ANNUAL REPORT

for the

COMPREHENSIVE ENVIRONMENTAL MONITORING PROGRAM

Covering the period:

July 24, 1982 through June 30, 2020

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EXECUTIVE SUMMARY

The Comprehensive Environmental Monitoring Program (CEMP) safeguards the unique environmental resources at the Natural Energy Laboratory of Hawaii Authority (NELHA). The CEMP, in combination with independent biota monitoring surveys, determine if any negative impact has occurred to the water chemistry, the diversity and abundance of the coral cover, and the marine biota populations to the class AA marine water fronting the facility. The benthic survey data indicates a gradual increase in coral cover since Hurricane Iniki, and a strong northwest swell in the early 1990's. Since 2009, the benthic survey data's overall coral cover has fluctuated from 30 – 52%. A strong El Niño occurred from 2014 – 2016, that resulted in unusually warm waters between South America and the International Date Line. The warm waters did impact the reef in West Hawaii with substantial coral bleaching events in some areas. The overall benthic cover in the waters fronting NELHA were recorded in 2019 at 37.05%. Despite the strong El Nino meteorological conditions, the 2019 coral cover results are in the range of the last ten years of benthic surveys preformed at NELHA. Fish communities have remained relatively stable over the past twenty-eight years of monitoring and chlorophyll-a, a measure of phytoplankton biomass, has never exceeded the State of Hawaii, Department of Health (HDoH) limit. Marine water chemistry observations are unchanged since NELHA's nearshore water quality monitoring inception in 1993. Groundwater water chemistry has been comparatively constant over the past thirty-two years with intermittent anthropogenic nutrient enrichments and associated recoveries.

This report covers the period of July 2018 to June 2020 in the context of a thirty-eight year historical perspective. Starting in July 1982, NELHA monitored marine water quality from its weekly pipeline monitoring program. The CEMP water quality monitoring program began in March 1989 and was fully implemented by July 1993. This report will address the HDoH rules for class AA marine water and discuss general trends with respect to NELHA's groundwater, anchialine pond, and terrestrial seawater disposal monitoring programs.

Intrusion of naturally occurring and anthropogenic enriched groundwater can influence the nearshore environment. NELHA's Water Quality Laboratory is tasked with identifying and correcting harmful levels of anthropogenic nutrient enrichment to the groundwater, anchialine ponds and class AA marine water surrounding its facility. The challenge for NELHA's Water Quality Laboratory is to identify anthropogenic nutrient subsidies from naturally occurring nutrient enrichment. Many scientists performing similar monitoring programs use a conservative mixing model and/or isotopic tracers to determine whether anthropogenic supplementation has occurred. In this report, NELHA extensively used the conservative mixing model technique to describe groundwater water quality chemistry. NELHA follows the HDoH protocols to describe nearshore marine water chemistry.

During the period from July 2018 to June 2020, no extraordinary groundwater water quality issues were noted. For the same period, NELHA's ocean transect sampling results were within the historical range of NELHA's pipeline and ocean transect data set. The results are also similar to other West Hawaii marine water quality monitoring

programs. NELHA's seawater disposal monitoring program showed the expected nutrient concentrations and solids loading from its client's discharges. The results are summarized in this report and the raw data and charts can be found in the appendix.

During the monitoring period, NELHA's Water Quality Laboratory recorded two environmental incidents. On November 29, 2019, aquaculture effluent breached a return seawater discharge trench and spilled onto a neighboring client's property. The cause of the spill was identified and mitigative operational procedures were implemented. Unfortunately, a second incident occurred on December 18, 2019. Similar to the first incident, aquaculture effluent crossed the property line of the client's operations, the cause of the spill was identified as an operational issue and additional mitigative actions were implemented that day. A long-term corrective action that included dredging a legacy seawater return sump, to increase its percolation performance, and the use of bentonite clay in the sump berm, to reduce seepage, was completed on February 4, 2020.

In summary, the benthic, biota and water chemistry data show:

- Coral cover has gradually increased from the early 1990's storm events. In the last 10 years, coral cover has fluctuated from 30 to 50% and the benthic community is now recovering from the strong El Niño that occurred from 2014 – 2016.
- Fish communities have been stable over the past twenty-eight years.
- Chlorophyll-a, a measure of phytoplankton biomass, has never exceeded the conservative HDoH limit.
- Nearshore ocean water chemistry has been historically consistent.
- Groundwater has been comparatively stable over the past thirty-two years with intermittent nutrient spikes and associated recoveries.

In addition, NELHA has successfully implemented over the last thirteen years several enhancements to its CEMP program including:

- Adding shoreline benthic and biota survey to its program in 2020.
- Investing approximately $10,000 in new laboratory equipment in 2020. This includes:
    - Milli-Q System
    - BOD_5 Incubator
    - Ohaus Balance
    - YSI ProDSS Water Quality Meter
- The installation of marker pins for the benthic survey in 2017. The marker pins will bring consistency to the annual survey locations.

- Revisions issued to the Aquatic Species Health Management Program and a Self-Inspection Check List was implemented in 2017.
- An additional technical staff member to the NELHA Water Quality Laboratory to expand its testing capabilities as required by the State and Federal Agencies in 2015.
- Implementation of a seawater disposal monitoring program in 2011.
- Increased its groundwater monitoring capabilities with 13 additional groundwater monitoring wells, totaling 34 groundwater wells at the facility in 2009.
- Funding $70,000 of additional laboratory equipment to enhance the analytical abilities of the NELHA Water Quality Laboratory in 2007 and 2008. This included:
    - Astoria Pacific Segmented Flow Auto Analyzer
    - YSI 556 Multi-Probe
    - Mettler Balance
    - YSI Conductivity Meter
- Aligning sampling and analytical techniques with EPA and HDoH protocols in 2008.
- Participation in the EPA's Discharge Monitoring Report-Quality Assurance Study Program (DMRQA) since 2008.
- Documenting issues with the NELHA's Environmental Incident Report Form in 2007.

By continually enhancing the CEMP program, the NELHA Water Quality Laboratory has further improved its ability to find and identify the causes of episodic events and institute timely corrective actions.

INTRODUCTION

Natural Energy Laboratory of Hawaii Authority History

Natural Energy Laboratory of Hawaii Authority (NELHA) began as the Natural Energy Laboratory of Hawaii (NELH) in 1974 when the Hawaii State Legislature created it on 322 acres of land at Keahole Point. NELH was mandated to provide a support facility for research on the ocean thermal energy conversion (OTEC) process and its related technologies.

In 1979, a barge dubbed "Mini-OTEC," anchored offshore of Keahole Point, demonstrated the world's first production of net electrical power via closed-cycle OTEC. In 1980, after the necessary environmental impact and other surveys were completed, and master permits obtained, the first pipeline to draw deep seawater from 2000 ft. and surface seawater from 45 ft. depths were constructed at Keahole Point. In 1981, shore based OTEC research began with a project testing biofouling and corrosion countermeasures for the closed cycle OTEC process. By 1984 it had become apparent that the seawater being pumped for OTEC research could also be channeled into many other commercial uses. New legislation legalized commercialization on state property allowing NELH to host new business ventures. In 1985, the Legislature created the Hawaii Ocean Science and Technology (HOST) Park on an adjacent 548 acres at Keahole Point in anticipation of expansion needs of NELH's growing businesses. In 1990, HOST Park and NELH were merged into one agency, the NELH Authority (NELHA). NELHA is an attached State agency to the Department of Business, Economic Development & Tourism. In 1998 – 1999, the Legislature expanded the business activities allowed at NELHA to include other industries and commerce that could enhance economic development and generate additional revenues to support the growing park.

Today, NELHA is lessor to approximately 48 enterprises which generate approximately $103.6 million per year in total economic impact, including $4.8 million per year in tax revenues, over 509 jobs, construction activity and high value product exports *(*Economic Impact of the Natural Energy Laboratory Hawaii Authority Tenants on the State of Hawaii in 2018*, UHERO, 2019)*. NELHA also operates three pipeline systems that pump deep and surface seawater to shore 24/7 with the third being the world's largest to a depth of 3,000 ft. (917 m).

Comprehensive Environmental Monitoring Program History

The Comprehensive Environmental Monitoring Program (CEMP) was crafted in 1987 as a cooperative effort between the Natural Energy Laboratory of Hawaii (NELH) and Hawaii Ocean Science and Technology (HOST) Park. In 1989, GK & Associates issued the CEMP report (GK & Associates, 1989) describing the sampling frequency, locations and appropriate analysis to be performed at NELH and HOST. In July 1993, the CEMP was further expanded from the GK & Associates report by incorporating the guidelines outlined in the *1992 West Hawaii Coastal Monitoring Program*. The CEMP program

established the water quality monitoring objectives, and a four-step process to accomplish the stated objectives.

CEMP Objectives:

1. *To protect the unique environmental resources of the Keahole Point area and their diverse uses*
2. *To provide the information necessary to comply with the permit requirements of various County, State and Federal Agencies*

Four-Step Process:

1. *Establishing a baseline for groundwater and offshore water quality and coastal biota*
2. *Comparing monitoring results with baseline information to detect unacceptable changes*
3. *Tracing the cause of an unacceptable change to its source*
4. *Providing facilities management with options for corrective measures*

Prior to the CEMP being established, NELH began weekly water quality monitoring of its surface seawater on July 24, 1982. The initial monitoring program sampled incoming surface seawater from NELH's 12-inch pipeline. The parameters monitored were ortho-phosphate phosphorus, nitrate + nitrite nitrogen, dissolved silica, salinity, and temperature. On January 3, 1986, the monitoring program added total ammonia nitrogen, total dissolved phosphorous, total dissolved nitrogen, total organic carbon, and total suspended solids. The 28-inch surface seawater pipeline sampling started on January 8, 1987. At this time, dissolved oxygen and pH were added to the program. Alkalinity was added in June of the same year. Microbiology sampling for vibrio and total count marine agar started on March 23, 2005. Microbiology and total organic carbon analysis were discontinued on July 1, 2007 and alkalinity was discontinued on July 1, 2008.

Weekly water quality sampling of the deep seawater 40-inch pipeline started on August 16, 1988. The parameters monitored initially were ortho-phosphate phosphorus, nitrate + nitrite nitrogen, total ammonia nitrogen, dissolved silica, total dissolved phosphorous, total dissolved nitrogen, total organic carbon, alkalinity, salinity, pH, and temperature. Dissolved oxygen was added on September 15, 1988, total suspended solids on September 26, 1994 and Microbiology on March 23, 2005. Microbiology and total organic carbon analysis were discontinued on July 1, 2007 and alkalinity was discontinued on July 1, 2008.

Sampling for both the 40-inch deep seawater pipeline and the 28-inch surface seawater pipeline was reduced from weekly to monthly on October 12, 1999. In 2005, water quality monitoring began on the surface seawater 24-inch and 55-inch pipelines and the deep seawater 18-inch and 55-inch pipelines. Water quality sampling was discontinued on the earthquake damaged 18-inch deep seawater pipeline by December 2006 and restarted in October 2009 after its repair. Since August 2010, the 18-inch pipeline pump has been inoperable.

After a thorough review, the CEMP was modified in July 2007 to realign its ocean transect stations to the 2004 HDoH, Hawaii Administrative Rules (HAR) Title 11 Chapter 54 by combining the coastal samples with the offshore samples into six transects. Ocean bottom transect sampling was discontinued during the same time period. Ocean bottom sample data indicates little or no difference from the surface seawater samples (See

Figure 11). The ocean bottom samples are also not required by the 2014 HDoH HAR Title 11 Chapter 54 administrative rules. In realigning the CEMP Ocean transect program with the HDoH rules, NELHA added to the ocean sampling program the measurement of chlorophyll-a, total dissolved nitrogen, and total dissolved phosphorus to all 5 transect stations. Fecal coliform microbiology testing of ocean transects, and brackish groundwater samples were discontinued due to the EPA discrediting this test for samples taken in brackish and marine waters. Enterococci microbiology testing is only required in recreational areas and routine testing of NELHA's beach park was transferred in 2008 to the HDoH as part of its tier II beach rotational sampling program. Furthermore, all septic tanks were identified on the facility and have been put on a maintenance schedule with a pumping requirement of every three to five years. In addition to marine water sampling changes, NELHA discontinued total dissolved nitrogen and total dissolved phosphorus from the groundwater monitoring program in December 2007. It was shown that groundwater has a diminutive fraction of organic nutrients and inorganic nutrient measurements provided acceptable monitoring information (See ***Figure 20***).

The NELHA Water Quality Laboratory has implemented additional changes to the CEMP program for the period of July 2010 to June 2011. A quarterly seawater disposal monitoring program samples approximately 57 seawater disposal locations for total suspended solids, biological oxygen demand, total nitrogen and total phosphorous as guided by HAR Title 11 Chapter 62 and with further recommendations from the HDoH, Wastewater Branch. The results of the seawater disposal monitoring program are forwarded to the Department of Health, Wastewater Branch initially on a quarterly basis and now on a yearly basis as part of the annual CEMP report. A discussion can be found in the seawater disposal monitoring program section and in Appendix D. Finally, the County Planning Department, Department of Land and Natural Resources Department of Aquatic Resources, and the Department of Health Wastewater Branch and Clean Water Branch have approved frequency changes for the biota monitoring survey from biannually to yearly and groundwater monitoring from monthly to quarterly. These monitoring frequency changes were implemented after January 2011. The biota monitoring surveys are in a separate annual report that can be found on NELHA's website: https://nelha.hawaii.gov/resources/library/nelha-lab-reports/

The CEMP has a rich historical record of water quality data within the NELHA property and the surrounding class AA coastline. The CEMP has also found and mitigated several groundwater water quality issues over the past twenty-nine years by tracing the cause of an unacceptable change to its source. The CEMP established a baseline in 2007 for groundwater water quality chemistry by identifying historical periods of little or no activity then calculating the monitored analytes mean and standard deviations from that data set. Therefore, the baseline is the mean and detected changes can be found outside the calculated three standard deviations from the mean (±3σ) (See ***Figure 7***). The mean and calculated three standard deviations (±3σ) control plots in conjunction with the conservative mixing model (See ***Figure 5 & 6***) are used to evaluate overall environmental impact to the groundwater within the NELHA facility. Nearshore water quality chemistry is regulated by the Hawaii State Department of Health (HDoH) and a methodology and standards have been adopted as outlined by HAR Title 11 Chapter 54. The HDoH water

quality criteria from 1989 – present is outlined in ***Table 1***. Seawater disposal water quality is regulated by HAR Title 11 Chapter 62.

Parameter	1989-2004	2004 – present
Total Ammonia Nitrogen (μg NH_4^+ & NH_3^- N/L)	**Wet 3.5** **Dry 2.5**	**2.5**
Chlorophyll-a ($\mu g/L$)	**Wet 0.3** **Dry 0.15**	**0.3**
Turbidity (N.T.U.)	**Wet 0.5** **Dry 0.2**	**0.1**
Total Dissolved Nitrogen (μg N/L)	**Wet 150** **Dry 110**	**100**
Nitrate and Nitrite Nitrogen (μg NO_3^- & NO_2^- N/L)	**Wet 5** **Dry 3.5**	**4.5**
Total Dissolved Phosphorous (μg P/L)	**Wet 20** **Dry 16**	**12.5**
Ortho-Phosphate Phosphorus (μg PO_4^{3-} P/L)	**n/a**	**5.0**

Table 1. *Pre & post 2014 HDoH HAR 11-54 Criteria for the Kona Coast Area as geometric mean values.*

NELHA adopted the *1992 West Hawaii Coastal Monitoring Program* guidelines for sampling offshore ocean transects from July 1993 to June 2007. The *1992 West Hawaii Coastal Monitoring Program* guidelines do not follow the same sampling protocol as the HDoH, HAR Title 11 Chapter 54 rules. Ocean transect station locations are the main differences between the two methods as seen in ***Figure 1***.

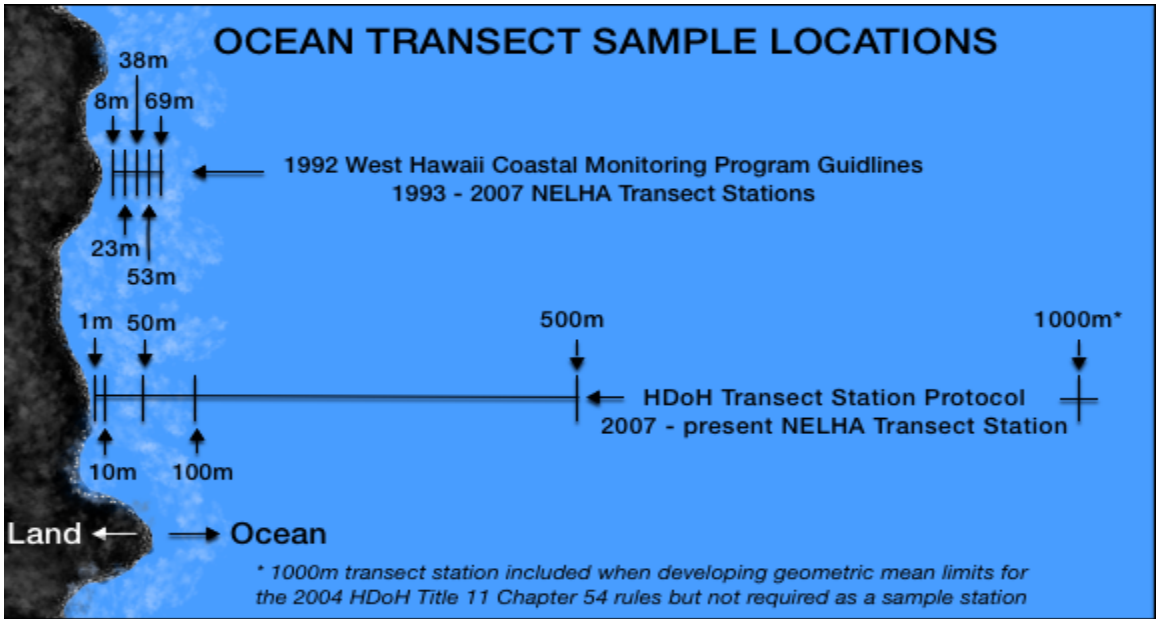


Figure 1. *Comparison of NELHA and HDoH ocean transect station distances from the shoreline.*

As of July 1, 2007, NELHA follows the sampling and reporting procedures as outlined in the *1997 Rational for the Development of Area-Specific Water Quality Criteria for the West Coast of the Island of Hawaii and Procedures for Their Use* report. The CEMP water chemistry results are reported to the Hawaii County Planning Department, Hawaii Department of Health, National Marine Fisheries Service, US Army Corps of Engineers, U.S. Fish & Wildlife Service, Coastal Zone Management Program, Department of Land and Natural Resources, and Division of Aquatic Resources annually as specified in our permits.

PERMIT REQUIREMENTS

NELH began in 1974 with the issuance of several environmental assessments, environmental impact statements and permits. The first environmental assessment was issued on January 1976, *Environmental Assessment of Natural Energy Laboratory at Keahole Point, Hawaii* report and was prepared by RM Towill. Followed up by the December 1976 *Environmental Impact Statement for the Natural Energy Laboratory of Hawaii at Keahole Point, Hawaii (Phase I)* also prepared by RM Towill.

On February 11, 1977, CDUA HA-879 was issued, which allowed governmental use of conservation land areas at Keahole Point TMK's 7-3-43:3, 4, 5 and adjacent coastal water and submerged lands. The Land Use Commission approved reclassifying NELH land from Conservation to Urban on February 17, 1978.

The County of Hawaii, Planning Commission issued a Special Management Area (SMA) Use Permit No.77 on November 16, 1978. The condition that is pertinent to the CEMP is Condition #9.

SMA 77 Condition #9:

> *All other applicable rules, regulations and requirements, including those of the HDoH and Department of Water Supply, shall be complied with.*

By July 1980, a draft environmental assessment related to the construction and operation of stage I of the seacoast test facility was issued. By August 1985 the final environmental impact statement was issued: *Development Plan for the Hawaii Ocean Science & Technology Park and Expansion of the Natural Energy Laboratory of Hawaii* by Traverse Group, Inc.

On June 6, 1986, SMA Use Permit No. 239 was issued by the County of Hawaii, Planning Commission and the approval of change of zone for TMK 7-3-09:Por. of 5 and 7-3-43:Por. of 3. The condition that is pertinent to the CEMP is Condition #8. SMA Use Permit No. 239 was amended on September 22, 1994 to include parcel 23 for which same types of projects are allowable on the rest of the NELH and HOST Park properties. This changed Condition #8 to Condition #10.

SMA 239 Condition #10 (formally Condition #8):

> *Offshore water quality monitoring data shall be submitted annually to the Planning Department prior to the anniversary date (June 4, 1986) of granting of the SMA Use Permit.*

On July 31, 1986, the Department of Land and Natural Resources approved HA-1862, (supersedes HA-879). This Conservation District use application allowed for the use of approximately 2,940 acres of ocean waters and submerged lands in the vicinity of Keahole Point, Hawaii for temporary and permanent ocean research, alternative energy and mariculture research and commercial mariculture and energy activities and facilities. Immediate construction and development of three ocean water pipelines and use of portions of two parcels of land for pipeline and utility easements, pump stations and road improvement and maintenance activities on and offshore of Keahole Point, Hawaii was approved. The conditions that are pertinent to the CEMP are conditions #5, 15, 16, and 19.

CDUA: HA-1862 Condition #5:

> *The applicant shall comply with all applicable Public Health Regulations*

CDUA: HA-1862 Condition #15:

> *The monitoring program includes anchialine ponds at NELH/HOST park site. Monitoring program should describe the existing conditions at these sites in terms of water quality and endemic aquatic fauna, and the program should last a minimum of 10 years. This program should be coordinated with this Dept. and the appropriate Federal, State and County Agencies.*

CDUA: HA-1862 Condition #16:

> *Should the long term studies indicate that the anchialine ponds at NELH/HOST Park are being adversely affected by seawater plume, the NELH and HOST Park shall take necessary mitigative measures to alleviate these effects which may include the installation of an ocean outfall for the disposal of return seawater.*

CDUA: HA-1862 Condition #19:

> *A long term monitoring/sampling program to determine the impacts of impingement and entrainment on fish eggs, larvae, and juveniles be conducted. These studies should be coordinated with the National Marine Fisheries Service, The Division of Aquatic Resources, and the U.S. Fish and Wildlife Service.*

On September 29, 1994, the Department of Land and Natural Resources approved HA-1862A. This Conservation District Use Application allowed for the use of approximately 350 acres of ocean waters and submerged lands in the vicinity of Keahole Point, Hawaii for temporary and permanent ocean research, alternative energy and mariculture research and commercial mariculture and energy activities and facilities; and for the pipeline and utility easements, construction and maintenance of pumps, and other related maintenance activities on and offshore of Keahole Point, Hawaii; use of one parcel of land, TMK: 7-3-09: 23 for establishment of aquacultural activities and its related facilities and uses. The conditions that are pertinent to the CEMP are #1, 4 and 8.

CDUA: HA-1862A Condition #1:

> *The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments and applicable parts of Section 13-2-21, Administrative Rules, as amended*

CDUA: HA-1862A Condition #4:

> *The applicant shall comply with all applicable Department of Health Administrative Rules*

CDUA: HA-1862A Condition #8:

> *That the applicant shall comply with all applicable conditions to Conservation District Permit HA-1862 and its previous amendments*

NELHA continues to maintain the CEMP as mandated by SMA 77 Condition #9, SMA 239 Condition #10, CDUA: HA-1862A Condition #5, 15, 16, and 19 and CDUA: HA-1862A Condition #1, 4, and 8.

CEMP PURPOSE

The purpose of the CEMP is to fulfill NELHA's regulatory requirements and to protect the unique environmental resources of the Keahole Point area and their diverse uses as outlined in the objectives of the 1989 GK & Associate report. This report will review up to thirty-eight years of pipeline, thirty-two years of groundwater and twenty-eight years of marine water chemistry data collected at NELHA.

CEMP RATIONALE AND APPROACH

Analytical

The NELHA Water Quality Laboratory follows *Standard Methods for the Examination of Water and Wastewater 22nd Edition* and EPA test methods for its analytical procedures. NELHA continuously reviews, monitors and updates its analytical methods and procedures to ensure high quality data. The NELHA Water Quality Laboratory also voluntarily participates in the EPA's Discharge Monitoring Report-Quality Assurance Study Program (See ***Appendix F)***.

In 2007, NELHA Water Quality Laboratory transitioned many of its analysis from bench top laboratory methods to in situ methods. The transition from bench top wet chemistry to in situ methods allowed NELHA to sample additional groundwater locations with reduced staffing while providing results in the field for faster mitigative response times.

NELHA has invested significant resources to sharpen its nutrient analytical techniques and equipment. Nutrients such as nitrate + nitrite nitrogen, ortho-phosphate phosphorous and total ammonia nitrogen are critical parameters for water quality monitoring. In September of 2007, NELHA transitioned from the Technicon AutoAnalyzer II to the Astoria-Pacific A2 for its nutrient analysis. The NELHA Water Quality Laboratory

did experience challenges with its nutrient analytical equipment transition for the 3rd and 4th quarter of 2007. Since then, NELHA has developed standard operating procedures and quality assurance programs to ensure the highest quality of nutrient analytical results. In May 2009, the NELHA Water Quality laboratory has refined its nutrient analyses quality control standards to include two low nutrient control standards every fifteenth unknown analysis. It also collects quarterly low nutrient seawater approximately 2 miles offshore for its dilution and blank water. By February of 2015, NELHA transitioned its Total Ammonia analysis from the automated colorimetric phenate method to a fluorometric ammonium orthophthaldialdehyde (OPA) method.

Even though NELHA strives to report the most accurate and precise nutrient results using standard methods and techniques, it is important to recognize method weaknesses and inherent analytical problems with nutrient analysis of brackish and marine waters. The nutrient analysis is a colorimetric method. This method relies on the precise addition of reactants and reagents to generate a measurable color. The amount color generated from the reaction is related to the concentration of the analyte being analyzed. A photo detector determines the samples transmittances, deepness of color, and compares it to a recent calibration curve.

Colorimetric nutrient analyses have challenges the reader should keep in mind when reviewing nutrient data. First, at high concentrations the results have high standard deviations, which are documented in *Standard Methods for the Examination of Water and Wastewater 22nd Edition*. Second, at very low concentrations, such as 5 µg/L (5 parts per billion), the instrument is approaching the method detection limit. In addition, there are refractive index issues (***Figure 2a***.) that cause leading and trailing noise on the measured sample peaks as the salinity varies from baseline water to unknown sample. There's also a salt effect that shifts the baseline if the salinity of the sample and baseline do not match.

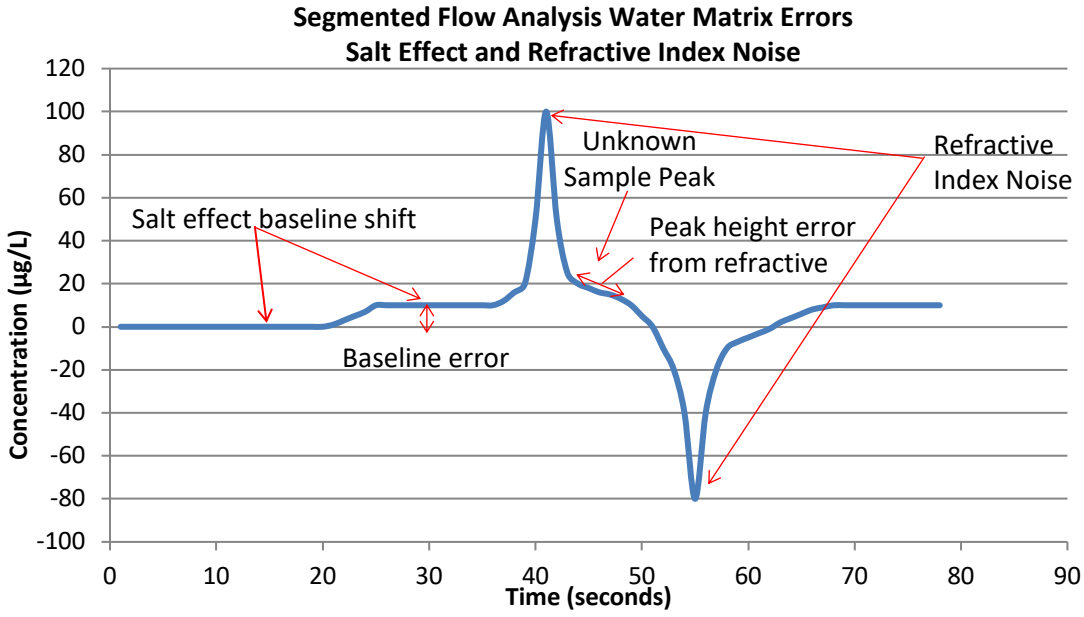


Figure 2a. *Segmented flow analysis salt effect and refractive index noise diagram showing the noise to signal differences when the unknown sample salinity is different than the baseline salinity.*

The nutrient method also requires a baseline water (de-ionized water or low nutrient seawater) to be free of nitrate + nitrite nitrogen, ortho-phosphate phosphorous, silicates, and total ammonia nitrogen to establish a zero. Baselines also shift during the analysis and cause small but sometimes substantial errors at low concentrations (***Figure 2b***.).

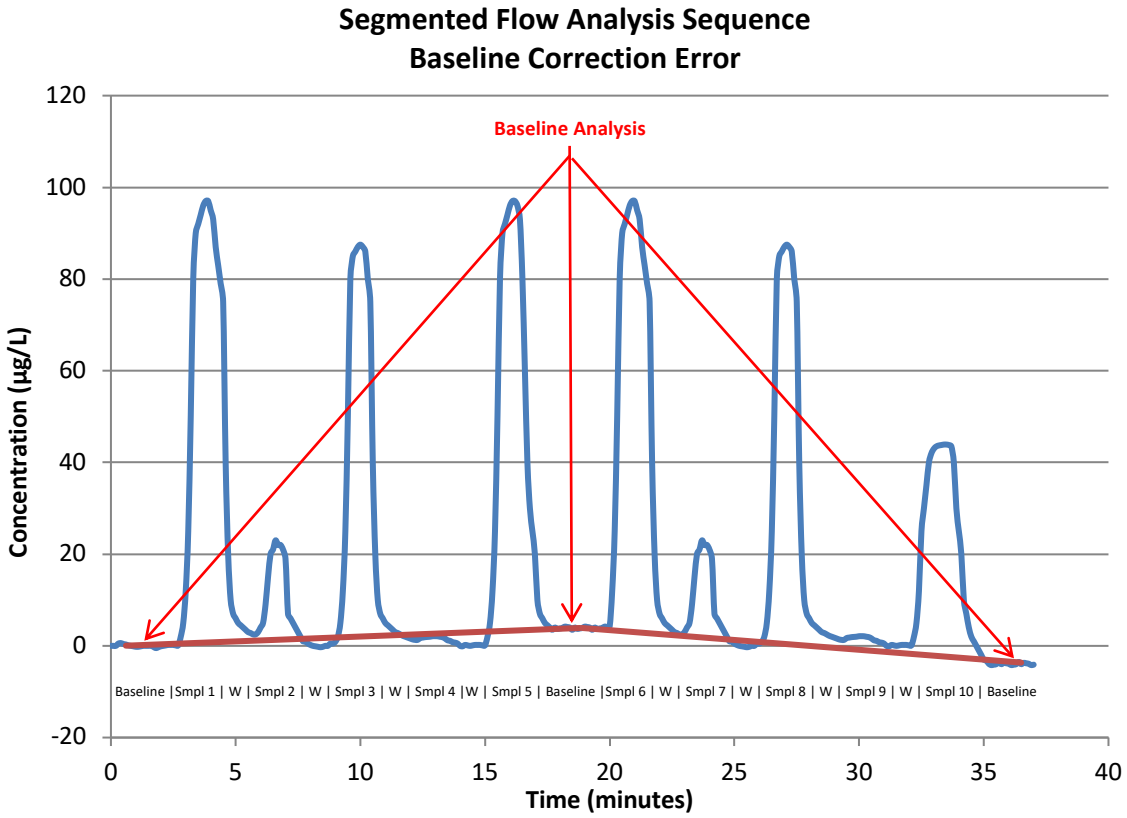


Figure 2b. *This diagram shows an example of how the baseline is drawn. The baseline is established by preforming a baseline analysis after five unknown samples, then drawing a linear line from one baseline analysis to the next. The analytical software then measures peak heights from the baseline to the peak crest. For example, an error can be seen in sample 4 and 9. For sample 4, the analytical software would measure a smaller than actual peak height and report a lower than actual concentration. The opposite would be true for sample 9, as the analytical software would measure a higher than actual peak height and report a higher than actual concentration. This effect becomes significant at very low concentration measurements.*

NELHA quantifies its method detection limit (MDL) on its nutrient analysis every run. The results vary from run to run but the MDL does provide a gauge of how well the instrument is performing as the unknown concentrations approach zero. The MDL is defined as the minimum measured concentration that can be reported with 99% confidence that the measured concentration is distinguishable from the method blank result. NELHA performs this measurement by analyzing a laboratory prepared standard at 10 µg/L seven times. The standard deviation is determined from the data set. The standard deviation is then multiplied by the degree of freedom in the sample set to determine the MDL. In addition to the MDL, NELHA is now developing a minimum reporting limit (MRL) for its nutrient analysis. The minimum reporting limit is defined as the “less-than” value

reported when an analyte either is not detected or is detected at a concentration less than the MRL. Since the definition of the MRL is not specific, an MRL can be set at any concentration acceptable to the data user and the laboratory as long as reliable measurement is achieved. NELHA is exploring the EPA definition of MRL as the MDL multiplied by 3.18. Future reports will describe data if below the MRL as <MRL value. Figure 2c shows the MDL for a series of analytical runs between November 2017 and August 2019. A calculated mean MDL for the data period is provided at the bottom of the table. The calculated MRL as described by the EPA definition utilized the mean MDL for the data period. This information may be helpful to put in context the raw dataset NELHA presents in this report and the current HDoH administrative rules.

Method Detection Limits (MDL) for Ocean Transect Analysis
Calculated Minimum Reporting Limits (MRL) Using EPA Guidance

Analyte:	**SI**	**PO4**	**NO3 & NO2**	**NH3**	**TDP**	**TDN**
Units:	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
Nov-17	3.4	0.5	0.9	4.3	0.5	0.9
Jan-18	4.8	1.2	0.2	2.2	1.2	0.2
Feb-18	2.2	0.6	1.8	3.5	0.6	1.8
May-18	5.1	2.5	4.6	2.5	2.5	4.6
Sep-18	19.4	1.1	1.5	4.5	1.1	1.5
Nov-18	1.5	0.5	1.1	1.8	0.5	1.1
Jan-19	0.8	0.5	1.9	3.7	0.5	1.9
Apr-19	11.4	2.3	5.4	3.1	2.3	5.4
Aug-19	4.7	1.4	1.3	16.6	1.4	1.3
Mean MDL	***5.9***	***1.2***	***2.1***	***4.7***	***1.2***	***2.1***
MRL	***<18.8***	***<3.7***	***<6.6***	***<14.9***	***<3.7***	***<6.6***

Table 2C. *The table provides Method Detection Limit (MDL) and Minimum Recording Limit (MRL) data from November 2017 to August 2019.*

Marine Water

Marine water quality monitoring from 1993 to 2007 followed the 1989 GK & Associates *HOST and NELH Cooperative Environmental Monitoring Program* report and incorporated the recommendations from the *1992 West Hawaii Coastal Monitoring Program Monitoring Guidelines*. The frequency of sampling for the marine water program is quarterly. The marine water quality stations include coastal sampling locations accessible by land and marine transects accessible by boat. Site locations were determined based on a salinity survey and proximity to offshore intake pipelines or flow envelops monitored by groundwater wells, return seawater trenches and anchialine pond locations. The sites were selected by design to provide the earliest detection of change in groundwater intrusion to the coastal environment. The transect station distances adopted in 1993 are perpendicular to the shoreline extending to the 20-meter depth contour. Ocean bottom sampling was included in the sampling regime due to concerns

related to dense cold deep seawater sinking to lower depths when returning to the environment. Surface ocean water samples monitored the brackish, less dense groundwater intrusion into the marine water, which tends to float when the ocean mixing energy is low. This strategy of focusing on groundwater intrusions at known infiltration locations was well thought out and effectively implemented by the staff at NELHA thirty-two years ago.

Since July 2007, NELHA has implemented the standard sampling procedure and analytical protocol of the August 31, 2004, HDoH HAR Title 11 Chapter 54 for its quarterly ocean transect sampling program. This adjustment required incorporating the coastal sampling program into its ocean transects at the specified distances in the Hawaii Administrative Rules. It also required the addition of total dissolved phosphorous, total dissolved nitrogen, pH, dissolved oxygen and chlorophyll-a analytes to be measured for all the transect stations. Historically, these analytes were only measured at the first station of the five station transect and at the coastal location. In addition, the NELHA Water Quality Laboratory has invested in a boat deck mounted GPS with programed waypoints to locate the transect stations. To enhance consistency and productivity, the NELHA Water Quality Laboratory combined the use of a peristaltic pump for sampling and a handheld YSI meter for in situ measurements of pH, DO, salinity, and temperature.

NELHA will represent the marine water transect data in a summary table and seven analytes transect summary plots, for the 2018 – 2020 sampling, in Appendix A. For a historical perspective, the 1993 – 2020 five stations transect data will be presented in historical data tables and analyte station plots in Appendix A. The data tables and graphs will include geometric mean data, HDoH, HAR Title 11 Chapter 54 limits, and data range bars in the transect summary plots. See ***Figure 3*** for an example of transect summary plot and ***Figure 4*** for an example of a historical station plot. Please note, the historical station plots are a comparison of the perceived distances from the shoreline from 1993 – 2007 with the 2007 – 2020 data using HDoH, HAR Title 11 Chapter 54 locations that were sampled with the use of GPS coordinates (See ***Figure 1*** for a graphical representation of the different distances). ***Table 2*** represents the current transect locations as GPS coordinates and distances from the shoreline with the perceived distances from the shoreline from 1993 – 2007.

Transect	GPS Coordinates 2007-2020 1	2	3	4	5	6	Distance from Shoreline (m) 2007-2020	1993-2007
Station 1	19°43'55.34"N 156° 3'25.71"W	19°43'52.40"N 156° 3'35.17"W	19°43'39.31"N 156° 3'42.66"W	19°43'35.12"N 156° 3'38.75"W	19°43'18.59"N 156° 3'27.00"W	19°42'44.10"N 156° 2'59.02"W	1	8
Station 2	19°43'55.66"N 156° 3'25.90"W	19°43'52.63"N 156° 3'35.39"W	19°43'39.26"N 156° 3'43.01"W	19°43'34.88"N 156° 3'38.98"W	19°43'18.37"N 156° 3'27.26"W	19°42'44.04"N 156° 2'59.35"W	10	23
Station 3	19°43'56.82"N 156° 3'26.52"W	19°43'53.56"N 156° 3'36.32"W	19°43'39.06"N 156° 3'44.41"W	19°43'33.99"N 156° 3'39.95"W	19°43'17.63"N 156° 3'28.41"W	19°42'43.78"N 156° 3'0.68"W	50	38
Station 4	19°43'58.23"N 156° 3'27.26"W	19°43'54.78"N 156° 3'37.47"W	19°43'38.90"N 156° 3'46.06"W	19°43'32.86"N 156° 3'41.21"W	19°43'16.56"N 156° 3'29.76"W	19°42'43.47"N 156° 3'2.39"W	100	53
Station 5	19°44'9.84"N 156° 3'33.41"W	19°44'4.33"N 156° 3'46.81"W	19°43'37.27"N 156° 3'59.27"W	19°43'23.88"N 156° 3'51.22"W	19°43'8.59"N 156° 3'40.47"W	19°42'41.05"N 156° 3'15.85"W	500	69

Table 2. *GPS coordinates and distances from shoreline for NELHA Ocean transect 1-6.*

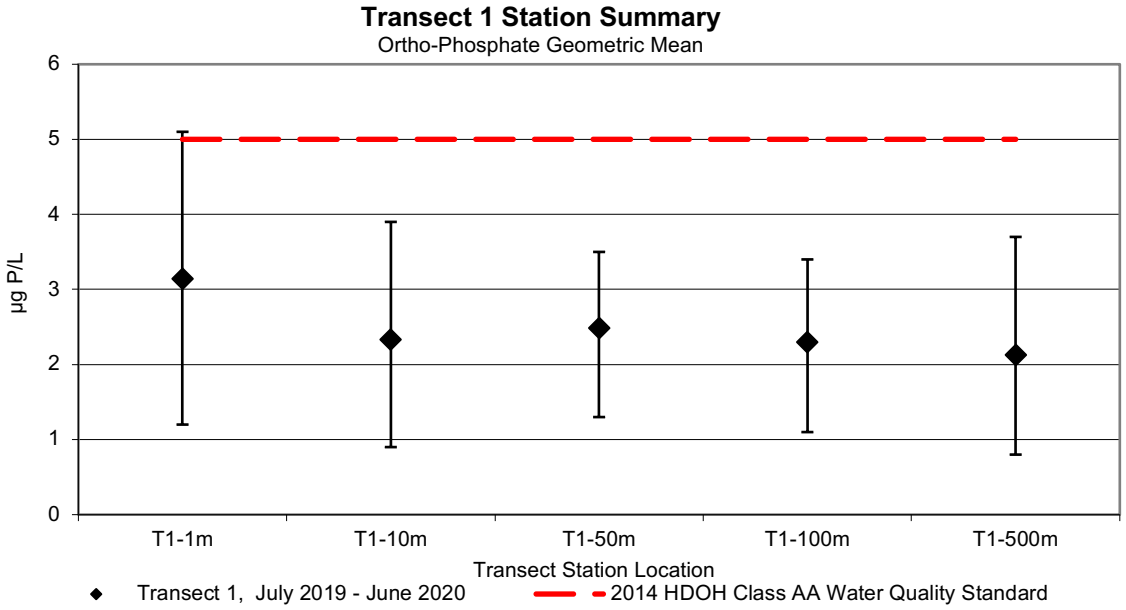


Figure 3. *Ocean transect summary plot example. The x axis is distances from the shoreline in meters (for example, T1-50m would be transect 1, at a station 50 meters from the shoreline). The y axis represents ortho-phosphate phosphorus concentrations. The closed diamonds are the yearly geometric mean of the 2019 – 2020 quarterly sampling. The range bars represent the minimum and maximum values of the plotted geometric means. The dashed line represents the HDoH, HAR Title 11 Chapter 54 limits.*

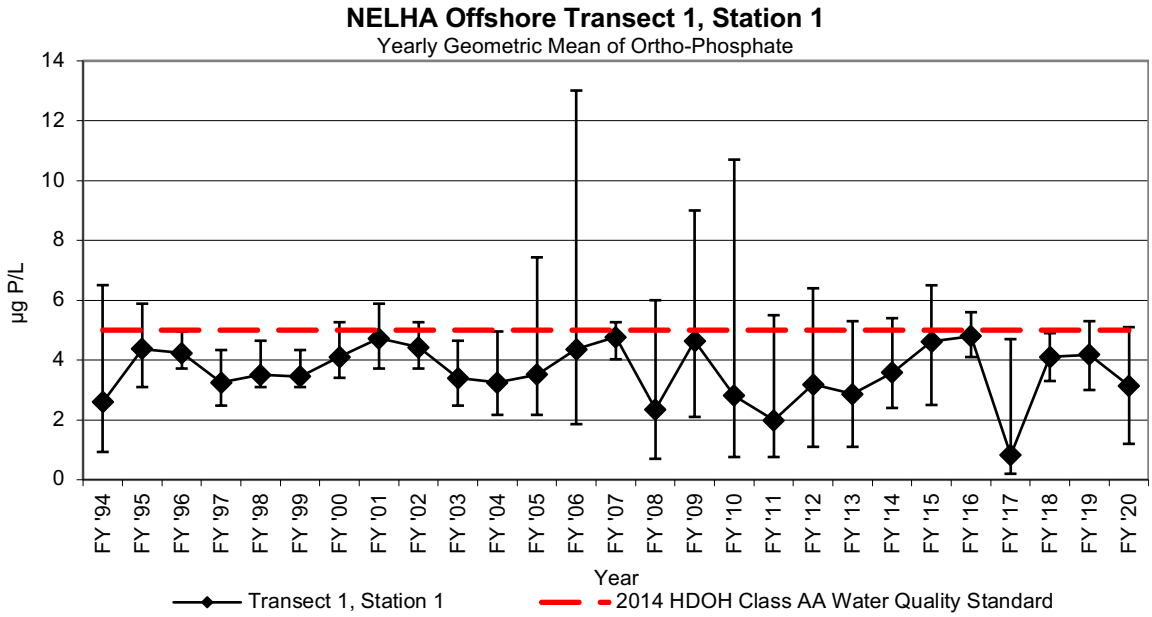


Figure 4. *Ocean transect historical station plot example. The x axis displays the year of the ocean transect station data (the plot title states the plot represents Transect 1, Station 1 for the fiscal years of 1993 – 1994 to 2019 – 2020). The y axis represents ortho-phosphate phosphorus concentrations. The closed diamonds are the yearly geometric mean of the 1993–2020 quarterly sampling. The range bars represent the minimum and maximum values of the raw data for the plotted geometric means. The red dashed line represents the HDoH, HAR Title 11 Chapter 54 limits.*

Groundwater

Conservative Mixing Model

NELHA evaluates groundwater within this report using two methods, a conservative mixing model (Dollar and Atkinson, 1992) and a time series control plot. The conservative mixing model plots a linear relationship, called the conservative mixing line, in conjunction with groundwater salinity and nutrient data. The conservative mixing line is linear regression of pipeline surface seawater and upslope control well groundwater. These "endpoints" describe the natural mixing of groundwater with seawater. The "groundwater endpoint" represents a high nutrient concentration at a salinity value in the brackish water regime. Control wells W1, & W13 are the "groundwater endpoints" that are connected to either surface seawater (SSW) "endpoints" (low nutrient concentration and elevated salinity) or deep seawater (DSW) "endpoints" (high nutrient concentration and elevated salinity). By plotting the groundwater data with the two conservative mixing lines, one can better interpret the nutrient concentration of the brackish water lens in the formation. The conservative mixing model shows nutrient enrichment if a sample concentration is plotted above the surface seawater conservative mixing line. The conservative mixing model also shows nutrient uptake if a sample concentration is plotted below the surface seawater conservative mixing line. By including the deep seawater conservative mixing line to the scatter plots, one can view the nutrient enrichment in relationship to nutrient rich deep seawater disposal at NELHA. See ***Table 3***

for endpoint data and potable groundwater nutrient data. See ***Figure 5-6*** for conservative mixing model examples.

SITE ID	n	PO4 (µg/L)	NO3 (µg/L)	NH3 (µg/L)	Si (µg/L)	TD (µg/L)	TDN (µg/L)	SALINITY (PSU)	pH	DO (ppm)
SSW (Mean '82-'20)	1129	4.09	3.56	3.76	79.16	11.24	72.79	34.73	8.25	6.65
DSW 2000' (Mean '88-'20)	927	94	578	2.5	2376	97	618	34.41	7.58	1.35
DSW 3000' (Mean '06-'20)	179	93	608	3.3	2804	94	640	34.58	7.59	1.98
Well 1 (Mean '89-'20)	284	104	1180	3.3	18055	107	1221	8.92	7.89	7.14
Mean Potable Wells West Hawaii	42	105	1405	3.0	26078	179*	1998*	0.30		
Min. Potable Wells	1	44	615	0.0	16362	77*	952*	0.06		
Max. Potable Wells	1	148	3320	22	32043	256*	4727*	0.98		
Tap Water (NELHA)	1	127	1164	<1.1	24491	132	1821	0.75	7.59	
NELHA Groundwater Y intercept	1451	138	1682					0		
1997 HDoH Y intercepts	?	116	1101			111	1475	0		
Rain Water	1	27	67	85	10	37	109	0.02		
R1 Treated Effluent (Maui)	1	1700	6320	260		1720	7330		6.9	1.6
§11-54-6, HDoH West Hawaii Std.		5.0	4.5	2.5		12.5	100			

Table 3. *Well 1, Well 13, surface and deep seawater data was used for the conservative mixing line end points. Additional data in the table is for comparative purposes, which include surface and deep seawater, groundwater, potable wells situated from Kawaihae to Kealakekua Bay in West Hawaii (unpublished data courtesy of T. Nance and S. Dollar), tap water at NELHA, Y intercepts from NELHA SSW and Well 1 and Well 13 end points, Y intercepts from the March 1997 HDoH Rationale for the Development of Area-Specific Water Quality Criteria for the West Coast of the Island of Hawaii and Procedures for their use, rain water from the Kona Palisades subdivision and R1 treated wastewater effluent at the Kihei Treatment Plant on Maui. *Total Phosphorus or Total Nitrogen reported.*

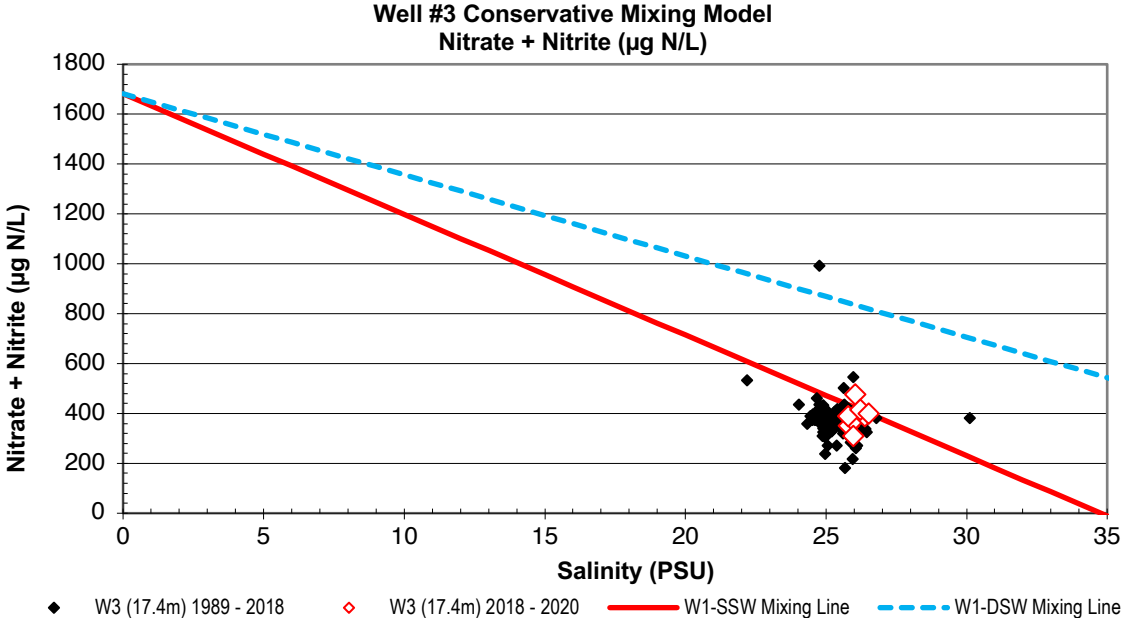


Figure 5. *Typical conservative mixing model with no nutrient subsidies.*

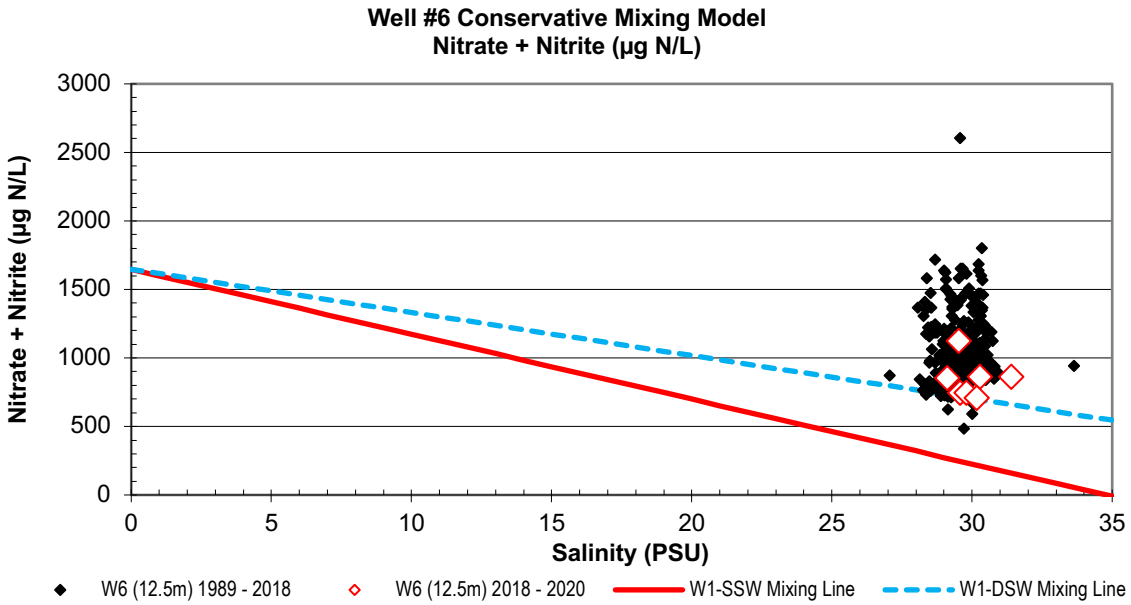


Figure 6. *Typical conservative mixing model with nutrient subsidies above the surface seawater and deep seawater mixing plot lines.*

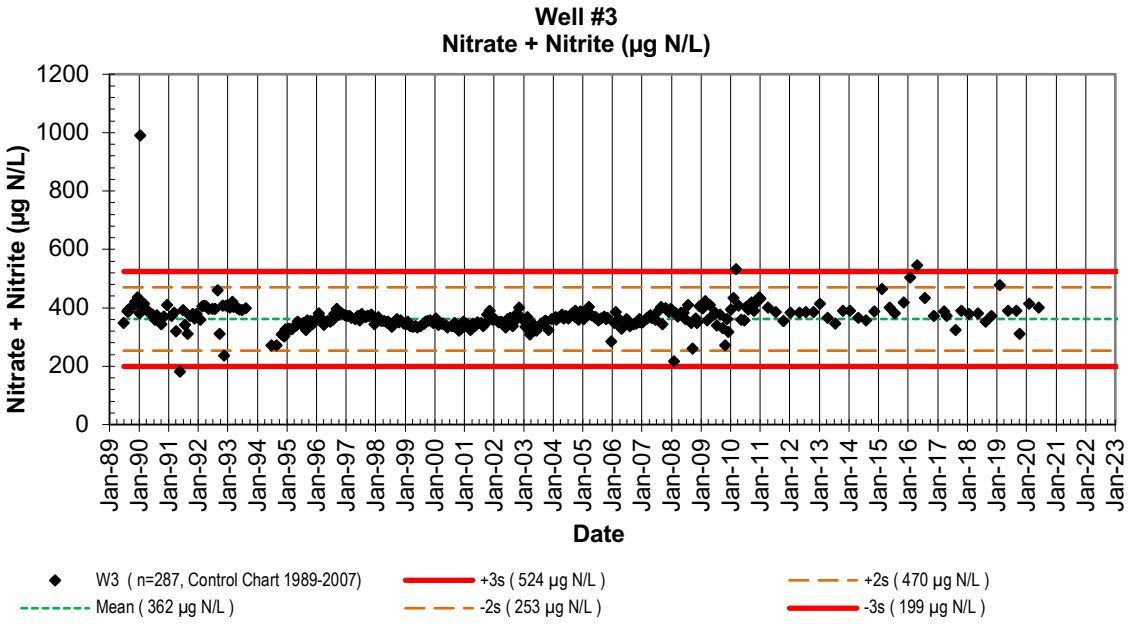


Figure 7. *An example of a stable groundwater control plot showing time on the x axis and concentration on the y axis with data from well 3 from 1989 to 2020 as closed diamonds. The green short dashed line represents the mean, the red solid lines represent three standard deviations (±3σ) from the mean, and the orange long dashed lines represent two standard deviations (±2σ) from the mean. The sample population used to calculate the mean and standard deviations were from 1989 – 2007.*

In addition to using a conservative mixing model, NELHA will represent the groundwater data in a time series control plot format (See ***Figure 7-8)***. The baseline for the groundwater water quality chemistry in the time series control plot was developed

by identifying historical periods of little or no activity and calculating the analytes mean and standard deviation. Therefore, the baseline is the mean and detected changes can be found outside the calculated three standard deviations (±3σ). The NELHA water quality laboratory will use the time series control plot in conjunction with the conservative mixing model to evaluate groundwater data.

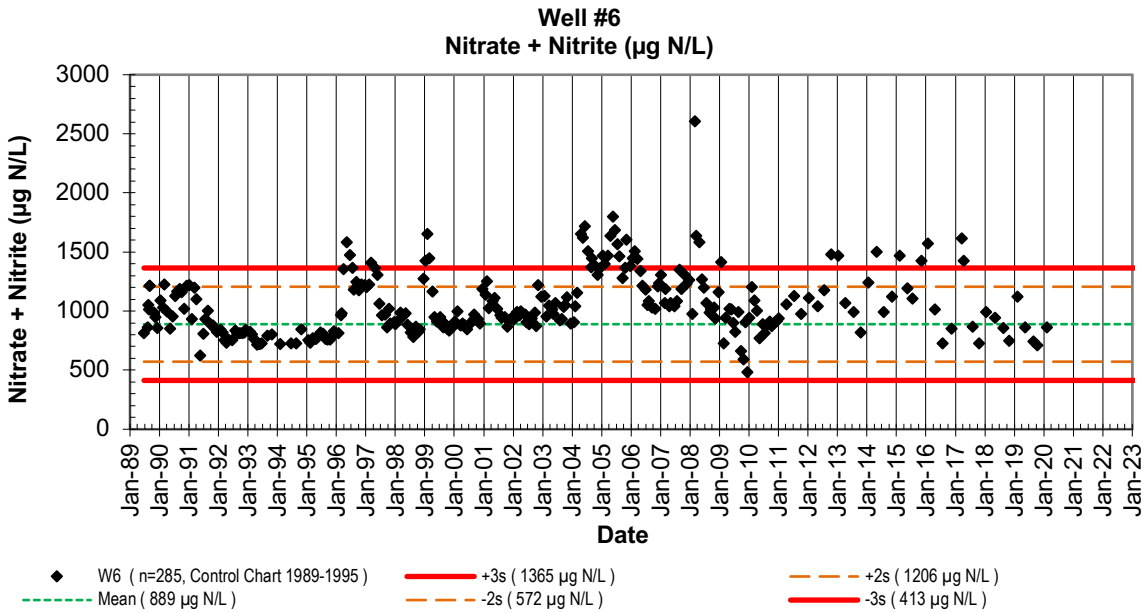


Figure 8. *An example of an irregular groundwater control plot showing time on the x axis and concentration on the y axis with data from well 6 from 1989 to 2020 as closed diamonds. The green short dashed line represents the mean, the red solid lines represent three standard deviations (±3σ) from the mean, and the orange long dashed lines represent two standard deviations (±2σ) from the mean. The sample population used to calculate the mean and standard deviations were from 1989 to 1995.*

Groundwater Wells

The groundwater monitoring program has three components: groundwater wells, anchialine ponds, and seawater return trenches. The first component, groundwater wells, focuses on 34 strategically placed wells on the NELHA property. NELHA began monitoring 15 groundwater wells on June 1989. Six additional wells were added to the program on May 1992 to evaluate the performance of seawater return trench 4. In 2008, NELHA received $300,000 of Capital Improvement Project (CIP) funding from the State legislature to add an additional 13 groundwater monitoring wells to the CEMP program. By January 2009, all 34 wells on the NELHA property were monitored at a monthly frequency (See ***Table 4*** for GPS coordinates and ***Figure 9a-9b*** for map locations). The well monitoring frequency was reduced to quarterly on January 2011 to enhance the overall monitoring program at the facility with the addition of 57 seawater disposal monitoring locations.

Wells are in groupings of up to three bore holes in a Well-Set. A Well-Set usually has a shallow well ranging in salinity from 5-31 PSU, a mid-depth well ranging in salinity from 14-33 PSU, and a deep well ranging in salinity from 15-34 PSU. The wells were drilled with truck-mounted rotary drilling equipment. The wells were monitored during the

drilling for temperature and conductivity to delineate fresh, brackish, and seawater boundaries. A two-inch PVC casing and screen were installed in each bore hole with the screened portion targeting a fresh, brackish, seawater zone. The annulus space of the wells were packed with sand blasting material and/or crushed basalt rock. The wells were sealed using bentonite and cement grout.

A dedicated bladder pump sampling system was recommended by C.W. Associates (1988 Geolabs-Hawaii 8-9) for the initial 21 wells. It is unclear to the author the rational used to determine the installation depths of the dedicated bladder pumps. It is also unclear if the bladder pump depths have changed, as the dedicated pumping systems were periodically refurbished with new bladders, tubing and check valves. It was also recommended that purge pumps be installed to purge the well 3-10 well volumes prior to sampling (1988 Geolabs-Hawaii 9). The NELHA well purging and sampling procedure from 1989 – 2007 was based on purge time. The purging procedure for the dedicated bladder pumps was 5 minutes for shallow wells, 10 minutes for mid depth wells, and 15 minutes for deep wells. Sample bottles were triple rinsed with sample water prior to sample collection. By July 2007, the purge time protocol was changed to a purge volume protocol or in situ stability criteria of temperature and salinity. The NELHA Water Quality Laboratory also added in July 2007 depth to water measurements to the matrix of field data monitored at each well.

It is standard procedure that a well should be purged sufficiently to ensure a representative sample. The standard purge volumes that the EPA, USGS and Standard Methods recommend fall in the range of 3 – 10 well volumes (EPA 2; USGS Chapter 2, 49; Standard Methods 1-28). Due to the highly porous nature of the formation and experience examining temperature, conductivity and pH changes during the purge cycle, the NELHA Water Quality Laboratory adopted a standard practice of purging three well volumes before sampling. In June 2010, NELHA adjusted the purge volumes protocol, based on the stability criteria the USGS reports in the *National field manual for the collection of water-quality data* (variously dated USGS) of ± 0.2˚C for temperature and ± 3% for salinity. In situ measurements of these analytes are recorded on the sample manifest sheet during the purging period until the stability criteria is met. Sampling commences after the sample bottles have been rinsed three times with the purge water.

The NELHA Water Quality Laboratory specified Grundfos Redi-Flo 2, Variable Frequency Drive (VFD) and a Reel-EZ pump system in September 2008 as part of a greater CIP project to expanding our 21 environmental groundwater monitoring well program to a total of 34 environmental groundwater monitoring wells. The system was chosen based on recommendations from various environmental engineering consultants, the NELHA Operations Department's positive operational experience with Grundfos pumps, system mobility criteria and pump flow rate specifications. One of the issues identified with the older bladder pump system was pumping performance. By choosing a system with a potential 9 gallons per minute flow rate and the ability to lift 250 ft., the NELHA Water Quality Laboratory would be able to reduce the time requirements to purge each well. However, dedicated bladder pump systems have the advantage of less moving parts, reduced chances of cross contamination and the use of corrosion resistant plastic materials. It was initially proposed to install dedicated submersible pump system for all

our wells. Due to the low conductivity requirements of various multistage pumping systems available on the market, it was determined that NELHA's environmental monitoring wells were outside the appropriate application for this class of pumps to deploy as a dedicated system.

Two new mobile Grundfos Redi-Flo 2 pumps were phased into operation by October 2008. During the phase in period the older bladder pumps were extracted from each environmental monitoring well and measurements were made to determine the bladder pump intake screen depth from the top of the casing. By January 2009, 13 newly drilled wells were brought on line. For the newer wells, the pumping depths were chosen based on the mid-point of the screened zone. However, in some circumstances, when the depth to water measurement was lower than the top of the screened zone, the pumping depth was designated at the mid-point of the groundwater column.

In April 2009, the NELHA Water Quality Laboratory experienced complications with the Grundfos Pumps. Due to severe overheating and silt contamination, both Grundfos pumps windings eventually ground faulted. Two new Grundfos pumps were purchased to replace the damaged pumps and two additional 12 volt Proactive Mini-Monsoon sampling pumps were added to the NELHA Water Quality Laboratory groundwater pumping system. The Mini-Monsoon pumps are designed to pump in substandard conditions with a lift of 70 ft. and a 400-hour service life. The NELHA Water Quality Laboratory will utilize the more robust plastic Mini-Monsoon pumps in applications requiring a lift of less than 70 ft. The Grundfos pumps will be reserved for applications that require greater than 70 ft. of lift in low conductivity groundwater. Since October 2015, the NELHA Water Quality Laboratory transitioned to the Proactive Mega-Monsoon sampling pumps for wells requiring 70 ft. or more lift.

Anchialine Pond

Anchialine pond water quality monitoring is the second component of the CEMP groundwater program. Anchialine ponds are defined as land locked pools adjacent to the sea with measurable salinities and tidal fluctuations. Natural anchialine ponds are restricted to highly porous substrates, such as lavas or limestone. Most of the known Hawaiian anchialine ponds are found on the western and southern shorelines of the Big Island of Hawaii. NELHA historically has monitored two clusters of anchialine ponds, one located in the northern NELHA complex, and the second grouping found in the southern part of the facility located on the Department of Transportation, Ellison Onizuka Kona International Airport property. A third anchialine pond area was discovered just north of the 55" pump station and was added to the program on July 9, 2012. Water quality parameters were monitored historically on a quarterly basis. On December 2007, the NELHA Water Quality Laboratory changed its monitoring frequency of the anchialine ponds to monthly but reduced back to its historical quarterly sampling frequency by January 2011.

Seawater Return Trenches

The third groundwater water quality monitoring component samples two seawater return trenches. The two seawater return trenches found on the NELHA

property were historically monitored on a quarterly basis. The seawater return trenches are located close to aquaculture clients and an onshore OTEC facility where excess seawater from their operations was gravity feed into the seepage trench. The trenches are designed to facilitate residence time and warm the deep seawater before it moves through the porous basalt lava rock towards the ocean. The increased contact time with the porous formation allows natural processes to breakdown nutrients before reaching the nearshore environment. Long term monitoring ensures that the trenches are within baseline water chemistry levels acceptable by the HDoH, HAR Title 11 Chapter 62 rules. On December 2007, the NELHA Water Quality Laboratory changed its monitoring frequency of seawater return trenches to monthly. Since January 2011, seawater return trench water chemistry monitoring has been reduced to its historical quarterly sampling frequency.

Groundwater GPS Coordinates

Location	*Latitude*	*Longitude*	*Location*	*Latitude*	*Longitude*
Well-Set 1 (W1)	*19°42'57"N*	*156°02'05"W*	*Well-Set 10 (W10)*	*19°43'21"N*	*156°03'23"W*
Well-Set 2 (W2)	*19°42'45"N*	*156°02'55"W*	*Well-Set 11 (W11)*	*19°43'31"N*	*156°03'30"W*
Well-Set 3 (W3)	*19°43'40"N*	*156°03'07"W*	*Well-Set 12 (W12)*	*19°44'57"N*	*156°03'04"W*
Well-Set 4 (W4)	*19°43'38"N*	*156°03'17"W*	*Well-Set 13 (W13)*	*19°43'27"N*	*156°01'58"W*
Well-Set 5 (W5)	*19°43'44"N*	*156°03'38"W*	*Seawater Return Trench 4*	*19°43'47"N*	*156°03'31"W*
Well-Set 6 (W6)	*19°43'36"N*	*156°03'35"W*	*Seawater Return Trench 5*	*19°43'23"N*	*156°03'17"W*
Well-Set 7 (W7)	*19°43'49"N*	*156°03'34"W*	*Anchialine Pond 1 (A1)*	*19°43'53"N*	*156°03'25"W*
Well-Set 8 (W8)	*19°43'47"N*	*156°03'28"W*	*Anchialine Pond 2 (A2)*	*19°42'60"N*	*156°02'54"W*
Well-Set 9 (W9)	*19°42'54"N*	*156°02'38"W*	*Anchialine Pond 3 (A3)*	*19°42'50"N*	*156°02'54"W*

Table 4. *Groundwater GPS coordinates.*

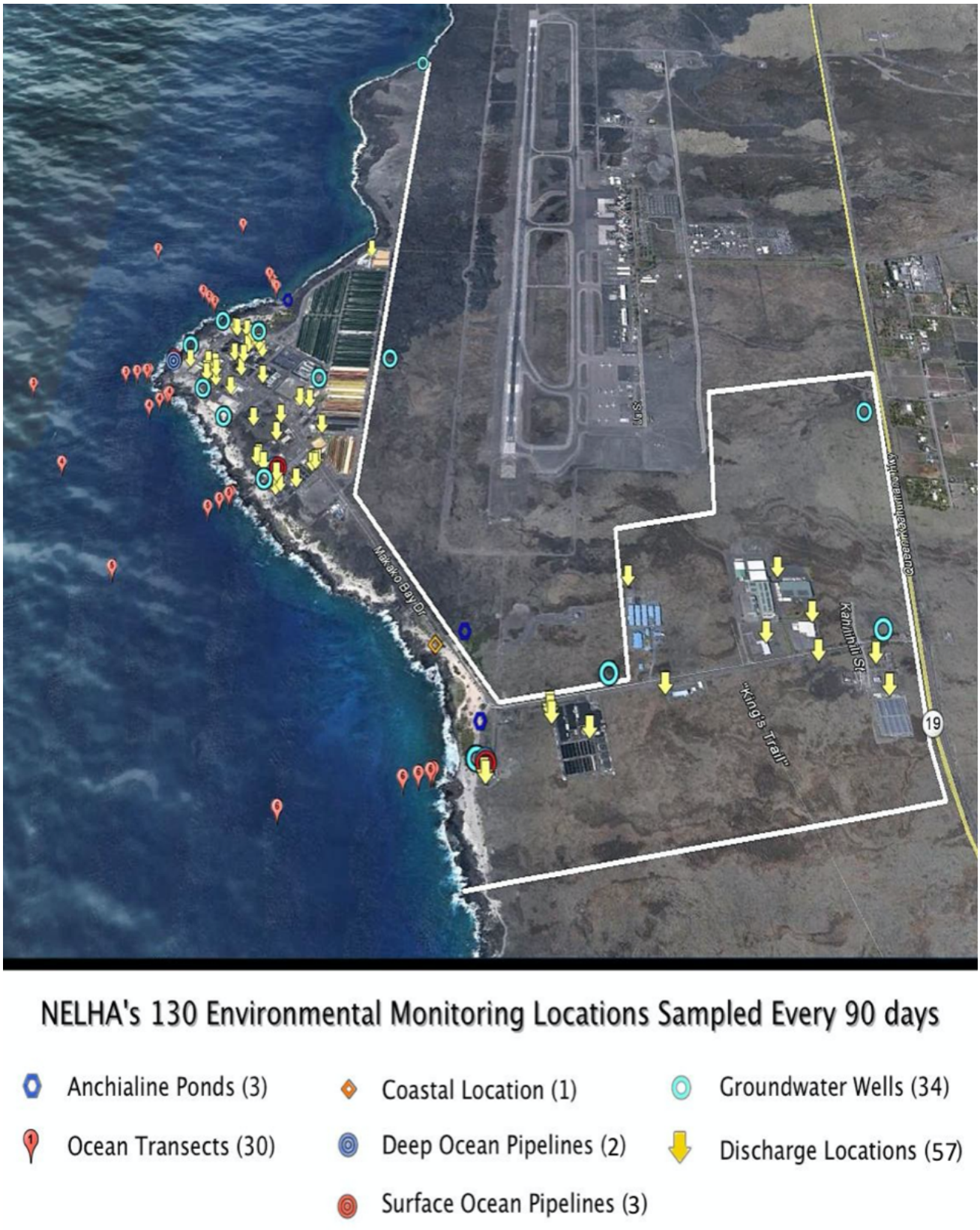


Figure 9a. *Google Map view of water quality monitoring stations at NELHA.*

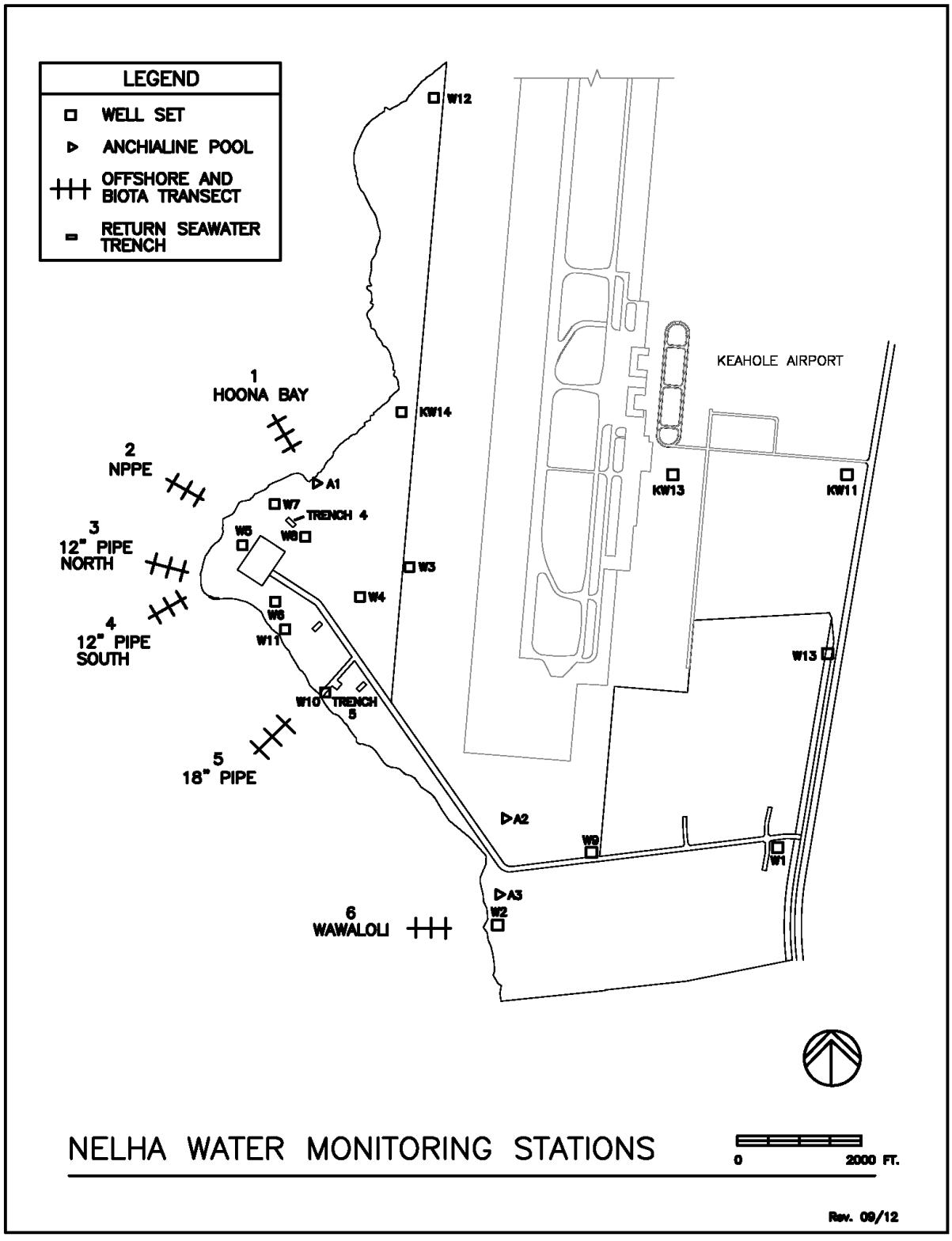


Figure 9b. *Locations of water quality monitoring stations at NELHA.*

MARINE SAMPLING REGIME CHANGE

The HDoH has outlined specific methods in the *1997 Rational for the Development of Area-Specific Water Quality Criteria for the West Coast of the Island of Hawaii and Procedures for Their Use* report on how to sample and calculate a geometric mean or the slope of a linear regression, to evaluate ocean transect water chemistry results with the HDoH limits. NELHA changed its marine water transect sampling procedure by July 2007 to comply with the HDoH, HAR Title 11 Chapter 54 rules. However, there are several challenges NELHA faces with its pre-July 2007 data set when comparing results to the 2014 HDoH procedures and specification. First, the historical NELHA transect stations are located in the nearshore region. In contrast, the HDoH transect station locations represent both the nearshore and offshore (see ***Figure 1***). The second challenge with NELHA's historical data is the interpretation of the 1-meter sample. Historically these samples were labeled as coastal samples and were taken on different date from the ocean transect samples within the quarterly sampling frequency. It is difficult to merge the coastal historical data with the nearshore transect data. Especially when the salinity data triggers the required linear regressions on a data set. On several occasions, the historical data set would generate positive slopes from the regression because of the differences of salinity values on dissimilar sampling dates. NELHA will not be representing the nearshore data in the HDoH methodology using the historical coastal data for this report. NELHA rectified this situation by collecting all offshore transect data on the same day starting on July 1, 2007.

MARINE SAMPLING RESULTS

NELHA has compiled the calculated geometric mean results per the HDoH, HAR Title 11 Chapter 54 protocol. There is a great degree of interpretation on how to evaluate the HDoH rules. NELHA will follow the *1997 Rational for the Development of Area-Specific Water Quality Criteria for the West Coast of the Island of Hawaii and Procedures for Their Use* report. This report is very clear on how to handle surface seawater samples when the salinity is below 32 PSU. However, what is unclear from the report is how to compare data with salinity values above 32 PSU. From the 1997 Rational report, "For those parameters with concentrations that do not exist in a distinct onshore/offshore gradient a geometric mean "not to exceed" value is given for all open coastal waters of the area." There have been two approaches discussed by water quality experts regarding the geometric mean "not to exceed" value. The first approach is to directly compare the results of each yearly geometric mean transect stations to the HDoH limits. The second approach is to take the geometric mean of all the transect stations and compare that result to the HDoH limits. NELHA will report the ocean transect data as yearly geometric means of transect stations to the HDoH limits for the current fiscal year and the historical data for trend evaluations. This decision was guided by comments made during the April 24, 2008 West Hawaii Water Quality Conference sponsored by the County of Hawaii, Planning Department.

NELHA would also like to point out that very small changes in salinity may create large changes in the nutrient concentrations in the nearshore environment. Salinity changes due to groundwater infiltration may lead to significant nutrient subsidies to the

nearshore environment. When considering the groundwater contribution that would reduce the salinity from 35 PSU to above 32 PSU by applying the conservative mixing line with one "endpoint" from the 28-inch surface seawater pipeline at NELHA and the other "endpoint" from brackish water from a control wells at eastern boarder of the HOST Park property. Control well 1 and well 13 represent groundwater upslope of NELHA's activities and is in alignment with well nutrient data obtained from the Ellison Onizuka Kona International Airport, well WA11A. NELHA's control wells are also in the mid-range of the potable well data for West Hawaii (see ***Table 3***). The plotted results show how a very small change in salinity will have a dramatic effect on analyte concentrations such as nitrate + nitrite nitrogen or ortho-phosphate phosphorus in the nearshore environment (see ***Figure 10a***).

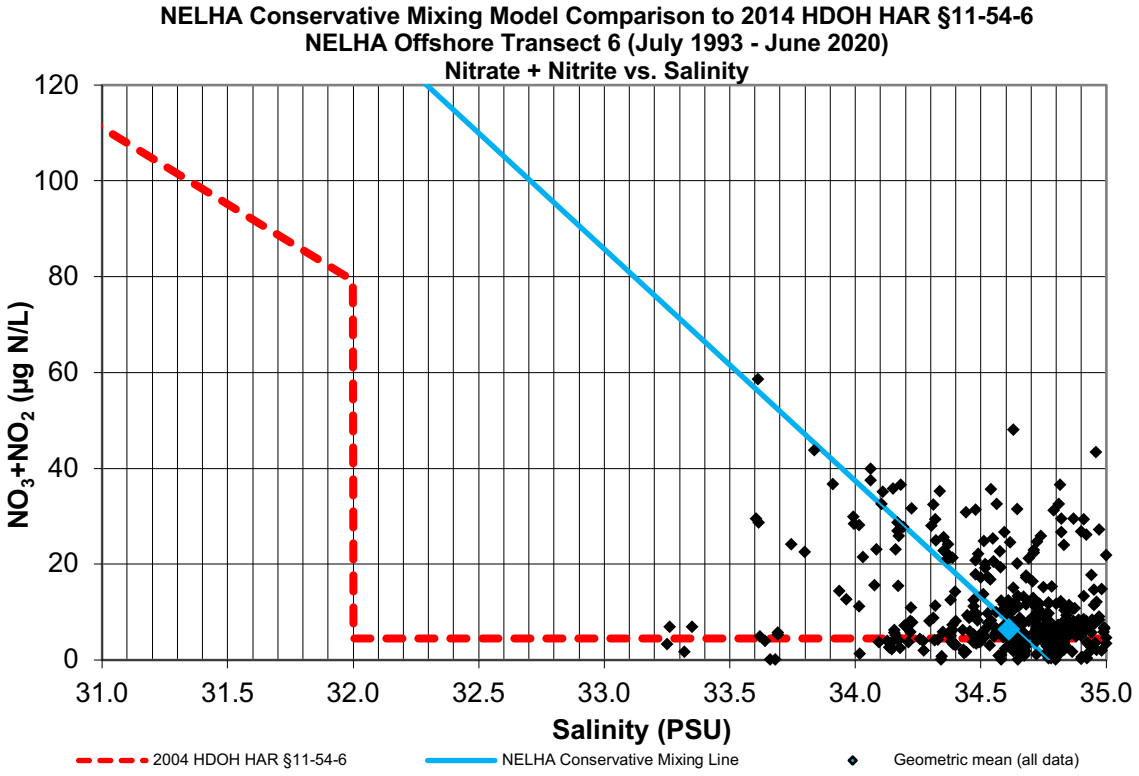


Figure 10a. *A comparison plot shows historical data from transect 6, black diamonds, with NELHA's conservative mixing model, blue line, and the irregular HDoH mixing plot line equation, dashed red line, following the 1997 Rational for the Development of Area-Specific Water Quality Criteria for the West Coast of the Island of Hawaii and Procedures for Their Use report.*

Figure 10a shows a scatter plot of twenty-five years of nitrate + nitrite nitrogen data of ocean transect six with the HDoH and NELHA groundwater to surface seawater conservative mixing line as described above. By examining the slope of the NELHA conservative mixing line one can see that 0.05 PSU change from the average 34.76 salinity of surface seawater brings the conservative mixing line outside of the 2014 HDoH HAR §11-54-6 limit represented as the red horizontal dashed line. For reference the geometric mean of all transect 6 data is shown as a blue filled diamond which is outside of the 2014

HDoH, HAR §11-54-6 limit but below the conservative mixing line. In comparison, the same data set was plotted with the silicate conservative mixing line in ***Figure 10b.*** Silicate is another indicator of fresh water influx to the nearshore environment. The plotted data from ocean transect 6 shows a stronger relationship to silicate (R^2=0.46) than salinity (R^2=0.049).

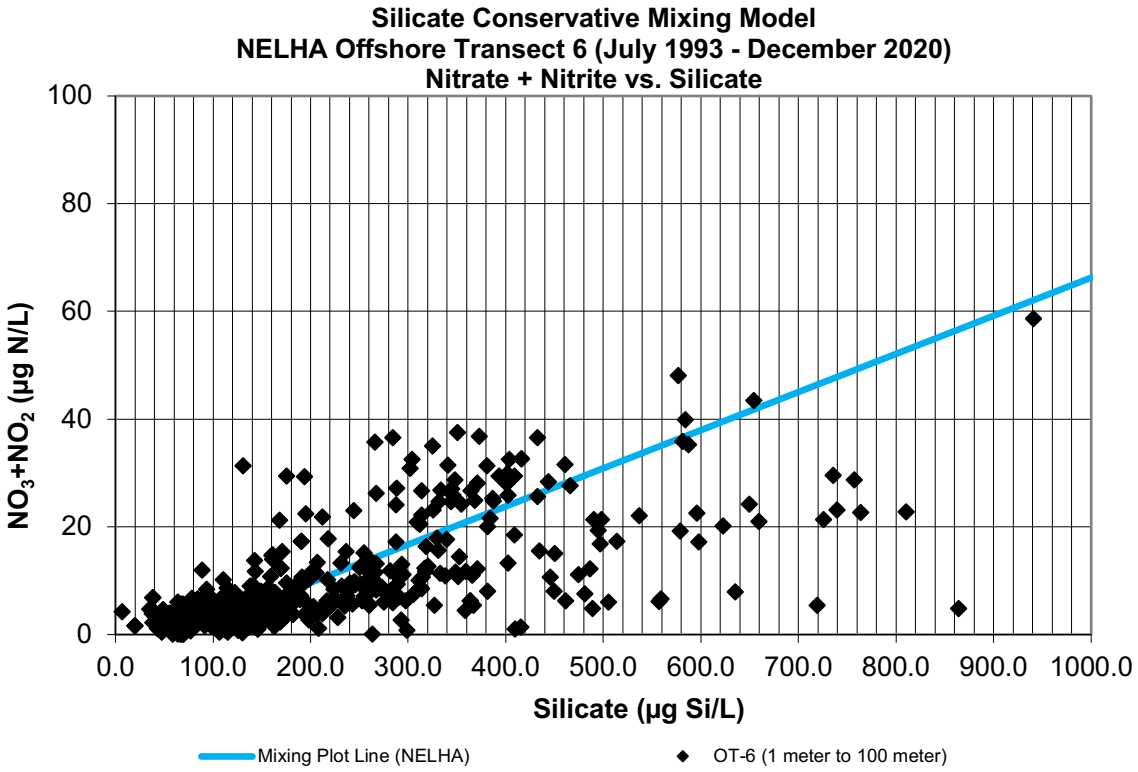


Figure 10b. *Silicate conservative mixing model plotted with nearshore ocean transect 6 historical data.*

Disposal of cold dense nutrient rich deep seawater from the OTEC facility into seawater return trenches prompted concerns that thermally cold and nutrient rich seawater would concentrate at the bottom region of the nearshore environment. To determine if the hypothesis is valid, from 1993 to 2007 the NELHA Water Quality Laboratory conducted surface and bottom sampling at its six ocean transect locations. When comparing fourteen years of samples collected from the bottom and surface, there was no conclusive evidence of substantial differences in nutrient concentrations based on depth in the water column. ***Figure 11-12*** shows a typical transect analysis of nitrate + nitrite nitrogen and ortho-phosphate phosphorus. The plots show the blue bottom samples are more likely to have lower nutrient concentrations than the corresponding red surface samples. NELHA has discontinued bottom sampling of its six offshore transects based on the above analysis and will conform with the regulatory sampling requirements in HDoH, HAR Title 11 Chapter 54.

NELHA has historically taken surface seawater samples from our 12-inch and 28-inch pipeline starting in July 1982 (see Appendix C). The 12-inch pipeline data set brackets July 1982 to December 1988. The analysis of surface seawater continued with the 28-inch

pipeline from January 1989 to present date. The 12-inch pipeline and 28-inch pipeline intake locations sampled a similar source seawater. This historical record may be informative, as the water quality data set was taken prior to, and during present-day aquaculture, mariculture and water bottling activities at NELHA at HOST Park.

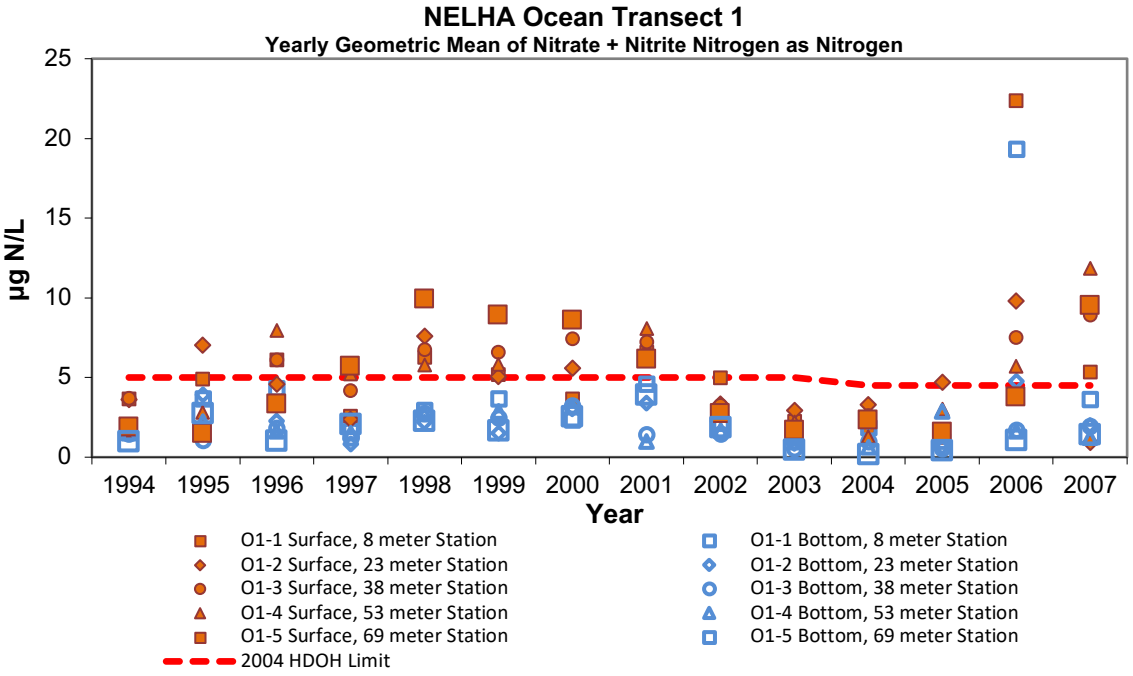


Figure 11. *Comparison of surface, orange closed symbols, and bottom, blue open symbols, ocean transect sampling for the analyte nitrate + nitrite nitrogen.*

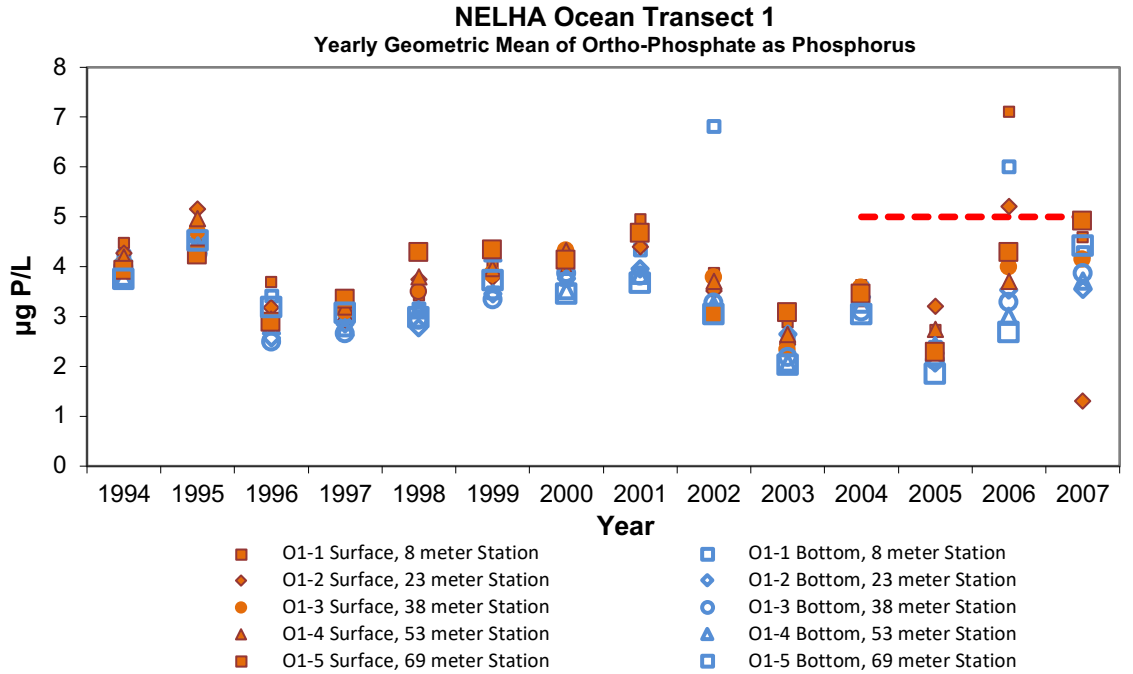


Figure 12. *Comparison of surface, orange closed symbols, and bottom, blue open symbols, ocean transect sampling for the analyte ortho-phosphate phosphorus.*

The 12-inch surface seawater pipeline intake was located 100 meters from the shoreline in 20 meters deep water. The pipe intake depth was 8 meters. The intake location of NELHA's 28-inch surface seawater pipeline is located 163 meters from the shoreline at a pipe depth of 21 meters in an ocean depth of 27.4 meters. The 12-inch pipeline and 28-inch pipeline sampling is approximately 31 to 94 meters further from the shoreline than NELHA's furthest transect station between 1994-2007, but within the range of the HDoH transect station sampling protocol. In addition, the sampling was conducted at 8 to 21 meters from the air water interface, which is 7 - 20 meters deeper than the HDoH transect station sampling protocol. One might hypothesize that the water quality from the 12 and 28-inch surface seawater pipeline would be more representative of open ocean water than nearshore seawater and therefore have no issues meeting the HDoH 2014 limits.

In ***Figure 13***, the mean salinity from the 12 and 28-inch surface seawater pipeline is 34.73 PSU (n=1118) with a 0.40 PSU standard deviation. This suggests very little groundwater influence on the water quality. Please note, from May 2004 to December 2004 the salinity analysis was performed using a refractometer due to the repair of the A.G.E. Model 2100 precision salinometer. From July 2009 to present date the salinity analysis was performed using a handheld YSI 556 multiprobe as the company who supported the A.G.E Model 2100 precision salinometer is no longer commercially available for parts, or repairs.

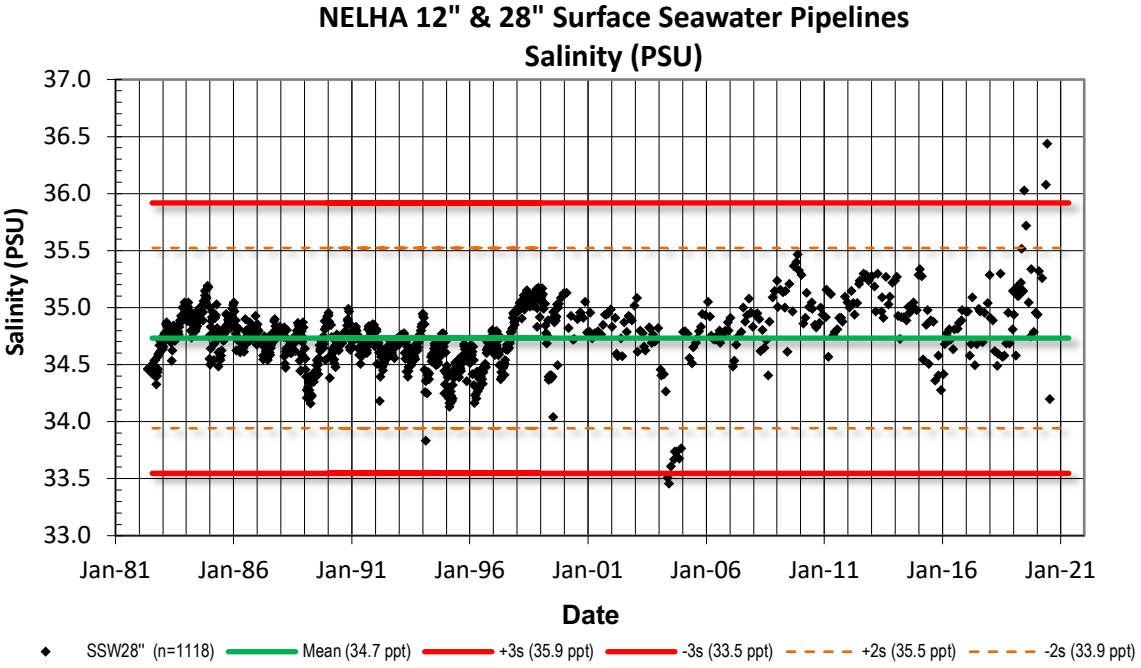


Figure 13. *Historical NELHA 28-inch pipeline surface seawater salinity data.*

In ***Figure 14*** the Ortho-Phosphorus scatter plot shows a great deal of variability. The mean Ortho-Phosphorus result from July 1982 to present date is 4.09 µg P/L (n=1129)

with a standard deviation of 1.71 µg P/L. The geometric mean for the same period is 3.67 µg P/L. NELHA's annual geometric means are plotted as orange diamonds in ***Figure 14*** with the raw data, as black diamonds. The 2014 HDoH geometric mean limit is 5.0 µg P/L, represented as the red line. Before 2004 there was no established HDoH geometric mean limit for Ortho-Phosphorus. The ortho-phosphate scatter plot of NELHA's surface seawater pipeline sample data reveals the recent data scatter is aligned with the historical data even though there are time the geometric mean exceeds the HDoH geometric mean limit. The evaluation of NELHA's pipeline data to the HDoH limits requires additional contexts. The context includes; where the samples are taken, and the limitations of the analytical methods. In general, the samples are taken offshore, approximately 100 to 163 meters from the shoreline at a depth of 8 to 20 meters, depending if the source water was from the 12" or 28" pipeline. There is a relationship between higher silicate and lower salinity concentrations with increased ortho-phosphate phosphorous and nitrate + nitrite nitrogen concentrations. Small changes in silicate and/or salinity can cause the ortho-phosphate concentrations to exceed the HDoH limits. This is directly due to the infiltration of groundwater into the nearshore environment as discussed in ***Figure 10a***. However, the deeper the sample is taken the less likely the nutrients will be elevated as shown in ***Figure 11 + 12.*** In addition, the nutrient analysis (ortho-phosphate phosphorus, nitrate + nitrite nitrogen, and total ammonia nitrogen) utilize a colorimetric technique, which is approaching the detection limits of the analytical equipment below 5.0 µg/L.

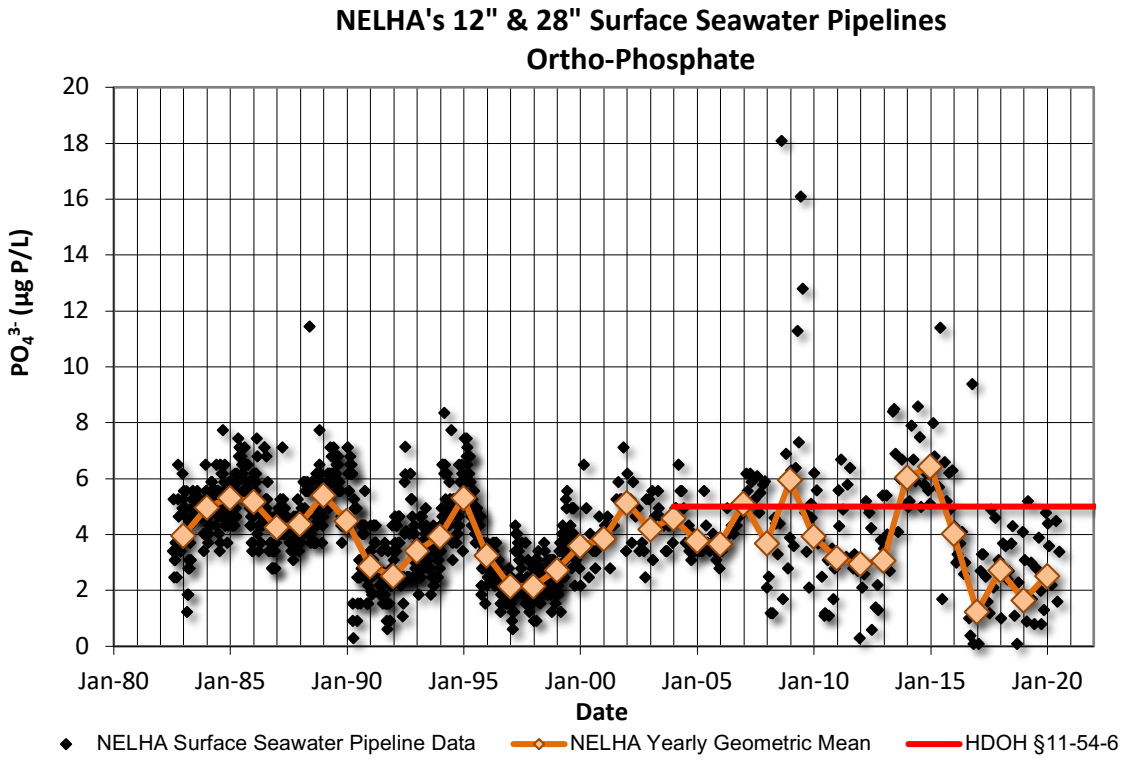


Figure 14. *Historical NELHA 28-inch pipeline surface seawater ortho-phosphate phosphorus data with NELHA annual geometric means in comparison to the HDoH limit.*

Figure 15 shows a nitrate + nitrite nitrogen scatter plot with the HDoH limits from 1979 to 2004, a geometric mean not to exceed 5.0 µg N/L and the HDoH limits from 2004 to present, geometric mean not to exceed 4.5 µg N/L. The mean nitrate + nitrite nitrogen result from July 1982 to present date is 3.56 µg N/L (n=1129) with a standard deviation of 3.46 µg N/L. The geometric mean for the same period is 3.04 µg N/L and NELHA's annual geometric means are plotted as orange diamonds in ***Figure 15***. Visually, the most recent data is more scattered than data in the early 1980's with elevated concentrations nitrate + nitrite nitrogen in 2016. As discussed in ***Figure 10a,*** some of the variation in the nitrate + nitrite nitrogen concentrations may also be due to small influx of groundwater.

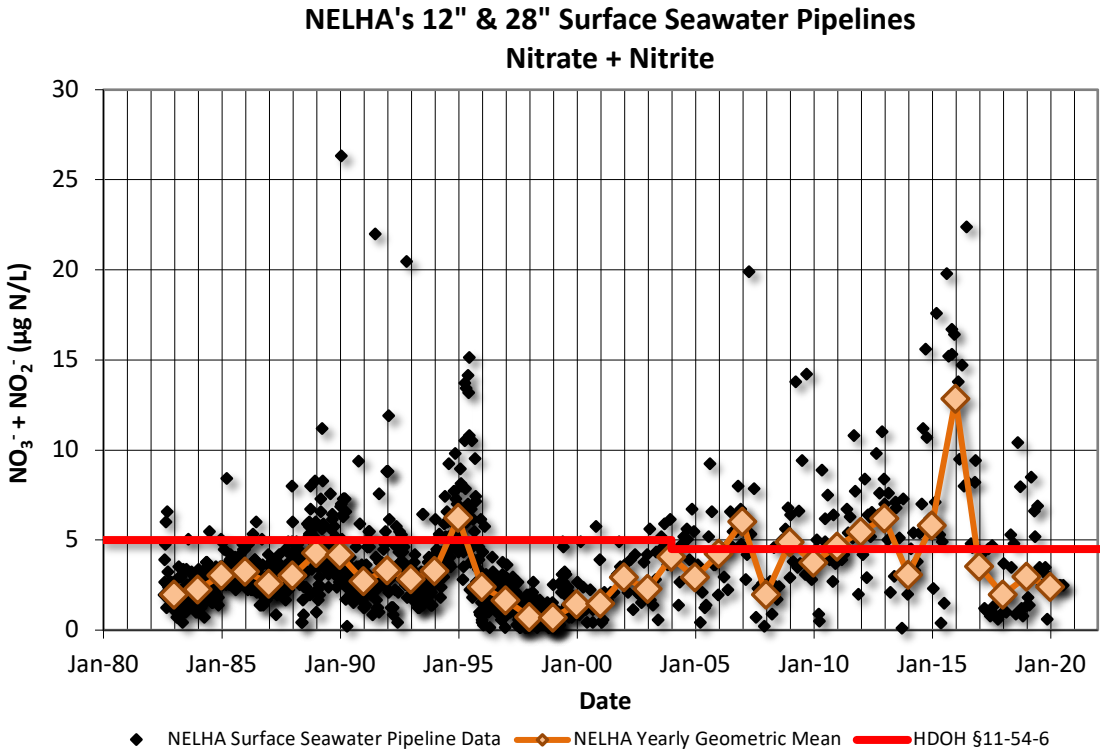


Figure 15. *Historical NELHA 28-inch pipeline surface seawater nitrate + nitrite nitrogen data with NELHA annual geometric means in comparison to the HDoH limits.*

Figure 16a shows the total ammonia nitrogen scatter plot with the HDoH 1979 to 2004 geometric mean not to exceed 3.5 µg N/L limit for the wet season, 2.5 µg N/L limit for the dry season and the HDoH 2004 to present geometric mean not to exceed 2.5 µg N/L limit. The mean total ammonia nitrogen result from July 1982 to present date for NELHA's 28-inch surface seawater pipeline is 3.76 µg N/L (n=955) with a standard deviation of 3.12 µg N/L. The geometric mean for the same period is 2.95 µg N/L. NELHA's annual geometric means are plotted as orange diamonds, with the raw data in black in ***Figure 16a***. It has been noted in the literature that total ammonia nitrogen has no relationship with salinity. As such, ***Figure 16b*** shows a plot of total ammonia of both the 28-inch surface and 40-inch deep seawater pipeline. It is very unlikely that NELHA's 40-inch deep ocean pipeline source water is in contact with anthropogenic total ammonia contaminates. However, the deep ocean source water exceeded the HDoH geometric

mean standard of 2.5 µg N/L for total ammonia for eleven of the thirty-two years or 33% of the monitoring period.

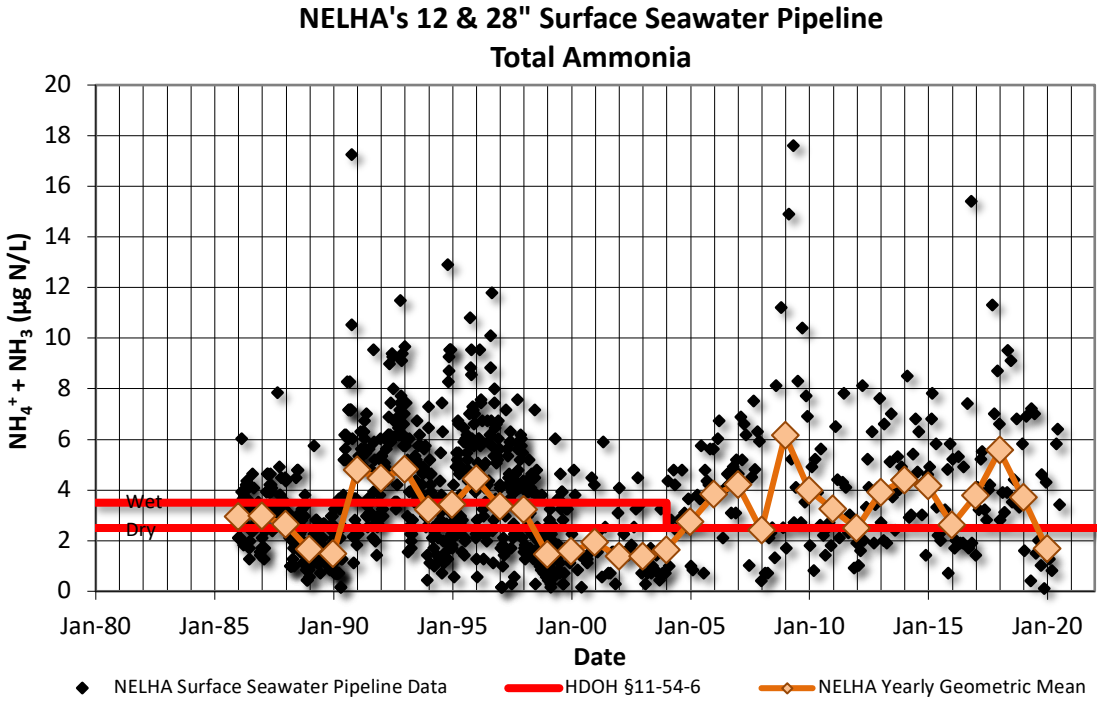


Figure 16a. *Historical NELHA 28-inch pipeline surface seawater plotting total ammonia nitrogen data with NELHA annual geometric means in comparison to the HDoH limits.*

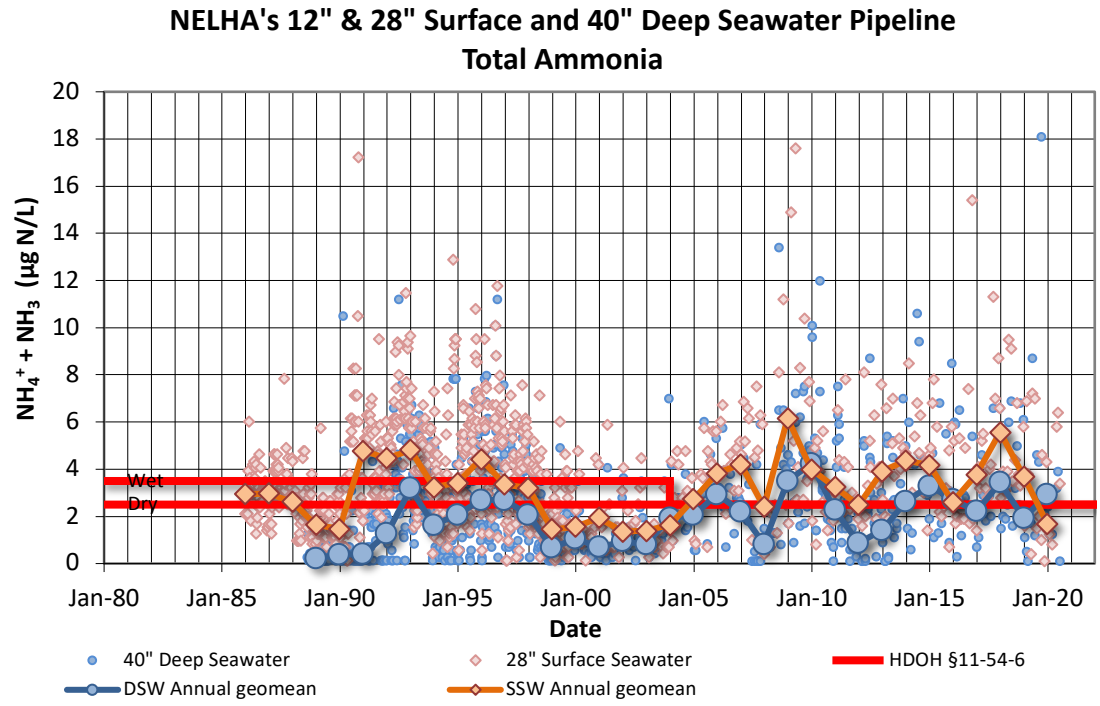


Figure 16b. *Historical comparison of NELHA 28-inch surface and 40-inch deep seawater pipeline plotting total ammonia nitrogen data with NELHA annual geometric means with the HDoH limits.*

In the author's opinion, the marine water quality standards, HDoH HAR §11-54-6, are unrealistic target and represent the mean of NELHA's thirty plus years of monitoring its surface seawater pipelines. As such, the HDoH HAR §11-54-6 standards for nitrate + nitrite nitrogen, and ortho-phosphate phosphorus are difficult to achieve for samples with a salinity of less than 32 psu. As shown in ***Figure 10a*** and ***Table 3*** the slope of the linear regressions will be dependent on the source groundwater in the area. In NELHA's case, the source groundwater in our control wells at the eastern edge of our property has been determined (n=1451) to have a y-intercept of 1682 and slope of -48.4 for nitrate + nitrite nitrogen and a y-intercept of 138.4 and slope of -3.87 for ortho-phosphate phosphorus. The HDoH HAR §11-54-6 standards require a y-intercept of 1101 and slope of -31.9 for nitrate + nitrite nitrogen and a y-intercept of 116 and slope of -3.2 for ortho-phosphate phosphorus or less to achieve the standard. For samples greater than 32 psu, the problem meeting the HDoH HAR §11-54-6 standards are analytical. The instrumentation currently available have a method detection limit (5 µg nutrient/L) approaching the HDoH HAR §11-54-6 geometric mean limit. It is true that the instruments commercially available can detect concentrations as low as 0.7 µg nutrient/L in a deionized water matrix with laboratory prepared samples, it is unrealistic to measure at these low concentrations with environmental water samples, utilizing a segmented flow autoanalyzer instrument in a seawater matrix. As stated earlier, the minimum reporting limit (MRL) would be three times higher than the method detection limit (MDL) as discussed on page 9 & 10 of this report.

Ocean Transect Observations

NELHA's twenty-seven years of ocean transect data has similar results to NELHA's pipeline samples when compared to the HDoH HAR §11-54-6 standard. Total ammonia nitrogen, nitrate + nitrite nitrogen, ortho-phosphate phosphorus, total dissolved phosphorous, total dissolved nitrogen and turbidity on occasions have been slightly over the HDoH HAR §11-54-6 limit. Historically, the total ammonia nitrogen and nitrate + nitrite nitrogen show small fluctuations over the past twenty-seven years of monitoring. After reviewing all the transect data, it appears that the yearly transect variations is minimal and there seems to be no upward trends. NELHA's Transect data has also shown chlorophyll-a results consistently below the HDoH criteria for Class AA marine waters.

Ocean Transect Station Percent Compliance to
HDoH, HAR Title 11 Chapter 54 Water Quality Limits
NELHA Fiscal Years 2019 & 2020

Ocean Transect #	1	2	3	4	5	6
Ortho-Phosphate Phosphorus	100%	100%	100%	100%	100%	100%
Nitrate + Nitrite Nitrogen	80%	40%	100%	100%	100%	80%
Total Ammonia Nitrogen	10%	40%	100%	10%	10%	20%
Total Dissolved Phosphorus	90%	90%	100%	100%	100%	100%
Total Dissolved Nitrogen	100%	100%	100%	100%	100%	100%
Turbidity	100%	100%	100%	100%	100%	50%

Ocean Transect #	1	2	3	4	5	6
Chlorophyll-a	100%	100%	100%	100%	100%	100%

Ocean Transect Station Percent Compliance to
HDoH, HAR Title 11 Chapter 54 Water Quality Limits
NELHA Fiscal Year 1994 through 2020

Ocean Transect #	1	2	3	4	5	6
Ortho-Phosphate Phosphorus	99%	99%	99%	99%	99%	95%
Nitrate + Nitrite Nitrogen	55%	70%	72%	93%	77%	35%
Total Ammonia Nitrogen	54%	55%	43%	42%	45%	39%
Total Dissolved Phosphorus	67%	65%	76%	73%	72%	71%
Total Dissolved Nitrogen	92%	97%	96%	99%	92%	94%
Turbidity	76%	87%	83%	86%	84%	73%
Chlorophyll-a	100%	100%	100%	100%	100%	100%

Table 5. *The summary tables outline percent compliance of nearshore surface seawater transect stations for the period between July 2018 to June 2020 and July 1993 to June 2020.*

Although NELHA has identified sample locations that have results slightly greater than the 2014 HDoH limit, it is more difficult to determine from the current data if the higher values are natural changes in the ocean, anthropogenic or natural subsides from groundwater, sampling contamination, and/or analytical issues measuring at the method detection limits of our segmented flow nutrient analyzer. Reviewing the March 1987 *Alternative Methods of Seawater Return Flow Disposal*, ocean transect data collected in the report did not meet the 2014 HDoH limits. For example, in 1987 the geometric mean total ammonia nitrogen was 3.2 µg N/L (2.5 µg N/L HDoH limit), total nitrogen was 220 µg N/L (100 µg N/L HDoH limit) and turbidity was 0.75 NTU (0.1 NTU HDoH limit). Please note, the 1987 report does not specify the location of the transect data or frequency of the sampling. Even during 1987, when there was very little aquaculture and mariculture activities at NELH and no development activity in the HOST Park, the ocean transects sampled exceeded the 2014 HDoH nearshore water quality limits for West Hawaii.

Ocean Transect 1

Ocean transect 1 is located just north of the NELHA Research Campus in the groundwater sampling envelope of anchialine pond A1. The location of this transect is known to have high volumes of fresh water infiltrating the nearshore environment. Historically, NELHA has observed slightly elevated values for total ammonia nitrogen between 1994 – 1998, 2005 – 2007, and 2013 – 2016. During 2018 – 2020 monitoring years, the total ammonia nitrogen was also slightly elevated at 1m, 10m and 50m and 500m transect locations. The historical nitrate + nitrite nitrogen values have been scattered, above and below the HDoH limit. This trend continues for the 2018 – 2020 with results highest (7.1 µg N/L) in the nearshore 1m sample. The turbidity data had increased during the 2005 – 2008 period from the historical mean. The 2018 – 2020 turbidity values are below the HDoH limit. In general, the five stations of ocean transect 1 have complied with the HDoH specifications for ortho-phosphate phosphorus, and chlorophyll-a. See ***Appendix A-T1*** for each of the transect station data tables and yearly trend plots. The %

coral cover in transect 1 (Ho'ona Bay) is 36.4% shallow, 44.7% mid, 58.3% deep with a corresponding biomass of 147.1 g/m^2 shallow, 182.4 g/m^2 mid, 107.7 g/m^2 deep (2019 Plan B Consultancy, Inc. – NELHA Benthic and Biota Monitoring Program, Annual Survey Report – 2019, December 2019, 36, 47).

Ocean Transect 2

Ocean transect 2 is located just north of the Keahole Point Lighthouse in the groundwater sampling envelope of Well-Set 7 & 8 and seawater return trench 4. Historically, NELHA has observed slightly elevated values for total ammonia nitrogen between 1994 – 1998 and 2005 – 2007. The 2018 – 2020 values for total ammonia nitrogen are scattered slightly elevated closest to the shoreline and slightly lower than the HDoH Limit 50 meters or further offshore. The nitrate + nitrite nitrogen values are scattered but within the historical trends. The turbidity measurements increased during the 2005 – 2008 period, similar to ocean transect one. However, turbidity for 2018 – 2020 has returned to its historical measurements below the HDoH limit. Total dissolved phosphorus trended slightly above the HDoH limit for transect stations 1 for 2018 – 2019. In general, the five stations of ocean transect 2 have been in compliance with the HDoH specifications for ortho-phosphate phosphorus, total dissolved nitrogen and chlorophyll-a. See ***Appendix A-T2*** for each of the transect station data tables and yearly trend plots. The % coral cover in transect 2 (NPPE) is 32.9% shallow, 51.6% mid, 56.7% deep with a corresponding biomass of 135.6 g/m^2 shallow, 105.7 g/m^2 mid, 138.5 g/m^2 deep (2019 Plan B Consultancy, Inc. – NELHA Benthic and Biota Monitoring Program, Annual Survey Report – 2019, December 2019, 36, 47).

Ocean Transect 3

Ocean transect 3 is located seaward of the Keahole Point Lighthouse in the groundwater flow envelope of Well-Set 5. Historically, NELHA has observed slightly elevated values for total ammonia nitrogen from 1993 – 1998 and 2006 – 2007. For the 2018 – 2020 period, values for total ammonia nitrogen are all below the HDoH limit. In addition, the nitrate + nitrite nitrogen was lower than historical trends. The turbidity data had increased during the 2005 – 2008 period, similar to ocean transects 1 and 2. However, turbidity for 2018 – 2020 has returned to its historical measurements below the HDoH limit. In general, the five stations of ocean transect 3 have been in compliance with the HDoH specifications for ortho-phosphate phosphorus, total dissolved nitrogen and chlorophyll-a. See ***Appendix A-T3*** for each of the transect station data tables and yearly trend plots. The % coral cover in transect 3 (12" Pipe North) is 27.1% shallow, 35.2% mid, 37.7% deep with a corresponding biomass of 119.5 g/m^2 shallow, 90.6 g/m^2 mid, 148.1 g/m^2 deep (2019 Plan B Consultancy, Inc. – NELHA Benthic and Biota Monitoring Program, Annual Survey Report – 2019, December 2019, 36, 47).

Ocean Transect 4

Ocean transect 4 is located south of the Keahole Point Lighthouse in the groundwater flow envelope of Well-Set 6. Historically NELHA has observed slightly elevated values for total ammonia nitrogen from 1994 – 1998 and 2005 – 2007. The 2018

– 2020 values for total ammonia nitrogen were slightly elevated in comparison to the HDoH limit. The turbidity data had increased during the 2005 – 2008 period, similar to ocean transects 1, 2 and 3. In 2018 – 2020 turbidity values are below the HDoH limit. In general, the five stations of ocean transect 4 have been in compliance with the HDoH specifications for ortho-phosphate phosphorus, total dissolved phosphorus, nitrate + nitrite nitrogen, total dissolved nitrogen and chlorophyll-a. See ***Appendix A-T4*** for each of the transect station data tables and yearly trend plots. The % coral cover in transect 4 (12" Pipe South) is 38.1% shallow, 36.0% mid, 28.7% deep with a corresponding biomass of 69.7 g/m^2 shallow, 141.8 g/m^2 mid, 129.2 g/m^2 deep (2019 Plan B Consultancy, Inc. – NELHA Benthic and Biota Monitoring Program, Annual Survey Report – 2019, December 2019, 36, 47).

Ocean Transect 5

Ocean transect 5 is located between the NELHA research campus and the beach park in the groundwater flow envelope of seawater return trench 5, Well-Set 10 and 13. Historically NELHA has observed slightly elevated values for total ammonia nitrogen from 1994 – 1998 and 2005 – 2007. The 2018 – 2020 values for total ammonia nitrogen are scattered within 1 µg N/L of the HDoH limit. The historical trend of nitrate + nitrite nitrogen has been either slightly above or below the HDoH limit. The 2018 – 2020 values for nitrate + nitrite nitrogen are below the HDoH limit. The turbidity data had increased during the 2005 – 2008 period and was also high in 1996 – 1997. For 2018 – 2020 the turbidity measurements have been below the HDoH limit. In general, the five stations of ocean transect 5 have been in compliance with the HDoH specifications for ortho-phosphate phosphorus, total dissolved phosphorus, total dissolved nitrogen, and chlorophyll-a. See ***Appendix A-T5*** for each of the transect station data tables and yearly trend plots. The % coral cover in transect 5 (18" Pipe) is 35.2% shallow, 36.1% mid, 30.4% deep with a corresponding biomass of 123.1 g/m^2 shallow, 45.8 g/m^2 mid, 202.0 g/m^2 deep (2019 Plan B Consultancy, Inc. – NELHA Benthic and Biota Monitoring Program, Annual Survey Report – 2019, December 2019, 36, 47).

Ocean Transect 6

Ocean transect 6 is located south of the beach park in the flow envelope of Well-Set 1, 2 and 9. This location has high volumes of groundwater infiltrating the nearshore. Before 2000, development above ocean transect 6 was limited. Historically NELHA has observed slightly elevated values for total ammonia nitrogen from 1994 – 1998 and 2005 – 2007. The 2018 – 2020 values for total ammonia nitrogen continue to be scattered within 1 µg N/L of the HDoH limit in all transect stations. The nitrate + nitrite nitrogen has also been elevated historically in the nearshore. NELHA observed lower than normal nitrate + nitrite nitrogen values during 2018 – 2020 period. The higher historical nitrate + nitrite nitrogen values may be attributed to lower salinity and higher silicate concentrations which suggests increased groundwater infiltration at this location (see ***Figure 10a & 10b***). Turbidity has been slightly elevated historically in the nearshore and continued in 2018 – 2019, but measurements were below the 2014 HDoH limit for 2019 - 2020. In general, the five stations of ocean transect 6 have been in compliance with the

HDoH specifications for ortho-phosphate phosphorus, total dissolved nitrogen, and chlorophyll-a. See ***Appendix A-T6*** for each of the transect station data tables and yearly trend plots. The % coral cover in transect 6 (Wawaloli Beach) is 36.0% shallow, 30.2.8% mid, 15.0% deep with a corresponding biomass of 150.5 g/m^2 shallow, 118.6 g/m^2 mid, 55.4 g/m^2 deep (2019 Plan B Consultancy, Inc. – NELHA Benthic and Biota Monitoring Program, Annual Survey Report – 2019, December 2019, 36, 47).

GROUNDWATER SAMPLING RESULTS

NELHA historically monitored twenty-two wells, two trenches and two anchialine ponds located on or in the vicinity of the facility. The wells have been indicators for acute incidences of groundwater nutrient subsidies from business activities. Examples of business activities that may lead to acute nutrient subsidies may include, leaky tanks/ponds, effluent discharges, and/or malfunctioning equipment. Groundwater wells are a valuable part of the NELHA environmental monitoring program. NELHA successfully executed a $298,489.40 CIP contract in late 2008 to upgrade the CEMP groundwater monitoring program by adding an additional thirteen groundwater monitoring wells in areas not covered by the original program (see ***Figure 9a and 9b*** *for a map of groundwater wells****)***. As of January 1, 2009, the NELHA Water Quality Laboratory monitors thirty-four wells, two trenches and two anchialine ponds. On February 23, 2012, NELHA discovered a 4 ft. x 4 ft. anchialine pond located just north of the 55-inch pump station. NELHA has added the anchialine pond, A3, to its quarterly water chemistry monitoring program on July 9, 2012 and in its biota monitoring program in fiscal year 2014 – 2015.

In this report, NELHA plotted ortho-phosphate phosphorus, nitrate + nitrite nitrogen and silicate silicon data using a conservative mixing model. Historical data is represented as closed diamonds. For the 2018 – 2020 monitoring period, data is represented as red open diamonds. Data points found on the graph above the surface seawater conservative mixing line (red) can be interpreted as subsidies to the analyte being plotted. The groundwater conservative mixing model scatter plots and equations can be found in ***Appendix B-1***. In addition to the conservative mixing model scatter plots, time series control plots for ortho-phosphate phosphorus, nitrate + nitrite nitrogen, silicate silicon, total ammonia nitrogen, dissolved oxygen, temperature, pH, and salinity are presented. The time series control plots include indicator lines calculated from specified data ranges, for the analytes mean, two standard deviations (±2σ) and three standard deviations (±3σ) from the mean. Each well, trench and pond will be discussed from the historical perspective with comments on recent trends.

The NELHA Water Quality Laboratory has identified wells that have nutrient subsidies above the 2018 – 2020 deep sea water conservative mixing line. For ortho-phosphate phosphorus Wells W5, W5A, W5B, W6, W6A, W6B, W7, W7A, W7B, W8, W8A, W8B, W10, W10A, W10B, W11A, and W11B were identified as being above the NELHA deep seawater conservative mixing line (***Figure 17***). Ortho-phosphate phosphorous concentration in potable water wells in West Hawaii range from 45 to 148 µg P/L with a mean of 104 µg P/L (unpublished data courtesy of T. Nance and S. Dollar). NELHA's groundwater well Ortho-phosphate phosphorous concentrations for fiscal year 2018 – 2020 range of 52 to 323 µg P/L with a mean of 137 µg P/L.

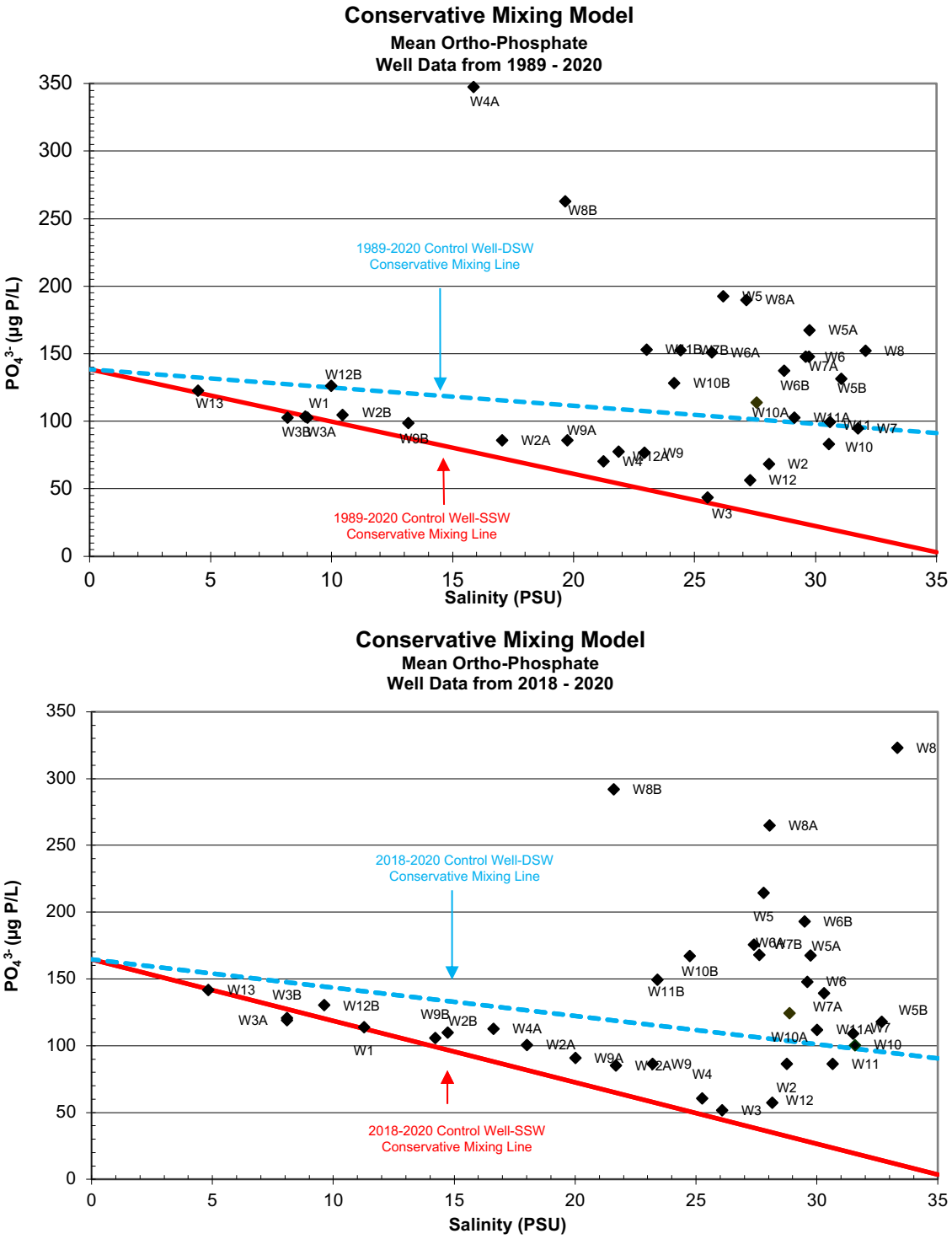


Figure 17. *Conservative mixing model showing mean ortho-phosphate phosphorus verses mean salinity well data from 1989 – 2020 and 2018 – 2020. NELHA control well to surface seawater (SSW) conservative mixing line is the solid red line while the NELHA control well to deep seawater (DSW) conservative mixing line is the blue dashed line. Ortho-phosphate phosphorous concentration in potable water wells in West Hawaii have a range of 45 to 148 µg P/L and mean of 104 µg P/L (unpublished data courtesy of T. Nance and S. Dollar).*

Wells W5, W5A, W6, W7, W7A, W7B, W8B, and W13 were identified as being above the NELHA 2018 – 2020 deep seawater conservative mixing line for nitrate + nitrite nitrogen (***Figure 18***). In comparison, the natural nutrient variations found within potable water wells in West Hawaii have a range from 615 to 3319 µg N/L and a mean of 1405 µg N/L for nitrate + nitrite nitrogen (unpublished data courtesy of T. Nance and S. Dollar). NELHA's groundwater well for fiscal year 2018 – 2020 shows a range of 8 to 2349 µg N/L and a mean of 931 µg N/L for nitrate + nitrite nitrogen.

The silicate silicon conservative mixing model for fiscal years 2018 – 2020 shows most of the well data either close to the surface seawater or deep seawater mixing plot line (***Figure 19***).

The EPA, and HDoH have minimal guidelines, rules and regulations for well sampling programs below the UIC line and only require the nutrient concentration values to be reported. There are specific HDoH limits for TSS and BOD_5 measurements regulated under Hawaii Administrative Rules (HAR), Title 11 Chapter 62. NELHA is aware of an EPA limit of 10,000 µg N/L for nitrate + nitrite nitrogen for groundwater. NELHA's groundwater monitoring program has reported results during the 2018 – 2020 fiscal years for its thirty-four wells in a range of concentrations from 8 to 2349 µg N/L for nitrate + nitrite nitrogen.

A comparison of total nutrient (organic + inorganic) to inorganic nutrient in historical groundwater data show identical trends. The overall concentration of total nutrient is just slightly higher than inorganic nutrient concentrations in groundwater samples ***(Figure 20*)*.** This trend holds for both nitrate + nitrite nitrogen to total dissolved nitrogen and ortho-phosphate phosphorus to total dissolved phosphorous. NELHA discontinued total dissolved nitrogen and total dissolved phosphorous from the groundwater analyte testing matrix as of January 1, 2008. Historically, there has been no evidence of a significant nutrient concentration in groundwater coming from an organic source. The analysis of total dissolved nitrogen and total dissolved phosphorous can be reinstated, if the need arises. However, the time requirements of photo oxidizing total dissolved nitrogen and phosphorous or total nitrogen and phosphorus are significant, and the value of the result tend to be minimal from a monitoring and management perspective. The analytical difference between total dissolved nitrogen and total nitrogen is a filtration step prior to the oxidation and analysis of total dissolved nitrogen. Same is true for total dissolved phosphorus and total phosphorus. NELHA does perform total nitrogen and total phosphorous analysis for seawater disposal samples.

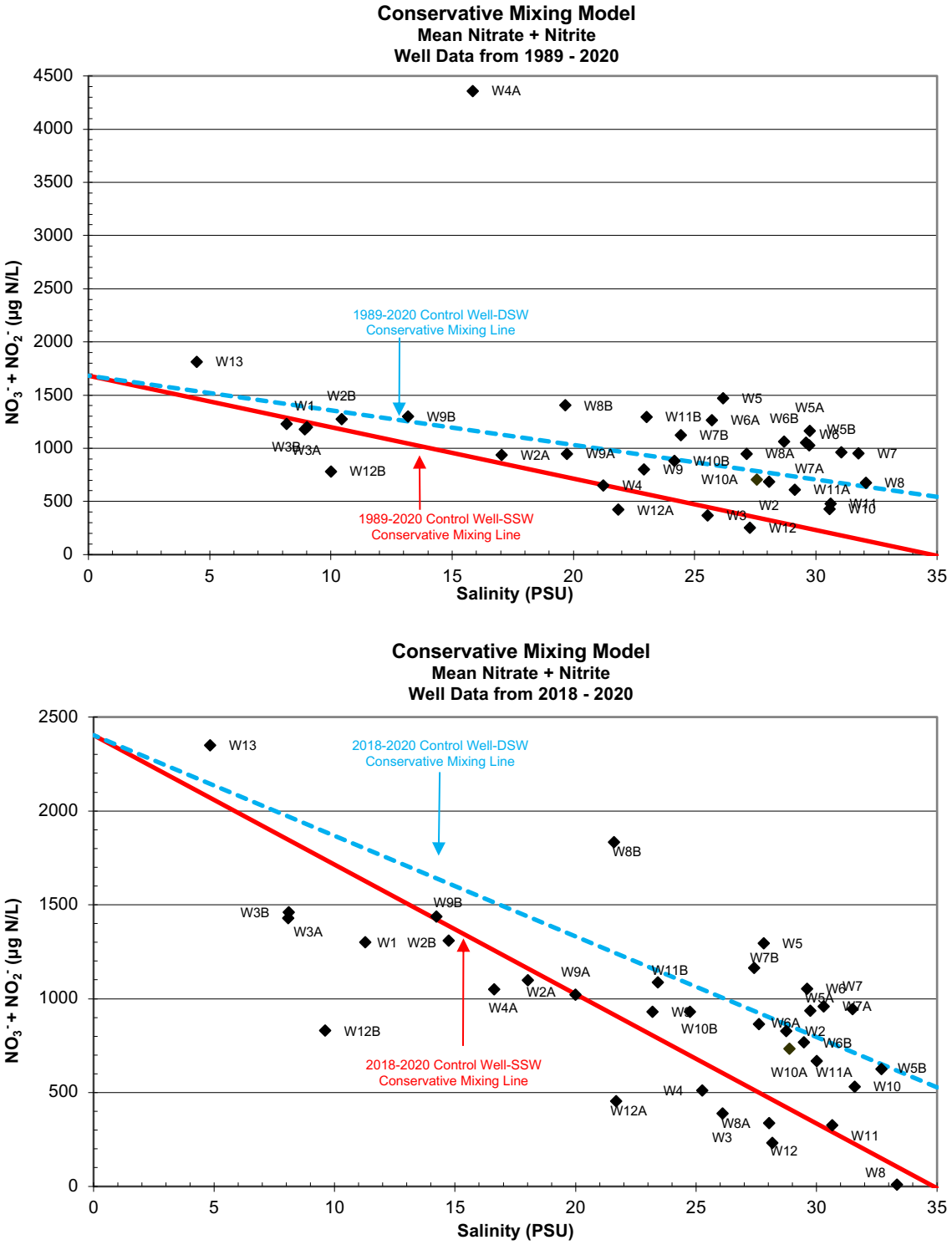


Figure 18. *Conservative mixing model showing mean nitrate + nitrite nitrogen verses mean salinity well data from 1989 - 2020 and 2018 – 2020. NELHA control well to surface seawater (SSW) conservative mixing line is the solid red line while the NELHA control well to deep seawater (DSW) conservative mixing line is the blue dashed line. Nitrate + nitrite nitrogen concentration in potable water wells in West Hawaii have a range 615 to 3319 µg N/L and a mean of 1405 µg N/L (unpublished data courtesy of T. Nance and S. Dollar).*

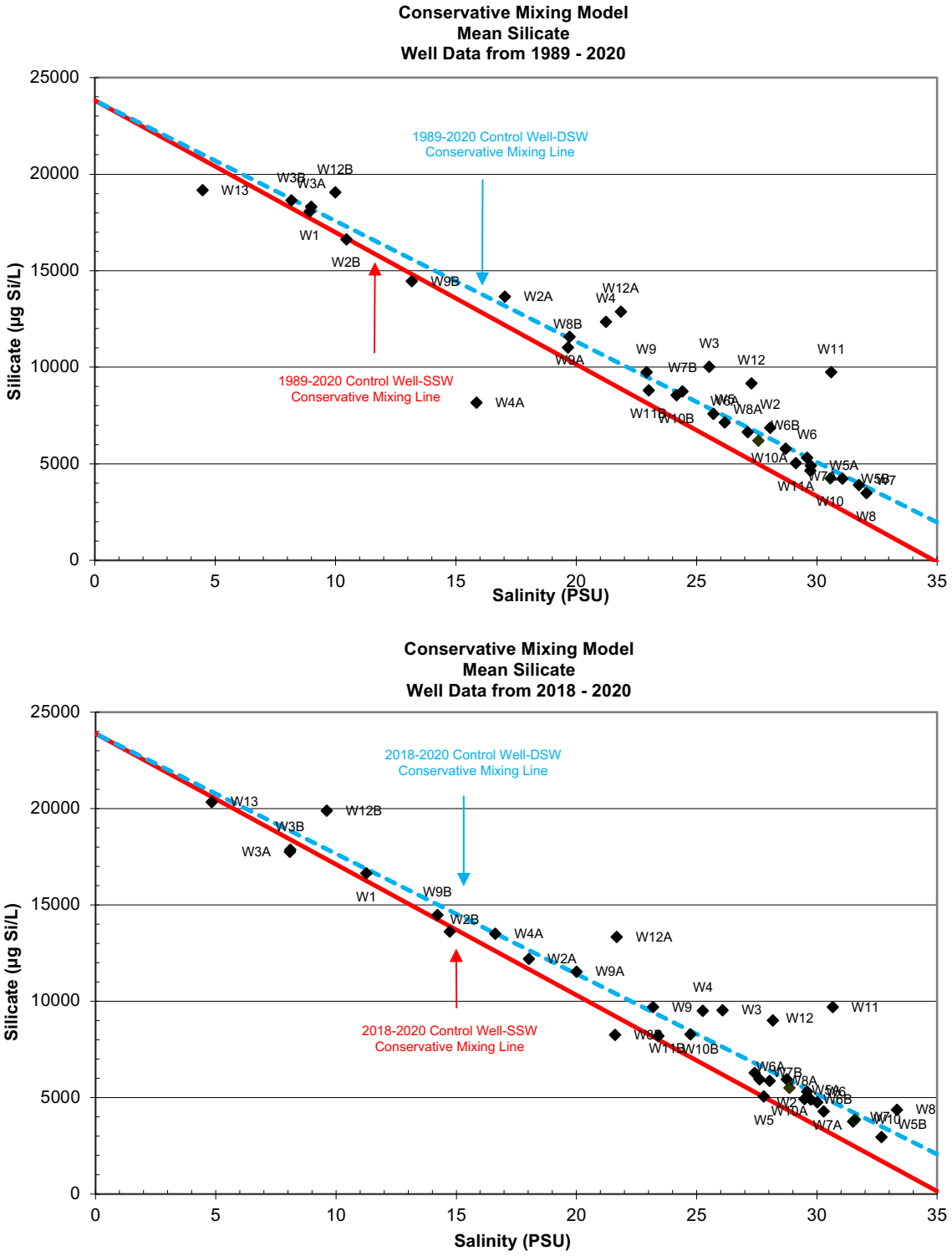


Figure 19. *Conservative mixing model showing mean silicate silicon verses mean salinity well data from 1989 – 2020 and 2018 – 2020. NELHA control well to surface seawater (SSW) conservative mixing line is the solid red line while the NELHA control well to deep seawater (DSW) conservative mixing line is the blue dashed line.*

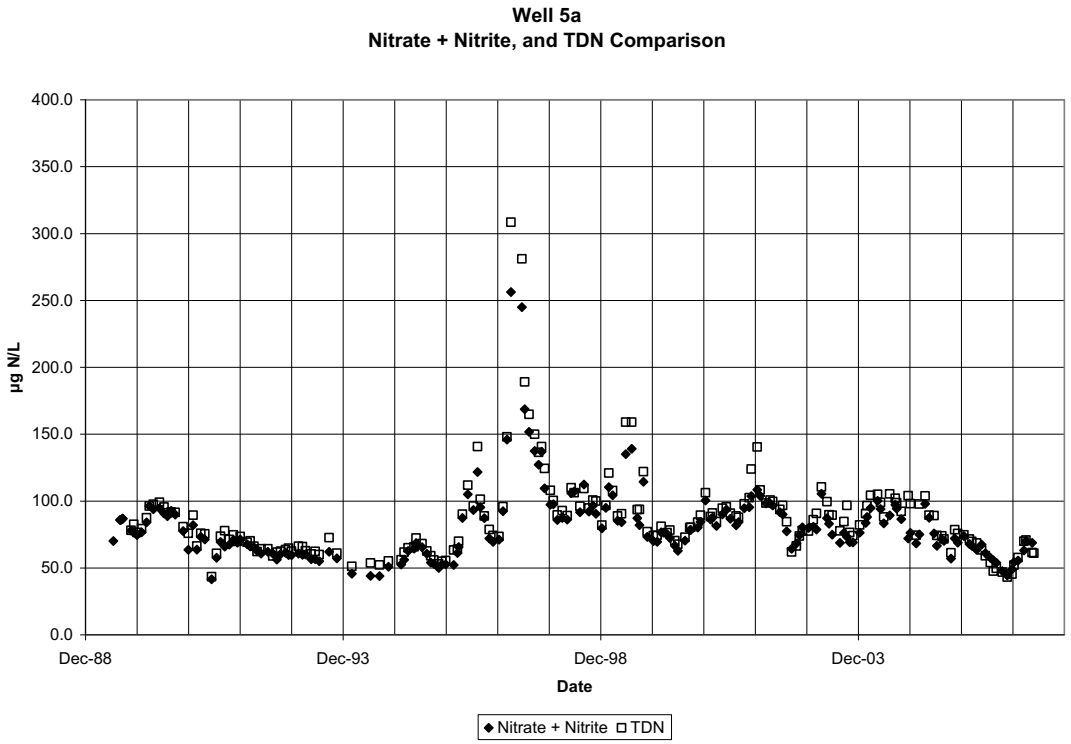


Figure 20. *Typical brackish water well nitrate + nitrite nitrogen and total dissolved nitrogen comparison.*

Well 1

Well 1 consists of one 135 ft. depth well at ground level (elevation of top cap 104.9 ft.) that is located at the eastern edge of the HOST Park property next to the Gateway Center approximately 5300 ft. from the shoreline. It monitors the base line groundwater entering the NELHA property. The data from well 1 is used as an end member to calculate the conservative mixing model throughout the report. Well 1 has been historically a stable well. It has also tracked consistently with a sister well found at the top of the Ellison Onizuka Kona International Airport property. In general, the historical salinity data is trending upward since 1991. The nutrient concentrations have been stable with a high period from 2008-2011. Temperature has also been rising over the past few years. These trends might be attributable to the changes in the purging and sampling procedures or analytical changes from the acquisition of the Astoria Pacific Segmented Flow Analyzer in 2007. See ***Appendix B-1-11*** for data tables and analyte plots of Well-Set 1.

Well-Set 2

Well-Set 2 consists of three wells at a depth of 14.5 ft. (W2B), 24.5 ft. (W2A), and 48 ft. (W2) from ground level (elevation ~8.5 ft.). Well-Set 2 is located at the western edge of the HOST Park property seaward of the 55-inch pumping station approximately 240 ft. from the shoreline. These three wells monitor the activities of the businesses in the HOST Park region. The businesses in this area fall into two general categories, aquaculture and

deep seawater bottling. Well-Set 2 historically has been stable and was considered a control well before 2001. Since 2001, well-set 2, has shown a step change in nutrient and dissolved oxygen concentrations after the addition of the 55-inch pumping station, and the newly established activities in the HOST Park region. The ortho-phosphate phosphorous, nitrate + nitrite nitrogen and dissolved oxygen step change is most pronounced in well 2, the deepest in the well-set, and least pronounced in well 2A and 2B, the shallowest in the well-set. The data suggests nutrient subsidies beyond the deep seawater conservative mixing line for the analyte nitrate + nitrite nitrogen between 2001 and 2004 with the highest concentration being 1925 µg N/L for well 2. For the 2018 – 2020 monitoring period the mean nitrate + nitrite nitrogen for well 2 was 825 µg N/L. In addition, an upward trend in salinity in well 2B has been observed. See ***Appendix B-2-1 - B-2B-11*** for data tables and analyte plots of well-set 2.

Well-Set 3

Well-Set 3 consists of three wells at a depth of 25 ft. (W3B), 35 ft. (W3A), and 65 ft. (W3) from ground level (elevation ~20.5 ft.). Initially, Well-Set 3 was located on vacant NELHA property until August 1993. The vacant land was leased to Cyanotech Corporation for their expansion. The well was relocated in March 1994 to an area just east of the Cyanotech Corporation's facility on the Department of Transportation's property approximately 2300 ft. from the shoreline. Well-Set 3 monitors the incoming groundwater to the NELHA facility. Well-Set 3 has been stable throughout its thirty-one years of monitoring and the data aligns itself to the surface seawater conservative mixing model. See ***Appendix B-3-1 - B-3B-11*** for data tables and analyte plots of Well-Set 3.

Well-Set 4

Well-Set 4 consists of two wells at a depth of 39.5 ft. (W4A), and 67 ft. (W4) from ground level (elevation ~24.5 ft.). Well-Set 4 is adjacent to the Cyanotech Corporation processing facility approximately 1800 ft. from the shoreline. The historical data of Well-Set 4 shows several nutrient spikes that occurred in the mid 1990's. The shallow well was the indicator well in all cases. NELHA, in conjunction with Cyanotech Corporation's staff have been able to identify the source of the problem and made appropriate corrective actions. In recent history, Well-Set 4 has been trending downward from the spikes of the mid 1990's with the results within the last ten years being clustered between the surface and deep seawater mixing plot lines. During the 2018– 2020 monitoring period, Well-Set 4 has maintained background nutrient concentrations. See ***Appendix B-4-1 – B-4A-8*** for data tables and analyte plots of Well-Set 4.

Well-Set 5

Well-Set 5 consists of three wells at a depth of 18 ft. (W5), 28 ft. (W5A) and 55 ft. (W5B) from ground level (elevation ~12.2 ft.). Well-Set 5 is located just northwest of the NELHA research campus approximately 280 ft. from the shoreline. The historical data of Well-Set 5 shows nutrient levels that trend higher than the deep-sea conservative mixing model. The most recent data shows nutrient concentrations are within the historical trend. See ***Appendix B-5-1 – B-5B-11*** for data tables and analyte plots of Well-Set 5.

Well-Set 6

Well-Set 6 consists of three wells at a depth of 18 ft. (W6A), 29 ft. (W6B) and 49.6 ft. (W6) from ground level (elevation ~9.8 ft.). Well-Set 6 is located just southwest of the NELHA research campus approximately 220 ft. from the shoreline. Well-Set 6 results generally look similar to Well-Set 5. Nutrients are higher than the deep-sea conservative mixing model. The shallow well (W6A) salinity has a general trend upward in the late 90's. Since then, salinity in W6A has been relatively flat from its peak. See ***Appendix B-6-1 – B-6B-11*** for data tables and analyte plots of Well-Set 6.

Well-Set 7

Well-Set 7 consists of three wells at a depth of 20 ft. (W7B), 34 ft. (W7A) and 58 ft. (W7) from ground level (elevation ~8.6 ft.). Well-Set 7 is located just north of the NELHA research campus within the Hoʻona archaeology preserve, approximately 200 ft. from the shoreline. The wells in Well-Set 7 are packed with sand from a high surf event and are currently being sampled by a peristaltic pump. As such, the flushing volumes tend to be reduced from our normal sampling procedures and the sample may not be representative of the ground water. Well-Set 7 results generally look similar to Well-Set 6 and 5. Nutrients are higher than the deep-sea conservative mixing model. There was an observable increase in ortho-phosphate phosphorous concentrations in well 7B during the 2002 – 2005 monitoring period. Since then, the ortho-phosphate phosphorous measurements receded to an elevated plateau above the historical mean. Well 7A and 7B have been inundated with sand from a high surf event in March of 2017. NELHA has attempted to remove the sand on two occasions recently with little success. Sampling can still be performed with the peristaltic pump, however, the sample tubing in the well is degrading and it is just a matter of time when sampling this well set will no longer be practical. See ***Appendix B-7-1 – B-7B-11*** for data tables and analyte plots of Well-Set 7.

Well-Set 8

Well-Set 8 consists of three wells at a depth of 25 ft. (W8B), 39 ft. (W8A) and 65 ft. (W8) from ground level (elevation ~15.4 ft.). Well-Set 8 is located just northeast of the NELHA research campus nestled between Taylor Shellfish-Kona, Shrimp Improvement System, Cyanotech Corporation, Seawater Return Trench 4 and the Ho'ona archeological preserve approximately 760 ft. from the shoreline. Well-Set 8B's ortho-phosphate phosphorus concentrations started to trend upward in the 2001 – 2002 monitoring period and peaked in 2003 – 2004. Since the peak, the concentration dropped to a low point in 2009. Then plateaued until 2012 when the ortho-phosphate phosphorus concentrations began to rise again. Since 2012, Well-Set 8B's ortho-phosphate phosphorus concentrations have dropped to slightly above background until the concentrations began to elevate in the 2018 – 2019 monitoring period. In 2020 ortho-phosphate phosphorus concentrations returned to slightly above background levels. The Total ammonia nitrogen values also mirrored the trend of ortho-phosphate phosphorus. The NELHA staff did identify specific cause for some of the ortho-phosphate phosphorous and total ammonia nitrogen increases. The elevated ortho-phosphate phosphorous

concentrations on April 30, 2012 sampling may be attributed to debris and water from raceway cleaning operation in near proximity of Well 8B. The client responsible has implemented two corrective actions to prevent reoccurrence of this type of spill. They include the removal of a discharge pipe to the incident area and the conversion of an unused raceway to serve as an evaporation pond to receive pond cleaning discharge water. NELHA Staff have been observing the elevated phosphorous and total ammonia nitrogen concentrations in Well Set 8 and will continue to investigate to find the root cause of the other two incidents. See ***Appendix B-8-1 – B-8B-11*** for data tables and analyte plots of Well-Set 8.

Well-Set 9

Well-Set 9 consists of three wells at a depth of 45 ft. (W9B), 65 ft. (W9A) and 85 ft. (W9) from ground level (elevation ~31.1 ft.). Well-Set 9 is located just west of Moana Technologies, Inc. on the north side of the Makako Bay Drive in the utility corridor bordering the Ellison Onizuka Kona International Airport boundary approximately 2000 ft. from the shoreline. Well-Set 9 was established on January 23, 2009. Although there is less data (n=62) than the first eight Well-Sets, it appears that W9, W9A and W9B nutrients are trending slightly above the predicted concentration from the conservative mixing model. There seems to be very little change in the 2018 – 2020 monitoring period. See ***Appendix B-9-1 – B-9B-6*** for data tables and analyte plots of Well-Set 9.

Well-Set 10

Well-Set 10 consists of three wells at a depth of 20 ft. (W10B), 40 ft. (W10A) and 60 ft. (W10) from ground level (elevation ~8.3 ft.). Well-Set 10 is located seaward of Blue Ocean Mariculture and Ocean Rider, Inc. at the end of Ilikai Place approximately 350 ft. from the shoreline. Well-Set 10 was established on January 21, 2009 in the flow envelope of seawater return trench 5 and ocean transect 5. Well-Set 10 continues to be above the predicted nitrate + nitrite nitrogen and ortho-phosphate phosphorous concentrations of the conservative mixing model. There are no changes in the monitoring data for the 2018 – 2020 monitoring period. See ***Appendix B-10-1 – B-10B-6*** for data tables and analyte plots of Well-Set 10.

Well-Set 11

Well-Set 11 consists of three wells at a depth of 20 ft. (W11B), 40 ft. (W11A) and 60 ft. (W11) from ground level (elevation ~11.1 ft.). Well-Set 11 is located southwest of the former Mera Pharmaceuticals, now Sea Salts of Hawaii, in a utility corridor approximately 350 ft. from the shoreline. Well-Set 11 was established on January 22, 2009. In general, Well-Set 11 is above the predicted ortho-phosphate phosphorous and nitrate + nitrite nitrogen conservative mixing model concentrations. During the 2016 – 2018 monitoring period an inverse relationship was observed when nitrate & nitrite concentrations dropped to the surface seawater conservative mixing line while ortho-phosphate rose above the deep seawater conservative mixing line. In the 2018 – 2020

monitoring period, NELHA is observing elevated nitrate & nitrite nitrogen concentrations mostly in Well-Set 11A. See ***Appendix B-11-1 – B-11B-6*** for data tables and analyte plots of Well-Set 11.

Well-Set 12

Well-Set 12 consists of three wells at a depth of 20 ft. (W12B), 40 ft. (W12A) and 60 ft. (W12) from ground level (elevation ~19 ft.). Well-Set 12 is in a remote area in the upper northwest corner of the NELHA property approximately 300 ft. from the shoreline. This Well-Set is considered a control site. Well-Set 12 was established on January 27, 2009. It appears after eleven years of sampling Well-Set 12 (n=62), nutrients are trending slightly above the conservative mixing model for ortho-phosphate phosphorous and slightly below for nitrate + nitrite nitrogen. The 2018 – 2020 monitoring period continue the historical trends. See ***Appendix B-12-1 – B-12B-6*** for data tables and analyte plots of Well-Set 12.

Well 13

Well 13 consists of one well at a depth of 150 ft. (W13) from ground level (elevation ~135 ft.). Well 13 is in the northeast corner of the HOST Park property near the intersection of the Queen Kaahumanu Highway and Kaiminani Drive approximately 8000 ft. from the shoreline. This well monitors agricultural activities just east of NELHA and is considered a control well. Well 13 was established on January 23, 2009. It appears Well 13's nitrate + nitrite nitrogen and ortho-phosphate phosphorous concentrations are trending above the predicted concentration from the conservative mixing model. Due to the Queen Kaahumanu Highway Construction, access to the site has been limited from 2015 through early 2018. Sampling has resumed in March of 2018. Trends seem comparable in the 2018 – 2020 monitoring period to the historical data set. See ***Appendix B-13-1 – B-13-6*** for data tables and analyte plots of Well-Set 13.

Seawater Return Trench 4

Seawater Return Trench 4 is approximately 110 ft. long by 25 ft. wide by 15 ft. deep. Seawater Return Trench 4 has a permeability of 430 ft. per day, that was determined on June 4, 1992. Seawater Return Trench 4 is located just northeast of the NELHA research campus between Well-Set 8 and Well-Set 7 at approximately 650 ft. from the shoreline. From January 1992 to approximately May 2002 the trench received OTEC return seawater and minimal aquaculture seawater disposal. Since May 2002, the seawater return trench was mostly used for aquaculture seawater disposal and the ortho-phosphate phosphorus values started to trend upward. A nitrate + nitrite nitrogen and ortho-phosphate phosphorus spike occurred in January 2004. Since January 2004, the level of ortho-phosphate phosphorus remained relatively high with an additional spike in January 2005 and a recovery by November 2005. By November 2008 the ortho-phosphate phosphorus and nitrate + nitrite nitrogen concentrations were elevated but returned to the predicted deep seawater conservative mixing model concentrations. Over the 2018 –

2020 monitoring period, the data is showing elevated ortho-phosphate phosphorus and nitrate + nitrite nitrogen concentrations similar to the 2008 event. The total ammonia nitrogen values were higher than baseline in 2006 – 2007 but returned to its historical concentrations by 2007 – 2008. Due to operational changes, seawater return trench 4 received excess deep seawater from the earthquake damaged 40-inch pipeline starting January 2009. The repairs to the 40-inch deep seawater pipeline were completed in late September 2009 and the facility has shifted back to its normal seawater distribution operations. Seawater return trench 4 was also used as an OTEC seawater disposal location and has shown nutrient levels between the deep and surface seawater conservative mixing models and is reflective of the mixed seawater disposal from the Makai Ocean Engineering OTEC test facility from 2009 - 2019. This is most pronounced in the silicate data set. See ***Appendix B-T4-1 – B- T4-6*** for data tables and analyte plots of seawater return trench 4.

Seawater Return Trench 5

Seawater Return Trench 5 is approximately 60 ft. long by 20 ft. wide by 10 ft. deep. Seawater Return Trench 5 is located south of the NELHA research campus after the Kau pumping station access road in the flow envelope of Well-Set 10 and Ocean Transect 5. The NELHA Water Quality Laboratory has observed several nitrate + nitrite nitrogen and ortho-phosphate phosphorus spikes from September 1992 to January 1997. All the spikes were one-time incidences and values fell back to normal levels soon after. Since January 1997, the monitoring results have been within its historical baseline activity. No sampling occurred due to the lack of client activity at the end of the fiscal year 2007-2008. During the 2009 – 2010 fiscal year no observations of significant changes were recorded from baseline results. However, Seawater Return Trench 5 was the focus of an unfounded complaint by the local Surfrider Foundation, claiming a NELHA client was disposing fish processing waste into this trench. The trench was inspected by NELHA's Water Quality Laboratory, and the Hawaii Department of Health, Clean Water and Wastewater Branch. No fowl smells or evidence of fish waste were found at the site. In July 2012, mechanical aeration was added to Seawater Return Trench 5 to increase the dissolved oxygen concentrations, turn up settled solids and to enhance microbial remediation. Since these changes, seawater return trench 5 has had a higher than normal total ammonia nitrogen, nitrate & nitrite nitrogen, total dissolved nitrogen, ortho-phosphate phosphorus, total dissolved phosphorous and suspended solids concentrations. The elevated nutrient concentrations are most likely due to expanded client activities. In March of 2018, the trench was agitated by a portable pumping system to remove settled solids and to dispose offsite. These activities were performed to prepare the trench for mechanical dredging. For the 2018 – 2020 monitoring period there were no significant changes from the historical record. See ***Appendix B-T5-1 – B- T5-6*** for data tables and analyte plots of seawater return trench 5.

Anchialine Pond A1

Anchialine pond A1 is located north of the NELHA research campus in the Ho'ona archaeology preserve. Historical water quality data for anchialine pond A1 agrees with

background data with the exception of one significant water quality issue discovered on December 11, 2007. Elevated nitrate + nitrite nitrogen concentrations from baseline levels were revealed by NELHA's monitoring program and attributed to difficulties clients had preventing water overflowing in several raceways during two "100 year" storm events that occurred on December 3 and December 6, 2007. In response to the rain events the NELHA Water Quality Laboratory increased the sampling schedule for the trenches and ponds in the program from a quarterly frequency to a monthly frequency. In addition, NELHA's clients adjusted their SOP's to "pump down" open raceways to tanks and other storage areas in order to prevent media overflows during heavy rain events. By January 2008, anchialine pond A1 recovered to baseline nutrient concentrations. Historically, the nitrate + nitrite nitrogen data fluctuates below 1500 µg N/L to above 400 µg N/L with most recent data points plotted above the surface seawater mixing model. The ortho-phosphate phosphorus data shares a similar pattern. For the 2018 – 2020 monitoring period, the nitrate + nitrite nitrogen and ortho-phosphate concentrations were within the historical trend. See ***Appendix B-A1-1 – B- A1-9*** for data tables and analyte plots of anchialine pond A1.

Anchialine Pond A2

Anchialine pond A2 is located east of the NELHA beach park. The water quality data for anchialine pond A2 has been historically consistent. The nitrate + nitrite nitrogen data fluctuates very little; however, most data points are above the surface seawater and deep seawater conservative mixing model. The ortho-phosphate phosphorus data is also consistent with the clear majority of data points sitting on the surface seawater conservative mixing lines. There have been some isolated cases of elevated nutrient concentrations, but in each circumstance, the pond rapidly returns to baseline levels. Anchialine pond A2 salinity has been increasing slowly over time from 7.5 PSU in 1993 to less than 12 PSU in 2010. Salinity has plateaued at less than 12 PSU since 2010 to present date. Please note: anchialine pond A2 is used by the public as a bathing pond. For the 2018 – 2020 monitoring period there were no significant changes from the historical record. See ***Appendix B-A2-1 – B- A2-9*** for data tables and analyte plots of anchialine pond A2.

Anchialine Pond A3

Anchialine pond A3 is located south of the beach park. Anchialine pond A3 was recently placed on the CEMP monitoring program when re-discovered during a land survey just north of the 55-inch pumping station. Although the data set is very limited (n=33), the water quality appears to have similar concentration ranges as anchialine pond A1 and A2. Elevated nutrients have been observed on October 20, 2016 sampling in both the A2 and A3 pond complexes. Following samples show a recovery to baseline levels. For the 2018 – 2020 monitoring period there were no significant changes from the historical record. See ***Appendix B-A3-1 – B- A3-7*** for data tables and analyte plots of anchialine pond A3.

Coastal Site C24

Coastal Site C24 is located at the beach park. The water quality data for coastal site C24 has been historically consistent since 1991. The nitrate + nitrite nitrogen data fluctuates significantly due to tide and tends to have concentrations above the conservative mixing model. The nutrient subsidy is most likely due to the proximity of the beach park septic system, which is located less than two hundred feet from the sampling location. Coastal site C24 is also monitored by the HDoH for microbiology indicators (Enterococci and Clostridium Perfringens) as a tier II beach. The results of the bi-monthly sampling by the HDoH suggest no indication of fecal contamination. The HDoH monitoring results can be found on their water quality data web portal.

Data: http://cwb.doh.hawaii.gov/CleanWaterBranch/WaterQualityData/default.aspx
Location #: 1237
Location Name: OTEC

Site: http://health.hawaii.gov/cwb/files/2013/06/SampleSite_Kona1237.pdf

The ortho-phosphate data also fluctuates significantly at coastal site C24 but does follow the predicted concentrations from the conservative mixing model. All other analytes seem to be within the normal historical ranges. For the 2018 – 2020 monitoring period there were no significant changes from the historical record. See ***Appendix B-C24-1 – B-C24-11*** for data tables and analyte plots of Coastal Site C24.

MARINE BIOTA MONITORING PROGRAM

NELHA's marine resources are examined by its Marine Biota Monitoring Program. The Marine Biota Monitoring Program is performed under contract by technically qualified consultants to evaluate the benthic and biota communities in the nearshore environment and anchialine ponds found on the grounds of the facility. Due to fiscal issues in 2009 with the State of Hawaii budget and other delays not attributed to NELHA, the Marine Biota Monitoring Program contract was not encumbered until 12-28-09. As such, only the March 2010 Marine Biota Monitoring Program survey was performed during the 2009 – 2010 fiscal year. As of April 15, 2011, NELHA received written and verbal approvals from the Department of Aquatic Resources, County Planning Department and the Department of Health to reduce the frequency of the Marine Biota Monitoring Program from biannually to annually.

Please see the separate report NELHA *Benthic and Biota Monitoring Program, Annual Survey Report - 2019.* http://nelha.hawaii.gov/resources/library/nelha-lab-reports/

BIOTA SURVEY EXECUTIVE SUMMARY

The Natural Energy Lab of Hawaii Authority (NELHA) is a Hawaii state agency that operates an Ocean Science and Technology Park at Kailua-Kona on the West side of Hawaii Island. The purpose of the NELHA facility is to promote research, education, and commercial activities that focus on development of sustainable industries. The nearshore marine environment surrounding

NELHA, known as Keahole Point, is known for supporting abundant and diverse benthic and fish communities. The development of NELHA included the installment of pipeline infrastructure on the reef in order to pump surface and deep seawater to the operational facilities. Since installing the underwater pipe components, a comprehensive monitoring program was developed to ensure the NELHA infrastructure and activities do not detrimentally affect the health and productivity of the nearby marine environments. This monitoring program performs annual characterizations of the anchialine habitats, benthic substrate, and nearshore fish assemblages.

Since the monitoring program began in 1989, more than 47 annual surveys of these environments have been conducted and extensive reports have been prepared. The results, findings, summaries, and references for these reports are both publicly available and discussed throughout this report, which presents the results of the 2019 surveys.

The anchialine pools in the vicinity of the NELHA facility are distributed into two main complexes, "Northern" and "Southern", comprised of five pools in the Northern complex and ten in the Southern complex. The pools within both complexes are relatively clustered, with the exception of pool S-10, which is situated south of the main Southern complex. A faunal

The results of the 2019 survey were generally consistent with previous annual surveys, with observed variances described in the following report. The native red shrimp, 'ōpae 'ula (Halocaridina rubra), were found in most pools where invasive fish were absent, with the exception of one Northern area pools (N-3). Similarly, the presence of invasive fish within the pools almost always precluded or limited native shrimp presence. Overall species composition at each pool was similar to previous surveys. Minimal turbidity was observed across sites in 2019, despite the presence of introduced fish in a portion of the pools. Relative to 2017, fewer signs of public visitation were observed at the Southern complex pools adjacent to the Wawaloli Beach park. Invasive algae were not observed in any pool. Observations at all pools suggest that the current water quality conditions can sustain a community of native species.

The results of this survey support the conclusion that the surveyed anchialine pools, adjacent to the NELHA facility, are not currently impacted by anthropogenic inputs from local facilities. The relatively small size and enclosed nature of several of the Southern pools make them ideal candidates for invasive fish removal programs, which would likely further enhance the presence of H. rubra and other native shrimp species within the pools.

The marine surveys are conducted at six stations along the coastline adjacent to the NELHA facilities. At each station, transects are conducted at three depth (fsw = feet salt water) gradients (~15-fsw, ~30-fsw, and ~50-fsw) for total of 18 transects. Benthic habitat is characterized by surveying all abiotic and biotic feature of the substrate along 50-m transects. The benthic surveys reported a gradual increase in coral cover for the first 20 years of the study (Ziemann

2010), and corals in the genus Porites have been the dominant species among all stations and depths. Data from the last eight years have found the coral cover to stabilize in the range of ~30-50%. The overall coral cover for 2018 was 37.05%, which is within this range and shows the benthic communities to have exhibited relatively consistent values of coral cover for the last nine years. Permanent pins were established in 2017, which improves the ability to temporally track shifts in benthic composition and structure over time. The data from 2019 were quite consistent to 2017 and 2018 which indicates the pins will assist with temporal monitoring of the study sites.

The overall percent coral cover among the six stations was 37.05%, the most dominant corals were Porites lobata (25.23%), Porites compressa (6.07%), Porites evermanni (1.53%), Montipora capitata (2.67%), Montipora patula (0.65%) and Pocillopora meandrina (0.83%). These coral species were present among all the stations. Other corals present were Pocillopora grandis (previously eydouxi), Leptastrea purpurea, Leptastrea bewickensis, Montipora flabellata, Pavona varians, Porites brighami, Porites rus and Fungia scutaria. These corals accounted for a small percentage of the overall relative benthic cover.

Monitoring of the nearshore fish assemblages was conducted at the same six stations and depths as the benthic community. Surveys were performed at the same spatial locations of the benthic surveys and used a 4 x 25-meter belt transect to record the abundance and size of all fish present in the survey area. Fish data exhibit inherent variability due to high mobility and spatial habitat ranges of the nearshore species. The results from this monitoring program have been variable throughout the 28-year period of this monitoring program. The findings from 2019 show similar values of abundance, diversity, and biomass to 2018. Ultimately, data from the duration of the monitoring program shows the nearshore habitats surrounding NELHA support highly diverse and productive fish assemblages.

These results and findings from the surveys of the anchialine ponds, nearshore benthic substrate, and nearshore fish assemblages indicate these environments are not exhibiting any signs of detrimental impacts associated with the NELHA facility.

SEAWATER DISPOSAL MONITORING PROGRAM

The NELHA Water Quality Laboratory in partnership with Department of Health (HDoH), Wastewater Branch has implemented a seawater disposal monitoring program which commenced on January 1, 2011. This program examines quarterly approximately 57 nonpoint seawater disposal locations at the NELHA facility. These locations mostly encompass older seepage pits and leach fields that are regulated under Hawaii Administrative Rules (HAR), Title 11 Chapter 62. The results of this program are sent yearly to the HDoH, Wastewater Branch. The analytes tested in the seawater disposal monitoring program are biological oxygen demand 5-day test (BOD_5), and total suspended solids (TSS). Both of these tests have a 30 mg/L mean limit and a not to exceed

limit of 60 mg/L. In addition to the BOD_5 and TSS tests, total nitrogen and total phosphorous are required monitoring analytes. Seawater disposal from injection wells are regulated by the Underground Injection Control (UIC), HAR, Title 11 Chapter 23 by the HDoH, Safe Drinking Water Branch and are not included in the seawater disposal monitoring program.

NELHA has prepared a *Business Sector Seawater Disposal Summary Table* (see ***Table 6)*** summarizing the seawater disposal data collected from July 2010 and June 2020. The data is organized into five business activity sectors which include:

Extraction – Desalinization and brine/salt production
Fin Fish – Warm and cold-water fish production
Shellfish – Shrimp and bivalve (clams) production
Algae – Micro and macro algae for food and feed stock production
Energy – Thermal process water and algae for energy production

The analytes are reported in ***Table 6*** as a weighted mean. The weighted analyte mean is calculated by the percentage of seawater disposal flow each NELHA client contributes to the business sector. This *"weights"* the analyte concentration based on the daily seawater disposal flow volume the NELHA client contributes to the business sector. The business sector's reported weighted mean is the sum of all *"weighted"* analyte concentration fractions from the client's seawater disposal discharges. The standard deviations reported are calculated from the raw data and is not weighted.

Business Sector Seawater Disposal Summary Table
July 2010 – June 2020

Analysis		BOD (mg/L)		TSS (mg/L)		Total Nitrogen (µg N/L)		Total Phosphorous (µg P/L)		Flow Volume (kgal/day)		
HDOH Limit		30 mg/L		30 mg/L		N/A		N/A		N/A		
Sector	**n**	Weighted Mean	Std. Dev.	Weighted Mean	Std. Dev.	Weighted Mean	Std. Dev.	Weighted Mean	Std. Dev.	Total Volume	Mean	%
Extraction	108	2.0	0.0	4.5	0.8	917	113	149	30	359	90	1.3%
Fin Fish	551	2.1	0.5	5.0	1.6	427	255	70	40	2601	113	9.4%
Shellfish	568	3.4	3.8	8.4	8.7	850	744	133	140	10073	560	36.3%
Algae	185	3.1	2.6	7.6	9.8	676	496	102	163	13823	1257	49.8%
Energy	346	2.1	0.0	4.0	1.7	486	107	74	18	929	84	3.3%

Table 6. *Seawater Disposal Summary Table highlights the analytes flow volume weighted mean within each of the NELHA client activity sector groupings.*

CRITIQUE OF "A REVIEW OF COASTAL MONITORING…IN WEST HAWAII"

In 2004, the Hawaii County Planning Department contracted the Marine Science Department at the University of Hawaii at Hilo to evaluate monitoring data from development projects in West Hawaii. In 2006, an evaluation report, *A Review of Coastal Monitoring Data for Developments in West Hawaii*, was issued. The evaluation report included several data sets from NELHA's CEMP program. NELHA found many inaccuracies and defects in the author's interpretation of the CEMP data sets. NELHA had an opportunity to formally respond to these issues on October 23, 2008 in a meeting with the authors of the report, Hawaii County Planning Department Director, Coastal Zone Management Staff, Division of Aquatic Resources Director, one member of the public, and two other Environmental Scientists who had similar interpretation issues with the report. The mediated meeting ended with no clear conclusion. NELHA has included a two-page summary critique of *A Review of Coastal Monitoring Data for Developments in West Hawaii* in Appendix F.

CONCLUSION

For the past thirty-eight years, NELHA's management in combination with the objectives of the Comprehensive Environmental Monitoring Program (CEMP) has shown no detrimental impact of the nearshore coral, fish, and anchialine pond communities. NELHA has also verified that chlorophyll-a, a measure of phytoplankton biomass, has never exceeded the conservative HDoH limit in the Class AA ocean waters. NELHA has not only accomplished its primary goal of protecting the marine resources in the Class AA waters fronting the property, but also collected baseline water quality data, identified client effluent issues and implemented corrective actions to mitigate any harms to the environment. The CEMP program made several minor and major adjustments over the past thirty-eight years to bring the program into compliance with changing regulations and increase its overall effectiveness. Major adjustments occurred in FY2008 to address HDoH regulations, transition the laboratory to a new Astoria Pacific Auto Analyzer for its nutrient analysis, participate in the EPA's DMRQA analytical certification program, implemented an Environmental Incident Report Form and became more efficient by using in situ instrumentation for pH, salinity, DO, and temperature. In FY2009, NELHA successfully developed 13 additional groundwater monitoring wells in locations previously not monitored, upgraded its groundwater sampling equipment and implemented a septic tank maintenance log. In FY2011, the NELHA Water Quality Laboratory executed a client effluent monitoring program, which collects quarterly samples at approximately 57 seawater disposal locations at facility. In the FY2020 monitoring period, the NELHA Water Quality Lab collected 542 samples and performed 6,102 analytical tests while continually striving to build a more efficient and effective sampling and analytical program. This includes recent upgrades to the NELHA laboratory with a Milli-Q deionized water system, VWR 50 sample BOD_5 incubator, YSI ProDSS Water Quality Meter and Ohaus balance. NELHA believes the above enhancements to the CEMP program in conjunction with working closely with regulatory agencies such as the Hawaii

Department of Health has strengthened the overall program effectiveness in identifying potential environmental issues and mitigating them in a timely matter.

ACKNOWLEGEMENT

The Author would like to acknowledge Pam Madden for her dedication to the NELHA Water Quality Laboratory, her efforts to collect samples under all meteorological and oceanographic conditions, and her ideas to improve the laboratory overall operation. Additional recognition to Dean Towle, Rich Robinson, and Tony Mitchell for their boat navigation skills as they safely maneuver a 17-foot Boston Whaler within meters of NELHA's rocky shoreline allowing the NELHA Water Quality Laboratory Staff to collect surface ocean samples. Further help was received from the many reviewers of this report over the years including Gregory Barbour, Laurence Sombardier, Jan War, Ron Baird, Jeff Nichols and Will Rolston. Finally, a special thanks goes to my wife, Mary Park for taking the time to listen to my crazy ideas and reviewing this technical document with a smile.

LITERATURE CITED

Burns J., Annandale K., *Benthic and Biota Monitoring Program, Natural Energy Laboratory of Hawaii Authority, Survey Report – 2019,* December 2019, Contract No. 67673 - PlanB Consultancy Inc.

Bybee, D.R., Bybee, J.D., Bybee, J.C., Bybee, J.H., Bybee, S.M., Hyde S.K., Smith B., 2015, *Marine Environmental Monitoring Program for the Natural Energy Laboratory of Hawaii Authority Survey Report July 2014*
Bybee Consulting LLC

Clesceri, L.S., Greenberg, A.E., Eaton, A.D., 1998, *Standard Methods for the Examination of Water and Wastewater 20th Edition*
Washington DC, American Public Health Association, American Water Works Association, Water Environment Federation

Department of Health, Amendment and Compilation of Chapter 11-54 Hawaii Administrative Rules, August 31, 2004

Department of Health Environmental Planning Office, *1997*, *Rational for the Development of Area-Specific Water Quality Criteria for the West Coast of the Island of Hawaii and Procedures for their use*
Prepared by the State of Hawaii

Dollar, S.J., and Atkinson, M.J., 1992, *Effects of Nutrient Subsidies from Groundwater to Nearshore Marine Ecosystems Off the Island of Hawaii*
Estuarine, Coastal and Shelf Science, v. 35, p. 409-424.

EPA SOP#:2007, 1995, *Groundwater Well Sampling*

EPA SOP# GW 0001, 1996, *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells;* Region 1

EPA-625-/6-74-003a, 1974, *Methods for Chemical Analysis of Water and Waste*, Environmental Research Center, Cincinnati, Ohio, p. 10-12

Geolabs-Hawaii, 1988, *Installation Report Water Quality Monitoring Wells Natural Energy Laboratory of Hawaii and Hawaii Ocean Science and Technology Park Keahole, North Kona, Hawaii (Well 1-6)*
C.W. Associates Inc. dba Geolabs-Hawaii, 2006 Kalihi Street, Honolulu, Hawaii 96819

Geolabs-Hawaii, 1992, *Installation Report Water Quality Monitoring Wells Natural Energy Laboratory of Hawaii and Hawaii Ocean Science and Technology Park Keahole, North Kona, Hawaii (Well 7-8)*
C.W. Associates Inc. dba Geolabs-Hawaii, 2006 Kalihi Street, Honolulu, Hawaii 96819

Geolabs-Hawaii, 1994, *Installation Report Water Quality Monitoring Wells Natural Energy Laboratory of Hawaii and Hawaii Ocean Science and Technology Park Keahole, North Kona, Hawaii (relocation Well 3)*
C.W. Associates Inc. dba Geolabs-Hawaii, 2006 Kalihi Street, Honolulu, Hawaii 96819

GK & Associates, 1989, *Natural Energy Laboratory of Hawaii Authority Comprehensive Environmental Monitoring Program*
Revised 1993 by NELHA Staff

GK & Associates, 1989, *Hawaii Ocean Science and Technology Park and Natural Energy Laboratory of Hawaii Cooperative Environmental Monitoring Program*
Contract No. 23321

Hunt, C.D., Jr., 2007, *Ground-Water Nutrient Flux to Coastal Waters and Numerical Simulation of Wastewater Injection at Kihei, Maui, Hawaii*.
US Geological Survey Scientific Investigations Report 2006-5283, 69p

MCM Planning, 1987, *Final Supplemental Environmental Impact Statement, Alternative Methods of Seawater Return Flow Disposal*

Nance, T., and Dollar, S., Summary of Potable Well Data from Kawaihae to Kealakekua Bay in West Hawaii
Unpublished

RM Towill, 1976, *Environmental Assessment of Natural Energy Laboratory at Keahole Point*

U.S. Geological Survey, variously dated, *National field manual for the collection of water-quality data: U.S. Geological Survey Techniques of Water-Resources Investigations,* book 9, chaps. A1-A9 available online at http://pubs.water.usgs.gov/twri9A

Valley Well Drilling and AMEC Earth & Environmental, Inc., *Summary Report of Installation of Groundwater Monitoring Wells (Well 9 – 13)*
AMEC Earth & Environmental, Inc. dba Valley Well Drilling 91-458 Komohana Street, Kapolei, Hawaii 96707

West Hawaii Coastal Monitoring Task Force. 1992, *West Hawaii coastal monitoring program monitoring guidelines*,
Unpublished

APPENDIX A - NELHA Ocean Transect Data Tables and Graphs

Ocean Transect 1

2018 – 2020 Summary Data Table & Graphs..……..……Appendix A-T1-FYXX-1
Station 1 Historical Data Table & Graphs…..……...Appendix A-T1-S1-1
Station 2 Historical Data Table & Graphs…..……...Appendix A-T1-S2-1
Station 3 Historical Data Table & Graphs……..……...Appendix A-T1-S3-1
Station 4 Historical Data Table & Graphs.…..……...Appendix A-T1-S4-1
Station 5 Historical Data Table & Graphs…….……....Appendix A-T1-S5-1

Ocean Transect 2

2018 – 2020 Summary Data Table & Graphs…….……Appendix A-T2- FYXX-1
Station 1 Historical Data Table & Graphs…..……...Appendix A-T2-S1-1
Station 2 Historical Data Table & Graphs…..……...Appendix A-T2-S2-1
Station 3 Historical Data Table & Graphs……..……...Appendix A-T2-S3-1
Station 4 Historical Data Table & Graphs.…..……...Appendix A-T2-S4-1
Station 5 Historical Data Table & Graphs…….……....Appendix A-T2-S5-1

Ocean Transect 3

2018 – 2020 Summary Data Table & Graphs..……Appendix A-T3-FYXX-1
Station 1 Historical Data Table & Graphs…..……...Appendix A-T3-S1-1
Station 2 Historical Data Table & Graphs…..……...Appendix A-T3-S2-1
Station 3 Historical Data Table & Graphs……..……...Appendix A-T3-S3-1
Station 4 Historical Data Table & Graphs.…..……...Appendix A-T3-S4-1
Station 5 Historical Data Table & Graphs…….……....Appendix A-T3-S5-1

Ocean Transect 4

2018 – 2020 Summary Data Table & Graphs..……Appendix A-T4-FYXX-1
Station 1 Historical Data Table & Graphs…..……...Appendix A-T4-S1-1
Station 2 Historical Data Table & Graphs…..……...Appendix A-T4-S2-1
Station 3 Historical Data Table & Graphs……..……...Appendix A-T4-S3-1
Station 4 Historical Data Table & Graphs.…..……...Appendix A-T4-S4-1
Station 5 Historical Data Table & Graphs…….……....Appendix A-T4-S5-1

Ocean Transect 5

2018 – 2020 Summary Data Table & Graphs..……Appendix A-T5-FYXX-1
Station 1 Historical Data Table & Graphs…..……...Appendix A-T5-S1-1
Station 2 Historical Data Table & Graphs…..……...Appendix A-T5-S2-1
Station 3 Historical Data Table & Graphs……..……...Appendix A-T5-S3-1
Station 4 Historical Data Table & Graphs.…..……...Appendix A-T5-S4-1
Station 5 Historical Data Table & Graphs…….……....Appendix A-T5-S5-1

Ocean Transect 6

2018 – 2020 Summary Data Table & Graphs..……Appendix A-T6-FYXX-1
Station 1 Historical Data Table & Graphs…..……...Appendix A-T6-S1-1
Station 2 Historical Data Table & Graphs…..……...Appendix A-T6-S2-1
Station 3 Historical Data Table & Graphs……..……...Appendix A-T6-S3-1
Station 4 Historical Data Table & Graphs.…..……...Appendix A-T6-S4-1
Station 5 Historical Data Table & Graphs…….……....Appendix A-T6-S5-1

NELHA Water Quality Laboratory

Transect 1

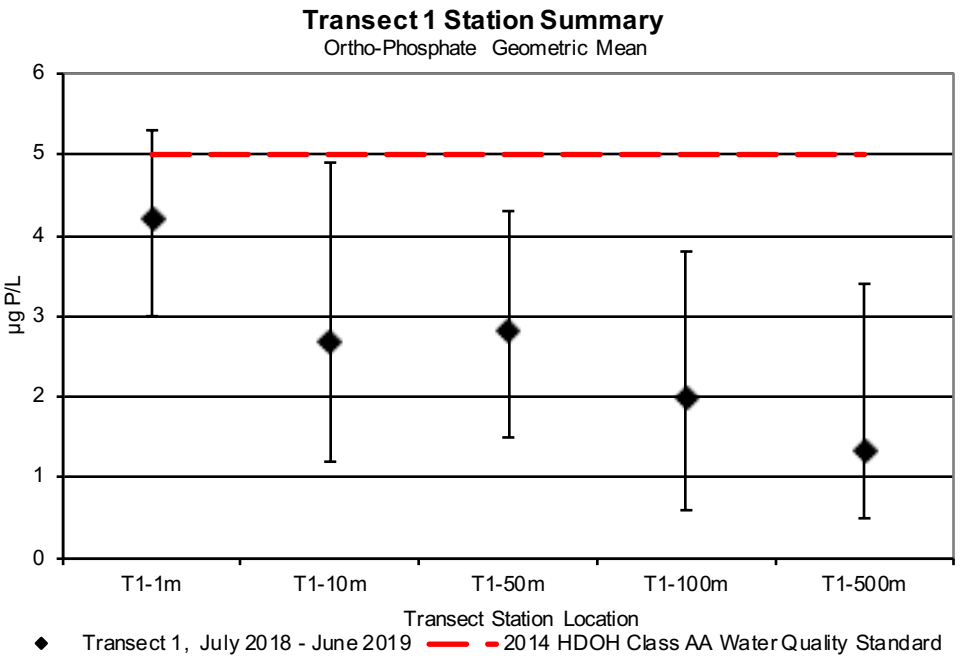
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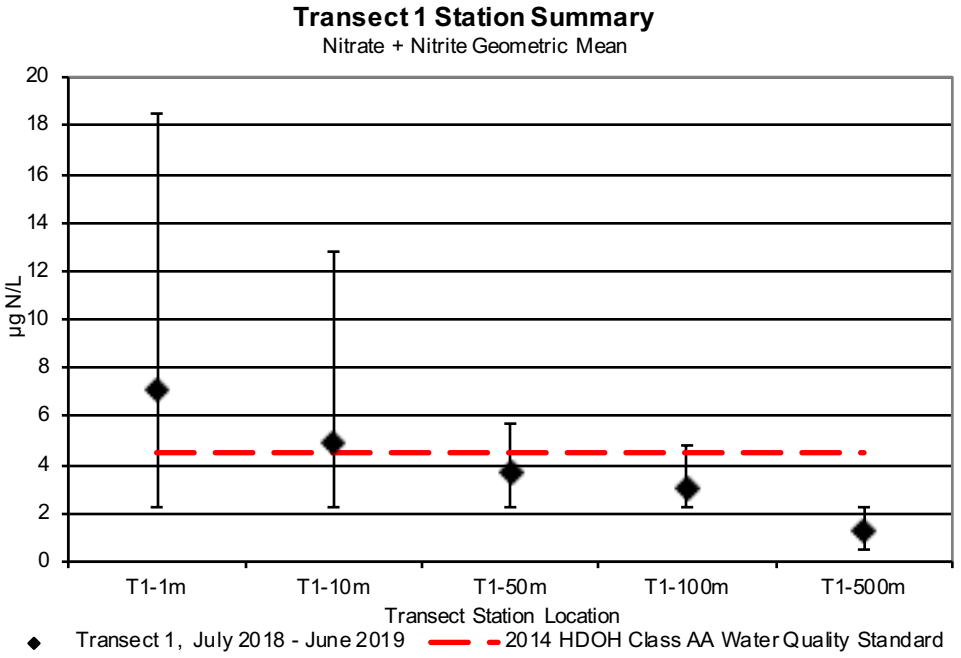
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T1-1m	9/24/18	927	0.1	Low	0.10	3.0	0.16	2.3	0.28	3.9	4.2	119	0.39	12.1	5.13	72	0.12	34.52	27.7	8.19	5.33	0.15
T1-1m	11/13/18	1021	1.6	Ebb	0.13	4.1	1.32	18.5	0.29	4.1	5.1	143	0.54	16.7	5.75	81	0.12	34.86	27.3	8.22	5.06	0.24
T1-1m	1/22/19	1009	0.5	Ebb	0.17	5.3	0.86	12.0	0.16	2.3	6.8	191	0.44	13.5	3.72	52	0.10	34.81	24.9	8.24	5.97	0.22
T1-1m	4/16/19	959	0.3	Flood	0.15	4.7	0.37	5.2	0.24	3.3	2.9	83	0.49	15.2	3.34	47	0.05	35.61	25.7	8.11	7.56	0.13
Geomean	**FY '19**				0.14	**4.2**	0.51	***7.1***	0.2	***3.3***			0.5	***14.3***	4.4	**61**	**0.09**					**0.18**
T1-10m	9/24/18	936	0.1	Low	0.07	2.1	0.16	2.3	0.32	4.5	3.2	91	0.38	11.8	3.17	44	0.10	34.64	27.7	8.18	5.29	0.16
T1-10m	11/13/18	1024	1.6	Ebb	0.04	1.2	0.38	5.3	0.36	5.0	0.3	9	0.36	11.2	4.04	57	0.09	35.00	27.3	8.19	4.67	0.20
T1-10m	1/22/19	1013	0.5	Ebb	0.16	4.9	0.91	12.8	0.08	1.1	6.2	175	0.43	13.4	3.36	47	0.08	34.78	24.9	8.23	5.88	0.26
T1-10m	4/16/19	1006	0.3	Flood	0.14	4.2	0.27	3.8	0.25	3.5	2.1	58	0.40	12.3	4.44	62	0.05	35.65	25.7	8.10	7.27	0.09
Geomean	**FY '19**				0.09	**2.7**	0.35	**4.9**	0.22	***3.1***			0.39	**12.1**	3.7	**52**	**0.08**					**0.17**
T1-50m	9/24/18	943	0.1	Low	0.10	3.1	0.16	2.3	0.33	4.6	6.6	187	0.44	13.5	4.68	66	0.11	34.61	27.7	8.18	5.29	0.21
T1-50m	11/13/18	1029	1.6	Ebb	0.05	1.5	0.41	5.7	0.25	3.5	1.7	49	0.35	10.7	3.91	55	0.10	34.98	27.3	8.20	4.65	0.20
T1-50m	1/22/19	1016	0.5	Ebb	0.10	3.1	0.19	2.6	0.04	0.5	1.6	44	0.38	11.7	2.16	30	0.06	34.80	25.0	8.22	5.70	0.36
T1-50m	4/16/19	1012	0.3	Flood	0.14	4.3	0.38	5.3	0.38	5.3	4.6	130	0.41	12.6	2.92	41	0.04	35.59	25.6	8.11	7.20	0.12
Geomean	**FY '19**				0.09	**2.8**	0.26	**3.6**	0.18	***2.6***			0.39	**12.1**	3.3	**46**	**0.07**					**0.21**
T1-100m	9/24/18	952	0.1	Low	0.07	2.2	0.16	2.3	0.29	4.1	6.5	184	0.48	14.8	6.07	85	0.08	34.60	27.7	8.16	5.10	0.17
T1-100m	11/13/18	1033	1.6	Ebb	0.02	0.6	0.19	2.6	0.24	3.4	0.3	9	0.35	10.8	5.64	79	0.08	35.01	27.2	8.20	4.60	0.21
T1-100m	1/22/19	1021	0.5	Ebb	0.10	3.2	0.34	4.8	0.02	0.3	2.6	73	0.39	12.0	2.58	36	0.07	34.87	25.0	8.23	5.71	0.36
T1-100m	4/16/19	1018	0.3	Flood	0.12	3.8	0.21	2.9	0.39	5.5	1.9	53	0.40	12.4	2.10	29	0.04	35.66	25.7	8.12	7.22	0.09
Geomean	**FY '19**				0.06	**2.0**	0.21	**3.0**	0.16	**2.2**			0.40	**12.4**	3.7	**52**	**0.07**					**0.18**
T1-500m	9/24/18	1004	0.1	Low	0.02	0.5	0.16	2.3	0.19	2.6	0.0	1	0.36	11.3	3.18	45	0.08	34.78	27.9	8.17	5.17	0.37
T1-500m	11/13/18	1040	1.6	Ebb	0.02	0.7	0.14	2.0	0.24	3.4	0.1	4	0.38	11.7	3.49	49	0.07	35.02	27.3	8.21	4.59	0.18
T1-500m	1/22/19	1028	0.5	Ebb	0.08	2.5	0.09	1.3	0.12	1.7	0.2	6	0.39	12.2	2.33	33	0.05	34.96	25.0	8.22	5.70	0.18
T1-500m	4/16/19	1027	0.3	Flood	0.11	3.4	0.04	0.5	0.44	6.2	1.1	31	0.38	11.8	2.62	37	0.03	35.65	25.8	8.13	7.09	0.09
Geomean	**FY '19**				0.04	**1.3**	0.09	**1.3**	0.22	***3.1***			0.38	**11.7**	2.9	**40**	**0.05**					**0.18**

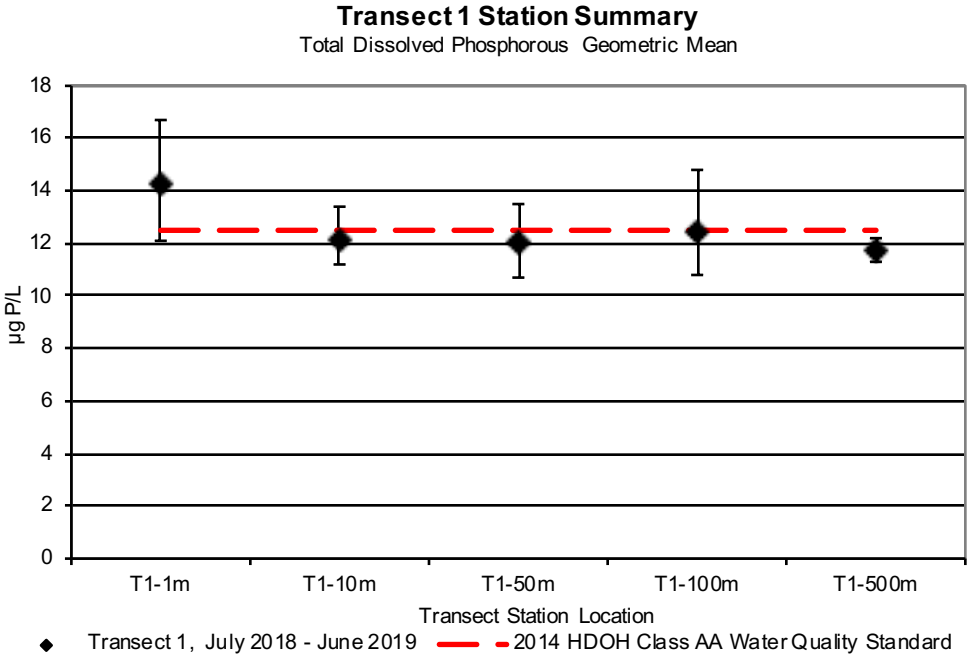
NELHA Water Quality Laboratory

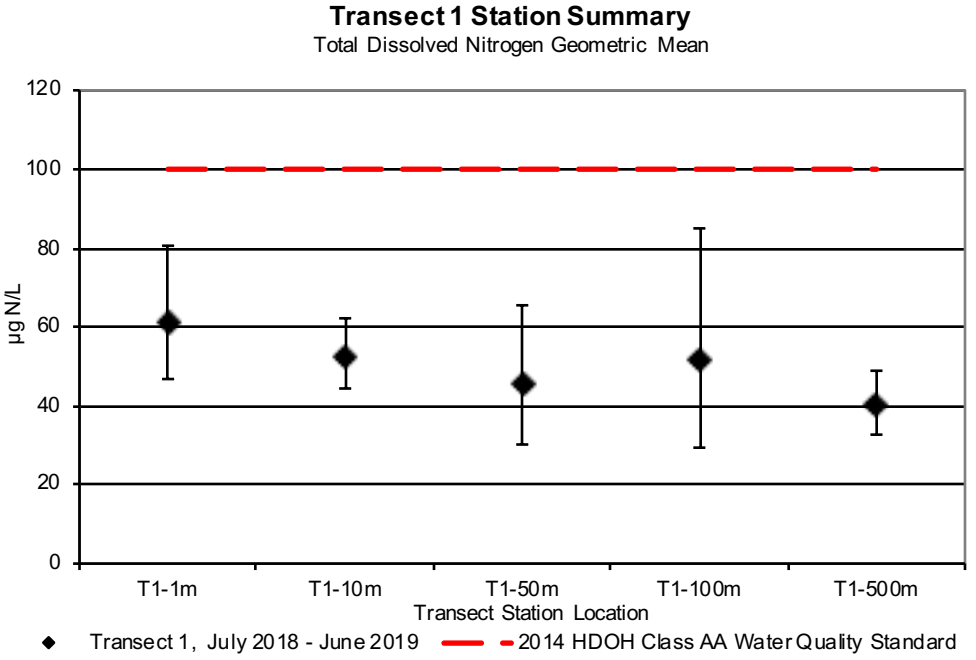
Transect 1

July 2018 - June 2019





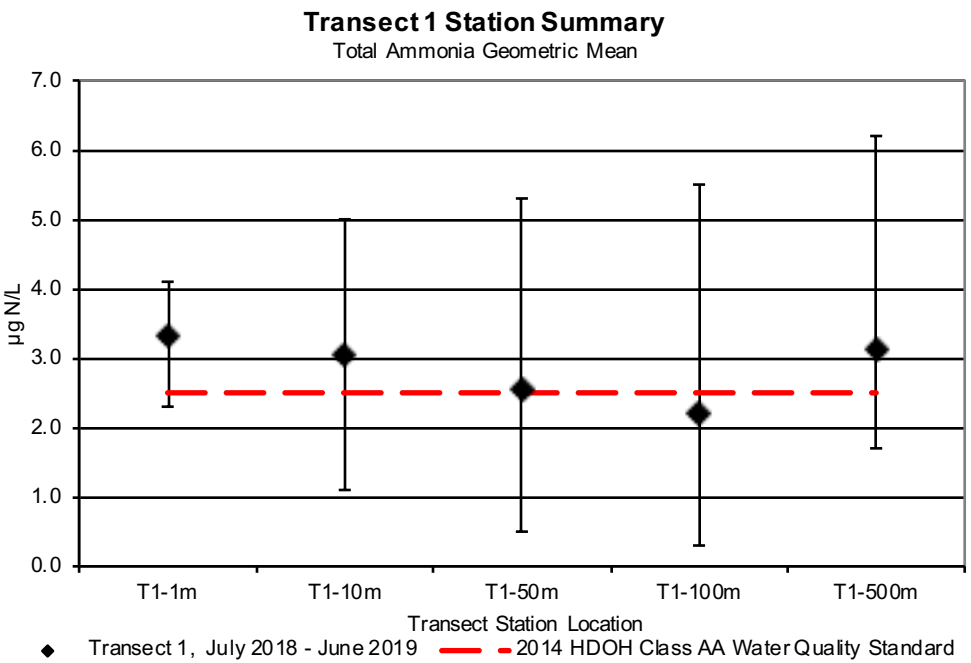


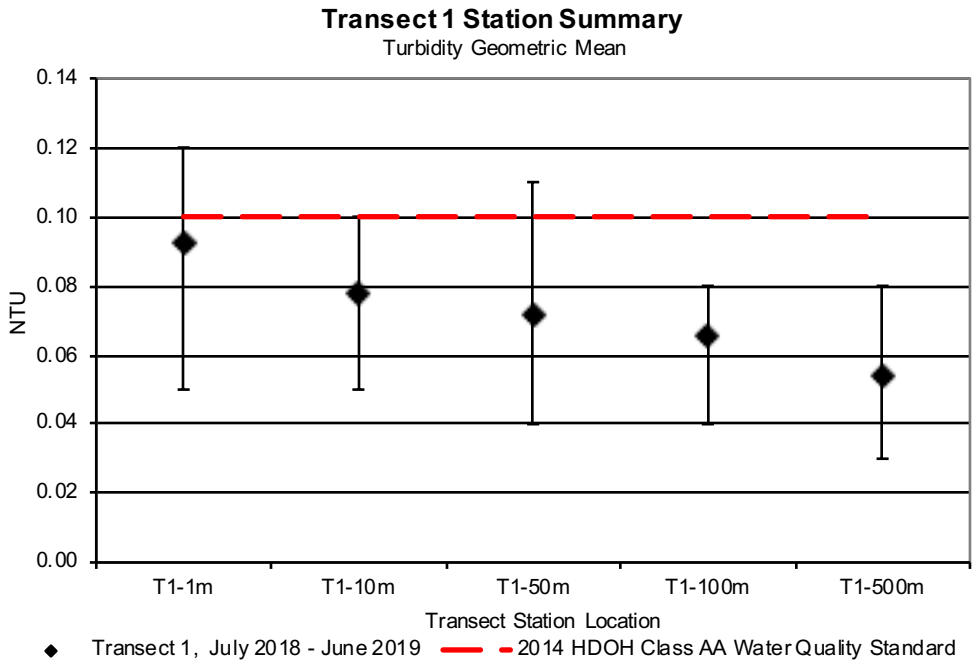


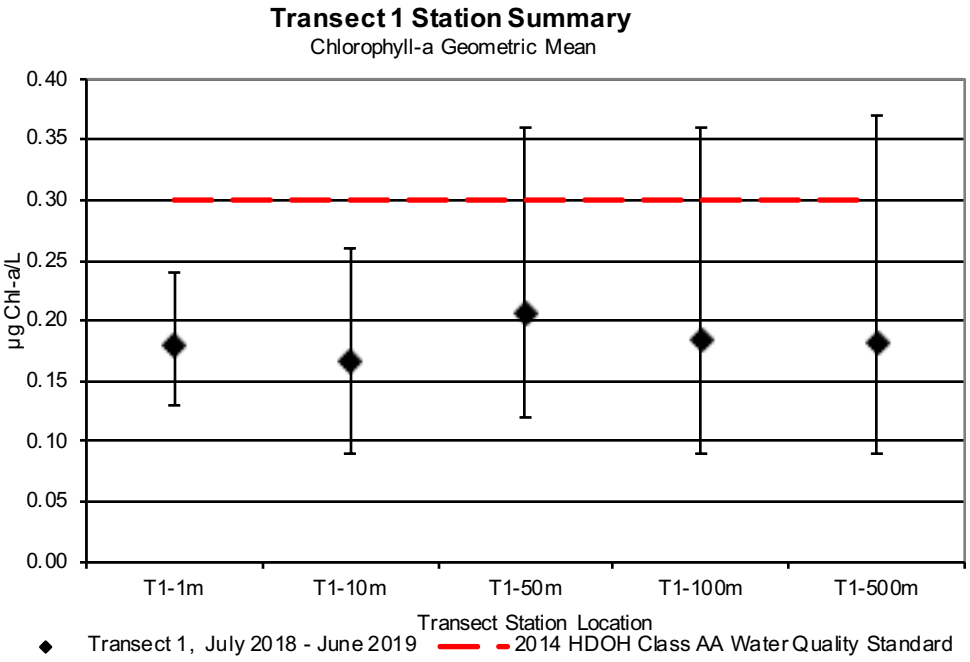
NELHA Water Quality Laboratory

Transect 1

July 2018 - June 2019







NELHA Water Quality Laboratory

Transect 1

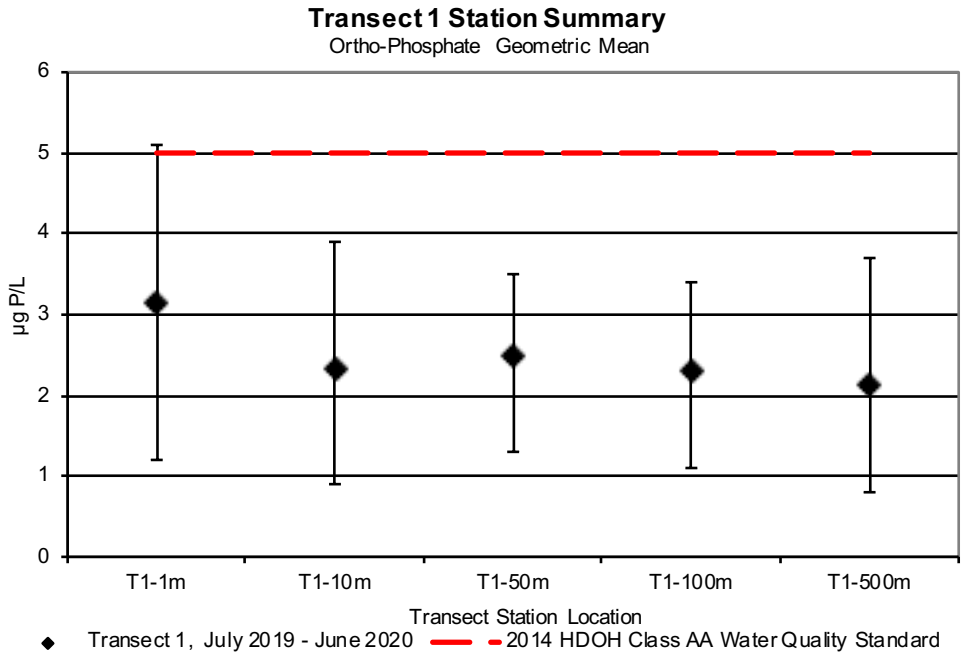
July 2019 - June 2020

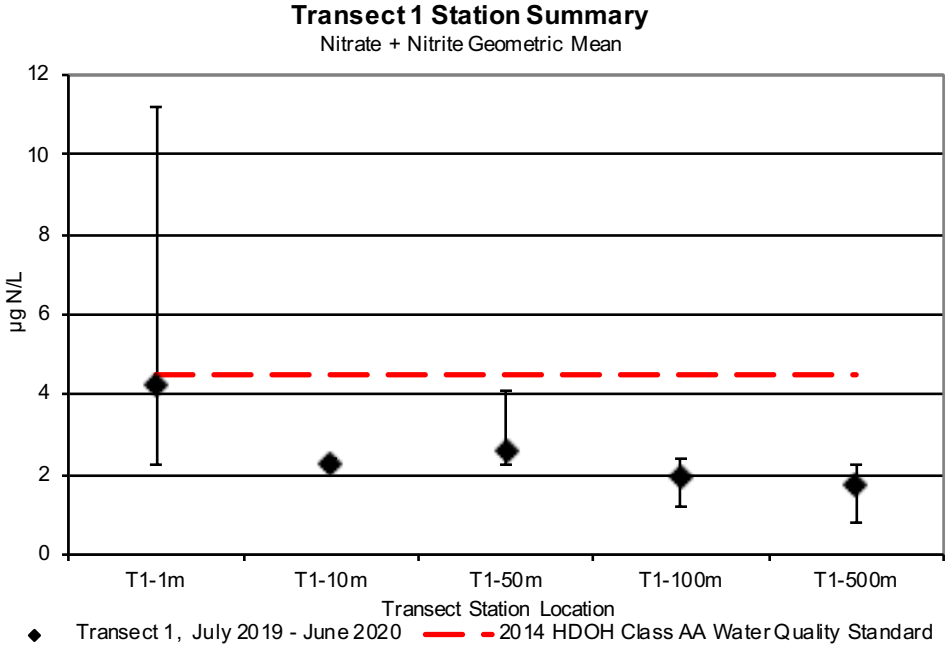
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T1-1m	8/13/19	1140	1.0	Flood	0.04	1.2	0.16	2.3	0.35	4.9	1.1	32	0.25	7.8	2.63	37	0.09	35.69	28.4	8.20	6.81	0.24
T1-1m	11/19/19	1139	1.8	High	0.12	3.8	0.16	2.3	0.21	3.0	0.8	23	0.37	11.4	2.67	37	0.11	34.80	27.5	8.23	6.57	0.16
T1-1m	1/22/20	932	0.4	Low	0.16	5.1	0.41	5.7	0.09	1.3	3.9	108	0.45	14.0	3.98	56	0.04	34.94	25.0	8.21	6.84	0.15
T1-1m	6/24/10	1010	-0.1	Low	0.14	4.2	0.80	11.2	0.21	2.9	7.3	206	0.34	10.5	4.24	59	0.08	35.32	25.8	8.14	7.02	0.36
Geomean	**FY '20**				0.10	**3.1**	0.30	**4.3**	0.2	**2.7**			0.3	**10.7**	3.3	**46**	**0.08**					**0.21**
T1-10m	8/13/19	1144	1.0	Flood	0.03	0.9	0.16	2.3	0.30	4.2	1.1	31	0.28	8.8	1.87	26	0.09	35.70	28.3	8.21	6.52	0.22
T1-10m	11/19/19	1143	1.8	High	0.12	3.7	0.17	2.4	0.49	6.8	0.9	25	0.38	11.8	2.58	36	0.13	34.84	27.6	8.24	6.70	0.16
T1-10m	1/22/20	937	0.4	Low	0.13	3.9	0.16	2.3	0.09	1.3	1.8	52	0.39	12.0	2.86	40	0.09	34.92	25.1	8.22	6.65	0.14
T1-10m	6/24/10	1014	-0.1	Low	0.07	2.3	0.16	2.3	0.14	1.9	1.3	37	0.34	10.5	2.13	30	0.06	35.33	25.8	8.16	6.97	0.29
Geomean	**FY '20**				0.07548	**2.3**	0.16	**2.3**	0.20	**2.9**			0.35	**10.7**	2.3	**33**	**0.09**					**0.19**
T1-50m	8/13/19	1148	1.0	Flood	0.04	1.3	0.16	2.3	0.09	1.3	3.1	88	0.29	8.9	2.16	30	0.1	35.68	28.3	8.22	6.54	0.12
T1-50m	11/19/19	1146	1.8	High	0.11	3.5	0.29	4.1	0.60	8.4	1.8	50	0.38	11.7	2.59	36	0.10	34.81	27.6	8.24	6.70	0.17
T1-50m	1/22/20	943	0.4	Low	0.11	3.5	0.16	2.3	0.09	1.3	0.5	15	0.39	12.1	2.55	36	0.04	34.92	25.0	8.22	6.68	0.19
T1-50m	6/24/10	1019	-0.1	Low	0.08	2.4	0.16	2.3	0.09	1.3	1.9	55	0.36	11.0	2.43	34	0.07	35.34	25.8	8.16	6.88	0.33
Geomean	**FY '20**				0.08	**2.5**	0.19	**2.6**	0.15	**2.0**			0.35	**10.9**	2.4	**34**	**0.07**					**0.19**
T1-100m	8/13/19	1152	1.0	Flood	0.04	1.1	0.09	1.2	0.18	2.5	4.6	129	0.30	9.2	2.69	38	0.10	35.58	28.4	8.22	6.71	0.23
T1-100m	11/19/19	1151	1.8	High	0.11	3.4	0.17	2.4	0.60	8.4	0.6	16	0.40	12.5	2.27	32	0.09	34.78	27.6	8.23	6.65	0.19
T1-100m	1/22/20	949	0.4	Low	0.10	3.1	0.16	2.3	0.09	1.3	-0.2	-5	0.38	11.9	2.27	32	0.06	34.91	25.1	8.22	6.66	0.25
T1-100m	6/24/10	1023	-0.1	Low	0.08	2.4	0.16	2.3	0.09	1.3	2.4	67	0.33	10.3	2.21	31	0.07	35.28	25.8	8.16	6.84	0.32
Geomean	**FY '20**				0.07	**2.3**	0.14	**2.0**	0.17	**2.4**			0.35	**10.9**	2.4	**33**	**0.08**					**0.24**
T1-500m	8/13/19	1159	1.0	Flood	0.03	0.8	0.16	2.3	0.09	1.3	1.4	39	0.28	8.7	2.05	29	0.1	35.70	28.5	8.22	6.50	0.11
T1-500m	11/19/19	1157	1.8	High	0.09	2.8	0.06	0.8	0.74	10.3	0.3	9	0.43	13.3	2.52	35	0.08	34.87	27.7	8.24	6.39	0.14
T1-500m	1/22/20	957	0.4	Low	0.12	3.7	0.16	2.3	0.09	1.3	0.5	14	0.41	12.6	2.57	36	0.03	34.92	25.0	8.21	6.60	0.12
T1-500m	6/24/10	1030	-0.1	Low	0.08	2.5	0.16	2.3	0.04	0.6	3.4	95	0.26	8.2	2.66	37	0.06	35.26	35.9	8.15	6.74	0.39
Geomean	**FY '20**				0.07	**2.1**	0.12	**1.7**	0.13	**1.8**			0.34	**10.5**	2.4	**34**	**0.06**					**0.16**

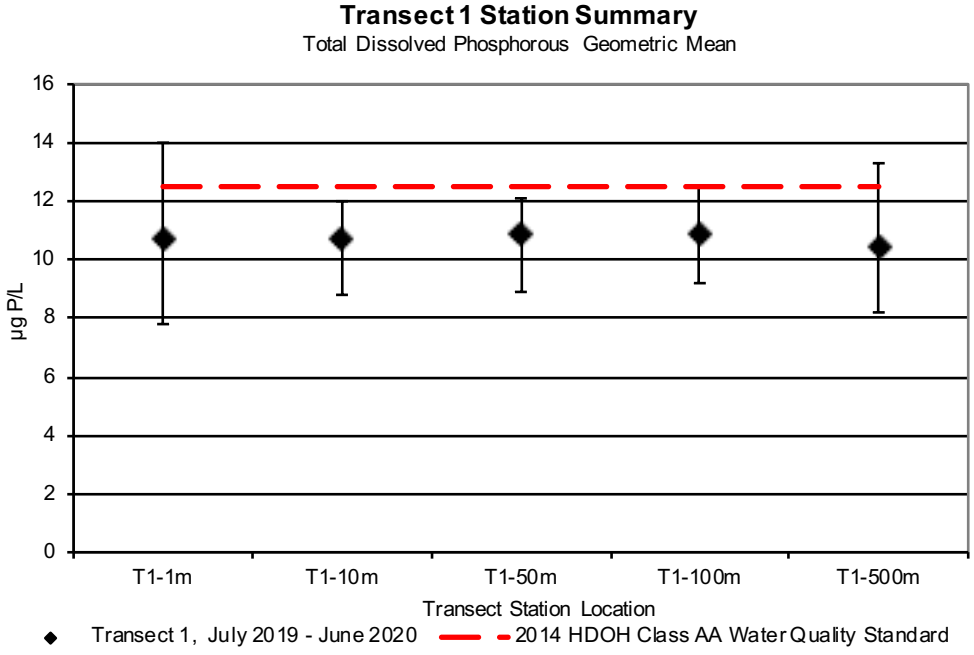
NELHA Water Quality Laboratory

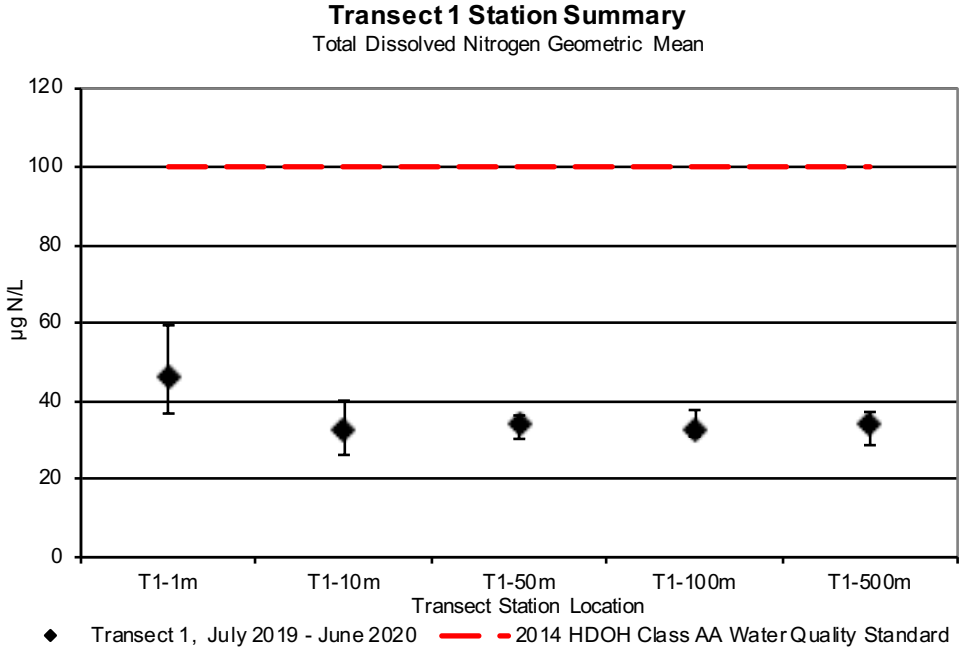
Transect 1

July 2019 - June 2020







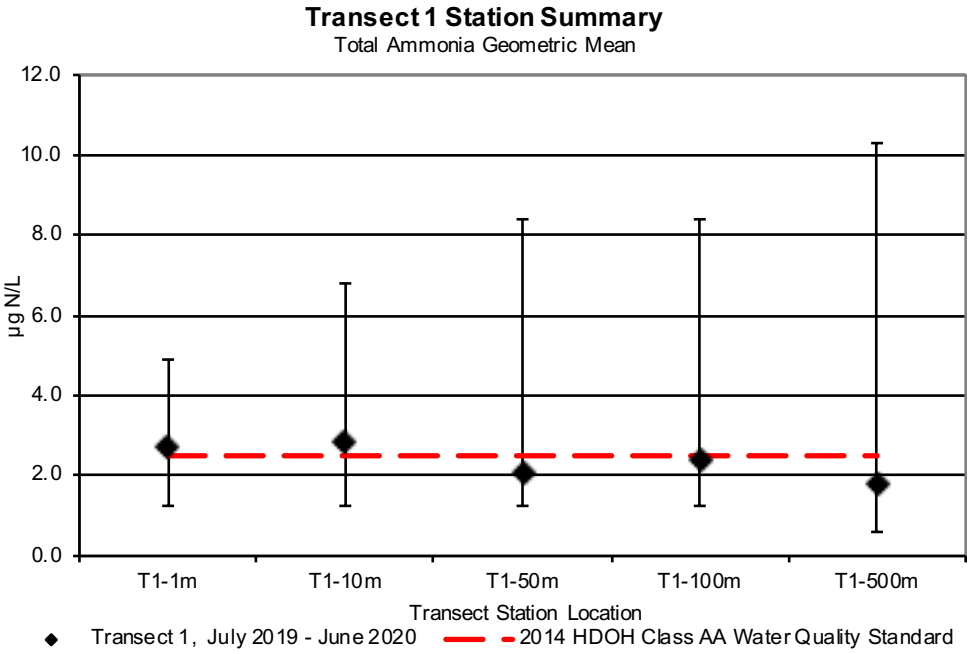


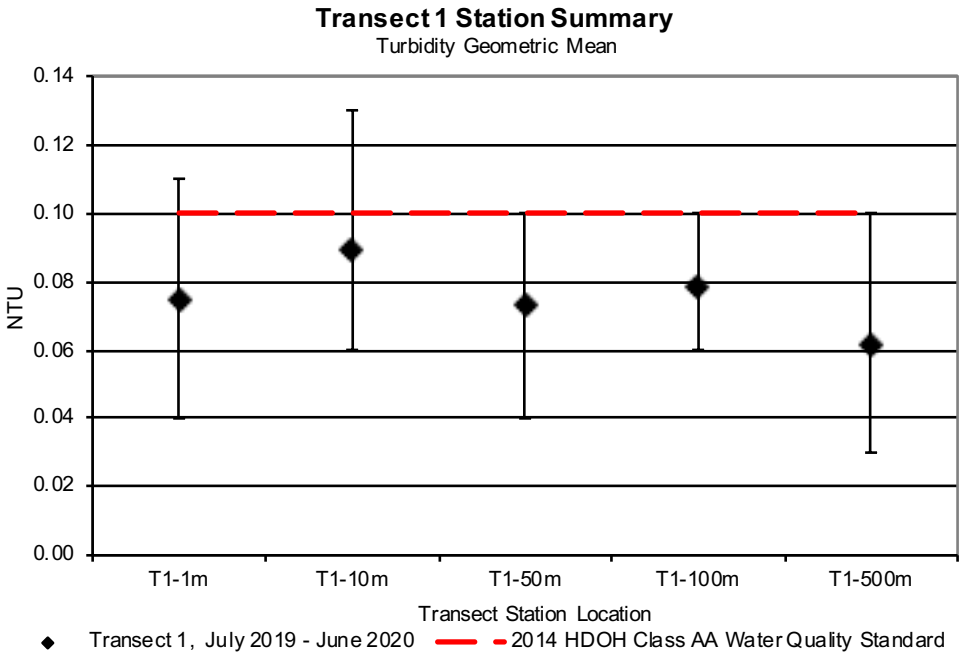
Appendix A-T1-FY20-2

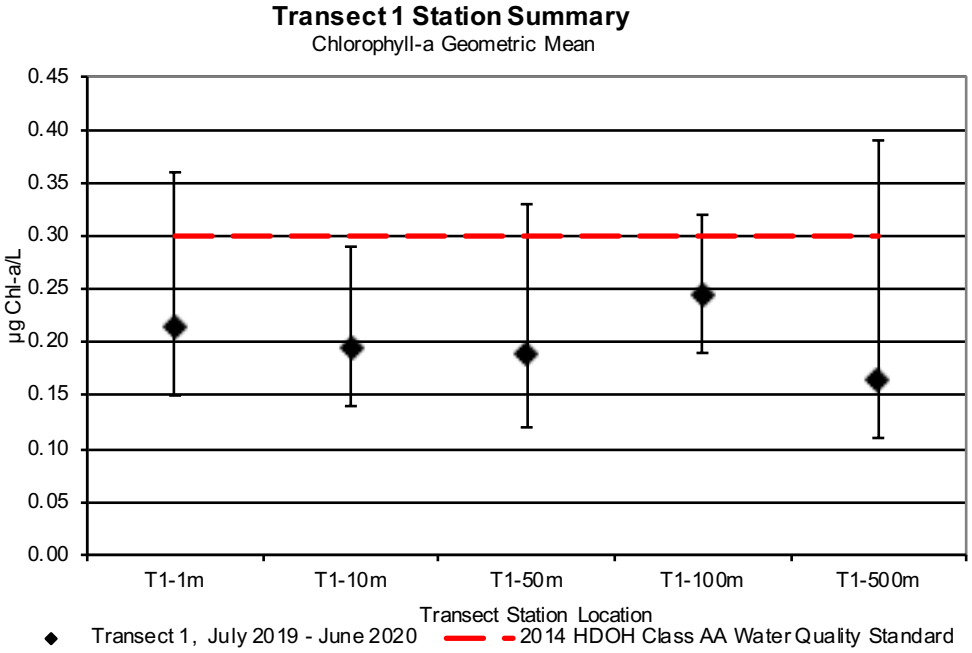
NELHA Water Quality Laboratory

Transect 1

July 2019 - June 2020







NELHA Water Quality Laboratory

Transect 1, Station 1

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O1-1S-8m	7/27/93	1213	0.03	0.9	0.03	0.4	0.14	2.0	2.5	70	0.28	8.7	7.2	101	0.28	8.67	1.18	0.09	34.508	26.6	8.27	7.03	0.06	no sample	no sample
O1-1S-8m	12/7/93	1113	0.06	1.9	0.20	2.8	0.15	2.1	4.5	125	0.23	7.1	5.2	72	0.23	7.12	1.13	0.11	34.789	25.9	8.26	6.90	0.09	no sample	no sample
O1-1S-8m	3/16/94	1041	0.21	6.5	0.77	10.8	0.20	2.8	10.5	295	0.34	10.5	4.1	57	0.34	10.53	1.14	0.11	34.269	24.7	8.25	7.11	0.09	<1	<1
O1-1S-8m	6/14/94	1032	0.13	4.0	0.14	2.0	0.03	0.4	2.7	77	0.30	9.3	6.4	90	0.30	9.29	1.12	0.11	34.564	25.4	8.25	7.05	0.03	<1	<1
Geomean	**FY '94**			**2.6**		**2.2**		**1.5**				**8.8**		**78**				***0.10***					**0.06**		
O1-1S-8m	9/15/94	1050	0.10	3.1	0.09	1.3	0.14	2.0	3.0	83	0.28	8.7	5.2	72	0.30	9.29	1.20	0.12	34.630	27.8	8.29	6.99	0.09	<1	<1
O1-1S-8m	11/16/94	947	0.16	5.0	0.49	6.9	0.50	7.0	6.4	180	0.36	11.2	5.3	75	0.38	11.77	1.06	0.07	34.473	26.1	8.25	6.87	0.17	1	<1
O1-1S-8m	3/21/95	1214	0.19	5.9	0.26	3.6	0.09	1.3	4.8	135	0.35	10.8	4.9	68	0.35	10.84	0.94	0.10	34.165	25.0	8.25	7.11	0.14	<1	<1
O1-1S-8m	6/26/95	959	0.13	4.0	0.33	4.6	0.45	6.3	4.7	131	0.32	9.9	6.1	85	0.32	9.91	0.98	0.07	34.492	26.7	8.23	6.94	0.12	<1	<1
Geomean	**FY '95**			**4.4**		**3.5**		***3.2***				**10.1**		**75**				**0.09**					**0.13**		
O1-1S-8m	9/25/95	907	0.12	3.7	0.44	6.2	0.15	2.1	7.2	202	0.31	9.6	6.0	83	0.31	9.60	1.16	0.12	34.408	27.1	8.26	6.72	0.17	<1	<1
O1-1S-8m	11/13/95	1153	0.16	5.0	0.40	5.6	0.50	7.0	7.0	197	0.31	9.6	5.8	81	0.31	9.60	1.02	0.06	34.248	27.0	8.30	8.75	0.05	<1	<1
O1-1S-8m	3/11/96	937	0.14	4.3	0.42	5.9	0.33	4.6	3.7	103	0.35	10.8	4.8	67	0.35	10.84	1.07	0.06	34.181	25.1	8.24	7.06	0.01	<1	<1
O1-1S-8m	5/13/96	903	0.13	4.0	0.48	6.7	0.19	2.7	7.6	213	0.30	9.3	7.6	107	0.30	9.29	1.24	0.07	34.165	26.6	8.21	7.06	0.11	<1	<1
Geomean	**FY '96**			**4.2**		***6.1***		***3.7***				**9.8**		**83**				**0.07**					**0.06**		
O1-1S-8m	7/30/96	815	0.14	4.3	0.86	12.0	0.16	2.2	9.4	263	0.28	8.7	5.1	72	0.28	8.67	1.00	0.13	34.289	27.9	8.23	6.59	0.08	<1	1
O1-1S-8m	10/1/96	1208	0.08	2.5	0.21	2.9	0.54	7.6	3.4	95	0.28	8.7	4.9	68	0.28	8.67	0.99	0.10	34.692	27.9	8.22	6.84	0.02	<1	<1
O1-1S-8m	1/6/97	1215	0.09	2.8	0.07	1.0	0.14	2.0	2.6	74	0.30	9.3	4.6	65	0.32	9.91	1.03	0.10	34.703	25.5	8.27	6.97	0.07	1	<1
O1-1S-8m	4/21/97	1206	0.12	3.7	0.50	7.0	0.22	3.1	2.0	56	0.36	11.2	6.0	85	0.37	11.46	1.12	0.14	34.560	26.6	8.27	6.76	0.01	<1	<1
Geomean	**FY '97**			**3.2**		**3.9**		***3.2***				**9.4**		**72**				***0.12***					**0.03**		
O1-1S-8m	8/18/97	1143	0.10	3.1	0.16	2.2	0.25	3.5	4.1	116	0.34	10.5	4.3	60	0.35	10.84	1.16	0.10	34.627	27.0	8.40	6.45	0.06	<1	<1
O1-1S-8m	10/6/97	1205	0.11	3.4	0.20	2.8	0.34	4.8	31.8	892	0.36	11.2	4.5	63	0.36	11.15	1.00	0.12	34.667	27.4	8.47	6.77	0.10	<1	<1
O1-1S-8m	3/3/98	1205	0.10	3.1	0.46	6.4	0.24	3.4	4.9	136	0.34	10.5	4.8	67	0.34	10.53	0.99	0.09	34.959	25.1	8.23	7.04	0.05	<1	<1
O1-1S-8m	5/4/98	1118	0.15	4.6	1.24	17.4	0.16	2.2	13.2	371	0.43	13.3	5.6	78	0.44	13.63	0.87	0.20	34.720	23.8	8.24	7.24	0.11	<1	<1
Geomean	**FY '98**			**3.5**		***5.1***		***3.3***				**11.3**		**67**				***0.12***					**0.08**		
O1-1S-8m	7/6/98	1220	0.10	3.1	0.14	2.0	0.10	1.4	3.5	99	0.36	11.2	5.3	75	0.37	11.46	1.07	0.08	35.020	26.4	8.24	7.17	0.17	<1	<1
O1-1S-8m	10/5/98	1149	0.10	3.1	0.50	7.0	0.14	2.0	6.6	184	0.40	12.4	6.7	94	0.40	12.39	1.10	0.08	35.020	27.4	8.23	7.28	0.07	<1	<1
O1-1S-8m	1/13/99	1157	0.11	3.4	0.45	6.3	0.10	1.4	4.8	135	0.35	10.8	5.4	75	0.36	11.15	1.13	0.10	35.027	25.2	8.24	7.11	0.06	<1	<1
O1-1S-8m	4/12/99	927	0.14	4.3	0.52	7.3	0.11	1.5	6.9	194	0.39	12.1	6.0	84	0.40	12.39	1.11	0.12	34.606	24.1	8.21	7.09	0.12	<1	<1
Geomean	**FY '99**			**3.5**		***5.0***		**1.6**				**11.6**		**81**				**0.09**					**0.10**		

NELHA Water Quality Laboratory

Transect 1, Station 1

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O1-1S-8m	7/6/99	930	0.11	3.4	0.13	1.8	0.06	0.8	2.6	72	0.34	10.5	4.7	66	0.34	10.53	1.00	0.08	34.942	25.6	8.20	6.77	0.17	29	<1
O1-1S-8m	10/4/99	1021	0.17	5.3	0.61	8.5	0.16	2.2	8.5	239	0.35	10.8	5.1	72	0.35	10.84	0.99	0.12	34.794	25.9	8.26	7.00	0.06	<1	<1
O1-1S-8m	1/4/00	1213	0.11	3.4	0.60	8.4	0.37	5.2	13.2	371	0.35	10.8	5.6	79	0.35	10.84	0.98	0.08	35.050	24.7	8.23	7.11	0.13	<1	<1
O1-1S-8m	4/17/00	1004	0.15	4.6	0.28	3.9	0.02	0.3	4.8	134	0.35	10.8	7.1	99	0.36	11.15	1.02	0.10	34.592	24.3	8.26	7.05	0.11	<1	<1
Geomean	**FY '00**			**4.1**		***4.8***		**1.3**				**10.8**		**78**				**0.09**					**0.11**		
O1-1S-8m	7/24/00	1234	0.12	3.7	0.10	1.4	0.01	0.1	6.4	180	0.35	10.8	5.8	81	0.36	11.15	1.02	0.08	34.770	27.2	8.28	6.95	0.11	<1	<1
O1-1S-8m	10/30/00	1256	0.14	4.3	0.28	3.9	0.31	4.3	6.1	172	0.34	10.5	5.1	71	0.35	10.84	1.13	0.08	34.907	27.3	8.24	6.64	0.24	<1	<1
O1-1S-8m	2/26/01	1233	0.19	5.9	0.84	11.8	0.16	2.2	12.2	343	0.38	11.8	5.9	82	0.39	12.08	1.04	0.09	34.476	24.9	8.22	6.83	0.09	<1	<1
O1-1S-8m	5/7/01	1019	0.17	5.3	1.04	14.6	0.35	4.9	10.9	306	0.40	12.4	5.4	76	0.41	12.70	0.99	0.12	34.698	24.6	8.20	7.29	0.10	<1	<1
Geomean	**FY '01**			**4.7**		***5.5***		**1.6**				**11.4**		**77**				**0.09**					**0.12**		
O1-1S-8m	8/21/01	1201	0.17	5.3	0.63	8.8	0.03	0.4	6.2	174	0.35	10.8	5.9	82	0.35	10.84	1.05	0.12	34.688	26.8	8.23	7.18	0.12	<1	<1
O1-1S-8m	10/8/01	950	0.12	3.7	0.09	1.3	0.05	0.7	2.5	70	0.37	11.5	6.0	84	0.37	11.46	1.10	0.12	34.938	27.2	8.21	6.72	0.09	<1	<1
O1-1S-8m	3/5/02	1108	0.17	5.3	0.71	9.9	0.09	1.3	8.5	238	0.38	11.8	6.9	96	0.39	12.08	0.95	0.16	34.630	24.3	8.23	6.88	0.16	<1	1
O1-1S-8m	4/17/02	1126	0.12	3.7	0.69	9.7	0.24	3.4	6.4	180	0.40	12.4	6.0	84	0.42	13.01	1.00	0.08	34.372	25.7	8.21	6.75	0.14	<1	<1
Geomean	**FY '02**			**4.4**		***5.7***		**1.1**				**11.6**		**87**				***0.12***					**0.12**		
O1-1S-8m	7/8/02	1020	0.15	4.6	0.05	0.7	0.11	1.5	3.5	99	0.44	13.6	6.5	91	0.44	13.63	1.06	0.08	34.645	26.5	8.22	6.81	0.18	1	<1
O1-1S-8m	10/9/02	1109	0.08	2.5	0.66	9.2	0.09	1.3	6.0	168	0.31	9.6	6.1	86	0.31	9.60	0.95	0.12	34.876	27.0	8.26	6.82	0.10	<1	<1
O1-1S-8m	3/11/03	1004	0.12	3.7	0.64	9.0	0.04	0.6	5.0	139	0.34	10.5	6.2	87	0.36	11.15	0.99	0.22	34.880	24.5	8.24	7.04	0.17	<1	1
O1-1S-8m	4/22/03	1100	0.10	3.1	0.32	4.5	0.07	1.0	2.9	81	0.33	10.2	5.2	73	0.36	11.15	1.03	0.06	35.018	25.1	8.26	7.06	0.08	<1	<1
Geomean	**FY '03**			**3.4**		**4.0**		**1.0**				**10.9**		**84**				***0.11***					**0.13**		
O1-1S-8m	8/18/03	1300	0.07	2.2	0.34	4.8	0.30	4.2	6.2	173	0.38	11.8	7.5	105	0.38	11.77	n/a	0.10	34.869	28.1	8.24	6.82	0.05	<1	<1
O1-1S-8m	10/29/03	1048	0.09	2.8	0.07	1.0	0.18	2.5	3.1	86	0.36	11.2	4.2	58	0.39	12.08	n/a	0.11	34.836	27.6	8.21	n/a	0.16	<1	<1
O1-1S-8m	3/11/04	950	0.16	5.0	0.41	5.7	0.20	2.8	2.9	81	0.41	12.7	5.2	72	0.40	12.39	n/a	n/a	34.291	25.6	8.25	6.24	0.17	<1	<1
O1-1S-8m	5/20/04	930	0.12	3.7	0.08	1.1	0.18	2.5	4.2	118	0.34	10.5	5.6	78	0.36	11.15	n/a	n/a	33.51	26.5	8.23	6.82	0.01	<1	<1
Geomean	**FY '04**			**3.2**		**2.3**		***2.9***				**11.5**		**77**				***0.10***					**0.06**		
O1-1S-8m	9/20/04	935	0.09	2.8	0.05	0.7	0.19	2.7	3.1	86	0.34	10.5	5.9	82	0.34	10.53	n/a	0.18	33.72	27.7	8.24	6.60	0.11	<1	<1
O1-1S-8m	11/17/04	906	0.11	3.4	0.17	2.4	0.26	3.6	2.3	65	0.36	11.2	5.8	81	0.35	10.84	n/a	0.08	33.60	27.1	8.27	6.59	0.03	<1	<1
O1-1S-8m	1/13/05	1030	0.07	2.2	0.21	2.9	0.08	1.1	3.6	102	0.27	8.4	4.1	57	0.28	8.67	n/a	0.06	35.852	25.2	8.33	6.78	0.09	<1	<1
O1-1S-8m	4/11/05	1026	0.24	7.4	1.54	21.6	0.28	3.9	11.2	315	0.41	12.7	6.3	88	0.42	13.01	n/a	0.12	34.232	25.2	8.30	7.08	0.08	<1	1
Geomean	**FY '05**			**3.5**		**3.2**		***2.6***				**10.6**		**76**				***0.10***					**0.07**		

NELHA Water Quality Laboratory

Transect 1, Station 1

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O1-1S-8m	7/20/05	1012	0.06	1.9	0.02	0.3	0.32	4.5	1.4	39	0.35	10.8	4.4	61	0.35	10.84	n/a	0.08	34.756	26.6	8.25	6.67	0.01	<1	<1
O1-1S-8m	10/11/05	900	0.06	1.9	0.07	1.0	0.08	1.1	4.0	113	0.31	9.6	3.6	51	0.31	9.60	1.26	0.17	34.938	26.5	8.28	6.64	0.12	<1	1
O1-1S-8m	3/13/06	944	0.26	8.1	3.20	44.8	0.28	3.9	20.3	571	0.55	17.0	8.7	122	0.54	16.73	n/a	0.19	34.266	24.4	8.28	7.23	0.12	<1	<1
O1-1S-8m	5/15/06	943	0.42	13.0	5.14	72.0	0.67	9.4	39.3	1103	0.76	23.5	10.2	143	0.89	27.57	1.12	0.24	33.529	25.0	8.26	7.12	0.84	<1	<1
Geomean	**FY '06**			**4.4**		***5.5***		***3.7***				***14.3***		**86**				***0.16***					**0.10**		
O1-1S-8m	8/14/06	937	0.15	4.6	0.40	5.6	0.32	4.5	4.5	125	0.44	13.6	5.8	81	0.41	12.70	1.10	0.13	34.545	26.5	8.26	7.19	0.08	<1	<1
O1-1S-8m	11/1/06	943	0.17	5.3	0.99	13.9	0.88	12.3	9.9	279	0.37	11.5	7.1	99	0.43	13.32	1.30	0.22	34.598	26.8	8.27	7.12	0.23	<1	<1
O1-1S-8m	2/12/07	1005	0.17	5.3	0.97	13.6	0.46	6.4	7.3	205	0.41	12.7	6.3	88	0.41	12.70	1.13	0.44	34.414	24.5	8.23	6.81	0.19	<1	<1
O1-1S-8m	4/9/07	938	0.13	4.0	0.15	2.1	0.39	5.5	5.2	145	0.36	11.2	4.8	67	0.54	16.73	0.98	0.49	34.658	25.1	8.21	6.62	0.02	<1	<1
Geomean	**FY '07**			**4.8**		***6.9***		***6.6***				**12.2**		**83**				***0.28***					**0.09**		
T1-1m	9/26/07	855	0.19	6.0	0.81	11.3	0.34	4.7	9.3	260	0.43	13.4	7.0	98				0.08	34.750	26.8	8.10	6.12	0.12		
T1-1m	12/13/07	1030	0.06	1.9	0.61	8.6			6.8	190	0.43	13.4	7.0	99				0.19	34.672	25.7	8.36	6.43	0.23		
T1-1m	3/10/08	930	0.02	0.7	0.26	3.7	0.06	0.8	3.4	96	0.41	12.6	7.9	111				0.09	34.893	24.9	8.09	6.51	0.24		
T1-1m	6/5/08	941	0.12	3.8	0.19	2.7	0.16	2.2	12.6	354	0.30	9.3	11.9	167				0.1	34.817	24.9	8.09	6.81	0.21		
Geomean	**FY '08**			**2.3**		***5.6***		**2.0**				**12.0**		***115***				***0.11***					**0.19**		
T1-1m	9/22/08	1037	0.07	2.1	0.09	1.3	0.41	5.8	2.1	59	0.32	9.9	5.4	76				0.10	34.750	26.6	7.95	6.68	0.02		
T1-1m	11/17/08	916	0.13	4.1	0.23	3.2	0.28	3.9	2.7	75	0.29	8.9	4.1	58				0.15	34.950	25.7	8.10	5.39	0.02		
T1-1m	2/9/09	913	0.19	6	0.30	4.2	0.12	1.7	2.1	60	0.32	9.8	4.6	65				0.27	34.961	24.9	8.06	6.28	0.01		
T1-1m	4/13/09	907	0.29	9	0.36	5.1	0.33	4.6	3.7	105	0.60	18.7	5.7	80				0.20	34.958	23.9	8.05	6.06	0.05		
Geomean	**FY '09**			**4.6**		**3.1**		***3.6***				**11.3**		**69**				***0.17***					**0.02**		
T1-1m	9/9/09	856	0.35	10.7	0.36	5.1	0.16	2.2	9.8	276	0.65	20	7.2	101				0.11	35.08	26.8	8.22	6.01	0.06		
T1-1m	11/23/09	928	0.02	0.76	0.33	4.6	0.04	0.6	33.5	940	0.31	9.7	6.4	90				0.08	35.17	25.3	8.25	6.13	0.18		
T1-1m	2/23/10	928	0.16	5.1	0.44	6.1	0.39	5.5	42.7	1199	0.35	10.8	5.1	71				0.10	35.03	24.6	8.21	6.23	0.32		
T1-1m	5/25/10	1056	0.05	1.5	0.12	1.7	0.12	1.7	10.3	290	0.58	18.1	6.2	87				0.08	34.96	25.1	8.25	7.01	0.09		
Geomean	**FY '10**			**2.8**		**3.9**		**1.9**				***14.0***		**87**				**0.09**					**0.13**		
T1-1m	8/10/10	937	0.03	0.9	0.49	6.8	0.26	3.7	5.8	164	0.29	8.9	3.3	46				0.08	34.84	25.96	8.24	6.45	0.07		
T1-1m	11/8/10	927	0.02	0.76	0.29	4	0.16	2.2	5.3	149	0.38	11.7	4.7	65				0.18	35.25	26.42	8.24	6.18	0.04		
T1-1m	1/11/11	935	0.13	4.1	0.21	2.9	0.03	0.4	3.3	93	0.44	13.5	3.9	55				0.09	35.01	24.98	8.21	6.42	0.08		
T1-1m	4/26/11	935	0.18	5.5	0.35	4.9	0.14	1.9	6.8	192	0.48	14.9	3.5	49				0.08	34.95	25.06	8.23	6.46	0.14		
Geomean	**FY '11**			**2.0**		**4.4**		**1.6**				**12.0**		**53**				***0.10***					**0.07**		

NELHA Water Quality Laboratory

Transect 1, Station 1

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T1-1m	7/26/11	944	0.21	6.4	0.38	5.3	0.10	1.4	2.8	80	0.52	16.1	4.1	58				0.05	34.76	25.86	8.25	6.36	0.09		
T1-1m	10/18/11	927	0.04	1.1	0.29	4.1	0.26	3.7	2.3	64	0.30	9.4	5.6	79				0.09	35.04	26.51	8.19	6.45	0.11		
T1-1m	1/25/12	949	0.11	3.4	0.26	3.6	0.08	1.1	3.1	86	0.42	13.1	4.7	66				0.10	35.00	24.65	8.18	6.72	0.11		
T1-1m	4/24/12	1014	0.14	4.3	0.24	3.4	0.29	4.1	2.6	73	0.43	13.2	3.5	50				0.11	35.10	24.71	8.20	6.56	0.13		
Geomean	**FY '12**			**3.2**		**4.0**		**2.2**				***12.7***		**62**				**0.08**					**0.11**		
T1-1m	7/24/12	929	0.04	1.1	0.24	3.3	0.19	2.6	1.1	32	0.67	20.8	7.3	103				0.08	35.08	26.33	8.22	6.87	0.04		
T1-1m	11/27/12	931	0.12	3.7	1.05	14.7	0.37	5.2	7.9	221	0.45	13.9	5.7	80				0.07	35.04	25.00	8.20	6.83	0.30		
T1-1m	1/24/13	938	0.10	3.1	0.24	3.3	0.31	4.3	2.0	55	0.43	13.4	7.2	101				0.08	35.02	24.65	8.21	6.40	0.09		
T1-1m	4/16/13	939	0.17	5.3	0.40	5.6	0.08	1.1	1.0	27	0.50	15.4	6.3	89				0.07	35.15	24.87	8.21	7.04	0.08		
Geomean	**FY '13**			**2.9**		***5.5***		***2.8***				***15.6***		**93**				**0.07**					**0.10**		
T1-1m	8/1/13	850	0.08	2.4	0.29	4.1	0.24	3.3	5.0	142	0.43	13.3	5.1	71				0.10	35.08	26.1	8.23	6.76	0.13		
T1-1m	10/29/13	928	0.10	3.1	0.35	4.9	0.36	5.0	2.5	70	0.55	16.9	9.3	130				0.04	35.28	27.0	8.25	6.21	0.17		
T1-1m	2/4/14	928	0.13	4.1	0.47	6.6	1.09	15.2	3.5	97	0.44	13.5	8.9	125				0.02	34.91	25.2	8.22	6.33	0.15		
T1-1m	5/6/14	923	0.17	5.4	0.50	7.0	0.39	5.5	3.7	105	0.51	15.7	9.2	129				0.09	34.69	25.8	8.21	6.59	0.16		
Geomean	**FY '14**			**3.6**		***5.5***		***6.1***				***14.8***		***110***				**0.05**					**0.15**		
T1-1m	8/5/14	942	0.21	6.5	0.26	3.6	0.51	7.2	1.4	39	0.42	13.0	9.3	130				0.10	34.98	26.8	8.20	6.28	0.17		
T1-1m	11/17/14	1120	0.17	5.2	0.19	2.7	0.31	4.3	0.1	3	0.55	16.9	9.3	130				0.14	35.02	27.0	8.21	7.00	0.10		
T1-1m	3/3/15	931	0.08	2.5	0.86	12.1	0.31	4.3	4.1	116	0.36	11.2	7.7	108				0.09	34.78	25.5	8.15	6.85	0.18		
T1-1m	6/16/15	1037	0.17	5.4	1.32	18.5	0.65	9.1	8.0	226	0.29	9.1	7.6	106				0.08	33.88	26.4	8.21	6.33	0.20		
Geomean	**FY '15**			**4.6**		***6.8***		***5.9***				**12.2**		***118***				***0.10***					**0.16**		
T1-1m	8/26/15	1138	0.16	4.9	0.24	3.4	0.31	4.3	7.1	200	0.27	8.5	5.4	75				0.05	34.48	28.4	8.20	6.06	0.35		
T1-1m	11/17/15	938	0.18	5.6	0.42	5.9	0.16	2.3	6.2	174	0.54	16.8	5.5	77				0.07	33.81	27.4	8.21	6.53	0.20		
T1-1m	3/1/16	938	0.13	4.1	0.12	1.7	0.39	5.4	0.6	18	0.52	16.2	7.1	100				0.08	34.75	25.4	8.27	5.82	0.07		
T1-1m	5/3/16	914	0.15	4.7	0.64	8.9	0.24	3.4	4.6	129	0.40	12.3	9.9	138				0.08	34.52	25.5	8.34	6.38	0.22		
Geomean	**FY '16**			**4.8**		**4.2**		***3.7***				***13.0***		**94**				**0.07**					**0**		
T1-1m	7/6/16	942	0.15	4.7	0.29	4.0	0.34	4.7	5.1	143	0.56	17.2	7.2	101				0.12	34.54	26.8	8.28	6.68	0.24		
T1-1m	12/20/16	935	0.04	1.2	0.28	3.9	0.05	0.7	2.2	62	0.34	10.6	3.5	49				0.06	34.69	25.6	8.22	5.78	0.33		
T1-1m	2/28/17	847	0.01	0.4	0.19	2.7	0.04	0.6	0.5	15	0.32	9.9	4.5	63				0.11	34.64	24.7	8.21	8.74	0.11		
T1-1m	5/9/17	1004	0.01	0.2	0.66	9.3	0.16	2.2	3.2	91	0.27	8.3	3.8	54				0.15	34.60	25.8	8.19	4.82	0.10		
Geomean	**FY '17**			**0.8**		**4.4**		**1.4**				**11.1**		**64**				***0.10***					**0**		

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Transect 1, Station 1

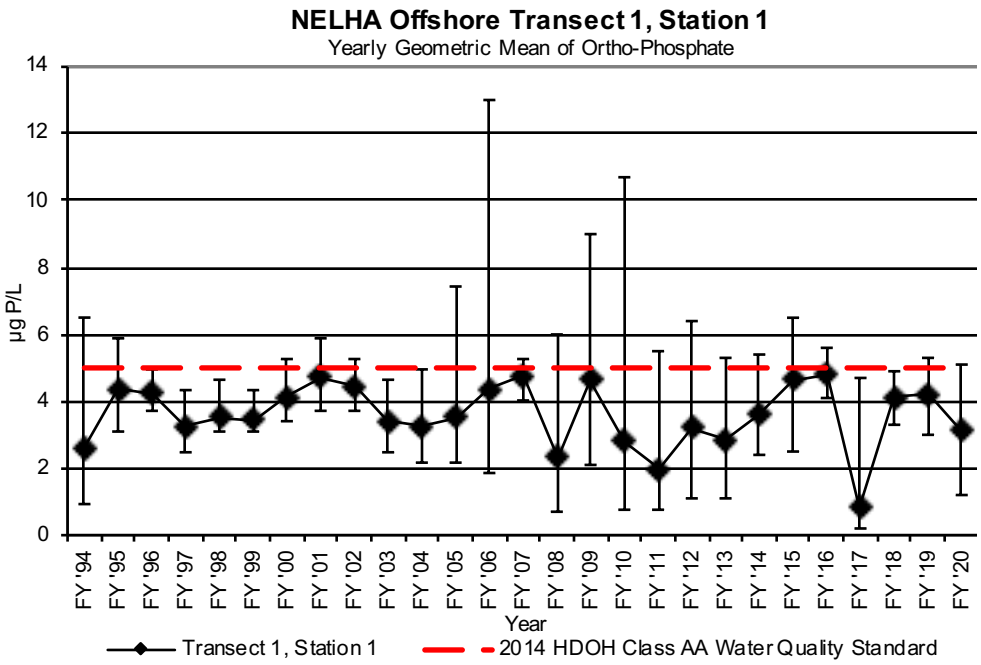
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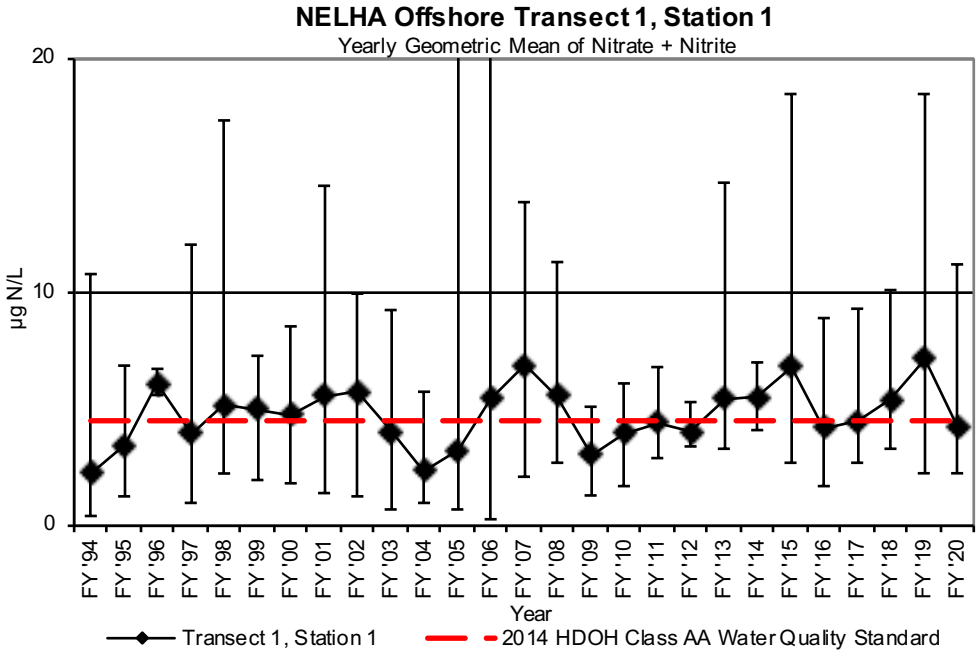
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T1-1m	9/27/17	939	0.16	4.9	0.29	4.1	0.26	***3.7***	1.0	28	0.41	***12.8***	3.3	47				0.10	34.74	27.8	8.25	4.67	0.13		
T1-1m	11/28/17	1026	0.13	4.0	0.44	***6.1***	0.56	***7.8***	3.4	96	0.42	***12.9***	5.5	77				***0.11***	35.05	26.1	8.16	5.09	0.21		
T1-1m	1/30/18	1008	0.11	3.3	0.24	3.3	0.17	2.4	2.4	66	0.36	11.3	3.7	52				0.10	34.81	24.6	8.16	5.58	0.27		
T1-1m	5/16/18	1011	0.14	4.4	0.72	***10.1***	0.14	2.0	7.4	207	0.40	12.4	4.0	56				0.02	34.70	25.5	8.14	6.21	0.14		
Geomean	**FY '18**			**4.1**		***5.4***		***3.4***				**12.3**		**57**				**0.07**					**0**		
T1-1m	9/24/18	927	0.10	3.0	0.16	2.3	0.28	3.9	4.2	119	0.39	12.1	5.1	72				0.12	34.52	27.7	8.19	5.33	0.15		
T1-1m	11/13/18	1021	0.13	4.1	1.32	18.5	0.29	4.1	5.1	143	0.54	16.7	5.8	81				0.12	34.86	27.3	8.22	5.06	0.24		
T1-1m	1/22/19	1009	0.17	5.3	0.86	12.0	0.16	2.3	6.8	191	0.44	13.5	3.7	52				0.10	34.81	24.9	8.24	5.97	0.22		
T1-1m	4/16/19	959	0.15	4.7	0.37	5.2	0.24	3.3	2.9	83	0.49	15.2	3.3	47				0.05	35.61	25.7	8.11	7.56	0.13		
Geomean	**FY '19**			**4.2**		***7.1***		***3.3***				***14.3***		**61**				**0.09**					**0**		
T1-1m	8/13/19	1140	0.04	1.2	0.16	2.3	0.35	4.9	1.1	32	0.25	7.8	2.6	37				0.09	35.69	28.4	8.20	6.81	0.24		
T1-1m	11/19/19	1139	0.12	3.8	0.16	2.3	0.21	3.0	0.8	23	0.37	11.4	2.7	37				0.11	34.80	27.5	8.23	6.57	0.16		
T1-1m	1/22/20	932	0.16	5.1	0.41	5.7	0.09	1.3	3.9	108	0.45	14.0	4.0	56				0.04	34.94	25.0	8.21	6.84	0.15		
T1-1m	6/24/10	1010	0.14	4.2	0.80	11.2	0.21	2.9	7.3	206	0.34	10.5	4.2	59				0.08	35.32	25.8	8.14	7.02	0.36		
Geomean	**FY '20**			**3.1**		**4.3**		***2.7***				**10.7**		**46**				**0.08**					**0**		

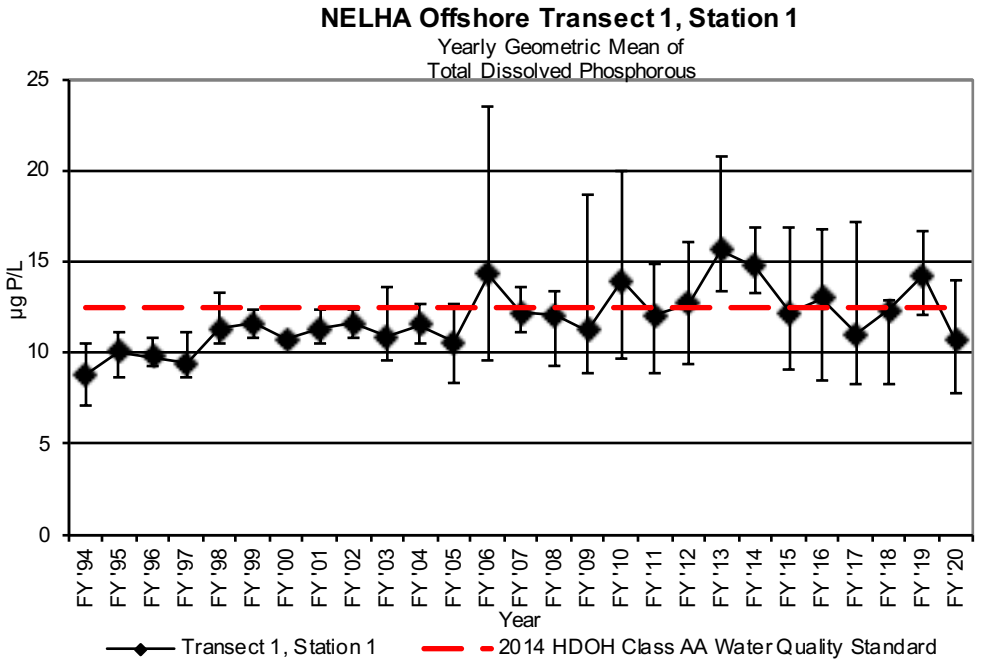
NELHA Water Quality Laboratory

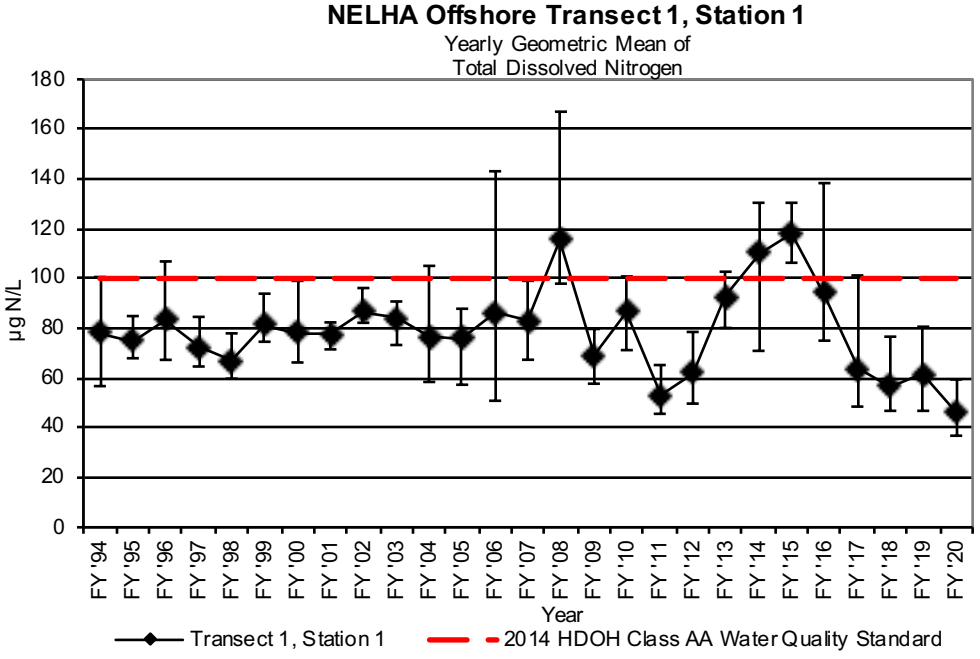
Transect 1, Station 1

7/27/93 - 7/14/20





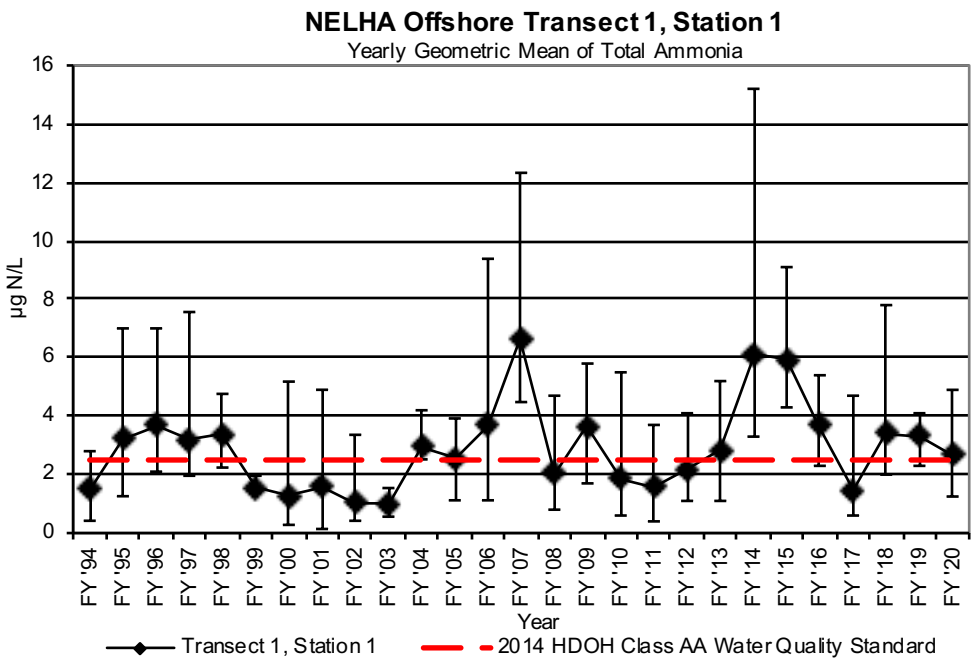


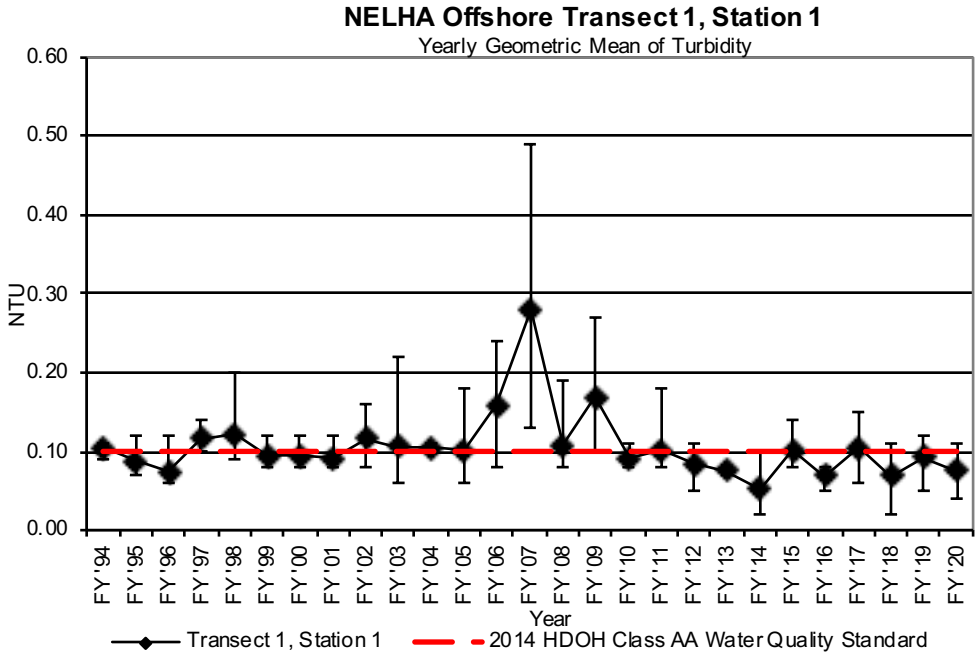


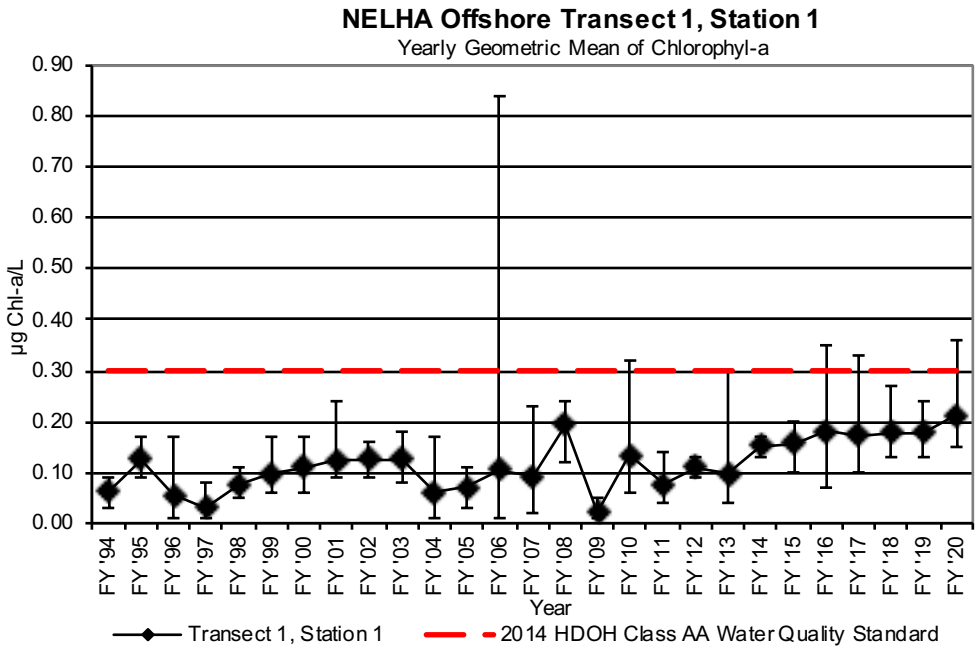
NELHA Water Quality Laboratory

Transect 1, Station 1

7/27/93 - 7/14/20







NELHA Water Quality Laboratory

Transect 1, Station 2

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3				TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-2S-23m	7/27/93	1201	0.10	3.1	0.09	1.3	0.27	3.8	2.0	55					0.10	34.502	26.6			
O1-2S-23m	12/7/93	1058	0.06	1.9	0.15	2.1	0.11	1.5	3.5	99					0.11	34.805	25.9			
O1-2S-23m	3/16/94	1032	0.19	5.9	0.63	8.8	0.22	3.1	8.8	248			3.81	53.37	0.12	34.330	24.7			
O1-2S-23m	6/14/94	1021	0.12	3.7	0.10	1.4	0.01	0.1	2.7	75					0.08	34.575	25.4			
Geomean	**FY '94**			**3.3**		**2.4**		**1.3**							***0.10***					
O1-2S-23m	9/15/94	1036	0.10	3.1	0.14	2.0	0.14	2.0	3.8	106					0.12	34.596	27.7			
O1-2S-23m	11/16/94	932	0.16	5.0	0.50	7.0	0.52	7.3	6.1	170					0.07	34.490	26.1			
O1-2S-23m	3/21/95	1203	0.27	8.4	0.13	1.8	0.16	2.2	3.4	94					0.09	34.210	25.0			
O1-2S-23m	6/26/95	948	0.14	4.3	0.98	13.7	0.58	8.1	8.5	239					0.07	34.384	26.7			
Geomean	**FY '95**			**4.9**		**4.3**		***4.0***							**0.09**					
O1-2S-23m	9/25/95	900	0.12	3.7	0.54	7.6	0.22	3.1	7.5	210					0.14	34.373	27.1			
O1-2S-23m	11/13/95	1147	0.17	5.3	0.92	12.9	0.53	7.4	13.3	373					0.07	34.039	27.0			
O1-2S-23m	3/11/96	932	0.13	4.0	0.28	3.9	0.31	4.3	2.4	69					0.07	34.210	25.0			
O1-2S-23m	5/13/96	856	0.12	3.7	0.42	5.9	0.19	2.7	6.9	193					0.07	34.162	26.5			
Geomean	**FY '96**			**4.1**		***6.9***		***4.0***							**0.08**					
O1-2S-23m	7/30/96	850	0.09	2.8	0.38	5.3	0.11	1.5	4.8	135					0.08	34.420	27.8			
O1-2S-23m	10/1/96	1203	0.08	2.5	0.26	3.6	0.53	7.4	3.9	109					0.09	34.659	28.0			
O1-2S-23m	1/6/97	1211	0.08	2.5	0.08	1.1	0.13	1.8	2.5	70					0.17	34.711	25.5			
O1-2S-23m	4/21/97	1200	0.10	3.1	0.44	6.2	0.23	3.2	2.0	55					0.10	34.556	26.5			
Geomean	**FY '97**			**2.7**		**3.4**		***2.9***							***0.11***					
O1-2S-23m	8/18/97	1140	0.10	3.1	0.15	2.1	0.21	2.9	4.4	122					0.09	34.608	26.9			
O1-2S-23m	10/6/97	1159	0.10	3.1	0.16	2.2	0.33	4.6	10.8	304					0.09	34.673	27.4			
O1-2S-23m	3/3/98	1201	0.10	3.1	0.45	6.3	0.23	3.2	5.3	149					0.07	34.955	25.1			
O1-2S-23m	5/4/98	1113	0.18	5.6	1.74	24.4	0.16	2.2	19.0	534					0.09	34.508	23.8			
Geomean	**FY '98**			**3.6**		***5.2***		***3.1***							**0.08**					
O1-2S-23m	7/6/98	1214	0.10	3.1	0.16	2.2	0.10	1.4	3.9	110					0.10	35.009	26.5			
O1-2S-23m	10/5/98	1144	0.12	3.7	0.69	9.7	0.15	2.1	6.1	172					0.08	34.977	27.4			
O1-2S-23m	1/13/99	1153	0.10	3.1	0.20	2.8	0.14	2.0	4.5	128					0.08	35.038	25.2			
O1-2S-23m	4/12/99	922	0.15	4.6	0.65	9.1	0.08	1.1	8.8	248					0.07	34.553	24.0			
Geomean	**FY '99**			**3.6**		***4.8***		**1.6**							**0.08**					

NELHA Water Quality Laboratory

Transect 1, Station 2

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$				TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-2S-23m	7/6/99	926	0.10	3.1	0.21	2.9	0.08	1.1	2.6	72					0.10	34.940	25.6			
O1-2S-23m	10/4/99	1016	0.15	4.6	0.63	8.8	0.13	1.8	8.0	225					0.08	34.803	25.9			
O1-2S-23m	1/4/00	1208	0.13	4.0	1.23	17.2	0.38	5.3	11.2	316					0.08	34.866	24.6			
O1-2S-23m	4/17/00	1000	0.14	4.3	0.13	1.8	0.02	0.3	6.4	179					0.06	34.648	24.2			
Geomean	**FY '00**			**4.0**		***5.3***		**1.3**							**0.08**					
O1-2S-23m	7/24/00	1230	0.12	3.7	0.55	7.7	0.06	0.8	8.0	224					0.08	34.730	27.3			
O1-2S-23m	10/30/00	1247	0.14	4.3	0.29	4.1	0.28	3.9	8.5	239					0.07	34.902	27.2			
O1-2S-23m	2/26/01	1228	0.19	5.9	0.97	13.6	0.19	2.7	13.8	386					0.11	34.425	24.9			
O1-2S-23m	5/7/01	1017	0.13	4.0	0.49	6.9	0.30	4.2	5.2	145					0.07	34.805	24.6			
Geomean	**FY '01**			**4.4**		***7.3***		**2.5**							**0.08**					
O1-2S-23m	8/21/01	1151	0.15	4.6	0.50	7.0	0.07	1.0	5.1	143					0.09	34.717	26.7			
O1-2S-23m	10/8/01	947	0.11	3.4	0.20	2.8	0.05	0.7	4.6	128					0.07	34.941	27.2			
O1-2S-23m	3/5/02	1101	0.14	4.3	0.42	5.9	0.05	0.7	4.3	121					0.12	34.669	24.3			
O1-2S-23m	4/17/02	1121	0.10	3.1	0.22	3.1	0.24	3.4	4.7	131					0.09	34.457	25.6			
Geomean	**FY '02**			**3.8**		**4.3**		**1.1**							**0.09**					
O1-2S-23m	7/8/02	1016	0.17	5.3	0.16	2.2	0.17	2.4	4.9	138					0.06	34.613	26.5			
O1-2S-23m	10/9/02	1104	0.07	2.2	0.22	3.1	0.08	1.1	2.7	76					0.06	34.941	27.0			
O1-2S-23m	3/11/03	956	0.11	3.4	1.46	20.4	0.03	0.4	7.7	217					0.09	34.788	24.5			
O1-2S-23m	4/22/03	1056	0.08	2.5	0.45	6.3	0.07	1.0	3.6	101					0.07	34.991	25.2			
Geomean	**FY '03**			**3.1**		***5.5***		**1.0**							**0.07**					
O1-2S-23m	8/18/03	1116	0.05	1.5	0.10	1.4	0.30	4.2	1.9	53					0.11	34.875	28.0			
O1-2S-23m	10/29/03	1033	0.09	2.8	0.03	0.4	0.18	2.5	2.8	78					0.10	34.85	27.4			
O1-2S-23m	3/11/04	944	0.15	4.6	0.66	9.2	0.15	2.1	3.5	98					n/a	34.275	25.5			
O1-2S-23m	5/20/04	936	0.11	3.4	0.13	1.8	0.21	2.9	2.6	72					n/a	33.54	26.5			
Geomean	**FY '04**			**2.9**		**1.8**		***2.8***							***0.10***					
O1-2S-23m	9/20/04	931	0.08	2.5	0.08	1.1	0.25	3.5	1.8	49					0.08	33.71	27.7			
O1-2S-23m	11/17/04	902	0.11	3.4	0.45	6.3	0.24	3.4	4.3	122					0.10	33.63	27.1			
O1-2S-23m	1/13/05	1025	0.07	2.2	0.35	4.9	0.06	0.8	3.7	103					0.08	34.840	25.1			
O1-2S-23m	4/11/05	1018	0.21	6.5	2.49	34.9	0.24	3.4	16.9	474					0.08	34.821	25.2			
Geomean	**FY '05**			**3.3**		***5.9***		**2.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 1, Station 2

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$				TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-2S-23m	7/20/05	1005	0.05	1.5	0.02	0.3	0.12	1.7	1.3	37					0.09	34.739	26.2			
O1-2S-23m	10/11/05	853	0.05	1.5	0.02	0.3	0.14	2.0	2.3	64					0.15	34.919	26.5			
O1-2S-23m	3/13/06	937	0.16	5.0	1.43	20.0	0.28	3.9	9.8	274					0.12	34.620	24.4			
O1-2S-23m	5/15/06	937	0.21	6.5	2.83	39.6	0.33	4.6	25.7	722					0.20	33.990	24.9			
Geomean	**FY '06**			**3.0**		**2.8**		***2.8***							***0.13***					
O1-2S-23m	8/14/06	930	0.27	8.4	0.65	9.1	0.33	4.6	6.5	182					0.12	34.504	26.5			
O1-2S-23m	11/1/06	934	0.13	4.0	0.75	10.5	0.58	8.1	8.2	231					0.18	34.660	26.7			
O1-2S-23m	2/12/07	958	0.19	5.9	1.53	21.4	0.46	6.4	10.8	303					0.17	34.230	24.5			
O1-2S-23m	4/9/07	932	0.12	3.7	0.32	4.5	0.23	3.2	4.7	131					0.20	34.649	25.0			
Geomean	**FY '07**			***5.2***		***9.8***		***5.3***							***0.16***					
T1-10m	9/26/07	907	0.29	9.0	2.71	37.9	0.34	4.7	22.0	619	0.60	18.6	9.5	133	0.12	33.972	26.8	8.10	6.39	0.32
T1-10m	12/13/07	1032	0.07	2.1	0.39	5.5			13.2	370	0.37	11.6	7.0	99	0.19	34.638	25.7	8.32	6.33	0.21
T1-10m	3/10/08	932	0.02	0.7	0.64	8.9	0.06	0.8	12.8	360	0.42	13.1	10.2	143	0.15	34.867	25.0	8.1	6.57	0.25
T1-10m	6/5/08	943	0.10	3.2	0.35	4.9	0.16	2.2	10.3	290	0.28	8.8	9.2	129	0.11	34.8026	25.0	8.08	6.73	0.22
Geomean	**FY '08**			**2.6**		***9.8***		**2.0**				***12.6***		***125***	***0.14***					**0.25**
T1-10m	9/22/08	1041	0.06	1.9	0.12	1.7	0.04	0.6	2.5	70	0.25	7.7	5.0	70	0.12	34.832	26.6	7.99	6.53	0.06
T1-10m	11/17/08	923	0.17	5.3	0.23	3.2	0.14	1.9	3.3	93	0.36	11.3	4.7	66	0.08	34.951	25.6	8.16	5.30	0.07
T1-10m	2/9/09	918	0.10	3.1	0.10	1.4	0.12	1.7	1.6	46	0.22	6.8	4.9	69	0.18	34.984	24.9	8.06	6.23	0.01
T1-10m	4/13/09	912	0.17	5.2	0.21	2.9	1.25	17.5	2.7	75	0.40	12.5	6.7	94	0.10	34.985	23.9	8.10	6.01	0.04
Geomean	**FY '09**			**3.6**		**2.2**		**2.4**				**9.3**		**74**	***0.11***					**0.04**
T1-10m	9/9/09	911	0.30	9.3	0.27	3.8	0.10	1.4	13.3	375	0.54	16.7	7.4	104	0.14	35.20	26.6	8.23	5.76	0.04
T1-10m	11/23/09	934	0.03	0.8	0.24	3.4	0.14	1.9	19.1	536	0.34	10.4	6.8	95	0.08	35.19	25.3	8.27	6.13	0.2
T1-10m	2/23/10	942	0.17	5.4	0.43	6	0.40	5.6	31.5	886	0.35	10.9	4.9	69	0.09	35.04	24.6	8.21	6.23	0.32
T1-10m	5/25/10	1100	0.04	1.2	0.12	1.7	0.12	1.7	14.6	411	0.36	11.2	5.2	73	0.07	34.97	25.1	8.23	7.02	0.09
Geomean	**FY '10**			**2.6**		**3.4**		**2.2**				**12.1**		**84**	**0.09**					**0.12**
T1-10m	8/10/10	942	0.04	1.2	0.58	8.1	0.06	0.9	4.8	135	0.29	9	3.3	46	0.08	34.84	25.97	8.25	6.41	0.07
T1-10m	11/8/10	931	0.01	0.3	0.17	2.4	0.14	2.0	2.3	65	0.35	10.7	3.4	48	0.04	35.26	26.42	8.25	6.15	0.05
T1-10m	1/11/11	940	0.13	3.9	0.22	3.1	0.01	0.1	4.4	123	0.42	12.9	3.6	51	0.09	35.01	24.98	8.21	6.41	0.09
T1-10m	4/26/11	940	0.14	4.4	0.44	6.2	0.07	1.0	8.3	234	0.45	14	3.9	55	0.09	34.94	25.03	8.21	6.53	0.12
Geomean	**FY '11**			**1.6**		**4.4**		**0.7**				**11.5**		**50**	**0.07**					**0.08**

NELHA Water Quality Laboratory

Transect 1, Station 2

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-10m	7/26/11	952	0.19	5.9	0.35	4.9	0.12	1.7	2.3	66	0.47	14.6	5.0	70	0.08	34.78	25.87	8.24	6.46	0.10
T1-10m	10/18/11	930	0.04	1.2	0.29	4.1	0.29	4	2.7	76	0.30	9.3	5.1	72	0.07	35.04	26.50	8.20	6.59	0.10
T1-10m	1/25/12	953	0.11	3.4	0.36	5.1	0.16	2.2	4.4	124	0.43	13.3	5.6	79	0.10	34.95	24.64	8.19	6.84	0.06
T1-10m	4/24/12	1019	0.15	4.5	0.45	6.3	0.24	3.4	4.4	122	0.41	12.8	4.2	59	0.08	35.06	24.70	8.23	6.63	0.20
Geomean	**FY '12**			**3.2**		***5.0***		***2.7***				**12.3**		**70**	**0.08**					**0.10**
T1-10m	7/24/12	935	0.04	1.1	0.64	9	0.48	6.7	1.5	41	0.36	11	11.0	155	0.06	35.00	26.33	8.23	6.86	0.03
T1-10m	11/27/12	936	0.12	3.6	1.20	16.8	0.32	4.5	8.6	242	0.44	13.5	6.2	87	0.08	35.04	25.03	8.20	6.82	0.30
T1-10m	1/24/13	942	0.08	2.5	0.18	2.5	0.17	2.4	1.5	43	0.44	13.5	6.5	91	0.07	35.02	24.65	8.20	6.27	0.13
T1-10m	4/16/13	944	0.15	4.6	0.38	5.3	0.17	2.4	1.0	28	0.48	15	6.9	97	0.03	35.16	24.85	8.21	7.00	0.06
Geomean	**FY '13**			**2.6**		***6.7***		***3.6***				***13.2***		***104***	**0.06**					**0.09**
T1-10m	8/1/13	854	0.04	1.3	0.24	3.3	0.06	0.9	4.6	129	0.39	12.2	5.6	79	0.07	35.00	26.1	8.26	6.79	0.11
T1-10m	10/29/13	931	0.14	4.3	0.34	4.8	0.35	4.9	2.5	69	0.43	13.2	6.0	84	0.07	35.28	27.0	8.24	6.19	0.16
T1-10m	2/4/14	932	0.13	4.0	0.41	5.8	0.64	8.9	3.0	83	0.39	12.1	5.7	80	0.02	34.92	25.2	8.22	6.35	0.16
T1-10m	5/6/14	929	0.16	5.0	0.50	7.0	0.47	6.6	3.6	103	0.46	14.1	5.9	83	0.05	34.69	25.8	8.21	6.54	0.07
Geomean	**FY '14**			**3.3**		***5.0***		***4.0***				***12.9***		**81**	**0.05**					**0.12**
T1-10m	8/5/14	946	0.21	6.5	0.26	3.7	0.37	5.2	2.1	59	0.55	17.0	5.3	74	0.14	34.96	26.8	8.21	5.99	0.16
T1-10m	11/17/14	1123	0.17	5.2	0.16	2.2	0.32	4.5	0.1	2	0.43	13.2	6.0	84	0.04	35.02	27.1	8.21	7.02	0.19
T1-10m	3/3/15	935	0.05	1.4	0.56	7.8	0.19	2.7	2.7	76	0.32	9.8	7.6	106	0.04	34.80	25.5	8.16	6.78	0.18
T1-10m	6/16/15	1041	0.13	4.1	1.09	15.2	0.13	1.8	6.9	193	0.41	12.7	5.9	82	0.06	33.97	26.5	8.21	6.07	0.25
Geomean	**FY '15**			**3.7**		***5.6***		***3.3***				***12.9***		**86**	**0.06**					**0.19**
T1-10m	8/26/15	1144	0.13	3.9	0.26	3.7	0.31	4.4	7.3	205	0.13	4.1	5.4	76	0.04	34.49	28.4	8.21	6.08	0.32
T1-10m	11/17/15	943	0.15	4.5	0.43	6.0	0.07	1.0	5.8	162	0.56	17.3	6.3	89	0.06	33.86	27.4	8.22	6.17	0.15
T1-10m	3/1/16	944	0.15	4.5	0.13	1.8	0.33	4.6	0.1	2	0.48	14.9	5.6	79	0.07	34.77	25.4	8.24	5.71	0.08
T1-10m	5/3/16	921	0.15	4.7	0.80	11.2	0.21	2.9	4.1	115	0.34	10.6	5.8	81	0.08	34.56	25.5	8.27	6.22	0.25
Geomean	**FY '16**			**4.4**		***4.6***		***2.8***				**10.3**		**81**	**0.06**					**0.18**
T1-10m	7/6/16	953	0.13	3.9	0.14	2.0	0.39	5.4	3.1	87	0.57	17.7	5.3	74	0.09	34.49	26.8	8.25	6.78	0.23
T1-10m	12/20/16	948	0.08	2.4	0.39	5.4	0.05	0.7	1.9	54	0.33	10.3	3.3	47	0.04	34.69	25.6	8.23	5.47	0.21
T1-10m	2/28/17	853	0.00	0.1	0.06	0.9	0.04	0.5	0.0	0	0.28	8.6	3.5	49	0.12	34.69	24.7	8.21	9.04	0.08
T1-10m	5/9/17	1009	0.01	0.2	0.64	9.0	0.08	1.1	3.8	106	0.25	7.8	3.5	49	0.15	34.58	25.8	8.20	4.83	0.08
Geomean	**FY '17**			**0.7**		**3.1**		**1.2**				**10.5**		**54**	**0.09**					**0.13**

NELHA Water Quality Laboratory

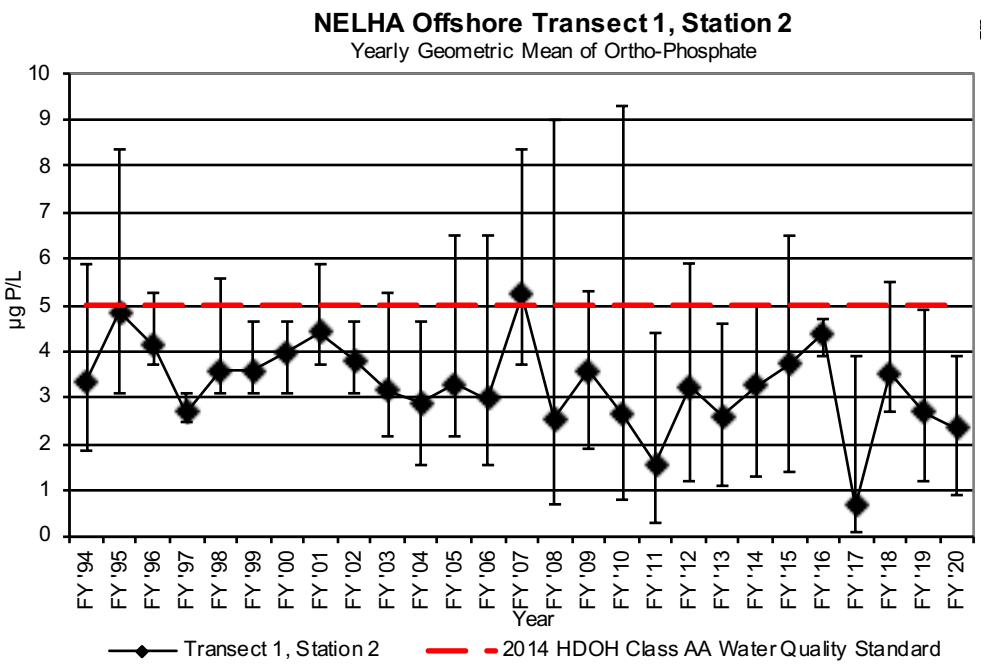
Transect 1, Station 2

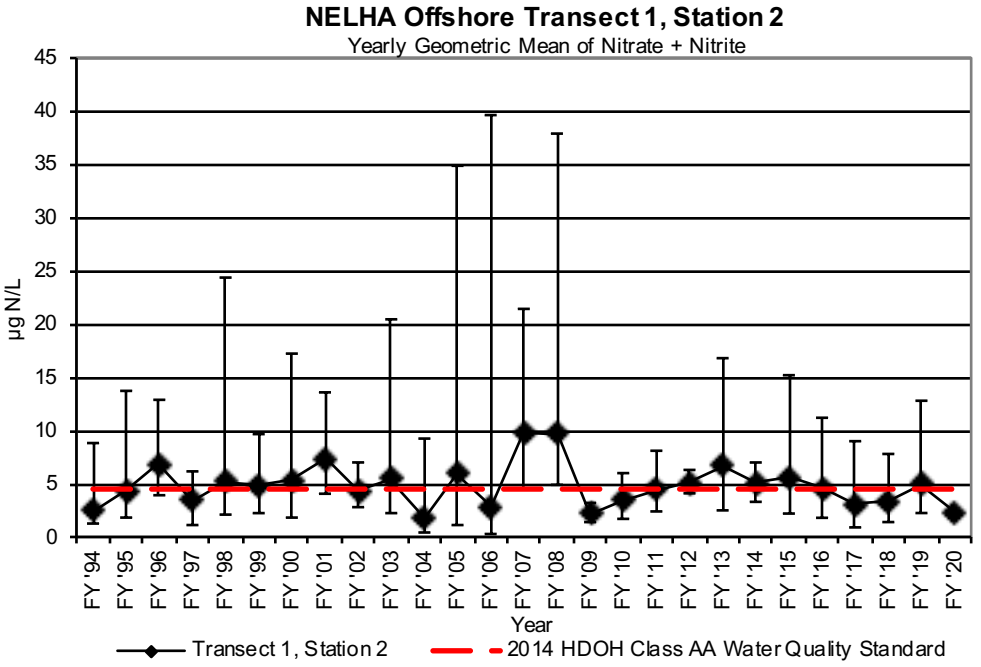
7/27/93 - 7/14/20

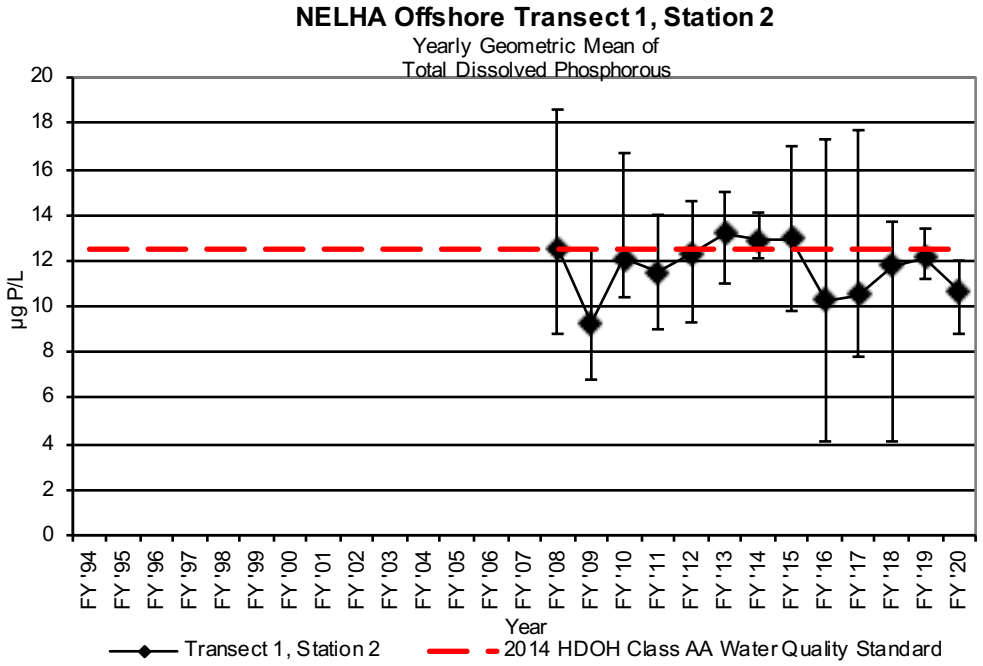
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3			TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**			**12.5**		**100**	**0.10**					**0.30**
T1-10m	9/27/17	944	0.18	5.5	0.30	4.2	0.27	3.8	1.4	39	0.44	13.7	3.5	50	0.09	34.75	27.8	8.20	4.46	0.22
T1-10m	11/28/17	1033	0.12	3.8	0.56	7.8	0.36	5.1	3.9	109	0.41	12.6	5.2	72	0.10	35.01	26.1	8.16	4.90	0.20
T1-10m	1/30/18	1014	0.09	2.7	0.10	1.4	0.15	2.1	1.7	47	0.33	10.1	2.1	30	0.09	34.83	24.6	8.16	5.42	0.21
T1-10m	5/16/18	1016	0.09	2.7	0.18	2.5	0.19	2.7	3.2	90	0.36	11.0	3.3	46	0.02	34.75	25.5	8.16	6.05	0.17
Geomean	**FY '18**			**3.5**		**3.3**		***3.2***				**11.8**		**47**	**0.06**					**0.20**
T1-10m	9/24/18	936	0.07	2.1	0.16	2.3	0.32	4.5	3.2	91	0.38	11.8	3.2	44	0.10	34.64	27.7	8.18	5.29	0.16
T1-10m	11/13/18	1024	0.04	1.2	0.38	5.3	0.36	5.0	0.3	9	0.36	11.2	4.0	57	0.09	35.00	27.3	8.19	4.67	0.20
T1-10m	1/22/19	1013	0.16	4.9	0.91	12.8	0.08	1.1	6.2	175	0.43	13.4	3.4	47	0.08	34.78	24.9	8.23	5.88	0.26
T1-10m	4/16/19	1006	0.14	4.2	0.27	3.8	0.25	3.5	2.1	58	0.40	12.3	4.4	62	0.05	35.65	25.7	8.10	7.27	0.09
Geomean	**FY '19**			**2.7**		***4.9***		***3.1***				**12.1**		**52**	**0.08**					**0.17**
T1-10m	8/13/19	1144	0.03	0.9	0.16	2.3	0.30	4.2	1.1	31	0.28	8.8	1.9	26	0.09	35.70	28.3	8.21	6.52	0.22
T1-10m	11/19/19	1143	0.12	3.7	0.17	2.4	0.49	6.8	0.9	25	0.38	11.8	2.6	36	0.13	34.84	27.6	8.24	6.70	0.16
T1-10m	1/22/20	937	0.13	3.9	0.16	2.3	0.09	1.3	1.8	52	0.39	12.0	2.9	40	0.09	34.92	25.1	8.22	6.65	0.14
T1-10m	6/24/10	1014	0.07	2.3	0.16	2.3	0.14	1.9	1.3	37	0.34	10.5	2.1	30	0.06	35.33	25.8	8.16	6.97	0.29
Geomean	**FY '20**			**2.3**		**2.3**		***2.9***				**10.7**		**33**	**0.09**					**0.19**

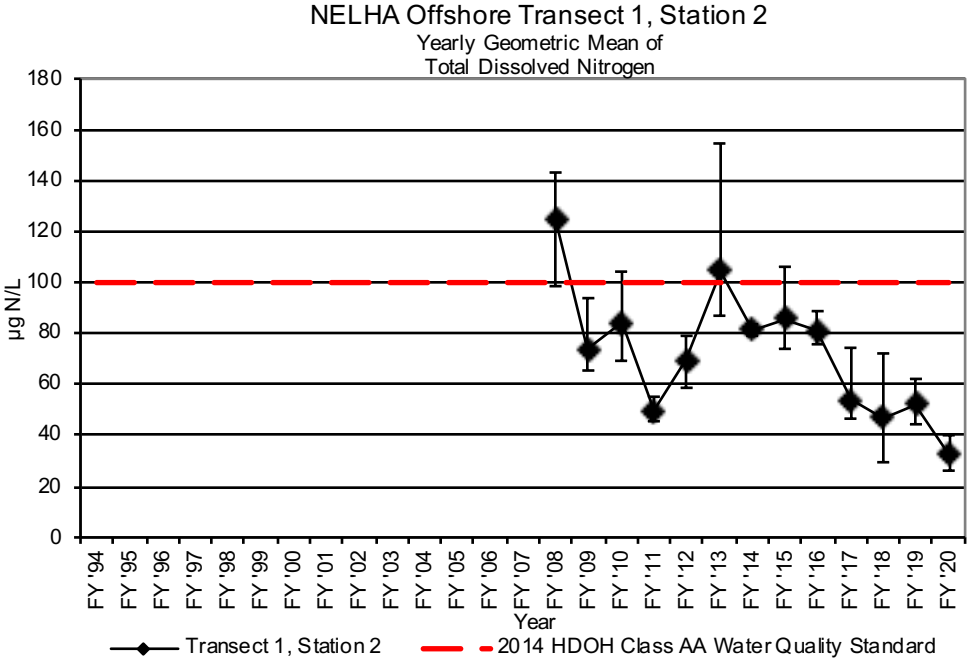
NELHA Water Quality Laboratory

Transect 1, Station 2

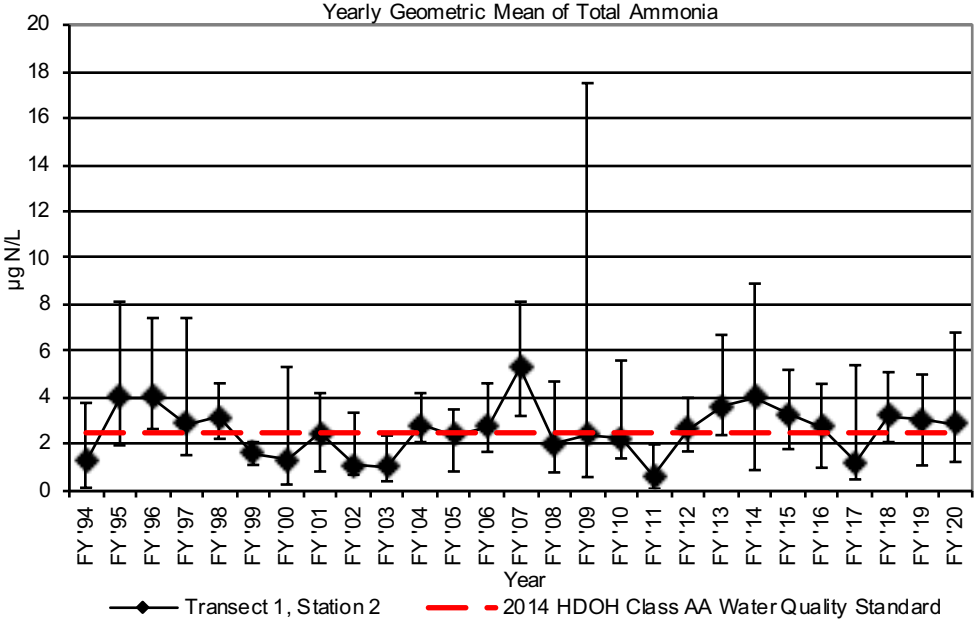




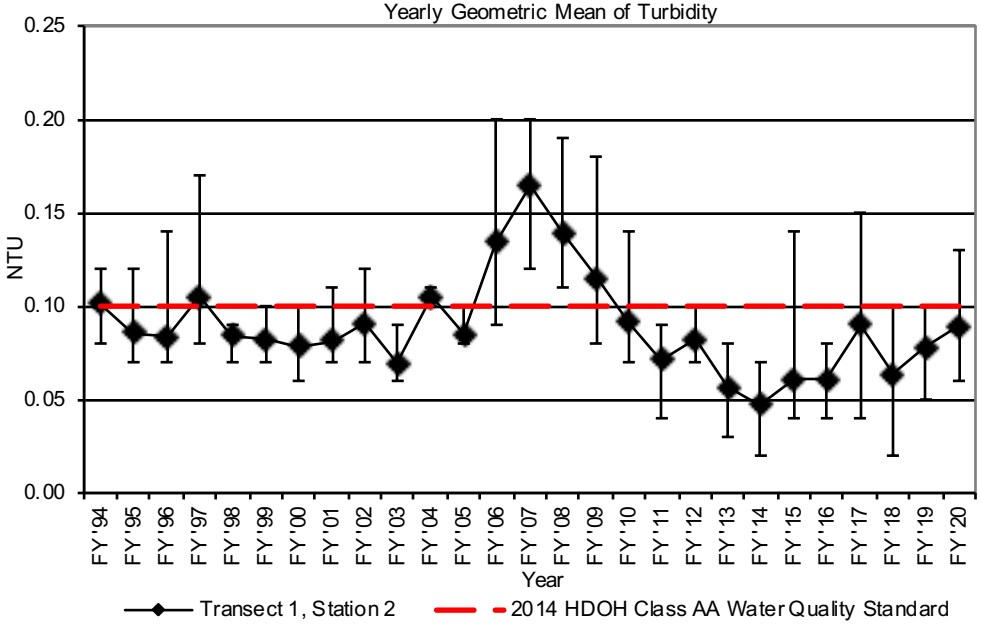




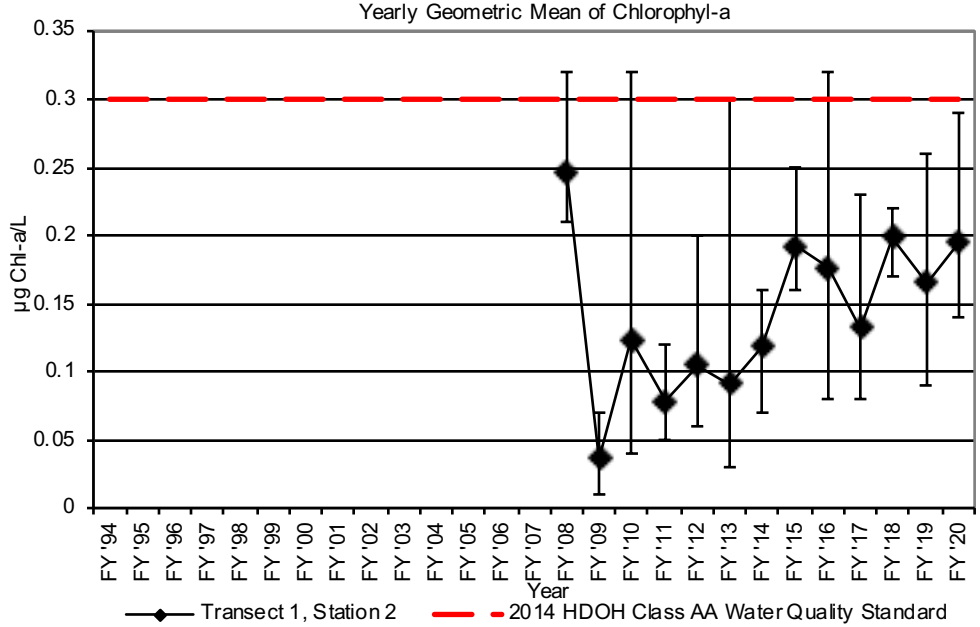
NELHA Offshore Transect 1, Station 2
Yearly Geometric Mean of Total Ammonia



NELHA Offshore Transect 1, Station 2
Yearly Geometric Mean of Turbidity



NELHA Offshore Transect 1, Station 2
Yearly Geometric Mean of Chlorophyl-a



NELHA Water Quality Laboratory

Transect 1, Station 3

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-3S-38m	7/27/93	1149	0.06	1.9	0.05	0.7	0.18	2.5	1.8	51					0.10	34.500	26.6			
O1-3S-38m	12/7/93	1048	0.06	1.9	0.11	1.5	0.10	1.4	2.5	71					0.07	34.822	25.8			
O1-3S-38m	3/16/94	1026	0.19	5.9	0.86	12.0	0.20	2.8	11.5	323					0.12	34.244	24.7			
O1-3S-38m	6/14/94	1014	0.11	3.4	0.05	0.7	0.01	0.1	2.4	68					0.08	34.584	25.4			
Geomean	**FY '94**			**2.9**		**1.7**		**1.1**							**0.09**					
O1-3S-38m	9/15/94	1032	0.10	3.1	0.46	6.4	0.14	2.0	7.6	213					0.08	34.450	27.7			
O1-3S-38m	11/16/94	929	0.14	4.3	0.25	3.5	0.50	7.0	3.2	90					0.07	34.574	26.0			
O1-3S-38m	3/21/95	1154	0.18	5.6	0.08	1.1	0.12	1.7	3.3	93					0.08	34.220	25.0			
O1-3S-38m	6/26/95	947	0.15	4.6	0.80	11.2	0.55	7.7	10.2	285					0.07	34.324	26.8			
Geomean	**FY '95**			**4.3**		**4.1**		***3.7***							**0.07**					
O1-3S-38m	9/25/95	850	0.18	5.6	0.57	8.0	0.28	3.9	5.9	165					0.09	34.358	27.1			
O1-3S-38m	11/13/95	1144	0.11	3.4	0.07	1.0	0.45	6.3	1.5	43					0.07	34.364	27.0			
O1-3S-38m	3/11/96	926	0.13	4.0	0.43	6.0	0.39	5.5	4.3	120					0.07	34.147	25.1			
O1-3S-38m	5/13/96	851	0.11	3.4	0.50	7.0	0.19	2.7	8.1	227					0.06	34.136	26.5			
Geomean	**FY '96**			**4.0**		**4.3**		***4.4***							**0.07**					
O1-3S-38m	7/30/96	845	0.09	2.8	0.45	6.3	0.12	1.7	5.6	156					0.08	34.395	27.8			
O1-3S-38m	10/1/96	1158	0.06	1.9	0.37	5.2	0.50	7.0	5.0	140					0.08	34.622	27.9			
O1-3S-38m	1/6/97	1204	0.08	2.5	0.07	1.0	0.13	1.8	2.5	69					0.08	34.708	25.6			
O1-3S-38m	4/21/97	1152	0.09	2.8	0.38	5.3	0.24	3.4	2.8	78					0.12	34.561	26.6			
Geomean	**FY '97**			**2.4**		**3.6**		***2.9***							**0.09**					
O1-3S-38m	8/18/97	1135	0.14	4.3	1.48	20.7	0.23	3.2	19.2	539					0.11	34.162	27.0			
O1-3S-38m	10/6/97	1156	0.10	3.1	0.20	2.8	0.34	4.8	5.5	155					0.08	34.673	27.4			
O1-3S-38m	3/3/98	1157	0.09	2.8	0.53	7.4	0.24	3.4	5.9	166					0.06	34.937	25.1			
O1-3S-38m	5/4/98	1108	0.20	6.2	2.07	29.0	0.26	3.6	22.1	621					0.10	34.403	23.8			
Geomean	**FY '98**			**3.9**		***10.6***		***3.7***							**0.09**					
O1-3S-38m	7/6/98	1209	0.09	2.8	0.13	1.8	0.08	1.1	3.9	108					0.08	35.011	26.4			
O1-3S-38m	10/5/98	1139	0.10	3.1	0.38	5.3	0.16	2.2	4.9	136					0.09	35.033	27.3			
O1-3S-38m	1/13/99	1148	0.10	3.1	0.53	7.4	0.11	1.5	7.0	197					0.10	34.961	25.2			
O1-3S-38m	4/12/99	917	0.16	5.0	0.77	10.8	0.08	1.1	17.0	477					0.08	34.511	24.0			
Geomean	**FY '99**			**3.4**		***5.3***		**1.4**							**0.09**					

NELHA Water Quality Laboratory

Transect 1, Station 3

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-3S-38m	7/6/99	920	0.10	3.1	0.19	2.7	0.05	0.7	2.5	71					0.12	34.943	25.6			
O1-3S-38m	10/4/99	1011	0.15	4.6	0.63	8.8	0.15	2.1	7.7	217					0.08	34.828	25.9			
O1-3S-38m	1/4/00	1204	0.15	4.6	1.49	20.9	0.40	5.6	12.3	345					0.11	34.810	24.6			
O1-3S-38m	4/17/00	955	0.14	4.3	0.21	2.9	0.01	0.1	3.8	106					0.08	34.611	24.2			
Geomean	**FY '00**			**4.1**		***6.2***		**1.0**							**0.10**					
O1-3S-38m	7/24/00	1228	0.13	4.0	0.59	8.3	0.06	0.8	7.8	219					0.07	34.735	27.3			
O1-3S-38m	10/30/00	1240	0.14	4.3	0.43	6.0	0.28	3.9	9.3	260					0.11	34.898	27.1			
O1-3S-38m	2/26/01	1223	0.24	7.4	1.68	23.5	0.17	2.4	25.5	717					0.13	34.052	25.0			
O1-3S-38m	5/7/01	1014	0.14	4.3	0.54	7.6	0.31	4.3	5.5	154					0.06	34.796	24.6			
Geomean	**FY '01**			**4.9**		***9.7***		**2.4**							**0.09**					
O1-3S-38m	8/21/01	1142	0.15	4.6	0.44	6.2	0.02	0.3	6.6	185					0.10	34.741	26.7			
O1-3S-38m	10/8/01	940	0.10	3.1	0.18	2.5	0.06	0.8	7.8	220					0.07	34.940	27.2			
O1-3S-38m	3/5/02	1058	0.14	4.3	0.32	4.5	0.04	0.6	6.3	178					0.08	34.734	24.2			
O1-3S-38m	4/17/02	1118	0.14	4.3	0.50	7.0	0.26	3.6	4.7	131					0.06	34.436	25.7			
Geomean	**FY '02**			**4.1**		***4.7***		**0.8**							**0.08**					
O1-3S-38m	7/8/02	1007	0.19	5.9	0.05	0.7	0.11	1.5	15.8	442					0.08	34.636	26.5			
O1-3S-38m	10/9/02	1100	0.06	1.9	0.36	5.0	0.04	0.6	4.7	132					0.08	34.920	27.0			
O1-3S-38m	3/11/03	949	0.13	4.0	0.67	9.4	0.03	0.4	5.8	163					0.16	34.844	24.5			
O1-3S-38m	4/22/03	1054	0.07	2.2	0.24	3.4	0.06	0.8	3.1	87					0.07	35.009	25.2			
Geomean	**FY '03**			**3.1**		**3.2**		**0.7**							**0.09**					
O1-3S-38m	8/18/03	1106	0.06	1.9	0.08	1.1	0.25	3.5	2.4	69					0.14	34.855	27.5			
O1-3S-38m	10/29/03	1024	0.06	1.9	0.01	0.1	0.18	2.5	2.3	65					0.10	34.903	27.5			
O1-3S-38m	3/11/04	938	0.15	4.6	0.79	11.1	0.09	1.3	3.9	110					n/a	34.266	25.6			
O1-3S-38m	5/20/04	943	0.12	3.7	0.07	1.0	0.18	2.5	3.1	87					n/a	33.47	26.6			
Geomean	**FY '04**			**2.8**		**1.1**		**2.3**							***0.12***					
O1-3S-38m	9/20/04	923	0.09	2.8	0.07	1.0	0.21	2.9	2.0	56					0.09	33.75	27.8			
O1-3S-38m	11/17/04	856	0.11	3.4	0.32	4.5	0.18	2.5	2.8	79					0.09	33.58	27.1			
O1-3S-38m	1/13/05	1020	0.07	2.2	0.37	5.2	0.06	0.8	3.8	107					0.08	34.858	25.5			
O1-3S-38m	4/11/05	1009	0.18	5.6	1.95	27.3	0.23	3.2	13.4	377					0.09	34.147	25.1			
Geomean	**FY '05**			**3.3**		***5.0***		**2.1**							**0.09**					

NELHA Water Quality Laboratory

Transect 1, Station 3

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-3S-38m	7/20/05	958	0.06	1.9	0.02	0.3	0.21	2.9	1.6	45					0.08	34.731	26.4			
O1-3S-38m	10/11/05	846	0.04	1.2	0.01	0.1	0.14	2.0	2.1	59					0.12	34.907	26.5			
O1-3S-38m	3/13/06	930	0.11	3.4	0.27	3.8	0.28	3.9	3.0	85					0.09	34.729	24.5			
O1-3S-38m	5/15/06	931	0.18	5.6	2.20	30.8	0.11	1.5	24.8	697					0.08	34.045	24.7			
Geomean	**FY '06**			**2.6**		**1.5**		**2.4**							**0.09**					
O1-3S-38m	8/14/06	924	0.14	4.3	0.39	5.5	0.15	2.1	3.8	108					0.14	34.706	26.5			
O1-3S-38m	11/1/06	928	0.10	3.1	0.36	5.0	0.46	6.4	5.0	140					0.24	34.753	26.7			
O1-3S-38m	2/12/07	950	0.15	4.6	0.86	12.0	0.39	5.5	6.9	193					0.21	34.424	24.5			
O1-3S-38m	4/9/07	925	0.12	3.7	0.47	6.6	0.30	4.2	5.4	152					0.17	34.629	25.3			
Geomean	**FY '07**			**3.9**		***6.8***		***4.2***							***0.19***					
T1-50m	9/26/07	919	0.21	6.6	1.05	14.7	0.34	4.8	10.4	292	0.42	13.0	6.2	87	0.09	34.680	26.8	8.09	6.32	0.12
T1-50m	12/13/07	1036	0.11	3.4	0.67	9.4			5.8	162	0.41	12.7	7.1	99	0.12	34.503	25.7	8.31	6.28	0.25
T1-50m	3/10/08	938	0.05	1.7	0.64	9.0	0.06	0.8	5.2	147	0.43	13.3	8.7	123	0.10	34.787	25.0	8.1	6.50	0.2
T1-50m	6/5/08	946	0.09	2.8	0.29	4.1	0.16	2.2	18.6	522	0.26	8.1	8.2	116	0.08	34.8034	25.0	8.08	6.78	0.29
Geomean	**FY '08**			**3.2**		***8.5***		**2.0**				**11.5**		***105***	**0.10**					**0.20**
T1-50m	9/22/08	1047	0.06	1.8	0.17	2.4	0.07	1	2.6	72	0.25	7.7	5.0	70	0.07	34.805	26.6	8.01	6.33	0.1
T1-50m	11/17/08	927	0.16	5.1	0.40	5.6	0.14	1.9	3.6	102	0.37	11.5	6.1	86	0.33	34.905	25.6	8.20	6.17	0.08
T1-50m	2/9/09	924	0.09	2.8	0.10	1.4	0.12	1.7	1.1	32	0.16	4.9	5.7	80	0.11	35.049	24.9	8.07	6.20	0.01
T1-50m	4/13/09	916	0.22	6.7	0.15	2.1	0.24	3.4	2.8	79	0.51	15.9	6.5	91	0.14	34.983	23.9	8.13	5.79	0.04
Geomean	**FY '09**			**3.6**		**2.5**		**1.8**				**9.1**		**81**	***0.14***					**0.04**
T1-50m	9/9/09	919	0.17	5.3	0.50	7	0.04	0.5	8.1	226	0.56	17.4	7.1	99	0.11	35.15	26.8	8.22	5.54	0.16
T1-50m	11/23/09	938	0.03	0.8	0.22	3.1	0.14	1.9	9.7	273	0.37	11.6	5.2	74	0.06	35.16	25.3	8.29	6.11	0.17
T1-50m	2/23/10	945	0.17	5.2	0.39	5.4	0.49	6.9	17.6	495	0.38	11.8	4.5	63	0.06	35.03	24.6	8.20	6.22	0.2
T1-50m	5/25/10	1104	0.02	0.7	0.06	0.8	0.05	0.7	13.7	386	0.29	9	3.2	45	0.08	35.00	24.9	8.22	6.85	0.1
Geomean	**FY '10**			**2.0**		**3.1**		**1.5**				**12.1**		**68**	**0.08**					**0.15**
T1-50m	8/10/10	945	0.05	1.5	0.86	12	0.05	0.7	6.2	173	0.29	9.1	3.4	48	0.04	34.31	25.95	8.24	6.38	0.12
T1-50m	11/8/10	934	0.02	0.5	0.14	2	0.12	1.7	3.5	98	0.41	12.6	4.0	56	0.03	35.25	26.42	8.25	6.13	0.08
T1-50m	1/11/11	945	0.14	4.3	0.54	7.5	0.06	0.9	3.7	104	0.51	15.7	4.5	64	0.06	35.02	24.97	8.20	6.46	0.09
T1-50m	4/26/11	945	0.14	4.4	0.53	7.4	0.05	0.7	3.3	94	0.47	14.6	3.8	53	0.06	34.95	25.02	8.21	6.50	0.20
Geomean	**FY '11**			**1.9**		***6.0***		**0.9**				***12.7***		**55**	**0.05**					**0.11**

NELHA Water Quality Laboratory

Transect 1, Station 3

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-50m	7/26/11	957	0.19	5.9	0.33	4.6	0.13	1.8	2.4	69	0.48	15	4.4	62	0.04	34.80	25.98	8.25	6.39	0.06
T1-50m	10/18/11	935	0.04	1.3	0.29	4	0.26	3.6	2.6	72	0.31	9.6	4.8	68	0.10	35.03	26.52	8.20	6.57	0.12
T1-50m	1/25/12	958	0.10	3.1	0.30	4.2	0.11	1.6	3.6	100	0.44	13.7	5.7	80	0.05	34.98	24.66	8.18	6.57	0.12
T1-50m	4/24/12	1026	0.12	3.7	0.26	3.7	0.23	3.2	3.1	88	0.39	12.1	3.8	53	0.12	35.07	24.75	8.21	6.66	0.24
Geomean	**FY '12**			**3.1**		**4.1**		**2.4**				**12.4**		**65**	**0.07**					**0.12**
T1-50m	7/24/12	943	0.04	1.2	0.49	6.9	0.35	4.9	2.3	64	0.34	10.6	5.0	71	0.07	35.07	26.31	8.22	6.42	0.03
T1-50m	11/27/12	940	0.12	3.7	1.10	15.4	0.45	6.3	8.6	241	0.35	10.8	4.1	58	0.05	35.05	25.05	8.20	6.72	0.28
T1-50m	1/24/13	946	0.07	2.1	0.01	0.1	0.21	2.9	0.9	26	0.41	12.6	4.8	68	0.03	35.04	24.70	8.20	6.25	0.10
T1-50m	4/16/13	950	0.15	4.5	0.46	6.5	0.11	1.6	2.1	58	0.47	14.5	5.8	81	0.02	35.14	24.92	8.21	6.83	0.06
Geomean	**FY '13**			**2.5**		**2.9**		***3.5***				**12.0**		**69**	**0.04**					**0.08**
T1-50m	8/1/13	859	0.04	1.3	0.30	4.2	0.07	1.0	5.3	149	0.41	12.6	4.9	68	0.08	35.07	26.1	8.25	6.63	0.18
T1-50m	10/29/13	935	0.16	5.1	0.21	2.9	0.34	4.8	1.9	52	0.43	13.2	6.1	86	0.02	35.29	27.1	8.22	6.06	0.21
T1-50m	2/4/14	936	0.10	3.2	0.40	5.6	0.38	5.3	3.6	102	0.43	13.3	8.6	121	0.02	34.89	25.2	8.21	6.30	0.17
T1-50m	5/6/14	933	0.16	5.0	0.59	8.3	0.56	7.8	3.5	100	0.45	13.8	6.3	88	0.06	34.71	25.8	8.22	6.36	0.16
Geomean	**FY '14**			**3.2**		***4.9***		***3.8***				***13.2***		**89**	**0.04**					**0.18**
T1-50m	8/5/14	949	0.19	5.9	0.37	5.2	0.32	4.5	2.4	67	0.55	17.1	5.5	77	0.10	34.95	26.8	8.21	6.07	0.15
T1-50m	11/17/14	1127	0.15	4.8	0.16	2.2	0.29	4.1	0.4	10	0.43	13.2	6.1	86	0.10	35.02	27.1	8.21	6.79	0.20
T1-50m	3/3/15	941	0.04	1.2	0.51	7.2	0.08	1.1	2.6	74	0.33	10.1	7.6	106	0.06	34.80	25.5	8.13	6.77	0.21
T1-50m	6/16/15	1049	0.13	4.0	0.92	12.9	0.26	3.7	6.4	180	0.44	13.5	6.6	92	0.05	34.13	26.4	8.21	6.01	0.30
Geomean	**FY '15**			**3.4**		***5.7***		***2.9***				***13.2***		**90**	**0.07**					**0.21**
T1-50m	8/26/15	1152	0.20	6.2	0.26	3.6	0.27	3.8	4.3	121	0.35	10.9	6.9	96	0.04	34.51	28.4	8.21	6.10	0.36
T1-50m	11/17/15	950	0.13	4.0	0.44	6.2	0.22	3.1	3.8	107	0.52	16.0	5.6	78	0.07	33.90	27.3	8.26	6.12	0.13
T1-50m	3/1/16	952	0.13	3.9	0.19	2.7	2.20	30.8	0.0	1	0.48	14.8	4.1	57	0.08	34.78	25.4	8.26	5.67	0.09
T1-50m	5/3/16	927	0.14	4.3	0.95	13.3	0.18	2.5	4.6	130	0.43	13.2	5.8	81	0.05	34.55	25.5	8.24	6.17	0.27
Geomean	**FY '16**			**4.5**		***5.3***		***5.5***				***13.6***		**77**	**0.06**					**0.18**
T1-50m	7/6/16	1002	0.12	3.6	0.15	2.1	0.25	3.5	3.5	98	0.51	15.7	5.4	76	0.09	34.48	26.8	8.25	6.60	0.21
T1-50m	12/20/16	956	0.07	2.3	0.69	9.6	0.24	3.3	3.3	93	0.35	10.9	3.9	55	0.03	34.68	25.6	8.24	5.52	0.31
T1-50m	2/28/17	859	0.01	0.2	0.04	0.6	0.02	0.3	0.1	2	0.27	8.4	3.1	43	0.11	34.70	24.7	8.22	7.20	0.10
T1-50m	5/9/17	1016	0.01	0.2	0.74	10.4	0.04	0.5	4.7	131	0.26	7.9	4.6	64	0.14	34.54	25.8	8.22	4.77	0.13
Geomean	**FY '17**			**0.8**		**3.3**		**1.1**				**10.3**		**58**	**0.08**					**0.17**

NELHA Water Quality Laboratory

Transect 1, Station 3

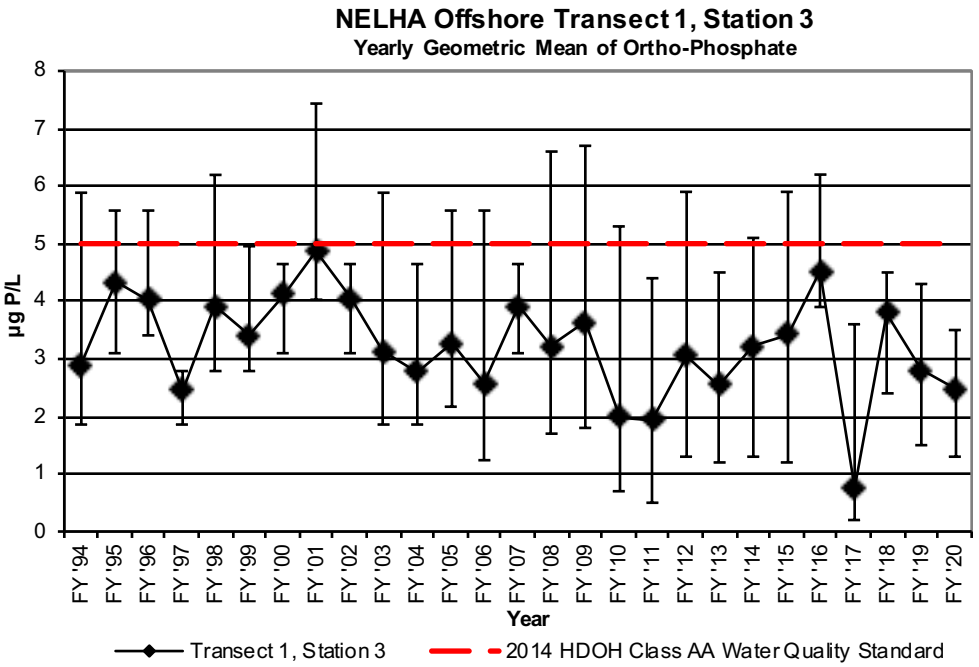
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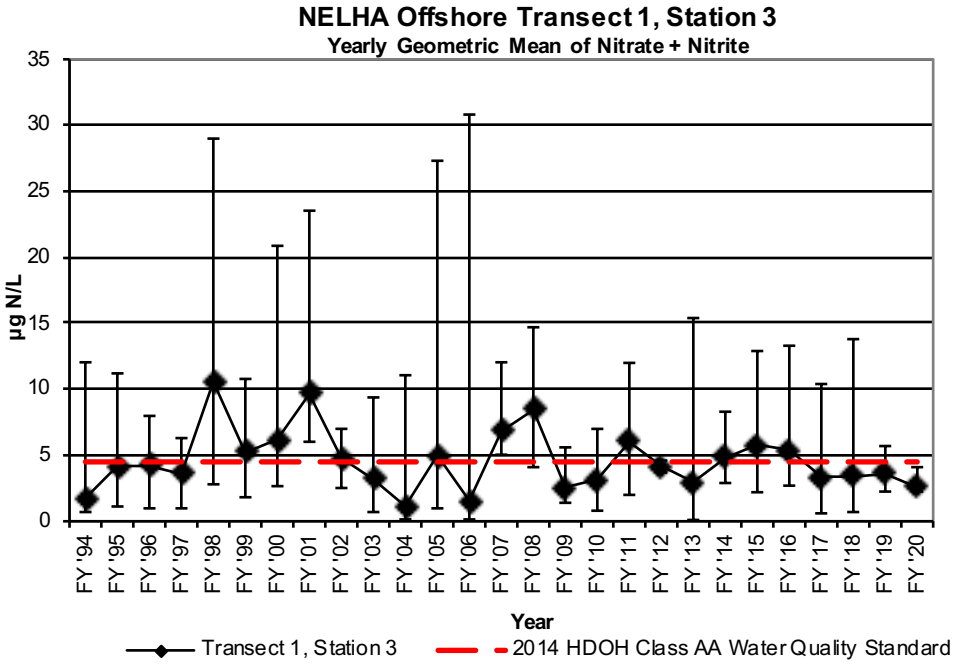
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-50m	9/27/17	949	0.14	4.4	0.26	3.7	0.21	2.9	1.4	39	0.39	12.2	3.3	47	0.08	34.74	27.7	8.20	4.35	0.20
T1-50m	11/28/17	1041	0.14	4.4	0.99	13.8	0.36	5.0	5.5	153	0.41	12.6	3.3	47	0.10	34.96	26.1	8.16	4.84	0.21
T1-50m	1/30/18	1020	0.08	2.4	0.05	0.7	0.12	1.7	1.5	43	0.36	11.0	3.1	43	0.08	34.86	24.6	8.16	5.37	0.61
T1-50m	5/16/18	1021	0.15	4.5	0.26	3.7	1.52	21.3	4.7	133	0.53	16.5	19.6	274	0.02	34.73	25.5	8.16	6.04	0.11
Geomean	**FY '18**			**3.8**		**3.4**		***4.8***				***12.9***		**71**	**0.06**					**0.23**
T1-50m	9/24/18	943	0.10	3.1	0.16	2.3	0.33	4.6	6.6	187	0.44	13.5	4.7	66	0.11	34.61	27.7	8.18	5.29	0.21
T1-50m	11/13/18	1029	0.05	1.5	0.41	5.7	0.25	3.5	1.7	49	0.35	10.7	3.9	55	0.10	34.98	27.3	8.20	4.65	0.20
T1-50m	1/22/19	1016	0.10	3.1	0.19	2.6	0.04	0.5	1.6	44	0.38	11.7	2.2	30	0.06	34.80	25.0	8.22	5.70	0.36
T1-50m	4/16/19	1012	0.14	4.3	0.38	5.3	0.38	5.3	4.6	130	0.41	12.6	2.9	41	0.04	35.59	25.6	8.11	7.20	0.12
Geomean	**FY '19**			**2.8**		**3.6**		***2.6***				**12.1**		**46**	**0.07**					**0.21**
T1-50m	8/13/19	1148	0.04	1.3	0.16	2.3	0.09	1.3	3.1	88	0.29	8.9	2.2	30	0.10	35.68	28.3	8.22	6.54	0.12
T1-50m	11/19/19	1146	0.11	3.5	0.29	4.1	0.60	8.4	1.8	50	0.38	11.7	2.6	36	0.10	34.81	27.6	8.24	6.70	0.17
T1-50m	1/22/20	943	0.11	3.5	0.16	2.3	0.09	1.3	0.5	15	0.39	12.1	2.5	36	0.04	34.92	25.0	8.22	6.68	0.19
T1-50m	6/24/10	1019	0.08	2.4	0.16	2.3	0.09	1.3	1.9	55	0.36	11.0	2.4	34	0.07	35.34	25.8	8.16	6.88	0.33
Geomean	**FY '20**			**2.5**		**2.6**		**2.0**				**10.9**		**34**	**0.07**					**0.19**

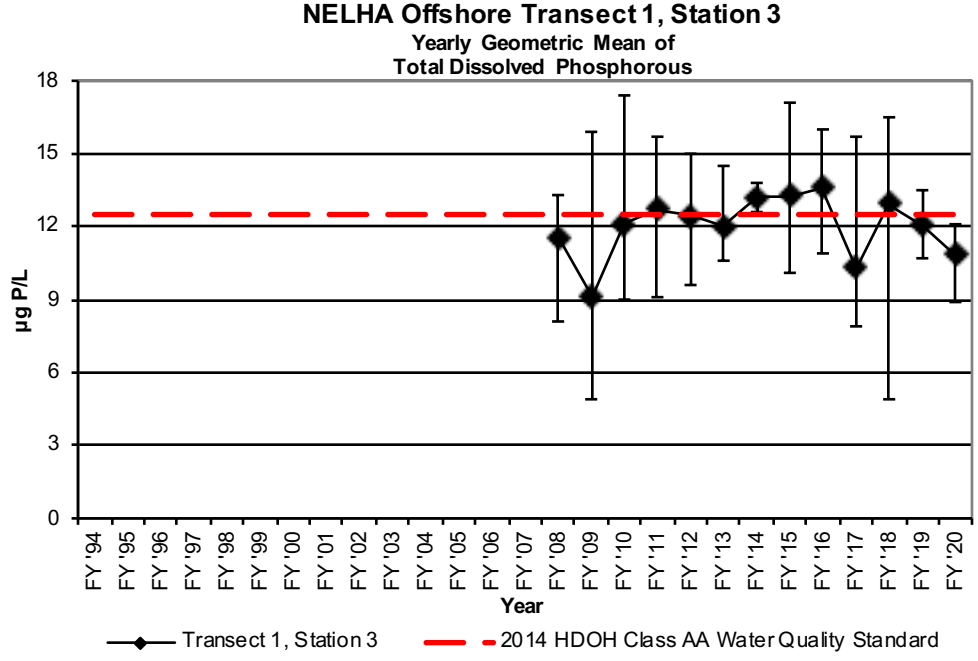
NELHA Water Quality Laboratory

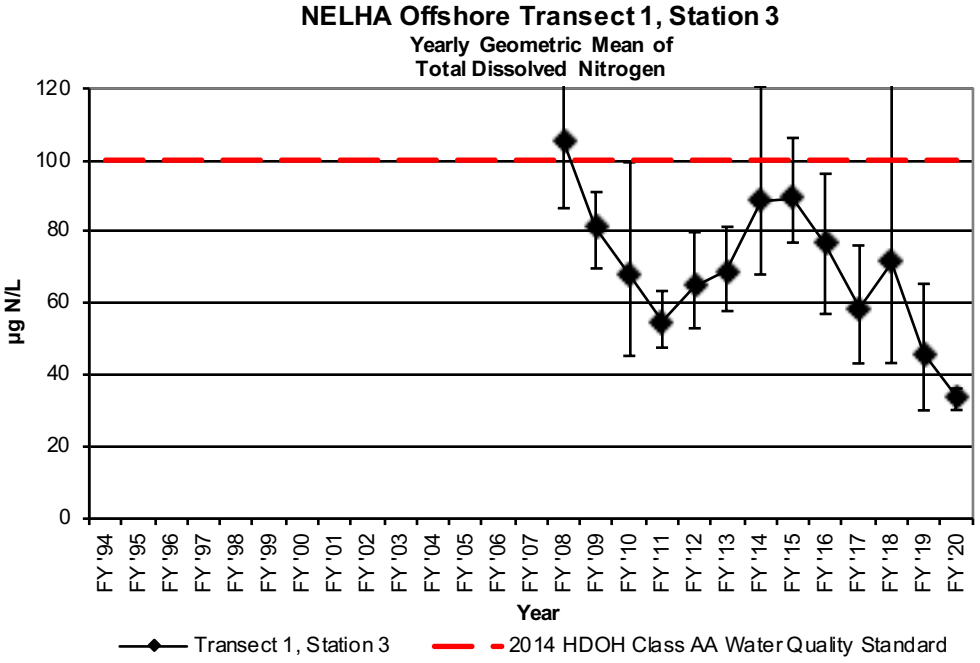
Transect 1, Station 3

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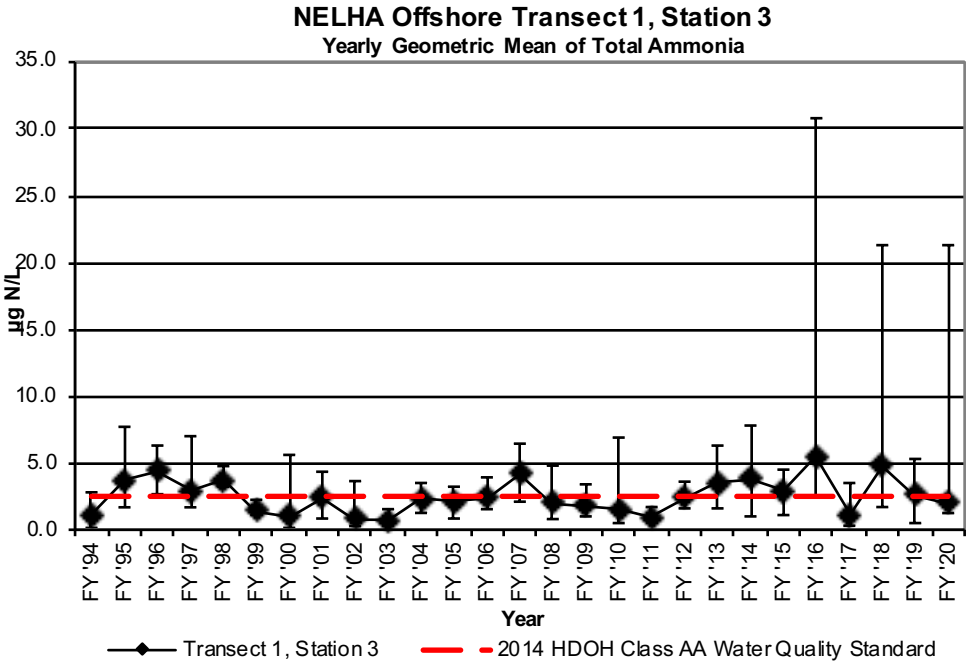


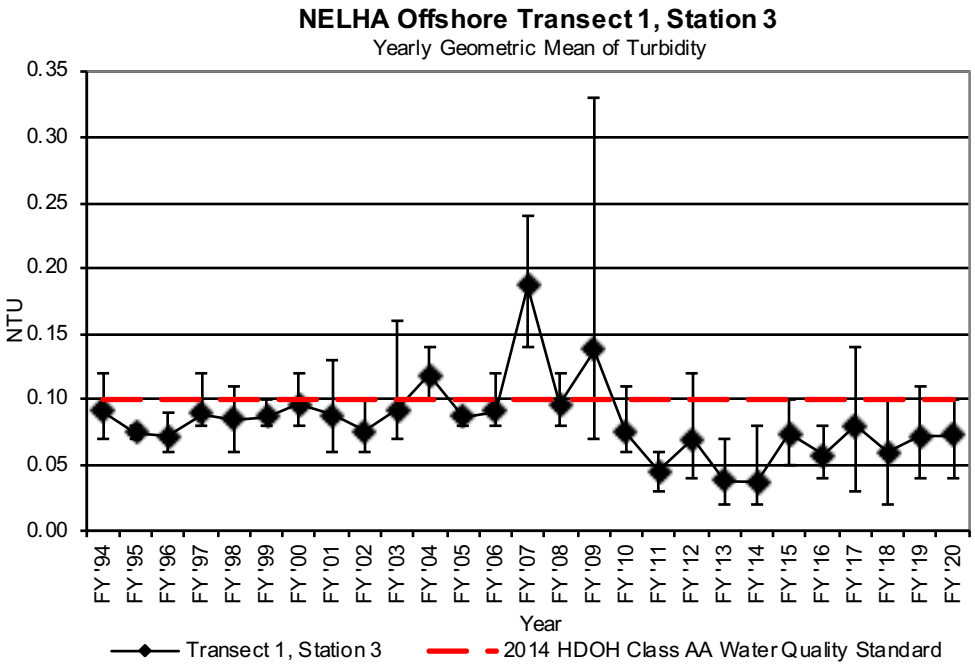


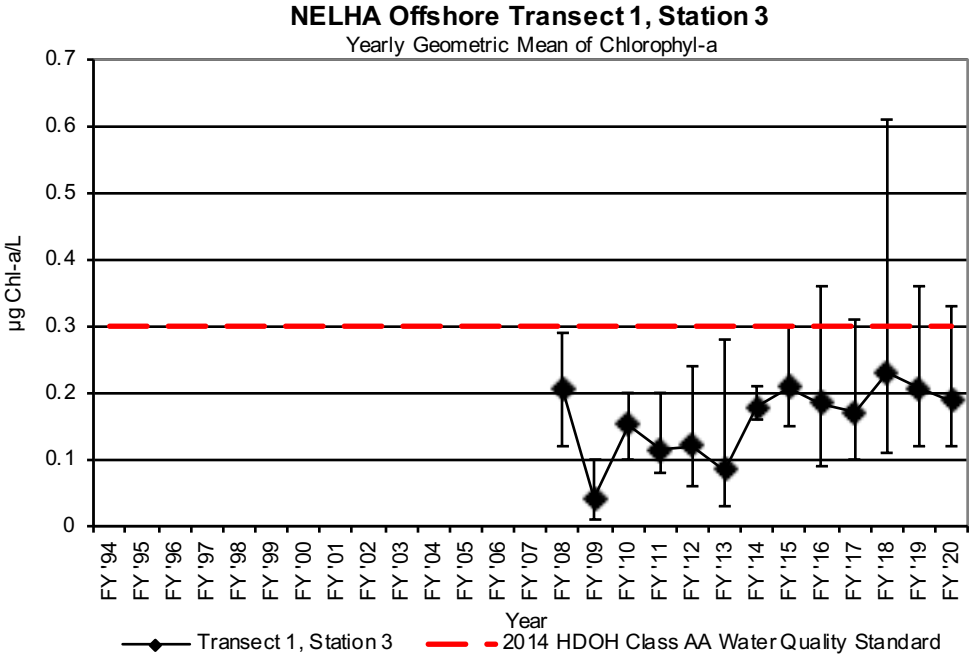
NELHA Water Quality Laboratory

Transect 1, Station 3

7/27/93 - 7/14/20







NELHA Water Quality Laboratory

Transect 1, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-4S-53m	7/27/93	1136	0.11	3.4	0.09	1.3	0.24	3.4	3.8	107					0.07	34.516	26.6			
O1-4S-53m	12/7/93	1041	0.06	1.9	0.14	2.0	0.11	1.5	2.4	66					0.06	34.817	25.8			
O1-4S-53m	3/16/94	1020	0.19	5.9	0.60	8.4	0.17	2.4	8.3	233					0.11	34.343	24.7			
O1-4S-53m	6/14/94	1008	0.11	3.4	0.02	0.3	0.01	0.1	1.8	49					0.07	34.588	25.4			
Geomean	**FY '94**			**3.4**		**1.6**		**1.1**							**0.08**					
O1-4S-53m	9/15/94	1027	0.09	2.8	0.02	0.3	0.11	1.5	2.8	80					0.07	34.633	27.6			
O1-4S-53m	11/16/94	927	0.18	5.6	0.85	11.9	0.52	7.3	10.8	303					0.07	34.325	26.0			
O1-4S-53m	3/21/95	1149	0.18	5.6	0.10	1.4	0.15	2.1	3.3	94					0.08	34.215	25.1			
O1-4S-53m	6/26/95	943	0.21	6.5	1.23	17.2	0.20	2.8	17.5	493					0.08	34.145	26.7			
Geomean	**FY '95**			**4.9**		**3.0**		***2.9***							**0.07**					
O1-4S-53m	9/25/95	844	0.16	5.0	1.34	18.8	0.22	3.1	16.2	454					0.13	34.048	27.0			
O1-4S-53m	11/13/95	1140	0.11	3.4	0.01	0.1	0.36	5.0	1.7	49					0.05	34.361	27.1			
O1-4S-53m	3/11/96	921	0.14	4.3	0.79	11.1	0.38	5.3	7.6	215					0.06	34.017	25.3			
O1-4S-53m	5/13/96	844	0.14	4.3	0.82	11.5	0.28	3.9	11.3	316					0.09	34.023	26.6			
Geomean	**FY '96**			**4.2**		**4.3**		***4.2***							**0.08**					
O1-4S-53m	7/30/96	840	0.07	2.2	0.28	3.9	0.10	1.4	5.9	165					0.06	34.455	27.9			
O1-4S-53m	10/1/96	1152	0.06	1.9	0.57	8.0	0.61	8.5	7.1	200					0.08	34.720	27.9			
O1-4S-53m	1/6/97	1159	0.09	2.8	0.22	3.1	0.14	2.0	3.6	100					0.08	34.704	25.6			
O1-4S-53m	4/21/97	1146	0.09	2.8	0.40	5.6	0.22	3.1	2.2	61					0.09	34.555	26.4			
Geomean	**FY '97**			**2.4**		***4.8***		***2.9***							**0.08**					
O1-4S-53m	8/18/97	1130	0.14	4.3	1.38	19.3	0.23	3.2	17.2	482					0.11	34.185	27.1			
O1-4S-53m	10/6/97	1151	0.10	3.1	0.16	2.2	0.36	5.0	4.0	112					0.07	34.698	27.5			
O1-4S-53m	3/3/98	1152	0.11	3.4	0.56	7.8	0.21	2.9	5.7	160					0.09	34.926	25.1			
O1-4S-53m	5/4/98	1102	0.23	7.1	2.69	37.7	0.26	3.6	28.2	791					0.09	34.213	23.8			
Geomean	**FY '98**			**4.2**		***10.6***		***3.6***							**0.09**					
O1-4S-53m	7/6/98	1204	0.10	3.1	0.16	2.2	0.10	1.4	3.8	106					0.11	35.008	26.5			
O1-4S-53m	10/5/98	1134	0.09	2.8	0.12	1.7	0.11	1.5	1.8	50					0.09	34.974	27.4			
O1-4S-53m	1/13/99	1143	0.11	3.4	0.67	9.4	0.18	2.5	8.2	231					0.07	34.942	25.2			
O1-4S-53m	4/12/99	912	0.17	5.3	0.74	10.4	0.08	1.1	9.7	272					0.08	34.500	24.0			
Geomean	**FY '99**			**3.5**		**4.4**		**1.6**							**0.09**					

NELHA Water Quality Laboratory

Transect 1, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-4S-53m	7/6/99	915	0.12	3.7	0.19	2.7	0.05	0.7	6.6	184					0.08	34.938	25.6			
O1-4S-53m	10/4/99	1005	0.12	3.7	0.32	4.5	0.13	1.8	4.9	138					0.07	34.938	25.9			
O1-4S-53m	1/4/00	1159	0.15	4.6	1.49	20.9	0.39	5.5	13.1	367					0.08	34.810	24.5			
O1-4S-53m	4/17/00	951	0.14	4.3	0.38	5.3	0.04	0.6	5.8	162					0.05	34.567	24.2			
Geomean	**FY '00**			**4.1**		***6.0***		**1.4**							**0.07**					
O1-4S-53m	7/24/00	1220	0.14	4.3	0.94	13.2	0.09	1.3	13.5	378					0.10	34.599	27.4			
O1-4S-53m	10/30/00	1234	0.13	4.0	0.27	3.8	0.31	4.3	6.5	181					0.08	34.912	27.1			
O1-4S-53m	2/26/01	1218	0.21	6.5	1.14	16.0	0.20	2.8	18.1	508					0.10	34.299	24.9			
O1-4S-53m	5/7/01	1008	0.16	5.0	0.95	13.3	0.30	4.2	9.0	253					0.07	34.700	24.6			
Geomean	**FY '01**			**4.9**		***10.1***		***2.8***							**0.09**					
O1-4S-53m	8/21/01	1143	0.16	5.0	0.57	8.0	0.02	0.3	5.4	153					0.11	34.713	26.7			
O1-4S-53m	10/8/01	936	0.10	3.1	0.18	2.5	0.11	1.5	3.0	85					0.07	34.940	27.1			
O1-4S-53m	3/5/02	1052	0.14	4.3	0.36	5.0	0.02	0.3	5.0	140					0.09	34.665	24.2			
O1-4S-53m	4/17/02	1112	0.15	4.6	0.33	4.6	0.18	2.5	8.0	225					0.10	34.440	25.7			
Geomean	**FY '02**			**4.2**		***4.7***		**0.7**							**0.09**					
O1-4S-53m	7/8/02	1002	0.14	4.3	0.04	0.6	0.10	1.4	3.2	90					0.10	34.660	26.5			
O1-4S-53m	10/9/02	1055	0.07	2.2	0.35	4.9	0.06	0.8	3.8	106					0.12	34.921	27.0			
O1-4S-53m	3/11/03	941	0.19	5.9	1.95	27.3	0.04	0.6	13.1	367					0.11	34.622	24.5			
O1-4S-53m	4/22/03	1049	0.14	4.3	0.81	11.3	0.08	1.1	6.7	187					0.08	34.902	25.2			
Geomean	**FY '03**			**3.9**		***5.4***		**0.9**							***0.10***					
O1-4S-53m	8/18/03	1055	0.04	1.2	0.01	0.1	0.30	4.2	2.8	78					0.08	34.835	27.8			
O1-4S-53m	10/29/03	1016	0.05	1.5	0.04	0.6	0.05	0.7	3.0	83					0.09	34.839	27.6			
O1-4S-53m	3/11/04	931	0.13	4.0	0.02	0.3	0.05	0.7	1.7	46					n/a	34.241	25.6			
O1-4S-53m	5/20/04	948	0.12	3.7	0.20	2.8	0.21	2.9	4.8	134					n/a	33.48	26.6			
Geomean	**FY '04**			**2.3**		**0.5**		**1.6**							**0.08**					
O1-4S-53m	9/20/04	918	0.09	2.8	0.07	1.0	0.27	3.8	2.3	66					0.18	33.66	27.9			
O1-4S-53m	11/17/04	851	0.10	3.1	0.25	3.5	0.13	1.8	2.4	66					0.09	33.62	27.4			
O1-4S-53m	1/13/05	1014	0.04	1.2	0.01	0.1	0.04	0.6	1.8	49					0.08	34.860	25.9			
O1-4S-53m	4/11/05	1003	0.24	7.4	2.35	32.9	0.25	3.5	16.1	451					0.08	34.031	25.1			
Geomean	**FY '05**			**3.0**		**2.0**		**1.9**							***0.10***					

NELHA Water Quality Laboratory

Transect 1, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE M/D/Y	TIME (2400)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	Turbidity (NTU)	Salinity (PSU)	Temp. (˚C)	pH (unit)	DO (ppm)	Chl a (µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-4S-53m	7/20/05	950	0.13	4.0	1.50	21.0	0.17	2.4	0.9	26					0.10	34.401	26.5			
O1-4S-53m	10/11/05	840	0.05	1.5	0.06	0.8	0.18	2.5	4.2	117					0.08	34.907	26.5			
O1-4S-53m	3/13/06	924	0.10	3.1	0.09	1.3	0.26	3.6	2.6	73					0.10	34.807	24.6			
O1-4S-53m	5/15/06	927	0.16	5.0	1.73	24.2	0.17	2.4	20.0	562					0.12	34.192	25.0			
Geomean	**FY '06**			**3.1**		***4.8***		***2.7***							**0.10**					
O1-4S-53m	8/14/06	916	0.13	4.0	0.54	7.6	0.22	3.1	4.4	124					0.18	34.579	26.5			
O1-4S-53m	11/1/06	920	0.10	3.1	0.33	4.6	0.41	5.7	5.0	141					0.21	34.756	26.7			
O1-4S-53m	2/12/07	943	0.18	5.6	1.40	19.6	0.46	6.4	9.3	261					0.31	34.333	24.5			
O1-4S-53m	4/9/07	919	0.14	4.3	0.51	7.1	0.33	4.6	6.4	180					0.45	34.597	25.3			
Geomean	**FY '07**			**4.2**		***8.4***		***4.8***							***0.27***					
T1-100m	9/26/07	928	0.18	5.7	0.35	4.9	0.12	1.7	4.1	114	0.45	13.8	4.9	68	0.07	34.920	26.8	8.14	6.33	0.16
T1-100m	12/13/07	1039	0.10	3.1	0.27	3.8			15.0	422	0.36	11.2	5.2	73	0.12	34.490	25.7	8.3	6.15	0.27
T1-100m	3/10/08	940	0.14	4.3	0.59	8.2	0.06	0.8	5.6	159	0.45	13.8	8.1	113	0.07	34.841	24.9	8.12	6.59	0.32
T1-100m	6/5/08	949	0.11	3.3	0.24	3.4	0.16	2.2	17.7	497	0.29	9.0	8.0	111	0.08	34.8144	25.0	8.08	6.72	0.2
Geomean	**FY '08**			**4.0**		***4.8***		**1.4**				**11.8**		**89**	**0.08**					**0.23**
T1-100m	9/22/08	1053	0.06	1.8	0.14	2	0.15	2.1	2.3	66	0.25	7.8	4.9	68	0.10	34.814	26.6	8.01	6.83	0.1
T1-100m	11/17/08	932	0.15	4.7	0.07	1	0.14	1.9	3.7	104	0.39	12.1	5.8	81	0.09	34.934	25.7	8.22	6.11	0.07
T1-100m	2/9/09	933	0.09	2.9	0.16	2.2	0.12	1.7	1.7	49	0.22	6.7	5.4	76	0.14	35.058	24.9	8.06	6.15	0.01
T1-100m	4/13/09	923	0.23	7.1	0.23	3.2	0.34	4.7	3.8	107	0.48	14.8	4.9	69	0.16	34.968	24.0	8.15	5.90	0.05
Geomean	**FY '09**			**3.6**		**1.9**		**2.4**				**9.8**		**73**	***0.12***					**0.04**
T1-100m	9/9/09	926	0.13	4.1	0.16	2.2	0.10	1.4	6.0	169	0.50	15.6	5.3	75	0.12	35.16	26.9	8.23	5.50	0.27
T1-100m	11/23/09	942	0.03	0.8	0.43	6	0.12	1.7	33.5	941	0.42	12.9	7.7	108	0.09	35.13	25.3	8.26	6.13	0.13
T1-100m	2/23/10	951	0.17	5.2	0.22	3.1	0.48	6.7	93.0	2612	0.40	12.3	4.4	62	0.05	35.06	24.6	8.21	6.13	0.34
T1-100m	5/25/10	1109	0.02	0.7	0.07	1	0.04	0.5	4.1	114	0.29	9	4.6	65	0.08	35.01	24.9	8.25	6.84	0.1
Geomean	**FY '10**			**1.9**		**2.5**		**1.7**				**12.2**		**75**	**0.08**					**0.19**
T1-100m	8/10/10	948	0.04	1.2	0.92	12.9	0.05	0.7	11.5	324	0.58	17.9	4.9	68	0.09	34.73	25.96	8.24	6.42	0.10
T1-100m	11/8/10	938	0.00	0.1	0.25	3.5	0.17	2.4	2.2	62	0.41	12.6	4.7	66	0.08	35.26	26.42	8.24	6.12	0.06
T1-100m	1/11/11	949	0.13	4.1	0.54	7.5	0.01	0.1	5.6	158	0.45	13.8	3.9	55	0.05	35.01	24.97	8.21	6.47	0.11
T1-100m	4/26/11	950	0.12	3.6	0.34	4.8	0.15	2.1	10.5	295	0.43	13.4	4.2	59	0.06	34.97	25.02	8.22	6.46	0.12
Geomean	**FY '11**			**1.2**		***6.3***		**0.8**				***14.3***		**62**	**0.07**					**0.09**

NELHA Water Quality Laboratory

Transect 1, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-100m	7/26/11	1006	0.16	5	0.02	0.3	0.09	1.3	1.8	50	0.48	14.8	5.1	71	0.08	34.86	26.18	8.26	6.42	0.07
T1-100m	10/18/11	938	0.02	0.6	0.21	2.9	0.18	2.5	3.2	90	0.32	9.8	5.7	80	0.07	35.05	26.58	8.20	6.55	0.09
T1-100m	1/25/12	1006	0.10	3.2	0.51	7.1	0.11	1.5	5.7	159	0.47	14.5	5.6	78	0.09	34.93	24.62	8.17	6.53	0.10
T1-100m	4/24/12	1031	0.11	3.5	0.21	3	0.16	2.3	2.8	79	0.40	12.5	4.3	60	0.13	35.07	24.78	8.21	6.60	0.07
Geomean	**FY '12**			**2.4**		**2.1**		**1.8**				***12.7***		**72**	**0.09**					**0.08**
T1-100m	7/24/12	951	0.03	0.9	0.37	5.2	0.23	3.2	2.4	69	0.30	9.4	4.1	58	0.08	35.08	26.30	8.23	6.81	0.14
T1-100m	11/27/12	944	0.09	2.9	0.79	11	0.31	4.3	6.5	184	0.48	15	6.5	91	0.05	35.10	25.07	8.20	6.74	0.20
T1-100m	1/24/13	950	0.05	1.7	0.01	0.1	0.18	2.5	1.1	32	0.44	13.5	5.0	70	0.06	35.10	24.80	8.23	6.43	0.05
T1-100m	4/16/13	956	0.15	4.6	0.19	2.6	0.14	2	0.7	21	0.47	14.5	4.9	68	0.03	35.17	24.90	8.20	6.85	0.05
Geomean	**FY '13**			**2.1**		**2.0**		***2.9***				***12.9***		**71**	**0.05**					**0.09**
T1-100m	8/1/13	905	0.05	1.7	0.34	4.7	0.06	0.8	5.2	145	0.41	12.7	5.1	71	0.06	35.08	26.0	8.24	6.69	0.13
T1-100m	10/29/13	940	0.13	4.1	0.25	3.5	0.57	8.0	2.2	62	0.43	13.4	6.2	87	0.02	35.30	27.1	8.21	6.17	0.23
T1-100m	2/4/14	941	0.12	3.7	0.54	7.5	0.41	5.8	4.3	121	0.39	12.1	6.4	90	0.02	34.87	25.2	8.21	6.31	0.16
T1-100m	5/6/14	940	0.11	3.3	0.32	4.5	0.30	4.2	3.2	91	0.45	13.9	6.5	91	0.06	34.74	25.9	8.22	6.37	0.17
Geomean	**FY '14**			**3.0**		***4.9***		***3.5***				***13.0***		**84**	**0.03**					**0.17**
T1-100m	8/5/14	952	0.18	5.6	0.24	3.4	0.41	5.8	2.6	74	0.54	16.6	5.4	75	0.09	34.94	26.8	8.21	5.93	0.13
T1-100m	11/17/14	1130	0.17	5.2	0.21	2.9	0.46	6.4	0.7	20	0.43	13.4	6.2	87	0.09	34.99	27.1	8.22	6.78	0.22
T1-100m	3/3/15	946	0.02	0.7	0.36	5.0	0.07	1.0	2.9	82	0.32	10.0	8.0	113	0.07	34.79	25.5	8.15	6.74	0.14
T1-100m	6/16/15	1057	0.16	5.0	1.49	20.8	0.27	3.8	11.0	309	0.55	16.9	6.5	91	0.05	35.81	26.5	8.20	6.05	0.15
Geomean	**FY '15**			**3.2**		***5.7***		***3.4***				***13.9***		**90**	**0.07**					**0.16**
T1-100m	8/26/15	1157	0.13	4.0	0.28	3.9	0.21	2.9	5.1	142	0.40	12.4	3.8	53	0.03	34.44	28.4	8.21	6.03	0.43
T1-100m	11/17/15	956	0.14	4.2	0.36	5.1	0.14	1.9	3.5	98	0.53	16.5	7.3	103	0.05	33.92	27.3	8.21	6.11	0.18
T1-100m	3/1/16	958	0.15	4.5	0.29	4.1	0.31	4.4	0.6	17	0.47	14.5	5.4	75	0.07	34.77	25.4	8.24	5.68	0.08
T1-100m	5/3/16	931	0.18	5.5	1.30	18.2	0.21	3.0	8.5	240	0.42	12.9	7.3	103	0.07	34.57	25.5	8.23	6.26	0.29
Geomean	**FY '16**			**4.5**		***6.2***		***2.9***				***14.0***		**81**	**0.05**					**0.21**
T1-100m	7/6/16	1010	0.11	3.5	0.20	2.8	0.71	10.0	2.9	82	0.11	3.5	5.2	73	0.09	34.47	26.8	8.25	6.59	0.24
T1-100m	12/20/16	1004	0.08	2.4	0.51	7.2	0.25	3.5	6.2	175	0.34	10.4	2.9	40	0.03	34.68	25.6	8.25	5.44	0.17
T1-100m	2/28/17	904	0.00	0.1	0.12	1.7	0.04	0.6	0.6	18	0.28	8.8	4.6	65	0.07	34.67	24.7	8.23	6.63	0.17
T1-100m	5/9/17	1024	0.04	1.3	0.06	0.9	0.09	1.2	0.5	15	0.26	7.9	5.0	70	0.09	34.66	25.6	8.20	4.62	0.08
Geomean	**FY '17**			**1.0**		**2.4**		**2.2**				**7.1**		**60**	**0.06**					**0.15**

NELHA Water Quality Laboratory

Transect 1, Station 4

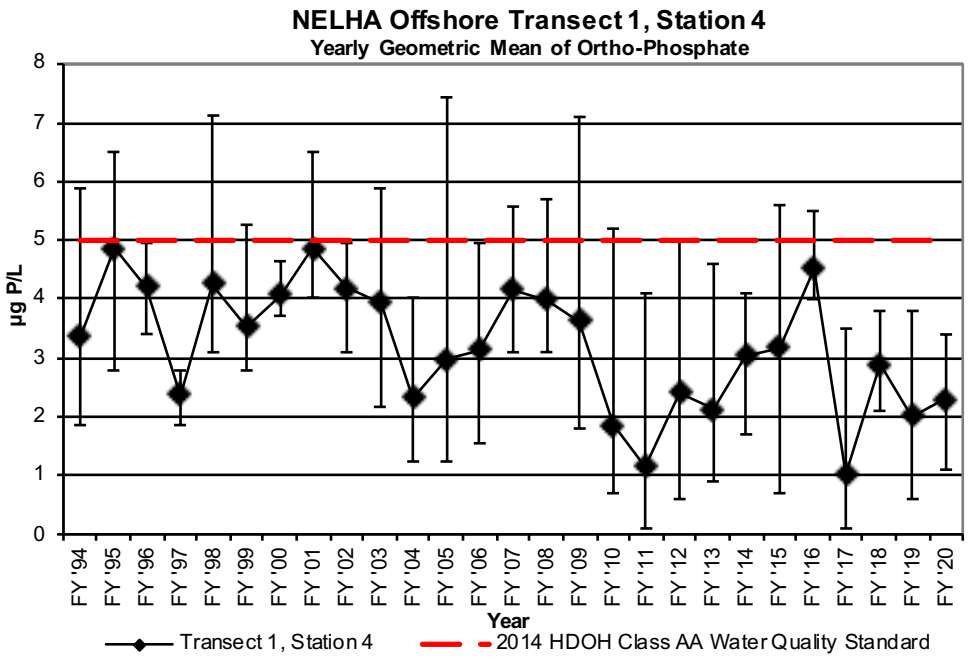
7/27/1993 - 7/14/20

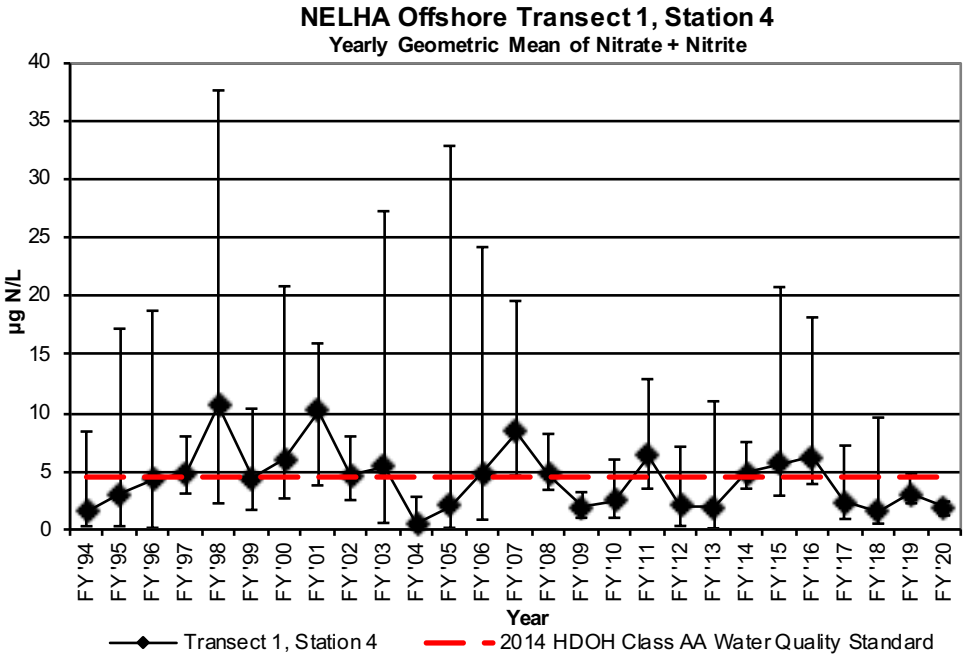
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-100m	9/27/17	954	0.11	3.5	0.16	2.3	0.12	1.7	1.6	46	0.43	13.3	4.3	60	0.09	34.76	27.8	8.20	4.35	0.17
T1-100m	11/28/17	1048	0.12	3.8	0.69	9.6	0.34	4.7	4.4	124	0.40	12.3	2.7	38	0.09	34.98	26.1	8.18	4.48	0.21
T1-100m	1/30/18	1026	0.08	2.5	0.04	0.6	0.14	1.9	1.5	41	0.34	10.6	2.1	30	0.08	34.90	24.6	8.16	5.36	0.18
T1-100m	5/16/18	1026	0.07	2.1	0.04	0.5	0.11	1.5	2.5	71	0.35	10.7	2.1	29	0.02	34.74	25.5	8.16	5.95	0.11
Geomean	**FY '18**			**2.9**		**1.6**		**2.2**				**11.7**		**38**	**0.06**					**0.16**
T1-100m	9/24/18	952	0.07	2.2	0.16	2.3	0.29	4.1	6.5	184	0.48	14.8	6.1	85	0.08	34.60	27.7	8.16	5.10	0.17
T1-100m	11/13/18	1033	0.02	0.6	0.19	2.6	0.24	3.4	0.3	9	0.35	10.8	5.6	79	0.08	35.01	27.2	8.20	4.60	0.21
T1-100m	1/22/19	1021	0.10	3.2	0.34	4.8	0.02	0.3	2.6	73	0.39	12.0	2.6	36	0.07	34.87	25.0	8.23	5.71	0.36
T1-100m	4/16/19	1018	0.12	3.8	0.21	2.9	0.39	5.5	1.9	53	0.40	12.4	2.1	29	0.04	35.66	25.7	8.12	7.22	0.09
Geomean	**FY '19**			**2.0**		**3.0**		**2.2**				**12.4**		**52**	**0.07**					**0.18**
T1-100m	8/13/19	1152	0.04	1.1	0.09	1.2	0.18	2.5	4.6	129	0.30	9.2	2.7	38	0.10	35.58	28.4	8.22	6.71	0.23
T1-100m	11/19/19	1151	0.11	3.4	0.17	2.4	0.60	8.4	0.6	16	0.40	12.5	2.3	32	0.09	34.78	27.6	8.23	6.65	0.19
T1-100m	1/22/20	949	0.10	3.1	0.16	2.3	0.09	1.3	-0.2	-5	0.38	11.9	2.3	32	0.06	34.91	25.1	8.22	6.66	0.25
T1-100m	6/24/10	1023	0.08	2.4	0.16	2.3	0.09	1.3	2.4	67	0.33	10.3	2.2	31	0.07	35.28	25.8	8.16	6.84	0.32
Geomean	**FY '20**			**2.3**		**2.0**		**2.4**				**10.9**		**33**	**0.08**					**0.24**

NELHA Water Quality Laboratory

Transect 1, Station 4

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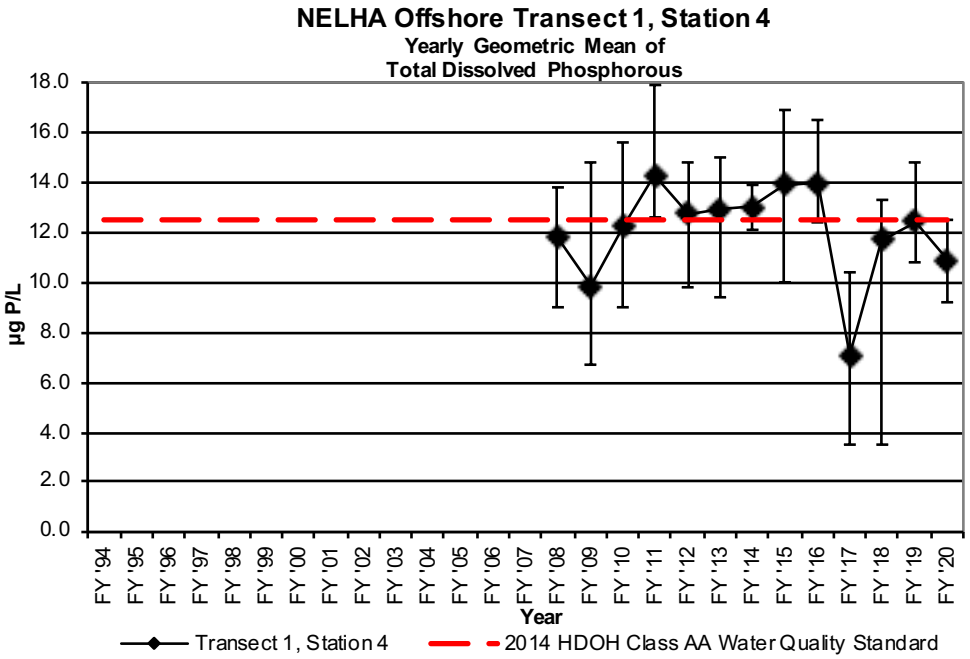


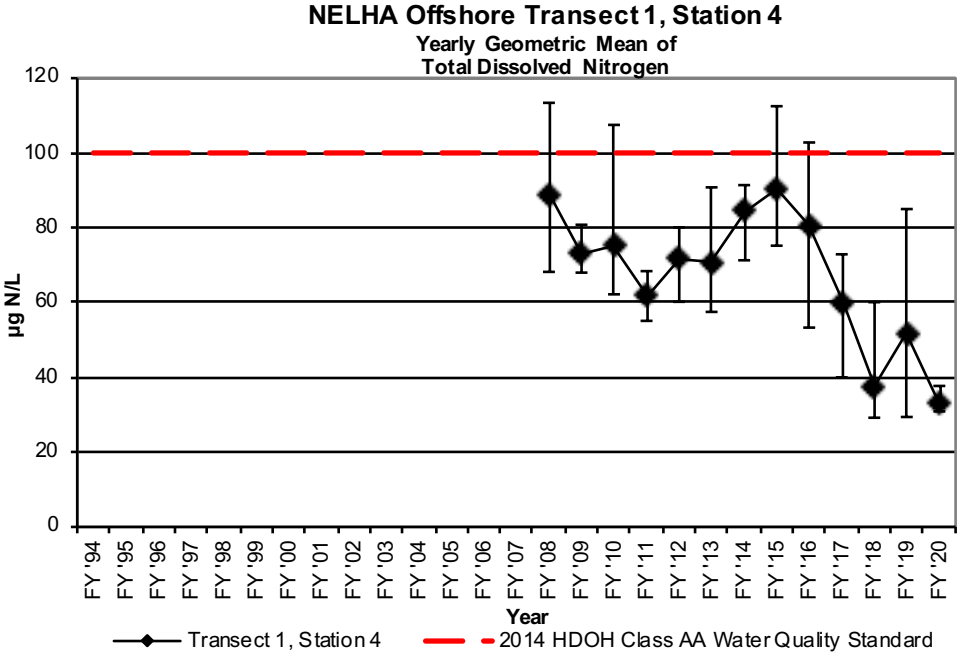


NELHA Water Quality Laboratory

Transect 1, Station 4

7/27/1993 - 7/14/20

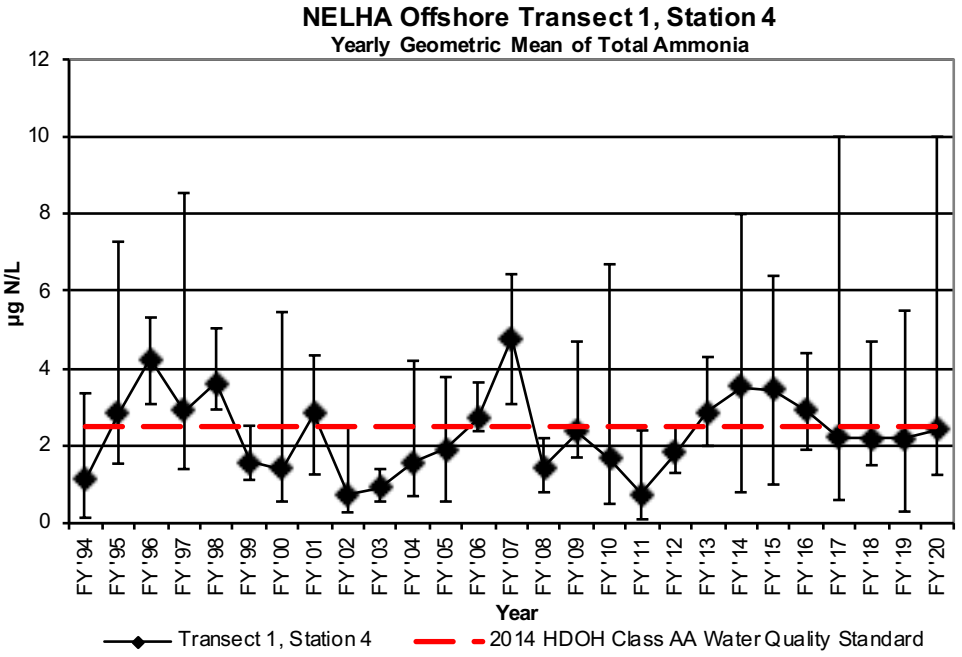


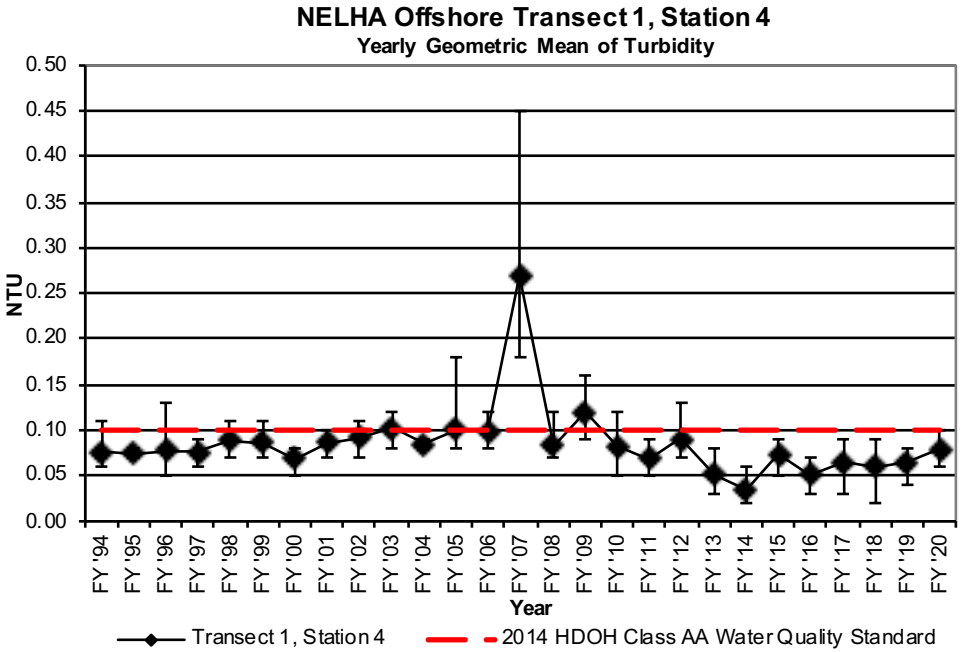


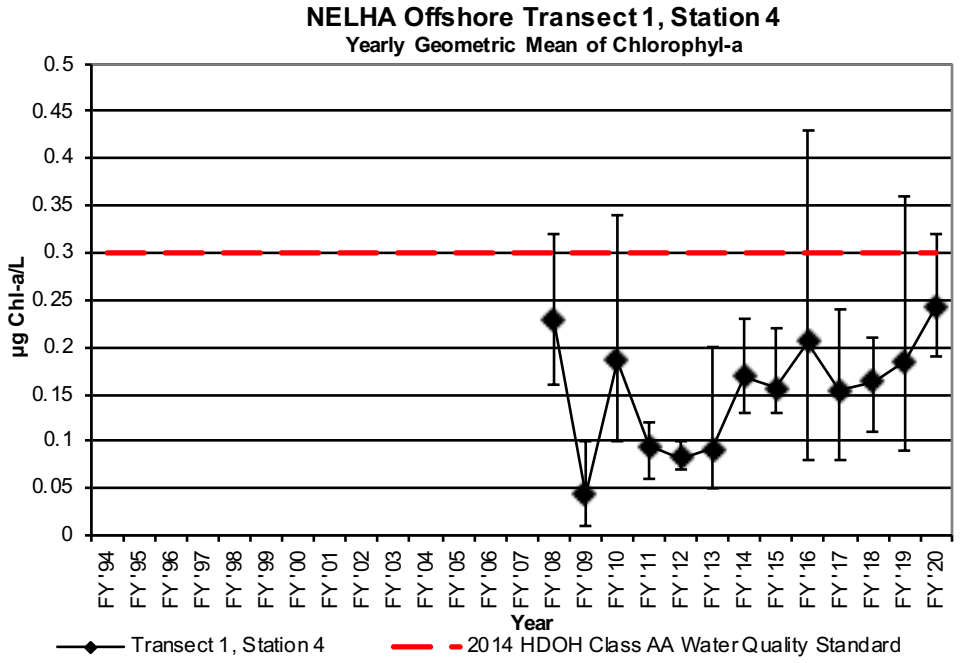
NELHA Water Quality Laboratory

Transect 1, Station 4

7/27/1993 - 7/14/20







NELHA Water Quality Laboratory

Transect 1, Station 5

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-5S-69m	7/27/93	1125	0.04	1.2	0.01	0.1	0.18	2.5	3.8	107					0.07	34.499	26.6			
O1-5S-69m	12/7/93	1031	0.06	1.9	0.10	1.4	0.18	2.5	2.4	68					0.08	34.817	25.9			
O1-5S-69m	3/16/94	1012	0.18	5.6	0.45	6.3	0.20	2.8	9.0	252					0.09	34.400	24.8			
O1-5S-69m	6/14/94	1001	0.10	3.1	0.04	0.6	0.01	0.1	2.0	57					0.08	34.585	25.4			
Geomean	**FY '94**			**2.5**		**0.9**		**1.3**							**0.08**					
O1-5S-69m	9/15/94	1020	0.08	2.5	0.02	0.3	0.09	1.3	3.6	101					0.09	34.634	27.6			
O1-5S-69m	11/16/94	923	0.18	5.6	0.92	12.9	0.55	7.7	12.3	345					0.06	34.295	26.0			
O1-5S-69m	3/21/95	1142	0.17	5.3	0.01	0.1	0.12	1.7	4.1	115					0.10	34.215	25.1			
O1-5S-69m	6/26/95	940	0.17	5.3	1.19	16.7	0.53	7.4	15.2	426					0.08	34.165	26.7			
Geomean	**FY '95**			**4.4**		**1.7**		***3.3***							**0.08**					
O1-5S-69m	9/25/95	835	0.11	3.4	0.52	7.3	0.26	3.6	10.2	286					0.12	34.388	27.1			
O1-5S-69m	11/13/95	1131	0.11	3.4	0.02	0.3	0.40	5.6	2.1	58					0.06	34.370	27.1			
O1-5S-69m	3/11/96	914	0.14	4.3	0.74	10.4	0.39	5.5	7.2	202					0.08	34.285	25.0			
O1-5S-69m	5/13/96	838	0.10	3.1	0.01	0.1	0.26	3.6	3.1	88					0.05	34.311	27.4			
Geomean	**FY '96**			**3.5**		**1.3**		***4.5***							**0.07**					
O1-5S-69m	7/30/96	830	0.09	2.8	0.31	4.3	0.12	1.7	3.9	108					0.08	34.448	28.2			
O1-5S-69m	10/1/96	1147	0.06	1.9	1.42	19.9	0.69	9.7	15.4	431					0.08	34.280	27.8			
O1-5S-69m	1/6/97	1153	0.09	2.8	0.16	2.2	0.17	2.4	3.0	84					0.08	34.700	25.7			
O1-5S-69m	4/21/97	1136	0.09	2.8	0.38	5.3	0.25	3.5	1.9	54					0.07	34.554	26.5			
Geomean	**FY '97**			**2.5**		***5.7***		***3.4***							**0.08**					
O1-5S-69m	8/18/97	1125	0.17	5.3	1.90	26.6	0.23	3.2	22.4	628					0.11	34.021	27.2			
O1-5S-69m	10/6/97	1145	0.10	3.1	0.24	3.4	0.32	4.5	13.8	387					0.08	34.665	27.4			
O1-5S-69m	3/3/98	1145	0.11	3.4	0.50	7.0	0.22	3.1	7.3	204					0.08	34.936	25.1			
O1-5S-69m	5/4/98	1056	0.28	8.7	3.87	54.2	0.21	2.9	65.9	1851					0.10	33.838	23.7			
Geomean	**FY '98**			**4.7**		***13.6***		***3.4***							**0.09**					
O1-5S-69m	7/6/98	1155	0.10	3.1	0.16	2.2	0.10	1.4	4.1	115					0.10	34.997	26.4			
O1-5S-69m	10/5/98	1127	0.12	3.7	0.81	11.3	0.16	2.2	7.5	211					0.10	34.926	27.3			
O1-5S-69m	1/13/99	1137	0.13	4.0	1.11	15.5	0.10	1.4	11.5	324					0.11	34.822	25.2			
O1-5S-69m	4/12/99	906	0.18	5.6	1.46	20.4	0.08	1.1	15.5	435					0.09	34.307	24.0			
Geomean	**FY '99**			**4.0**		***9.5***		**1.5**							**0.10**					

NELHA Water Quality Laboratory

Transect 1, Station 5

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-5S-69m	7/6/99	910	0.11	3.4	0.16	2.2	0.09	1.3	5.0	139					0.09	34.936	25.6			
O1-5S-69m	10/4/99	1000	0.15	4.6	0.64	9.0	0.16	2.2	17.2	482					0.10	34.796	26.0			
O1-5S-69m	1/4/00	1154	0.12	3.7	1.23	17.2	0.40	5.6	10.9	305					0.08	34.884	24.6			
O1-5S-69m	4/17/00	946	0.19	5.9	1.40	19.6	0.02	0.3	16.8	472					0.05	34.221	24.3			
Geomean	**FY '00**			**4.3**		***9.1***		**1.5**							**0.08**					
O1-5S-69m	7/24/00	1212	0.10	3.1	0.23	3.2	0.03	0.4	3.1	87					0.09	34.879	27.2			
O1-5S-69m	10/30/00	1228	0.14	4.3	0.36	5.0	0.36	5.0	6.9	195					0.08	34.877	27.1			
O1-5S-69m	2/26/01	1210	0.22	6.8	1.44	20.2	0.20	2.8	26.5	743					0.11	34.138	24.8			
O1-5S-69m	5/7/01	1003	0.14	4.3	0.80	11.2	0.31	4.3	8.3	232					0.08	34.720	24.6			
Geomean	**FY '01**			**4.5**		***7.8***		**2.3**							**0.09**					
O1-5S-69m	8/21/01	1126	0.14	4.3	0.29	4.1	0.02	0.3	4.0	112					0.12	34.745	26.7			
O1-5S-69m	10/8/01	929	0.12	3.7	0.11	1.5	0.07	1.0	3.0	83					0.08	34.929	27.2			
O1-5S-69m	3/5/02	1046	0.15	4.6	0.49	6.9	0.06	0.8	7.4	208					0.11	34.574	24.3			
O1-5S-69m	4/17/02	1107	0.13	4.0	0.23	3.2	0.22	3.1	3.6	102					0.08	34.455	25.7			
Geomean	**FY '02**			**4.2**		**3.4**		**0.9**							**0.10**					
O1-5S-69m	7/8/02	955	0.12	3.7	0.12	1.7	0.12	1.7	4.7	131					0.08	34.638	26.5			
O1-5S-69m	10/9/02	1050	0.04	1.2	0.11	1.5	0.06	0.8	4.6	130					0.07	34.956	26.9			
O1-5S-69m	3/11/03	933	0.17	5.3	1.62	22.7	0.04	0.6	11.0	308					0.09	34.738	24.4			
O1-5S-69m	4/22/03	1044	0.12	3.7	1.28	17.9	0.09	1.3	7.9	222					0.08	34.845	25.2			
Geomean	**FY '03**			**3.1**		***5.7***		**1.0**							**0.08**					
O1-5S-69m	8/18/03	1040	0.04	1.2	0.01	0.1	0.30	4.2	3.4	95					0.02	34.806	27.6			
O1-5S-69m	10/29/03	1006	0.12	3.7	0.01	0.1	0.09	1.3	1.2	34					0.07	34.846	27.5			
O1-5S-69m	3/11/04	924	0.16	5.0	0.66	9.2	0.05	0.7	11.3	316					n/a	34.279	25.8			
O1-5S-69m	5/20/04	954	0.12	3.7	0.08	1.1	0.18	2.5	3.2	91					n/a	33.45	26.6			
Geomean	**FY '04**			**3.0**		**0.7**		**1.7**							**0.04**					
O1-5S-69m	9/20/04	912	0.09	2.8	0.08	1.1	0.27	3.8	2.4	68					0.08	33.73	n/a			
O1-5S-69m	11/17/04	844	0.09	2.8	0.18	2.5	0.16	2.2	2.2	62					0.08	33.65	26.8			
O1-5S-69m	1/13/05	1010	0.05	1.5	0.19	2.7	0.05	0.7	2.7	77					0.08	34.854	25.9			
O1-5S-69m	4/11/05	955	0.20	6.2	1.66	23.3	0.38	5.3	12.4	348					0.08	34.175	25.1			
Geomean	**FY '05**			**2.9**		**3.6**		**2.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 1, Station 5

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O1-5S-69m	7/20/05	940	0.06	1.9	0.01	0.1	0.13	1.8	1.6	46					0.10	34.730	25.1			
O1-5S-69m	10/11/05	833	0.05	1.5	0.05	0.7	0.13	1.8	2.5	70					0.11	34.906	26.5			
O1-5S-69m	3/13/06	915	0.10	3.1	0.01	0.1	0.25	3.5	2.4	66					0.13	34.824	24.5			
O1-5S-69m	5/15/06	920	0.18	5.6	1.80	25.2	0.11	1.5	17.6	494					0.26	34.243	24.6			
Geomean	**FY '06**			**2.7**		**0.8**		**2.1**							***0.14***					
O1-5S-69m	8/14/06	911	0.17	5.3	0.43	6.0	0.33	4.6	4.6	129					0.18	34.579	26.6			
O1-5S-69m	11/1/06	916	0.12	3.7	0.68	9.5	0.46	6.4	6.6	186					0.47	34.748	26.7			
O1-5S-69m	2/12/07	937	0.21	6.5	2.43	34.0	0.26	3.6	14.3	402					0.23	34.175	24.5			
O1-5S-69m	4/9/07	909	0.12	3.7	0.19	2.7	0.40	5.6	4.0	111					0.44	34.664	25.5			
Geomean	**FY '07**			**4.7**		***8.5***		***5.0***							***0.30***					
T1-500m	9/26/07	832	0.11	3.5	0.06	0.9	0.31	4.4	5.0	141	0.32	9.9	4.2	59	0.07	34.992	26.8	8.11	6.20	0.05
T1-500m	12/13/07	1044	0.15	4.7	0.03	0.4			5.6	157	0.42	13.0	6.3	89	0.18	34.720	25.7	8.28	6.20	0.2
T1-500m	3/10/08	946	0.15	4.7	0.36	5.1	0.06	0.8	4.5	127	0.38	11.8	7.6	106	0.10	34.888	25.0	8.2	6.53	0.21
T1-500m	6/5/08	953	0.12	3.8	0.13	1.8	0.16	2.2	16.6	466	0.26	7.9	6.5	92	0.08	34.8146	25.0	8.07	6.63	0.13
Geomean	**FY '08**			**4.1**		**1.3**		**2.0**				**10.5**		**84**	***0.10***					**0.13**
T1-500m	9/22/08	1101	0.05	1.4	0.05	0.7	0.14	2	1.4	40	0.25	7.8	5.9	83	0.08	34.839	26.7	8.02	6.27	0.05
T1-500m	11/17/08	939	0.16	5	0.04	0.5	0.14	1.9	2.8	80	0.37	11.5	5.5	77	0.20	34.966	25.6	8.24	5.99	0.08
T1-500m	2/9/09	939	0.09	2.9	0.21	2.9	0.12	1.7	2.9	81	0.17	5.2	4.9	69	0.09	35.047	24.9	8.06	6.04	0.01
T1-500m	4/13/09	932	0.14	4.4	0.30	4.2	3.47	48.6	4.6	128	0.48	15	10.5	147	0.18	34.924	24.1	8.15	6.03	0.1
Geomean	**FY '09**			**3.1**		**1.4**		***4.2***				**9.1**		**90**	***0.13***					**0.04**
T1-500m	9/9/09	935	0.11	3.5	0.11	1.6	0.12	1.7	6.1	171	0.53	16.4	6.4	90	0.11	35.20	26.8	8.20	5.66	0.26
T1-500m	11/23/09	951	0.03	0.8	0.08	1.1	0.05	0.7	15.9	448	0.40	12.5	5.1	72	0.07	35.18	25.3	8.25	6.16	0.18
T1-500m	2/23/10	1002	0.15	4.6	0.00	0.05	0.48	6.7	14.5	407	0.38	11.9	4.0	57	0.04	35.06	24.6	8.21	6.03	0.23
T1-500m	5/25/10	1115	0.01	0.3	0.01	0.1	0.04	0.5	2.3	66	0.31	9.6	4.8	67	0.11	35.06	25.2	8.22	6.87	0.05
Geomean	**FY '10**			**1.4**		**0.3**		**1.4**				**12.4**		**70**	**0.08**					**0.15**
T1-500m	8/10/10	955	0.02	0.6	0.67	9.4	0.05	0.7	7.2	202	0.27	8.3	3.6	50	0.06	34.77	25.98	8.22	6.28	0.06
T1-500m	11/8/10	943	0.00	0.1	0.02	0.3	0.07	1.0	7.0	197	0.32	9.9	4.4	62	0.04	35.31	26.58	8.25	6.17	0.03
T1-500m	1/11/11	957	0.11	3.5	0.00	0.05	0.07	1.0	0.6	17	0.42	13.1	3.0	43	0.04	35.04	25.12	8.21	6.34	0.13
T1-500m	4/26/11	953	0.10	3.2	0.21	3	0.08	1.1	4.7	132	0.46	14.1	3.5	49	0.08	34.94	25.03	8.22	6.33	0.14
Geomean	**FY '11**			**0.9**		**0.8**		**0.9**				**11.1**		**51**	**0.05**					**0.08**

NELHA Water Quality Laboratory

Transect 1, Station 5

7/27/93 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-500m	7/26/11	1017	0.17	5.3	0.29	4	0.06	0.9	2.7	76	0.48	14.8	5.4	76	0.08	34.79	26.10	8.26	6.32	0.08
T1-500m	10/18/11	947	0.01	0.2	0.03	0.4	0.11	1.5	2.0	55	0.39	12	5.5	77	0.08	35.06	26.60	8.23	6.78	0.13
T1-500m	1/25/12	1013	0.06	1.9	0.01	0.2	0.04	0.6	1.8	51	0.41	12.7	6.2	87	0.07	35.04	24.77	8.20	6.74	0.08
T1-500m	4/24/12	1038	0.09	2.8	0.03	0.4	0.15	2.1	0.9	24	0.38	11.9	4.4	62	0.11	35.19	24.64	8.22	6.66	0.08
Geomean	**FY '12**			**1.5**		**0.6**		**1.1**				***12.8***		**75**	**0.08**					**0.09**
T1-500m	7/24/12	956	0.00	0.1	0.16	2.3	0.09	1.3	1.6	44	0.37	11.5	5.5	77	0.03	35.09	26.36	8.23	6.76	0.08
T1-500m	11/27/12	950	0.06	2	0.16	2.3	0.31	4.4	2.5	71	0.42	13	5.9	82	0.09	35.22	25.10	8.21	6.87	0.09
T1-500m	1/24/13	957	0.05	1.6	0.01	0.1	0.12	1.7	1.1	31	0.47	14.5	6.2	88	0.04	35.10	24.69	8.22	6.33	0.09
T1-500m	4/16/13	1003	0.14	4.3	0.04	0.6	0.07	1	0.7	18	0.46	14.3	6.2	88	0.03	35.12	24.91	8.21	6.74	0.05
Geomean	**FY '13**			**1.1**		**0.8**		**1.8**				***13.3***		**83**	**0.04**					**0.08**
T1-500m	8/1/13	911	0.03	0.8	0.24	3.3	0.06	0.9	6.6	184	0.41	12.6	5.7	80	0.06	35.09	26.0	8.25	6.14	0.15
T1-500m	10/29/13	946	0.12	3.8	0.18	2.5	0.41	5.8	2.3	66	0.42	13.0	5.3	74	0.02	35.28	27.1	8.20	6.13	0.24
T1-500m	2/4/14	949	0.08	2.4	0.07	1.0	0.24	3.4	2.9	80	0.41	12.8	6.3	89	0.02	34.91	25.3	8.23	6.25	0.22
T1-500m	5/6/14	951	0.06	1.9	0.01	0.2	0.15	2.1	1.2	33	0.43	13.3	6.0	84	0.06	34.83	26.0	8.22	6.12	0.14
Geomean	**FY '14**			**1.9**		**1.1**		**2.5**				***12.9***		**81**	**0.03**					**0.18**
T1-500m	8/5/14	957	0.16	5.1	0.07	1.0	0.31	4.4	1.2	34	0.55	16.9	5.0	69	0.11	34.98	26.8	8.22	5.86	0.11
T1-500m	11/17/14	1137	0.15	4.5	0.09	1.2	0.42	5.9	0.5	13	0.42	13.0	5.3	74	0.10	35.00	27.1	8.21	6.81	0.22
T1-500m	3/3/15	953	0.03	0.9	0.54	7.6	0.09	1.2	5.1	144	0.10	3.2	7.0	98	0.07	34.72	25.6	8.15	6.66	0.16
T1-500m	6/16/15	1104	0.11	3.3	0.55	7.7	0.19	2.6	4.8	135	0.41	12.6	5.7	80	0.05	34.11	26.6	8.21	6.02	0.18
Geomean	**FY '15**			**2.9**		**2.9**		***3.0***				**9.7**		**79**	**0.08**					**0.16**
T1-500m	8/26/15	1204	0.12	3.7	0.03	0.4	0.18	2.5	1.1	31	0.39	12.2	4.8	67	0.02	34.60	28.6	8.21	6.25	0.11
T1-500m	11/17/15	1004	0.14	4.3	0.44	6.2	0.19	2.6	4.7	132	0.52	16.2	6.1	85	0.05	33.95	27.3	8.21	6.19	0.19
T1-500m	3/1/16	1005	0.14	4.4	0.39	5.4	1.06	14.8	2.5	71	0.46	14.4	5.7	80	0.07	34.71	25.5	8.24	5.70	0.10
T1-500m	5/3/16	937	0.12	3.8	0.11	1.6	0.09	1.3	0.3	9	0.47	14.6	10.1	142	0.06	34.72	25.5	8.27	6.38	0.24
Geomean	**FY '16**			**4.0**		**2.2**		***3.3***				***14.3***		**90**	**0.05**					**0.15**
T1-500m	7/6/16	1021	0.08	2.4	0.23	3.2	0.26	3.7	1.6	44	0.48	14.9	5.3	74	0.07	34.53	26.9	8.25	6.64	0.26
T1-500m	12/20/16	1013	0.04	1.3	0.14	1.9	0.01	0.2	2.4	66	0.33	10.3	2.4	34	0.03	34.71	25.6	8.25	5.57	0.17
T1-500m	2/28/17	912	0.00	0.1	0.01	0.2	0.04	0.5	0.3	8	0.31	9.6	4.6	65	0.12	34.66	24.7	8.22	6.19	0.15
T1-500m	5/9/17	1033	0.04	1.3	0.25	3.5	0.34	4.8	2.2	63	0.24	7.3	3.3	46	0.09	34.61	25.7	8.20	4.63	0.09
Geomean	**FY '17**			**0.8**		**1.4**		**1.2**				**10.2**		**52**	**0.07**					**0.16**

NELHA Water Quality Laboratory

Transect 1, Station 5

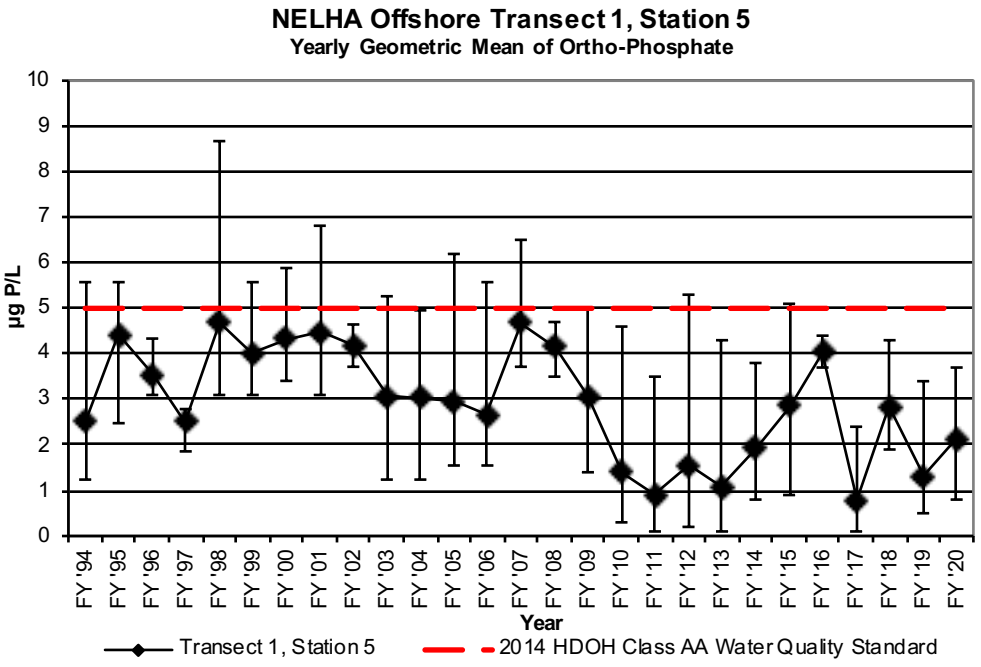
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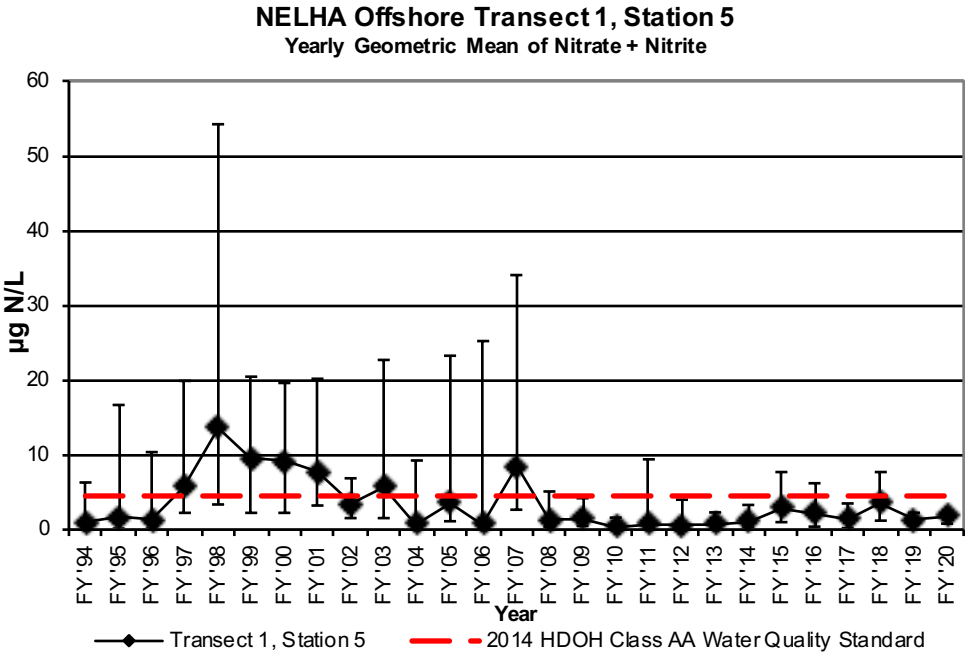
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T1-500m	9/27/17	1002	0.14	4.3	0.41	5.7	0.18	2.5	2.4	68	0.50	15.4	3.4	48	0.09	34.74	27.7	8.18	4.25	0.16
T1-500m	11/28/17	1056	0.10	3.0	0.55	7.7	0.25	3.5	2.0	55	0.38	11.7	3.2	45	0.06	35.08	26.2	8.19	4.82	0.17
T1-500m	1/30/18	1035	0.08	2.6	0.24	3.4	0.09	1.3	3.5	99	0.37	11.4	4.2	59	0.09	34.84	24.5	8.16	5.28	0.18
T1-500m	5/16/18	1034	0.06	1.9	0.09	1.2	0.09	1.3	1.6	46	0.36	11.1	4.5	63	0.03	34.79	25.6	8.16	5.96	0.12
Geomean	**FY '18**			**2.8**		**3.7**		**2.0**				**12.3**		**53**	**0.06**					**0.16**
T1-500m	9/24/18	1004	0.02	0.5	0.16	2.3	0.19	2.6	0.0	1	0.36	11.3	3.2	45	0.08	34.78	27.9	8.17	5.17	0.37
T1-500m	11/13/18	1040	0.02	0.7	0.14	2.0	0.24	3.4	0.1	4	0.38	11.7	3.5	49	0.07	35.02	27.3	8.21	4.59	0.18
T1-500m	1/22/19	1028	0.08	2.5	0.09	1.3	0.12	1.7	0.2	6	0.39	12.2	2.3	33	0.05	34.96	25.0	8.22	5.70	0.18
T1-500m	4/16/19	1027	0.11	3.4	0.04	0.5	0.44	6.2	1.1	31	0.38	11.8	2.6	37	0.03	35.65	25.8	8.13	7.09	0.09
Geomean	**FY '19**			**1.3**		**1.3**		***3.1***				**11.7**		**40**	**0.05**					**0.18**
T1-500m	8/13/19	1159	0.03	0.8	0.16	2.3	0.09	1.3	1.4	39	0.28	8.7	2.0	29	0.10	35.70	28.5	8.22	6.50	0.11
T1-500m	11/19/19	1157	0.09	2.8	0.06	0.8	0.74	10.3	0.3	9	0.43	13.3	2.5	35	0.08	34.87	27.7	8.24	6.39	0.14
T1-500m	1/22/20	957	0.12	3.7	0.16	2.3	0.09	1.3	0.5	14	0.41	12.6	2.6	36	0.03	34.92	25.0	8.21	6.60	0.12
T1-500m	6/24/10	1030	0.08	2.5	0.16	2.3	0.04	0.6	3.4	95	0.26	8.2	2.7	37	0.06	35.26	35.9	8.15	6.74	0.39
Geomean	**FY '20**			**2.1**		**1.7**		**1.8**				**10.5**		**34**	**0.06**					**0.16**

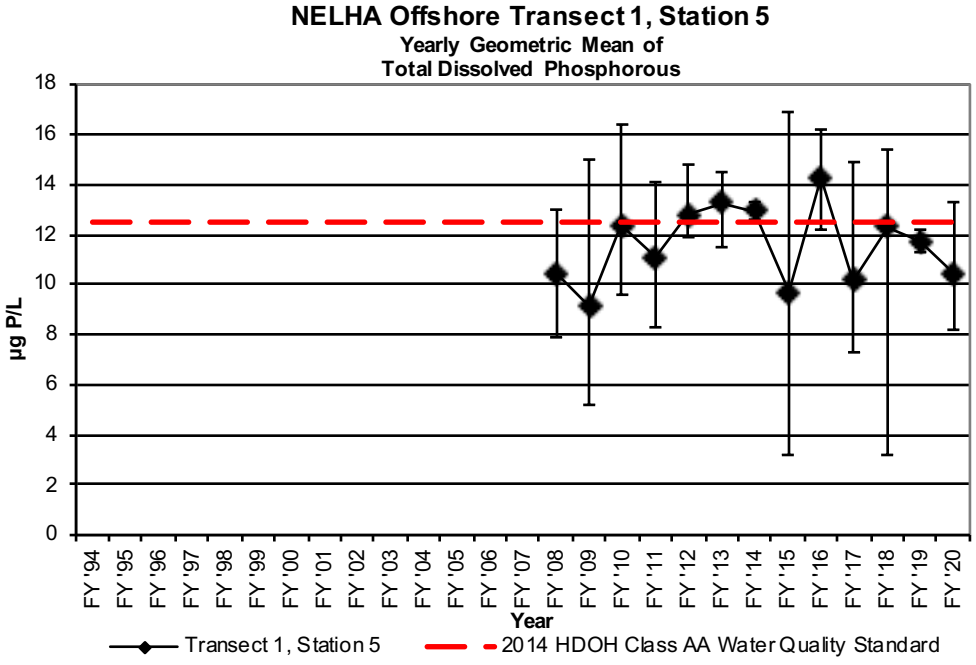
NELHA Water Quality Laboratory

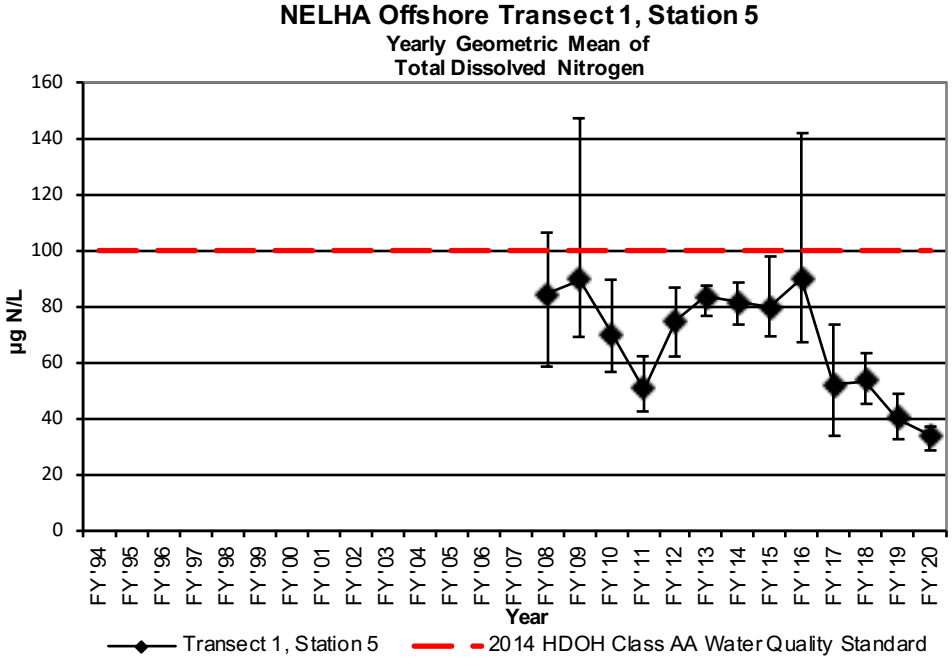
Transect 1, Station 5

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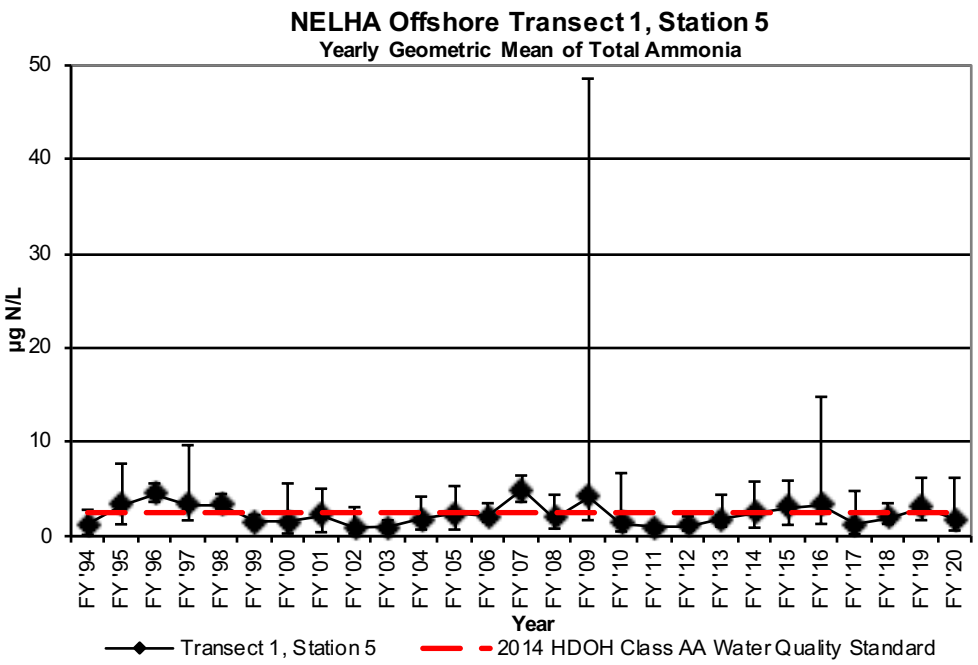


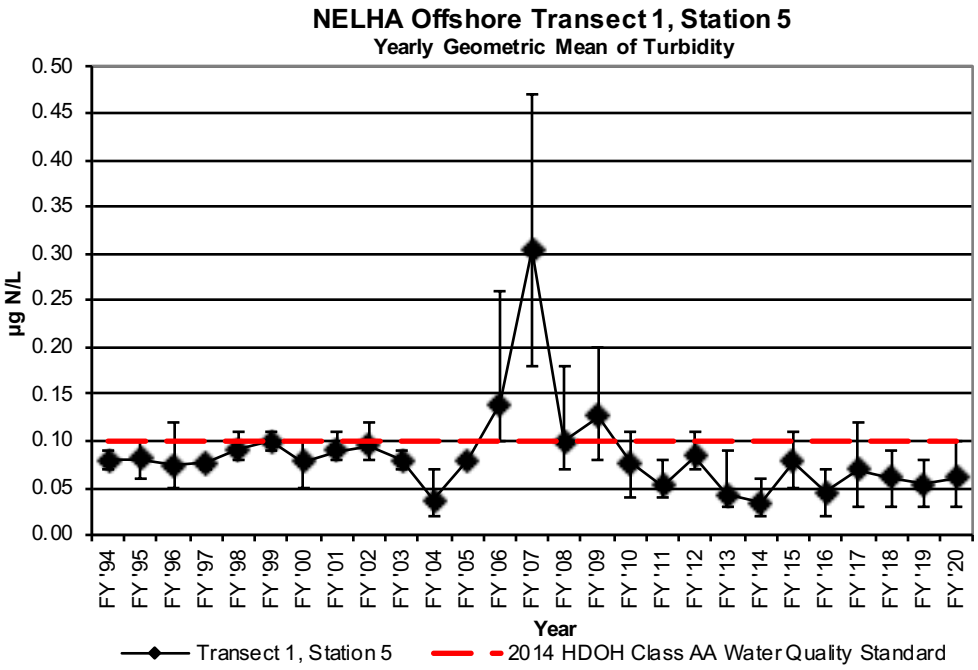


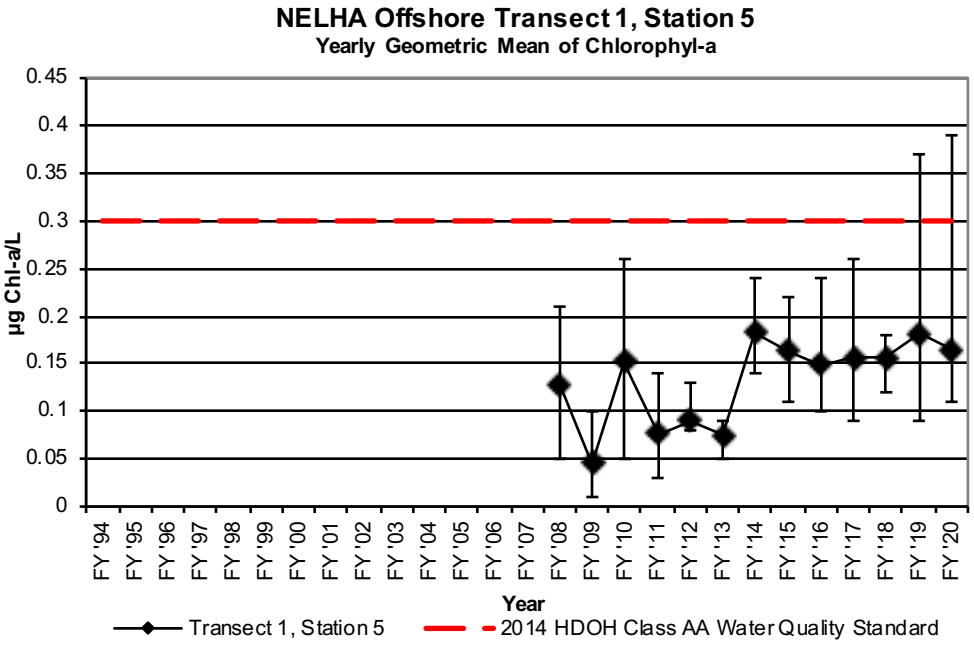
NELHA Water Quality Laboratory

Transect 1, Station 5

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NELHA Water Quality Laboratory

Transect 2

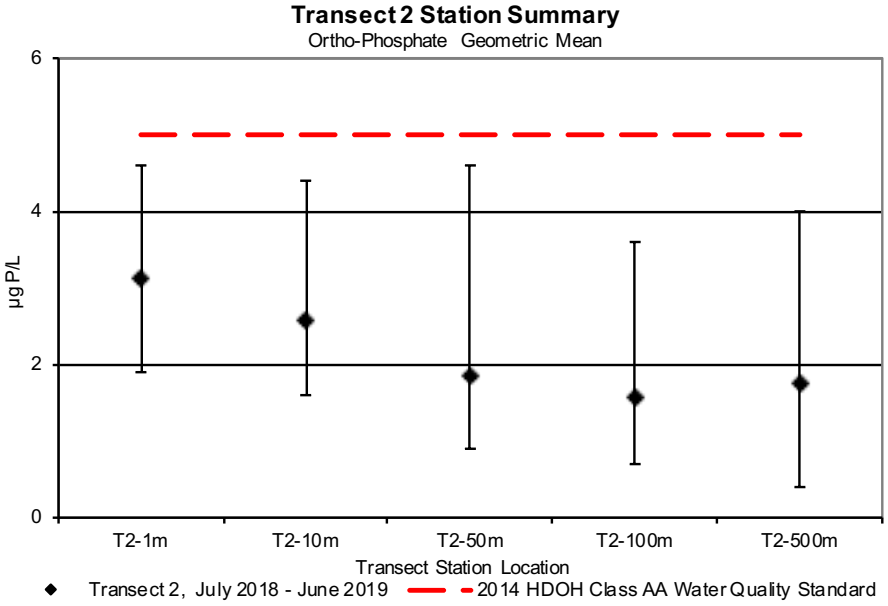
July 2018 - June 2019

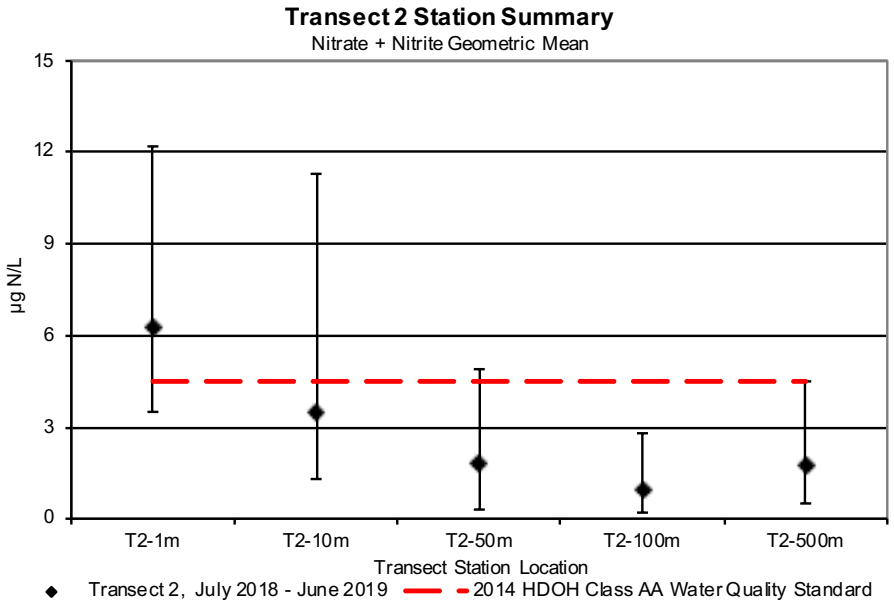
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T2-1m	9/24/18	1016	0.3	Low	0.06	1.9	0.25	3.5	0.31	4.3	1.6	44	0.47	14.5	3.98	56	0.10	34.71	27.7	8.18	5.35	0.13
T2-1m	11/13/18	1052	1.4	Ebb	0.08	2.5	0.87	12.2	0.46	6.4	1.3	37	0.39	12.2	5.08	71	0.11	34.97	27.3	8.23	4.80	0.26
T2-1m	1/22/19	1039	0.4	Ebb	0.15	4.6	0.62	8.7	0.10	1.4	2.9	80	0.43	13.4	3.32	47	0.08	34.92	24.9	8.22	5.90	0.29
T2-1m	4/16/19	1039	0.6	Flood	0.14	4.4	0.30	4.2	0.40	5.6	2.0	55	0.40	12.5	2.96	41	0.08	35.61	25.8	8.15	7.60	0.16
Geomean	**FY '19**				0.10	**3.1**	0.45	***6.3***	0.3	***3.8***			0.4	***13.1***	3.8	**53**	**0.09**					**0.20**
T2-10m	9/24/18	1023	0.3	Low	0.05	1.6	0.16	2.3	0.16	2.3	0.2	5	0.36	11.2	2.73	38	0.10	34.77	27.8	8.17	5.2	0.20
T2-10m	11/13/18	1056	1.4	Ebb	0.07	2.3	0.81	11.3	0.41	5.7	1.0	28	0.39	12.1	4.78	67	0.09	35.00	27.3	8.21	4.46	0.37
T2-10m	1/22/19	1043	0.4	Ebb	0.09	2.7	0.09	1.3	0.01	0.1	0.1	4	0.38	11.8	2.42	34	0.08	34.99	25.1	8.22	5.79	0.12
T2-10m	4/16/19	1045	0.6	Flood	0.14	4.4	0.32	4.5	0.19	2.6	2.0	56	0.41	12.8	3.08	43	0.07	35.63	25.8	8.16	7.56	0.14
Geomean	**FY '19**				0.08	**2.6**	0.25	**3.5**	0.10	**1.4**			0.39	**12.0**	3.1	**44**	**0.08**					**0.19**
T2-50m	9/24/18	1030	0.3	Low	0.03	0.9	0.16	2.3	0.10	1.4	0.5	15	0.32	9.9	2.69	38	0.07	34.80	27.8	8.17	5.15	0.20
T2-50m	11/13/18	1101	1.4	Ebb	0.04	1.1	0.24	3.4	0.27	3.8	0.2	6	0.34	10.6	4.21	59	0.08	35.03	27.3	8.21	4.32	0.25
T2-50m	1/22/19	1047	0.4	Ebb	0.08	2.6	0.02	0.3	0.07	1.0	0.2	5	0.37	11.5	2.02	28	0.05	35.00	25.1	8.22	5.65	0.18
T2-50m	4/16/19	1051	0.6	Flood	0.15	4.6	0.35	4.9	0.03	0.4	2.3	65	0.40	12.5	3.35	47	0.06	35.59	25.8	8.15	7.49	0.14
Geomean	**FY '19**				0.06	**1.9**	0.13	**1.8**	0.09	**1.2**			0.36	**11.1**	3.0	**41**	**0.06**					**0.19**
T2-100m	9/24/18	1037	0.3	Low	0.02	0.7	0.16	2.3	0.13	1.8	0.5	14	0.31	9.5	1.87	26	0.08	34.80	27.8	8.17	5.15	0.23
T2-100m	11/13/18	1105	1.4	Ebb	0.03	0.8	0.20	2.8	0.25	3.5	0.2	6	0.34	10.4	3.41	48	0.08	35.03	27.3	8.22	4.39	0.15
T2-100m	1/22/19	1052	0.4	Ebb	0.10	3.1	0.01	0.2	0.03	0.4	0.0	0	0.38	11.7	1.93	27	0.05	35.00	25.1	8.22	5.66	0.18
T2-100m	4/16/19	1057	0.6	Flood	0.12	3.6	0.05	0.7	0.16	2.2	1.5	42	0.37	11.6	2.41	34	0.04	35.61	25.9	8.15	7.17	0.12
Geomean	**FY '19**				0.05	**1.6**	0.07	**1.0**	0.11	**1.5**			0.35	**10.8**	2.3	**33**	**0.06**					**0.17**
T2-500m	9/24/18	1047	0.3	Low	0.01	0.4	0.16	2.3	0.19	2.7	0.5	14	0.29	9.0	1.41	20	0.09	34.80	27.9	8.16	5.03	0.17
T2-500m	11/13/18	1112	1.4	Ebb	0.07	2.1	0.12	1.7	0.18	2.5	2.1	59	0.32	9.9	2.13	30	0.06	35.01	27.4	8.22	4.62	0.14
T2-500m	1/22/19	1100	0.4	Ebb	0.09	2.8	0.04	0.5	0.08	1.1	0.7	20	0.37	11.5	1.12	16	0.07	34.96	25.0	8.22	5.64	0.11
T2-500m	4/16/19	1105	0.6	Flood	0.13	4.0	0.32	4.5	0.03	0.4	4.7	132	0.38	11.8	1.66	23	0.04	35.50	26.0	8.14	7.06	0.16
Geomean	**FY '19**				0.06	**1.8**	0.12	**1.7**	0.09	**1.3**			0.34	**10.5**	1.5	**22**	**0.06**					**0.14**

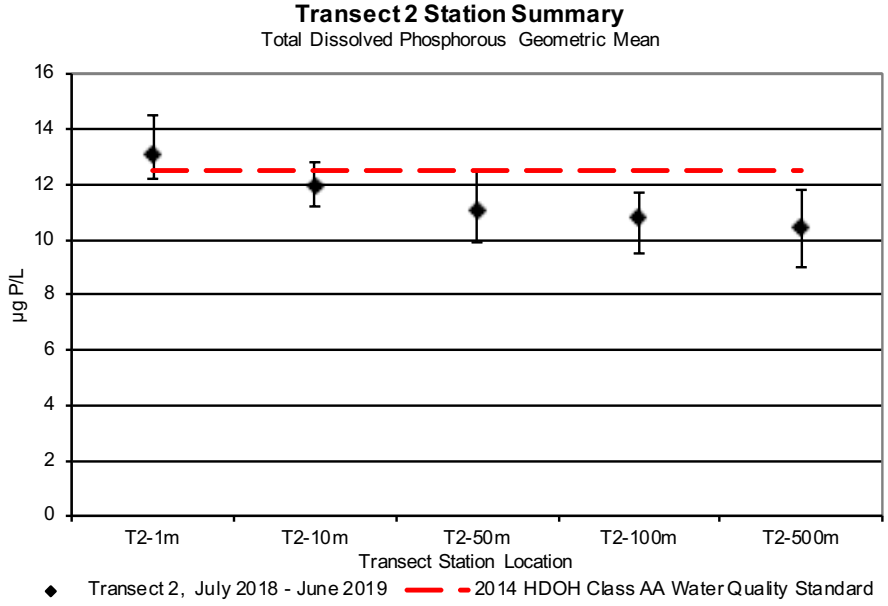
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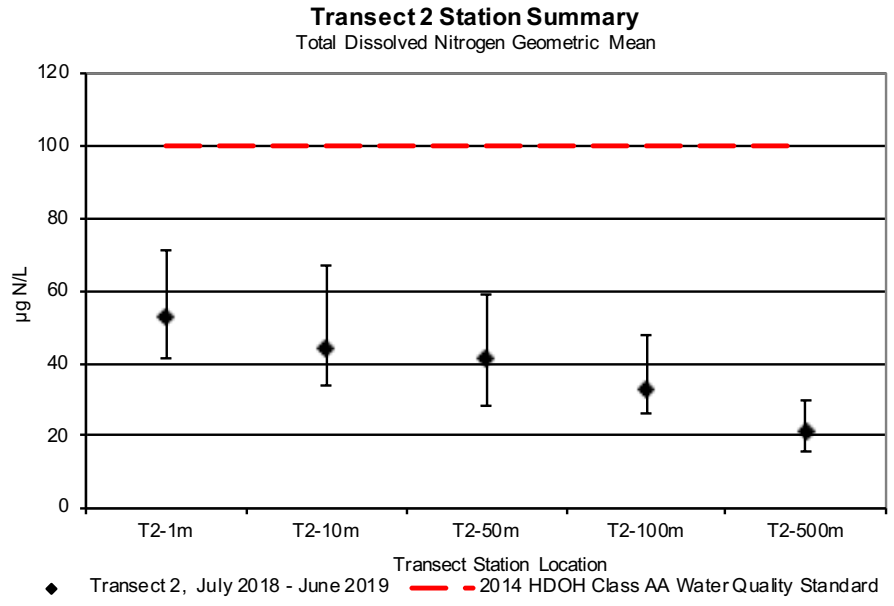
Transect 2

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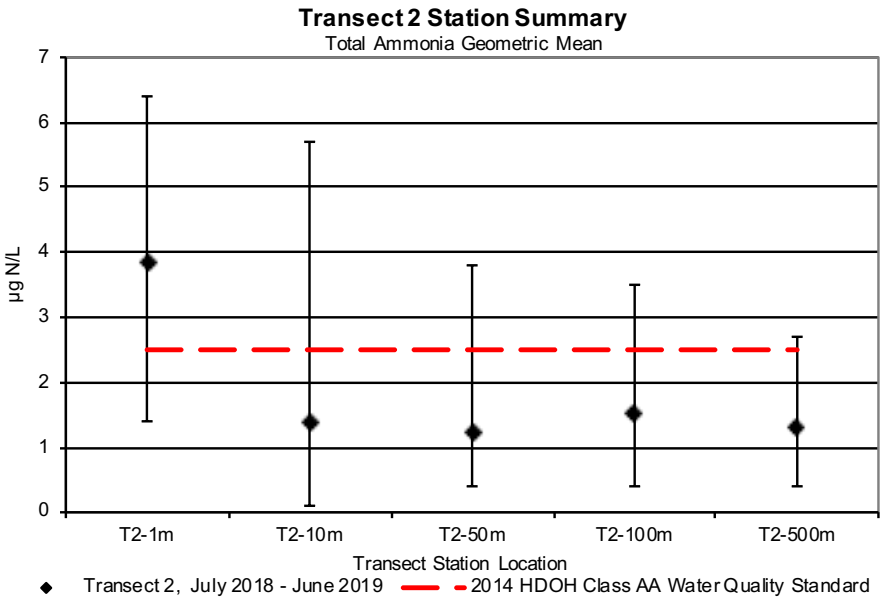


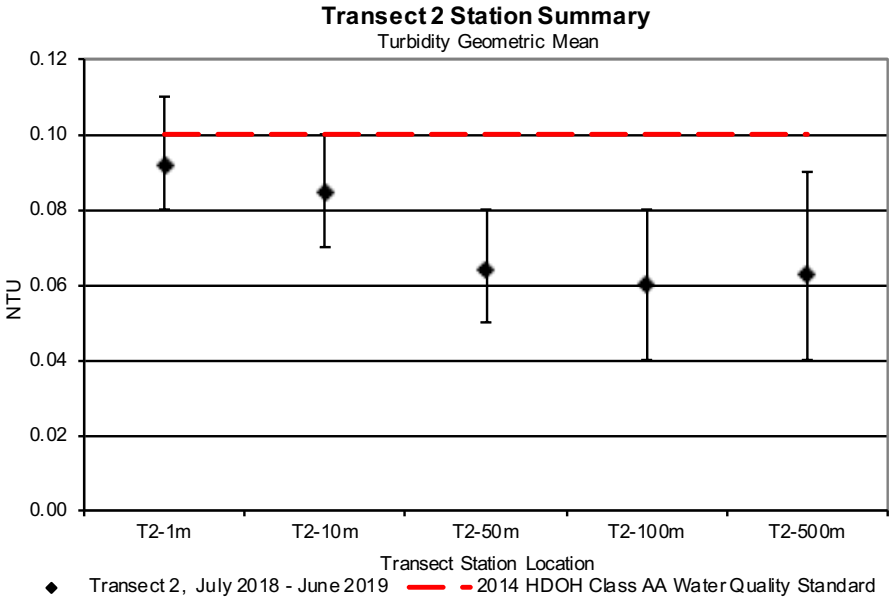


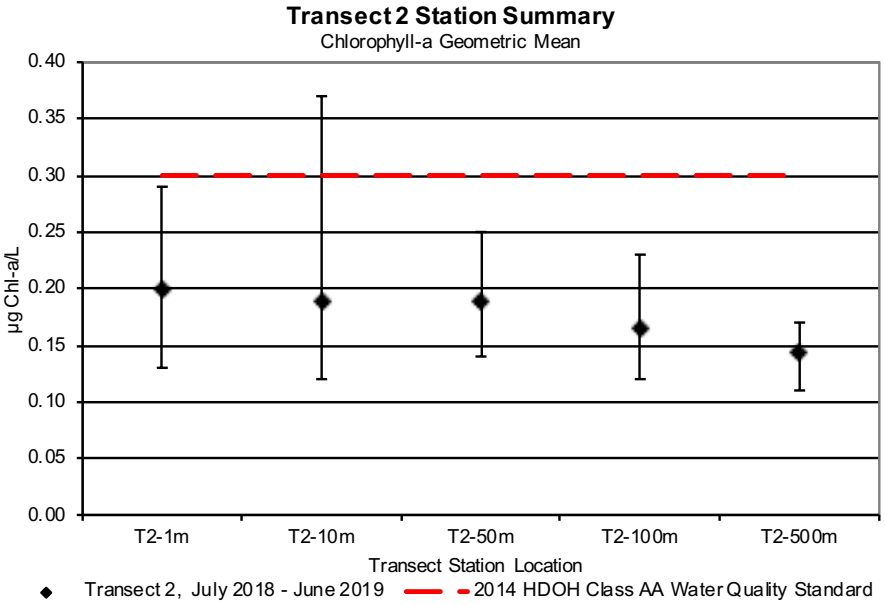
NELHA Water Quality Laboratory

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Transect 2

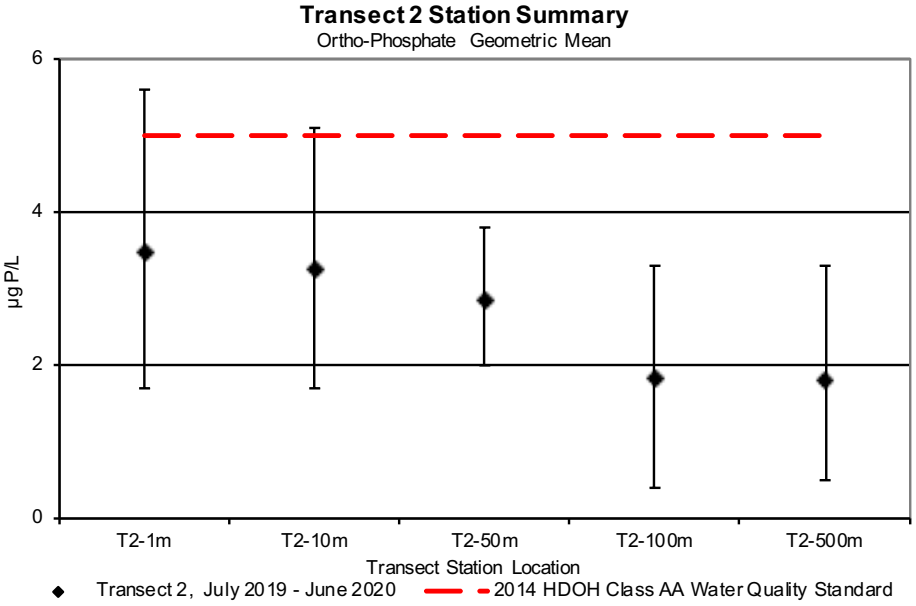
July 2018 - June 2019

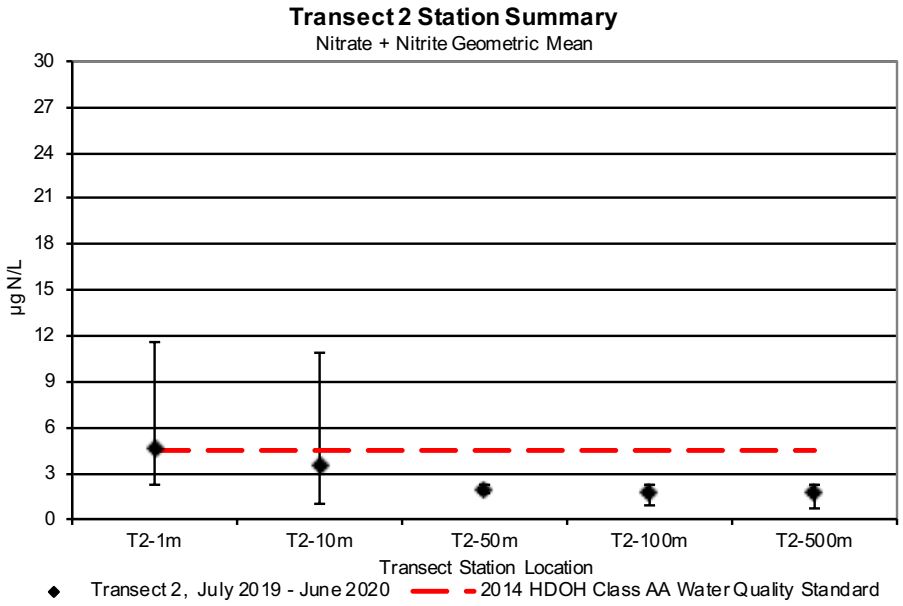
SITE ID	DATE	TIME	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T2-1m	8/13/19	1014	0.4	Flood	0.05	1.7	0.16	2.3	0.40	5.6	2.8	79	0.32	10.0	2.63	37	0.11	35.47	28.3	8.21	6.87	0.17
T2-1m	11/20/19	1031	1.9	High	0.12	3.6	0.21	3.0	1.21	17.0	0.6	17	0.47	14.6	2.77	39	0.12	35.36	27.5	8.19	7.03	0.20
T2-1m	1/22/20	1009	0.5	Low	0.18	5.6	0.42	5.9	0.09	1.3	2.7	76	0.47	14.7	3.85	54	0.09	34.92	25.0	8.23	7.00	0.13
T2-1m	6/24/20	1040	-0.1	Low	0.14	4.2	0.83	11.6	0.21	2.9	3.9	109	0.34	10.4	3.86	54	0.08	35.24	25.9	8.17	6.98	0.30
Geomean	**FY '20**				0.11	**3.5**	0.33	***4.6***	0.3	***4.3***			0.4	**12.2**	3.2	**45**	**0.10**					**0.19**
T2-10m	8/13/19	1020	0.4	Flood	0.05	1.7	0.07	1.0	0.20	2.8	4.0	113	0.33	10.1	2.84	40	0.16	35.54	28.3	8.22	6.92	0.16
T2-10m	11/20/19	1035	1.9	High	0.11	3.3	0.19	2.7	1.20	16.8	0.8	23	0.38	11.7	3.58	50	0.09	35.37	27.5	8.21	6.93	0.18
T2-10m	1/22/20	1014	0.5	Low	0.16	5.1	0.36	5.0	0.09	1.3	2.2	61	0.45	13.9	3.17	44	0.05	34.93	25.0	8.21	6.83	0.13
T2-10m	6/24/20	1044	-0.1	Low	0.13	4.0	0.78	10.9	0.15	2.1	3.6	102	0.32	10.0	3.09	43	0.07	35.27	25.9	8.17	6.97	0.26
Geomean	**FY '20**				0.11	**3.3**	0.25	**3.5**	0.24	***3.3***			0.37	**11.3**	3.2	**44**	**0.08**					**0.18**
T2-50m	8/13/19	1025	0.4	Flood	0.06	2.0	0.12	1.7	0.09	1.3	4.5	125	0.33	10.2	2.82	40	0.08	35.54	28.3	8.22	6.6	0.18
T2-50m	11/20/19	1040	1.9	High	0.08	2.5	0.12	1.7	0.70	9.8	0.2	7	0.40	12.4	2.53	36	0.09	35.34	27.5	8.22	6.61	0.16
T2-50m	1/22/20	1021	0.5	Low	0.12	3.8	0.16	2.3	0.09	1.3	0.0	0	0.40	12.3	2.81	39	0.04	34.93	25.0	8.22	6.67	0.11
T2-50m	6/24/20	1049	-0.1	Low	0.11	3.4	0.14	1.9	0.09	1.3	2.3	65	0.32	10.0	3.06	43	0.08	35.36	25.9	8.18	6.77	0.38
Geomean	**FY '20**				0.09	**2.8**	0.13	**1.9**	0.15	**2.1**			0.36	**11.2**	2.8	**39**	**0.07**					**0.19**
T2-100m	8/13/19	1034	0.4	Flood	0.01	0.4	0.16	2.3	0.26	3.6	3.3	93	0.29	9.1	2.50	35	0.13	35.58	28.3	8.22	6.45	0.18
T2-100m	11/20/19	1045	1.9	High	0.09	2.9	0.06	0.9	0.39	5.5	0.5	14	0.41	12.6	2.18	31	0.10	35.30	27.5	8.22	6.54	0.14
T2-100m	1/22/20	1026	0.5	Low	0.11	3.3	0.16	2.3	0.09	1.3	-0.1	-3	0.39	12.0	2.58	36	0.04	34.92	25.1	8.21	6.68	0.12
T2-100m	6/24/20	1055	-0.1	Low	0.09	2.9	0.16	2.3	0.09	1.3	1.4	39	0.30	9.4	2.20	31	0.03	35.42	25.8	8.18	6.69	0.39
Geomean	**FY '20**				0.06	**1.8**	0.13	**1.8**	0.17	**2.4**			0.34	**10.7**	2.4	**33**	**0.06**					**0.19**
T2-500m	8/13/19	1043	0.4	Flood	0.02	0.5	0.16	2.3	0.26	3.7	1.9	55	0.26	8.0	1.83	26	0.08	35.66	28.3	8.21	6.51	0.12
T2-500m	11/20/19	1053	1.9	High	0.09	2.7	0.05	0.7	0.09	1.3	0.6	17	0.44	13.5	2.76	39	0.05	35.25	27.6	8.22	6.50	0.16
T2-500m	1/22/20	1036	0.5	Low	0.11	3.3	0.16	2.3	0.09	1.3	1.2	35	0.36	11.3	2.09	29	0.06	34.94	25.0	8.22	6.52	0.14
T2-500m	6/24/20	1104	-0.1	Low	0.07	2.3	0.16	2.3	0.09	1.3	0.4	12	0.22	6.9	0.94	13	0.05	35.49	25.8	8.17	6.71	0.22
Geomean	**FY '20**				0.06	**1.8**	0.12	**1.7**	0.12	**1.6**			0.31	**9.6**	1.8	**25**	**0.06**					**0.16**

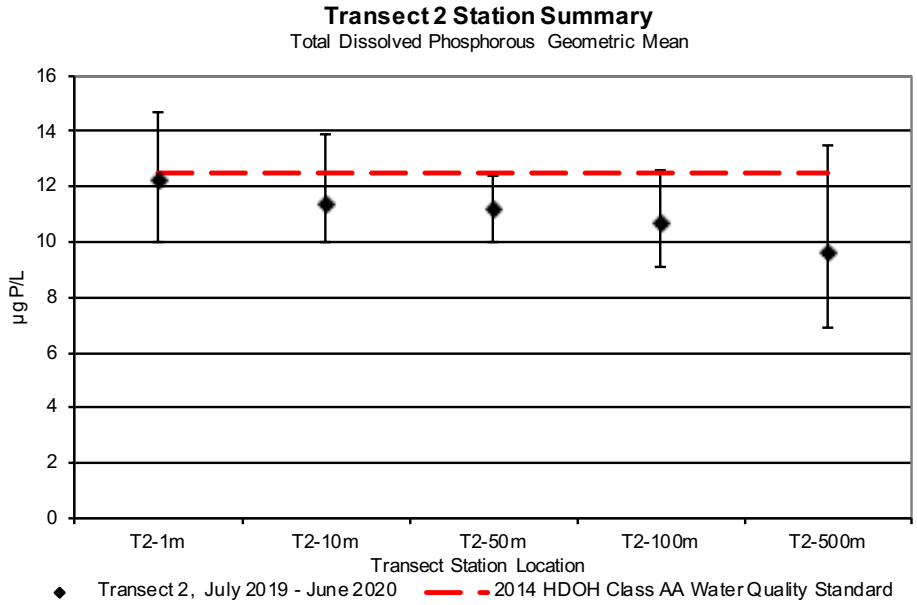
NELHA Water Quality Laboratory

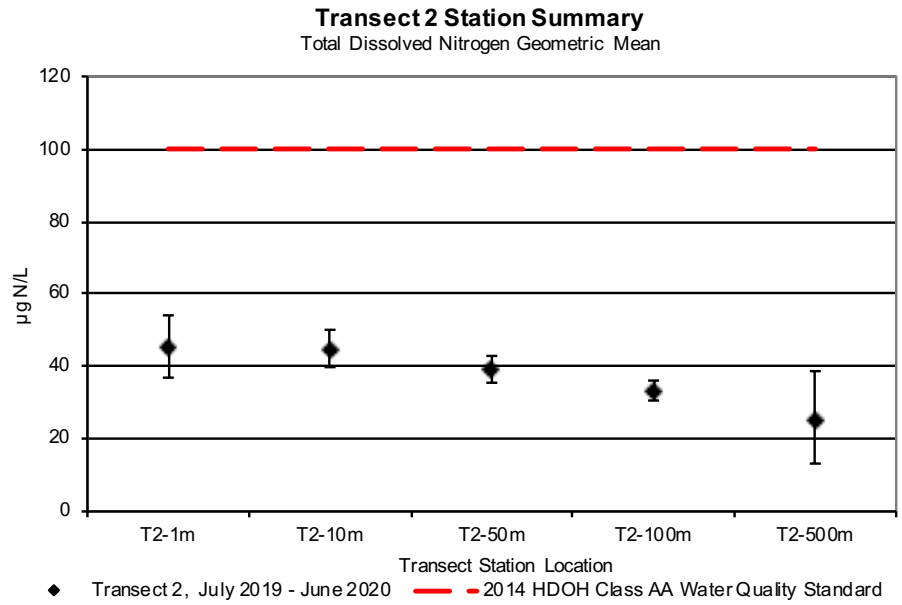
Transect 2

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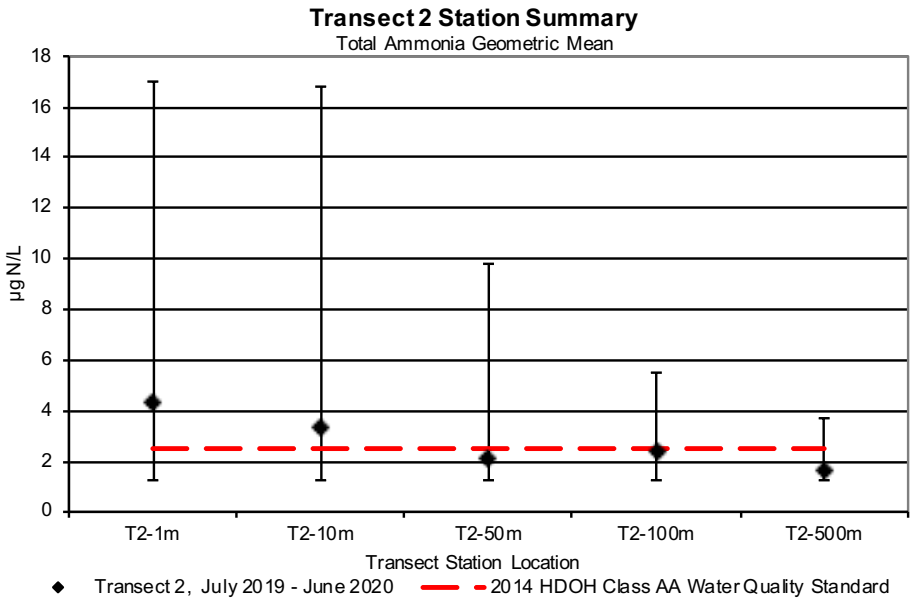


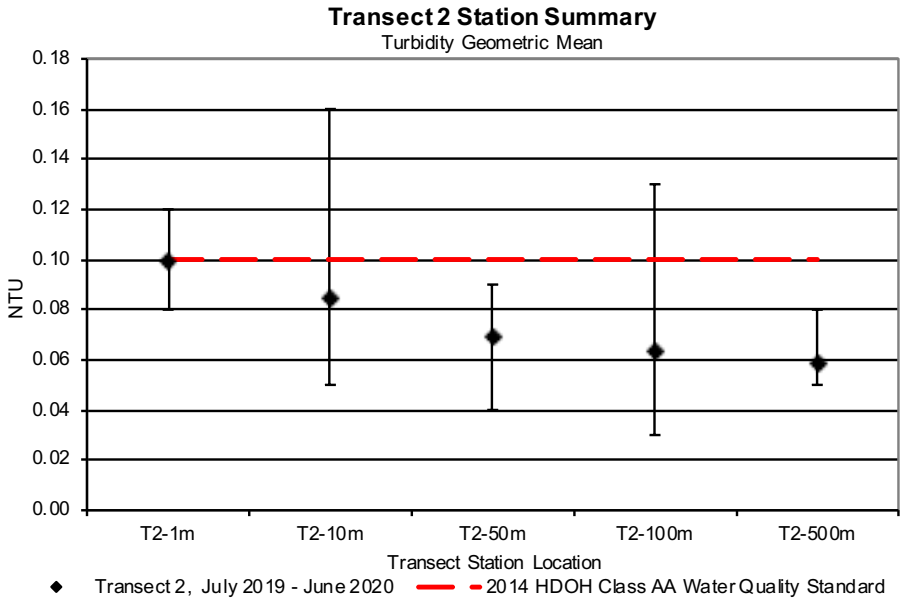


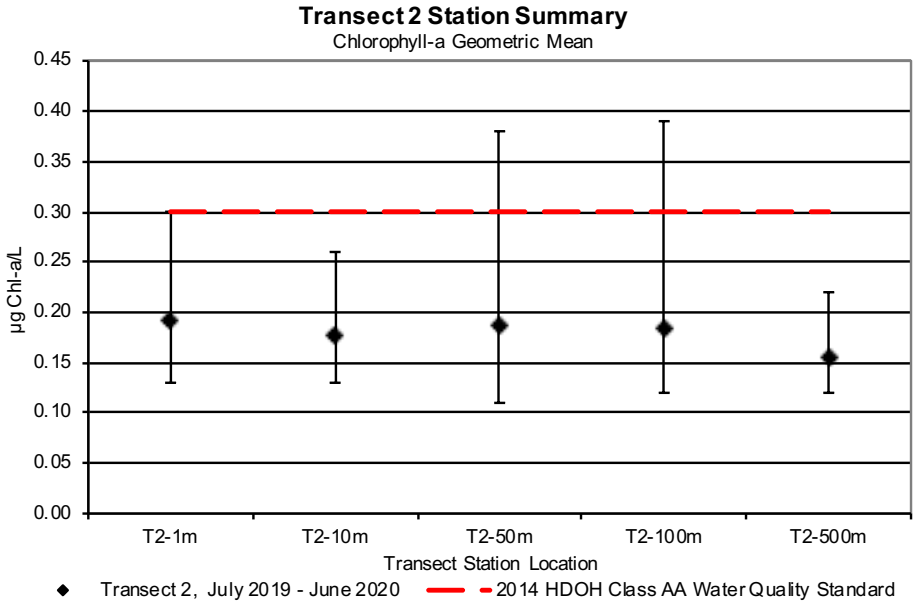
NELHA Water Quality Laboratory

Transect 2

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NELHA Water Quality Laboratory

Transect 2, Station 1

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O2-1S-8m	7/27/93	1008	0.07	2.2	0.04	0.6	0.24	3.4	2.3	65	0.29	9.0	7.7	108	0.29	8.98	1.43	0.06	34.472	26.7	8.26	6.95	0.07		
O2-1S-8m	12/7/93	932	0.08	2.5	0.20	2.8	0.18	2.5	4.3	120	0.25	7.7	5.3	74	0.25	7.74	1.10	0.08	34.765	25.7	8.24	6.98	0.12		
O2-1S-8m	3/16/94	929	0.17	5.3	0.37	5.2	0.20	2.8	6.6	185	0.31	9.7	3.5	49	0.31	9.60	1.19	0.08	34.408	24.5	8.25	7.23	0.15	<1	<1
O2-1S-8m	6/14/94	906	0.13	4.0	0.14	2.0	0.02	0.3	2.6	73	0.29	9.0	6.4	90	0.29	8.98	1.08	0.11	34.545	25.3	8.22	7.09	0.12	<1	<1
Geomean	**FY '94**			**3.3**		**2.0**		**1.6**				**8.8**		**77**				**0.08**					**0.11**		
O2-1S-8m	9/15/94	1027	0.10	3.1	0.34	4.8	0.27	3.8	4.2	117	0.29	9.0	6.8	95	0.32	9.91	1.25	0.11	34.563	27.7	8.26	6.81	0.15	<1	<1
O2-1S-8m	11/16/94	827	0.17	5.3	0.70	9.8	0.52	7.3	7.2	202	0.29	9.0	5.5	77	0.37	11.46	1.02	0.07	34.430	25.9	8.22	6.76	0.05	<1	<1
O2-1S-8m	3/21/95	1024	0.19	5.9	0.22	3.1	0.12	1.7	3.9	108	0.34	10.5	7.0	98	0.34	10.53	1.11	0.09	34.196	25.1	8.24	7.31	0.09	<1	<1
O2-1S-8m	6/26/95	833	0.12	3.7	0.38	5.3	0.50	7.0	3.5	97	0.29	9.0	5.6	79	0.29	8.98	1.00	0.09	34.517	26.5	8.22	6.96	0.13	<1	<1
Geomean	**FY '95**			**4.3**		***5.3***		***4.2***				**9.3**		**87**				**0.09**					**0.10**		
O2-1S-8m	9/25/95	1011	0.12	3.7	0.31	4.3	0.24	3.4	6.0	168	0.32	9.9	5.6	79	0.33	10.22	0.98	0.09	34.483	27.1	8.25	6.84	0.11	<1	<1
O2-1S-8m	11/13/95	1014	0.13	4.0	0.19	2.7	0.44	6.2	1.9	52	0.31	9.6	4.8	67	0.31	9.60	0.98	0.06	34.419	26.8	8.28	6.67	0.06	<1	<1
O2-1S-8m	3/11/96	1102	0.15	4.6	0.31	4.3	0.42	5.9	2.6	73	0.33	10.2	4.9	69	0.33	10.22	1.07	0.10	34.225	25.4	8.26	7.27	0.08	<1	<1
O2-1S-8m	5/13/96	1007	0.10	3.1	0.12	1.7	0.19	2.7	2.3	65	0.30	9.3	4.1	58	0.30	9.29	1.06	0.07	34.307	26.9	8.22	7.14	0.10	<1	<1
Geomean	**FY '96**			**3.8**		**3.0**		***4.2***				**9.8**		**68**				**0.08**					**0.09**		
O2-1S-8m	7/30/96	920	0.12	3.7	1.32	18.5	0.29	4.1	5.1	142	0.27	8.4	5.1	72	0.27	8.36	1.03	0.13	34.396	27.9	8.22	6.52	0.09	1	<1
O2-1S-8m	10/1/96	1039	0.09	2.8	0.17	2.4	0.62	8.7	2.4	67	0.29	9.0	4.7	66	0.29	8.98	1.00	0.08	34.733	28.0	8.23	6.94	0.08	<1	<1
O2-1S-8m	1/6/97	1105	0.10	3.1	0.29	4.1	0.23	3.2	3.3	93	0.27	8.4	3.7	52	0.31	9.60	1.07	0.08	34.663	25.7	8.28	7.68	0.02	<1	<1
O2-1S-8m	4/21/97	1050	0.11	3.4	1.04	14.6	0.28	3.9	3.7	104	0.36	11.2	5.4	75	0.37	11.46	1.11	0.12	34.512	26.5	8.28	6.93	0.07	1	<1
Geomean	**FY '97**			**3.2**		***7.1***		***4.6***				**9.1**		**65**				**0.10**					**0.06**		
O2-1S-8m	8/18/97	1048	0.11	3.4	0.63	8.8	0.23	3.2	4.8	134	0.33	10.2	5.1	71	0.34	10.53	1.08	0.12	34.586	26.8	8.41	6.68	0.11	<1	<1
O2-1S-8m	10/6/97	1108	0.10	3.1	0.48	6.7	0.43	6.0	5.1	142	0.37	11.5	4.9	69	0.37	11.46	1.03	0.11	34.697	27.6	8.48	6.93	0.15	1	<1
O2-1S-8m	3/3/98	1042	0.10	3.1	0.40	5.6	0.22	3.1	4.1	115	0.35	10.8	5.0	70	0.35	10.84	1.06	0.07	34.973	24.9	8.23	7.07	0.04	<1	<1
O2-1S-8m	5/4/98	1011	0.12	3.7	0.70	9.8	0.11	1.5	7.5	209	0.39	12.1	5.0	70	0.41	12.70	0.89	0.07	34.908	23.8	8.22	7.00	0.17	<1	<1
Geomean	**FY '98**			**3.3**		***7.6***		***3.1***				**11.1**		**70**				**0.09**					**0.10**		
O2-1S-8m	7/6/98	1113	0.14	4.3	0.76	10.6	0.14	2.0	5.4	153	0.39	12.1	5.6	79	0.39	12.08	1.06	0.09	34.942	26.3	8.22	7.03	0.11	<1	<1
O2-1S-8m	10/5/98	1047	0.13	4.0	0.63	8.8	0.19	2.7	4.7	131	0.37	11.5	6.1	85	0.42	13.01	1.02	0.12	35.019	27.1	8.23	7.49	0.10	<1	<1
O2-1S-8m	1/13/99	1057	0.12	3.7	0.58	8.1	0.18	2.5	4.2	117	0.37	11.5	6.1	86	0.37	11.46	1.27	0.12	35.054	25.0	8.22	7.12	0.44	<1	<1
O2-1S-8m	4/12/99	1037	0.13	4.0	0.30	4.2	0.11	1.5	4.4	124	0.39	12.1	4.8	67	0.39	12.08	1.01	0.08	34.655	24.2	8.23	7.40	0.15	<1	<1
Geomean	**FY '99**			**4.0**		***7.5***		**2.1**				**11.8**		**79**				***0.10***					**0.16**		

NELHA Water Quality Laboratory

Transect 2, Station 1

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O2-1S-8m	7/6/99	1055	0.11	3.4	0.07	1.0	0.10	1.4	2.9	82	0.36	11.2	5.4	76	0.36	11.15	1.05	0.09	34.948	25.7	8.22	7.07	0.16	1	<1
O2-1S-8m	10/4/99	1135	0.14	4.3	0.19	2.7	0.15	2.1	5.3	148	0.40	12.4	4.5	63	0.41	12.70	1.02	0.12	34.942	26.0	8.27	7.00	0.10	<1	<1
O2-1S-8m	1/4/00	1114	0.12	3.7	0.60	8.4	0.42	5.9	12.9	361	0.32	9.9	5.9	83	0.32	9.91	0.96	0.10	35.084	24.8	8.23	7.00	0.05	<1	<1
O2-1S-8m	4/17/00	1102	0.15	4.6	0.36	5.0	0.08	1.1	4.3	122	0.37	11.5	5.9	82	0.36	11.15	1.04	0.11	34.609	24.3	8.27	n/a	0.05	<1	<1
Geomean	**FY '00**			**4.0**		**3.2**		**2.1**				**11.2**		**76**				***0.10***					**0.08**		
O2-1S-8m	7/24/00	1119	0.11	3.4	0.31	4.3	0.06	0.8	3.3	92	0.33	10.2	5.4	76	0.34	10.53	1.03	0.08	34.888	27.3	8.27	8.54	0.15	<1	<1
O2-1S-8m	10/30/00	1138	0.14	4.3	0.39	5.5	0.31	4.3	18.3	515	0.35	10.8	5.2	73	0.36	11.15	1.07	0.09	34.927	27.1	8.26	6.80	0.10	<1	<1
O2-1S-8m	2/26/01	1127	0.16	5.0	0.59	8.3	0.20	2.8	7.0	195	0.37	11.5	6.1	85	0.37	11.46	1.08	0.11	34.652	24.9	8.22	6.80	0.06	<1	<1
O2-1S-8m	5/7/01	1129	0.14	4.3	0.72	10.1	0.36	5.0	4.5	127	0.38	11.8	6.1	85	0.40	12.39	1.13	0.08	34.808	24.7	8.21	7.23	0.15	<1	<1
Geomean	**FY '01**			**4.2**		***6.7***		***2.7***				**11.1**		**80**				**0.09**					**0.11**		
O2-1S-8m	8/21/01	1029	0.15	4.6	0.37	5.2	0.03	0.4	3.0	83	0.38	11.8	5.2	73	0.39	12.08	1.06	0.10	34.795	26.7	8.22	6.90	0.13	<1	<1
O2-1S-8m	10/8/01	1049	0.18	5.6	0.19	2.7	0.08	1.1	2.4	67	0.35	10.8	5.3	75	0.35	10.84	1.03	0.07	34.949	27.3	8.24	7.02	0.15	<1	<1
O2-1S-8m	3/5/02	1000	0.16	5.0	0.33	4.6	0.09	1.3	7.1	198	0.37	11.5	5.8	81	0.39	12.08	0.99	0.07	34.686	24.2	8.22	6.85	0.13	<1	<1
O2-1S-8m	4/17/02	1010	0.17	5.3	0.36	5.0	0.27	3.8	5.0	140	0.41	12.7	6.1	85	0.43	13.32	0.95	0.08	34.455	25.6	8.18	6.54	0.14	<1	<1
Geomean	**FY '02**			***5.1***		**4.2**		**1.2**				**11.7**		**78**				**0.08**					**0.14**		
O2-1S-8m	7/8/02	1125	0.20	6.2	0.35	4.9	0.17	2.4	4.2	119	0.44	13.6	5.9	83	0.44	13.63	1.02	0.11	34.629	26.7	8.24	7.05	0.20	<1	<1
O2-1S-8m	10/9/02	1000	0.09	2.8	0.47	6.6	0.11	1.5	3.7	103	0.31	9.6	6.3	88	0.32	9.91	0.95	0.08	34.903	27.1	8.26	8.13	0.12	1	1
O2-1S-8m	3/12/03	1125	0.12	3.7	0.13	1.8	0.03	0.4	6.6	186	0.34	10.5	8.1	113	0.39	12.08	1.09	0.10	34.774	25.1	8.28	7.37	0.16	<1	<1
O2-1S-8m	4/22/03	1124	0.12	3.7	1.09	15.3	0.03	0.4	4.5	126	0.36	11.2	5.6	78	0.37	11.46	0.99	0.11	34.948	25.3	8.26	7.36	0.15	<1	<1
Geomean	**FY '03**			**3.9**		***5.5***		**0.9**				**11.1**		**89**				**0.10**					**0.15**		
O2-1S-8m	8/18/03	1135	0.10	3.1	0.18	2.5	0.25	3.5	3.5	98	0.36	11.2	6.4	90	0.37	11.46	n/a	0.06	34.821	28.2	8.24	6.83	0.12	<1	<1
O2-1S-8m	10/29/03	1158	0.10	3.1	0.07	1.0	0.10	1.4	12.3	345	0.38	11.8	5.7	80	0.38	11.77	n/a	0.12	34.811	27.6	8.25	n/a	0.14	<1	<1
O2-1S-8m	3/11/04	1027	0.17	5.3	0.32	4.5	0.04	0.6	5.6	156	0.42	13.0	5.8	81	0.44	13.63	n/a	n/a	34.344	25.8	8.28	6.48	0.17	<1	<1
O2-1S-8m	5/20/04	1021	0.12	3.7	0.15	2.1	0.22	3.1	3.3	92	0.37	11.5	5.7	80	0.38	11.77	n/a	n/a	33.48	26.8	8.25	6.98	0.01	<1	<1
Geomean	**FY '04**			**3.7**		**2.2**		**1.7**				**11.8**		**82**				**0.08**					**0.07**		
O2-1S-8m	9/20/04	1010	0.10	3.1	0.08	1.1	0.26	3.6	1.5	43	0.34	10.5	5.9	82	0.34	10.53	n/a	0.10	33.76	27.8	8.25	6.82	0.10	1	<1
O2-1S-8m	11/17/04	942	0.08	2.5	0.25	3.5	0.19	2.7	2.1	60	0.36	11.2	5.5	77	0.36	11.15	n/a	0.08	33.57	26.9	8.28	6.77	0.13	<1	<1
O2-1S-8m	1/13/05	1105	0.07	2.2	0.26	3.6	0.11	1.5	2.9	82	0.28	8.7	5.4	75	0.28	8.67	n/a	0.11	34.831	25.9	8.34	7.06	0.09	<1	<1
O2-1S-8m	4/11/05	1104	0.16	5.0	0.71	9.9	0.30	4.2	7.8	219	0.41	12.7	5.6	79	0.42	13.01	n/a	0.10	34.481	25.3	8.32	7.21	0.07	<1	<1
Geomean	**FY '05**			**3.0**		**3.5**		***2.8***				**10.7**		**78**				**0.10**					**0.10**		

NELHA Water Quality Laboratory

Transect 2, Station 1

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O2-1S-8m	7/20/05	1054	0.19	5.9	0.40	5.6	0.16	2.2	3.7	103	0.39	12.1	4.4	61	0.39	12.08	n/a	0.08	34.669	26.5	8.25	6.61	0.02	<1	<1
O2-1S-8m	10/11/05	940	0.06	1.9	0.03	0.4	0.14	2.0	2.3	65	0.32	9.9	2.7	37	0.35	10.84	1.02	0.16	34.919	26.5	8.28	6.72	0.11	<1	<1
O2-1S-8m	3/13/06	1051	0.12	3.7	0.09	1.3	0.41	5.7	2.7	76	0.35	10.8	4.0	55	0.39	12.08	n/a	0.13	34.782	24.6	8.28	7.59	0.10	<1	<1
O2-1S-8m	5/15/06	1019	0.28	8.7	0.95	13.3	0.13	1.8	6.5	184	0.55	17.0	6.6	93	0.55	17.04	1.14	0.14	34.615	25.0	8.26	6.97	0.72	<1	1
Geomean	**FY '06**			**4.3**		**2.5**		***2.6***				**12.2**		**59**				***0.12***					**0.11**		
O2-1S-8m	8/14/06	1018	0.21	6.5	0.49	6.9	0.33	4.6	3.3	92	0.47	14.6	6.3	88	0.48	14.87	1.14	0.12	34.614	26.6	8.26	7.22	0.11	<1	<1
O2-1S-8m	11/1/06	1024	0.10	3.1	0.23	3.2	0.43	6.0	2.6	72	0.31	9.6	5.5	77	0.32	9.91	1.12	0.13	34.820	27.0	8.25	6.70	0.16	<1	<1
O2-1S-8m	2/12/07	1045	0.17	5.3	0.58	8.1	0.51	7.1	5.6	158	0.38	11.8	6.0	84	0.38	11.77	1.09	0.70	34.490	24.5	8.23	7.01	0.16	<1	<1
O2-1S-8m	4/9/07	1016	0.14	4.3	0.23	3.2	0.29	4.1	3.6	102	0.35	10.8	5.4	75	0.48	14.87	0.95	0.53	34.697	25.1	8.22	7.09	0.02	<1	<1
Geomean	**FY '07**			**4.6**		***4.9***		***5.3***				**11.6**		**81**				***0.28***					**0.09**		
T2-1m	9/26/07	943	0.16	4.9	0.35	4.9	0.41	5.8	14.0	392	0.37	11.5	5.2	73				0.08	34.939	26.8	8.15	6.38	0.08		
T2-1m	12/13/07	1121	0.11	3.4	0.39	5.5			13.0	365	0.38	11.7	6.9	96				0.18	34.685	25.7	8.24	6.61	0.25		
T2-1m	3/10/08	1010	0.16	4.9	0.37	5.2	0.06	0.8	5.2	147	0.36	11.2	8.4	117				0.41	34.903	24.9	8.19	6.58	0.19		
T2-1m	6/5/08	1015	0.11	3.5	0.64	9.0	0.16	2.2	20.2	567	0.25	7.8	7.8	109				0.08	34.783	25.1	8.09	6.83	0.27		
Geomean	**FY '08**			**4.1**		***6.0***		**2.2**				**10.4**		**97**				***0.15***					**0.18**		
T2-1m	9/22/08	1108	0.05	1.7	0.04	0.6	0.15	2.1	2.0	57	0.26	8.2	5.9	82				0.06	34.811	26.7	8.02	6.38	0.07		
T2-1m	11/17/08	950	0.14	4.2	0.21	3	0.14	1.9	2.5	71	0.26	8.2	5.4	76				0.19	34.964	25.7	8.24	6.11	0.02		
T2-1m	2/9/09	948	0.09	2.8	0.60	8.4	0.12	1.7	3.5	100	0.11	3.5	5.1	72				0.14	35.066	24.8	8.08	6.09	0.03		
T2-1m	4/13/09	942	0.43	13.3	1.92	26.9	0.47	6.6	5.3	148	0.50	15.4	6.9	96				0.10	34.868	24.0	8.18	6.18	0.14		
Geomean	**FY '09**			**4.0**		**4.5**		***2.6***				**7.8**		**81**				***0.11***					**0.05**		
T2-1m	9/9/09	947	0.15	4.6	0.49	6.8	0.30	4.2	6.7	189	0.52	16.2	5.8	81				0.07	35.15	26.9	8.21	5.60	0.21		
T2-1m	11/23/09	1003	0.03	0.8	0.16	2.3	0.03	0.4	23.8	669	0.27	8.4	5.0	70				0.07	35.20	25.3	8.27	6.40	0.15		
T2-1m	2/23/10	1012	0.16	5.1	0.29	4.1	0.43	6	16.3	458	0.31	9.6	4.7	66				0.07	35.06	24.6	8.18	6.49	0.37		
T2-1m	5/25/10	1026	0.05	1.5	0.31	4.3	0.19	2.6	3.7	105	0.25	7.6	5.7	80				0.11	34.95	25.1	8.23	7.00	0.08		
Geomean	**FY '10**			**2.3**		**4.1**		**2.3**				**10.0**		**74**				**0.08**					**0.17**		
T2-1m	8/10/10	1005	0.08	2.5	1.38	19.3	0.16	2.2	10.8	304	0.52	16.2	5.8	81				0.06	34.81	25.95	8.22	6.67	0.06		
T2-1m	11/8/10	952	0.03	0.9	0.44	6.2	0.24	3.3	2.6	72	0.36	11.2	4.7	65				0.10	35.25	26.40	8.25	6.42	0.06		
T2-1m	1/11/11	1009	0.14	4.2	0.25	3.5	0.08	1.1	2.8	79	0.44	13.5	3.9	55				0.08	34.96	24.95	8.24	6.61	0.13		
T2-1m	4/26/11	1009	0.11	3.4	0.44	6.2	0.10	1.4	9.1	256	0.44	13.7	5.1	72				0.10	34.97	24.99	8.21	6.53	0.14		
Geomean	**FY '11**			**2.4**		***7.1***		**1.8**				***13.5***		**67**				**0.08**					**0.09**		

NELHA Water Quality Laboratory

Transect 2, Station 1

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	ecal Colifor	Enterococci
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	Bact/100 ml	Bact/100 ml
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T2-1m	7/26/11	1032	0.18	5.6	0.49	6.9	0.14	1.9	3.5	98	0.51	15.8	6.3	88				0.06	34.81	25.93	8.25	6.66	0.09		
T2-1m	10/18/11	957	0.02	0.7	0.29	4	0.29	4.1	3.1	88	0.31	9.5	6.4	89				0.09	35.06	26.58	8.22	6.93	0.12		
T2-1m	1/25/12	1023	0.10	3	0.39	5.4	0.17	2.4	4.3	121	0.45	14	7.6	106				0.08	34.98	24.66	8.20	6.96	0.10		
T2-1m	4/24/12	1049	0.15	4.6	0.81	11.4	0.24	3.3	4.0	113	0.42	13	5.8	82				0.07	35.09	24.70	8.21	6.86	0.10		
Geomean	**FY '12**			**2.7**		***6.4***		***2.8***				***12.9***		**91**				**0.07**					**0.10**		
T2-1m	7/24/12	1010	0.02	0.6	0.36	5	0.27	3.8	2.3	64	0.39	12.2	6.8	95				0.12	35.07	26.31	8.23	6.83	0.12		
T2-1m	11/27/12	959	0.11	3.3	0.97	13.6	0.40	5.6	7.2	203	0.48	14.9	6.1	85				0.06	35.05	25.05	8.21	6.89	0.35		
T2-1m	1/23/13	1005	0.08	2.5	0.38	5.3	0.26	3.6	1.9	54	0.49	15.1	7.3	102				0.09	35.12	24.67	8.21	6.52	0.16		
T2-1m	4/16/13	1013	0.15	4.5	0.34	4.7	0.11	1.6	0.9	26	0.50	15.4	6.3	89				0.07	35.14	24.94	8.22	6.95	0.06		
Geomean	**FY '13**			**2.2**		***6.4***		***3.3***				***14.3***		**92**				**0.08**					**0.14**		
T2-1m	8/1/13	921	0.07	2.2	0.36	5.1	0.09	1.3	3.8	106	0.51	15.8	9.1	128				0.06	35.22	26.1	8.24	6.95	0.19		
T2-1m	10/29/13	954	0.15	4.6	0.57	8.0	0.26	3.7	2.6	74	0.45	13.8	6.5	92				0.05	35.27	27.0	8.20	6.50	0.26		
T2-1m	2/4/14	959	0.11	3.4	0.39	5.4	0.45	6.3	5.8	162	0.42	12.9	6.5	91				0.02	34.94	25.2	8.22	6.53	0.20		
T2-1m	5/6/14	1000	0.13	4.1	0.56	7.8	0.74	10.3	2.9	83	0.46	14.4	6.7	94				0.06	34.77	25.9	8.22	6.29	0.16		
Geomean	**FY '14**			**3.4**		***6.4***		***4.2***				***14.2***		**100**				**0.04**					**0.20**		
T2-1m	8/5/14	1007	0.20	6.3	0.41	5.8	0.51	7.2	2.1	59	0.50	15.4	6.5	91				0.13	34.94	26.8	8.22	5.99	0.11		
T2-1m	11/17/14	1144	0.20	6.3	0.44	6.2	0.53	7.4	0.9	25	0.48	14.9	8.0	113				0.10	34.96	27.1	8.21	7.22	0.15		
T2-1m	3/3/15	1002	0.01	0.3	0.49	6.9	0.10	1.4	1.8	50	0.03	1.0	7.0	99				0.09	34.83	25.5	8.16	7.05	0.15		
T2-1m	6/16/15	1115	0.15	4.6	1.14	16.0	0.32	4.5	3.9	110	0.50	15.4	6.9	97				0.08	34.18	26.5	8.21	6.35	0.20		
Geomean	**FY '15**			**2.7**		***7.9***		***4.3***				**7.7**		**99**				**0.10**					**0.15**		
T2-1m	8/26/15	1100	0.08	2.5	0.31	4.4	0.24	3.4	4.4	122	0.16	5.0	5.2	73				0.04	34.51	28.4	8.23	6.33	0.25		
T2-1m	11/17/15	1013	0.16	5.0	0.51	7.2	0.04	0.6	3.4	95	0.51	15.7	6.2	86				0.08	33.96	27.4	8.22	6.33	0.15		
T2-1m	3/1/16	1017	0.15	4.5	0.26	3.6	0.29	4.1	0.4	10	0.47	14.5	5.4	76				0.07	34.72	25.4	8.24	6.04	0.12		
T2-1m	5/3/16	948	0.14	4.4	0.54	7.5	0.20	2.8	1.4	39	0.43	13.3	5.5	77				0.06	34.66	25.6	8.25	6.43	0.18		
Geomean	**FY '16**			**4.0**		***5.4***		**2.2**				**11.1**		**78**				**0.06**					**0.17**		
T2-1m	7/6/16	1040	0.13	4.0	0.11	1.6	0.45	6.3	1.8	52	0.24	7.5	4.9	69				0.09	34.53	26.9	8.26	6.53	0.20		
T2-1m	12/20/16	1027	0.05	1.7	0.22	3.1	0.23	3.2	1.6	45	0.36	11.1	4.1	58				0.05	34.71	25.6	8.27	5.77	0.24		
T2-1m	2/28/17	924	0.01	0.4	0.24	3.3	0.01	0.1	0.7	19	0.30	9.2	3.0	43				0.10	34.66	24.7	8.21	5.98	0.13		
T2-1m	5/10/17	924	0.02	0.6	0.58	8.1	0.26	3.6	2.2	60	0.25	7.8	4.5	63				0.13	34.70	25.7	8.20	4.32	0.10		
Geomean	**FY '17**			**1.1**		**3.4**		**1.6**				**8.8**		**57**				**0.09**					**0.16**		

NELHA Water Quality Laboratory

Transect 2, Station 1

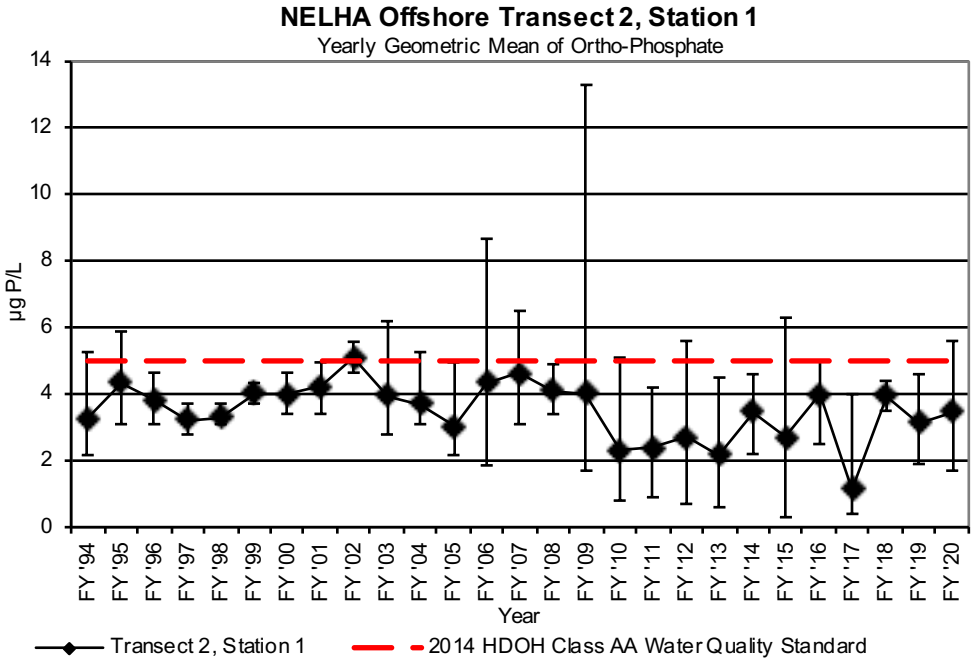
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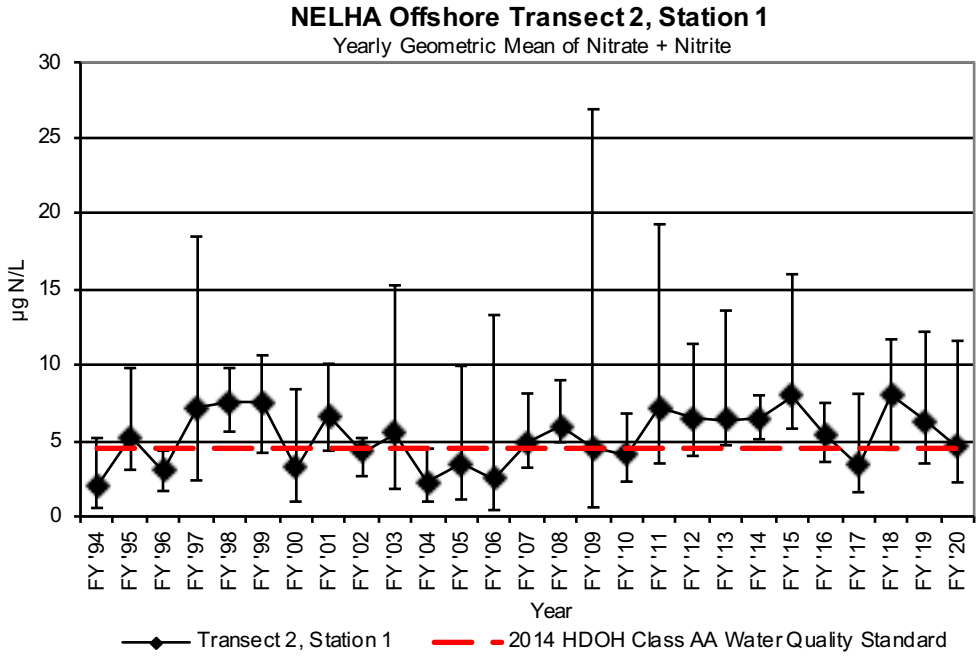
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T2-1m	9/27/17	1012	0.14	4.4	0.31	4.4	0.29	4.0	1.1	31	0.46	14.1	4.4	62				0.09	34.79	27.8	8.20	4.45	0.26		
T2-1m	11/28/17	1108	0.13	4.1	0.69	9.6	0.36	5.1	2.4	69	0.43	13.3	14.6	204				0.11	35.04	26.1	8.22	5.01	0.24		
T2-1m	1/30/18	1048	0.13	3.9	0.60	8.4	0.19	2.7	3.3	93	0.38	11.9	3.5	50				0.09	34.84	24.6	8.17	5.58	0.13		
T2-1m	5/16/18	1046	0.11	3.5	0.84	11.7	0.19	2.7	4.4	122	0.40	12.5	3.5	49				0.03	34.63	25.6	8.17	6.30	0.14		
Geomean	**FY '18**			**4.0**		***8.0***		***3.5***				***12.9***		**74**				**0.07**					**0.18**		
T2-1m	9/24/18	1016	0.06	1.9	0.25	3.5	0.31	4.3	1.6	44	0.47	14.5	4.0	56				0.10	34.71	27.7	8.18	5.35	0.13		
T2-1m	11/13/18	1052	0.08	2.5	0.87	12.2	0.46	6.4	1.3	37	0.39	12.2	5.1	71				0.11	34.97	27.3	8.23	4.80	0.26		
T2-1m	1/22/19	1039	0.15	4.6	0.62	8.7	0.10	1.4	2.9	80	0.43	13.4	3.3	47				0.08	34.92	24.9	8.22	5.90	0.29		
T2-1m	4/16/19	1039	0.14	4.4	0.30	4.2	0.40	5.6	2.0	55	0.40	12.5	3.0	41				0.08	35.61	25.8	8.15	7.60	0.16		
Geomean	**FY '19**			**3.1**		***6.3***		***3.8***				***13.1***		**53**				**0.09**					**0.20**		
T2-1m	8/13/19	1014	0.05	1.7	0.16	2.3	0.40	5.6	2.8	79	0.32	10.0	2.6	37				0.11	35.47	28.3	8.21	6.87	0.17		
T2-1m	11/20/19	1031	0.12	3.6	0.21	3.0	1.21	17.0	0.6	17	0.47	14.6	2.8	39				0.12	35.36	27.5	8.19	7.03	0.20		
T2-1m	1/22/20	1009	0.18	5.6	0.42	5.9	0.09	1.3	2.7	76	0.47	14.7	3.8	54				0.09	34.92	25.0	8.23	7.00	0.13		
T2-1m	6/24/20	1040	0.14	4.2	0.83	11.6	0.21	2.9	3.9	109	0.34	10.4	3.9	54				0.08	35.24	25.9	8.17	6.98	0.30		
Geomean	**FY '20**			**3.5**		***4.6***		***4.3***				**12.2**		**45**				**0.10**					**0.19**		

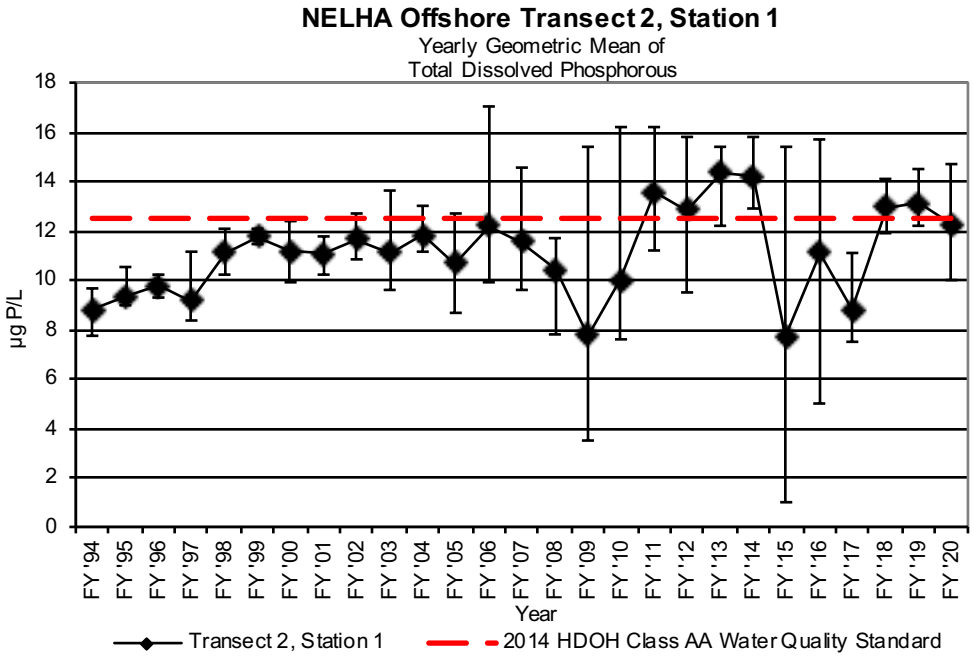
NELHA Water Quality Laboratory

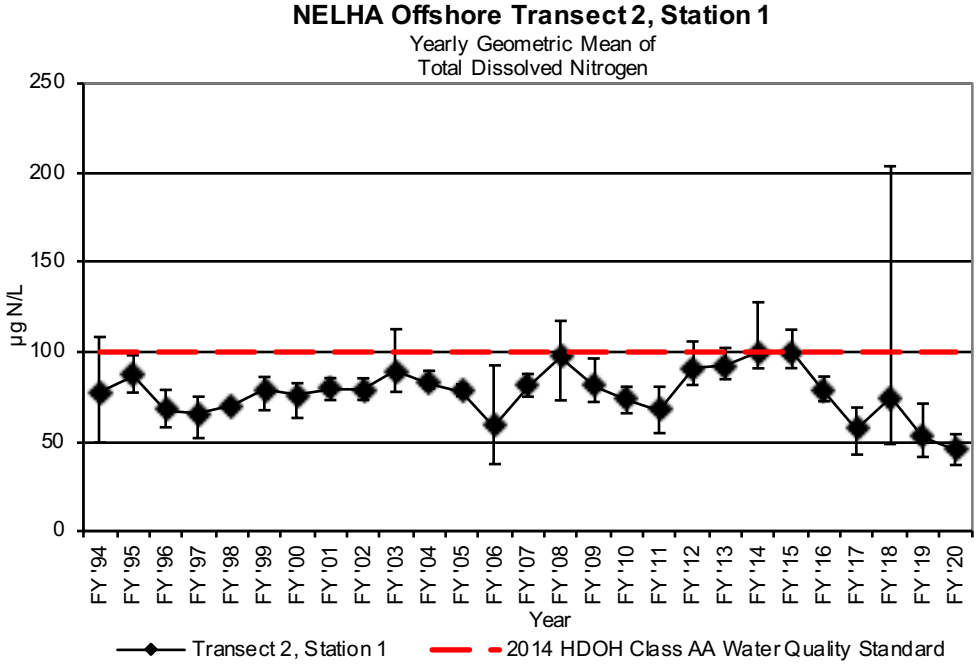
Transect 2, Station 1

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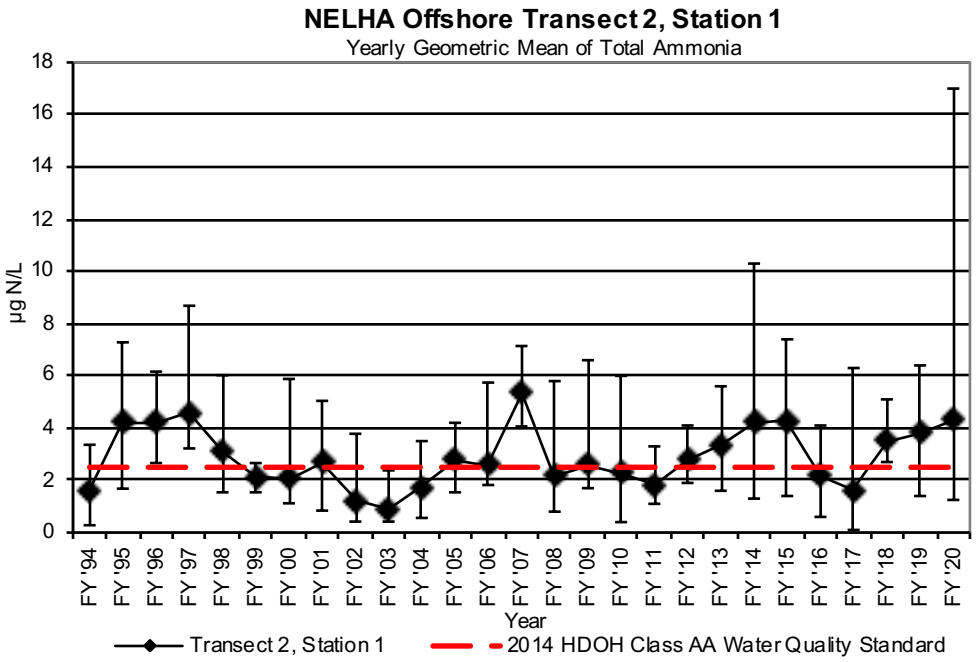


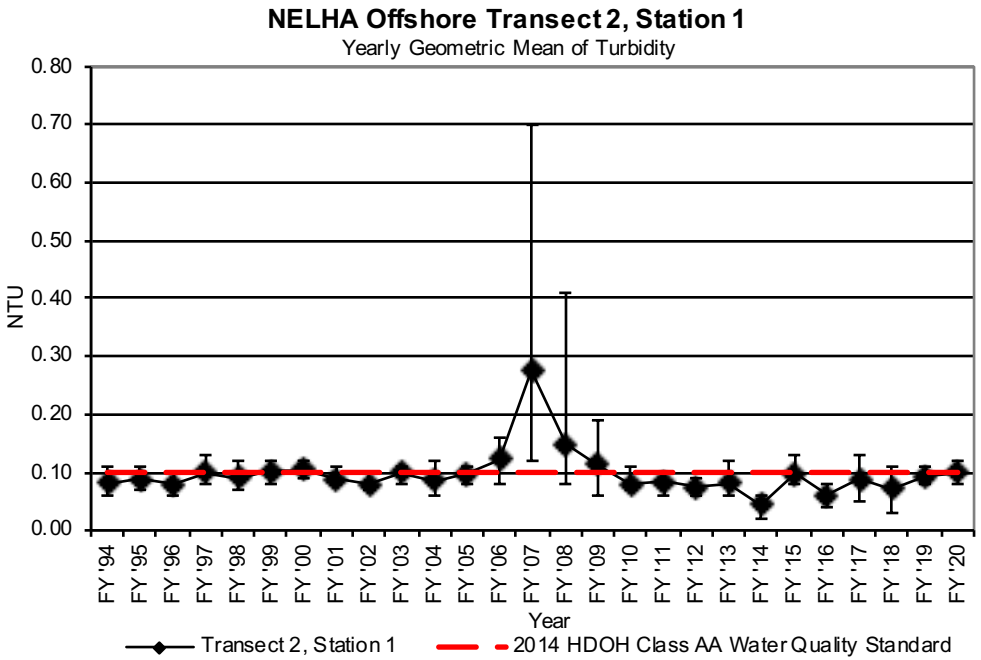


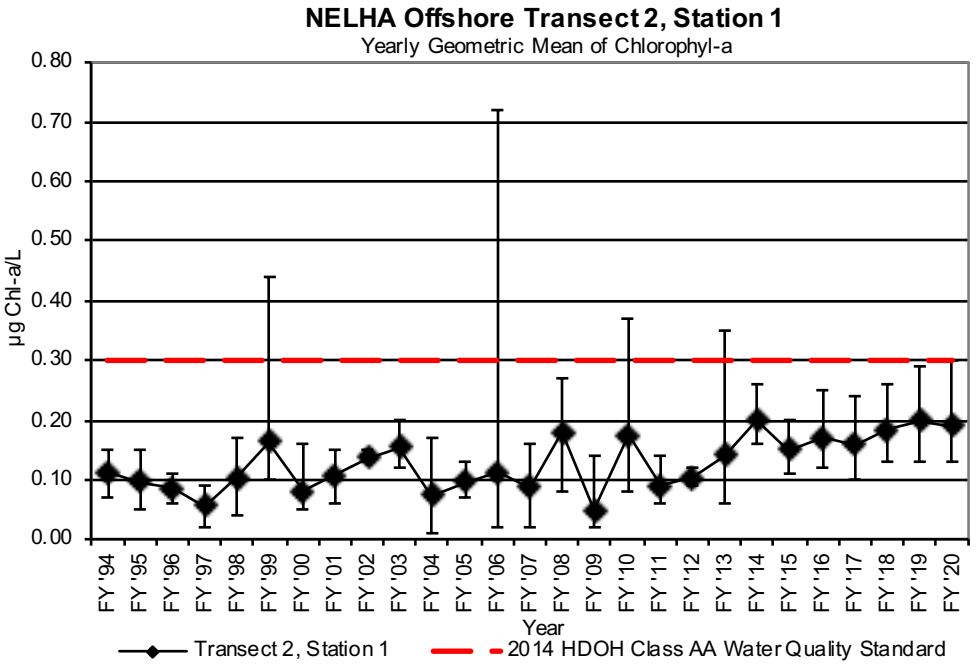
NELHA Water Quality Laboratory

Transect 2, Station 1

7/27/1993 - 7/14/20







NELHA Water Quality Laboratory

Transect 2, Station 2

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-2S-23m	7/27/93	1003	0.12	3.7	0.09	1.3	0.34	4.8	2.8	78					0.08	34.462	26.7			
O2-2S-23m	12/7/93	923	0.08	2.5	0.21	2.9	0.18	2.5	4.1	114					0.08	34.770	25.7			
O2-2S-23m	3/16/94	922	0.16	5.0	0.17	2.4	4.85	67.9	2.8	78					0.09	34.464	24.5			
O2-2S-23m	6/14/94	859	0.13	4.0	0.13	1.8	0.04	0.6	7.5	211					0.13	34.568	25.3			
Geomean	**FY '94**			**3.7**		**2.0**		***4.6***							**0.09**					
O2-2S-23m	9/8/94	1024	0.10	3.1	0.29	4.1	0.22	3.1	3.7	104					0.14	34.573	27.6			
O2-2S-23m	11/16/94	818	0.18	5.6	0.63	8.8	0.50	7.0	6.3	176					0.07	34.449	26.0			
O2-2S-23m	3/21/95	1016	0.20	6.2	0.20	2.8	0.18	2.5	3.8	105					0.14	34.204	25.0			
O2-2S-23m	6/26/95	827	0.13	4.0	0.46	6.4	0.48	6.7	4.0	111					0.06	34.499	26.5			
Geomean	**FY '95**			**4.6**		***5.0***		***4.4***							**0.10**					
O2-2S-23m	9/25/95	1025	0.14	4.3	0.28	3.9	0.24	3.4	5.0	139					0.13	34.484	27.2			
O2-2S-23m	11/13/95	1006	0.11	3.4	0.18	2.5	0.40	5.6	1.7	48					0.05	34.416	26.9			
O2-2S-23m	3/11/96	1055	0.13	4.0	0.22	3.1	0.43	6.0	2.3	66					0.07	34.264	25.5			
O2-2S-23m	5/13/96	1002	0.10	3.1	0.08	1.1	0.19	2.7	2.3	65					0.07	34.308	27.0			
Geomean	**FY '96**			**3.7**		**2.4**		***4.2***							**0.08**					
O2-2S-23m	7/30/96	945	0.12	3.7	1.60	22.4	0.31	4.3	5.5	154					0.11	34.366	27.9			
O2-2S-23m	10/1/96	1032	0.08	2.5	0.14	2.0	0.59	8.3	2.1	59					0.08	34.742	27.9			
O2-2S-23m	1/6/97	1101	0.10	3.1	0.22	3.1	0.23	3.2	3.1	86					0.11	34.675	25.7			
O2-2S-23m	4/21/97	1045	0.10	3.1	0.75	10.5	0.25	3.5	4.1	114					0.10	34.529	26.4			
Geomean	**FY '97**			**3.1**		***6.1***		***4.5***							**0.10**					
O2-2S-23m	8/18/97	1038	0.11	3.4	0.50	7.0	0.22	3.1	6.4	178					0.12	34.553	26.7			
O2-2S-23m	10/6/97	1102	0.09	2.8	0.21	2.9	0.38	5.3	5.0	140					0.09	34.719	27.5			
O2-2S-23m	3/3/98	1036	0.10	3.1	0.32	4.5	0.22	3.1	4.4	125					0.12	34.983	24.9			
O2-2S-23m	5/4/98	1006	0.12	3.7	0.63	8.8	0.07	1.0	6.9	194					0.07	34.929	23.8			
Geomean	**FY '98**			**3.2**		***5.3***		***2.7***							**0.10**					
O2-2S-23m	7/6/98	1105	0.38	11.8	0.92	12.9	0.25	3.5	15.3	429					0.13	34.935	26.3			
O2-2S-23m	10/5/98	1042	0.11	3.4	0.43	6.0	0.19	2.7	3.4	95					0.09	35.055	27.3			
O2-2S-23m	1/13/99	1052	0.12	3.7	0.60	8.4	0.26	3.6	4.8	135					0.08	35.046	25.0			
O2-2S-23m	4/12/99	1032	0.13	4.0	0.26	3.6	0.08	1.1	4.1	115					0.07	34.663	24.1			
Geomean	**FY '99**			**4.9**		***7.0***		**2.5**							**0.09**					

NELHA Water Quality Laboratory

Transect 2, Station 2

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-2S-23m	7/6/99	1047	0.11	3.4	0.13	1.8	0.11	1.5	2.4	68					0.12	34.955	25.7			
O2-2S-23m	10/4/99	1128	0.12	3.7	0.28	3.9	0.13	1.8	7.7	216					0.09	34.905	26.1			
O2-2S-23m	1/4/00	1108	0.09	2.8	0.41	5.7	0.35	4.9	3.6	100					0.08	35.092	24.8			
O2-2S-23m	4/17/00	1056	0.12	3.7	0.21	2.9	0.11	1.5	3.4	94					0.04	34.650	24.3			
Geomean	**FY '00**			**3.4**		**3.3**		**2.1**							**0.08**					
O2-2S-23m	7/24/00	1115	0.11	3.4	0.22	3.1	0.06	0.8	3.1	87					0.11	34.881	27.3			
O2-2S-23m	10/30/00	1133	0.13	4.0	0.23	3.2	0.34	4.8	4.0	113					0.08	34.953	27.0			
O2-2S-23m	2/26/01	1121	0.16	5.0	0.44	6.2	0.25	3.5	6.0	168					0.11	34.670	24.9			
O2-2S-23m	5/7/01	1126	0.14	4.3	0.60	8.4	0.31	4.3	4.2	117					0.08	34.822	24.7			
Geomean	**FY '01**			**4.1**		***4.8***		***2.8***							**0.09**					
O2-2S-23m	8/21/01	1024	0.14	4.3	0.49	6.9	0.02	0.3	4.0	113					0.09	34.773	26.7			
O2-2S-23m	10/8/01	1044	0.14	4.3	0.21	2.9	0.06	0.8	2.4	68					0.13	34.949	27.3			
O2-2S-23m	3/5/02	956	0.14	4.3	0.26	3.6	0.04	0.6	7.2	202					0.12	34.694	24.2			
O2-2S-23m	4/17/02	1004	0.15	4.6	0.45	6.3	0.27	3.8	10.1	283					0.06	34.458	25.5			
Geomean	**FY '02**			**4.4**		***4.6***		**0.8**							**0.10**					
O2-2S-23m	7/8/02	1120	0.18	5.6	0.20	2.8	0.10	1.4	3.5	99					0.12	34.650	26.6			
O2-2S-23m	10/9/02	958	0.06	1.9	0.13	1.8	0.09	1.3	2.6	74					0.10	34.936	27.1			
O2-2S-23m	3/12/03	1115	0.12	3.7	0.31	4.3	0.03	0.4	3.8	106					0.11	34.785	25.1			
O2-2S-23m	4/22/03	1120	0.10	3.1	0.87	12.2	0.03	0.4	3.3	94					0.09	34.984	25.2			
Geomean	**FY '03**			**3.3**		**4.1**		**0.7**							***0.10***					
O2-2S-23m	8/18/03	1245	0.07	2.2	0.25	3.5	0.25	3.5	2.4	68					0.06	34.825	28.2			
O2-2S-23m	10/29/03	1147	0.08	2.5	0.06	0.8	0.10	1.4	2.3	63					0.10	34.839	27.6			
O2-2S-23m	3/11/04	1020	0.12	3.7	0.07	1.0	0.04	0.6	2.4	67					n/a	34.357	25.8			
O2-2S-23m	5/20/04	1026	0.11	3.4	0.01	0.1	0.17	2.4	1.6	44					n/a	33.52	26.9			
Geomean	**FY '04**			**2.9**		**0.8**		**1.6**							**0.08**					
O2-2S-23m	9/20/04	1004	0.09	2.8	0.07	1.0	0.23	3.2	2.1	58					0.08	33.71	27.8			
O2-2S-23m	11/17/04	934	0.07	2.2	0.18	2.5	0.20	2.8	1.5	43					0.05	33.57	27.1			
O2-2S-23m	1/13/05	1059	0.05	1.5	0.07	1.0	0.09	1.3	2.0	55					0.09	34.775	24.9			
O2-2S-23m	4/11/05	1101	0.18	5.6	0.56	7.8	0.30	4.2	3.2	89					0.15	34.471	25.3			
Geomean	**FY '05**			**2.7**		**2.1**		***2.6***							**0.09**					

NELHA Water Quality Laboratory

Transect 2, Station 2

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-2S-23m	7/20/05	1052	0.19	5.9	0.45	6.3	0.18	2.5	3.7	103					0.11	34.668	26.9			
O2-2S-23m	10/11/05	934	0.06	1.9	0.04	0.6	0.17	2.4	2.7	74					0.11	34.862	26.5			
O2-2S-23m	3/13/06	1041	0.11	3.4	0.36	5.0	0.21	2.9	3.1	86					0.09	34.803	24.6			
O2-2S-23m	5/15/06	1014	0.12	3.7	1.41	19.7	0.13	1.8	9.5	266					0.16	34.541	24.9			
Geomean	**FY '06**			**3.4**		**4.3**		**2.4**							***0.11***					
O2-2S-23m	8/14/06	1008	0.13	4.0	0.32	4.5	0.22	3.1	2.8	78					0.13	34.595	26.7			
O2-2S-23m	11/1/06	1017	0.09	2.8	0.27	3.8	0.41	5.7	2.5	71					0.48	34.823	26.9			
O2-2S-23m	2/12/07	1039	0.13	4.0	0.19	2.7	0.34	4.8	2.4	67					0.29	34.549	24.5			
O2-2S-23m	4/9/07	1009	0.19	5.9	0.25	3.5	0.36	5.0	3.5	98					0.82	34.692	25.1			
Geomean	**FY '07**			**4.0**		**3.5**		***4.5***							***0.35***					
T2-10m	9/26/07	954	0.17	5.2	0.24	3.3	0.27	3.8	2.7	76	0.28	8.7	4.1	58	0.10	34.967	26.8	8.17	6.21	0.13
T2-10m	12/13/07	1124	0.11	3.3	0.44	6.1			20.1	566	0.38	11.7	8.4	118	0.16	34.697	25.7	8.23	6.54	0.24
T2-10m	3/10/08	1014	0.19	6.0	0.29	4.0	0.06	0.8	14.4	405	0.45	13.8	7.8	109	0.12	34.901	24.9	8.2	6.62	0.32
T2-10m	6/5/08	1017	0.12	3.7	0.46	6.4	0.16	2.2	17.2	483	0.27	8.5	11.0	154	0.07	34.8093	25.0	8.08	6.77	0.15
Geomean	**FY '08**			**4.4**		***4.8***		**1.9**				**10.5**		***103***	***0.11***					**0.20**
T2-10m	9/22/08	1114	0.05	1.7	0.12	1.7	0.09	1.3	2.4	68	0.25	7.7	5.0	71	0.07	34.801	26.7	8.02	6.64	0.06
T2-10m	11/17/08	958	0.19	5.8	0.20	2.8	0.14	1.9	2.9	82	0.41	12.7	5.5	77	0.06	34.957	25.6	8.24	6.08	0.04
T2-10m	2/9/09	953	0.10	3	0.46	6.5	0.12	1.7	2.8	77	0.19	6	5.7	79	0.09	35.068	24.9	8.06	6.30	0.01
T2-10m	4/13/09	946	0.32	9.9	1.88	26.4	0.44	6.1	5.0	142	0.47	14.6	8.1	114	0.10	34.884	23.9	8.18	6.41	0.06
Geomean	**FY '09**			**4.1**		***5.3***		**2.2**				**9.6**		**84**	**0.08**					**0.03**
T2-10m	9/9/09	953	0.87	27.1	0.41	5.7	0.28	3.9	6.0	168	0.47	14.7	6.8	95	0.07	35.16	27.0	8.21	5.58	0.26
T2-10m	11/23/09	1008	0.03	0.8	0.04	0.5	0.01	0.1	24.4	684	0.39	12.2	6.8	95	0.07	35.20	25.3	8.26	6.42	0.16
T2-10m	2/23/10	1016	0.18	5.5	0.26	3.7	0.44	6.2	15.4	434	0.41	12.6	7.5	105	0.13	35.06	24.6	8.19	6.39	0.22
T2-10m	5/25/10	1029	0.04	1.3	0.16	2.2	0.18	2.5	2.6	73	0.25	7.8	6.1	86	0.07	34.96	25.1	8.23	7.00	0.1
Geomean	**FY '10**			**3.5**		**2.2**		**1.6**				**11.5**		**95**	**0.08**					**0.17**
T2-10m	8/10/10	1010	0.06	2	1.26	17.6	0.09	1.2	7.3	206	0.47	14.7	6.8	95	0.06	34.82	25.97	8.23	6.63	0.08
T2-10m	11/8/10	956	0.02	0.6	0.38	5.3	0.19	2.7	5.6	157	0.37	11.5	7.0	98	0.11	35.25	26.43	8.25	6.35	0.08
T2-10m	1/11/11	1013	0.15	4.6	0.25	3.5	0.15	2.1	5.1	144	0.42	12.9	3.6	51	0.06	34.96	24.96	8.24	6.66	0.15
T2-10m	4/26/11	1013	0.11	3.4	0.28	3.9	0.27	3.8	5.5	154	0.43	13.2	5.4	76	0.10	34.99	24.98	8.21	6.63	0.11
Geomean	**FY '11**			**2.1**		***6.0***		**2.3**				***13.0***		**77**	**0.08**					**0.10**

NELHA Water Quality Laboratory

Transect 2, Station 2

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(°C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-10m	7/26/11	1037	0.19	5.8	0.34	4.8	0.14	1.9	1.5	41	0.47	14.6	5.7	80	0.08	34.81	25.94	8.26	6.77	0.11
T2-10m	10/18/11	1002	0.03	0.8	0.31	4.3	0.36	5	2.1	58	0.29	9.1	5.9	82	0.07	35.06	26.59	8.22	7.01	0.13
T2-10m	1/25/12	1027	0.11	3.3	0.38	5.3	0.19	2.6	3.4	96	0.41	12.8	7.1	100	0.07	34.98	24.68	8.20	6.95	0.08
T2-10m	4/24/12	1053	0.17	5.4	0.77	10.8	0.18	2.5	3.6	100	0.47	14.6	5.8	81	0.20	35.07	24.67	8.20	6.86	0.12
Geomean	**FY '12**			**3.0**		***5.9***		***2.8***				***12.6***		**85**	**0.09**					**0.11**
T2-10m	7/24/12	1014	0.03	1	0.39	5.5	0.29	4	1.9	54	0.34	10.6	6.5	91	0.14	35.07	26.31	8.21	6.81	0.11
T2-10m	11/27/12	1002	0.10	3	0.94	13.2	0.29	4	6.7	188	0.47	14.6	7.9	110	0.04	35.07	25.07	8.21	6.91	0.25
T2-10m	1/23/13	1010	0.09	2.9	0.39	5.4	0.24	3.3	1.8	50	0.40	12.5	5.9	82	0.02	35.12	24.67	8.21	6.53	0.15
T2-10m	4/16/13	1018	0.13	3.9	0.19	2.6	0.09	1.3	0.3	9	0.48	15	6.9	97	0.05	35.15	24.95	8.22	6.90	0.04
Geomean	**FY '13**			**2.4**		***5.7***		***2.9***				***13.1***		**95**	**0.05**					**0.11**
T2-10m	8/1/13	924	0.05	1.6	0.44	6.1	0.01	0.2	3.5	99	0.51	15.9	6.6	93	0.06	35.22	26.1	8.25	6.90	0.19
T2-10m	10/29/13	957	0.15	4.8	0.53	7.4	0.31	4.4	2.6	72	0.45	14.0	6.5	91	0.02	35.27	27.0	8.20	6.53	0.19
T2-10m	2/4/14	1002	0.13	3.9	0.38	5.3	0.65	9.1	2.5	70	0.39	12.2	7.1	100	0.02	34.94	25.2	8.21	6.37	0.18
T2-10m	5/6/14	1005	0.12	3.8	0.50	7.0	0.32	4.5	3.0	84	0.41	12.6	7.8	109	0.03	34.78	25.9	8.23	6.29	0.15
Geomean	**FY '14**			**3.3**		***6.4***		**2.3**				***13.6***		**98**	**0.03**					**0.18**
T2-10m	8/5/14	1010	0.20	6.2	0.41	5.8	0.43	6.0	2.2	61	0.50	15.6	6.1	85	0.09	34.96	26.8	8.22	6.04	0.15
T2-10m	11/17/14	1147	0.18	5.7	0.43	6.0	0.32	4.5	1.0	29	0.45	14.0	7.0	98	0.09	34.97	27.1	8.22	7.28	0.16
T2-10m	3/3/15	1007	0.02	0.6	0.30	4.2	0.07	1.0	2.1	60	0.25	7.8	7.2	100	0.09	34.84	25.5	8.16	6.83	0.14
T2-10m	6/16/15	1121	0.13	3.9	0.71	9.9	0.31	4.3	3.0	84	0.44	13.7	5.8	81	0.08	34.22	26.6	8.23	6.23	0.19
Geomean	**FY '15**			**3.0**		***6.2***		***3.3***				**12.4**		**91**	**0.09**					**0.16**
T2-10m	8/26/15	1107	0.13	4.1	0.41	5.7	0.21	2.9	5.3	148	0.36	11.0	5.6	78	0.03	34.45	28.4	8.22	6.03	0.42
T2-10m	11/17/15	1018	0.16	5.1	0.57	8.0	0.15	2.1	3.5	98	0.50	15.4	6.3	89	0.08	33.97	27.4	8.22	6.39	0.14
T2-10m	3/1/16	1021	0.16	4.9	0.24	3.4	0.64	8.9	0.5	15	0.45	13.8	4.4	62	0.10	34.76	25.5	8.24	5.85	0.09
T2-10m	5/3/16	953	0.15	4.8	0.49	6.9	0.19	2.6	1.1	30	0.43	13.2	6.3	89	0.09	34.68	25.6	8.24	6.34	0.18
Geomean	**FY '16**			**4.7**		***5.7***		***3.4***				***13.3***		**78**	**0.07**					**0.18**
T2-10m	7/6/16	1050	0.14	4.3	0.24	3.3	0.56	7.8	1.4	39	0.46	14.2	6.7	93	0.11	34.55	26.9	8.27	6.67	0.24
T2-10m	12/20/16	1034	0.05	1.5	0.21	3.0	0.31	4.3	1.4	39	0.36	11.3	4.1	57	0.02	34.72	25.6	8.27	6.14	0.21
T2-10m	2/28/17	930	0.00	0.1	0.12	1.7	0.12	1.7	0.3	8	0.30	9.2	3.5	49	0.07	34.67	24.7	8.22	5.86	0.13
T2-10m	5/10/17	927	0.05	1.7	0.21	2.9	0.07	1.0	0.9	26	0.22	6.9	4.5	63	0.07	34.73	25.7	8.21	4.27	0.08
Geomean	**FY '17**			**1.0**		**2.6**		***2.7***				**10.0**		**64**	**0.06**					**0.15**

NELHA Water Quality Laboratory

Transect 2, Station 2

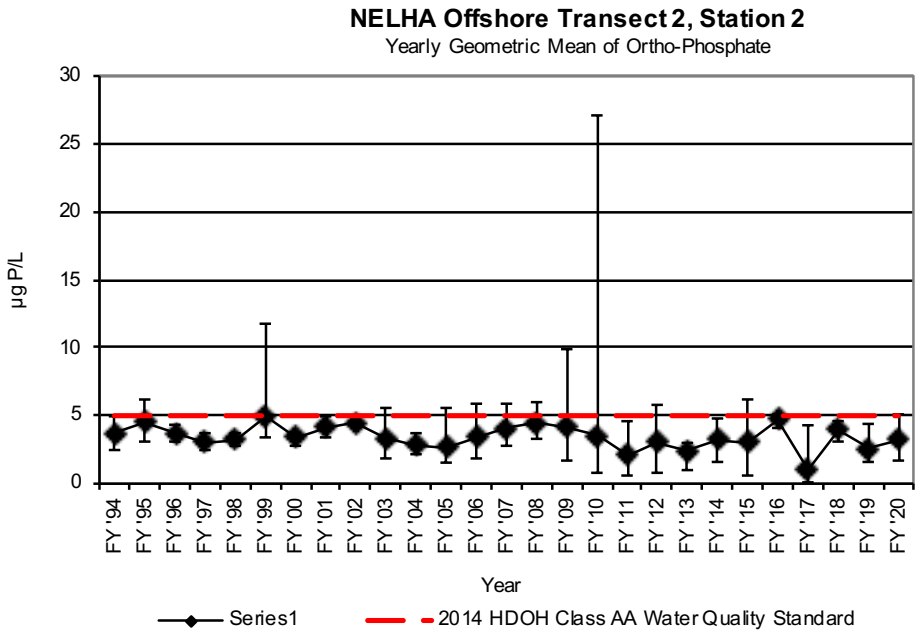
7/27/1993 - 7/14/20

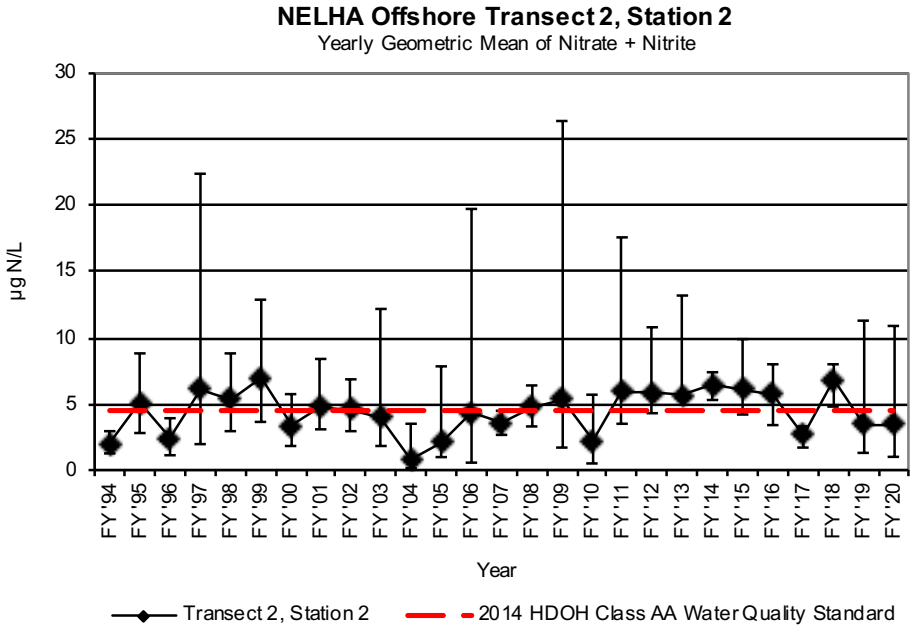
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-10m	9/27/17	1016	0.14	4.2	0.34	4.8	0.25	3.5	1.1	32	0.42	12.9	4.5	64	0.11	34.80	27.8	8.20	4.44	0.23
T2-10m	11/28/17	1114	0.15	4.6	0.51	7.1	0.25	3.5	2.6	72	0.40	12.4	3.7	52	0.07	35.05	26.1	8.21	5.03	0.26
T2-10m	1/30/18	1056	0.14	4.2	0.55	7.7	0.24	3.3	3.0	85	0.36	11.2	2.9	41	0.10	34.84	24.6	8.17	5.54	0.13
T2-10m	5/16/18	1051	0.10	3.1	0.57	8.0	0.17	2.4	3.6	102	0.38	11.8	3.0	42	0.02	34.71	25.6	8.17	6.10	0.13
Geomean	**FY '18**			**4.0**		***6.8***		***3.1***				**12.1**		**49**	**0.06**					**0.18**
T2-10m	9/24/18	1023	0.05	1.6	0.16	2.3	0.16	2.3	0.2	5	0.36	11.2	2.7	38	0.10	34.77	27.8	8.17	5.20	0.20
T2-10m	11/13/18	1056	0.07	2.3	0.81	11.3	0.41	5.7	1.0	28	0.39	12.1	4.8	67	0.09	35.00	27.3	8.21	4.46	0.37
T2-10m	1/22/19	1043	0.09	2.7	0.09	1.3	0.01	0.1	0.1	4	0.38	11.8	2.4	34	0.08	34.99	25.1	8.22	5.79	0.12
T2-10m	4/16/19	1045	0.14	4.4	0.32	4.5	0.19	2.6	2.0	56	0.41	12.8	3.1	43	0.07	35.63	25.8	8.16	7.56	0.14
Geomean	**FY '19**			**2.6**		**3.5**		**1.4**				**12.0**		**44**	**0.08**					**0.19**
T2-10m	8/13/19	1020	0.05	1.7	0.07	1.0	0.20	2.8	4.0	113	0.33	10.1	2.8	40	0.16	35.54	28.3	8.22	6.92	0.16
T2-10m	8/13/19	1035	0.11	3.3	0.19	2.7	1.20	16.8	0.8	23	0.38	11.7	3.6	50	0.09	35.37	27.5	8.21	6.93	0.18
T2-10m	11/20/19	1014	0.16	5.1	0.36	5.0	0.09	1.3	2.2	61	0.45	13.9	3.2	44	0.05	34.93	25.0	8.21	6.83	0.13
T2-10m	1/22/20	1044	0.13	4.0	0.78	10.9	0.15	2.1	3.6	102	0.32	10.0	3.1	43	0.07	35.27	25.9	8.17	6.97	0.26
Geomean	**FY '20**			**3.3**		**3.5**		***3.3***				**11.3**		**44**	**0.08**					**0.18**

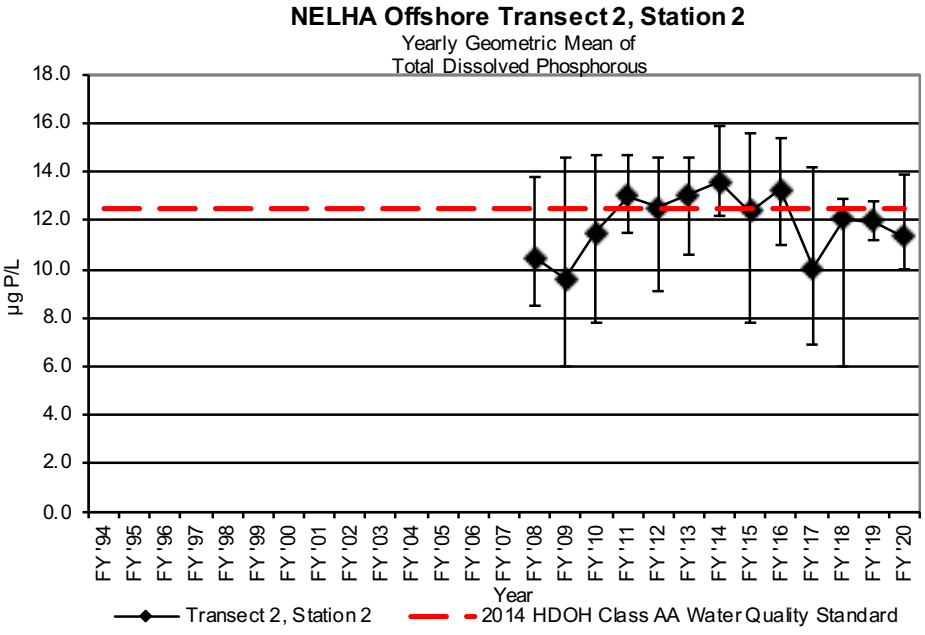
NELHA Water Quality Laboratory

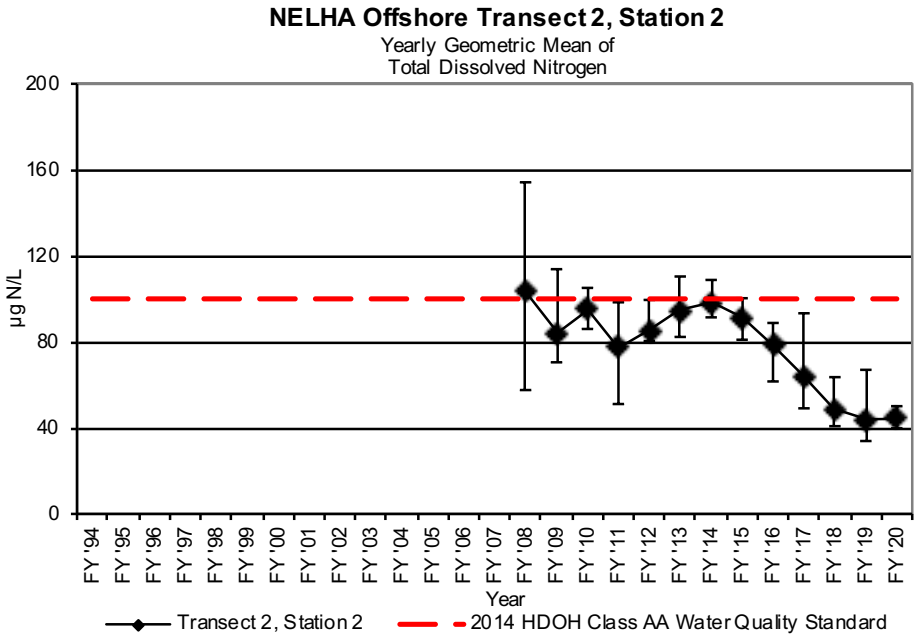
Transect 2, Station 2

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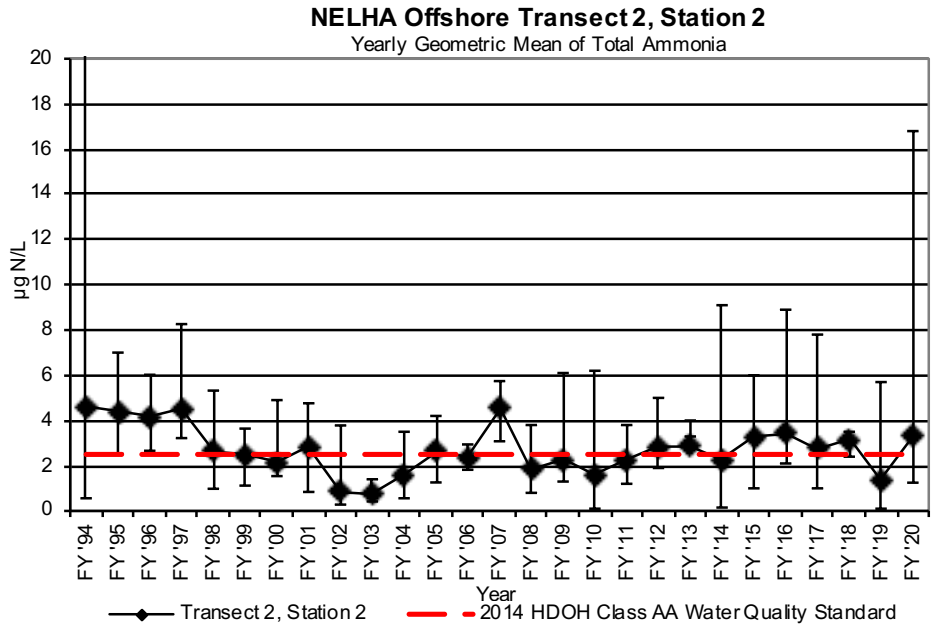


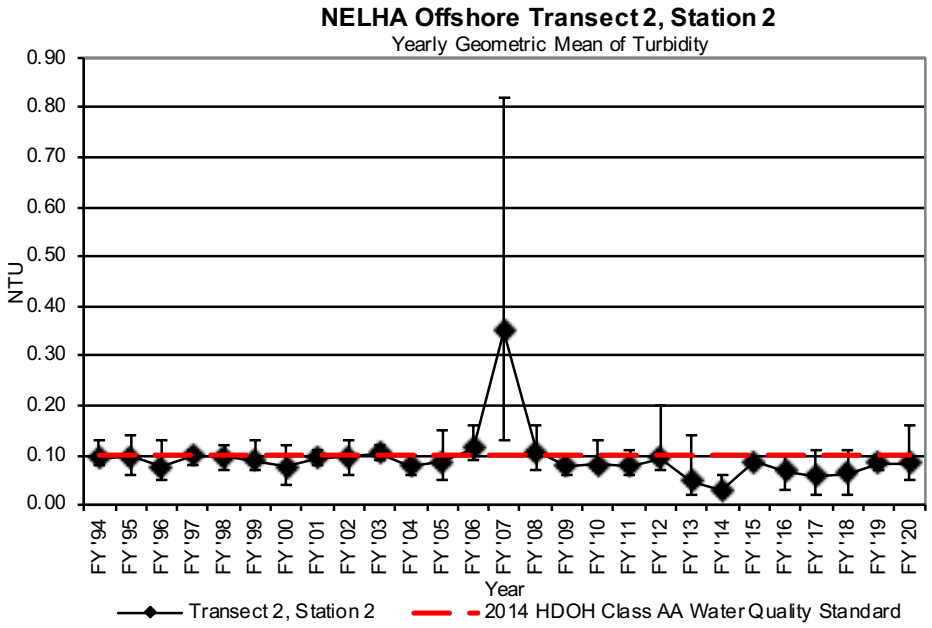


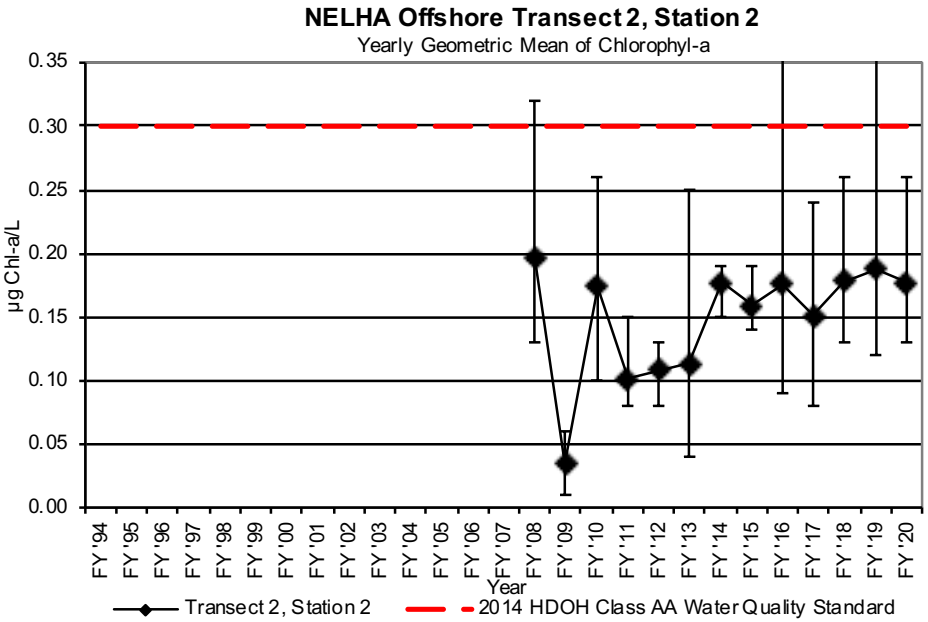
NELHA Water Quality Laboratory

Transect 2, Station 2

7/27/1993 - 7/14/20







NELHA Water Quality Laboratory

Transect 2, Station 3

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-3S-38m	7/27/93	954	0.07	2.2	0.05	0.7	0.24	3.4	2.4	66					0.08	34.471	26.6			
O2-3S-38m	12/7/93	916	0.10	3.1	0.20	2.8	0.20	2.8	3.6	102					0.06	34.774	25.6			
O2-3S-38m	3/16/94	915	0.16	5.0	0.29	4.1	0.17	2.4	5.5	154					0.10	34.442	24.6			
O2-3S-38m	6/14/94	854	0.12	3.7	0.15	2.1	0.08	1.1	2.7	75					0.11	34.541	25.3			
Geomean	**FY '94**			**3.3**		**2.0**		**2.2**							**0.09**					
O2-3S-38m	9/8/94	1019	0.10	3.1	0.26	3.6	0.20	2.8	3.4	95					0.08	34.590	27.7			
O2-3S-38m	11/16/94	816	0.15	4.6	0.24	3.4	0.52	7.3	3.4	94					0.07	34.555	26.0			
O2-3S-38m	3/21/95	1014	0.20	6.2	0.17	2.4	0.18	2.5	3.4	95					0.10	34.210	25.4			
O2-3S-38m	6/26/95	825	0.12	3.7	0.45	6.3	0.49	6.9	4.9	137					0.07	34.514	26.5			
Geomean	**FY '95**			**4.3**		**3.7**		***4.3***							**0.08**					
O2-3S-38m	9/25/95	1037	0.12	3.7	0.35	4.9	0.20	2.8	5.4	153					0.12	34.476	27.3			
O2-3S-38m	11/13/95	1001	0.11	3.4	0.18	2.5	0.40	5.6	2.1	60					0.07	34.391	26.8			
O2-3S-38m	3/11/96	1051	0.13	4.0	0.21	2.9	0.47	6.6	2.9	82					0.10	34.245	25.3			
O2-3S-38m	5/13/96	956	0.10	3.1	0.04	0.6	0.23	3.2	1.9	53					0.07	34.317	26.9			
Geomean	**FY '96**			**3.5**		**2.1**		***4.3***							**0.09**					
O2-3S-38m	7/30/96	940	0.11	3.4	0.96	13.4	0.18	2.5	3.7	103					0.10	34.462	27.9			
O2-3S-38m	10/1/96	1028	0.07	2.2	0.13	1.8	0.59	8.3	2.0	56					0.08	34.722	27.9			
O2-3S-38m	1/6/97	1056	0.09	2.8	0.23	3.2	0.20	2.8	3.3	93					0.09	34.668	25.7			
O2-3S-38m	4/21/97	1040	0.10	3.1	0.79	11.1	0.22	3.1	2.7	77					0.09	34.530	26.4			
Geomean	**FY '97**			**2.8**		***5.4***		***3.7***							**0.09**					
O2-3S-38m	8/18/97	1027	0.11	3.4	0.56	7.8	0.26	3.6	8.0	224					0.10	34.538	26.8			
O2-3S-38m	10/6/97	1058	0.10	3.1	0.18	2.5	0.33	4.6	4.0	111					0.09	34.724	27.5			
O2-3S-38m	3/3/98	1032	0.09	2.8	0.27	3.8	0.20	2.8	3.3	92					0.08	34.989	24.9			
O2-3S-38m	5/4/98	1001	0.11	3.4	0.70	9.8	0.11	1.5	7.2	202					0.07	34.914	23.8			
Geomean	**FY '98**			**3.2**		***5.2***		***2.9***							**0.08**					
O2-3S-38m	7/6/98	1100	0.13	4.0	0.75	10.5	0.07	1.0	9.3	260					0.10	34.937	26.3			
O2-3S-38m	10/5/98	1037	0.09	2.8	0.16	2.2	0.16	2.2	3.5	98					0.08	35.102	27.3			
O2-3S-38m	1/13/99	1047	0.11	3.4	0.41	5.7	0.10	1.4	3.3	94					0.07	35.080	24.9			
O2-3S-38m	4/12/99	1027	0.13	4.0	0.25	3.5	0.06	0.8	4.2	119					0.08	34.665	24.1			
Geomean	**FY '99**			**3.5**		***4.7***		**1.3**							**0.08**					

NELHA Water Quality Laboratory

Transect 2, Station 3

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-3S-38m	7/6/99	1040	0.11	3.4	0.10	1.4	0.09	1.3	2.5	70					0.09	34.945	25.7			
O2-3S-38m	10/4/99	1122	0.12	3.7	0.30	4.2	0.10	1.4	6.1	172					0.09	34.915	26.0			
O2-3S-38m	1/4/00	1103	0.11	3.4	0.32	4.5	0.35	4.9	3.5	97					0.10	35.094	24.8			
O2-3S-38m	4/17/00	1052	0.12	3.7	0.36	5.0	0.15	2.1	7.2	202					0.06	34.618	24.3			
Geomean	**FY '00**			**3.6**		**3.4**		**2.1**							**0.08**					
O2-3S-38m	7/24/00	1110	0.11	3.4	0.25	3.5	0.03	0.4	2.8	78					0.08	34.879	27.3			
O2-3S-38m	10/30/00	1127	0.12	3.7	0.03	0.4	0.31	4.3	4.5	127					0.08	34.997	27.0			
O2-3S-38m	2/26/01	1116	0.16	5.0	0.28	3.9	0.20	2.8	5.0	140					0.14	34.707	24.9			
O2-3S-38m	5/7/01	1122	0.14	4.3	0.46	6.4	0.33	4.6	3.8	107					0.06	34.833	24.6			
Geomean	**FY '01**			**4.1**		**2.5**		**2.2**							**0.09**					
O2-3S-38m	8/21/01	1020	0.14	4.3	0.29	4.1	0.03	0.4	2.5	69					0.08	34.792	26.6			
O2-3S-38m	10/8/01	1039	0.14	4.3	0.16	2.2	0.05	0.7	2.7	75					0.08	34.960	27.3			
O2-3S-38m	3/5/02	953	0.15	4.6	0.20	2.8	0.03	0.4	4.2	119					0.10	34.683	24.2			
O2-3S-38m	4/17/02	1000	0.16	5.0	0.29	4.1	0.26	3.6	4.3	122					0.10	34.466	25.5			
Geomean	**FY '02**			**4.6**		**3.2**		**0.8**							**0.09**					
O2-3S-38m	7/8/02	1117	0.18	5.6	0.17	2.4	0.11	1.5	3.6	100					0.08	34.660	26.5			
O2-3S-38m	10/9/02	952	0.05	1.5	0.20	2.8	0.13	1.8	2.7	76					0.09	34.931	27.0			
O2-3S-38m	3/12/03	1112	0.12	3.7	0.27	3.8	0.03	0.4	10.6	298					0.21	34.805	25.1			
O2-3S-38m	4/22/03	1116	0.10	3.1	0.42	5.9	0.04	0.6	2.6	73					0.13	35.026	25.2			
Geomean	**FY '03**			**3.2**		**3.5**		**0.9**							***0.12***					
O2-3S-38m	8/18/03	1238	0.08	2.5	0.08	1.1	0.20	2.8	2.3	64					0.04	34.839	28.2			
O2-3S-38m	10/29/03	1128	0.06	1.9	0.06	0.8	0.10	1.4	2.2	63					0.09	34.862	27.6			
O2-3S-38m	3/11/04	1014	0.13	4.0	0.04	0.6	0.04	0.6	1.7	46					n/a	34.361	25.7			
O2-3S-38m	5/20/04	1032	0.11	3.4	0.01	0.1	0.21	2.9	1.6	46					n/a	33.36	27.0			
Geomean	**FY '04**			**2.8**		**0.5**		**1.6**							**0.06**					
O2-3S-38m	9/20/04	957	0.10	3.1	0.11	1.5	0.23	3.2	2.2	61					0.08	33.74	27.8			
O2-3S-38m	11/17/04	930	0.10	3.1	0.19	2.7	0.23	3.2	1.8	51					0.09	33.52	27.4			
O2-3S-38m	1/13/05	1052	0.06	1.9	0.17	2.4	0.06	0.8	2.5	70					0.09	34.838	24.9			
O2-3S-38m	4/11/05	1053	0.14	4.3	0.38	5.3	0.29	4.1	2.9	83					0.07	34.511	25.3			
Geomean	**FY '05**			**3.0**		**2.7**		**2.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 2, Station 3

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-3S-38m	7/20/05	1049	0.05	1.5	0.01	0.1	0.13	1.8	1.4	40					0.07	34.747	26.8			
O2-3S-38m	10/11/05	926	0.06	1.9	0.01	0.1	0.19	2.7	4.5	126					0.13	34.900	26.5			
O2-3S-38m	3/13/06	1035	0.10	3.1	0.23	3.2	0.29	4.1	5.6	158					0.10	34.814	24.6			
O2-3S-38m	5/15/06	1007	0.10	3.1	1.54	21.6	0.17	2.4	13.4	376					0.13	34.389	24.9			
Geomean	**FY '06**			**2.3**		**1.1**		***2.6***							***0.10***					
O2-3S-38m	8/14/06	1003	0.13	4.0	0.36	5.0	0.20	2.8	3.2	89					0.13	34.602	26.6			
O2-3S-38m	11/1/06	1011	0.09	2.8	0.24	3.4	0.37	5.2	2.4	69					0.30	34.806	26.8			
O2-3S-38m	2/12/07	1034	0.13	4.0	0.25	3.5	0.40	5.6	2.9	82					0.12	34.543	24.5			
O2-3S-38m	4/9/07	1003	0.10	3.1	0.18	2.5	0.26	3.6	3.7	104					0.17	34.685	25.1			
Geomean	**FY '07**			**3.4**		**3.5**		***4.1***							***0.17***					
T2-50m	9/26/07	1002	0.17	5.3	0.29	4.0	0.11	1.6	5.0	141	0.09	2.8	5.4	76	0.04	34.945	26.8	8.16	6.23	0.09
T2-50m	12/13/07	1126	0.10	3.2	0.31	4.3			16.3	456	0.38	11.8	6.1	86	0.14	34.707	25.7	8.23	6.45	0.25
T2-50m	3/10/08	1017	0.20	6.1	0.41	5.7	0.06	0.8	4.1	115	0.41	12.7	7.1	99	0.25	34.870	25.0	8.19	6.54	0.26
T2-50m	6/5/08	1020	0.12	3.8	0.26	3.6	0.16	2.2	21.2	595	0.20	6.1	8.8	124	0.06	34.798	25.2	8.06	6.44	0.19
Geomean	**FY '08**			**4.5**		**4.3**		**1.4**				**7.1**		**95**	**0.10**					**0.18**
T2-50m	9/22/08	1120	0.05	1.5	0.04	0.6	0.04	0.6	1.8	50	0.27	8.5	4.9	68	0.09	34.812	26.7	8.03	6.60	0.09
T2-50m	11/17/08	1000	0.16	5	0.16	2.2	0.16	2.2	2.4	66	0.39	12	5.8	82	0.06	34.962	25.7	8.25	6.05	0.06
T2-50m	2/9/09	1002	0.06	2	0.10	1.4	0.10	1.4	1.2	33	0.14	4.3	5.5	77	0.07	35.116	24.9	8.06	5.99	0.01
T2-50m	4/13/09	951	0.26	7.9	0.49	6.9	0.49	6.9	3.5	98	0.47	14.5	7.0	98	0.10	34.955	24.0	8.18	6.15	0.02
Geomean	**FY '09**			**3.3**		**1.9**		**1.9**				**8.9**		**81**	**0.08**					**0.03**
T2-50m	9/9/09	1000	0.19	5.8	0.29	4	0.38	5.3	8.3	233	0.43	13.3	8.5	118	0.05	35.22	27.0	8.21	5.76	0.15
T2-50m	11/23/09	1014	0.03	0.8	0.15	2.1	0.01	0.2	15.7	441	0.40	12.4	5.8	82	0.08	35.21	25.4	8.25	6.33	0.13
T2-50m	2/23/10	1020	0.16	5.1	0.28	3.9	0.45	6.3	14.7	414	0.43	13.4	6.6	93	0.13	35.06	24.6	8.18	6.22	0.28
T2-50m	5/25/10	1035	0.04	1.1	0.06	0.8	0.05	0.7	3.1	87	0.35	10.8	6.0	85	0.06	35.00	24.9	8.22	6.84	0.1
Geomean	**FY '10**			**2.3**		**2.3**		**1.5**				**12.4**		**93**	**0.07**					**0.15**
T2-50m	8/10/10	1015	0.00	0.1	0.51	7.1	0.05	0.7	2.2	61	0.43	13.3	8.5	118	0.06	34.87	26.10	8.23	6.44	0.08
T2-50m	11/8/10	1002	0.02	0.7	0.39	5.5	0.21	3.0	4.1	116	0.32	9.8	6.4	90	0.09	35.26	26.42	8.25	6.28	0.09
T2-50m	1/11/11	1017	0.14	4.3	0.30	4.2	0.07	1.0	12.4	348	0.51	15.7	4.5	64	0.05	34.92	24.93	8.23	6.44	0.16
T2-50m	4/26/11	1019	0.12	3.7	0.53	7.4	0.16	2.2	18.4	517	0.42	13	4.6	64	0.09	34.98	25.01	8.21	6.43	0.14
Geomean	**FY '11**			**1.0**		***5.9***		**1.5**				***12.8***		**81**	**0.07**					**0.11**

NELHA Water Quality Laboratory

Transect 2, Station 3

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-50m	7/26/11	1044	0.19	6	0.42	5.9	0.15	2.1	3.0	84	0.48	15	6.2	87	0.04	34.79	25.97	8.26	6.68	0.09
T2-50m	10/18/11	1007	0.04	1.3	0.25	3.5	0.26	3.7	2.3	66	0.32	9.9	4.9	68	0.05	35.05	26.55	8.21	6.79	0.10
T2-50m	1/25/12	1031	0.06	2	0.02	0.3	0.02	0.3	1.4	41	0.37	11.6	5.1	71	0.07	35.03	24.66	8.20	6.73	0.13
T2-50m	4/24/12	1057	0.15	4.5	0.42	5.9	0.15	2.1	3.0	84	0.45	13.8	5.2	73	0.07	35.10	24.77	8.22	6.70	0.16
Geomean	**FY '12**			**2.9**		**2.5**		**1.5**				**12.4**		**74**	**0.06**					**0.12**
T2-50m	7/24/12	1020	0.02	0.6	0.26	3.6	0.16	2.2	2.0	57	0.41	12.6	5.5	77	0.09	35.06	26.29	8.23	6.64	0.14
T2-50m	11/27/12	1006	0.10	3.1	1.01	14.2	0.25	3.5	7.4	207	0.41	12.6	6.2	87	0.03	35.00	25.03	8.21	6.90	0.11
T2-50m	1/23/13	1014	0.10	3	0.39	5.4	0.25	3.5	1.9	54	0.49	15.1	7.4	104	0.05	35.11	24.60	8.22	6.46	0.14
T2-50m	4/16/13	1022	0.14	4.2	0.19	2.6	0.18	2.5	0.4	11	0.47	14.5	5.8	81	0.03	35.10	24.89	8.23	6.90	0.05
Geomean	**FY '13**			**2.2**		***5.2***		***2.9***				***13.7***		**87**	**0.04**					**0.10**
T2-50m	8/1/13	928	0.02	0.5	0.07	1.0	0.01	0.1	4.0	114	0.46	14.2	6.9	97	0.20	35.23	26.2	8.25	6.69	0.14
T2-50m	10/29/13	1001	0.15	4.5	0.39	5.4	0.27	3.8	2.8	78	0.50	15.4	6.8	95	0.03	35.29	27.0	8.23	6.44	0.20
T2-50m	2/4/14	1007	0.11	3.4	0.40	5.6	0.50	7.0	2.5	69	0.40	12.3	6.8	95	0.02	34.95	25.2	8.21	6.42	0.09
T2-50m	5/6/14	1010	0.08	2.5	0.11	1.6	0.18	2.5	2.4	68	0.45	13.8	7.4	103	0.02	34.80	26.0	8.21	6.09	0.06
Geomean	**FY '14**			**2.1**		**2.6**		**1.6**				***13.9***		**97**	**0.04**					**0.11**
T2-50m	8/5/14	1017	0.20	6.1	0.26	3.6	0.36	5.0	2.1	60	0.48	15.0	6.8	95	0.07	34.95	26.9	8.22	6.02	0.17
T2-50m	11/17/14	1152	0.16	4.9	0.11	1.6	0.38	5.3	0.3	8	0.71	22.0	6.0	84	0.10	35.00	27.1	8.21	6.83	0.22
T2-50m	3/3/15	1014	0.07	2.3	0.39	5.5	0.14	1.9	3.3	93	0.30	9.2	6.9	96	0.08	34.81	25.5	8.17	6.81	0.14
T2-50m	6/16/15	1126	0.12	3.7	0.53	7.4	0.24	3.3	2.4	68	0.42	13.0	5.1	72	0.07	34.26	26.5	8.20	6.10	0.15
Geomean	**FY '15**			**4.0**		**3.9**		***3.6***				***14.1***		**86**	**0.08**					**0.17**
T2-50m	8/26/15	1113	0.15	4.5	0.29	4.1	0.19	2.7	5.5	155	0.40	12.4	4.6	65	0.02	34.48	28.4	8.22	5.99	0.35
T2-50m	11/17/15	1026	0.17	5.2	0.52	7.3	0.70	9.8	6.5	184	0.50	15.6	5.6	79	0.06	33.98	27.4	8.24	6.26	0.13
T2-50m	3/1/16	1029	0.17	5.2	0.26	3.7	0.40	5.6	0.9	25	0.46	14.2	5.1	72	0.10	34.78	25.5	8.25	5.89	0.10
T2-50m	5/3/16	958	0.15	4.8	0.62	8.7	0.26	3.6	2.3	65	0.24	7.3	5.8	82	0.06	34.67	25.6	8.24	6.35	0.20
Geomean	**FY '16**			**4.9**		***5.6***		***4.8***				**11.9**		**74**	**0.05**					**0.17**
T2-50m	7/6/16	1100	0.15	4.8	0.01	0.2	0.32	4.5	3.8	106	0.52	16.0	5.7	80	0.07	34.57	26.9	8.26	6.51	0.24
T2-50m	12/20/16	1040	0.05	1.5	0.15	2.1	0.19	2.6	5.1	144	0.34	10.4	4.2	60	0.04	34.74	25.6	8.27	5.75	0.15
T2-50m	2/28/17	935	0.01	0.2	0.06	0.8	0.19	2.7	0.2	4	0.31	9.6	6.3	88	0.08	34.70	24.7	8.22	5.77	0.11
T2-50m	5/10/17	932	0.06	1.9	0.04	0.6	0.09	1.3	0.5	15	0.21	6.5	3.7	53	0.07	34.77	25.7	8.22	4.15	0.06
Geomean	**FY '17**			**1.3**		**0.7**		***2.5***				**10.1**		**68**	**0.06**					**0.12**

NELHA Water Quality Laboratory

Transect 2, Station 3

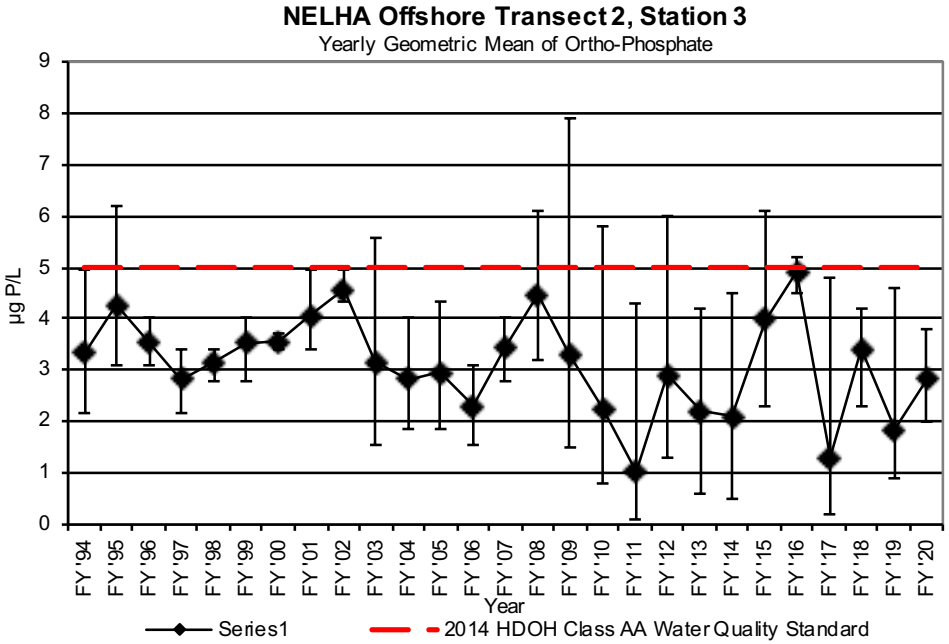
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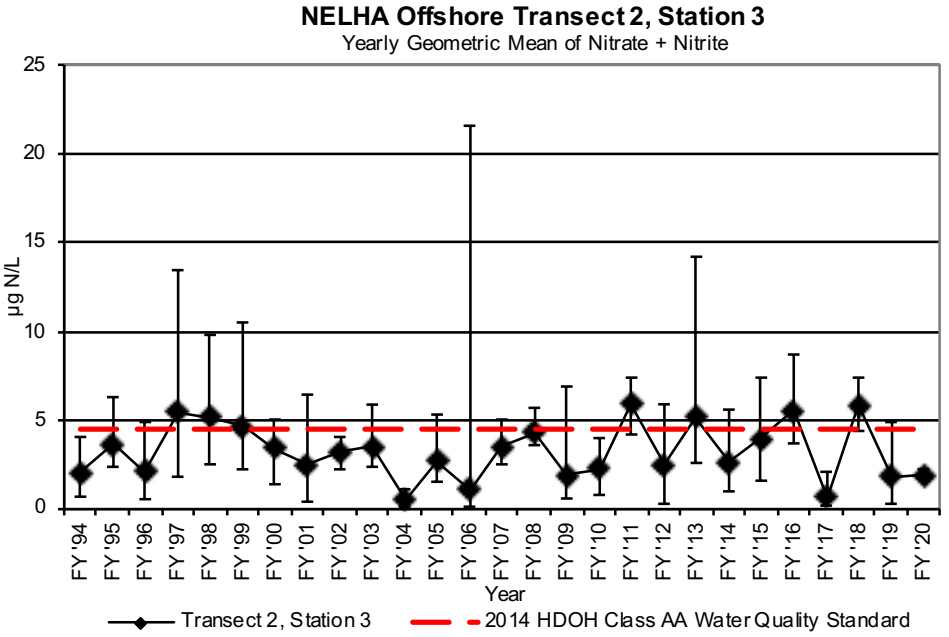
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-50m	9/27/17	1021	0.13	4.0	0.40	5.6	0.26	3.7	1.3	38	0.44	13.7	2.7	37	0.12	34.79	27.7	8.20	4.39	0.18
T2-50m	11/28/17	1119	0.14	4.2	0.53	7.4	0.31	4.4	3.0	85	0.38	11.9	5.4	76	0.09	35.03	26.2	8.20	4.83	0.26
T2-50m	1/30/18	1059	0.11	3.5	0.46	6.5	0.21	2.9	2.7	76	0.38	11.9	4.2	59	0.12	34.86	24.6	8.16	5.44	0.11
T2-50m	5/16/18	1056	0.07	2.3	0.31	4.4	0.12	1.7	3.0	85	0.36	11.3	4.1	57	0.02	34.73	25.6	8.16	5.95	0.12
Geomean	**FY '18**			**3.4**		***5.9***		***3.0***				**12.2**		**56**	**0.07**					**0.16**
T2-50m	9/24/18	1030	0.03	0.9	0.16	2.3	0.10	1.4	0.5	15	0.32	9.9	2.7	38	0.07	34.80	27.8	8.17	5.15	0.20
T2-50m	11/13/18	1101	0.04	1.1	0.24	3.4	0.27	3.8	0.2	6	0.34	10.6	4.2	59	0.08	35.03	27.3	8.21	4.32	0.25
T2-50m	1/22/19	1047	0.08	2.6	0.02	0.3	0.07	1.0	0.2	5	0.37	11.5	2.0	28	0.05	35.00	25.1	8.22	5.65	0.18
T2-50m	4/16/19	1051	0.15	4.6	0.35	4.9	0.03	0.4	2.3	65	0.40	12.5	3.3	47	0.06	35.59	25.8	8.15	7.49	0.14
Geomean	**FY '19**			**1.9**		**1.8**		**1.2**				**11.1**		**41**	**0.06**					**0.19**
T2-50m	8/13/19	1025	0.06	2.0	0.12	1.7	0.09	1.3	4.5	125	0.33	10.2	2.8	40	0.08	35.54	28.3	8.22	6.60	0.18
T2-50m	8/13/19	1040	0.08	2.5	0.12	1.7	0.70	9.8	0.2	7	0.40	12.4	2.5	36	0.09	35.34	27.5	8.22	6.61	0.16
T2-50m	11/20/19	1021	0.12	3.8	0.16	2.3	0.09	1.3	0.0	0	0.40	12.3	2.8	39	0.04	34.93	25.0	8.22	6.67	0.11
T2-50m	1/22/20	1049	0.11	3.4	0.14	1.9	0.09	1.3	2.3	65	0.32	10.0	3.1	43	0.08	35.36	25.9	8.18	6.77	0.38
Geomean	**FY '20**			**2.8**		**1.9**		**2.1**				**11.2**		**39**	**0.07**					**0.19**

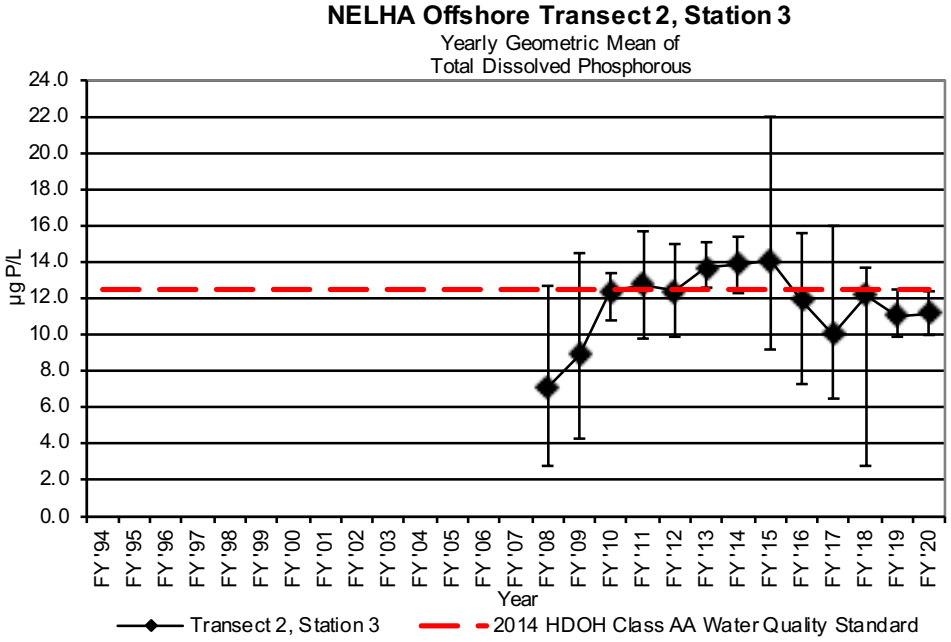
NELHA Water Quality Laboratory

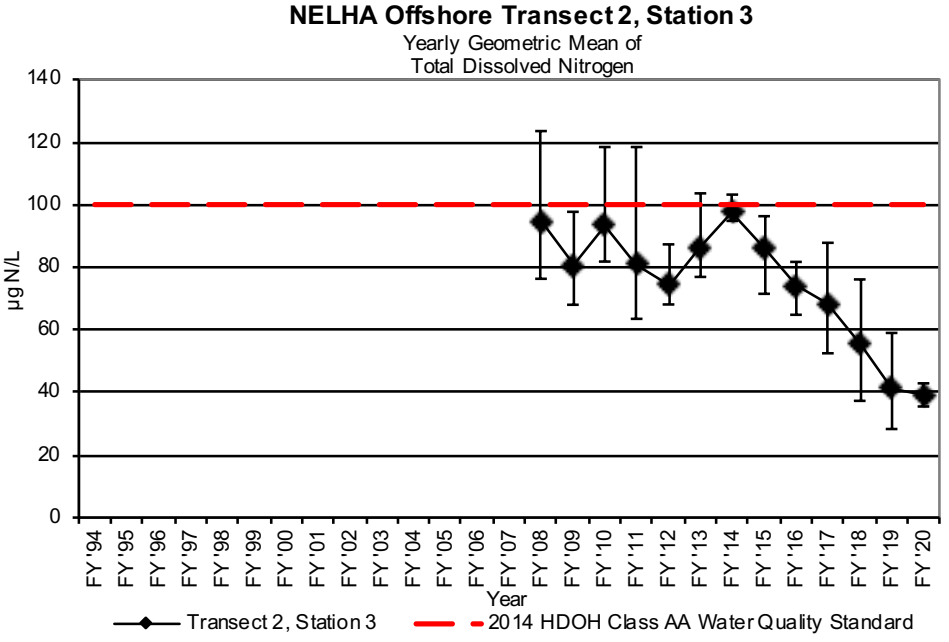
Transect 2, Station 3

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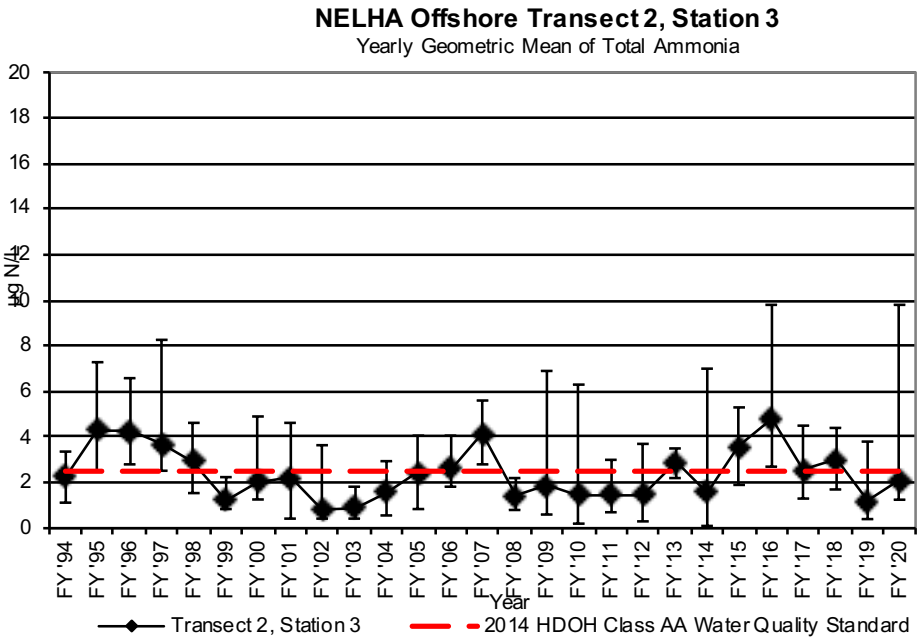


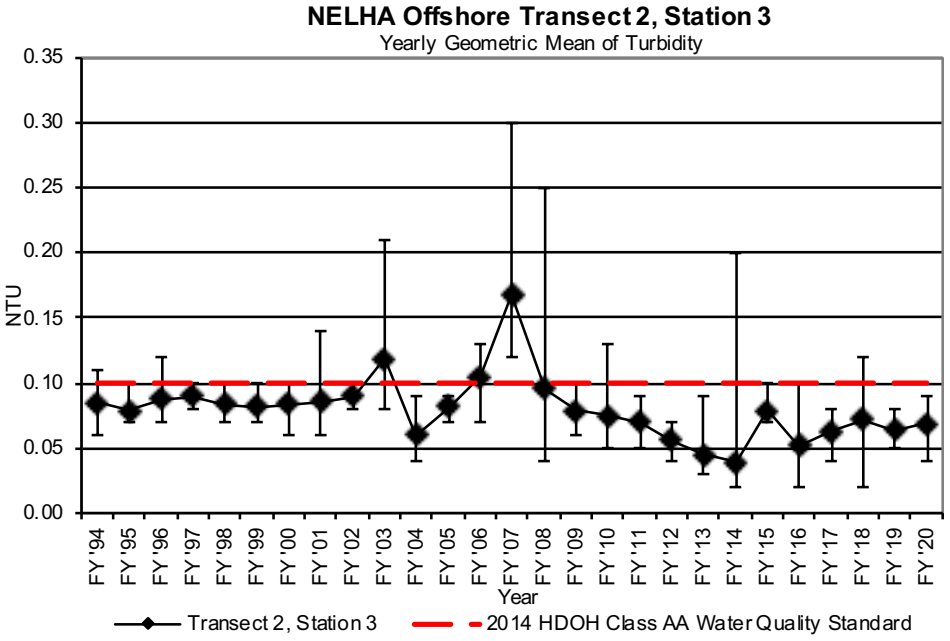


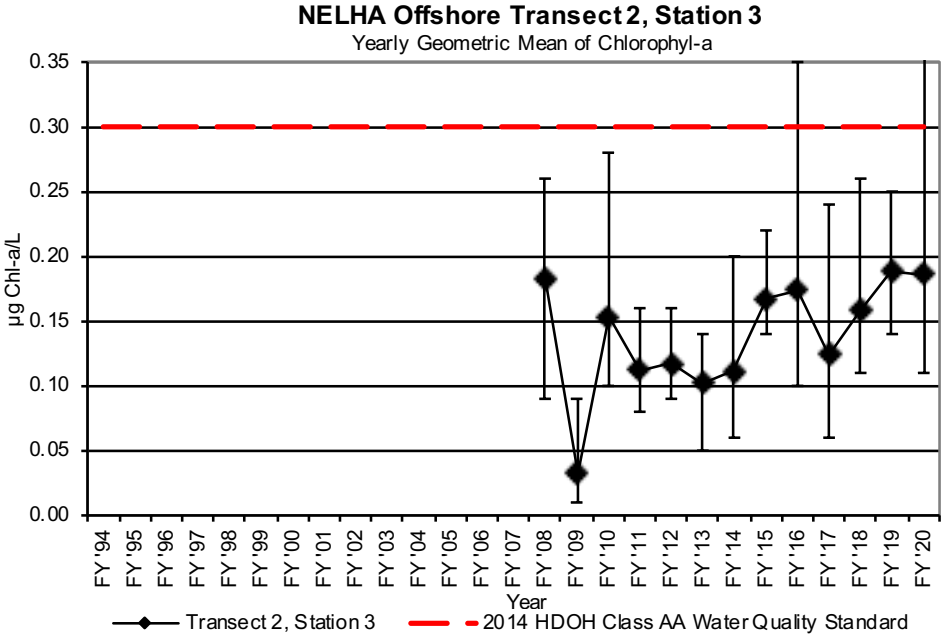
NELHA Water Quality Laboratory

Transect 2, Station 3

7/27/1993 - 7/14/20







NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-4S-53m	7/27/93	942	0.11	3.4	0.06	0.8	0.21	2.9	4.4	123					0.10	34.422	26.7			
O2-4S-53m	12/7/93	908	0.09	2.8	0.21	2.9	0.22	3.1	3.6	102					0.08	34.787	25.6			
O2-4S-53m	3/16/94	907	0.17	5.3	0.24	3.4	0.18	2.5	4.7	131					0.08	34.469	24.6			
O2-4S-53m	6/14/94	849	0.12	3.7	0.10	1.4	0.01	0.1	2.7	76					0.10	34.545	25.2			
Geomean	**FY '94**			**3.7**		**1.8**		**1.3**							**0.09**					
O2-4S-53m	9/8/94	1016	0.09	2.8	0.18	2.5	0.20	2.8	2.8	79					0.08	34.616	27.6			
O2-4S-53m	11/16/94	813	0.14	4.3	0.14	2.0	0.51	7.1	2.6	74					0.07	34.592	26.0			
O2-4S-53m	3/21/95	959	0.19	5.9	0.16	2.2	0.20	2.8	3.2	89					0.10	34.216	25.1			
O2-4S-53m	6/26/95	817	0.11	3.4	0.17	2.4	0.42	5.9	2.1	58					0.06	34.558	26.5			
Geomean	**FY '95**			**3.9**		**2.3**		***4.3***							**0.08**					
O2-4S-53m	9/25/95	1053	0.10	3.1	0.11	1.5	0.10	1.4	7.0	198					0.09	34.537	27.3			
O2-4S-53m	11/13/95	954	0.11	3.4	0.18	2.5	0.43	6.0	1.6	44					0.07	34.391	26.8			
O2-4S-53m	3/11/96	1045	0.11	3.4	0.21	2.9	0.43	6.0	2.2	62					0.11	34.244	25.3			
O2-4S-53m	5/13/96	950	0.10	3.1	0.02	0.3	0.23	3.2	1.8	50					0.06	34.315	26.8			
Geomean	**FY '96**			**3.2**		**1.3**		***3.6***							**0.08**					
O2-4S-53m	7/30/96	935	0.11	3.4	1.02	14.3	0.18	2.5	3.7	104					0.08	34.473	27.9			
O2-4S-53m	10/1/96	1024	0.08	2.5	0.14	2.0	0.59	8.3	2.0	56					0.09	34.738	27.8			
O2-4S-53m	1/6/97	1051	0.09	2.8	0.23	3.2	0.24	3.4	3.6	100					0.08	34.664	25.7			
O2-4S-53m	4/21/97	1032	0.12	3.7	0.76	10.6	0.25	3.5	2.8	78					0.09	34.529	26.4			
Geomean	**FY '97**			**3.1**		***5.6***		***4.0***							**0.08**					
O2-4S-53m	8/18/97	1023	0.12	3.7	0.65	9.1	0.23	3.2	7.3	206					0.10	34.507	26.8			
O2-4S-53m	10/6/97	1053	0.09	2.8	0.08	1.1	0.32	4.5	14.6	410					0.11	34.729	27.5			
O2-4S-53m	3/3/98	1026	0.07	2.2	0.14	2.0	0.19	2.7	3.2	91					0.07	35.007	24.9			
O2-4S-53m	5/4/98	956	0.12	3.7	0.69	9.7	0.13	1.8	7.3	206					0.08	34.917	23.8			
Geomean	**FY '98**			**3.0**		**3.7**		***2.9***							**0.09**					
O2-4S-53m	7/6/98	1054	0.12	3.7	0.59	8.3	0.07	1.0	5.6	158					0.09	34.943	26.3			
O2-4S-53m	10/5/98	1032	0.08	2.5	0.08	1.1	0.11	1.5	1.4	40					0.08	35.123	27.3			
O2-4S-53m	1/13/99	1042	0.11	3.4	0.56	7.8	0.10	1.4	4.5	126					0.07	35.043	25.0			
O2-4S-53m	4/12/99	1021	0.13	4.0	0.27	3.8	0.08	1.1	4.1	116					0.08	34.686	24.1			
Geomean	**FY '99**			**3.4**		**4.1**		**1.2**							**0.08**					

NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-4S-53m	7/6/99	1035	0.09	2.8	0.13	1.8	0.11	1.5	3.8	106					0.09	34.950	25.7			
O2-4S-53m	10/4/99	1115	0.12	3.7	0.34	4.8	0.14	2.0	5.1	142					0.08	34.911	26.1			
O2-4S-53m	1/4/00	1059	0.10	3.1	0.32	4.5	0.35	4.9	3.5	98					0.07	35.092	24.8			
O2-4S-53m	4/17/00	1047	0.13	4.0	0.36	5.0	0.15	2.1	3.7	103					0.06	34.611	24.3			
Geomean	**FY '00**			**3.4**		**3.7**		**2.4**							**0.07**					
O2-4S-53m	7/24/00	1106	0.11	3.4	0.29	4.1	0.09	1.3	3.7	103					0.06	34.881	27.2			
O2-4S-53m	10/30/00	1121	0.13	4.0	0.04	0.6	0.31	4.3	3.8	106					0.06	34.950	27.1			
O2-4S-53m	2/26/01	1111	0.16	5.0	0.37	5.2	0.19	2.7	5.0	140					0.12	34.711	24.9			
O2-4S-53m	5/7/01	1119	0.12	3.7	0.37	5.2	0.33	4.6	3.6	100					0.13	34.845	24.6			
Geomean	**FY '01**			**4.0**		**2.8**		**2.9**							**0.09**					
O2-4S-53m	8/21/01	1015	0.09	2.8	0.10	1.4	0.02	0.3	2.0	57					0.06	34.807	26.6			
O2-4S-53m	10/8/01	1035	0.13	4.0	0.08	1.1	0.06	0.8	2.3	65					0.06	34.948	27.3			
O2-4S-53m	3/5/02	949	0.15	4.6	0.33	4.6	0.03	0.4	4.8	135					0.13	34.680	24.1			
O2-4S-53m	4/17/02	955	0.16	5.0	0.32	4.5	0.23	3.2	18.9	530					0.08	34.463	25.4			
Geomean	**FY '02**			**4.0**		**2.4**		**0.8**							**0.08**					
O2-4S-53m	7/8/02	1113	0.18	5.6	0.24	3.4	0.15	2.1	3.5	99					0.12	34.643	26.6			
O2-4S-53m	10/9/02	946	0.06	1.9	0.16	2.2	0.12	1.7	2.5	69					0.07	34.944	27.0			
O2-4S-53m	3/12/03	1108	0.10	3.1	0.13	1.8	0.03	0.4	3.5	99					0.07	34.786	25.2			
O2-4S-53m	4/22/03	1110	0.08	2.5	0.28	3.9	0.04	0.6	2.7	77					0.06	35.013	25.1			
Geomean	**FY '03**			**3.0**		**2.7**		**1.0**							**0.08**					
O2-4S-53m	8/18/03	1230	0.06	1.9	0.08	1.1	0.20	2.8	2.5	70					0.04	34.824	28.2			
O2-4S-53m	10/29/03	1120	0.03	0.9	0.03	0.4	0.10	1.4	2.3	65					0.09	34.839	27.6			
O2-4S-53m	3/11/04	1007	0.12	3.7	0.01	0.1	0.04	0.6	1.7	47					n/a	34.353	25.7			
O2-4S-53m	5/20/04	1037	0.11	3.4	0.01	0.1	0.19	2.7	1.4	38					n/a	33.47	27.0			
Geomean	**FY '04**			**2.2**		**0.3**		**1.6**							**0.06**					
O2-4S-53m	9/20/04	952	0.09	2.8	0.05	0.7	0.22	3.1	1.9	52					0.09	33.77	27.8			
O2-4S-53m	11/17/04	925	0.10	3.1	0.13	1.8	0.27	3.8	2.1	58					0.07	33.58	26.7			
O2-4S-53m	1/13/05	1047	0.07	2.2	0.19	2.7	0.06	0.8	3.0	85					0.08	34.849	24.8			
O2-4S-53m	4/11/05	1048	0.13	4.0	0.31	4.3	0.24	3.4	2.8	79					0.08	34.575	25.3			
Geomean	**FY '05**			**2.9**		**2.0**		**2.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-4S-53m	7/20/05	1034	0.05	1.5	0.01	0.1	0.13	1.8	1.4	38					0.10	34.743	26.8			
O2-4S-53m	10/11/05	919	0.07	2.2	0.02	0.3	0.19	2.7	2.5	69					0.14	34.904	26.5			
O2-4S-53m	3/13/06	1028	0.09	2.8	0.12	1.7	0.35	4.9	8.8	247					0.09	34.823	24.6			
O2-4S-53m	5/15/06	1002	0.12	3.7	1.27	17.8	0.07	1.0	13.8	388					0.11	34.396	24.8			
Geomean	**FY '06**			**2.4**		**1.0**		**2.2**							***0.11***					
O2-4S-53m	8/14/06	956	0.13	4.0	0.41	5.7	0.17	2.4	3.3	92					0.15	34.597	26.0			
O2-4S-53m	11/1/06	1006	0.08	2.5	0.21	2.9	0.42	5.9	2.3	65					0.28	34.799	26.9			
O2-4S-53m	2/12/07	1028	0.13	4.0	0.24	3.4	0.43	6.0	2.5	70					0.23	34.569	24.5			
O2-4S-53m	4/9/07	957	0.12	3.7	0.20	2.8	0.25	3.5	3.8	106					0.16	34.68	25.1			
Geomean	**FY '07**			**3.5**		**3.6**		***4.1***							***0.20***					
T2-100m	9/26/07	1009	0.13	4.0	0.07	1.0	0.07	1.0	12.6	353	0.01	0.4	6.7	94	0.05	34.977	26.9	8.18	6.27	0.08
T2-100m	12/13/07	1131	0.09	2.7	0.06	0.8			11.7	328	0.26	8.1	7.4	103	0.18	34.700	25.8	8.23	6.42	0.25
T2-100m	3/10/08	1022	0.19	6.0	0.38	5.3	0.06	0.8	3.5	98	0.33	10.1	8.6	121	0.17	34.886	25.1	8.27	6.69	0.32
T2-100m	6/5/08	1022	0.12	3.7	0.22	3.1	0.16	2.2	24.2	679	0.29	9.0	10.5	147	0.05	34.8205	25.1	8.07	6.55	0.15
Geomean	**FY '08**			**3.9**		**1.9**		**1.2**				**4.1**		***115***	**0.09**					**0.18**
T2-100m	9/22/08	1127	0.04	1.3	0.05	0.7	0.16	2.3	1.4	40	0.27	8.4	4.6	65	0.08	34.830	26.8	8.05	6.73	0.07
T2-100m	11/17/08	1006	0.16	4.9	0.06	0.8	0.14	1.9	2.1	59	0.34	10.6	5.2	73	0.06	34.978	25.8	8.26	5.82	0.04
T2-100m	2/9/09	1009	0.06	1.8	0.10	1.4	0.12	1.7	1.5	43	0.11	3.3	6.9	97	0.06	35.127	24.8	8.07	6.03	0.01
T2-100m	4/13/09	956	0.23	7.1	0.12	1.7	0.33	4.6	2.9	80	0.43	13.4	5.3	75	0.10	34.989	24.0	8.19	5.99	0.15
Geomean	**FY '09**			**3.0**		**1.1**		**2.4**				**7.9**		**76**	**0.07**					**0.05**
T2-100m	9/9/09	1007	0.21	6.5	0.16	2.2	0.10	1.4	10.6	298	0.52	16.0	7.1	99	0.06	35.19	26.8	8.20	5.82	0.24
T2-100m	11/23/09	1019	0.03	0.8	0.09	1.2	0.06	0.8	52.2	1466	0.42	13.1	5.6	78	0.06	35.18	25.4	8.25	6.06	0.12
T2-100m	2/23/10	1024	0.15	4.8	0.18	2.5	0.29	4	13.5	380	0.36	11.1	7.2	101	0.06	35.07	24.6	8.18	6.03	0.23
T2-100m	5/25/10	1040	0.03	0.9	0.06	0.9	0.11	1.5	4.6	130	0.36	11.3	6.4	90	0.09	34.99	24.9	8.22	6.88	0.08
Geomean	**FY '10**			**2.2**		**1.6**		**1.6**				***12.7***		**92**	**0.07**					**0.15**
T2-100m	8/10/10	1021	0.05	1.6	0.52	7.3	0.01	0.2	3.9	109	0.52	16	7.1	99	0.05	34.89	26.13	8.22	6.34	0.13
T2-100m	11/8/10	1007	0.00	0.1	0.16	2.2	0.14	1.9	7.5	210	0.33	10.3	5.9	83	0.11	35.26	26.45	8.25	6.16	0.09
T2-100m	1/11/11	1023	0.13	4	0.27	3.8	0.11	1.5	2.7	75	0.45	13.8	3.9	55	0.08	34.95	24.95	8.23	6.32	0.11
T2-100m	4/26/11	1023	0.09	2.8	0.31	4.3	0.06	0.8	1.7	47	0.43	13.4	4.0	56	0.10	34.98	25.00	8.21	6.42	0.11
Geomean	**FY '11**			**1.2**		**4.0**		**0.8**				***13.2***		**71**	**0.08**					**0.11**

NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-100m	7/26/11	1050	0.19	5.9	0.36	5	0.14	1.9	2.3	64	0.47	14.7	4.1	57	0.06	34.79	25.98	8.25	6.52	0.11
T2-100m	10/18/11	1012	0.01	0.2	0.03	0.4	0.21	3	1.4	41	0.29	9	3.9	55	0.06	35.06	26.57	8.22	6.84	0.13
T2-100m	1/25/12	1037	0.07	2.2	0.06	0.9	0.08	1.1	2.4	67	0.38	11.8	4.4	62	0.06	34.04	24.63	8.20	6.71	0.03
T2-100m	4/24/12	1103	0.14	4.3	0.31	4.3	0.13	1.8	2.5	70	0.42	13.1	4.1	58	0.11	35.09	24.82	8.25	6.68	0.27
Geomean	**FY '12**			**1.8**		**1.7**		**1.8**				**12.0**		**58**	**0.07**					**0.10**
T2-100m	7/24/12	1025	0.03	0.9	0.28	3.9	0.19	2.6	2.1	58	0.35	10.8	4.7	66	0.05	35.06	26.28	8.24	6.61	0.14
T2-100m	11/27/12	1011	0.07	2.1	0.42	5.9	0.10	1.4	3.8	106	0.45	13.8	5.1	71	0.03	35.18	25.11	8.20	6.83	0.15
T2-100m	1/23/13	1019	0.06	2	0.09	1.3	0.14	1.9	1.2	34	0.45	13.8	5.8	81	0.05	35.12	24.70	8.22	6.30	0.06
T2-100m	4/16/13	1027	0.14	4.2	0.08	1.1	0.18	2.5	0.0	1	0.47	14.5	4.9	68	0.03	35.15	24.92	8.22	6.79	0.05
Geomean	**FY '13**			**2.0**		**2.4**		**2.0**				***13.1***		**71**	**0.04**					**0.09**
T2-100m	8/1/13	935	0.02	0.6	0.19	2.7	0.03	0.4	5.2	147	0.67	20.7	6.2	87	0.18	35.18	26.1	8.25	6.67	0.13
T2-100m	10/29/13	1005	0.14	4.2	0.26	3.7	0.49	6.9	2.3	65	0.46	14.3	5.9	83	0.08	35.30	27.0	8.21	6.25	0.17
T2-100m	2/4/14	1014	0.10	3.1	0.33	4.6	0.54	7.6	2.4	67	0.41	12.6	5.9	83	0.02	34.94	25.2	8.21	6.38	0.16
T2-100m	5/6/14	1015	0.08	2.4	0.13	1.8	0.22	3.1	2.4	66	0.41	12.8	5.6	78	0.05	34.81	26.0	8.21	6.08	0.15
Geomean	**FY '14**			**2.1**		**3.0**		***2.8***				***14.8***		**82**	**0.06**					**0.15**
T2-100m	8/5/14	1021	0.18	5.5	0.26	3.7	0.41	5.7	2.3	66	0.52	16.2	5.8	81	0.09	34.94	26.8	8.22	5.98	0.15
T2-100m	11/17/14	1156	0.16	4.9	0.09	1.3	0.24	3.3	0.2	5	0.48	14.9	5.5	77	0.08	34.94	27.1	8.21	6.77	0.22
T2-100m	3/3/15	1022	0.10	3.0	0.25	3.5	0.13	1.8	2.3	66	0.33	10.3	7.4	104	0.08	34.84	25.6	8.17	6.79	0.14
T2-100m	6/16/15	1134	0.11	3.3	0.55	7.7	0.23	3.2	3.8	106	0.43	13.3	4.9	69	0.06	34.26	26.5	8.19	6.03	0.19
Geomean	**FY '15**			**4.0**		**3.4**		***3.2***				***13.5***		**82**	**0.08**					**0.17**
T2-100m	8/26/15	1119	0.12	3.8	0.21	2.9	0.16	2.2	4.1	115	0.37	11.5	4.7	65	0.04	34.45	28.5	8.22	6.02	0.47
T2-100m	11/17/15	1031	0.16	4.9	0.46	6.4	0.10	1.4	3.9	110	0.50	15.5	5.0	70	0.07	33.97	27.4	8.23	6.23	0.12
T2-100m	3/1/16	1035	0.15	4.7	0.20	2.8	0.42	5.9	0.7	20	0.48	14.8	4.6	65	0.08	34.78	25.4	8.25	5.84	0.15
T2-100m	5/3/16	1004	0.10	3.2	0.16	2.3	0.05	0.7	0.2	7	0.38	11.7	4.2	59	0.07	34.69	25.6	8.24	6.28	0.22
Geomean	**FY '16**			**4.1**		**3.3**		**1.9**				***13.3***		**65**	**0.06**					**0.21**
T2-100m	7/6/16	1110	0.08	2.4	0.02	0.3	0.23	3.2	0.0	1	0.47	14.5	5.4	75	0.07	34.60	26.9	8.27	6.55	0.23
T2-100m	12/20/16	1045	0.04	1.2	0.16	2.3	0.16	2.3	1.7	47	0.33	10.3	3.1	43	0.02	34.72	25.6	8.27	5.66	0.14
T2-100m	2/28/17	941	0.02	0.6	0.01	0.1	0.28	3.9	0.2	5	0.29	9.0	4.6	65	0.07	34.70	24.7	8.23	5.75	0.09
T2-100m	5/10/17	937	0.05	1.7	0.08	1.1	0.07	1.0	0.7	21	0.21	6.6	3.3	46	0.07	34.76	25.7	8.21	4.11	0.09
Geomean	**FY '17**			**1.3**		**0.5**		**2.3**				**9.7**		**56**	**0.05**					**0.13**

NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-100m	9/27/17	1026	0.11	3.3	0.16	2.2	0.15	2.1	1.0	27	0.41	12.7	2.5	35	0.09	34.80	27.8	8.20	4.29	0.18
T2-100m	11/28/17	1128	0.12	3.7	0.35	4.9	0.21	2.9	2.4	69	0.38	11.9	3.1	43	0.07	35.04	26.2	8.20	4.75	0.19
T2-100m	1/30/18	1105	0.12	3.6	0.31	4.4	0.16	2.3	1.9	54	0.37	11.5	2.4	33	0.07	34.88	24.6	8.15	5.33	0.14
T2-100m	5/16/18	1102	0.09	2.7	0.09	1.2	0.11	1.6	3.6	100	0.33	10.1	1.5	21	0.02	34.71	25.6	8.16	5.96	0.10
Geomean	**FY '18**			**3.3**		**2.7**		**2.2**				**11.5**		**32**	**0.05**					**0.15**
T2-100m	9/24/18	1037	0.02	0.7	0.16	2.3	0.13	1.8	0.5	14	0.31	9.5	1.9	26	0.08	34.80	27.8	8.17	5.15	0.23
T2-100m	11/13/18	1105	0.03	0.8	0.20	2.8	0.25	3.5	0.2	6	0.34	10.4	3.4	48	0.08	35.03	27.3	8.22	4.39	0.15
T2-100m	1/22/19	1052	0.10	3.1	0.01	0.2	0.03	0.4	0.0	0	0.38	11.7	1.9	27	0.05	35.00	25.1	8.22	5.66	0.18
T2-100m	4/16/19	1057	0.12	3.6	0.05	0.7	0.16	2.2	1.5	42	0.37	11.6	2.4	34	0.04	35.61	25.9	8.15	7.17	0.12
Geomean	**FY '19**			**1.6**		**1.0**		**1.5**				**10.8**		**33**	**0.06**					**0.17**
T2-100m	8/13/19	1034	0.01	0.4	0.16	2.3	0.26	3.6	3.3	93	0.29	9.1	2.5	35	0.13	35.58	28.3	8.22	6.45	0.18
T2-100m	8/13/19	1045	0.09	2.9	0.06	0.9	0.39	5.5	0.5	14	0.41	12.6	2.2	31	0.10	35.30	27.5	8.22	6.54	0.14
T2-100m	11/20/19	1026	0.11	3.3	0.16	2.3	0.09	1.3	-0.1	-3	0.39	12.0	2.6	36	0.04	34.92	25.1	8.21	6.68	0.12
T2-100m	1/22/20	1055	0.09	2.9	0.16	2.3	0.09	1.3	1.4	39	0.30	9.4	2.2	31	0.03	35.42	25.8	8.18	6.69	0.39
Geomean	**FY '20**			**1.8**		**1.8**		**2.4**				**10.7**		**33**	**0.06**					**0.19**

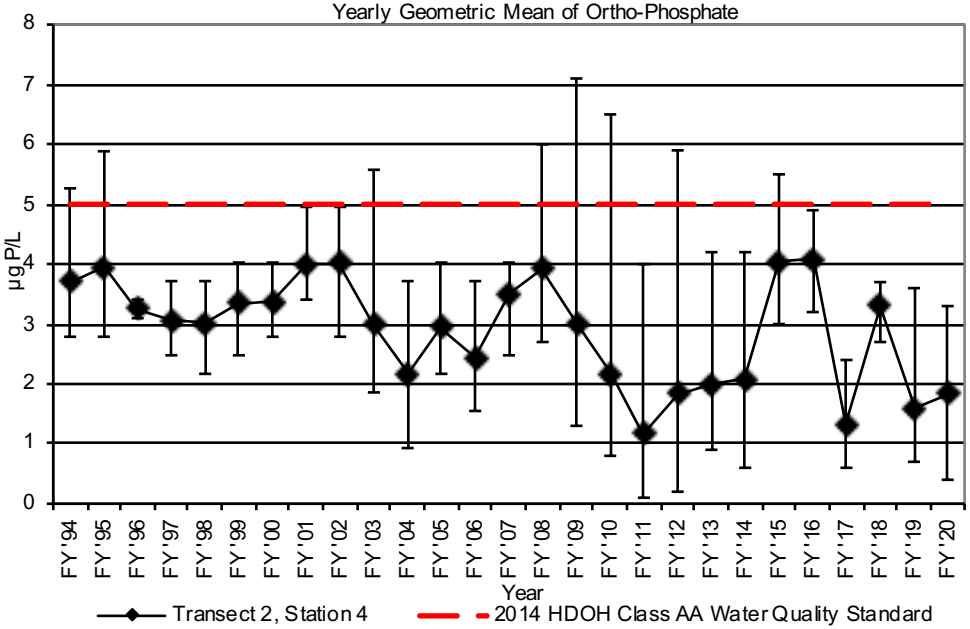
NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20

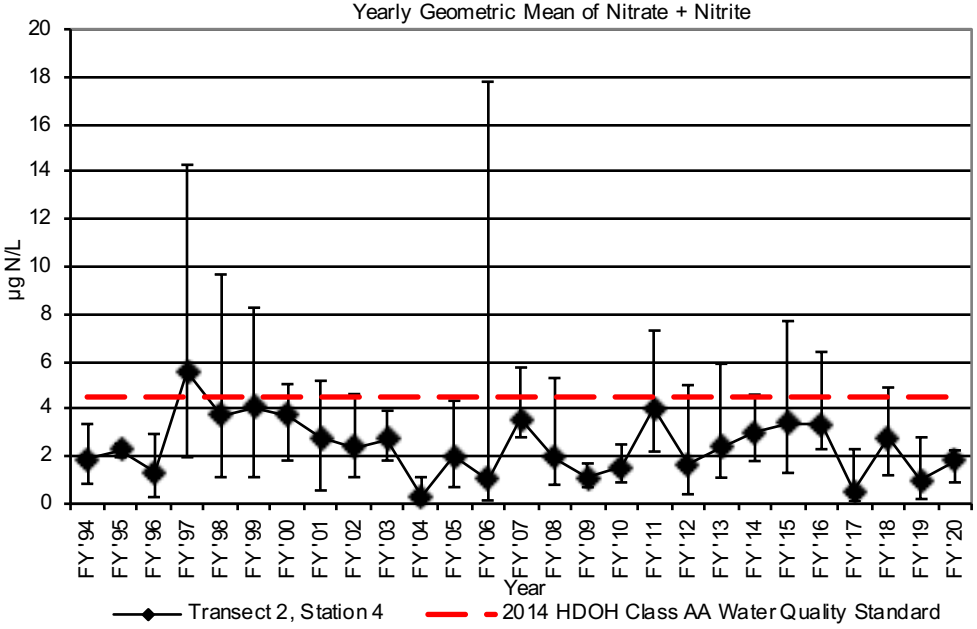
NELHA Offshore Transect 2, Station 4

Yearly Geometric Mean of Ortho-Phosphate



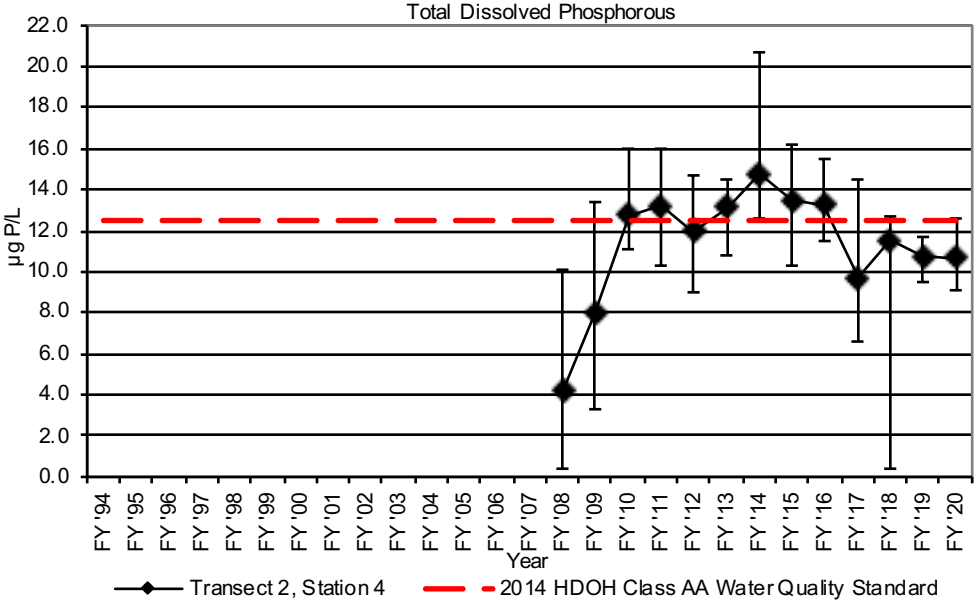
NELHA Offshore Transect 2, Station 4

Yearly Geometric Mean of Nitrate + Nitrite



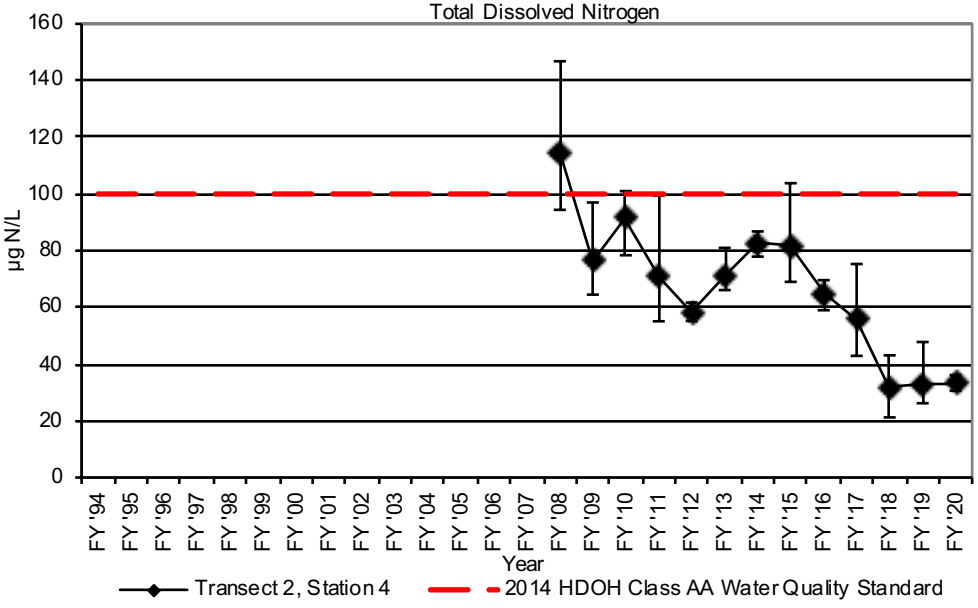
NELHA Offshore Transect 2, Station 4

Yearly Geometric Mean of
Total Dissolved Phosphorous



NELHA Offshore Transect 2, Station 4

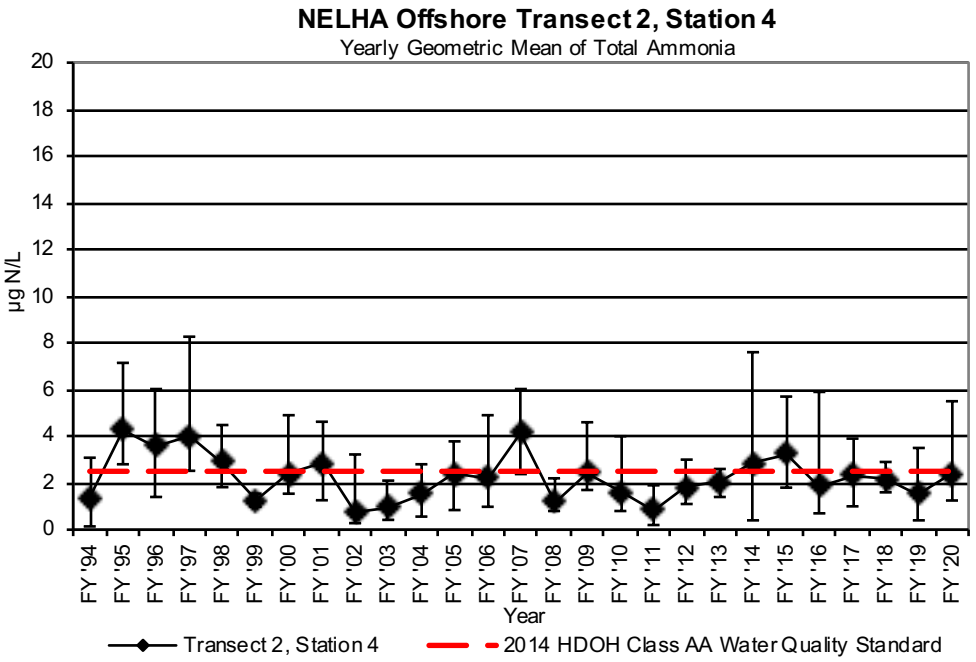
Yearly Geometric Mean of
Total Dissolved Nitrogen

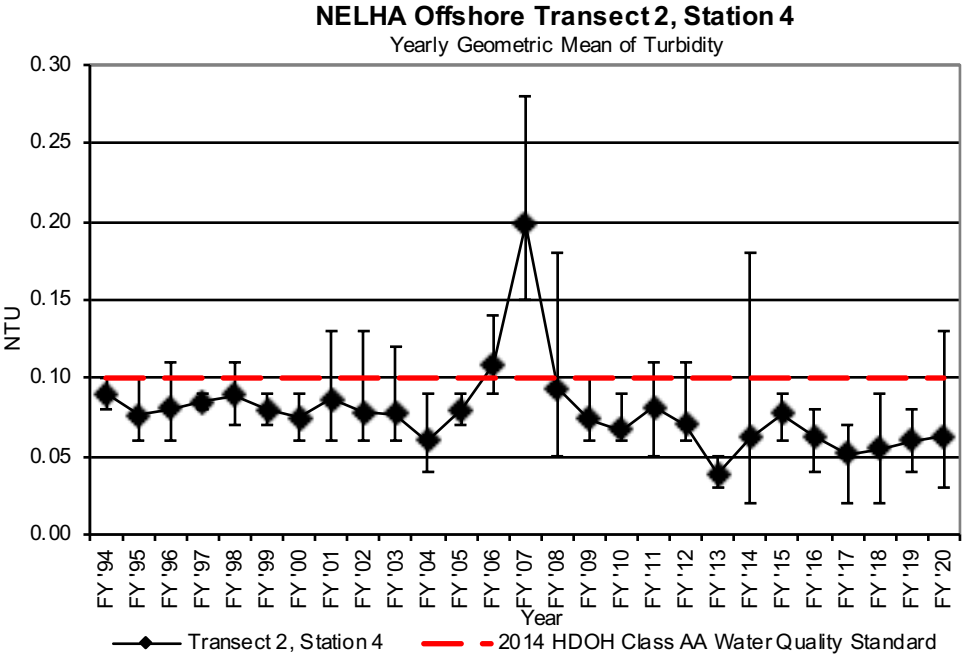


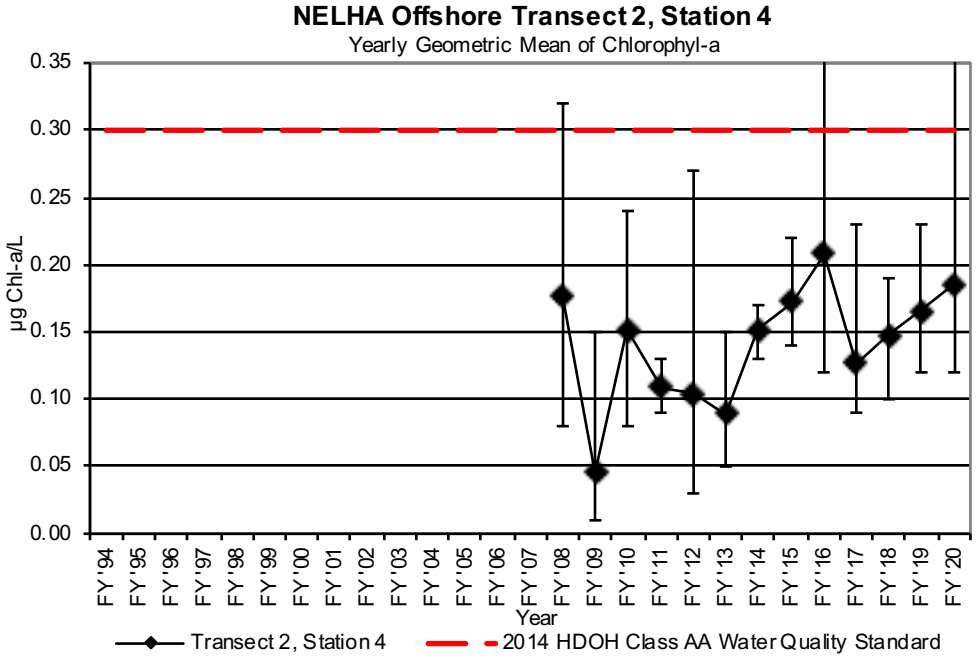
NELHA Water Quality Laboratory

Transect 2, Station 4

7/27/1993 - 7/14/20







NELHA Water Quality Laboratory

Transect 2, Station 5

7/27/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-5S-69m	7/27/93	933	0.08	2.5	0.06	0.8	0.27	3.8	2.4	67					0.08	34.447	26.7			
O2-5S-69m	12/7/93	858	0.09	2.8	0.13	1.8	0.12	1.7	3.9	108					0.07	34.809	25.6			
O2-5S-69m	3/16/94	858	0.16	5.0	0.19	2.7	0.17	2.4	3.9	109					0.09	34.490	24.6			
O2-5S-69m	6/14/94	842	0.09	2.8	0.16	2.2	0.25	3.5	2.8	78					0.08	34.582	25.2			
Geomean	**'93-'94**			**3.1**		**1.7**		***2.7***							**0.08**					
O2-5S-69m	9/8/94	1012	0.09	2.8	0.16	2.2	0.25	3.5	2.8	78					0.07	34.611	27.6			
O2-5S-69m	11/16/94	809	0.14	4.3	0.17	2.4	0.52	7.3	2.9	81					0.07	34.590	26.0			
O2-5S-69m	3/21/95	950	0.19	5.9	0.02	0.3	0.11	1.5	4.4	123					0.09	34.238	25.1			
O2-5S-69m	6/26/95	815	0.11	3.4	0.16	2.2	0.48	6.7	1.9	53					0.06	34.560	26.5			
Geomean	**'94-'95**			**3.9**		**1.4**		***4.0***							**0.07**					
O2-5S-69m	9/25/95	1102	0.10	3.1	0.15	2.1	0.17	2.4	3.9	108					0.08	34.511	27.2			
O2-5S-69m	11/13/95	949	0.12	3.7	0.18	2.5	0.43	6.0	2.0	56					0.06	34.385	26.8			
O2-5S-69m	3/11/96	1040	0.11	3.4	0.18	2.5	0.41	5.7	2.2	62					0.07	34.254	25.1			
O2-5S-69m	5/13/96	945	0.08	2.5	0.07	1.0	0.23	3.2	1.5	42					0.04	34.323	26.9			
Geomean	**'95-'96**			**3.1**		**1.9**		***4.0***							**0.06**					
O2-5S-69m	7/30/96	930	0.09	2.8	0.51	7.1	0.17	2.4	3.0	85					0.08	34.472	27.9			
O2-5S-69m	10/1/96	1019	0.07	2.2	0.12	1.7	0.61	8.5	1.9	52					0.08	34.724	27.8			
O2-5S-69m	1/6/97	1046	0.09	2.8	0.20	2.8	0.18	2.5	3.1	87					0.12	34.680	25.7			
O2-5S-69m	4/21/97	1027	0.10	3.1	0.72	10.1	0.21	2.9	3.0	85					0.09	34.523	26.3			
Geomean	**'96-'97**			**2.7**		**4.3**		***3.5***							**0.09**					
O2-5S-69m	8/18/97	1018	0.11	3.4	0.61	8.5	0.21	2.9	8.3	234					0.10	34.491	26.9			
O2-5S-69m	10/6/97	1046	0.08	2.5	0.09	1.3	0.37	5.2	4.3	120					0.07	34.723	27.5			
O2-5S-69m	3/3/98	1018	0.07	2.2	0.15	2.1	0.21	2.9	3.5	99					0.08	34.997	24.9			
O2-5S-69m	5/4/98	949	0.13	4.0	0.97	13.6	0.13	1.8	8.8	248					0.10	34.864	23.8			
Geomean	**'97-'98**			**2.9**		**4.2**		***3.0***							**0.09**					
O2-5S-69m	7/6/98	1047	0.13	4.0	0.65	9.1	0.14	2.0	6.4	180					0.09	34.941	26.2			
O2-5S-69m	10/5/98	1022	0.07	2.2	0.01	0.1	0.08	1.1	2.9	83					0.07	35.126	27.5			
O2-5S-69m	1/13/99	1035	0.06	1.9	0.08	1.1	0.01	0.1	2.5	71					0.06	35.097	25.0			
O2-5S-69m	4/12/99	1013	0.13	4.0	0.37	5.2	0.10	1.4	5.2	145					0.07	34.641	24.1			
Geomean	**'98-'99**			**2.8**		**1.6**		**0.8**							**0.07**					

NELHA Water Quality Laboratory

Transect 2, Station 5

7/27/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-5S-69m	7/6/99	1027	0.09	2.8	0.08	1.1	0.06	0.8	2.5	69					0.11	34.969	25.8			
O2-5S-69m	10/4/99	1106	0.13	4.0	0.31	4.3	0.14	2.0	4.8	134					0.14	34.926	26.0			
O2-5S-69m	1/4/00	1052	0.10	3.1	0.58	8.1	0.35	4.9	3.9	109					0.08	35.079	24.9			
O2-5S-69m	4/17/00	1042	0.14	4.3	0.11	1.5	0.01	0.1	10.3	289					0.05	34.647	24.3			
Geomean	**'99-'00**			**3.5**		**2.8**		**1.0**							**0.09**					
O2-5S-69m	7/24/00	1100	0.10	3.1	0.27	3.8	0.06	0.8	3.1	86					0.07	34.958	27.3			
O2-5S-69m	10/30/00	1110	0.12	3.7	0.03	0.4	0.32	4.5	3.6	100					0.06	34.964	27.0			
O2-5S-69m	2/26/01	1106	0.15	4.6	0.13	1.8	0.20	2.8	6.7	189					0.10	34.731	24.8			
O2-5S-69m	5/7/01	1114	0.13	4.0	0.27	3.8	0.33	4.6	7.9	221					0.09	34.847	24.6			
Geomean	**'00-'01**			**3.8**		**1.8**		***2.6***							**0.08**					
O2-5S-69m	8/21/01	1008	0.11	3.4	0.29	4.1	0.02	0.3	4.0	112					0.10	34.780	26.7			
O2-5S-69m	10/8/01	1030	0.12	3.7	0.09	1.3	0.05	0.7	2.7	74					0.09	34.950	27.4			
O2-5S-69m	3/5/02	944	0.14	4.3	0.20	2.8	0.02	0.3	2.8	80					0.11	34.702	24.1			
O2-5S-69m	4/17/02	951	0.14	4.3	0.04	0.6	0.24	3.4	3.6	101					0.11	34.478	25.4			
Geomean	**'01-'02**			**3.9**		**1.7**		**0.7**							***0.10***					
O2-5S-69m	7/8/02	1108	0.14	4.3	0.03	0.4	0.08	1.1	14.3	400					0.06	34.653	26.6			
O2-5S-69m	10/9/02	942	0.05	1.5	0.08	1.1	0.09	1.3	2.1	60					0.09	34.955	27.1			
O2-5S-69m	3/12/03	1101	0.13	4.0	0.26	3.6	0.07	1.0	2.3	65					0.07	34.774	25.2			
O2-5S-69m	4/22/03	1104	0.08	2.5	0.39	5.5	0.04	0.6	2.7	75					0.07	35.016	25.2			
Geomean	**'02-'03**			**2.9**		**1.7**		**0.9**							**0.07**					
O2-5S-69m	8/18/03	1200	0.06	1.9	0.09	1.3	0.20	2.8	2.3	64					0.04	34.834	28.2			
O2-5S-69m	10/29/03	1111	0.04	1.2	0.04	0.6	0.10	1.4	2.6	73					0.09	34.83	27.6			
O2-5S-69m	3/11/04	956	0.12	3.7	0.02	0.3	0.04	0.6	1.6	45					n/a	34.356	25.7			
O2-5S-69m	5/20/04	1045	0.10	3.1	0.01	0.1	0.19	2.7	1.3	37					n/a	33.60	27.0			
Geomean	**'03-'04**			**2.3**		**0.4**		**1.6**							**0.06**					
O2-5S-69m	9/20/04	947	0.08	2.5	0.01	0.1	0.21	2.9	2.2	61					0.07	33.87	27.7			
O2-5S-69m	11/17/04	919	0.08	2.5	0.01	0.1	0.19	2.7	1.8	52					0.07	33.59	26.7			
O2-5S-69m	1/13/05	1041	0.04	1.2	0.10	1.4	0.06	0.8	2.3	63					0.07	34.860	24.6			
O2-5S-69m	4/11/05	1041	0.10	3.1	0.26	3.6	0.20	2.8	3.6	101					0.07	34.487	25.2			
Geomean	**'04-'05**			**2.2**		**0.6**		**2.1**							**0.07**					

NELHA Water Quality Laboratory

Transect 2, Station 5

7/27/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O2-5S-69m	7/20/05	1028	0.05	1.5	0.01	0.1	0.16	2.2	1.3	36					0.11	34.742	26.8			
O2-5S-69m	10/11/05	913	0.05	1.5	0.01	0.1	0.19	2.7	3.7	105					0.09	34.950	26.6			
O2-5S-69m	3/13/06	1020	0.09	2.8	0.01	0.1	0.25	3.5	4.3	120					0.08	34.836	24.6			
O2-5S-69m	5/15/06	958	0.26	8.1	0.94	13.2	0.05	0.7	10.6	297					0.15	34.845	24.9			
Geomean	**'05-'06**			**2.7**		**0.4**		**2.0**							***0.10***					
O2-5S-69m	8/14/06	950	0.13	4.0	0.30	4.2	0.22	3.1	2.6	74					0.11	34.464	26.5			
O2-5S-69m	11/1/06	1000	0.08	2.5	0.17	2.4	0.39	5.5	2.1	59					0.27	34.841	27.1			
O2-5S-69m	2/12/07	1021	0.12	3.7	0.09	1.3	0.35	4.9	1.9	54					0.71	34.560	24.5			
O2-5S-69m	4/9/07	951	0.16	5.0	0.19	2.7	0.31	4.3	3.6	101					0.33	34.684	25.3			
Geomean	**'06-'07**			**3.7**		**2.4**		***4.4***							***0.29***					
T2-500m	9/26/07	1022	0.14	4.3	0.07	1.0	0.06	0.8	2.4	69	0.38	11.9	5.0	70	0.06	34.986	26.9	8.20	6.31	0.05
T2-500m	12/13/07	1136	0.10	3.2	0.04	0.6			12.5	350	0.38	11.8	6.1	85	0.11	34.718	25.8	8.23	6.23	0.43
T2-500m	3/10/08	1031	0.18	5.6	0.05	0.7	0.06	0.8	13.1	368	0.46	14.4	8.5	120	0.19	34.921	25.8	8.24	6.58	0.27
T2-500m	6/5/08	1025	0.08	2.6	0.13	1.8	0.16	2.2	18.2	510	0.23	7.2	7.9	110	0.06	34.8198	25.2	8.07	6.51	0.17
Geomean	**'07-'08**			**3.8**		**0.9**		**1.1**				**11.0**		**94**	**0.09**					**0.18**
T2-500m	9/22/08	1132	0.03	1	0.04	0.5	0.08	1.1	1.5	43	0.27	8.4	4.5	63	0.08	34.860	27.1	8.04	6.33	0.02
T2-500m	11/17/08	1013	0.14	4.4	0.04	0.5	0.14	1.9	1.6	46	0.35	10.7	4.4	61	0.07	34.988	26.1	8.27	5.76	0.02
T2-500m	2/9/09	1019	0.06	1.9	0.10	1.4	0.12	1.7	3.5	99	0.25	7.6	6.9	97	0.06	35.100	24.9	8.06	6.13	0.01
T2-500m	4/13/09	1004	0.20	6.3	0.04	0.6	0.28	3.9	3.3	93	0.44	13.5	4.4	61	0.10	34.997	24.0	8.19	5.96	0.04
Geomean	**'08-'09**			**2.7**		**0.7**		**1.9**				**9.8**		**69**	**0.08**					**0.02**
T2-500m	9/9/09	1016	0.15	4.7	0.07	1	0.06	0.9	5.0	141	0.55	17.1	6.7	94	0.06	35.23	26.7	8.19	5.46	0.3
T2-500m	11/23/09	1028	0.03	0.8	0.05	0.7	0.03	0.4	10.0	281	0.37	11.6	4.3	60	0.09	35.22	25.4	8.25	6.21	0.11
T2-500m	2/23/10	1032	0.14	4.4	0.04	0.6	0.34	4.7	12.0	336	0.36	11.1	5.0	70	0.05	35.11	24.6	8.19	6.01	0.32
T2-500m	5/25/10	1047	0.01	0.4	0.03	0.4	0.01	0.2	8.3	234	0.53	16.4	6.7	94	0.08	35.01	25.2	8.22	6.92	0.06
Geomean	**'09-'10**			**1.6**		**0.6**		**0.8**				***13.8***		**78**	**0.07**					**0.16**
T2-500m	8/10/10	1032	0.02	0.5	0.06	0.8	0.05	0.7	1.2	32	0.55	17.1	6.7	94	0.03	34.91	26.31	8.24	6.45	0.04
T2-500m	11/8/10	1015	0.00	0.1	0.04	0.5	0.18	2.5	1.8	50	0.31	9.5	5.0	70	0.11	35.27	26.36	8.25	6.18	0.06
T2-500m	1/11/11	1030	0.11	3.4	0.01	0.1	0.09	1.3	4.0	113	0.42	13.1	3.0	43	0.04	35.01	25.03	8.23	6.38	0.11
T2-500m	4/26/11	1031	0.08	2.6	0.06	0.8	0.15	2.1	20.7	582	0.48	14.8	3.2	45	0.08	34.98	25.05	8.22	6.48	0.12
Geomean	**'10-'11**			**0.8**		**0.4**		**1.5**				***13.3***		**60**	**0.06**					**0.08**

NELHA Water Quality Laboratory

Transect 2, Station 5

7/27/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-500m	7/26/11	1103	0.18	5.5	0.03	0.4	0.04	0.5	0.5	15	0.46	14.3	3.4	47	0.10	34.86	26.20	8.26	6.44	0.28
T2-500m	10/18/11	1019	0.01	0.2	0.04	0.6	0.12	1.7	2.2	62	0.30	9.4	4.6	64	0.08	35.05	26.63	8.23	6.79	0.10
T2-500m	1/25/12	1045	0.06	2	0.04	0.5	0.04	0.5	1.8	52	0.37	11.6	3.9	54	0.05	35.04	24.80	8.21	6.72	0.09
T2-500m	4/24/12	1110	0.13	4	0.21	3	0.14	2	3.3	92	0.41	12.8	3.5	50	0.13	34.14	24.89	8.21	6.65	0.29
Geomean	**'11-'12**			**1.7**		**0.8**		**1.0**				**11.9**		**53**	**0.08**					**0.16**
T2-500m	7/24/12	1032	0.02	0.5	0.21	3	0.25	3.5	1.7	49	0.34	10.4	4.9	68	0.09	35.06	26.46	8.25	6.76	0.14
T2-500m	11/27/12	1018	0.06	2	0.13	1.8	0.24	3.4	2.3	64	0.56	17.4	5.7	80	0.05	35.21	25.11	8.20	6.88	0.10
T2-500m	1/23/13	1027	0.06	1.9	0.06	0.9	0.21	2.9	1.3	36	0.38	11.8	5.1	71	0.02	35.12	24.70	8.22	6.34	0.18
T2-500m	4/16/13	1034	0.13	4	0.10	1.4	0.22	3.1	0.6	18	0.46	14.3	6.2	88	0.07	35.13	24.89	8.21	6.75	0.06
Geomean	**'12-'13**			**1.7**		**1.6**		***3.2***				***13.2***		**77**	**0.05**					**0.11**
T2-500m	8/1/13	943	0.02	0.6	0.11	1.6	0.01	0.2	5.3	149	0.42	13.0	3.9	55	0.06	35.18	26.2	8.25	6.66	0.12
T2-500m	10/29/13	1010	0.13	4.1	0.25	3.5	1.39	19.4	2.9	80	0.47	14.7	6.7	94	0.03	35.27	27.0	8.20	6.32	0.23
T2-500m	2/4/14	1020	0.08	2.5	0.12	1.7	0.58	8.1	2.0	56	0.37	11.6	4.3	60	0.02	34.99	25.2	8.20	6.29	0.17
T2-500m	5/6/14	1023	0.07	2.3	0.01	0.1	0.26	3.6	1.6	45	0.42	12.9	5.3	74	0.06	34.83	26.1	8.22	5.98	0.15
Geomean	**FY '14**			**1.9**		**1.0**		***3.0***				***13.0***		**69**	**0.04**					**0.16**
T2-500m	8/5/14	1025	0.17	5.3	0.06	0.9	0.26	3.6	1.3	36	0.48	15.0	4.7	66	0.10	34.96	26.6	8.22	5.97	0.10
T2-500m	11/17/14	1201	0.16	4.9	0.05	0.7	0.23	3.2	0.1	2	0.46	14.4	6.2	87	0.11	34.96	27.1	8.22	6.66	0.22
T2-500m	3/3/15	1030	0.06	2.0	0.10	1.4	0.09	1.3	0.9	27	0.17	5.4	7.0	99	0.07	34.85	25.6	8.18	6.95	0.14
T2-500m	6/16/15	1145	0.08	2.5	0.26	3.7	0.29	4.1	1.9	55	0.45	13.9	5.1	71	0.04	34.30	26.5	8.20	5.93	0.21
Geomean	**FY '15**			**3.4**		**1.3**		***2.8***				**11.3**		**80**	**0.07**					**0.16**
T2-500m	8/26/15	1127	0.13	3.9	0.01	0.1	0.18	2.5	1.0	28	0.23	7.2	4.8	67	0.02	34.56	28.7	8.23	6.01	0.08
T2-500m	11/17/15	1040	0.13	4.0	0.44	6.2	0.14	1.9	2.9	82	0.53	16.3	7.2	102	0.10	34.00	27.4	8.23	6.21	0.15
T2-500m	3/1/16	1042	0.14	4.4	0.20	2.8	0.28	3.9	0.1	2	0.46	14.1	4.0	57	0.08	34.76	25.5	8.24	5.70	0.08
T2-500m	5/3/16	1011	0.10	3.1	0.14	1.9	0.06	0.9	0.0	1	0.28	8.7	4.6	64	0.06	34.69	25.7	8.24	6.36	0.26
Geomean	**FY '16**			**3.8**		**1.3**		**2.0**				**11.0**		**70**	**0.06**					**0.13**
T2-500m	7/6/16	1122	0.07	2.3	0.27	3.8	0.25	3.5	0.3	7	0.54	16.7	4.1	57	0.11	34.60	27.2	8.28	6.49	0.31
T2-500m	12/20/16	1054	0.04	1.3	0.10	1.4	0.16	2.2	1.7	48	0.33	10.2	2.2	31	0.05	34.71	25.6	8.26	5.61	0.10
T2-500m	2/28/17	951	0.02	0.6	0.01	0.2	0.36	5.1	0.1	4	0.28	8.7	3.7	52	0.07	34.68	24.7	8.23	5.72	0.08
T2-500m	5/10/17	944	0.07	2.1	0.01	0.2	0.16	2.2	0.0	0	0.19	6.0	2.1	29	0.07	34.78	25.8	8.20	4.14	0.04
Geomean	**FY '17**			**1.4**		**0.7**		***3.0***				**9.7**		**40**	**0.07**					**0.10**

NELHA Water Quality Laboratory

Transect 2, Station 5

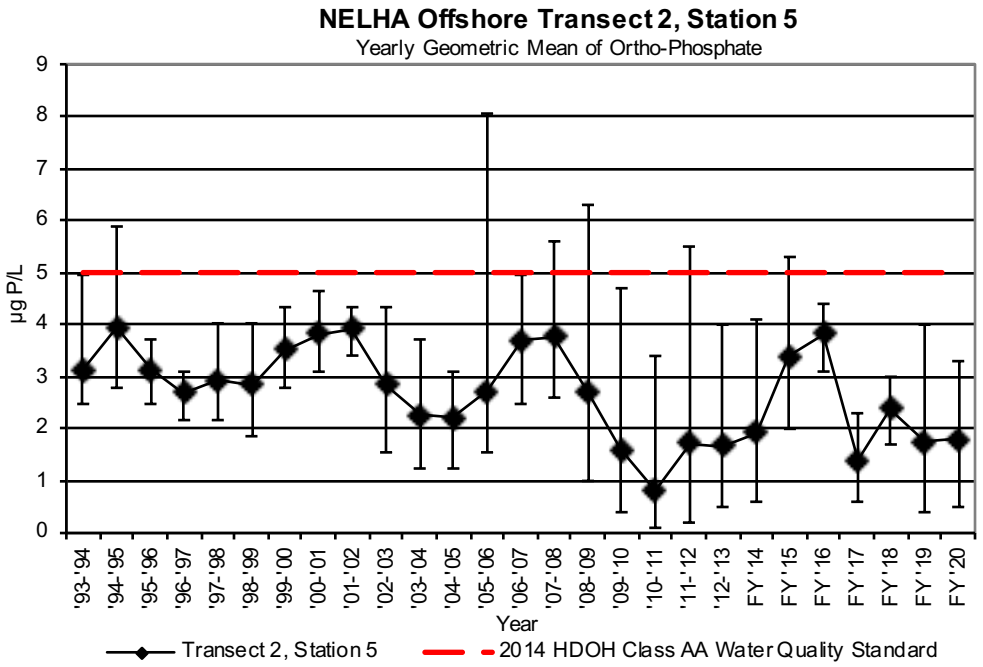
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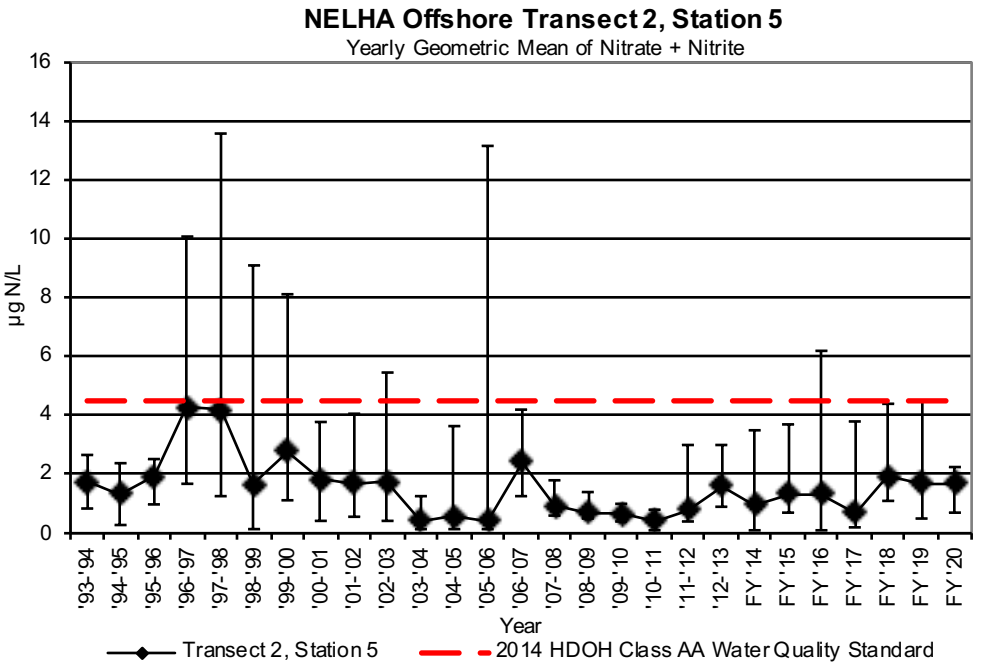
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T2-500m	9/27/17	1036	0.09	2.9	0.11	1.5	0.11	1.6	0.5	14	0.42	13.1	2.5	36	0.08	34.81	27.8	8.21	4.25	0.17
T2-500m	11/28/17	1136	0.10	3.0	0.31	4.4	0.25	3.5	2.2	61	0.36	11.1	2.5	35	0.07	35.05	26.2	8.20	4.75	0.18
T2-500m	1/30/18	1116	0.07	2.2	0.13	1.8	0.06	0.8	1.2	34	0.32	10.0	1.9	27	0.08	34.88	24.6	8.17	5.22	0.20
T2-500m	5/16/18	1109	0.05	1.7	0.08	1.1	0.07	1.0	1.3	37	0.35	10.9	2.3	33	0.02	34.79	25.7	8.17	5.92	0.10
Geomean	**FY '18**			**2.4**		**1.9**		**1.5**				**11.2**		**32**	**0.05**					**0.16**
T2-500m	9/24/18	1047	0.01	0.4	0.16	2.3	0.19	2.7	0.5	14	0.29	9.0	1.4	20	0.09	34.80	27.9	8.16	5.03	0.17
T2-500m	11/13/18	1112	0.07	2.1	0.12	1.7	0.18	2.5	2.1	59	0.32	9.9	2.1	30	0.06	35.01	27.4	8.22	4.62	0.14
T2-500m	1/22/19	1100	0.09	2.8	0.04	0.5	0.08	1.1	0.7	20	0.37	11.5	1.1	16	0.07	34.96	25.0	8.22	5.64	0.11
T2-500m	4/16/19	1105	0.13	4.0	0.32	4.5	0.03	0.4	4.7	132	0.38	11.8	1.7	23	0.04	35.50	26.0	8.14	7.06	0.16
Geomean	**FY '19**			**1.8**		**1.7**		**1.3**				**10.5**		**22**	**0.06**					**0.14**
T2-500m	8/13/19	1043	0.02	0.5	0.16	2.3	0.26	3.7	1.9	55	0.26	8.0	1.8	26	0.08	35.66	28.3	8.21	6.51	0.12
T2-500m	11/20/19	1053	0.09	2.7	0.05	0.7	0.09	1.3	0.6	17	0.44	13.5	2.8	39	0.05	35.25	27.6	8.22	6.50	0.16
T2-500m	1/22/20	1036	0.11	3.3	0.16	2.3	0.09	1.3	1.2	35	0.36	11.3	2.1	29	0.06	34.94	25.0	8.22	6.52	0.14
T2-500m	6/24/20	1104	0.07	2.3	0.16	2.3	0.09	1.3	0.4	12	0.22	6.9	0.9	13	0.05	35.49	25.8	8.17	6.71	0.22
Geomean	**FY '20**			**1.8**		**1.7**		**1.6**				**9.6**		**25**	**0.06**					**0.16**

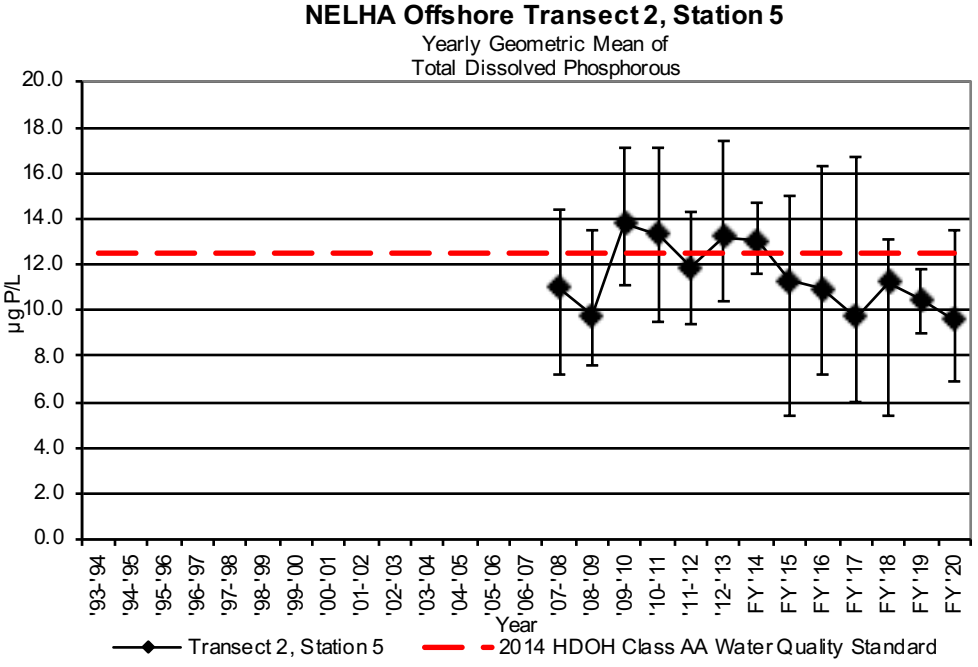
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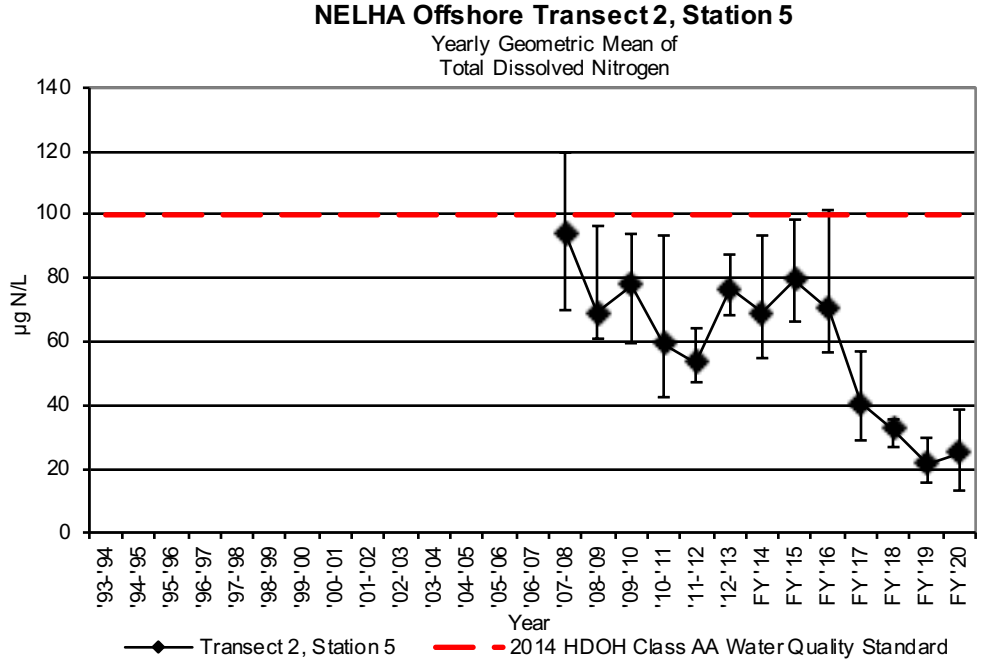
Transect 2, Station 5

7/27/1993 - 7/16/20





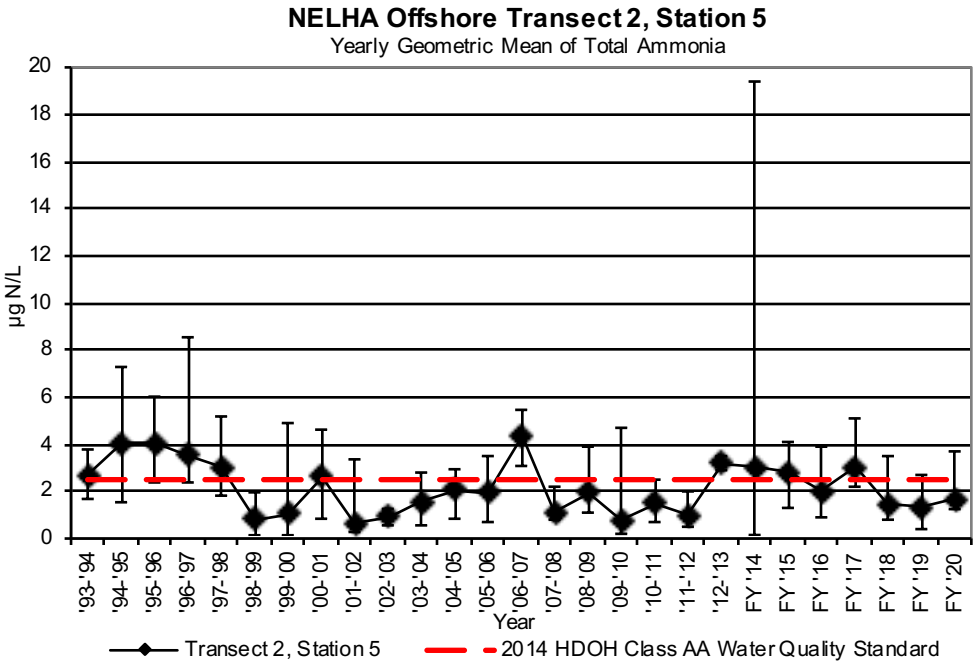


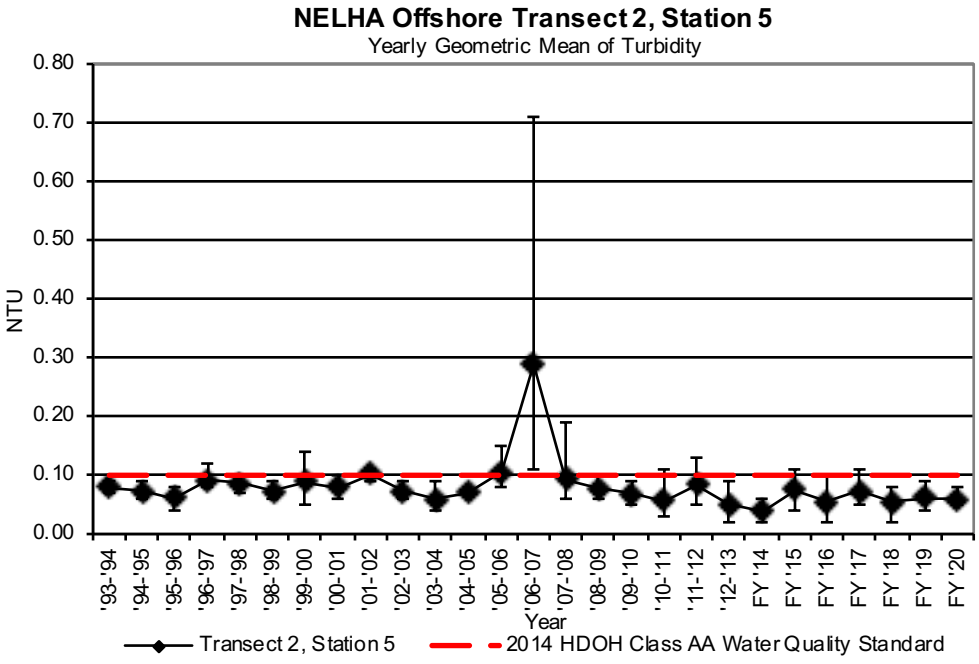


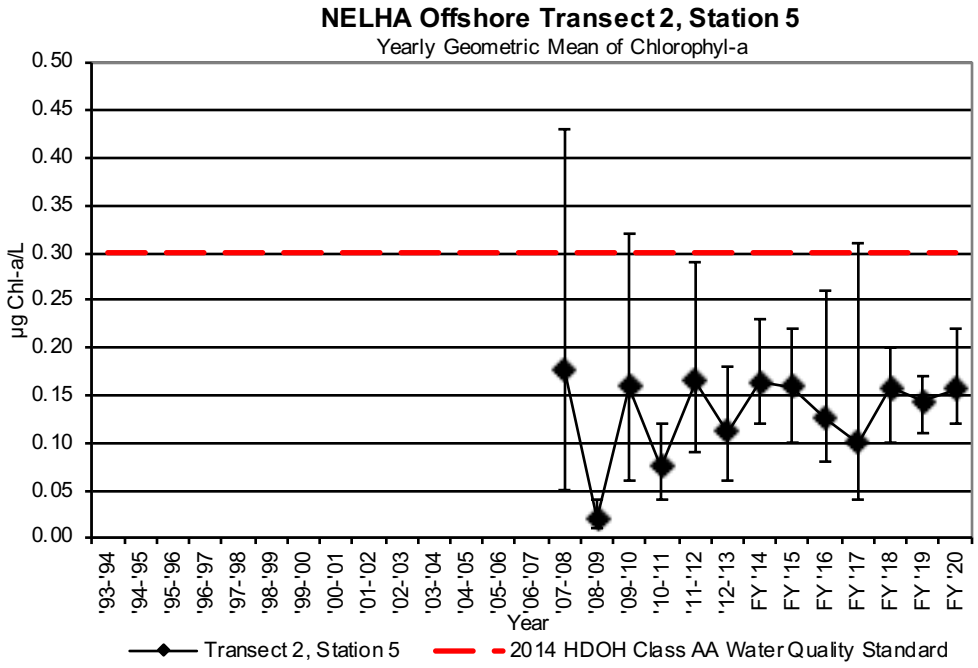
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Transect 2, Station 5

7/27/1993 - 7/16/20







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Transect 3

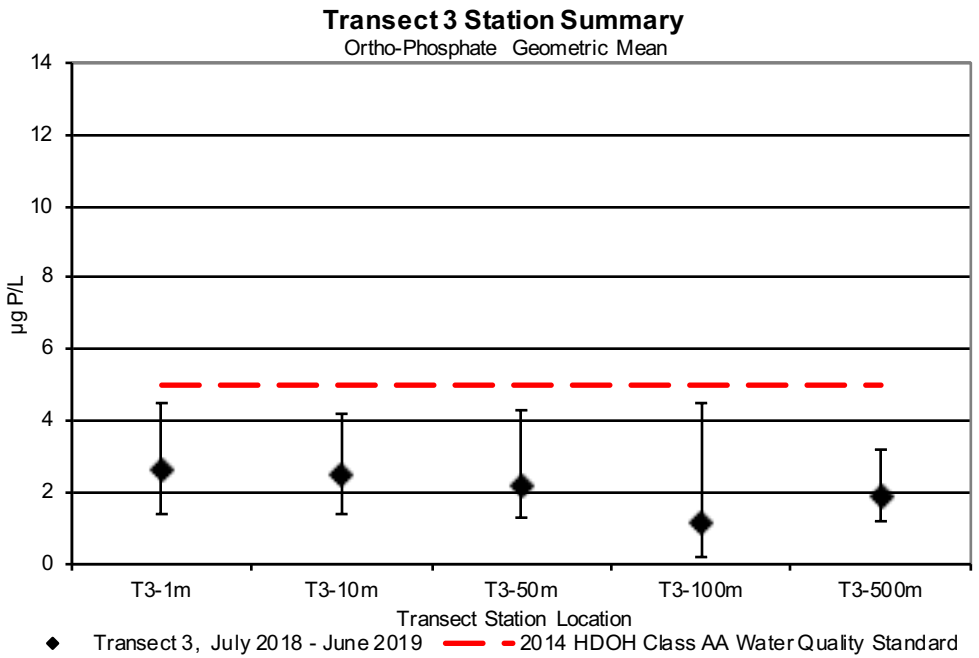
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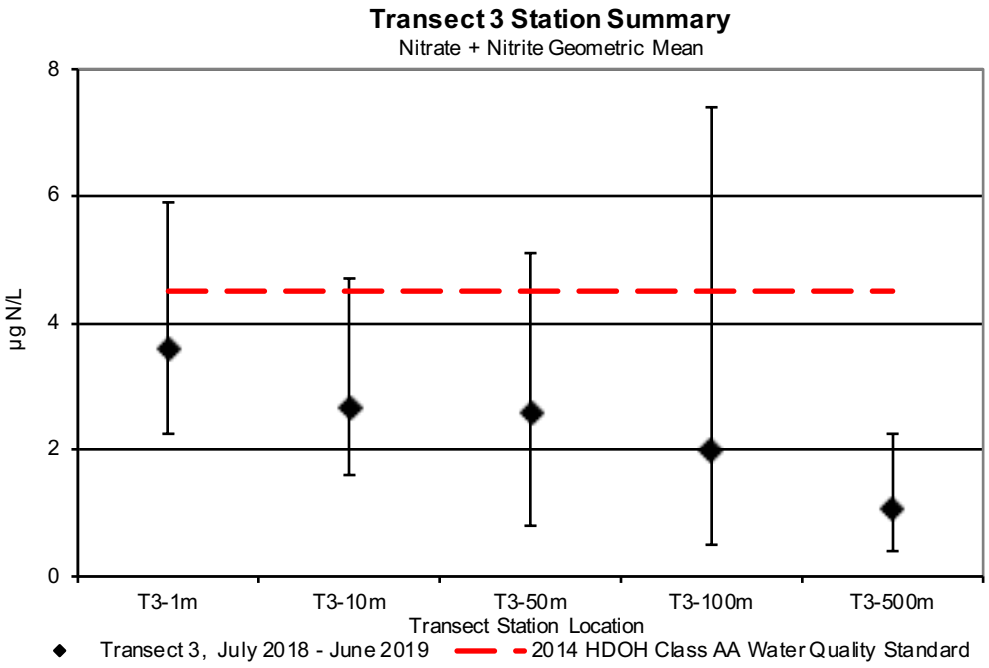
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T3-1m	9/24/18	1058	0.5	Flood	0.07	2.3	0.16	2.3	0.21	3.0	0.6	17	0.33	10.3	2.7	38	0.09	34.77	27.7	8.16	5.30	0.14
T3-1m	11/13/18	1126	1.3	Ebb	0.05	1.4	0.42	5.9	0.39	5.5	0.6	17	0.40	12.4	3.7	52	0.11	35.00	27.4	8.23	4.71	0.12
T3-1m	1/22/19	1111	0.2	Low	0.11	3.4	0.25	3.5	0.06	0.9	1.0	29	0.41	12.7	2.5	34	0.07	35.02	25.1	8.22	5.84	0.22
T3-1m	4/16/19	1115	0.8	Flood	0.15	4.5	0.26	3.6	0.10	1.4	2.0	55	0.40	12.5	2.7	38	0.07	35.59	25.9	8.17	7.59	0.17
Geomean	**FY '19**				0.09	**2.6**	0.26	**3.6**	0.2	**2.1**			0.4	**11.9**	2.9	**40**	**0.08**					**0.14**
T3-10m	9/24/18	1107	0.5	Flood	0.06	2.0	0.16	2.3	0.27	3.8	0.5	13	0.33	10.3	2.7	38	0.09	34.79	27.7	8.16	5.24	0.14
T3-10m	11/13/18	1130	1.3	Ebb	0.05	1.4	0.34	4.7	0.35	4.9	0.3	9	0.37	11.4	3.5	49	0.07	35.00	27.4	8.23	4.73	0.12
T3-10m	1/22/19	1114	0.2	Low	0.10	3.1	0.11	1.6	0.06	0.9	0.6	16	0.37	11.6	2.3	33	0.06	35.03	25.2	8.22	5.70	0.17
T3-10m	4/16/19	1121	0.8	Flood	0.14	4.2	0.21	3.0	0.06	0.8	1.9	55	0.38	11.9	3.0	42	0.05	35.60	25.9	8.17	7.49	0.17
Geomean	**FY '19**				0.08	**2.5**	0.19	**2.7**	0.14	**1.9**			0.36	**11.3**	2.9	**40**	**0.07**					**0.15**
T3-50m	9/24/18	1115	0.5	Flood	0.04	1.3	0.18	2.5	0.32	4.5	0.1	3	0.48	14.9	1.9	27	0.07	34.81	27.9	8.16	5.07	0.13
T3-50m	11/13/18	1135	1.3	Ebb	0.05	1.4	0.30	4.2	0.24	3.3	0.2	4	0.32	9.9	3.2	45	0.07	34.99	27.6	8.24	4.71	0.10
T3-50m	1/22/19	1119	0.2	Low	0.10	3.0	0.06	0.8	0.09	1.3	0.1	2	0.38	11.9	2.5	35	0.05	35.02	25.2	8.22	5.70	0.14
T3-50m	4/16/19	1127	0.8	Flood	0.14	4.3	0.36	5.1	0.09	1.2	3.3	93	0.38	11.7	3.0	43	0.06	35.54	26.0	8.16	7.33	0.17
Geomean	**FY '19**				0.07	**2.2**	0.18	**2.6**	0.16	**2.2**			0.39	**12.0**	2.6	**36**	**0.06**					**0.13**
T3-100m	9/24/18	1119	0.5	Flood	0.01	0.2	0.16	2.3	0.24	3.3	0.0	1	0.33	10.1	2.0	27	0.09	34.82	28.2	8.16	5.33	0.21
T3-100m	11/13/18	1139	1.3	Ebb	0.03	0.8	0.14	1.9	0.19	2.7	0.0	1	0.32	9.8	2.8	39	0.08	34.99	27.6	8.24	4.73	0.09
T3-100m	1/22/19	1124	0.2	Low	0.08	2.6	0.04	0.5	0.21	2.9	0.1	3	0.36	11.3	2.3	33	0.06	35.02	25.2	8.21	5.64	0.14
T3-100m	4/16/19	1133	0.8	Flood	0.15	4.5	0.53	7.4	0.11	1.5	4.8	134	0.40	12.4	2.8	40	0.07	35.52	26.0	8.16	7.21	0.21
Geomean	**FY '19**				0.04	**1.2**	0.14	**2.0**	0.18	**2.5**			0.35	**10.9**	2.4	**34**	**0.07**					**0.15**
T3-500m	9/24/18	1128	0.5	Flood	0.04	1.2	0.16	2.3	0.19	2.7	0.0	1	0.34	10.4	2.73	38	0.07	34.82	27.8	8.16	5.10	0.15
T3-500m	11/13/18	1147	1.3	Ebb	0.04	1.2	0.09	1.3	0.12	1.7	0.0	1	0.33	10.3	4.53	64	0.06	35.01	27.7	8.24	4.55	0.06
T3-500m	1/22/19	1133	0.2	Low	0.09	2.7	0.07	1.0	0.06	0.8	0.1	3	0.36	11.1	2.14	30	0.06	34.99	25.1	8.22	5.65	0.08
T3-500m	4/16/19	1141	0.8	Flood	0.10	3.2	0.03	0.4	0.14	2.0	1.7	49	0.36	11.3	2.01	28	0.03	35.59	26.1	8.17	7.08	0.15
Geomean	**FY '19**				0.06	**1.9**	0.07	**1.0**	0.12	**1.6**			0.35	**10.8**	2.7	**38**	**0.05**					**0.10**

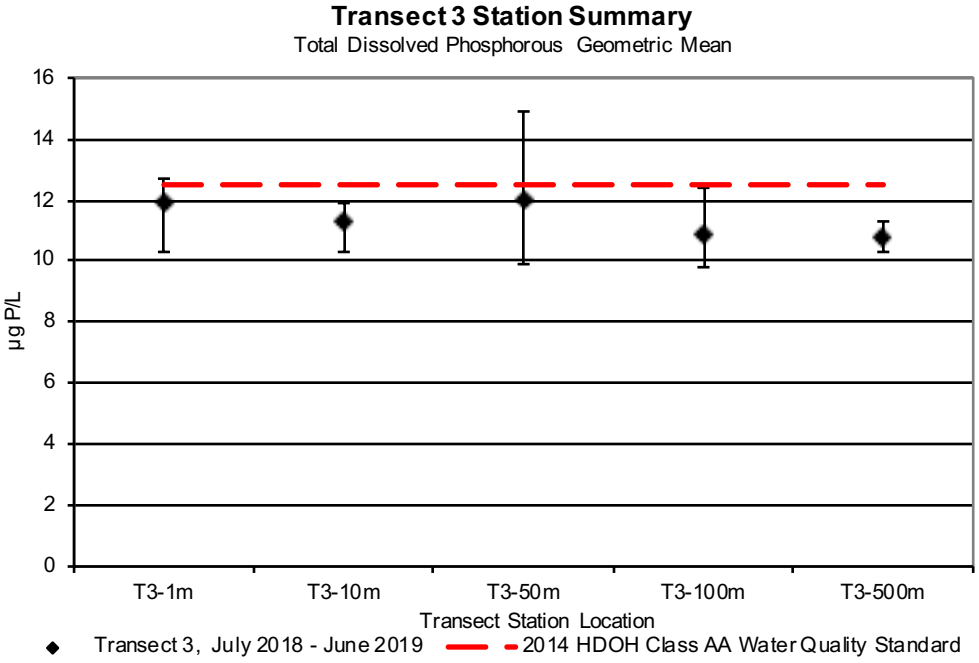
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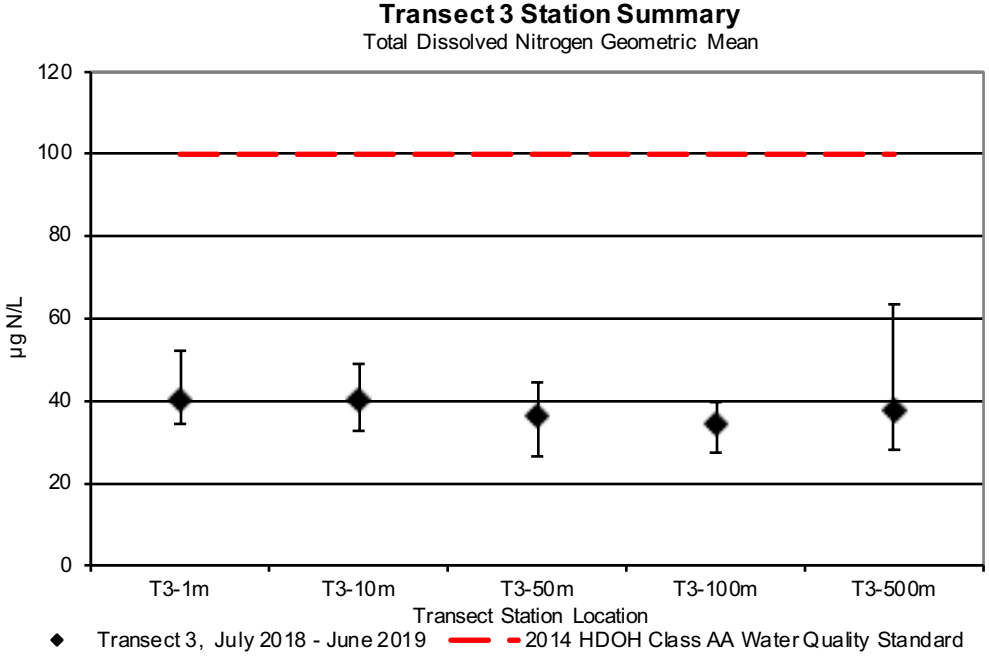
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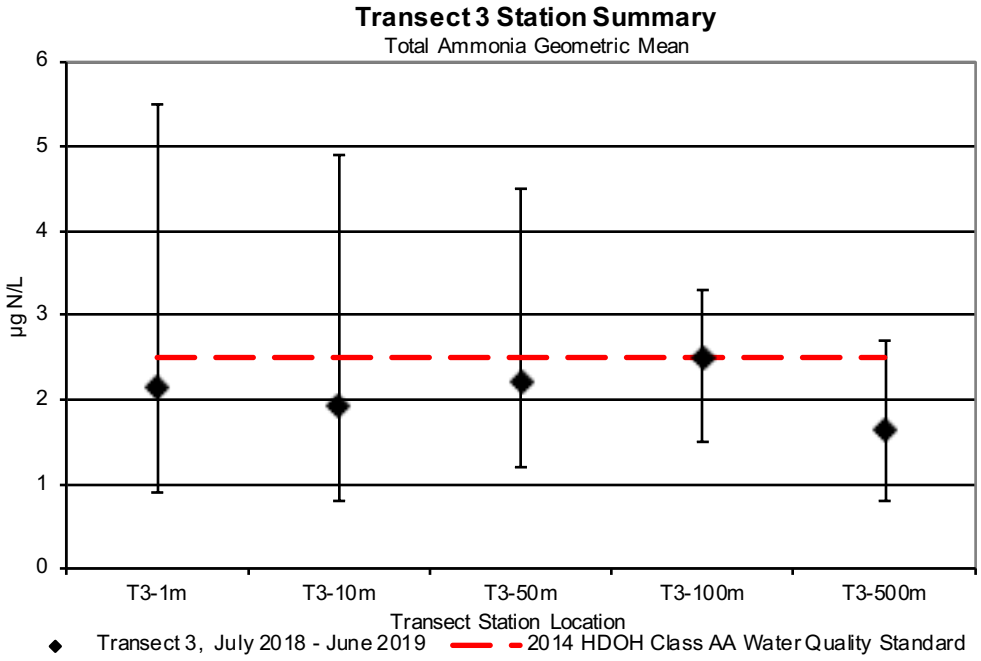


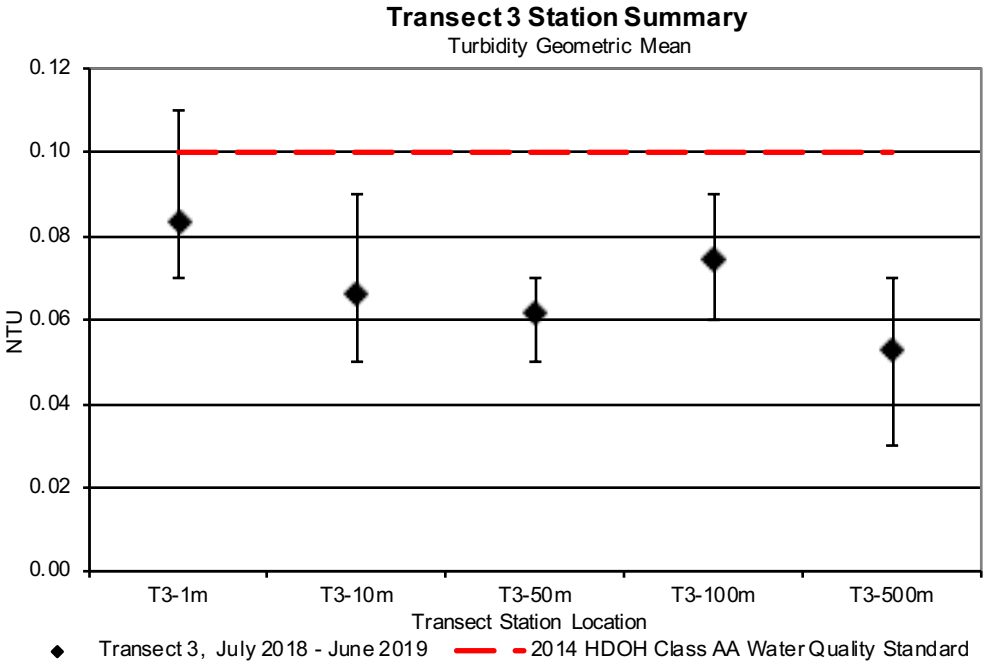


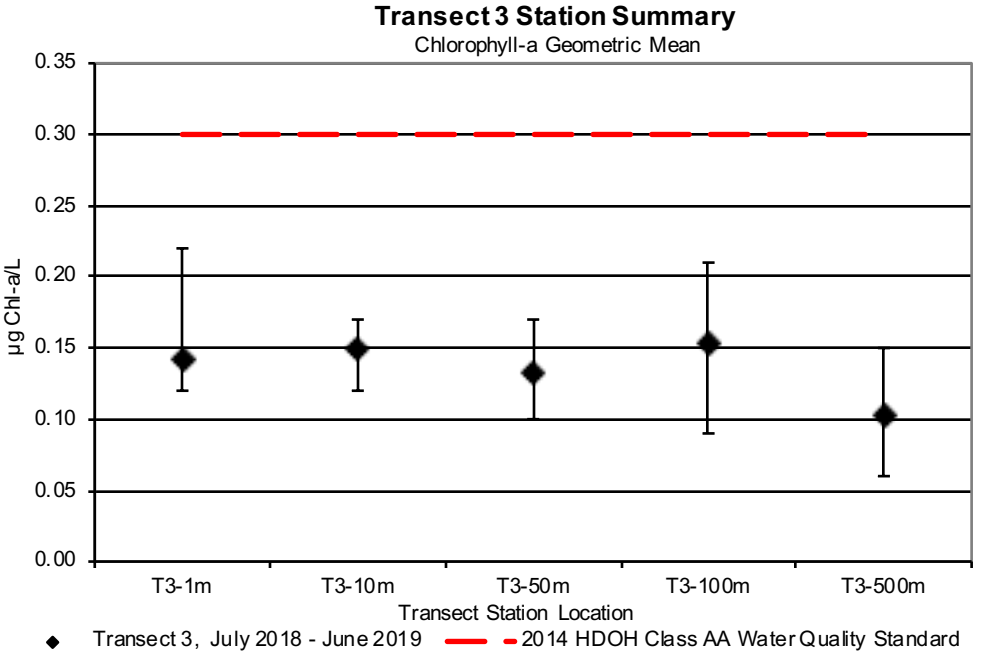
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Transect 3

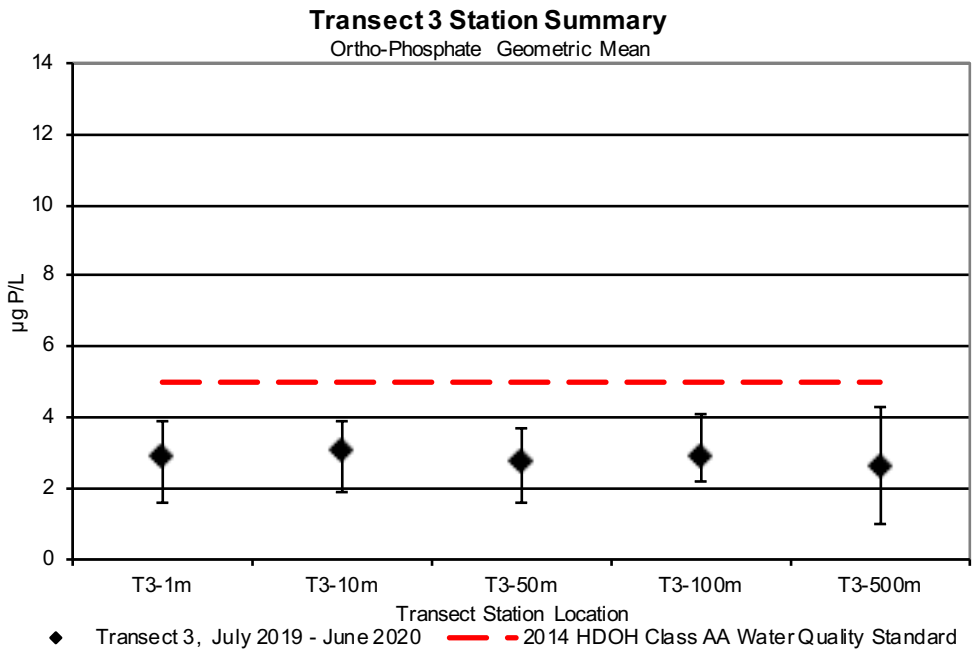
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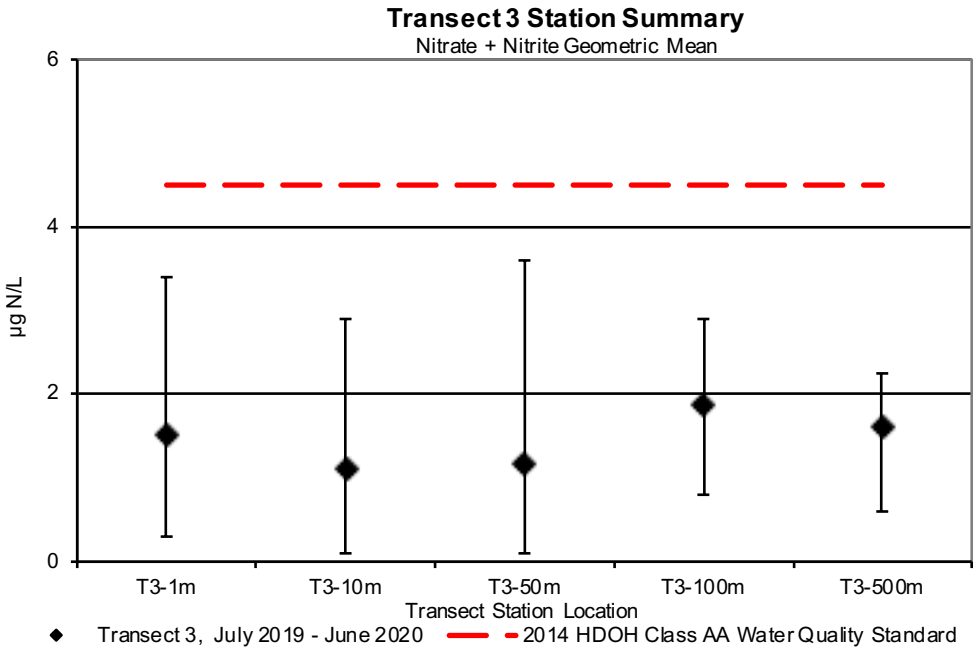
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T3-1m	8/13/19	1056	0.7	Flood	0.05	1.6	0.16	2.3	0.22	3.1	2.1	58	0.29	9.0	2.0	28	0.11	35.58	28.3	8.21	7.00	0.13
T3-1m	11/19/19	1025	1.9	High	0.12	3.7	0.24	3.4	0.09	1.2	0.4	12	0.43	13.4	3.0	43	0.09	34.80	27.6	8.24	6.83	0.36
T3-1m	1/22/20	1046	0.6	Flood	0.13	3.9	0.02	0.3	0.09	1.3	0.8	22	0.40	12.4	3.0	41	0.04	34.94	25.1	8.22	6.88	0.12
T3-1m	6/24/20	1114	-0.1	Low	0.10	3.2	0.16	2.3	0.06	0.8	2.2	62	0.29	8.9	2.6	36	0.07	35.46	26.0	8.19	7.05	0.29
Geomean	**FY '20**				0.09	**2.9**	0.11	**1.5**	0.1	**1.4**			0.3	**10.7**	2.6	**37**	**0.07**					**0.20**
T3-10m	8/13/19	1103	0.7	Flood	0.06	1.9	0.16	2.3	0.25	3.5	2.1	59	0.29	9	2.4	34	0.12	35.62	28.3	8.22	6.95	0.14
T3-10m	11/19/19	1029	1.9	High	0.12	3.8	0.21	2.9	0.20	2.8	1.5	42	0.43	13.4	3.2	45	0.09	34.77	27.6	8.24	6.84	0.34
T3-10m	1/22/20	1051	0.6	Flood	0.13	3.9	0.01	0.1	0.09	1.3	0.8	23	0.40	12.4	2.9	40	0.07	34.91	25.1	8.22	6.91	0.16
T3-10m	6/24/20	1119	-0.1	Low	0.11	3.3	0.16	2.3	0.13	1.8	2.1	58	0.31	9.6	2.4	34	0.06	35.46	26.0	8.18	6.97	0.32
Geomean	**FY '20**				0.10	**3.1**	0.08	**1.1**	0.15	**2.2**			0.35	**10.9**	2.7	**38**	**0.08**					**0.22**
T3-50m	8/13/19	1111	0.7	Flood	0.05	1.6	0.16	2.3	0.22	3.1	2.6	74	0.30	9.2	2.4	34	0.09	35.63	28.3	8.19	6.74	0.18
T3-50m	11/19/19	1033	1.9	High	0.12	3.7	0.26	3.6	0.04	0.5	0.7	18	0.42	12.9	3.0	42	0.08	34.78	27.6	8.25	6.61	0.16
T3-50m	1/22/20	1058	0.6	Flood	0.11	3.4	0.01	0.1	0.09	1.3	0.7	21	0.40	12.4	2.4	34	0.04	34.94	25.1	8.22	6.69	0.17
T3-50m	6/24/20	1123	-0.1	Low	0.09	2.9	0.16	2.3	0.09	1.3	2.1	59	0.32	9.8	2.6	36	0.07	35.49	26.0	8.18	6.83	0.28
Geomean	**FY '20**				0.09	**2.8**	0.08	**1.2**	0.09	**1.2**			0.35	**11.0**	2.6	**36**	**0.07**					**0.19**
T3-100m	8/13/19	1118	0.7	Flood	0.07	2.2	0.21	2.9	0.24	3.4	7.3	205	0.32	10.0	2.8	39	0.09	35.56	28.4	8.20	6.44	0.18
T3-100m	11/19/19	1038	1.9	High	0.11	3.3	0.06	0.8	0.09	1.3	0.2	5	0.41	12.8	2.5	35	0.08	34.78	27.7	8.24	6.58	0.21
T3-100m	1/22/20	1104	0.6	Flood	0.13	4.1	0.16	2.3	0.09	1.3	-0.4	-11	0.40	12.3	2.7	39	0.06	34.94	25.1	8.22	6.66	0.12
T3-100m	6/24/20	1129	-0.1	Flood	0.08	2.5	0.16	2.3	0.09	1.3	1.0	29	0.28	8.8	2.0	28	0.06	35.43	26.2	8.19	6.93	0.24
Geomean	**FY '20**				0.09	**2.9**	0.13	**1.9**	0.11	**1.6**			0.35	**10.8**	2.5	**35**	**0.07**					**0.18**
T3-500m	8/13/19	1128	0.7	Flood	0.03	1.0	0.16	2.3	0.39	5.5	1.5	41	0.28	8.6	1.81	25	0.08	35.66	28.4	8.20	6.48	0.18
T3-500m	11/19/19	1045	1.9	High	0.10	3.1	0.04	0.6	0.09	1.3	0.1	3	0.36	11.2	1.65	23	0.06	34.80	27.7	8.24	6.45	0.13
T3-500m	1/22/20	1113	0.6	Flood	0.12	3.6	0.16	2.3	0.09	1.3	0.7	19	0.37	11.6	1.93	27	0.04	34.95	25.1	8.22	6.65	0.10
T3-500m	6/24/20	1138	-0.1	Low	0.14	4.3	0.16	2.3	0.09	1.3	2.0	57	0.22	6.8	1.85	26	0.05	35.43	26.7	8.18	6.64	0.39
Geomean	**FY '20**				0.08	**2.6**	0.12	**1.6**	0.13	**1.8**			0.30	**9.3**	1.8	**25**	**0.06**					**0.17**

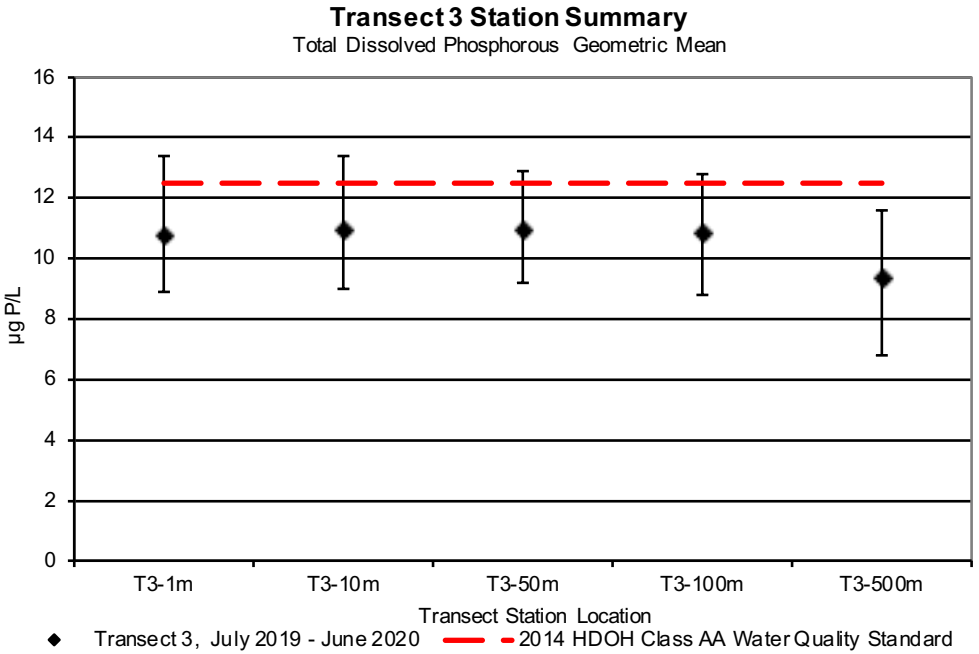
NELHA Water Quality Laboratory

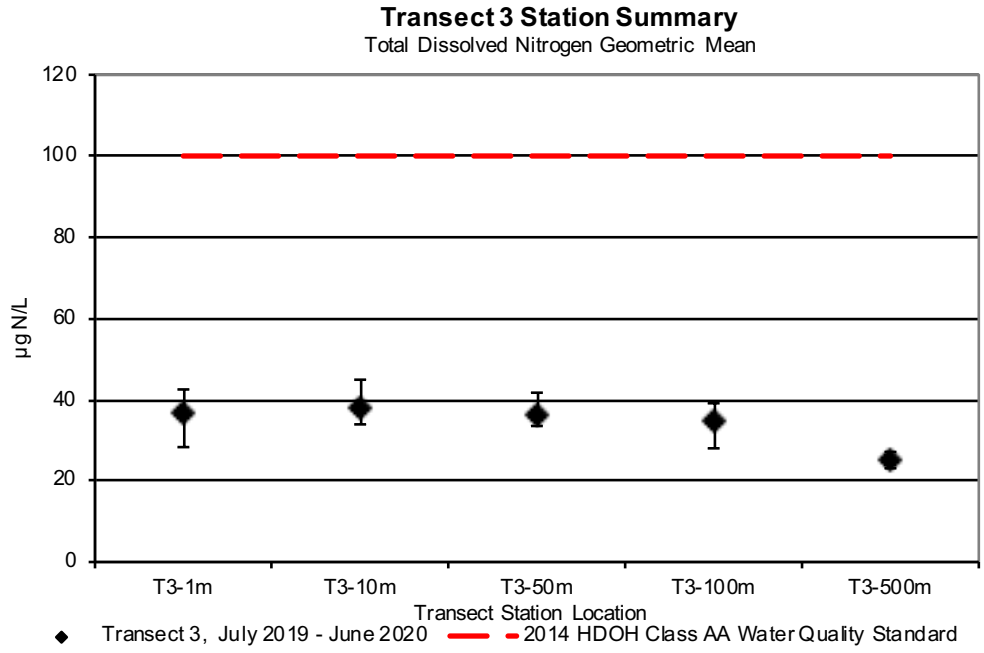
Transect 3

July 2018 - June 2019





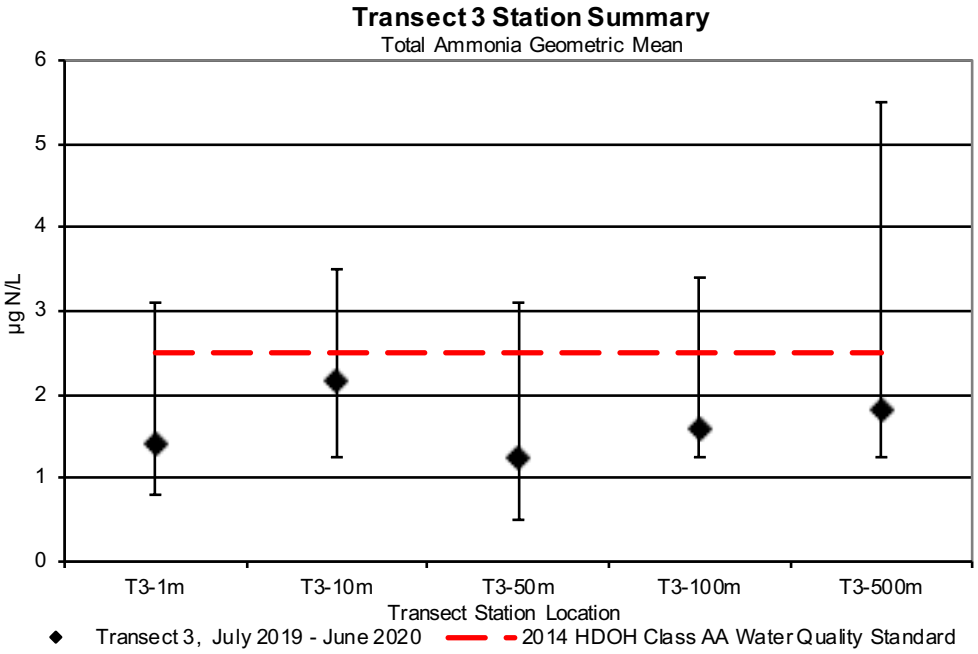


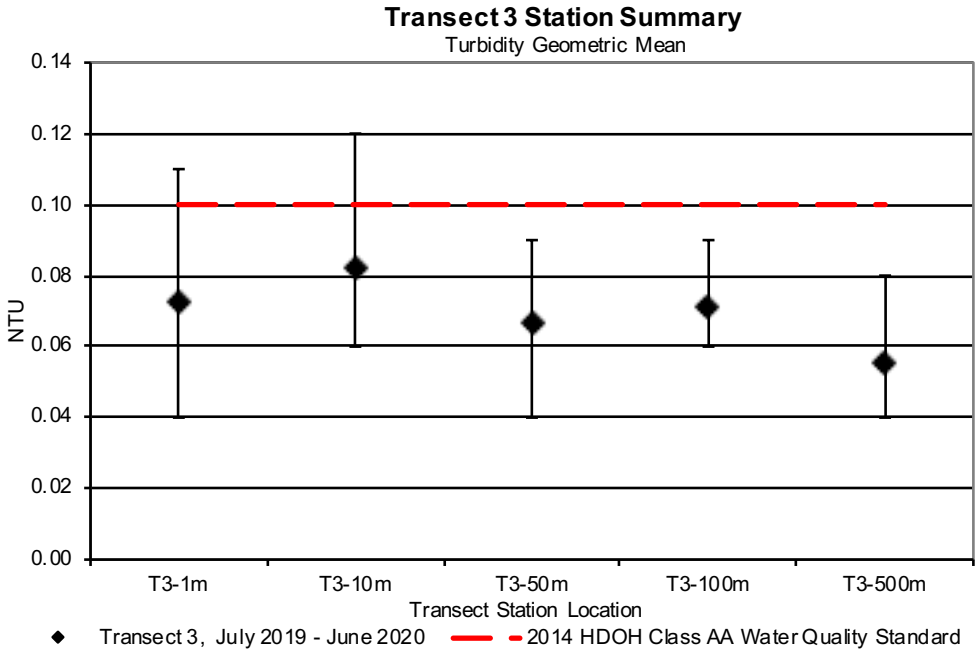


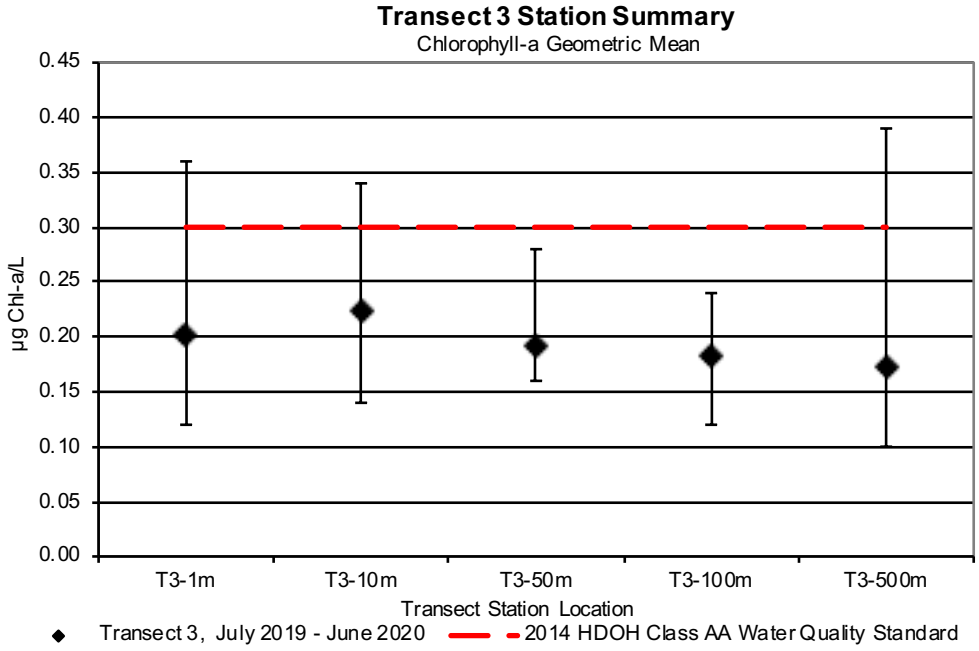
NELHA Water Quality Laboratory

Transect 3

July 2018 - June 2019







NELHA Water Quality Laboratory

Transect 3, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-2S-23m	8/3/93	1047	0.12	3.7	0.29	4.1	0.39	5.5	3.6	101					0.06	34.502	26.8			
O3-2S-23m	12/8/93	1058	0.09	2.8	0.21	2.9	0.14	2.0	2.7	77					0.07	34.788	25.7			
O3-2S-23m	3/8/94	1020	0.20	6.2	0.40	5.6	0.33	4.6	3.6	100			5.89	82.50	0.09	34.204	25.2			
O3-2S-23m	6/13/94	1012	0.13	4.0	0.29	4.1	0.11	1.5	4.5	127					0.16	34.520	25.7			
Geomean	**FY '94**			**4.0**		**4.1**		***3.0***							**0.09**					
O3-2S-23m	9/8/94	852	0.09	2.8	0.15	2.1	0.18	2.5	3.5	98					0.09	34.630	27.6			
O3-2S-23m	11/15/94	930	0.17	5.3	0.58	8.1	0.59	8.3	5.1	144					0.11	34.551	26.0			
O3-2S-23m	3/21/95	834	0.19	5.9	0.14	2.0	0.11	1.5	4.2	119					0.09	34.226	25.0			
O3-2S-23m	6/21/95	947	0.11	3.4	0.04	0.6	0.34	4.8	1.7	48					0.06	34.475	26.2			
Geomean	**FY '95**			**4.1**		**2.1**		***3.5***							**0.09**					
O3-2S-23m	9/25/95	1210	0.12	3.7	0.25	3.5	0.28	3.9	3.5	98					0.12	34.521	27.3			
O3-2S-23m	11/13/95	825	0.15	4.6	0.17	2.4	0.55	7.7	2.2	62					0.06	34.388	26.6			
O3-2S-23m	3/11/96	1219	0.12	3.7	0.29	4.1	0.49	6.9	2.3	64					0.08	34.192	25.5			
O3-2S-23m	5/13/96	1124	0.13	4.0	0.36	5.0	0.23	3.2	3.7	105					0.09	34.289	27.0			
Geomean	**FY '96**			**4.0**		**3.6**		***5.1***							**0.08**					
O3-2S-23m	7/30/96	1045	0.11	3.4	0.61	8.5	0.31	4.3	4.5	125					0.10	34.434	28.4			
O3-2S-23m	10/1/96	925	0.07	2.2	0.04	0.6	0.62	8.7	2.3	65					0.08	34.689	27.9			
O3-2S-23m	1/6/97	928	0.12	3.7	0.68	9.5	0.16	2.2	4.0	112					0.12	34.655	25.3			
O3-2S-23m	4/21/97	909	0.11	3.4	1.83	25.6	0.28	3.9	3.3	93					0.14	34.530	26.4			
Geomean	**FY '97**			**3.1**		***5.8***		***4.3***							***0.11***					
O3-2S-23m	8/18/97	903	0.11	3.4	0.46	6.4	0.20	2.8	4.7	133					0.10	34.617	27.0			
O3-2S-23m	10/6/97	927	0.11	3.4	0.03	0.4	0.32	4.5	2.9	81					0.08	34.707	27.4			
O3-2S-23m	3/3/98	926	0.07	2.2	0.15	2.1	0.24	3.4	2.5	71					0.08	35.027	24.9			
O3-2S-23m	5/4/98	1239	0.10	3.1	0.08	1.1	0.10	1.4	30.3	851					0.06	35.078	24.0			
Geomean	**FY '98**			**3.0**		**1.6**		***2.8***							**0.08**					
O3-2S-23m	7/6/98	941	0.12	3.7	0.55	7.7	0.05	0.7	5.6	157					0.09	34.949	26.1			
O3-2S-23m	10/5/98	916	0.08	2.5	0.06	0.8	0.09	1.3	2.4	69					0.08	35.107	27.2			
O3-2S-23m	1/13/99	916	0.10	3.1	0.68	9.5	0.26	3.6	3.5	99					0.07	35.063	24.8			
O3-2S-23m	4/13/99	911	0.17	5.3	0.71	9.9	0.11	1.5	4.3	121					0.11	34.617	24.2			
Geomean	**FY '99**			**3.5**		***5.0***		**1.5**							**0.09**					

NELHA Water Quality Laboratory

Transect 3, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-2S-23m	7/13/99	945	0.14	4.3	0.43	6.0	0.04	0.6	4.1	115					0.08	34.909	26.0			
O3-2S-23m	10/25/99	928	0.13	4.0	0.70	9.8	0.33	4.6	5.1	142					0.11	34.932	26.1			
O3-2S-23m	1/4/00	939	0.11	3.4	0.61	8.5	0.35	4.9	4.6	130					0.08	35.066	24.8			
O3-2S-23m	5/16/00	1005	0.16	5.0	0.41	5.7	0.10	1.4	4.7	133					0.10	34.636	25.2			
Geomean	**FY '00**			**4.1**		***7.3***		**2.1**							**0.09**					
O3-2S-23m	7/24/00	947	0.10	3.1	0.11	1.5	0.01	0.1	3.0	85					0.06	34.884	27.3			
O3-2S-23m	10/30/00	958	0.12	3.7	0.14	2.0	0.29	4.1	4.9	139					0.08	34.979	27.0			
O3-2S-23m	2/26/01	958	0.15	4.6	0.10	1.4	0.16	2.2	3.1	87					0.07	34.728	24.8			
O3-2S-23m	5/8/01	920	0.14	4.3	0.51	7.1	0.21	2.9	8.4	235					0.07	34.792	24.9			
Geomean	**FY '01**			**3.9**		**2.3**		**1.4**							**0.07**					
O3-2S-23m	8/13/01	943	0.10	3.1	0.05	0.7	0.29	4.1	2.8	79					0.09	34.892	26.6			
O3-2S-23m	10/10/01	928	0.14	4.3	0.08	1.1	0.04	0.6	3.1	88					0.10	34.935	27.4			
O3-2S-23m	3/4/02	1059	0.10	3.1	0.02	0.3	0.02	0.3	1.7	47					0.08	34.670	24.2			
O3-2S-23m	4/16/02	1112	0.17	5.3	0.43	6.0	0.35	4.9	7.1	199					0.09	34.396	25.7			
Geomean	**FY '02**			**3.8**		**1.1**		**1.3**							**0.09**					
O3-2S-23m	7/9/02	1003	0.13	4.0	0.43	6.0	0.18	2.5	4.1	114					0.07	34.640	26.6			
O3-2S-23m	10/7/02	1059	0.08	2.5	0.30	4.2	0.25	3.5	3.1	88					0.09	34.923	27.1			
O3-2S-23m	3/10/03	1026	0.14	4.3	0.26	3.6	0.03	0.4	3.0	83					0.07	34.808	24.8			
O3-2S-23m	4/22/03	1005	0.08	2.5	0.28	3.9	0.05	0.7	2.5	71					0.17	35.018	25.0			
Geomean	**FY '03**			**3.2**		**4.4**		**1.3**							**0.09**					
O3-2S-23m	8/19/03	1109	0.07	2.2	0.01	0.1	0.20	2.8	1.5	43					0.08	34.817	28.2			
O3-2S-23m	10/30/03	841	0.09	2.8	0.02	0.3	0.20	2.8	2.0	56					0.16	34.862	27.4			
O3-2S-23m	3/17/04	948	0.13	4.0	0.01	0.1	0.21	2.9	1.4	40					n/a	34.347	26.0			
O3-2S-23m	5/20/04	1112	0.12	3.7	0.03	0.4	0.18	2.5	2.0	56					n/a	33.53	26.8			
Geomean	**FY '04**			**3.1**		**0.2**		***2.8***							***0.11***					
O3-2S-23m	9/20/04	1047	0.08	2.5	0.03	0.4	0.31	4.3	1.9	53					0.09	33.78	28.1			
O3-2S-23m	11/17/04	1017	0.08	2.5	0.09	1.3	0.19	2.7	1.4	38					0.06	33.73	27.2			
O3-2S-23m	1/13/05	1142	0.04	1.2	0.01	0.1	0.08	1.1	1.8	51					0.06	34.856	24.9			
O3-2S-23m	4/11/05	1152	0.14	4.3	0.86	12.0	0.24	3.4	3.8	106					0.14	34.449	25.3			
Geomean	**FY '05**			**2.4**		**1.0**		***2.6***							**0.08**					

NELHA Water Quality Laboratory

Transect 3, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-2S-23m	7/20/05	1137	0.09	2.8	0.25	3.5	0.17	2.4	3.0	84					0.17	34.674	26.7			
O3-2S-23m	10/11/05	1028	0.05	1.5	0.01	0.1	0.17	2.4	1.3	36					0.11	34.847	27.5			
O3-2S-23m	3/14/06	854	0.10	3.1	0.09	1.3	0.30	4.2	1.5	41					0.10	34.760	24.5			
O3-2S-23m	5/15/06	1058	0.19	5.9	0.09	1.3	0.17	2.4	1.8	51					0.13	34.872	24.8			
Geomean	**FY '06**			**3.0**		**0.9**		***2.7***							***0.12***					
O3-2S-23m	8/14/06	1100	0.12	3.7	0.26	3.6	0.16	2.2	3.1	87					0.11	34.599	26.8			
O3-2S-23m	11/1/06	1105	0.08	2.5	0.16	2.2	0.41	5.7	2.0	56					0.76	34.806	27.4			
O3-2S-23m	2/12/07	1124	0.12	3.7	0.07	1.0	0.37	5.2	1.4	38					0.19	34.487	24.7			
O3-2S-23m	4/9/07	1101	0.12	3.7	0.44	6.2	0.32	4.5	5.3	149					0.16	34.585	25.4			
Geomean	**FY '07**			**3.4**		**2.7**		***4.2***							***0.22***					
T3-10m	9/26/07	1041	0.16	5.0	0.41	5.7	0.40	5.6	16.0	449	0.39	12.0	5.5	78	0.10	34.974	26.8	8.21	6.47	0.15
T3-10m	12/13/07	1203	0.11	3.5	0.59	8.3			6.5	181	0.37	11.5	5.6	79	0.09	34.658	25.8	8.25	6.70	0.24
T3-10m	3/10/08	1050	0.20	6.1	1.58	22.1	0.06	0.8	9.6	271	0.43	13.2	7.5	106	0.19	34.848	24.8	8.18	6.97	0.29
T3-10m	6/5/08	1055	0.14	4.3	0.38	5.3	0.16	2.2	24.1	676	0.22	6.7	6.5	91	0.05	34.799	25.1	8.17	6.68	0.29
Geomean	**FY '08**			**4.6**		***8.6***		**2.1**				**10.5**		**87**	**0.10**					**0.23**
T3-10m	9/22/08	1149	0.05	1.4	0.17	2.4	0.15	2.1	1.8	51	0.32	10.0	5.0	70	0.12	34.829	26.7	8.05	6.58	0.06
T3-10m	11/17/08	1029	0.19	5.8	0.20	2.8	0.14	1.9	2.9	82	0.36	11.3	4.7	66	0.08	34.960	25.9	8.27	6.20	0.01
T3-10m	2/9/09	1037	0.14	4.2	1.01	14.2	0.12	1.7	4.5	126	0.33	10.2	10.6	149	0.08	35.059	25.0	8.06	6.39	0.04
T3-10m	4/13/09	1017	0.16	4.9	1.04	14.5	1.72	24.1	3.9	109	0.50	15.4	10.4	146	0.10	34.936	23.8	8.19	6.36	0.11
Geomean	**FY '09**			**3.6**		***6.1***		***3.6***				**11.5**		***100***	**0.09**					**0.04**
T3-10m	9/9/09	1039	1.41	43.8	0.59	8.2	1.09	15.3	5.5	154	0.54	16.7	5.2	73	0.08	35.25	27.1	8.22	5.55	0.17
T3-10m	11/23/09	1045	0.03	0.8	0.58	8.1	0.29	4.1	9.1	255	0.41	12.8	5.3	75	0.07	35.23	25.1	8.30	6.56	0.13
T3-10m	2/23/10	1047	0.19	5.8	0.39	5.5	0.49	6.8	17.4	489	0.39	12.0	6.4	89	0.08	35.08	24.6	8.18	6.31	0.2
T3-10m	5/25/10	957	0.06	2	0.45	6.3	0.18	2.5	11.1	311	0.30	9.4	4.5	63	0.08	34.95	25.0	8.21	7.00	0.1
Geomean	**FY '10**			**4.5**		***6.9***		***5.7***				**12.5**		**74**	**0.08**					**0.14**
T3-10m	8/10/10	1050	0.08	2.6	1.10	15.4	0.12	1.7	3.7	104	0.67	20.6	2.2	31	0.09	34.83	26.28	8.24	6.70	0.08
T3-10m	11/8/10	1030	0.02	0.7	0.42	5.9	0.37	5.2	9.8	275	0.37	11.5	5.0	71	0.09	35.31	26.61	8.26	6.49	0.08
T3-10m	1/11/11	1044	0.14	4.3	0.35	4.9	0.12	1.7	25.7	722	0.43	13.4	4.3	61	0.08	34.97	24.97	8.23	6.65	0.11
T3-10m	4/26/11	1048	0.15	4.8	0.35	4.9	0.24	3.4	2.4	67	0.40	12.5	3.2	46	0.08	34.97	24.98	8.21	6.61	0.15
Geomean	**FY '11**			**2.5**		***6.8***		***2.7***				***14.1***		**49**	**0.08**					**0.10**

NELHA Water Quality Laboratory

Transect 3, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T3-10m	7/26/11	1119	0.19	6	0.26	3.6	0.14	2	1.3	38	0.46	14.1	3.6	51	0.06	34.81	26.07	8.28	6.76	0.07
T3-10m	10/18/11	1035	0.03	0.8	0.11	1.5	0.24	3.3	1.9	53	0.27	8.5	3.3	46	0.10	35.06	26.80	8.24	7.06	0.11
T3-10m	1/25/12	1101	0.13	3.9	0.91	12.7	0.14	1.9	3.4	96	0.42	13.0	5.4	75	0.07	34.98	24.64	8.21	7.28	0.11
T3-10m	4/24/12	1131	0.15	4.5	0.61	8.5	0.37	5.2	2.0	55	0.43	13.4	4.6	65	0.11	35.11	24.93	8.22	6.99	0.16
Geomean	**FY '12**			**3.0**		***4.9***		***2.8***				**12.0**		**58**	**0.08**					**0.11**
T3-10m	7/24/12	1045	0.06	1.9	0.36	5.1	0.25	3.5	1.4	40	0.30	9.4	4.2	59	0.10	35.06	26.36	8.24	6.97	0.10
T3-10m	11/27/12	1029	0.14	4.3	1.28	17.9	0.37	5.2	4.4	125	0.46	14.3	5.7	80	0.03	35.14	25.03	8.21	7.13	0.08
T3-10m	1/23/13	1040	0.10	3.1	0.48	6.7	0.37	5.2	2.4	67	0.49	15.2	7.0	98	0.03	35.08	24.72	8.21	6.69	0.03
T3-10m	4/16/13	1048	0.16	4.9	0.76	10.7	0.16	2.3	2.5	71	0.46	14.4	5.9	83	0.03	35.11	25.01	8.23	6.93	0.15
Geomean	**FY '13**			**3.3**		***9.0***		***3.8***				***13.1***		**79**	**0.04**					**0.08**
T3-10m	8/1/13	956	0.05	1.7	0.24	3.3	0.16	2.3	2.4	68	0.37	11.4	5.1	71	0.09	35.26	26.3	8.26	7.03	0.10
T3-10m	10/29/13	1025	0.15	4.5	0.59	8.2	0.36	5.0	2.6	72	0.45	14.0	6.0	85	0.02	35.26	27.1	8.22	6.57	0.15
T3-10m	2/4/14	1037	0.09	2.8	0.65	9.1	0.49	6.9	2.1	58	0.36	11.1	5.1	72	0.02	35.09	25.2	8.20	6.52	0.09
T3-10m	5/6/14	1040	0.10	3.2	0.47	6.6	0.37	5.2	3.2	89	0.50	15.6	7.3	103	0.04	34.74	25.9	8.20	6.28	0.15
Geomean	**FY '14**			**2.9**		***6.3***		***4.5***				***12.9***		**82**	**0.03**					**0.12**
T3-10m	8/5/14	1037	0.19	5.8	0.21	2.9	0.42	5.9	1.4	39	0.50	15.5	4.4	62	0.10	34.95	26.8	8.22	6.01	0.17
T3-10m	11/17/14	1213	0.17	5.2	0.29	4.1	0.36	5.0	0.3	9	0.45	13.9	6.9	97	0.06	34.95	27.2	8.22	7.04	0.18
T3-10m	3/3/15	1041	0.04	1.2	0.34	4.8	0.33	4.6	10.0	282	0.34	10.6	11.0	155	0.06	34.84	25.6	8.19	6.98	0.12
T3-10m	6/16/15	1252	0.12	3.7	0.47	6.6	0.34	4.8	3.1	86	0.42	13.1	7.2	101	0.06	34.27	26.8	8.23	6.32	0.13
Geomean	**FY '15**			**3.4**		**4.4**		***5.1***				***13.2***		**98**	**0.07**					**0.15**
T3-10m	8/26/15	1030	0.17	5.4	0.36	5.0	0.34	4.7	3.2	90	0.21	6.5	5.5	77	0.02	34.35	28.4	8.22	6.26	0.35
T3-10m	11/17/15	1056	0.15	4.5	0.50	7.0	0.09	1.3	3.8	107	0.51	15.7	6.9	97	0.07	34.01	27.5	8.23	6.50	0.12
T3-10m	3/1/16	1102	0.17	5.2	0.46	6.5	0.34	4.7	0.1	3	0.52	16.1	4.5	63	0.08	34.80	25.4	8.24	5.93	0.09
T3-10m	5/3/16	1026	0.10	3.1	0.21	3.0	0.17	2.4	0.6	17	0.42	12.9	6.0	85	0.08	34.68	25.7	8.26	6.45	0.17
Geomean	**FY '16**			**4.4**		***5.1***		***2.9***				**12.1**		**79**	**0.05**					**0.16**
T3-10m	7/6/16	1148	0.11	3.3	0.15	2.1	0.47	6.6	0.3	8	0.54	16.6	5.3	75	0.09	34.59	27.2	8.30	6.76	0.25
T3-10m	12/20/16	1117	0.08	2.6	0.51	7.2	0.22	3.1	2.1	59	0.36	11.2	3.6	50	0.03	34.73	25.6	8.28	5.96	0.13
T3-10m	2/28/17	1010	0.02	0.7	0.48	6.7	0.14	1.9	1.1	32	0.29	9.1	4.8	68	0.07	34.65	24.7	8.21	5.69	0.14
T3-10m	5/10/17	958	0.03	0.9	0.40	5.6	0.06	0.8	1.4	39	0.22	6.8	3.5	49	0.09	34.77	25.7	8.21	4.33	0.08
Geomean	**FY '17**			**1.5**		***4.9***		**2.4**				**10.4**		**59**	**0.06**					**0.14**

NELHA Water Quality Laboratory

Transect 3, Station 2

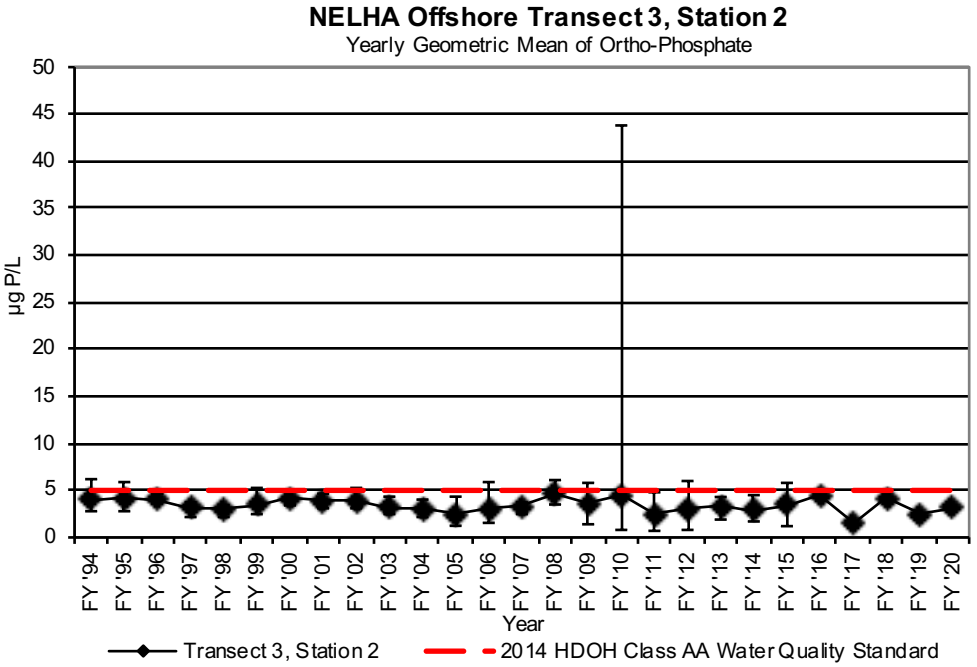
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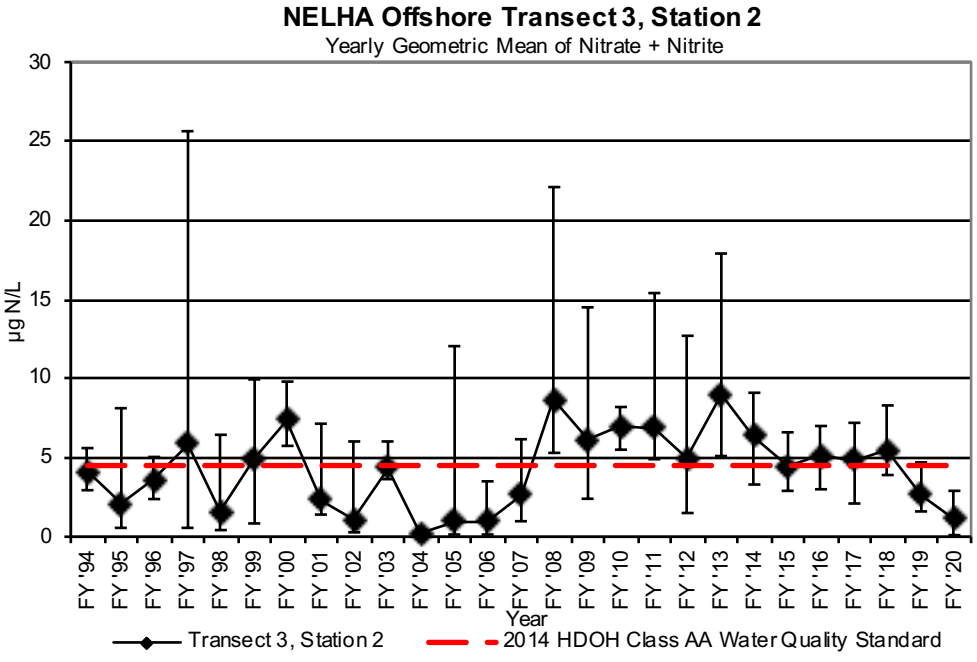
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T3-10m	9/27/17	1157	0.13	4.1	0.28	3.9	0.23	3.2	1.1	30	0.42	12.9	3.7	51	0.08	34.80	28.0	8.21	4.27	0.20
T3-10m	11/28/17	1151	0.13	4.0	0.44	6.2	0.54	7.5	1.9	52	0.40	12.3	3.3	46	0.08	35.05	26.2	8.21	4.94	0.15
T3-10m	1/30/18	1135	0.16	4.9	0.59	8.3	0.24	3.4	3.4	95	0.38	11.8	3.8	53	0.09	34.80	24.6	8.18	5.38	0.09
T3-10m	5/16/18	1129	0.11	3.5	0.32	4.5	0.18	2.5	2.8	78	0.36	11.2	2.3	32	0.07	34.73	25.7	8.19	6.31	0.13
Geomean	**FY '18**			**4.1**		***5.5***		***3.8***				**12.0**		**45**	**0.08**					**0.14**
T3-10m	9/24/18	1107	0.06	2.0	0.16	2.3	0.27	3.8	0.5	13	0.33	10.3	2.7	38	0.09	34.79	27.7	8.16	5.24	0.14
T3-10m	11/13/18	1130	0.05	1.4	0.34	4.7	0.35	4.9	0.3	9	0.37	11.4	3.5	49	0.07	35.00	27.4	8.23	4.73	0.12
T3-10m	1/22/19	1114	0.10	3.1	0.11	1.6	0.06	0.9	0.6	16	0.37	11.6	2.3	33	0.06	35.03	25.2	8.22	5.70	0.17
T3-10m	4/16/19	1121	0.14	4.2	0.21	3.0	0.06	0.8	1.9	55	0.38	11.9	3.0	42	0.05	35.60	25.9	8.17	7.49	0.17
Geomean	**FY '19**			**2.5**		**2.7**		**1.9**				**11.3**		**40**	**0.07**					**0.15**
T3-10m	8/13/19	1103	0.06	1.9	0.16	2.3	0.25	3.5	2.1	59	0.29	9.0	2.4	34	0.12	35.62	28.3	8.22	6.95	0.14
T3-10m	11/19/19	1029	0.12	3.8	0.21	2.9	0.20	2.8	1.5	42	0.43	13.4	3.2	45	0.09	34.77	27.6	8.24	6.84	0.34
T3-10m	1/22/20	1051	0.13	3.9	0.01	0.1	0.09	1.3	0.8	23	0.40	12.4	2.9	40	0.07	34.91	25.1	8.22	6.91	0.16
T3-10m	6/24/20	1119	0.11	3.3	0.16	2.3	0.13	1.8	2.1	58	0.31	9.6	2.4	34	0.06	35.46	26.0	8.18	6.97	0.32
Geomean	**FY '20**			**3.1**		**1.1**		**2.2**				**10.9**		**38**	**0.08**					**0.22**

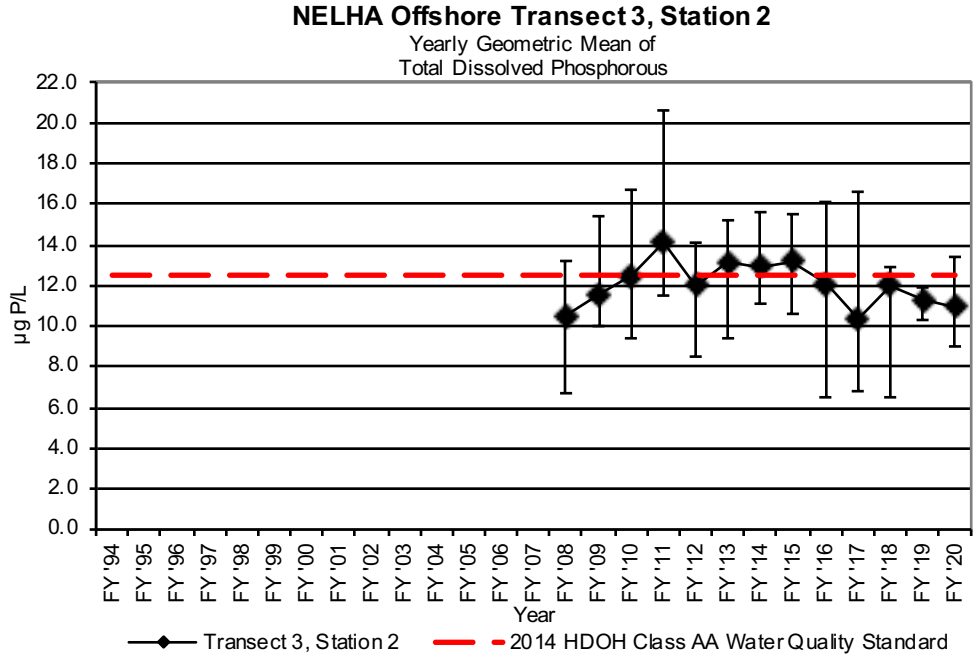
NELHA Water Quality Laboratory

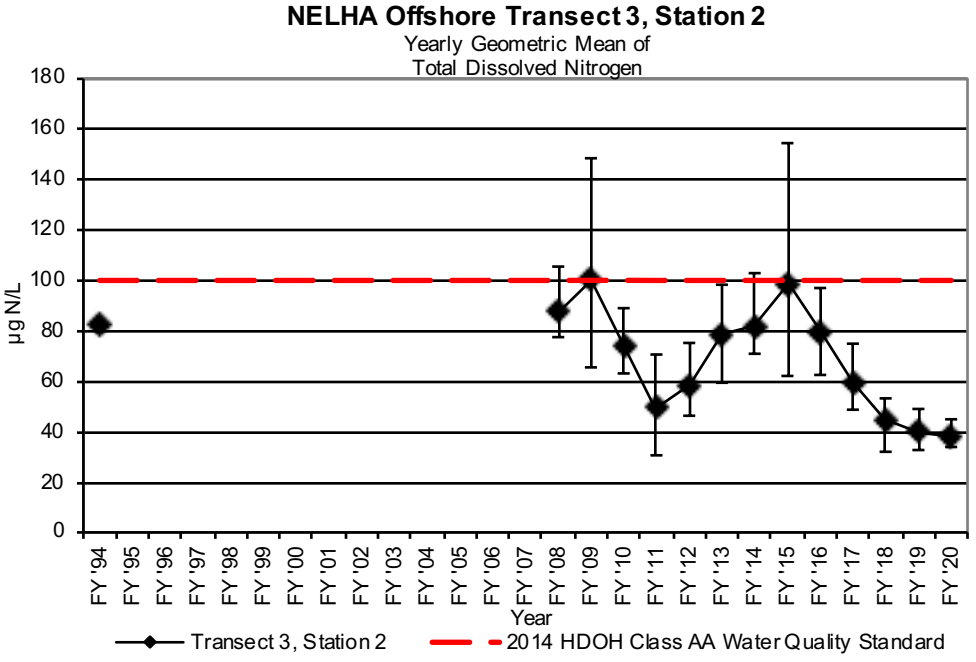
Transect 3, Station 2

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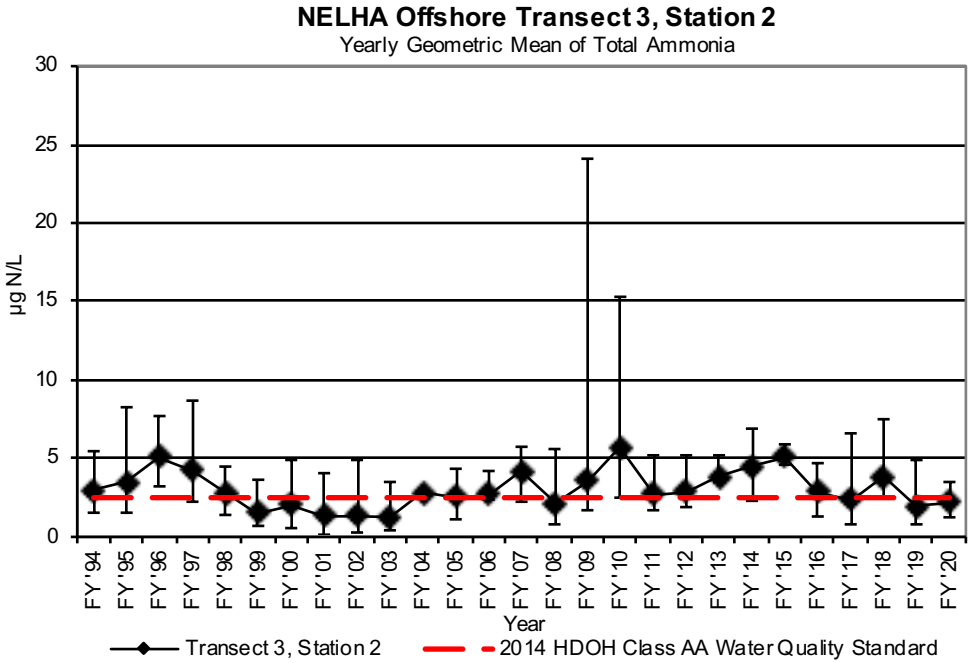


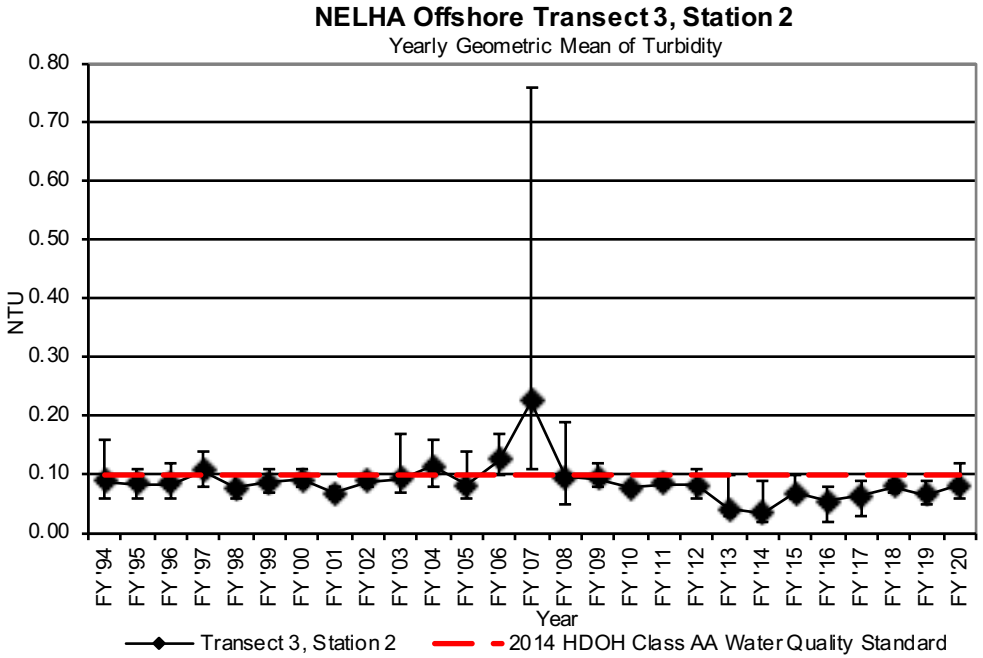


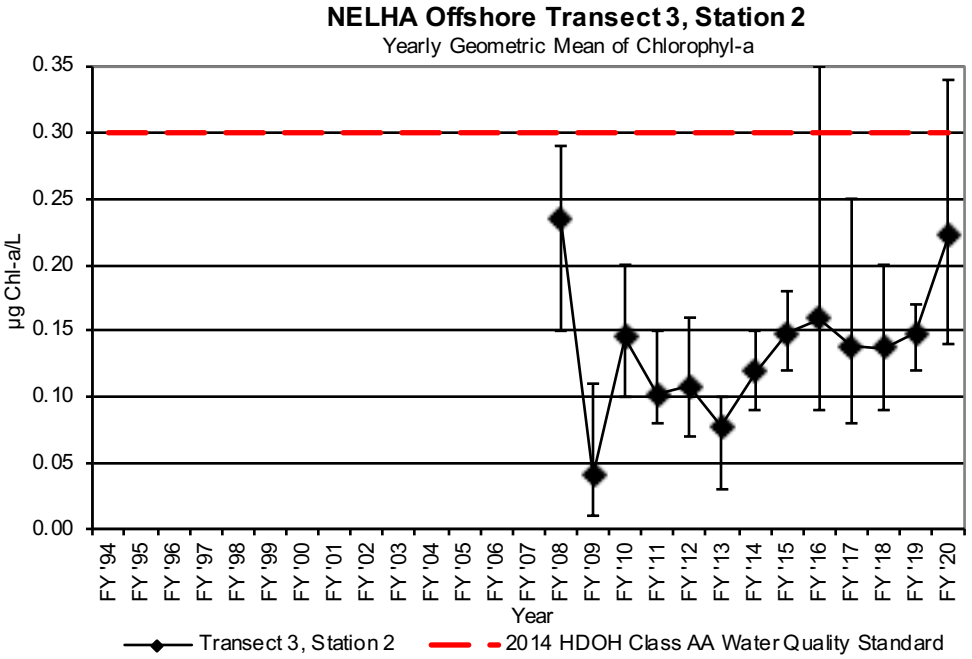
NELHA Water Quality Laboratory

Transect 3, Station 2

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NELHA Water Quality Laboratory

Transect 3, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O3-1S-8m	8/3/93	1056	0.12	3.7	0.34	4.8	0.43	6.0	3.7	103	0.30	9.3	8.1	113	0.38	11.77	1.00	0.11	34.508	26.9	8.24	7.07	0.10		
O3-1S-8m	12/8/93	1129	0.09	2.8	0.19	2.7	0.17	2.4	2.7	77	0.25	7.7	5.1	71	0.25	7.74	1.18	0.13	34.799	26.1	8.25	7.03	0.08		
O3-1S-8m	3/8/94	1027	0.22	6.8	0.43	6.0	0.25	3.5	3.5	99	0.33	10.2	5.9	82	0.33	10.22	1.13	0.14	34.200	25.2	8.25	7.28	0.01	<1	<1
O3-1S-8m	6/13/94	1020	0.15	4.6	0.37	5.2	0.16	2.2	4.4	122	0.32	9.9	7.4	104	0.32	9.91	1.05	0.18	34.510	25.6	8.23	7.23	0.07	<1	<1
Geomean	**FY '94**			**4.3**		**4.5**		***3.3***				**9.2**		**91**				***0.14***					**0.05**		
O3-1S-8m	9/8/94	910	0.09	2.8	0.19	2.7	0.27	3.8	2.7	76	0.27	8.4	6.1	85	0.31	9.60	1.12	0.08	34.634	27.6	8.24	6.67	0.06	2	<1
O3-1S-8m	11/15/94	943	0.17	5.3	0.61	8.5	0.59	8.3	5.1	142	0.34	10.5	5.6	78	0.38	11.77	1.01	0.08	34.569	26.0	8.26	7.07	0.08	2	1
O3-1S-8m	3/21/95	841	0.19	5.9	0.14	2.0	0.15	2.1	5.3	147	0.32	9.9	5.5	78	0.32	9.91	1.10	0.09	34.231	25.0	8.22	7.25	0.16	1	1
O3-1S-8m	6/21/95	1001	0.11	3.4	0.09	1.3	0.35	4.9	4.8	136	0.29	9.0	6.8	96	0.29	8.98	1.03	0.06	34.476	26.3	8.23	7.14	0.08	<1	<1
Geomean	**FY '95**			**4.1**		**2.7**		***4.2***				**9.4**		**84**				**0.08**					**0.09**		
O3-1S-8m	9/25/95	1154	0.19	5.9	0.29	4.1	0.28	3.9	4.0	113	0.30	9.3	8.5	118	0.30	9.29	1.17	0.11	34.522	27.3	8.27	7.04	0.05	1	<1
O3-1S-8m	11/13/95	817	0.15	4.6	0.20	2.8	0.45	6.3	1.7	47	0.31	9.6	5.1	71	0.31	9.60	1.00	0.06	34.391	26.7	8.26	7.00	0.12	<1	2
O3-1S-8m	3/11/96	1223	0.13	4.0	0.31	4.3	0.47	6.6	2.4	66	0.32	9.9	4.7	66	0.32	9.91	1.00	0.09	34.192	25.5	8.24	7.45	0.08	<1	<1
O3-1S-8m	5/13/96	1131	0.11	3.4	0.18	2.5	0.23	3.2	2.9	80	0.31	9.6	4.8	67	0.31	9.60	1.05	0.08	34.298	27.2	8.22	7.18	0.08	<1	<1
Geomean	**FY '96**			**4.4**		**3.3**		***4.8***				**9.6**		**78**				**0.08**					**0.08**		
O3-1S-8m	7/30/96	949	0.11	3.4	0.47	6.6	0.29	4.1	3.0	84	0.26	8.1	4.5	63	0.26	8.05	0.94	0.13	34.483	28.4	8.24	6.82	0.12	<1	<1
O3-1S-8m	10/1/96	931	0.09	2.8	0.10	1.4	0.60	8.4	33.9	952	0.29	9.0	4.6	65	0.29	8.98	1.12	0.09	34.692	28.1	8.22	6.77	0.08	<1	<1
O3-1S-8m	1/6/97	931	0.13	4.0	0.67	9.4	0.16	2.2	4.0	112	0.35	10.8	5.4	75	0.35	10.84	1.28	0.07	34.654	25.5	8.27	6.97	0.04	<1	<1
O3-1S-8m	4/21/97	914	0.12	3.7	1.78	24.9	0.27	3.8	3.4	96	0.36	11.2	6.6	93	0.37	11.46	1.10	0.10	34.507	26.4	8.27	6.77	0.07	<1	<1
Geomean	**FY '97**			**3.5**		***6.8***		***4.1***				**9.7**		**73**				**0.10**					**0.07**		
O3-1S-8m	8/18/97	908	0.12	3.7	0.60	8.4	0.21	2.9	3.9	110	0.37	11.5	5.0	70	0.44	13.63	1.10	0.18	34.614	26.9	8.39	6.67	0.15	<1	<1
O3-1S-8m	10/6/97	930	0.12	3.7	0.11	1.5	0.34	4.8	12.1	340	0.40	12.4	4.7	65	0.40	12.39	1.11	0.09	34.703	27.4	8.44	6.72	0.11	<1	<1
O3-1S-8m	3/3/98	931	0.11	3.4	0.43	6.0	0.24	3.4	3.6	102	0.32	9.9	5.2	72	0.32	9.91	0.99	0.07	35.000	24.8	8.21	6.86	0.02	<1	<1
O3-1S-8m	5/4/98	1241	0.12	3.7	0.43	6.0	0.13	1.8	4.0	111	0.41	12.7	5.1	72	0.42	13.01	0.92	0.07	35.030	24.0	8.24	7.18	0.19	<1	<1
Geomean	**FY '98**			**3.6**		***4.7***		***3.0***				**11.6**		**70**				**0.09**					**0.09**		
O3-1S-8m	7/6/98	947	0.16	5.0	0.65	9.1	0.06	0.8	19.6	549	0.39	12.1	5.3	74	0.41	12.70	1.05	0.10	34.941	26.2	8.21	6.87	0.15	<1	<1
O3-1S-8m	10/5/98	923	0.11	3.4	0.11	1.5	0.09	1.3	11.5	324	0.39	12.1	6.0	84	0.42	13.01	1.14	0.08	35.101	27.0	8.23	7.38	0.08	6	<1
O3-1S-8m	1/13/99	921	0.12	3.7	1.14	16.0	0.26	3.6	4.5	126	0.36	11.2	5.6	79	0.36	11.15	1.16	0.07	35.039	24.8	8.22	6.99	0.09	1	<1
O3-1S-8m	4/13/99	916	0.17	5.3	0.60	8.4	0.12	1.7	6.7	188	0.42	13.0	4.7	67	0.46	14.25	1.01	0.12	34.633	24.2	8.18	7.17	0.13	<1	<1
Geomean	**FY '99**			**4.3**		***6.6***		**1.6**				**12.1**		**76**				**0.09**					**0.11**		

NELHA Water Quality Laboratory

Transect 3, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O3-1S-8m	7/13/99	950	0.14	4.3	0.49	6.9	0.04	0.6	4.0	112	0.39	12.1	6.2	86	0.41	12.70	1.07	0.14	34.916	26.0	8.21	6.91	0.16	<1	<1
O3-1S-8m	10/25/99	934	0.14	4.3	0.62	8.7	0.31	4.3	17.9	504	0.34	10.5	5.0	71	0.40	12.39	1.05	0.09	34.943	26.1	8.25	6.77	0.14	<1	<1
O3-1S-8m	1/4/00	944	0.13	4.0	0.81	11.3	0.35	4.9	4.3	122	0.34	10.5	6.0	84	0.34	10.53	0.98	0.08	35.051	24.8	8.22	6.89	0.05	<1	<1
O3-1S-8m	5/16/00	1008	0.17	5.3	0.41	5.7	0.09	1.3	5.1	144	0.37	11.5	6.5	91	0.36	11.15	0.99	0.10	34.664	25.2	8.25	7.13	0.20	<1	<1
Geomean	**FY '00**			**4.5**		***7.9***		**2.0**				**11.1**		**83**				***0.10***					**0.12**		
O3-1S-8m	7/24/00	956	0.11	3.4	0.15	2.1	0.06	0.8	3.1	88	0.37	11.5	5.4	76	0.37	11.46	0.98	0.07	34.877	27.2	8.26	6.66	0.14	1	4
O3-1S-8m	10/30/00	1002	0.13	4.0	0.19	2.7	0.31	4.3	6.7	188	0.35	10.8	5.5	77	0.36	11.15	1.07	0.11	35.003	27.0	8.25	6.66	0.17	<1	1
O3-1S-8m	2/26/01	1003	0.13	4.0	0.12	1.7	0.16	2.2	3.7	104	0.39	12.1	5.7	79	0.40	12.39	1.48	0.11	34.719	24.8	8.20	6.73	0.09	<1	2
O3-1S-8m	5/8/01	923	0.14	4.3	0.66	9.2	0.19	2.7	4.3	119	0.33	10.2	5.4	75	0.35	10.84	1.04	0.09	34.793	24.9	8.20	7.06	0.14	<1	4
Geomean	**FY '01**			**3.9**		**3.1**		**2.2**				**11.1**		**77**				**0.09**					**0.13**		
O3-1S-8m	8/13/01	947	0.12	3.7	0.04	0.6	0.29	4.1	18.1	509	0.30	9.3	5.1	72	0.33	10.22	1.07	0.10	34.898	26.5	8.21	6.90	0.11	<1	<1
O3-1S-8m	10/10/01	933	0.16	5.0	0.05	0.7	0.07	1.0	3.0	85	0.40	12.4	5.1	71	0.41	12.70	1.04	0.08	34.936	27.4	8.21	6.87	0.11	<1	1
O3-1S-8m	3/4/02	1103	0.10	3.1	0.47	6.6	0.02	0.3	5.1	144	0.39	12.1	6.3	88	0.39	12.08	0.98	0.07	34.687	24.1	8.23	6.88	0.13	<1	<1
O3-1S-8m	4/16/02	1117	0.18	5.6	0.46	6.4	0.32	4.5	5.7	161	0.39	12.1	6.2	86	0.39	12.08	0.96	0.08	34.401	25.7	8.20	6.78	0.17	<1	<1
Geomean	**FY '02**			**4.2**		**2.0**		**1.5**				**11.4**		**79**				**0.08**					**0.13**		
O3-1S-8m	7/9/02	1006	0.13	4.0	0.54	7.6	0.15	2.1	4.3	122	0.36	11.2	7.6	106	0.40	12.39	1.09	0.08	34.630	26.6	8.20	6.78	0.18	<1	2
O3-1S-8m	10/7/02	1104	0.10	3.1	0.52	7.3	0.25	3.5	3.5	99	0.32	9.9	5.8	81	0.33	10.22	0.98	0.12	34.915	27.1	8.25	6.96	0.13	<1	<1
O3-1S-8m	3/10/03	1037	0.14	4.3	0.52	7.3	0.04	0.6	3.4	95	0.40	12.4	6.1	85	0.39	12.08	0.91	0.17	34.795	24.8	8.25	7.19	0.11	<1	<1
O3-1S-8m	4/22/03	1012	0.09	2.8	0.25	3.5	0.04	0.6	2.6	72	0.35	10.8	6.4	89	0.34	10.53	0.93	0.07	35.013	25.0	8.26	7.97	0.19	<1	<1
Geomean	**FY '03**			**3.5**		***6.1***		**1.2**				**11.0**		**90**				***0.10***					**0.15**		
O3-1S-8m	8/19/03	1125	0.11	3.4	0.22	3.1	0.20	2.8	3.0	85	0.35	10.8	6.5	91	0.36	11.15	n/a	0.09	34.858	28.0	8.25	6.77	0.15	<1	1
O3-1S-8m	10/30/03	856	0.10	3.1	0.11	1.5	0.25	3.5	1.7	48	0.39	12.1	6.7	94	0.38	11.77	n/a	0.09	34.817	27.5	8.22	N/A	0.07	<1	<1
O3-1S-8m	3/17/04	1001	0.13	4.0	0.02	0.3	0.23	3.2	1.8	51	0.36	11.2	5.5	77	0.39	12.08	n/a	n/a	34.349	26.0	8.28	6.39	0.10	<1	9
O3-1S-8m	5/20/04	1106	0.14	4.3	0.13	1.8	0.20	2.8	2.3	65	0.38	11.8	5.7	80	0.39	12.08	n/a	n/a	33.50	26.8	8.25	7.12	0.01	<1	<1
Geomean	**FY '04**			**3.7**		**1.2**		***3.1***				**11.4**		**85**				**0.09**					**0.06**		
O3-1S-8m	9/20/04	1054	0.09	2.8	0.03	0.4	0.24	3.4	2.0	55	0.33	10.2	5.2	73	0.34	10.53	n/a	0.11	33.76	28.1	8.26	6.74	0.15	3	1
O3-1S-8m	11/17/04	1021	0.08	2.5	0.12	1.7	0.29	4.1	1.4	38	0.30	9.3	3.4	48	0.31	9.60	n/a	0.09	33.77	27.2	8.30	6.82	0.10	<1	2
O3-1S-8m	1/13/05	1148	0.08	2.5	0.59	8.3	0.06	0.8	3.6	102	0.28	8.7	4.1	57	0.30	9.29	n/a	0.11	34.823	25.0	8.35	6.24	0.13	<1	<1
O3-1S-8m	4/11/05	1158	0.14	4.3	0.84	11.8	0.29	4.1	3.7	105	0.36	11.2	4.7	66	0.38	11.77	n/a	0.21	34.455	25.2	8.32	7.12	0.14	<1	<1
Geomean	**FY '05**			**2.9**		**2.9**		***2.6***				**9.8**		**60**				***0.12***					**0.13**		

NELHA Water Quality Laboratory

Transect 3, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O3-1S-8m	7/20/05	1144	0.09	2.8	0.30	4.2	0.13	1.8	3.0	84	0.32	9.9	3.3	46	0.34	10.53	n/a	0.16	34.684	26.7	8.25	6.85	0.06	<1	<1
O3-1S-8m	10/11/05	1035	0.05	1.5	0.01	0.1	0.15	2.1	1.7	47	0.31	9.6	3.0	42	0.32	9.91	1.00	0.12	34.859	27.5	8.29	6.67	0.08	<1	<1
O3-1S-8m	3/14/06	900	0.16	5.0	1.01	14.1	0.46	6.4	4.2	118	0.38	11.8	5.9	83	0.41	12.70	n/a	0.12	34.802	24.4	8.24	6.88	0.11	<1	3
O3-1S-8m	5/15/06	1105	0.12	3.7	1.17	16.4	0.27	3.8	4.7	131	0.39	12.1	6.8	95	0.47	14.56	1.06	0.17	34.676	24.9	8.27	6.97	0.41	<1	<1
Geomean	**FY '06**			**3.0**		**3.4**		***3.1***				**10.8**		**62**				***0.14***					**0.12**		
O3-1S-8m	8/14/06	1105	0.13	4.0	0.28	3.9	0.25	3.5	2.7	77	0.43	13.3	5.2	73	0.45	13.94	1.07	0.10	34.500	26.9	8.25	7.16	0.15	<1	<1
O3-1S-8m	11/1/06	1114	0.09	2.8	0.24	3.4	0.47	6.6	2.1	60	0.35	10.8	6.2	87	0.35	10.84	1.28	1.45	34.812	27.3	8.27	6.78	0.11	<1	<1
O3-1S-8m	2/12/07	1131	0.14	4.3	0.28	3.9	0.41	5.7	2.2	62	0.34	10.5	5.5	77	0.38	11.77	1.17	0.13	34.491	24.7	8.23	7.61	0.12	<1	<1
O3-1S-8m	4/9/07	1108	0.14	4.3	0.26	3.6	0.30	4.2	4.7	132	0.36	11.2	5.1	71	0.39	12.08	0.97	0.49	34.623	25.4	8.22	6.64	0.02	<1	<1
Geomean	**FY '07**			**3.8**		**3.7**		***4.9***				**11.4**		**77**				***0.31***					**0.08**		
T3-1m	9/26/07	1032	0.15	4.6	0.43	6.0	0.38	5.3	5.8	162	0.37	11.6	5.6	79				0.12	34.961	26.8	8.25	6.63	0.10		
T3-1m	12/13/07	1159	0.11	3.3	0.44	6.2			8.8	247	0.36	11.0	7.1	99				0.16	34.688	25.7	8.30	6.78	0.25		
T3-1m	3/10/08	1048	0.21	6.5	1.34	18.8	0.06	0.8	5.8	162	0.41	12.6	8.7	123				0.43	34.865	24.8	8.17	6.92	0.24		
T3-1m	6/5/08	1054	0.11	3.3	0.27	3.8	0.16	2.2	19.0	533	0.21	6.4	9.8	138				0.06	34.812	25.1	8.18	6.79	0.35		
Geomean	**FY '08**			**4.2**		***7.2***		**2.1**				**10.1**		***107***				***0.15***					**0.21**		
T3-1m	9/22/08	1143	0.06	2	0.24	3.3	0.31	4.3	1.9	54	0.26	8.1	4.8	67				0.06	34.853	26.9	8.06	6.62	0.04		
T3-1m	11/17/08	1026	0.14	4.2	0.21	3	0.14	1.9	2.5	71	0.29	8.9	4.1	58				0.12	34.955	26.0	8.26	6.25	0.04		
T3-1m	2/9/09	1031	0.19	6	0.99	13.8	0.12	1.7	3.2	91	0.39	12	11.2	157				0.08	35.600	25.0	8.06	6.50	0.06		
T3-1m	4/13/09	1012	0.24	7.5	0.96	13.4	0.31	4.4	3.8	106	0.57	17.6	5.6	78				0.10	34.955	23.9	8.19	6.20	0.07		
Geomean	**FY '09**			**4.4**		***6.5***		***2.8***				**11.1**		**83**				**0.09**					**0.05**		
T3-1m	9/9/09	1031	0.15	4.7	0.46	6.5	0.12	1.7	6.5	183	0.63	19.5	5.1	72				0.07	35.22	27.1	8.22	5.80	0.27		
T3-1m	11/23/09	1040	0.03	0.9	0.51	7.2	0.09	1.3	46.6	1309	0.37	11.6	5.3	75				0.07	35.23	25.1	8.28	6.60	0.11		
T3-1m	2/23/10	1043	0.16	5.1	0.35	4.9	0.41	5.8	17.5	491	0.33	10.3	6.4	90				0.10	35.02	24.6	8.20	6.36	0.35		
T3-1m	5/25/10	952	0.05	1.7	0.46	6.4	0.29	4.1	6.1	172	0.33	10.3	5.6	78				0.06	34.94	25.0	8.21	6.98	0.05		
Geomean	**FY '10**			**2.5**		***6.2***		***2.7***				**12.4**		**78**				**0.07**					**0.15**		
T3-1m	8/10/10	1046	0.06	1.9	0.73	10.2	0.12	1.7	2.2	62	0.31	9.7	4.5	63				0.07	35.22	27.10	8.22	5.80	0.27		
T3-1m	11/8/10	1027	0.02	0.7	0.39	5.5	0.29	4.0	3.1	88	0.39	12.1	6.0	84				0.07	35.23	25.10	8.28	6.60	0.11		
T3-1m	1/11/11	1040	0.14	4.4	0.29	4	0.44	6.1	3.1	88	0.42	13.1	4.8	68				0.10	35.02	24.62	8.20	6.36	0.35		
T3-1m	4/26/11	1044	0.11	3.4	0.37	5.2	0.29	4.0	5.6	158	0.46	14.4	3.4	48				0.06	34.94	25.03	8.21	6.98	0.05		
Geomean	**FY '11**			**2.1**		***5.8***		***3.6***				**12.2**		**64**				**0.07**					**0.15**		

NELHA Water Quality Laboratory

Transect 3, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T3-1m	7/26/11	1115	0.21	6.6	0.26	3.7	0.17	2.4	1.5	42	0.49	15.1	3.5	49				0.09	34.82	26.04	8.27	6.75	0.04		
T3-1m	10/18/11	1031	0.02	0.6	0.12	1.7	0.24	3.4	2.4	68	0.30	9.4	4.1	58				0.09	35.06	26.80	8.24	7.09	0.08		
T3-1m	1/25/12	1058	0.13	4	0.66	9.3	0.23	3.2	3.4	96	0.41	12.7	4.3	60				0.09	35.00	24.65	8.21	7.12	0.00		
T3-1m	4/24/12	1125	0.15	4.8	0.60	8.4	0.28	3.9	2.1	59	0.43	13.4	4.0	56				0.08	35.10	24.89	8.23	6.98	0.06		
Geomean	**FY '12**			**3.0**		***4.7***		***3.2***				**12.5**		**55**				**0.09**					**0.06**		
T3-1m	7/24/12	1041	0.05	1.5	0.35	4.9	0.25	3.5	1.6	45	0.34	10.5	3.8	54				0.06	35.06	26.37	8.24	7.10	0.04		
T3-1m	11/27/12	1026	0.12	3.8	1.12	15.7	0.26	3.6	4.0	113	0.49	15.1	6.3	88				0.04	35.15	25.02	8.20	7.12	0.15		
T3-1m	1/23/13	1037	0.11	3.3	0.66	9.2	0.25	3.5	2.8	80	0.43	13.4	5.7	80				0.06	35.08	24.70	8.20	6.71	0.06		
T3-1m	4/16/13	1045	0.16	5	0.72	10.1	0.41	5.7	2.3	63	0.48	14.9	6.7	94				0.06	35.11	25.00	8.21	7.01	0.04		
Geomean	**FY '13**			**3.1**		***9.2***		***4.0***				***13.3***		**77**				**0.05**					**0.06**		
T3-1m	8/1/13	952	0.04	1.2	0.11	1.5	0.08	1.1	2.3	64	0.44	13.5	5.2	73				0.11	35.25	26.3	8.26	7.02	0.14		
T3-1m	10/29/13	1021	0.15	4.7	0.50	7.0	0.34	4.7	2.5	72	0.46	14.1	6.2	87				0.06	35.25	27.1	8.22	6.54	0.12		
T3-1m	2/4/14	1033	0.10	3.2	0.54	7.6	0.56	7.8	2.1	59	0.38	11.9	4.0	57				0.02	35.10	25.2	8.20	6.56	0.14		
T3-1m	5/6/14	1034	0.11	3.5	0.43	6.0	0.28	3.9	3.1	88	0.45	13.9	5.4	76				0.08	34.72	25.9	8.20	6.11	0.16		
Geomean	**FY '14**			**2.8**		***4.7***		***3.5***				***13.3***		**72**				**0.06**					**0.14**		
T3-1m	8/5/14	1034	0.20	6.1	0.25	3.5	0.68	9.5	1.3	37	0.53	16.5	5.0	70				0.10	34.95	26.8	8.22	6.04	0.03		
T3-1m	11/17/14	1210	0.17	5.4	0.33	4.6	0.42	5.9	0.3	9	0.48	14.8	5.9	83				0.08	34.96	27.2	8.22	6.97	0.14		
T3-1m	3/3/15	1038	0.11	3.3	0.81	11.3	0.10	1.4	2.4	69	0.33	10.2	8.7	121				0.08	34.83	25.6	8.18	7.24	0.15		
T3-1m	6/16/15	1247	0.14	4.3	0.59	8.2	0.42	5.9	2.8	80	0.44	13.7	10.2	144				0.07	34.24	26.9	8.22	6.35	0.09		
Geomean	**FY '15**			**4.6**		***6.2***		***4.6***				***13.6***		***100***				**0.08**					**0.09**		
T3-1m	8/26/15	1024	0.18	5.6	0.40	5.6	0.26	3.7	17.5	490	0.23	7.2	6.6	92				0.05	34.29	28.3	8.22	6.32	0.11		
T3-1m	11/17/15	1051	0.17	5.3	0.54	7.5	0.69	9.6	7.5	210	0.52	16.2	5.6	78				0.07	33.99	27.4	8.24	6.60	0.17		
T3-1m	3/1/16	1057	0.19	5.8	0.53	7.4	0.32	4.5	1.0	29	0.52	16.0	4.5	63				0.09	34.74	25.4	8.25	5.98	0.11		
T3-1m	5/3/16	1021	0.13	3.9	0.13	1.8	0.21	3.0	1.0	28	0.40	12.5	5.3	75				0.05	34.68	25.7	8.24	6.49	0.12		
Geomean	**FY '16**			***5.1***		***4.9***		***4.7***				**12.4**		**76**				**0.06**					**0.13**		
T3-1m	7/6/16	1138	0.11	3.3	0.20	2.8	0.36	5.0	0.8	22	0.61	18.8	5.8	81				0.12	34.59	27.2	8.29	6.86	0.17		
T3-1m	12/20/16	1110	0.09	2.9	0.57	8.0	0.22	3.1	2.5	70	0.36	11.0	4.7	66				0.03	34.70	25.5	8.28	5.98	0.12		
T3-1m	2/28/17	1004	0.03	0.8	0.46	6.5	0.46	6.5	1.2	34	0.29	9.1	4.6	65				0.10	34.63	24.7	8.21	5.75	0.15		
T3-1m	5/10/17	956	0.03	0.8	0.41	5.8	0.10	1.4	1.4	39	0.24	7.4	3.8	53				0.08	34.75	25.7	8.20	4.33	0.09		
Geomean	**FY '17**			**1.6**		***5.4***		***3.4***				**10.9**		**65**				**0.07**					**0.13**		

NELHA Water Quality Laboratory

Transect 3, Station 1

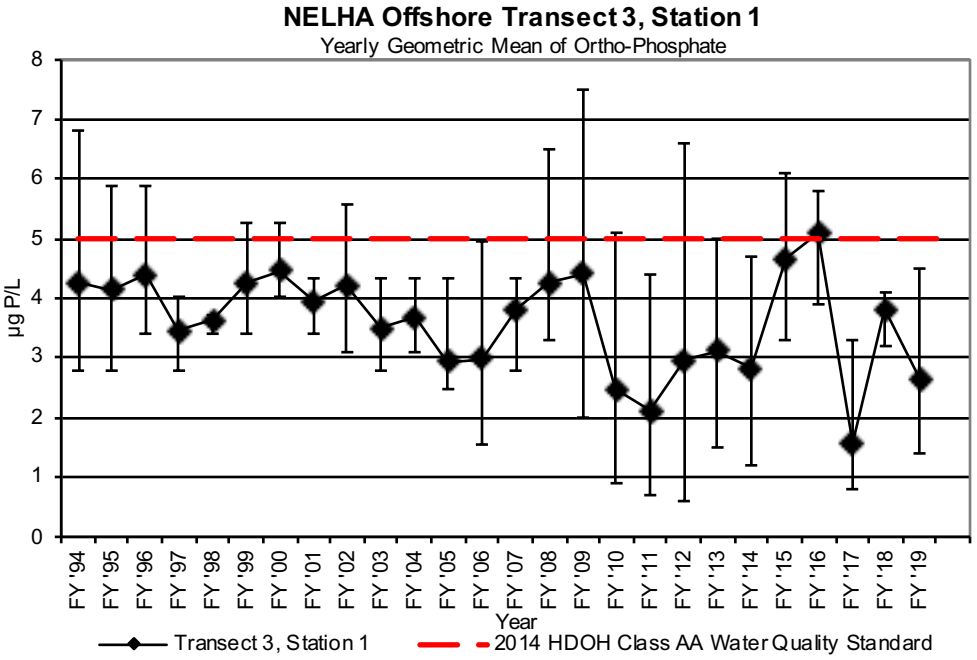
8/3/1993 - 7/16/20

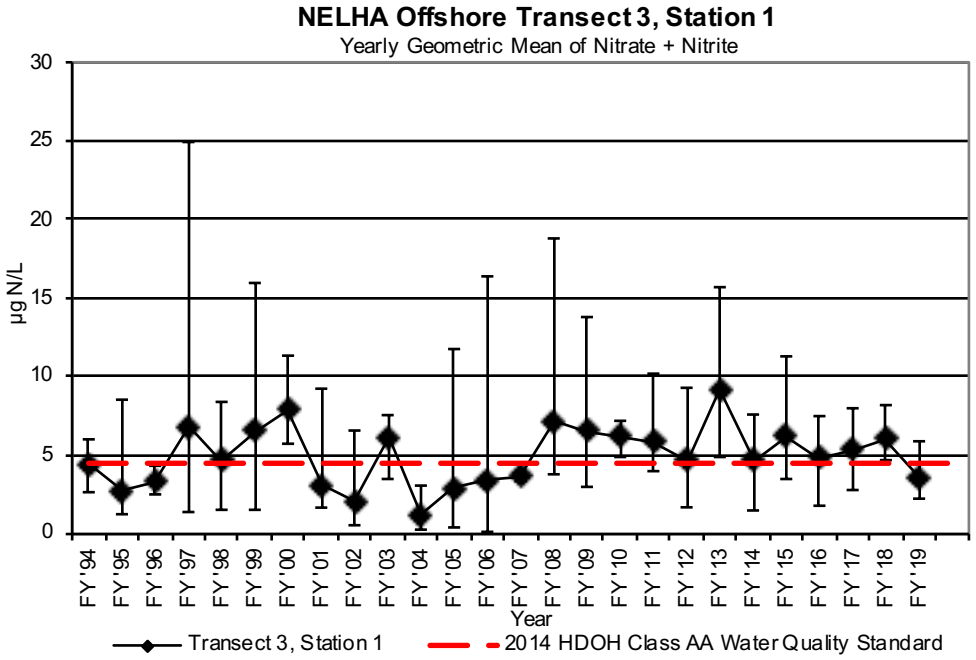
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T3-1m	9/27/17	1203	0.13	4.1	0.34	4.7	0.20	2.8	1.2	35	0.43	13.2	2.8	40				0.11	34.80	27.9	8.20	4.39	0.18		
T3-1m	11/28/17	1146	0.13	4.0	0.53	7.4	0.48	6.7	2.1	60	0.38	11.8	4.1	58				0.10	35.05	26.2	8.21	4.94	0.20		
T3-1m	1/30/18	1130	0.13	4.0	0.59	8.2	0.21	2.9	3.4	95	0.38	11.8	4.0	56				0.08	34.81	24.6	8.18	5.46	0.19		
T3-1m	5/16/18	1124	0.10	3.2	0.34	4.7	0.21	3.0	2.9	83	0.36	11.0	2.5	35				0.03	34.73	25.7	8.19	6.32	0.13		
Geomean	**FY '18**			**3.8**		***6.1***		***3.6***				**11.9**		**46**				**0.07**					**0.17**		
T3-1m	9/24/18	1058	0.07	2.3	0.16	2.3	0.21	3.0	0.6	17	0.33	10.3	2.7	38				0.09	34.77	27.7	8.16	5.30	0.14		
T3-1m	11/13/18	1126	0.05	1.4	0.42	5.9	0.39	5.5	0.6	17	0.40	12.4	3.7	52				0.11	35.00	27.4	8.23	4.71	0.12		
T3-1m	1/22/19	1111	0.11	3.4	0.25	3.5	0.06	0.9	1.0	29	0.41	12.7	2.5	34				0.07	35.02	25.1	8.22	5.84	0.22		
T3-1m	4/16/19	1115	0.15	4.5	0.26	3.6	0.10	1.4	2.0	55	0.40	12.5	2.7	38				0.07	35.59	25.9	8.17	7.59	0.17		
Geomean	**FY '19**			**2.6**		**3.6**		**2.1**				**11.9**		**40**				**0.08**					**0.16**		
T3-1m	8/13/19	1056	0.05	1.6	0.16	2.3	0.22	3.1	2.1	58	0.29	9.0	2.0	28				0.11	35.58	28.3	8.21	7.00	0.13		
T3-1m	11/19/19	1025	0.12	3.7	0.24	3.4	0.09	1.2	0.4	12	0.43	13.4	3.0	43				0.09	34.80	27.6	8.24	6.83	0.36		
T3-1m	1/22/20	1046	0.13	3.9	0.02	0.3	0.09	1.3	0.8	22	0.40	12.4	3.0	41				0.04	34.94	25.1	8.22	6.88	0.12		
T3-1m	6/24/20	1114	0.10	3.2	0.16	2.3	0.06	0.8	2.2	62	0.29	8.9	2.6	36				0.07	35.46	26.0	8.19	7.05	0.29		
Geomean	**FY '20**			**2.9**		**1.5**		**1.4**				**10.7**		**37**				**0.07**					**0.20**		

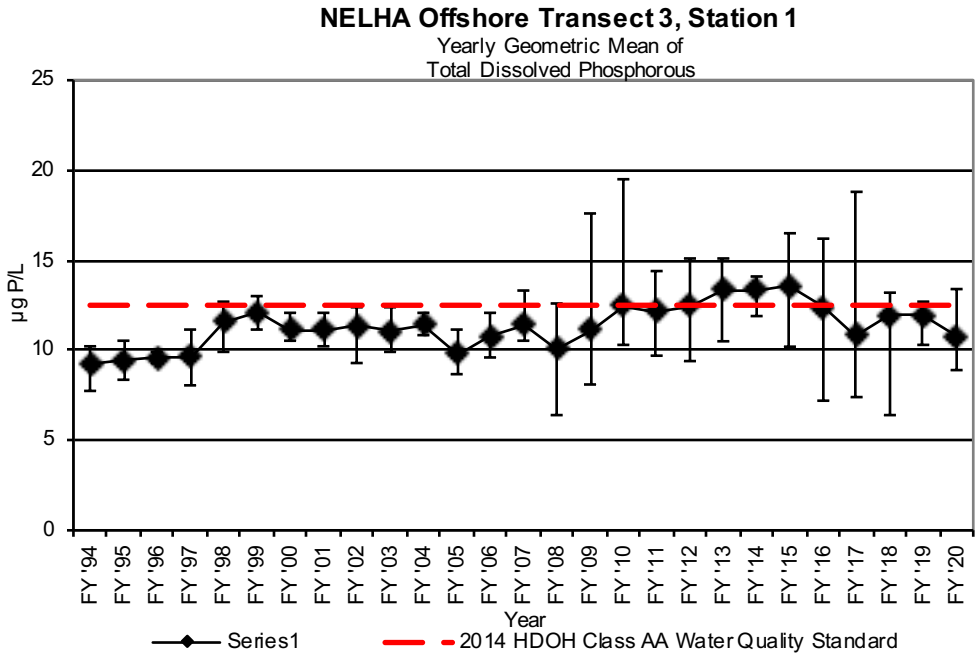
NELHA Water Quality Laboratory

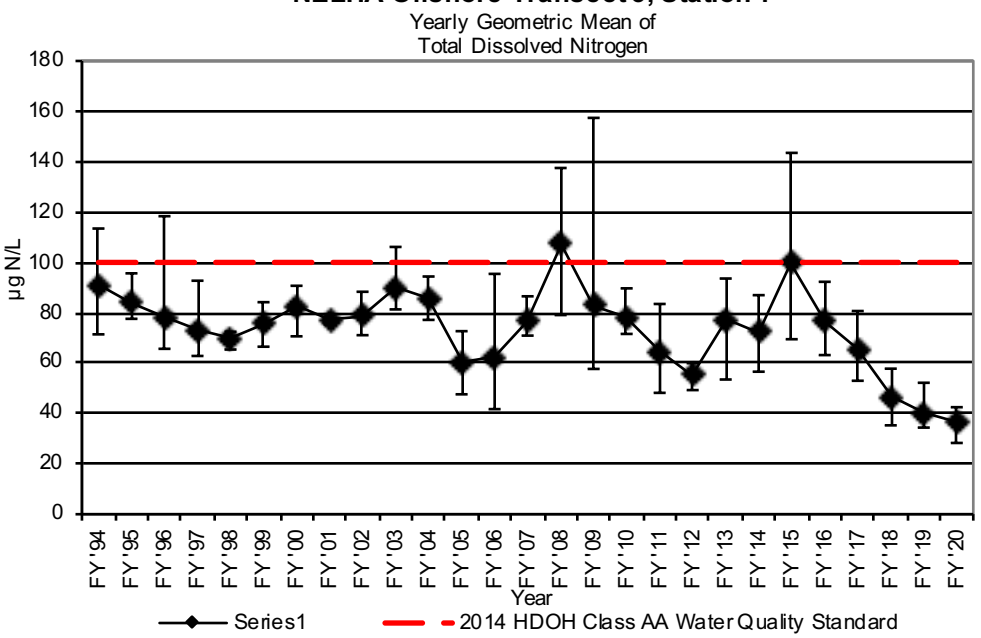
Transect 3, Station 1

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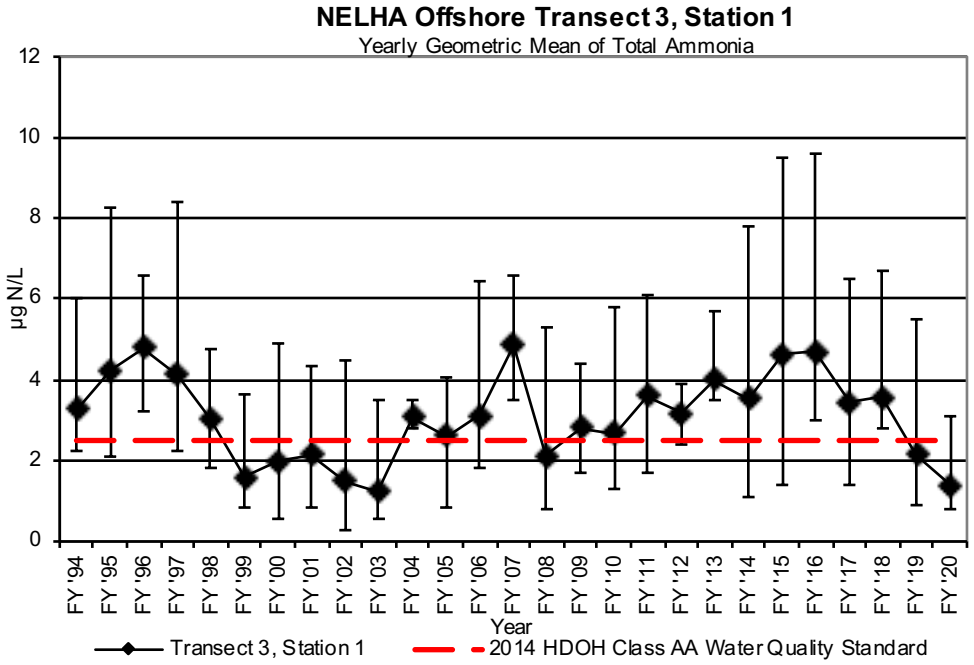


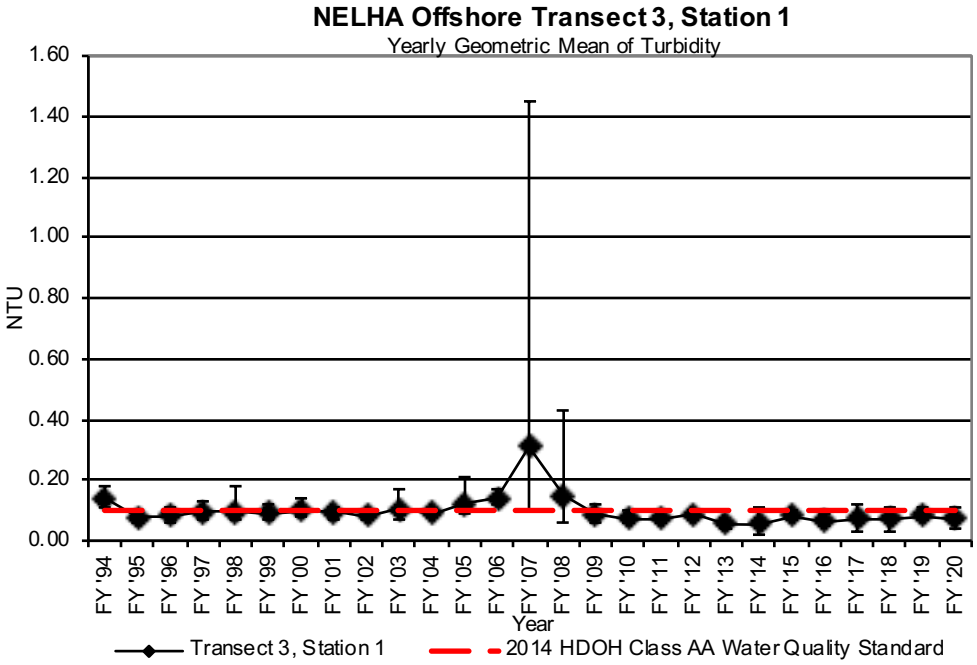


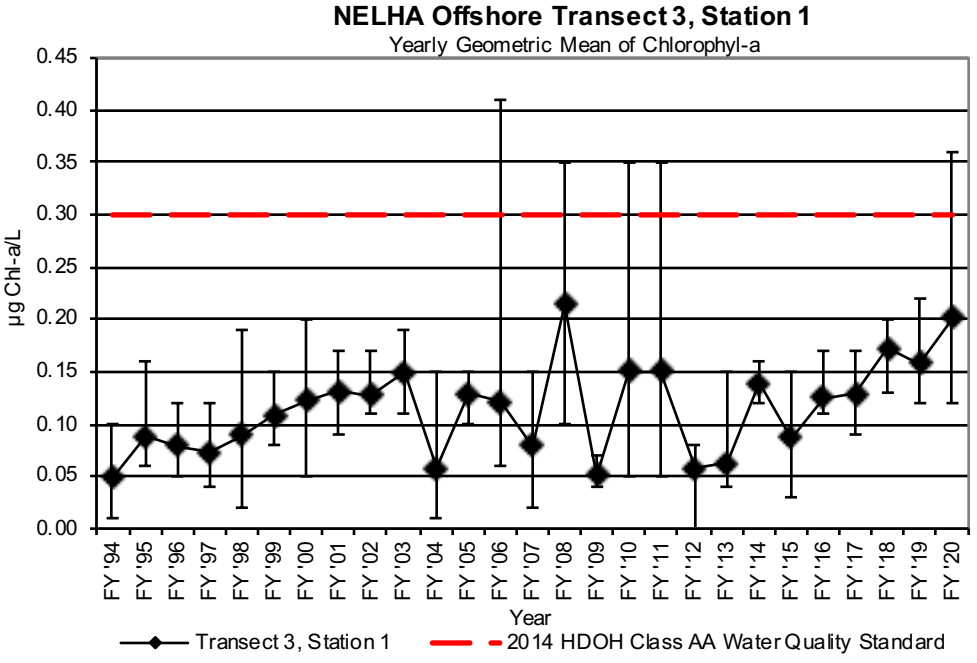
NELHA Water Quality Laboratory

Transect 3, Station 1

8/3/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 3, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-3S-38m	8/3/93	1039	0.12	3.7	0.12	1.7	0.35	4.9	2.5	70					0.07	34.472	26.9			
O3-3S-38m	12/8/93	1052	0.10	3.1	0.14	2.0	0.11	1.5	2.8	78					0.10	34.796	25.7			
O3-3S-38m	3/8/94	1015	0.19	5.9	0.31	4.3	0.26	3.6	3.5	98					0.07	34.213	25.1			
O3-3S-38m	6/13/94	1006	0.12	3.7	0.30	4.2	0.06	0.8	5.7	160					0.12	34.527	25.6			
Geomean	**FY '94**			**4.0**		**2.8**		**2.2**							**0.09**					
O3-3S-38m	9/8/94	850	0.08	2.5	0.09	1.3	0.20	2.8	2.0	55					0.10	34.624	27.6			
O3-3S-38m	11/15/94	927	0.16	5.0	0.41	5.7	0.61	8.5	4.3	122					0.07	34.581	26.0			
O3-3S-38m	3/21/95	823	0.20	6.2	0.12	1.7	0.06	0.8	4.7	132					0.09	34.226	24.9			
O3-3S-38m	6/21/95	945	0.08	2.5	0.07	1.0	0.35	4.9	2.7	77					0.08	34.478	26.3			
Geomean	**FY '95**			**3.7**		**1.9**		***3.2***							**0.08**					
O3-3S-38m	9/25/95	1220	0.17	5.3	0.29	4.1	0.34	4.8	4.3	120					0.14	34.492	27.3			
O3-3S-38m	11/13/95	835	0.14	4.3	0.14	2.0	0.50	7.0	8.7	245					0.05	34.395	26.7			
O3-3S-38m	3/11/96	1216	0.13	4.0	0.23	3.2	0.41	5.7	2.2	61					0.12	34.202	25.5			
O3-3S-38m	5/13/96	1120	0.10	3.1	0.09	1.3	0.17	2.4	2.7	76					0.12	34.297	27.2			
Geomean	**FY '96**			**4.1**		**2.4**		***4.6***							***0.10***					
O3-3S-38m	7/30/96	1040	0.11	3.4	0.55	7.7	0.31	4.3	4.1	114					0.10	34.422	28.4			
O3-3S-38m	10/1/96	919	0.07	2.2	0.01	0.1	0.66	9.2	2.2	63					0.11	34.689	27.9			
O3-3S-38m	1/6/97	921	0.12	3.7	0.77	10.8	0.18	2.5	4.3	120					0.07	34.661	25.3			
O3-3S-38m	4/21/97	903	0.11	3.4	1.23	17.2	0.27	3.8	8.6	240					0.09	34.534	26.4			
Geomean	**FY '97**			**3.1**		**3.8**		***4.4***							**0.09**					
O3-3S-38m	8/18/97	858	0.11	3.4	0.37	5.2	0.19	2.7	4.0	112					0.10	34.620	27.0			
O3-3S-38m	10/6/97	916	0.10	3.1	0.01	0.1	0.27	3.8	2.5	71					0.07	34.708	27.5			
O3-3S-38m	3/3/98	918	0.08	2.5	0.13	1.8	0.27	3.8	5.2	146					0.07	35.028	24.9			
O3-3S-38m	5/4/98	1229	0.09	2.8	0.05	0.7	0.09	1.3	2.8	77					0.07	35.086	24.0			
Geomean	**FY '98**			**2.9**		**1.0**		***2.6***							**0.08**					
O3-3S-38m	7/6/98	935	0.12	3.7	0.58	8.1	0.06	0.8	5.6	157					0.08	34.944	26.2			
O3-3S-38m	10/5/98	910	0.06	1.9	0.01	0.1	0.04	0.6	1.4	38					0.07	35.117	27.2			
O3-3S-38m	1/13/99	911	0.07	2.2	0.21	2.9	0.26	3.6	2.9	82					0.06	35.089	24.8			
O3-3S-38m	4/13/99	906	0.17	5.3	0.60	8.4	0.11	1.5	4.4	122					0.08	34.617	24.2			
Geomean	**FY '99**			**3.0**		**2.3**		**1.3**							**0.07**					

NELHA Water Quality Laboratory

Transect 3, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-3S-38m	7/13/99	937	0.12	3.7	0.31	4.3	0.02	0.3	3.6	101					0.08	34.898	26.0			
O3-3S-38m	10/25/99	922	0.12	3.7	0.56	7.8	0.31	4.3	4.0	112					0.08	34.935	26.1			
O3-3S-38m	1/4/00	932	0.11	3.4	0.54	7.6	0.33	4.6	3.8	106					0.08	35.065	24.8			
O3-3S-38m	5/16/00	1002	0.15	4.6	0.26	3.6	0.05	0.7	4.0	111					0.08	34.671	25.3			
Geomean	**FY '00**			**3.8**		***5.5***		**1.4**							**0.08**					
O3-3S-38m	7/24/00	942	0.11	3.4	0.29	4.1	0.01	0.1	2.7	74					0.07	34.874	27.3			
O3-3S-38m	10/30/00	950	0.12	3.7	0.04	0.6	0.31	4.3	3.5	99					0.08	34.986	27.0			
O3-3S-38m	2/26/01	953	0.16	5.0	0.22	3.1	0.16	2.2	4.2	117					0.07	34.729	24.8			
O3-3S-38m	5/8/01	917	0.13	4.0	0.67	9.4	0.20	2.8	4.1	116					0.07	34.769	24.8			
Geomean	**FY '01**			**4.0**		**2.8**		**1.4**							**0.07**					
O3-3S-38m	8/13/01	940	0.10	3.1	0.06	0.8	0.29	4.1	3.0	85					0.13	34.885	26.6			
O3-3S-38m	10/10/01	924	0.14	4.3	0.08	1.1	0.01	0.1	5.7	161					0.07	34.930	27.4			
O3-3S-38m	3/4/02	1056	0.14	4.3	0.53	7.4	0.02	0.3	4.5	126					0.11	34.648	24.2			
O3-3S-38m	4/16/02	1107	0.19	5.9	0.47	6.6	0.44	6.2	5.4	151					0.08	34.396	25.8			
Geomean	**FY '02**			**4.3**		**2.6**		**1.0**							**0.09**					
O3-3S-38m	7/9/02	957	0.13	4.0	0.31	4.3	0.14	2.0	4.3	121					0.07	34.635	26.6			
O3-3S-38m	10/7/02	1051	0.08	2.5	0.29	4.1	0.22	3.1	5.4	150					0.11	34.918	27.1			
O3-3S-38m	3/10/03	1021	0.12	3.7	0.10	1.4	0.04	0.6	2.4	67					0.13	34.825	24.8			
O3-3S-38m	4/22/03	1001	0.08	2.5	0.29	4.1	0.06	0.8	2.2	63					0.08	35.011	25.1			
Geomean	**FY '03**			**3.1**		**3.2**		**1.3**							**0.09**					
O3-3S-38m	8/19/03	1057	0.06	1.9	0.01	0.1	0.20	2.8	1.4	40					0.07	34.874	28.1			
O3-3S-38m	10/30/03	833	0.09	2.8	0.02	0.3	0.20	2.8	1.9	52					0.11	34.816	27.4			
O3-3S-38m	3/17/04	942	0.12	3.7	0.01	0.1	0.20	2.8	3.9	110					n/a	34.356	26.0			
O3-3S-38m	5/20/04	1115	0.12	3.7	0.01	0.1	0.17	2.4	1.7	47					n/a	33.46	26.7			
Geomean	**FY '04**			**2.9**		**0.2**		***2.7***							**0.09**					
O3-3S-38m	9/20/04	1041	0.07	2.2	0.01	0.1	0.26	3.6	2.0	55					0.08	33.68	28.0			
O3-3S-38m	11/17/04	1013	0.06	1.9	0.01	0.1	0.12	1.7	1.6	44					0.06	33.66	27.2			
O3-3S-38m	1/13/05	1135	0.04	1.2	0.06	0.8	0.14	2.0	1.8	51					0.07	34.870	24.8			
O3-3S-38m	4/11/05	1148	0.13	4.0	0.52	7.3	0.18	2.5	3.7	103					0.12	34.460	25.2			
Geomean	**FY '05**			**2.1**		**0.6**		**2.3**							**0.08**					

NELHA Water Quality Laboratory

Transect 3, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-3S-38m	7/20/05	1132	0.09	2.8	0.26	3.6	0.17	2.4	3.4	95					0.14	34.688	26.5			
O3-3S-38m	10/11/05	1022	0.05	1.5	0.01	0.1	0.18	2.5	1.3	36					0.10	34.868	27.4			
O3-3S-38m	3/14/06	846	0.10	3.1	0.07	1.0	0.26	3.6	9.1	256					0.09	34.867	24.4			
O3-3S-38m	5/15/06	1053	0.15	4.6	0.11	1.5	0.13	1.8	1.6	45					0.16	34.756	24.9			
Geomean	**FY '06**			**2.8**		**0.9**		***2.5***							***0.12***					
O3-3S-38m	8/14/06	1053	0.13	4.0	0.14	2.0	0.24	3.4	3.1	86					0.10	34.593	26.7			
O3-3S-38m	11/1/06	1100	0.09	2.8	0.13	1.8	0.37	5.2	2.0	56					0.36	34.801	27.3			
O3-3S-38m	2/12/07	1119	0.12	3.7	0.08	1.1	0.28	3.9	1.3	37					0.15	34.462	24.7			
O3-3S-38m	4/9/07	1053	0.21	6.5	0.37	5.2	0.27	3.8	4.0	113					0.18	34.622	25.4			
Geomean	**FY '07**			**4.1**		**2.1**		***4.0***							***0.18***					
T3-50m	9/26/07	1047	0.12	3.7	0.37	5.2	0.44	6.2	4.0	113	0.42	13.0	8.7	121	0.11	34.964	26.8	8.22	6.35	0.07
T3-50m	12/13/07	1206	0.08	2.5	0.28	3.9			8.3	232	0.37	11.6	5.6	78	0.08	34.694	25.9	8.23	6.54	0.25
T3-50m	3/10/08	1053	0.14	4.4	0.76	10.7	0.06	0.8	22.9	644	0.42	13.1	7.1	99	0.50	34.872	24.9	8.17	6.83	0.24
T3-50m	6/5/08	1057	0.14	4.2	0.44	6.1	0.16	2.2	15.6	437	0.32	9.8	10.6	149	0.05	34.7972	25.3	8.15	6.68	0.2
Geomean	**FY '08**			**3.6**		***6.0***		**2.2**				**11.8**		***109***	***0.12***					**0.17**
T3-50m	9/22/08	1154	0.30	9.2	0.11	1.6	0.16	2.2	2.3	64	0.76	23.6	4.0	57	0.16	34.830	26.6	8.04	6.34	0.09
T3-50m	11/17/08	1035	0.16	5	0.16	2.2	0.14	1.9	2.4	66	0.37	11.5	6.1	86	0.09	34.968	26.2	8.26	5.75	0.02
T3-50m	2/9/09	1043	0.13	4	0.83	11.6	0.12	1.7	3.1	86	0.25	7.8	5.4	76	0.14	35.066	24.9	8.05	6.23	0.07
T3-50m	4/13/09	1021	0.23	7	0.29	4	0.25	3.5	2.9	83	0.50	15.4	6.0	84	0.10	34.940	23.9	8.20	6.80	0.07
Geomean	**FY '09**			***6.0***		**3.6**		**2.2**				***13.4***		**75**	***0.12***					**0.05**
T3-50m	9/9/09	1046	0.16	4.9	0.08	1.1	0.35	4.9	4.6	129	0.53	16.3	5.1	71	0.02	35.24	27.5	8.22	5.46	0.1
T3-50m	11/23/09	1050	0.03	0.8	0.26	3.6	0.11	1.5	11.7	328	0.44	13.5	4.2	59	0.06	35.24	25.3	8.30	6.32	0.08
T3-50m	2/23/10	1056	0.17	5.2	0.20	2.8	0.44	6.1	14.4	404	0.40	12.5	6.3	88	0.16	35.10	24.7	8.17	6.10	0.37
T3-50m	5/25/10	1002	0.06	1.8	0.41	5.8	0.11	1.5	2.8	79	0.29	9.1	4.3	60	0.05	34.97	25.0	8.21	6.96	0.09
Geomean	**FY '10**			**2.5**		**2.8**		***2.9***				***12.6***		**69**	**0.06**					**0.13**
T3-50m	8/10/10	1055	0.07	2.3	0.99	13.8	0.12	1.7	4.4	125	0.26	8.2	4.1	57	0.07	34.81	26.28	8.24	6.50	0.09
T3-50m	11/8/10	1034	0.04	1.3	0.31	4.4	0.33	4.6	9.6	269	0.39	12.1	4.7	66	0.10	35.35	26.67	8.27	6.24	0.04
T3-50m	1/11/11	1050	0.14	4.2	0.20	2.8	0.19	2.6	3.4	96	0.44	13.6	4.7	66	0.04	34.98	24.97	8.22	6.52	0.15
T3-50m	4/26/11	1053	0.14	4.2	0.31	4.4	0.22	3.1	8.0	226	0.45	14	3.9	55	0.07	34.98	25.02	8.21	6.53	0.08
Geomean	**FY '11**			**2.7**		***5.2***		***2.8***				**11.7**		**61**	**0.07**					**0.08**

NELHA Water Quality Laboratory

Transect 3, Station 3

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SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T3-50m	7/26/11	1126	0.20	6.3	0.31	4.3	0.44	6.1	2.0	56	0.47	14.7	4.3	61	0.04	34.80	26.05	8.27	6.62	0.07
T3-50m	10/18/11	1042	0.02	0.6	0.10	1.4	0.16	2.2	2.0	56	0.30	9.2	3.6	50	0.04	35.06	26.81	8.24	7.08	0.07
T3-50m	1/25/12	1110	0.09	2.9	0.26	3.7	0.12	1.7	2.3	66	0.38	11.9	3.6	50	0.09	35.01	24.78	8.21	7.04	0.01
T3-50m	4/24/12	1138	0.16	4.9	0.64	9	0.33	4.6	3.2	89	0.42	13	4.0	56	0.10	35.05	25.04	8.22	6.93	0.18
Geomean	**FY '12**			**2.7**		**3.8**		***3.2***				**12.0**		**54**	**0.06**					**0.05**
T3-50m	7/24/12	1051	0.06	1.9	0.29	4	0.30	4.2	1.4	40	0.32	9.8	3.9	55	0.07	35.06	26.39	8.24	6.98	0.07
T3-50m	11/27/12	1033	0.09	2.8	0.41	5.8	0.27	3.8	2.2	62	0.38	11.8	4.2	59	0.04	35.20	25.06	8.21	6.91	0.04
T3-50m	1/23/13	1045	0.09	2.8	0.35	4.9	0.24	3.3	2.8	78	0.43	13.4	4.3	60	0.04	35.07	24.78	8.22	6.44	0.04
T3-50m	4/16/13	1053	0.16	5	0.74	10.4	0.16	2.2	2.8	80	0.48	14.9	5.9	82	0.08	35.10	25.00	8.20	6.88	0.08
Geomean	**FY '13**			**2.9**		***5.9***		***3.3***				**12.3**		**63**	**0.05**					**0.05**
T3-50m	8/1/13	1000	0.04	1.2	0.16	2.2	0.12	1.7	2.4	67	0.45	13.9	6.6	92	0.08	35.28	26.3	8.26	6.89	0.19
T3-50m	10/29/13	1029	0.13	4.0	0.38	5.3	0.40	5.6	2.5	71	0.45	13.9	5.1	71	0.02	35.25	27.1	8.22	6.43	0.21
T3-50m	2/4/14	1044	0.12	3.6	0.59	8.3	0.49	6.8	2.0	56	0.37	11.5	4.2	58	0.02	35.09	25.2	8.20	6.46	0.25
T3-50m	5/6/14	1049	0.12	3.7	0.56	7.9	0.23	3.2	4.3	121	0.42	13.1	6.3	89	0.08	34.74	25.9	8.19	6.35	0.18
Geomean	**FY '14**			**2.8**		***5.3***		***3.8***				***13.1***		**76**	**0.04**					**0.21**
T3-50m	8/5/14	1040	0.20	6.2	0.10	1.4	0.38	5.3	1.0	28	0.49	15.3	5.3	74	0.16	34.94	26.7	8.23	6.00	0.13
T3-50m	11/17/14	1217	0.17	5.3	0.14	2.0	0.35	4.9	0.0	0	0.46	14.4	5.5	78	0.07	34.95	27.3	8.22	6.74	0.16
T3-50m	3/3/15	1047	0.04	1.1	0.06	0.8	0.16	2.3	0.7	21	0.30	9.4	6.3	88	0.09	34.87	25.5	8.18	6.99	0.13
T3-50m	6/16/15	1259	0.09	2.9	1.03	14.4	0.46	6.4	2.7	76	0.32	9.9	7.5	106	0.05	34.23	26.9	8.23	6.30	0.17
Geomean	**FY '15**			**3.2**		**2.4**		***4.4***				**12.0**		**85**	**0.08**					**0.15**
T3-50m	8/26/15	1035	0.15	4.7	0.07	1.0	0.21	2.9	3.1	86	0.37	11.6	3.8	53	0.02	34.38	28.5	8.22	6.04	0.31
T3-50m	11/17/15	1102	0.15	4.7	0.46	6.4	0.19	2.6	4.0	111	0.52	16.2	5.6	78	0.06	34.00	27.4	8.23	6.39	0.15
T3-50m	3/1/16	1110	0.18	5.6	0.48	6.7	0.39	5.4	0.1	3	0.49	15.3	3.8	53	0.07	34.79	25.4	8.24	5.97	0.13
T3-50m	5/3/16	1032	0.07	2.3	0.18	2.5	0.16	2.3	0.6	16	0.46	14.3	11.2	157	0.07	34.67	25.8	8.27	6.41	0.19
Geomean	**FY '16**			**4.1**		**3.2**		***3.1***				***14.2***		**77**	**0.05**					**0.18**
T3-50m	7/6/16	1158	0.08	2.4	0.22	3.1	0.31	4.4	0.2	6	0.40	12.3	3.0	43	0.09	34.63	27.3	8.29	6.70	0.20
T3-50m	12/20/16	1124	0.05	1.7	0.19	2.6	0.25	3.5	1.5	41	0.34	10.4	2.9	41	0.03	34.74	25.6	8.28	5.95	0.17
T3-50m	2/28/17	1014	0.03	1.0	0.49	6.9	0.11	1.6	1.0	29	0.33	10.3	4.5	63	0.10	34.65	24.7	8.21	5.57	0.14
T3-50m	5/10/17	1004	0.04	1.2	0.08	1.1	0.09	1.2	0.4	12	0.23	7.0	3.0	42	0.06	34.81	25.8	8.21	4.11	0.04
Geomean	**FY '17**			**1.5**		**2.8**		**2.3**				**9.8**		**46**	**0.06**					**0.12**

NELHA Water Quality Laboratory

Transect 3, Station 3

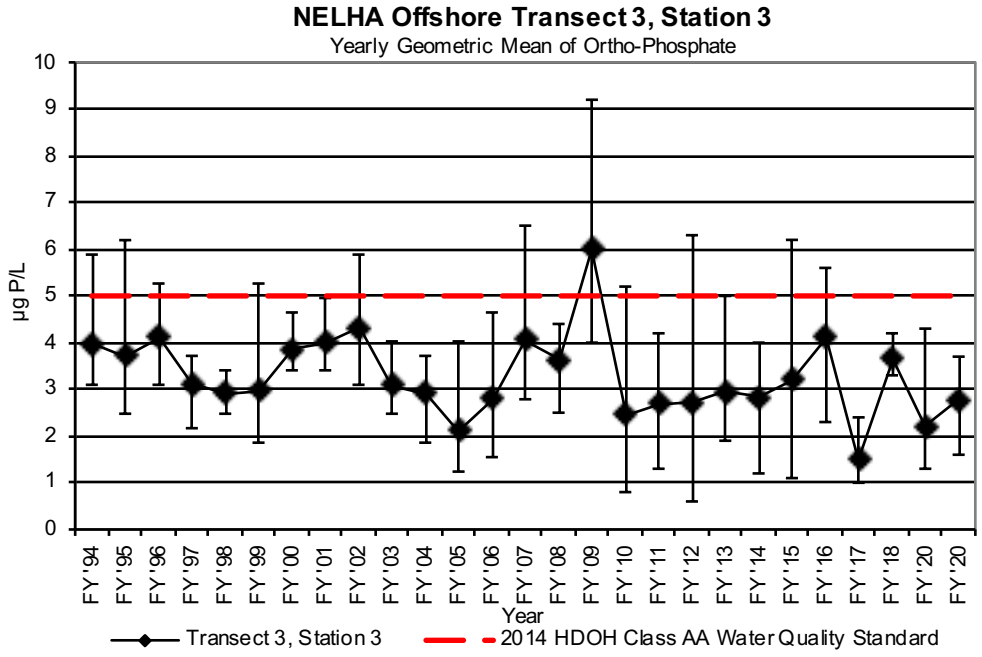
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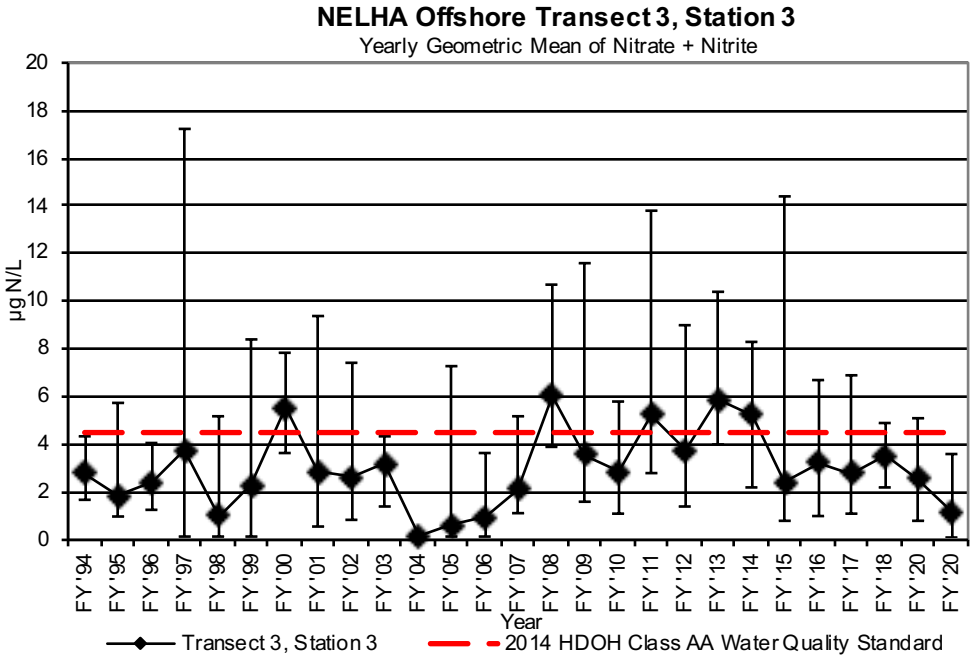
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T3-50m	9/27/17	1150	0.14	4.2	0.23	3.2	0.19	2.7	0.9	26	0.41	12.7	3.1	44	0.11	34.79	27.9	8.20	4.22	0.16
T3-50m	11/28/17	1158	0.11	3.3	0.31	4.3	0.58	8.1	1.8	51	0.38	11.9	5.0	70	0.10	35.06	26.3	8.21	4.75	0.14
T3-50m	1/30/18	1145	0.12	3.8	0.35	4.9	0.39	5.4	3.1	86	0.40	12.5	4.1	57	0.07	34.82	24.6	8.17	5.36	0.10
T3-50m	5/16/18	1134	0.11	3.4	0.16	2.2	0.23	3.2	2.6	73	0.36	11.2	2.9	40	0.04	34.69	25.9	8.18	6.28	0.12
Geomean	**FY '18**			**3.7**		**3.5**		***4.4***				**12.1**		**52**	**0.07**					**0.13**
T3-50m	9/24/18	1115	0.04	1.3	0.18	2.5	0.32	4.5	0.1	3	0.48	14.9	1.9	27	0.07	34.81	27.9	8.16	5.07	0.13
T3-50m	11/13/18	1135	0.05	1.4	0.30	4.2	0.24	3.3	0.2	4	0.32	9.9	3.2	45	0.07	34.99	27.6	8.24	4.71	0.10
T3-50m	1/22/19	1119	0.10	3.0	0.06	0.8	0.09	1.3	0.1	2	0.38	11.9	2.5	35	0.05	35.02	25.2	8.22	5.70	0.14
T3-50m	4/16/19	1127	0.14	4.3	0.36	5.1	0.09	1.2	3.3	93	0.38	11.7	3.0	43	0.06	35.54	26.0	8.16	7.33	0.17
Geomean	**FY '19**			**2.2**		**2.6**		**2.2**				**12.0**		**36**	**0.06**					**0.13**
T3-50m	8/13/19	1111	0.05	1.6	0.16	2.3	0.22	3.1	2.6	74	0.30	9.2	2.4	34	0.09	35.63	28.3	8.19	6.74	0.18
T3-50m	11/19/19	1033	0.12	3.7	0.26	3.6	0.04	0.5	0.7	18	0.42	12.9	3.0	42	0.08	34.78	27.6	8.25	6.61	0.16
T3-50m	1/22/20	1058	0.11	3.4	0.01	0.1	0.09	1.3	0.7	21	0.40	12.4	2.4	34	0.04	34.94	25.1	8.22	6.69	0.17
T3-50m	6/24/20	1123	0.09	2.9	0.16	2.3	0.09	1.3	2.1	59	0.32	9.8	2.6	36	0.07	35.49	26.0	8.18	6.83	0.28
Geomean	**FY '20**			**2.8**		**1.2**		**1.2**				**11.0**		**36**	**0.07**					**0.19**

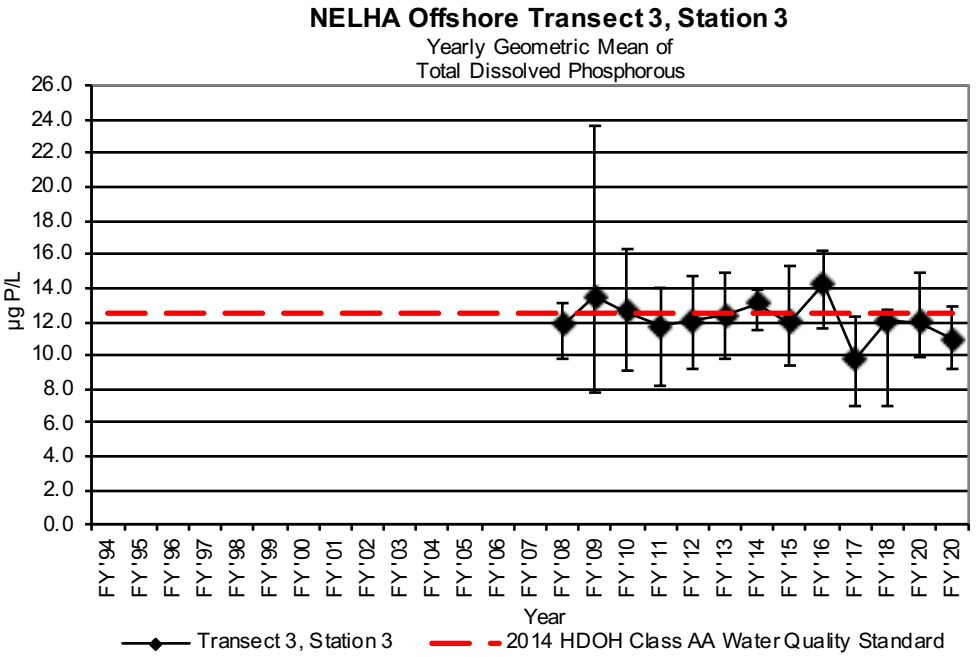
NELHA Water Quality Laboratory

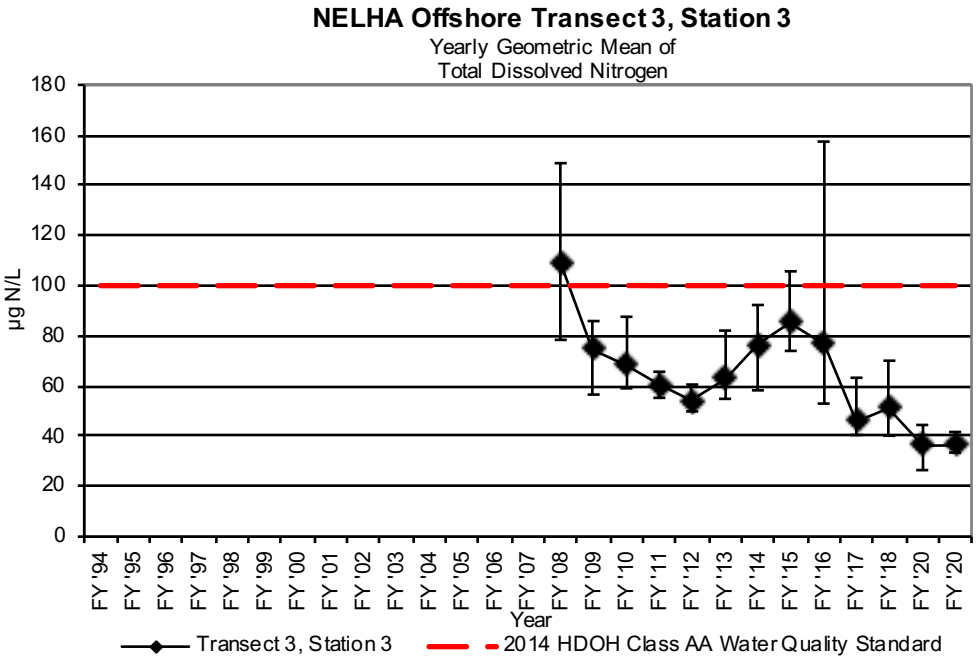
Transect 3, Station 3

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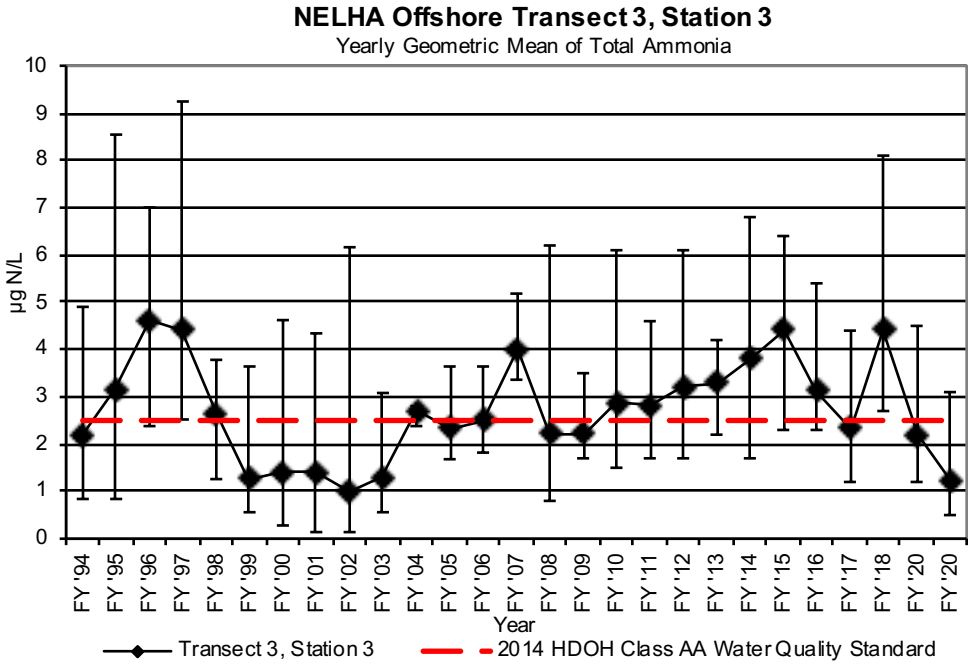


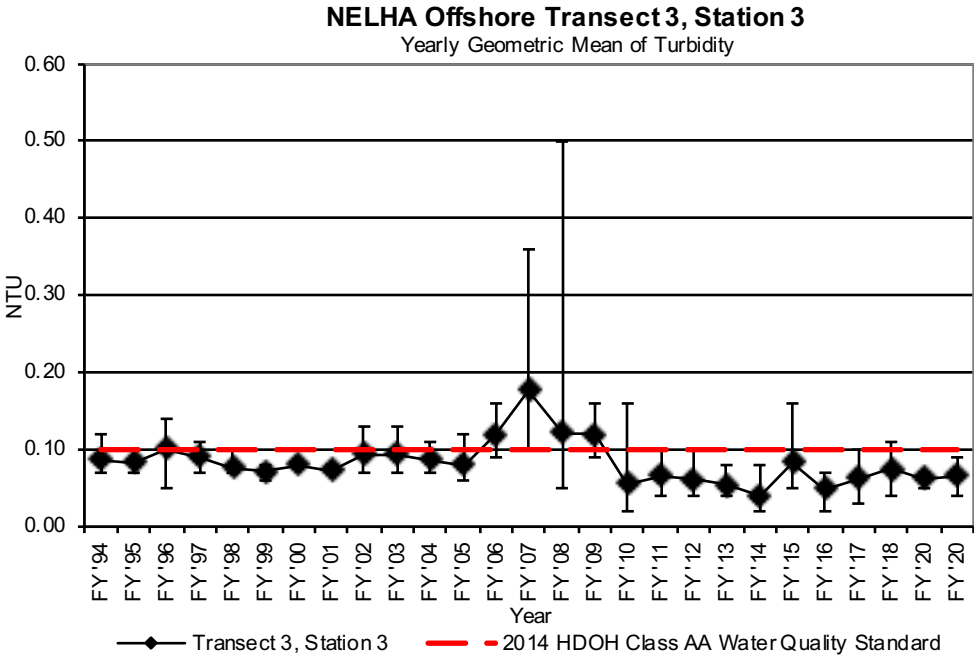


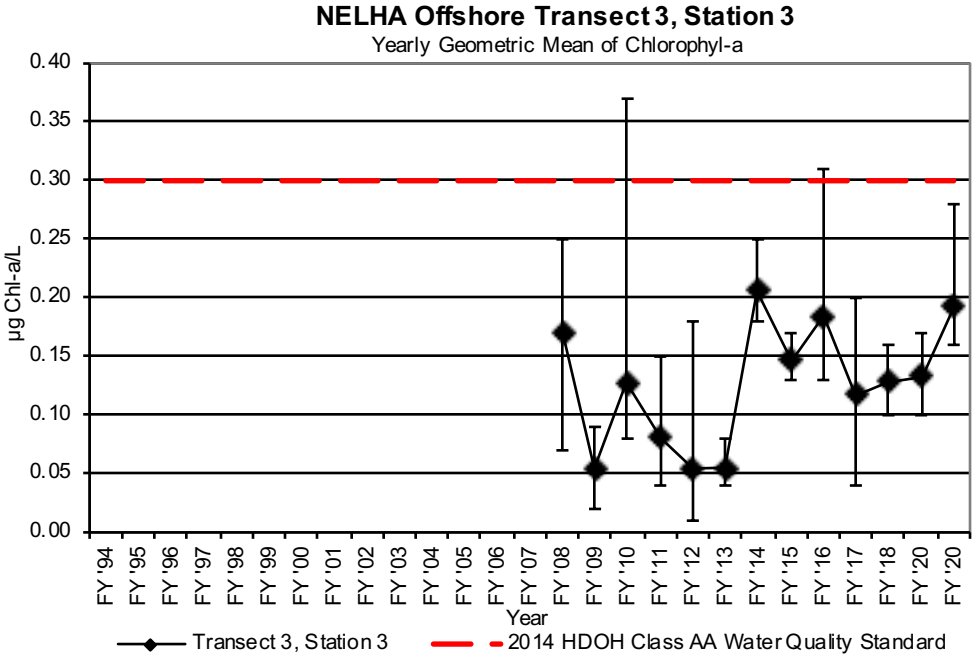
NELHA Water Quality Laboratory

Transect 3, Station 3

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NELHA Water Quality Laboratory

Transect 3, Station 4

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SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-4S-53m	8/3/93	1028	0.10	3.1	0.21	2.9	0.35	4.9	2.9	82					0.07	34.503	26.8			
O3-4S-53m	12/8/93	1044	0.12	3.7	0.14	2.0	0.11	1.5	4.7	132					0.07	34.790	25.7			
O3-4S-53m	3/8/94	1004	0.21	6.5	0.46	6.4	0.24	3.4	3.4	95					0.08	34.194	25.1			
O3-4S-53m	6/13/94	1000	0.11	3.4	0.13	1.8	0.11	1.5	4.4	124					0.09	34.537	25.6			
Geomean	**FY '94**			**4.0**		**2.9**		***2.5***							**0.08**					
O3-4S-53m	9/8/94	844	0.07	2.2	0.02	0.3	0.20	2.8	1.8	50					0.06	34.630	27.6			
O3-4S-53m	11/15/94	923	0.16	5.0	0.49	6.9	0.56	7.8	4.6	130					0.08	34.565	26.0			
O3-4S-53m	3/21/95	813	0.18	5.6	0.08	1.1	0.09	1.3	2.7	75					0.09	34.228	25.0			
O3-4S-53m	6/21/95	938	0.09	2.8	0.07	1.0	0.35	4.9	4.0	112					0.07	34.484	26.3			
Geomean	**FY '95**			**3.6**		**1.2**		***3.4***							**0.07**					
O3-4S-53m	9/25/95	1234	0.12	3.7	0.37	5.2	0.21	2.9	6.0	167					0.18	34.438	27.3			
O3-4S-53m	11/13/95	842	0.14	4.3	0.16	2.2	0.54	7.6	1.8	49					0.07	34.389	26.7			
O3-4S-53m	3/11/96	1210	0.12	3.7	0.22	3.1	0.40	5.6	2.1	59					0.07	34.205	25.5			
O3-4S-53m	5/13/96	1115	0.10	3.1	0.03	0.4	0.14	2.0	2.3	63					0.06	34.308	27.2			
Geomean	**FY '96**			**3.7**		**2.0**		***4.0***							**0.09**					
O3-4S-53m	7/30/96	1035	0.11	3.4	0.44	6.2	0.29	4.1	4.8	135					0.09	34.421	28.4			
O3-4S-53m	10/1/96	914	0.07	2.2	0.01	0.1	0.62	8.7	2.3	65					0.08	34.686	27.9			
O3-4S-53m	1/6/97	916	0.11	3.4	0.52	7.3	0.17	2.4	3.7	103					0.08	34.680	25.5			
O3-4S-53m	4/21/97	858	0.09	2.8	0.88	12.3	0.20	2.8	2.3	63					0.10	34.565	26.4			
Geomean	**FY '97**			**2.9**		**3.0**		***3.9***							**0.09**					
O3-4S-53m	8/18/97	854	0.10	3.1	0.27	3.8	0.23	3.2	3.6	100					0.09	34.624	27.0			
O3-4S-53m	10/6/97	911	0.10	3.1	0.02	0.3	0.30	4.2	2.4	68					0.07	34.702	27.4			
O3-4S-53m	3/3/98	912	0.09	2.8	0.10	1.4	0.21	2.9	2.3	64					0.07	35.029	24.8			
O3-4S-53m	5/4/98	1219	0.09	2.8	0.03	0.4	0.11	1.5	3.4	95					0.08	35.076	24.0			
Geomean	**FY '98**			**2.9**		**0.9**		***2.8***							**0.08**					
O3-4S-53m	7/6/98	928	0.10	3.1	0.39	5.5	0.02	0.3	5.3	149					0.08	34.954	26.2			
O3-4S-53m	10/5/98	905	0.06	1.9	0.01	0.1	0.03	0.4	2.6	74					0.06	35.121	27.3			
O3-4S-53m	1/13/99	907	0.08	2.5	0.13	1.8	0.15	2.1	3.2	89					0.08	35.090	24.9			
O3-4S-53m	4/13/99	902	0.17	5.3	0.40	5.6	0.11	1.5	7.2	203					0.13	34.621	24.2			
Geomean	**FY '99**			**2.9**		**1.7**		**0.8**							**0.08**					

NELHA Water Quality Laboratory

Transect 3, Station 4

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-4S-53m	7/13/99	932	0.12	3.7	0.16	2.2	0.03	0.4	3.1	87					0.09	34.911	26.1			
O3-4S-53m	10/25/99	918	0.12	3.7	0.42	5.9	0.31	4.3	3.5	98					0.13	34.939	26.1			
O3-4S-53m	1/4/00	927	0.10	3.1	0.51	7.1	0.33	4.6	4.4	123					0.08	35.080	24.8			
O3-4S-53m	5/16/00	958	0.12	3.7	0.24	3.4	0.09	1.3	3.2	89					0.06	34.685	25.5			
Geomean	**FY '00**			**3.6**		**4.2**		**1.8**							**0.09**					
O3-4S-53m	7/24/00	939	0.10	3.1	0.14	2.0	0.01	0.1	3.4	95					0.05	34.873	27.3			
O3-4S-53m	10/30/00	943	0.12	3.7	0.06	0.8	0.38	5.3	3.1	87					0.07	34.991	27.0			
O3-4S-53m	2/26/01	947	0.15	4.6	0.07	1.0	0.14	2.0	3.9	110					0.08	34.731	24.8			
O3-4S-53m	5/8/01	913	0.14	4.3	0.31	4.3	0.21	2.9	9.0	253					0.10	34.780	24.9			
Geomean	**FY '01**			**3.9**		**1.6**		**1.4**							**0.07**					
O3-4S-53m	8/13/01	935	0.10	3.1	0.01	0.1	0.24	3.4	4.3	121					0.04	34.873	26.7			
O3-4S-53m	10/10/01	918	0.13	4.0	0.09	1.3	0.04	0.6	3.3	93					0.08	34.929	27.4			
O3-4S-53m	3/4/02	1051	0.12	3.7	0.06	0.8	0.02	0.3	1.6	46					0.08	34.649	24.2			
O3-4S-53m	4/16/02	1102	0.15	4.6	0.15	2.1	0.44	6.2	4.5	125					0.07	34.443	25.8			
Geomean	**FY '02**			**3.8**		**0.7**		**1.3**							**0.07**					
O3-4S-53m	7/9/02	953	0.11	3.4	0.40	5.6	0.17	2.4	3.6	100					0.11	34.662	26.5			
O3-4S-53m	10/7/02	1046	0.08	2.5	0.02	0.3	0.18	2.5	3.4	97					0.06	34.938	27.1			
O3-4S-53m	3/10/03	1011	0.10	3.1	0.03	0.4	0.03	0.4	1.9	53					0.07	34.842	24.7			
O3-4S-53m	4/22/03	955	0.08	2.5	0.25	3.5	0.05	0.7	4.4	124					0.06	35.009	25.0			
Geomean	**FY '03**			**2.8**		**1.2**		**1.2**							**0.07**					
O3-4S-53m	8/19/03	1045	0.05	1.5	0.01	0.1	0.20	2.8	1.5	41					0.08	34.849	28.2			
O3-4S-53m	10/30/03	825	0.09	2.8	0.02	0.3	0.20	2.8	2.8	78					0.12	34.825	27.4			
O3-4S-53m	3/17/04	937	0.12	3.7	0.01	0.1	0.19	2.7	1.3	35					n/a	34.396	26.0			
O3-4S-53m	5/20/04	1119	0.12	3.7	0.01	0.1	0.22	3.1	1.3	36					n/a	33.45	26.9			
Geomean	**FY '04**			**2.8**		**0.2**		**2.8**							**0.10**					
O3-4S-53m	9/20/04	1034	0.09	2.8	0.01	0.1	0.30	4.2	1.9	53					0.06	33.72	28.1			
O3-4S-53m	11/17/04	1008	0.06	1.9	0.01	0.1	0.14	2.0	1.7	49					0.08	33.66	27.2			
O3-4S-53m	1/13/05	1130	0.06	1.9	0.38	5.3	0.12	1.7	2.7	75					0.08	34.820	25.0			
O3-4S-53m	4/11/05	1138	0.12	3.7	0.05	0.7	0.19	2.7	2.0	56					0.09	34.475	25.2			
Geomean	**FY '05**			**2.4**		**0.5**		**2.5**							**0.08**					

SITE ID | DATE | TIME | PO_4^{3-} | NO_3^- & NO_2^- | NH_4^+ & NH_3 | Si | TDP | TDN | Turbidity | Salinity | Temp. | pH | DO | Chl a

NELHA Water Quality Laboratory

Transect 3, Station 4

8/3/1993 - 7/16/20

	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-4S-53m	7/20/05	1126	0.08	2.5	0.15	2.1	0.17	2.4	3.9	109					0.09	34.656	26.5			
O3-4S-53m	10/11/05	1017	0.05	1.5	0.01	0.1	0.18	2.5	1.3	37					0.10	34.887	27.5			
O3-4S-53m	3/14/06	842	0.09	2.8	0.04	0.6	0.28	3.9	3.2	89					0.10	34.877	24.4			
O3-4S-53m	5/15/06	1046	0.07	2.2	0.07	1.0	0.10	1.4	3.4	94					0.08	34.720	24.9			
Geomean	**FY '06**			**2.2**		**0.6**		**2.4**							**0.09**					
O3-4S-53m	8/14/06	1048	0.12	3.7	0.24	3.4	0.25	3.5	3.4	96					0.13	34.600	26.9			
O3-4S-53m	11/1/06	1053	0.08	2.5	0.20	2.8	0.34	4.8	2.3	63					1.00	34.792	27.4			
O3-4S-53m	2/12/07	1114	0.13	4.0	0.07	1.0	0.35	4.9	1.3	35					0.48	34.444	24.6			
O3-4S-53m	4/9/07	1047	0.12	3.7	0.10	1.4	0.22	3.1	3.2	90					0.18	34.671	25.4			
Geomean	**FY '07**			**3.4**		**1.9**		***4.0***							***0.33***					
T3-100m	9/26/07	1056	0.13	4.1	0.31	4.4	0.31	4.3	5.9	165	0.37	11.4	6.7	94	0.09	34.943	26.9	8.23	6.42	0.10
T3-100m	12/13/07	1212	0.07	2.2	0.07	1.0			5.2	147	0.36	11.1	5.2	73	0.08	34.730	26.0	8.23	6.34	0.25
T3-100m	3/10/08	1056	0.19	5.8	0.64	9.0	0.06	0.8	3.8	107	0.31	9.6	7.2	101	0.12	34.894	24.9	8.18	6.76	0.26
T3-100m	6/5/08	1101	0.06	2.0	0.13	1.8	0.16	2.2	17.0	479	0.24	7.4	6.1	85	0.06	34.8335	25.1	8.14	6.56	0.11
Geomean	**FY '08**			**3.2**		**2.9**		**2.0**				**9.7**		**87**	**0.08**					**0.16**
T3-100m	9/22/08	1159	0.62	19.1	0.06	0.8	0.10	1.4	1.9	55	1.54	47.7	4.9	68	0.11	34.805	26.7	8.03	6.52	0.07
T3-100m	11/17/08	1040	0.16	4.9	0.06	0.8	0.14	1.9	2.1	59	0.39	12.1	5.8	81	0.08	34.974	26.2	8.27	6.10	0.05
T3-100m	2/9/09	1048	0.10	3.1	0.54	7.6	0.12	1.7	2.2	62	0.23	7	5.2	73	0.08	35.094	25.1	8.05	6.27	0.02
T3-100m	4/13/09	1026	0.22	6.7	0.10	1.4	0.26	3.7	2.9	82	0.47	14.6	4.6	65	0.10	34.946	24.0	8.19	6.56	0.02
Geomean	**FY '09**			***6.6***		**1.6**		**2.0**				***15.6***		**71**	**0.09**					**0.03**
T3-100m	9/9/09	1056	0.21	6.4	0.04	0.5	0.16	2.2	7.4	209	0.56	17.5	5.5	77	0.06	35.20	27.6	8.21	5.48	0.11
T3-100m	11/23/09	1100	0.03	0.8	0.07	1	0.14	1.9	28.6	803	0.41	12.6	4.9	69	0.04	35.25	25.4	8.28	6.23	0.17
T3-100m	2/23/10	1100	0.15	4.6	0.04	0.5	0.34	4.8	9.9	277	0.40	12.5	6.2	87	0.15	35.09	24.9	8.17	6.14	0.44
T3-100m	5/25/10	1007	0.05	1.7	0.20	2.8	0.05	0.7	2.0	56	0.29	8.9	4.9	69	0.13	35.00	25.0	8.22	6.94	0.08
Geomean	**FY '10**			**2.5**		**0.9**		**1.9**				***12.5***		**75**	**0.08**					**0.16**
T3-100m	8/10/10	1100	0.01	0.4	0.07	1	0.05	0.7	2.4	66	0.27	8.3	2.6	37	0.09	34.92	26.24	8.24	6.59	0.09
T3-100m	11/8/10	1039	0.02	0.7	0.04	0.6	0.09	1.3	2.8	80	0.46	14.4	4.7	66	0.10	35.38	26.72	8.26	6.30	0.02
T3-100m	1/11/11	1056	0.13	4	0.26	3.6	0.02	0.3	7.8	220	0.43	13.4	4.1	57	0.04	34.96	24.97	8.22	6.42	0.07
T3-100m	4/26/11	1059	0.16	5.1	0.24	3.4	0.26	3.7	2.5	71	0.49	15.1	3.6	50	0.08	34.49	24.98	8.21	6.50	0.16
Geomean	**FY '11**			**1.5**		**1.6**		**1.0**				**12.5**		**51**	**0.07**					**0.07**

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)

NELHA Water Quality Laboratory

Transect 3, Station 4

8/3/1993 - 7/16/20

DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**				**0.30**
T3-100m	7/26/11	1137	0.22	6.7	0.12	1.7	0.04	0.6	0.9	25	0.46	14.2	2.8	40	0.07	34.80	26.05	8.27	6.62	0.07
T3-100m	10/18/11	1047	0.02	0.7	0.06	0.9	0.14	1.9	1.6	45	0.32	9.8	3.9	55	0.08	35.06	26.81	8.24	7.08	0.07
T3-100m	1/25/12	1117	0.07	2.2	0.04	0.5	0.07	1	1.4	41	0.40	12.3	4.4	61	0.09	35.01	24.78	8.21	7.04	0.01
T3-100m	4/24/12	1150	0.10	3.1	0.02	0.3	0.26	3.6	0.6	16	0.38	11.9	2.9	41	0.10	35.05	25.04	8.22	6.93	0.18
Geomean	**FY '12**			**2.4**		**0.7**		**1.4**				**11.9**		**48**	**0.08**					**0.05**
T3-100m	7/24/12	1055	0.03	0.8	0.11	1.6	0.11	1.6	1.2	33	0.36	11.3	4.8	67	0.06	35.06	26.39	8.25	6.84	0.13
T3-100m	11/27/12	1036	0.08	2.5	0.29	4.1	0.54	7.5	2.4	67	0.57	17.6	4.8	68	0.02	35.21	25.19	8.21	6.83	0.20
T3-100m	1/23/13	1050	0.10	3	0.66	9.2	0.36	5	4.8	134	0.45	14	5.4	75	0.07	35.09	24.73	8.22	6.29	0.07
T3-100m	4/16/13	1058	0.16	4.9	0.56	7.8	0.17	2.4	1.8	51	0.47	14.5	5.9	82	0.02	35.10	24.95	8.21	6.78	0.09
Geomean	**FY '13**			**2.3**		***4.7***		***3.5***				***14.2***		**73**	**0.04**					**0.11**
T3-100m	8/1/13	1006	0.05	1.4	0.05	0.7	0.32	4.5	2.0	57	0.38	11.8	5.5	77	0.24	35.22	26.4	8.26	6.80	0.14
T3-100m	10/29/13	1035	0.11	3.3	0.36	5.0	0.31	4.4	2.3	65	0.44	13.6	5.3	74	0.02	35.26	27.1	8.20	6.47	0.19
T3-100m	2/4/14	1051	0.09	2.9	0.24	3.3	0.39	5.4	1.9	52	0.37	11.6	4.8	67	0.02	35.09	25.2	8.20	6.48	0.09
T3-100m	5/6/14	1055	0.14	4.2	0.51	7.2	0.18	2.5	4.2	118	0.44	13.7	5.8	81	0.04	34.73	26.0	8.20	6.15	0.20
Geomean	**FY '14**			**2.7**		**3.0**		***4.0***				***12.6***		**75**	**0.04**					**0.15**
T3-100m	8/5/14	1044	0.18	5.5	0.03	0.4	0.26	3.6	0.4	11	0.49	15.2	3.9	55	0.12	34.93	26.8	8.22	5.90	0.12
T3-100m	11/17/14	1221	0.22	6.9	0.08	1.1	0.46	6.5	0.0	0	0.49	15.1	5.6	78	0.08	34.95	27.2	8.22	6.80	0.14
T3-100m	3/3/15	1055	0.07	2.3	0.06	0.8	0.21	3.0	0.3	9	0.33	10.2	6.8	96	0.10	34.86	25.8	8.19	6.96	0.07
T3-100m	6/16/15	1306	0.08	2.5	0.39	5.4	0.37	5.2	2.3	63	0.36	11.3	7.0	98	0.05	34.32	27.0	8.22	6.04	0.10
Geomean	**FY '15**			**3.8**		**1.2**		***4.4***				***12.8***		**80**	**0.08**					**0.10**
T3-100m	8/26/15	1040	0.14	4.3	0.08	1.1	0.14	1.9	3.0	83	0.31	9.7	5.8	82	0.03	34.35	28.7	8.25	5.98	0.26
T3-100m	11/17/15	1108	0.16	4.9	0.51	7.2	0.10	1.4	4.1	116	0.54	16.8	5.9	83	0.06	34.01	27.5	8.25	6.48	0.15
T3-100m	3/1/16	1115	0.18	5.5	0.51	7.2	0.31	4.4	0.3	8	0.51	15.8	6.0	84	0.08	34.77	25.4	8.23	5.96	0.08
T3-100m	5/3/16	1038	0.25	7.8	0.14	1.9	0.06	0.9	0.5	14	0.42	13.1	6.4	89	0.07	34.66	25.8	8.27	6.48	0.21
Geomean	**FY '16**			***5.5***		**3.2**		**1.8**				***13.6***		**84**	**0.06**					**0.16**
T3-100m	7/6/16	1207	0.10	3.1	0.25	3.5	0.35	4.9	0.1	3	0.41	12.7	3.9	54	0.24	34.68	27.2	8.70	6.76	0.20
T3-100m	12/20/16	1131	0.05	1.5	0.15	2.1	0.13	1.8	1.8	51	0.33	10.2	3.1	44	0.04	34.74	25.6	8.28	6.59	0.17
T3-100m	2/28/17	1019	0.00	0.1	0.11	1.6	0.16	2.3	0.3	9	0.29	9.0	3.6	51	0.09	34.67	24.7	8.21	5.51	0.18
T3-100m	5/10/17	1009	0.06	1.8	0.05	0.7	0.12	1.7	0.7	19	0.20	6.2	3.1	44	0.07	34.81	25.9	8.21	4.13	0.07
Geomean	**FY '17**			**1.0**		**1.7**		**2.4**				**9.2**		**48**	**0.09**					**0.14**

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**

NELHA Water Quality Laboratory

Transect 3, Station 4

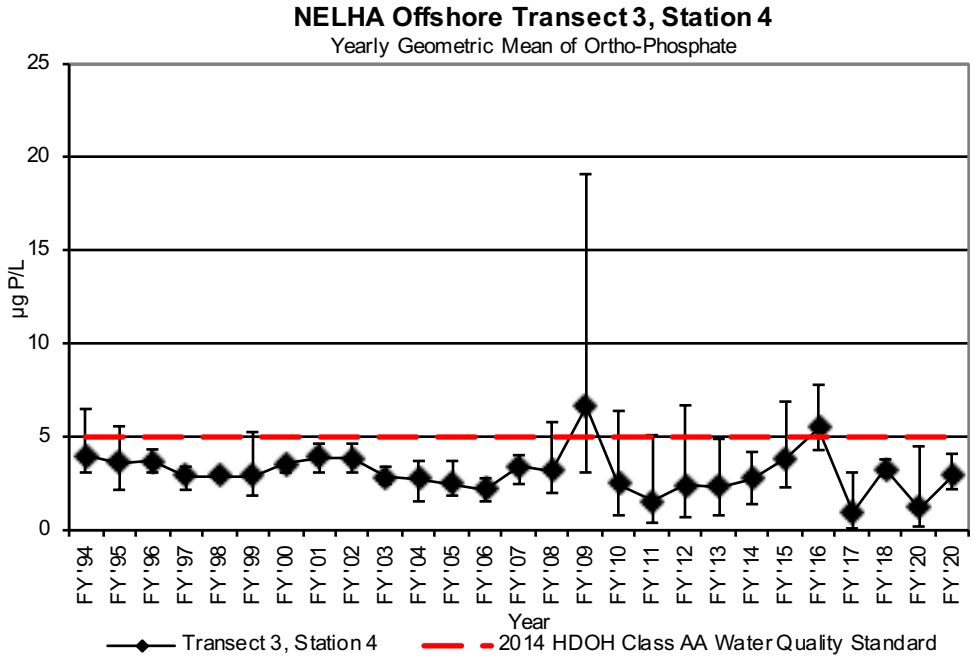
8/3/1993 - 7/16/20

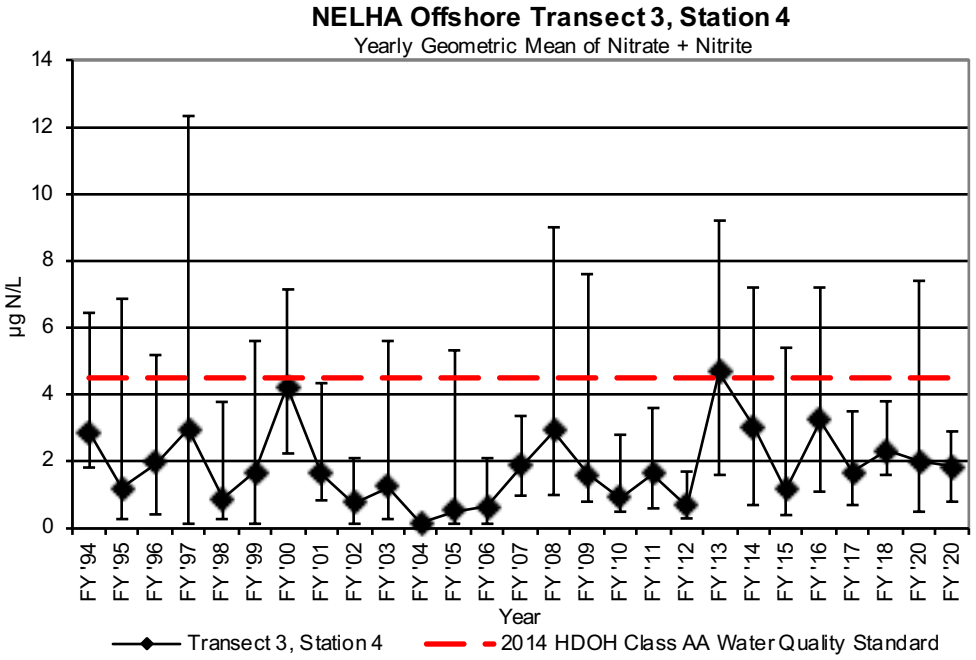
T3-100m	9/27/17	1142	0.12	3.8	0.19	2.7	0.10	1.4	0.7	20	0.40	12.5	3.1	44	0.09	34.79	27.9	8.21	4.22	0.11
T3-100m	11/28/17	1204	0.10	3.1	0.27	3.8	0.44	6.2	1.6	44	0.38	11.7	5.2	73	0.06	35.07	26.3	8.20	4.71	0.13
T3-100m	1/30/18	1152	0.09	2.9	0.13	1.8	0.12	1.7	1.2	34	0.35	10.8	2.8	40	0.07	34.87	24.6	8.17	5.20	0.18
T3-100m	5/16/18	1139	0.11	3.3	0.11	1.6	0.20	2.8	2.2	61	0.35	10.7	1.8	26	0.04	34.70	25.9	8.17	6.17	0.11
Geomean	**FY '18**			**3.3**		**2.3**		**2.5**				**11.4**		**43**	**0.06**					**0.13**
T3-100m	9/24/18	1119	0.01	0.2	0.16	2.3	0.24	3.3	0.0	1	0.33	10.1	2.0	27	0.09	34.82	28.2	8.16	5.33	0.21
T3-100m	11/13/18	1139	0.03	0.8	0.14	1.9	0.19	2.7	0.0	1	0.32	9.8	2.8	39	0.08	34.99	27.6	8.24	4.73	0.09
T3-100m	1/22/19	1124	0.08	2.6	0.04	0.5	0.21	2.9	0.1	3	0.36	11.3	2.3	33	0.06	35.02	25.2	8.21	5.64	0.14
T3-100m	4/16/19	1133	0.15	4.5	0.53	7.4	0.11	1.5	4.8	134	0.40	12.4	2.8	40	0.07	35.52	26.0	8.16	7.21	0.21
Geomean	**FY '19**			**1.2**		**2.0**		**2.5**				**10.9**		**34**	**0.07**					**0.15**
T3-100m	8/13/19	1118	0.07	2.2	0.21	2.9	0.24	3.4	7.3	205	0.32	10.0	2.8	39	0.09	35.56	28.4	8.20	6.44	0.18
T3-100m	11/19/19	1038	0.11	3.3	0.06	0.8	0.09	1.3	0.2	5	0.41	12.8	2.5	35	0.08	34.78	27.7	8.24	6.58	0.21
T3-100m	1/22/20	1104	0.13	4.1	0.16	2.3	0.09	1.3	-0.4	-11	0.40	12.3	2.7	39	0.06	34.94	25.1	8.22	6.66	0.12
T3-100m	6/24/20	1129	0.08	2.5	0.16	2.3	0.09	1.3	1.0	29	0.28	8.8	2.0	28	0.06	35.43	26.2	8.19	6.93	0.24
Geomean	**FY '20**			**2.9**		**1.9**		**1.6**				**10.8**		**35**	**0.07**					**0.18**

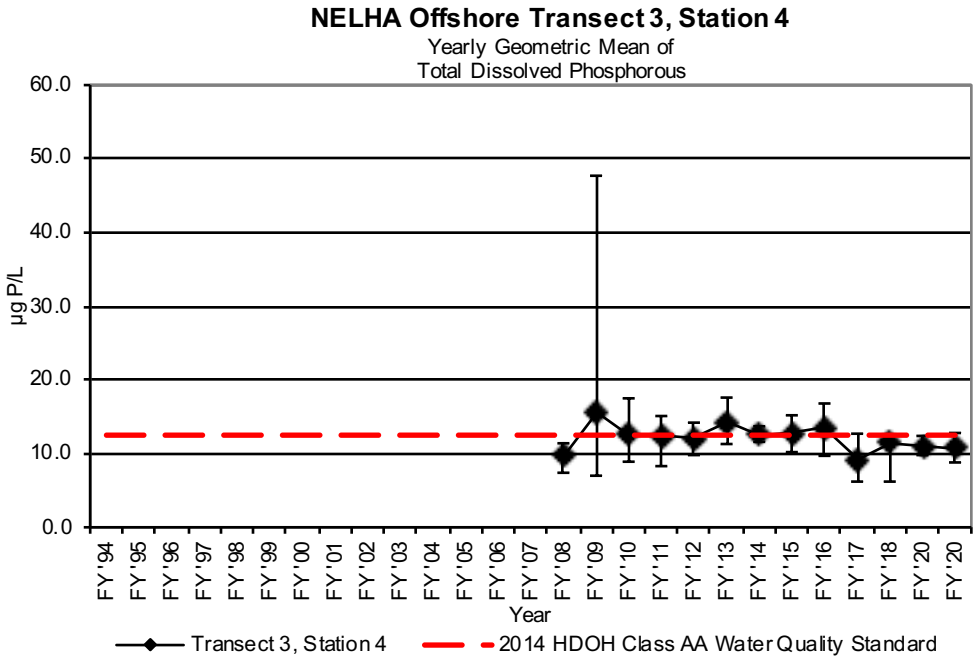
NELHA Water Quality Laboratory

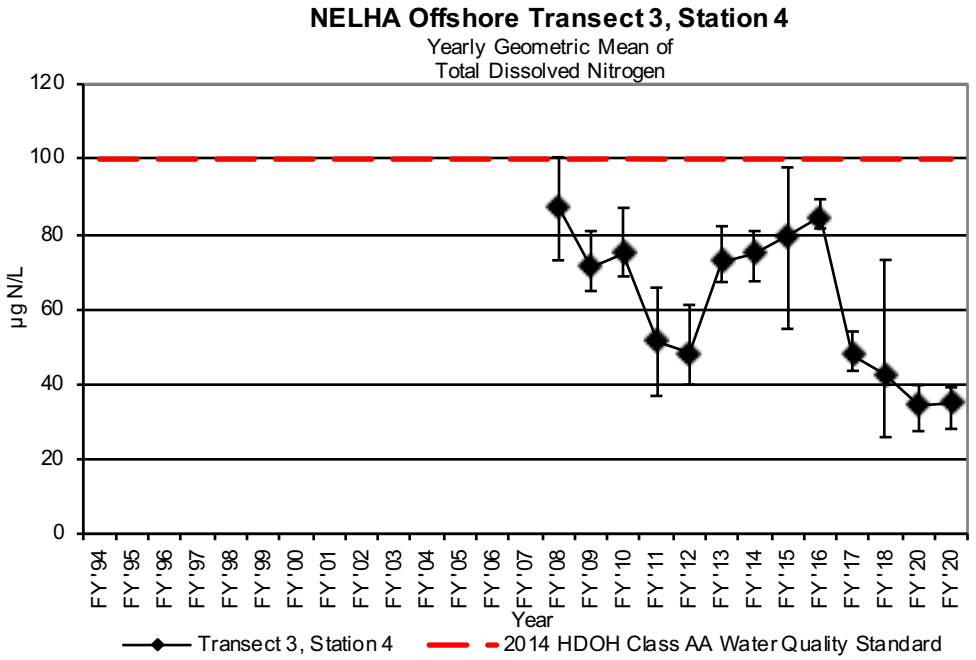
Transect 3, Station 4

8/3/1993 - 7/16/20





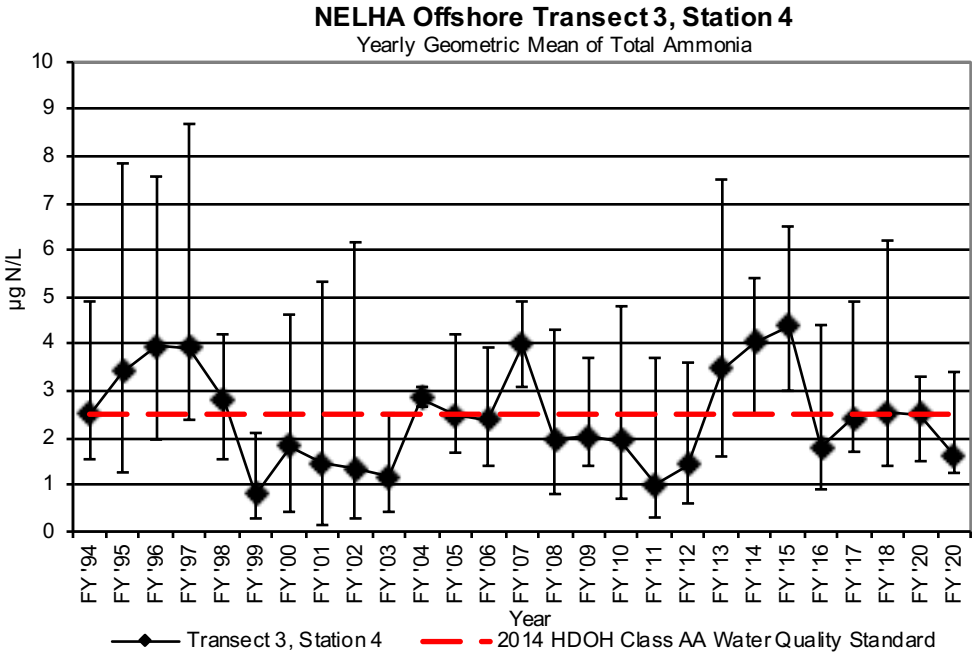


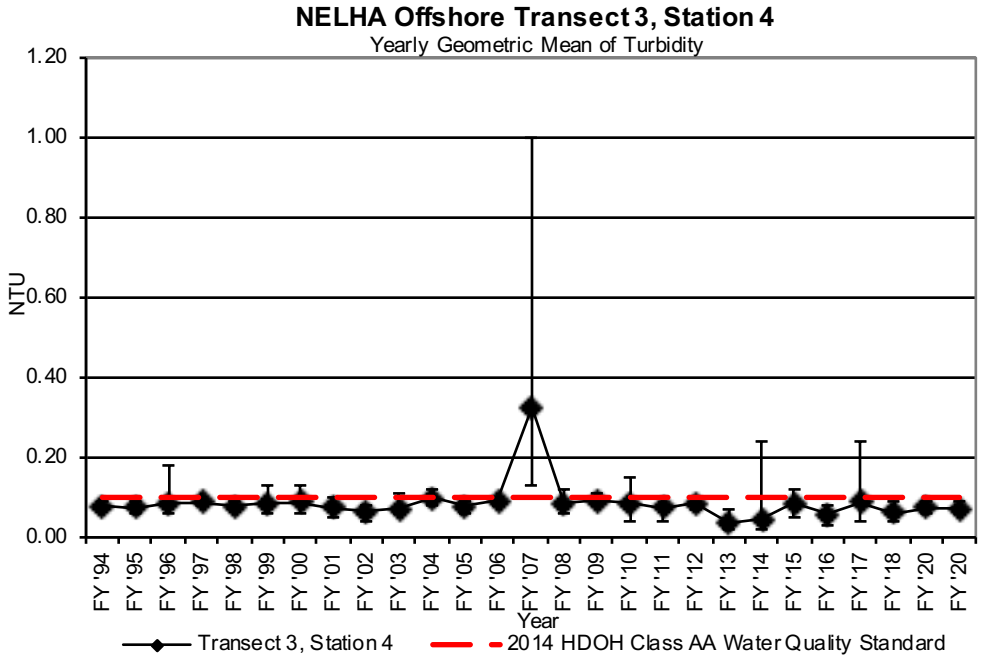


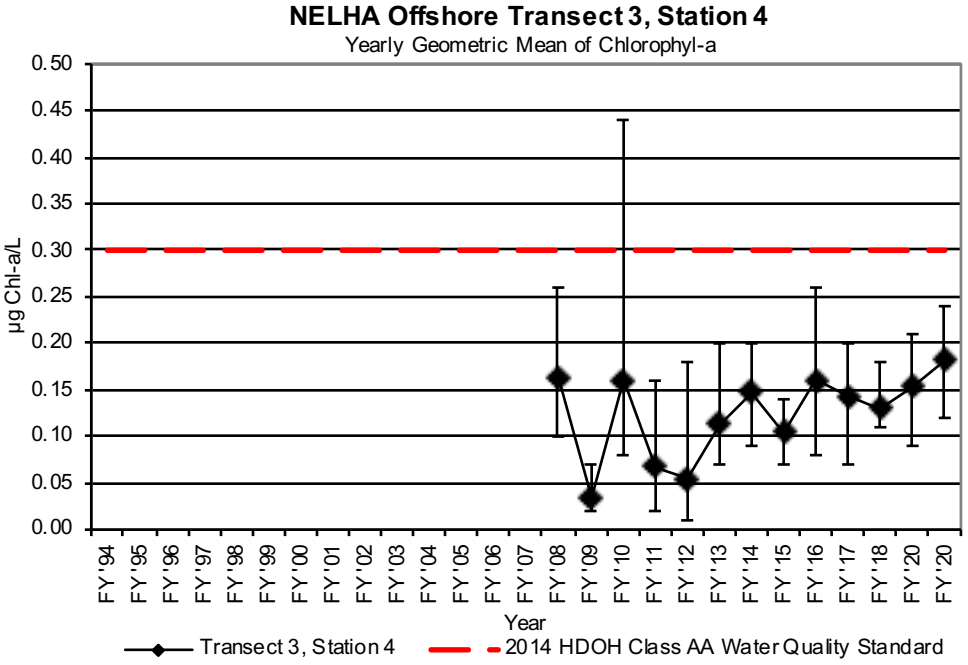
NELHA Water Quality Laboratory

Transect 3, Station 4

8/3/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 3, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-5S-69m	8/3/93	1018	0.12	3.7	0.21	2.9	0.39	5.5	3.0	85					0.12	34.507	26.8			
O3-5S-69m	12/8/93	1036	0.12	3.7	0.08	1.1	0.11	1.5	5.1	144					0.06	34.794	25.7			
O3-5S-69m	3/8/94	1009	0.18	5.6	0.22	3.1	0.21	2.9	2.5	71					0.07	34.225	25.2			
O3-5S-69m	6/13/94	953	0.13	4.0	0.19	2.7	0.06	0.8	7.0	198					0.11	34.532	25.6			
Geomean	**FY '94**			**4.2**		**2.3**		**2.1**							**0.09**					
O3-5S-69m	9/8/94	839	0.07	2.2	0.01	0.1	0.10	1.4	5.9	166					0.07	34.624	27.6			
O3-5S-69m	11/15/94	921	0.16	5.0	0.43	6.0	0.45	6.3	4.3	120					0.08	34.577	26.0			
O3-5S-69m	3/21/95	802	0.18	5.6	0.07	1.0	0.06	0.8	8.7	245					0.10	34.230	24.9			
O3-5S-69m	6/21/95	937	0.08	2.5	0.07	1.0	0.33	4.6	1.5	42					0.06	34.476	26.2			
Geomean	**FY '95**			**3.5**		**0.9**		**2.4**							**0.08**					
O3-5S-69m	9/25/95	1248	0.11	3.4	0.31	4.3	0.20	2.8	5.6	158					0.11	34.447	27.3			
O3-5S-69m	11/13/95	848	0.14	4.3	0.12	1.7	0.48	6.7	2.7	77					0.07	34.419	26.8			
O3-5S-69m	3/11/96	1205	0.12	3.7	0.21	2.9	0.42	5.9	2.2	61					0.06	34.201	25.6			
O3-5S-69m	5/13/96	1109	0.09	2.8	0.02	0.3	0.14	2.0	2.1	58					0.07	34.310	27.4			
Geomean	**FY '96**			**3.5**		**1.6**		***3.8***							**0.08**					
O3-5S-69m	7/30/96	1031	0.10	3.1	0.38	5.3	0.23	3.2	5.4	153					0.08	34.388	28.3			
O3-5S-69m	10/1/96	908	0.07	2.2	0.01	0.1	0.58	8.1	2.3	65					0.07	34.684	27.9			
O3-5S-69m	1/6/97	908	0.07	2.2	0.12	1.7	0.11	1.5	2.3	64					0.09	34.721	25.4			
O3-5S-69m	4/21/97	852	0.09	2.8	0.75	10.5	0.17	2.4	3.0	85					0.08	34.535	26.3			
Geomean	**FY '97**			**2.5**		**1.9**		***3.1***							**0.08**					
O3-5S-69m	8/18/97	848	0.10	3.1	0.27	3.8	0.22	3.1	3.2	90					0.10	34.638	27.0			
O3-5S-69m	10/6/97	903	0.11	3.4	0.01	0.1	0.33	4.6	5.0	140					0.08	34.704	27.4			
O3-5S-69m	3/3/98	907	0.08	2.5	0.06	0.8	0.19	2.7	4.7	132					0.08	35.030	24.9			
O3-5S-69m	5/4/98	905	0.08	2.5	0.09	1.3	0.11	1.5	3.3	91					0.09	35.039	24.1			
Geomean	**FY '98**			**2.8**		**0.9**		***2.8***							**0.09**					
O3-5S-69m	7/6/98	920	0.09	2.8	0.25	3.5	0.02	0.3	8.5	240					0.10	34.961	26.2			
O3-5S-69m	10/5/98	858	0.07	2.2	0.02	0.3	0.09	1.3	1.3	37					0.07	35.123	27.2			
O3-5S-69m	1/13/99	902	0.07	2.2	0.05	0.7	0.22	3.1	4.2	119					0.06	35.098	25.0			
O3-5S-69m	4/13/99	856	0.16	5.0	0.33	4.6	0.12	1.7	3.7	104					0.07	34.641	24.3			
Geomean	**FY '99**			**2.8**		**1.3**		**1.2**							**0.07**					

NELHA Water Quality Laboratory

Transect 3, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-5S-69m	7/13/99	924	0.11	3.4	0.06	0.8	0.06	0.8	4.5	127					0.07	34.907	26.2			
O3-5S-69m	10/25/99	915	0.14	4.3	0.19	2.7	0.31	4.3	21.9	614					0.09	34.950	26.1			
O3-5S-69m	1/4/00	921	0.10	3.1	0.61	8.5	0.35	4.9	3.9	109					0.08	35.063	24.8			
O3-5S-69m	5/16/00	954	0.11	3.4	0.18	2.5	0.09	1.3	2.4	69					0.09	34.704	25.5			
Geomean	**FY '00**			**3.5**		**2.6**		**2.2**							**0.08**					
O3-5S-69m	7/24/00	927	0.10	3.1	0.16	2.2	0.03	0.4	2.8	79					0.06	34.881	27.3			
O3-5S-69m	10/30/00	936	0.12	3.7	0.08	1.1	0.37	5.2	2.7	76					0.08	34.983	27.0			
O3-5S-69m	2/26/01	942	0.13	4.0	0.04	0.6	0.14	2.0	3.6	102					0.07	34.744	24.8			
O3-5S-69m	5/8/01	907	0.13	4.0	0.15	2.1	0.18	2.5	3.1	87					0.07	34.795	24.8			
Geomean	**FY '01**			**3.7**		**1.3**		**1.8**							**0.07**					
O3-5S-69m	8/13/01	930	0.09	2.8	0.05	0.7	0.24	3.4	6.4	179					0.09	34.860	26.7			
O3-5S-69m	10/10/01	911	0.11	3.4	0.07	1.0	0.01	0.1	3.0	85					0.06	34.948	27.4			
O3-5S-69m	3/4/02	1046	0.14	4.3	0.03	0.4	0.02	0.3	2.8	77					0.14	34.645	24.2			
O3-5S-69m	4/16/02	1054	0.12	3.7	0.18	2.5	0.20	2.8	4.6	128					0.11	34.464	25.9			
Geomean	**FY '02**			**3.5**		**0.9**		**0.8**							**0.10**					
O3-5S-69m	7/9/02	948	0.10	3.1	0.24	3.4	0.11	1.5	4.2	117					0.07	34.626	26.5			
O3-5S-69m	10/7/02	1040	0.08	2.5	0.32	4.5	0.25	3.5	2.0	55					0.06	34.937	27.2			
O3-5S-69m	3/10/03	1000	0.08	2.5	0.03	0.4	0.03	0.4	2.1	58					0.07	34.823	24.7			
O3-5S-69m	4/22/03	949	0.09	2.8	0.06	0.8	0.05	0.7	2.0	57					0.08	35.022	25.0			
Geomean	**FY '03**			**2.7**		**1.5**		**1.1**							**0.07**					
O3-5S-69m	8/19/03	1032	0.06	1.9	0.01	0.1	0.20	2.8	1.3	36					0.06	34.841	28.2			
O3-5S-69m	10/30/03	820	0.09	2.8	0.02	0.3	0.20	2.8	2.4	67					0.23	34.805	27.5			
O3-5S-69m	3/17/04	932	0.12	3.7	0.03	0.4	0.21	2.9	1.7	47					n/a	34.346	25.8			
O3-5S-69m	5/20/04	1124	0.12	3.7	0.07	1.0	0.21	2.9	1.3	35					n/a	33.40	26.9			
Geomean	**FY '04**			**2.9**		**0.4**		***2.9***							***0.12***					
O3-5S-69m	9/20/04	1027	0.08	2.5	0.07	1.0	0.34	4.8	1.8	49					0.07	33.73	28.0			
O3-5S-69m	11/17/04	1004	0.06	1.9	0.07	1.0	0.12	1.7	1.6	46					0.08	33.67	27.1			
O3-5S-69m	1/13/05	1123	0.04	1.2	0.26	3.6	0.12	1.7	2.4	67					0.10	34.850	24.9			
O3-5S-69m	4/11/05	1131	0.12	3.7	0.06	0.8	0.20	2.8	2.6	72					0.10	34.471	25.3			
Geomean	**FY '05**			**2.1**		**1.3**		**2.5**							**0.09**					

NELHA Water Quality Laboratory

Transect 3, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O3-5S-69m	7/20/05	1121	0.07	2.2	0.21	2.9	0.15	2.1	4.2	117					0.17	34.648	26.7			
O3-5S-69m	10/11/05	1012	0.05	1.5	0.01	0.1	0.18	2.5	4.2	119					0.18	34.848	27.5			
O3-5S-69m	3/14/06	835	0.09	2.8	0.06	0.8	0.26	3.6	1.4	39					0.09	34.859	24.4			
O3-5S-69m	5/15/06	1040	0.06	1.9	0.07	1.0	0.07	1.0	1.8	51					0.08	34.767	24.8			
Geomean	**FY '06**			**2.0**		**0.8**		**2.1**							***0.12***					
O3-5S-69m	8/14/06	1041	0.12	3.7	0.21	2.9	0.20	2.8	3.0	84					0.11	34.607	26.9			
O3-5S-69m	11/1/06	1045	0.10	3.1	0.09	1.3	0.47	6.6	2.0	57					0.71	34.817	27.4			
O3-5S-69m	2/12/07	1107	0.12	3.7	0.07	1.0	0.37	5.2	1.2	33					0.33	34.443	24.5			
O3-5S-69m	4/9/07	1040	0.11	3.4	0.07	1.0	0.31	4.3	2.4	66					2.64	34.712	25.1			
Geomean	**FY '07**			**3.5**		**1.4**		***4.5***							***0.51***					
T3-500m	9/26/07	1008	0.14	4.2	0.07	1.0	0.11	1.6	2.2	62	0.33	10.3	5.2	72	0.05	34.979	26.9	8.20	6.33	0.04
T3-500m	12/13/07	1220	0.07	2.2	0.07	1.0			2.9	81	0.39	12.1	4.8	68	0.12	34.775	26.2	8.2	6.23	0.43
T3-500m	3/10/08	1115	0.15	4.5	0.05	0.7	0.06	0.8	6.9	193	0.38	11.7	5.8	82	0.14	34.930	25.0	8.18	6.56	0.34
T3-500m	6/5/08	1104	0.06	2.0	0.13	1.8	0.16	2.2	10.4	293	0.24	7.3	5.5	77	0.06	34.7875	25.6	8.13	6.52	0.11
Geomean	**FY '08**			**3.0**		**1.1**		**1.4**				**10.2**		**74**	**0.08**					**0.16**
T3-500m	9/22/08	1207	0.09	2.7	0.03	0.4	0.04	0.6	1.5	41	0.37	11.5	4.8	68	0.07	34.865	27.0	8.04	6.29	0.06
T3-500m	11/17/08	1048	0.14	4.4	0.00	0.01	0.14	1.9	1.6	46	0.37	11.5	5.5	77	0.26	34.966	26.4	8.26	6.03	0.03
T3-500m	2/9/09	1059	0.07	2.3	0.10	1.4	0.12	1.7	2.2	62	0.26	8	5.8	82	0.08	35.106	25.0	8.06	5.97	0.01
T3-500m	4/13/09	1034	0.20	6.1	0.11	1.6	0.56	7.9	3.2	89	0.49	15.1	5.5	77	0.10	34.971	24.0	8.20	6.51	0.04
Geomean	**FY '09**			**3.6**		**0.3**		**2.0**				**11.2**		**76**	***0.11***					**0.03**
T3-500m	9/9/09	1100	0.14	4.4	0.03	0.4	0.07	1	5.9	165	0.56	17.4	5.9	82	0.11	35.24	27.7	8.20	5.33	0.19
T3-500m	11/23/09	1109	0.03	0.8	0.09	1.2	0.01	0.1	22.5	632	0.44	13.5	4.8	67	0.06	35.24	25.4	8.28	6.26	0.09
T3-500m	2/23/10	1109	0.14	4.4	0.01	0.1	0.39	5.5	9.7	271	0.39	12.2	6.4	90	0.08	35.08	24.9	8.18	5.94	0.36
T3-500m	5/25/10	1012	0.03	1	0.01	0.1	0.14	2	1.4	40	0.26	8.1	4.8	67	0.08	35.04	25.2	8.22	6.85	0.05
Geomean	**FY '10**			**2.0**		**0.3**		**1.0**				**12.3**		**76**	**0.08**					**0.13**
T3-500m	8/10/10	1106	0.01	0.2	0.01	0.2	0.05	0.7	1.9	52	0.29	9	2.9	40	0.04	34.91	26.43	8.25	6.58	0.13
T3-500m	11/8/10	1109	0.02	0.7	0.04	0.6	0.02	0.3	5.3	148	0.36	11.2	4.3	60	0.07	35.39	26.71	8.27	6.24	0.07
T3-500m	1/11/11	1109	0.12	3.7	0.01	0.2	0.03	0.4	2.1	59	0.43	13.2	3.9	55	0.04	35.01	25.07	8.22	6.32	0.11
T3-500m	4/26/11	1012	0.15	4.6	0.03	0.4	0.04	0.5	1.3	36	0.46	14.3	4.4	62	0.09	34.92	24.89	8.21	6.41	0.12
Geomean	**FY '11**			**1.2**		**0.3**		**0.5**				**11.7**		**54**	**0.06**					**0.10**

NELHA Water Quality Laboratory

Transect 3, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T3-500m	7/26/11	1146	0.18	5.5	0.01	0.1	0.02	0.3	0.1	3	0.47	14.6	4.4	62	0.09	34.87	26.27	8.26	6.40	0.04
T3-500m	10/18/11	1055	0.01	0.3	0.04	0.5	0.10	1.4	1.6	46	0.36	11.3	4.8	67	0.07	35.05	26.80	8.23	6.78	0.11
T3-500m	1/25/12	1139	0.05	1.6	0.01	0.2	0.02	0.3	1.4	40	0.33	10.3	3.8	54	0.08	35.09	25.08	8.22	6.81	0.07
T3-500m	4/24/12	1202	0.12	3.7	0.04	0.6	0.23	3.2	0.4	12	0.43	13.3	3.3	47	0.05	35.07	24.97	8.22	6.71	0.07
Geomean	**FY '12**			**1.8**		**0.3**		**0.8**				**12.3**		**57**	**0.07**					**0.07**
T3-500m	7/24/12	1102	0.02	0.6	0.09	1.2	0.14	1.9	2.2	61	0.37	11.5	3.7	53	0.12	35.02	26.35	8.26	6.86	0.14
T3-500m	11/27/12	1042	0.06	1.9	0.04	0.6	0.26	3.7	1.3	35	0.36	11.2	4.8	67	0.03	35.23	25.51	8.21	6.87	0.18
T3-500m	1/23/13	1059	0.07	2.3	0.01	0.1	0.26	3.6	1.0	27	0.41	12.8	5.2	73	0.08	35.12	24.90	8.23	6.42	0.08
T3-500m	4/16/13	1106	0.13	4.1	0.09	1.3	0.11	1.6	0.4	12	0.48	14.9	5.5	78	0.02	35.12	24.94	8.22	6.86	0.50
Geomean	**FY '13**			**1.8**		**0.6**		***2.5***				***12.5***		**67**	**0.05**					**0.18**
T3-500m	8/1/13	1015	0.02	0.6	0.08	1.1	0.03	0.4	2.0	57	0.38	11.9	5.0	70	0.13	35.25	26.6	8.26	6.82	0.07
T3-500m	10/29/13	1049	0.09	2.7	0.09	1.3	0.37	5.2	1.6	45	0.47	14.6	5.9	83	0.02	35.28	27.2	8.22	6.23	0.17
T3-500m	2/4/14	1101	0.09	2.9	0.06	0.8	0.29	4.1	1.5	42	0.37	11.5	3.7	52	0.02	35.12	25.3	8.20	6.25	0.11
T3-500m	5/6/14	1103	0.12	3.8	0.06	0.8	0.50	7.0	1.1	32	0.42	13.1	6.0	84	0.03	34.85	26.2	8.20	6.06	0.16
Geomean	**FY '14**			**2.1**		**1.0**		***2.8***				***12.7***		**71**	**0.04**					**0.12**
T3-500m	8/5/14	1051	0.19	5.8	0.03	0.4	0.51	7.2	0.5	15	0.50	15.5	4.9	69	0.09	34.93	27.1	8.22	5.86	0.10
T3-500m	11/17/14	1227	0.16	4.9	0.01	0.1	0.40	5.6	0.0	0	0.46	14.4	6.4	90	0.05	34.96	27.4	8.22	6.70	0.16
T3-500m	3/3/15	1103	0.05	1.7	0.01	0.1	0.14	2.0	0.1	3	0.33	10.2	6.9	96	0.10	34.79	25.7	8.19	6.97	0.04
T3-500m	6/16/15	1314	0.08	2.5	0.10	1.4	0.43	6.0	2.0	57	0.11	3.5	7.9	111	0.07	34.29	27.0	8.22	6.04	0.14
Geomean	**FY '15**			**3.3**		**0.3**		***4.7***				**9.4**		**90**	**0.07**					**0.10**
T3-500m	8/26/15	1048	0.16	5.0	0.06	0.8	0.22	3.1	1.1	32	0.20	6.3	4.5	64	0.02	34.47	28.7	8.23	5.99	0.13
T3-500m	11/17/15	1121	0.12	3.8	0.39	5.5	0.32	4.5	4.3	120	0.53	16.3	5.6	78	0.06	34.01	27.5	8.24	6.43	0.13
T3-500m	3/1/16	1123	0.15	4.6	0.35	4.9	0.42	5.9	0.3	9	0.49	15.3	5.2	73	0.08	34.78	25.5	8.24	5.73	0.09
T3-500m	5/3/16	1045	0.18	5.7	0.13	1.8	0.08	1.1	0.1	2	0.46	14.2	7.2	101	0.09	34.65	26.2	8.26	6.45	0.22
Geomean	**FY '16**			**4.7**		**2.5**		***3.1***				**12.2**		**78**	**0.05**					**0.14**
T3-500m	7/6/16	1214	0.06	2.0	0.26	3.6	0.19	2.7	0.4	12	0.42	13.1	4.6	65	0.10	34.78	27.3	8.30	6.61	0.26
T3-500m	12/20/16	1141	0.04	1.3	0.09	1.3	0.09	1.2	1.6	45	0.33	10.1	2.7	38	0.03	34.75	25.7	8.27	5.33	0.09
T3-500m	2/28/17	1027	0.02	0.5	0.02	0.3	0.11	1.6	0.1	2	0.27	8.5	4.3	60	0.11	34.70	24.7	8.22	5.54	0.10
T3-500m	5/10/17	1017	0.05	1.6	0.01	0.1	0.17	2.4	0.0	0	0.22	6.7	3.0	42	0.11	34.81	26.0	8.22	4.10	0.04
Geomean	**FY '17**			**1.2**		**0.6**		**1.9**				**9.3**		**50**	**0.08**					**0.10**

NELHA Water Quality Laboratory

Transect 3, Station 5

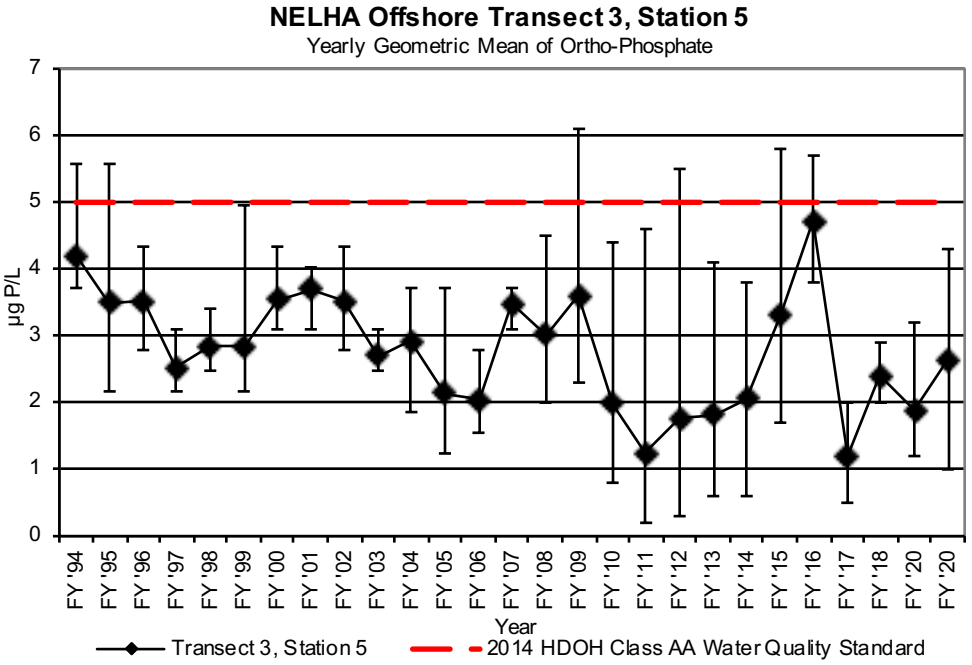
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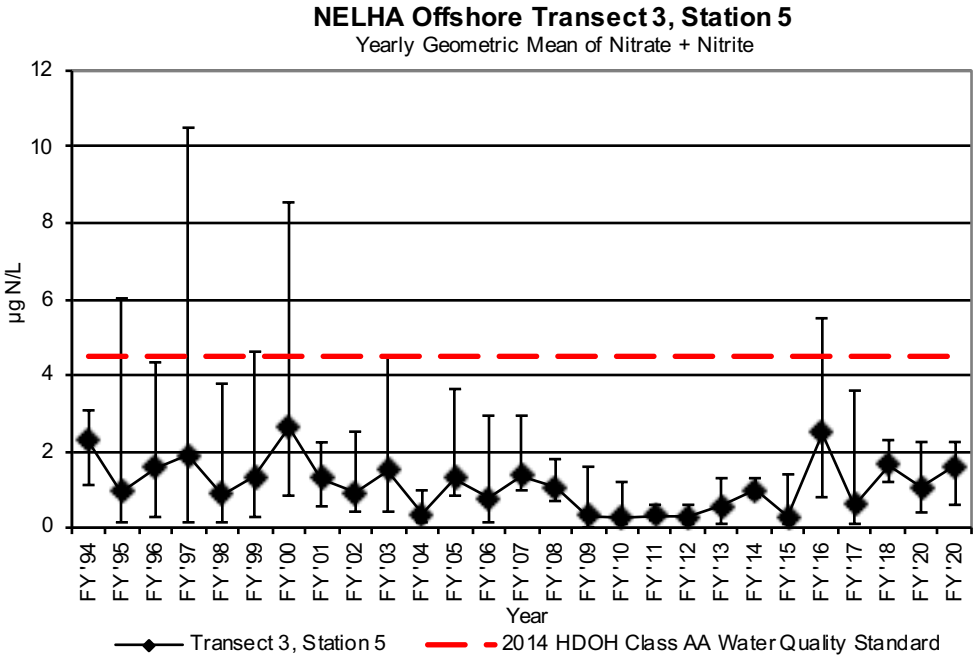
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T3-500m	9/27/17	1047	0.09	2.9	0.09	1.2	0.09	1.3	0.2	7	0.40	12.4	3.1	44	0.07	34.81	28.2	8.23	4.25	0.09
T3-500m	11/28/17	1211	0.08	2.4	0.11	1.5	0.39	5.5	0.9	25	0.34	10.5	2.9	40	0.05	35.11	26.6	8.21	4.73	0.08
T3-500m	1/30/18	1202	0.08	2.4	0.13	1.8	0.14	2.0	1.4	39	0.36	11.2	2.8	40	0.07	34.87	24.6	8.17	5.23	0.08
T3-500m	5/16/18	1146	0.06	2.0	0.16	2.3	0.09	1.3	1.0	29	0.35	10.9	3.0	41	0.03	34.66	26.4	8.17	5.95	0.07
Geomean	**FY '18**			**2.4**		**1.7**		**2.1**				**11.2**		**41**	**0.05**					**0.08**
T3-500m	9/24/18	1128	0.04	1.2	0.16	2.3	0.19	2.7	0.0	1	0.34	10.4	2.7	38	0.07	34.82	27.8	8.16	5.10	0.15
T3-500m	11/13/18	1147	0.04	1.2	0.09	1.3	0.12	1.7	0.0	1	0.33	10.3	4.5	64	0.06	35.01	27.7	8.24	4.55	0.06
T3-500m	1/22/19	1133	0.09	2.7	0.07	1.0	0.06	0.8	0.1	3	0.36	11.1	2.1	30	0.06	34.99	25.1	8.22	5.65	0.08
T3-500m	4/16/19	1141	0.10	3.2	0.03	0.4	0.14	2.0	1.7	49	0.36	11.3	2.0	28	0.03	35.59	26.1	8.17	7.08	0.15
Geomean	**FY '19**			**1.9**		**1.0**		**1.6**				**10.8**		**38**	**0.05**					**0.10**
T3-500m	8/13/19	1128	0.03	1.0	0.16	2.3	0.39	5.5	1.5	41	0.28	8.6	1.8	25	0.08	35.66	28.4	8.20	6.48	0.18
T3-500m	11/19/19	1045	0.10	3.1	0.04	0.6	0.09	1.3	0.1	3	0.36	11.2	1.6	23	0.06	34.80	27.7	8.24	6.45	0.13
T3-500m	1/22/20	1113	0.12	3.6	0.16	2.3	0.09	1.3	0.7	19	0.37	11.6	1.9	27	0.04	34.95	25.1	8.22	6.65	0.10
T3-500m	6/24/20	1138	0.14	4.3	0.16	2.3	0.09	1.3	2.0	57	0.22	6.8	1.8	26	0.05	35.43	26.7	8.18	6.64	0.39
Geomean	**FY '20**			**2.6**		**1.6**		**1.8**				**9.3**		**25**	**0.06**					**0.17**

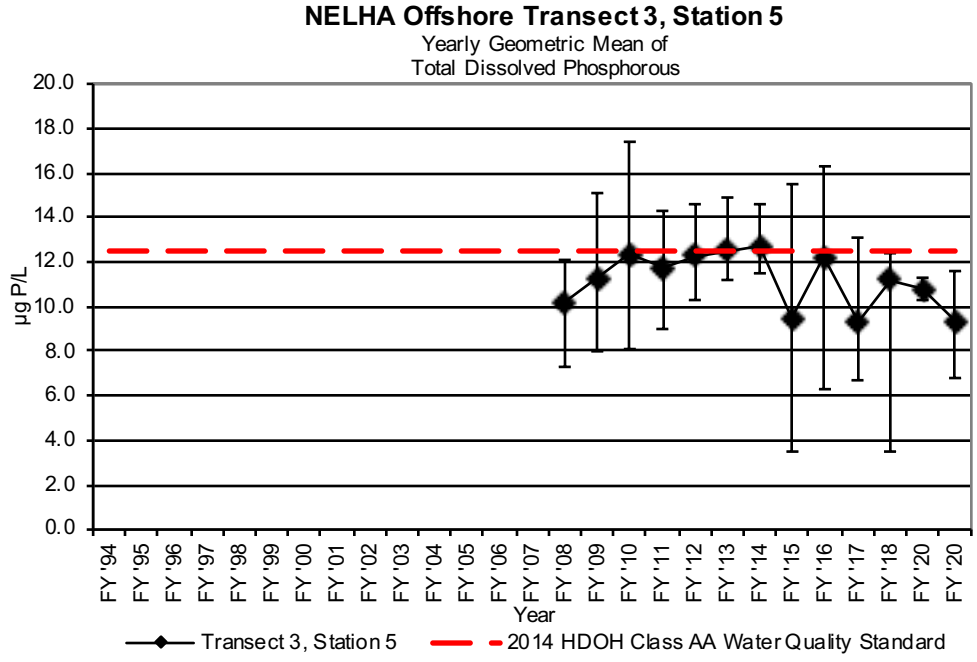
NELHA Water Quality Laboratory

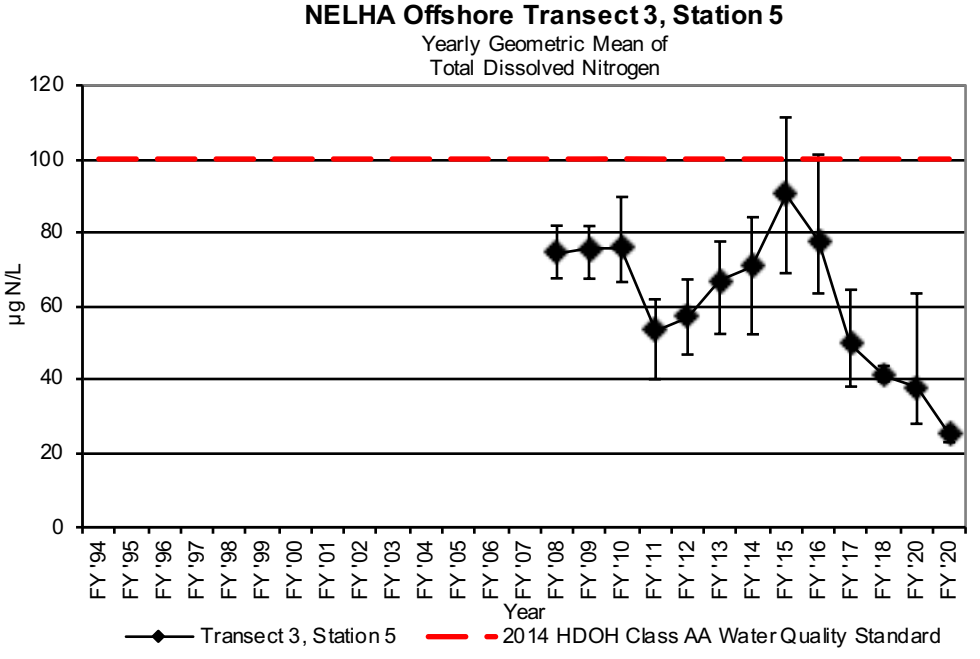
Transect 3, Station 5

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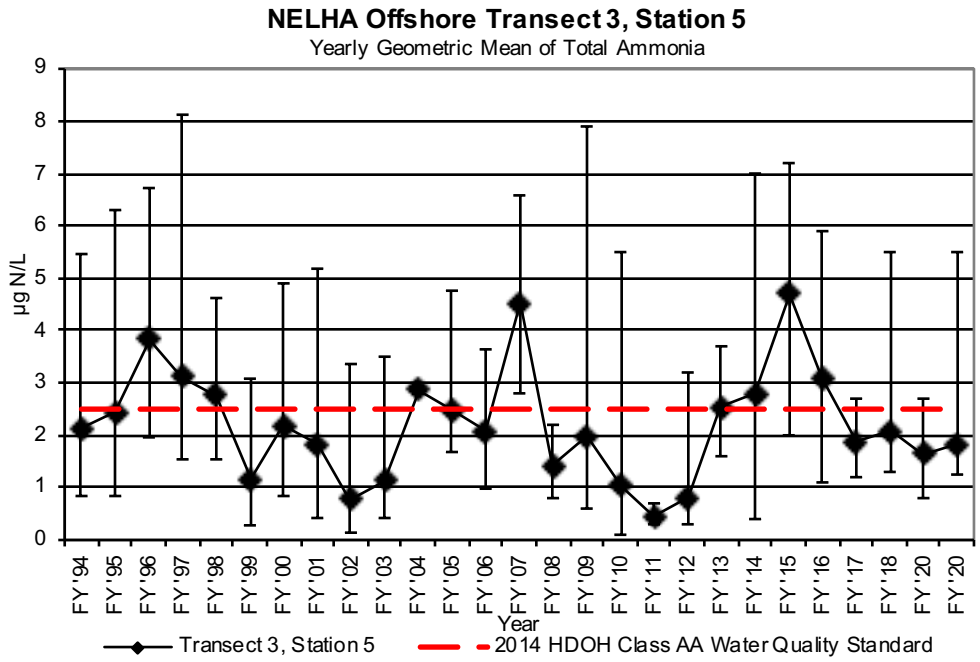


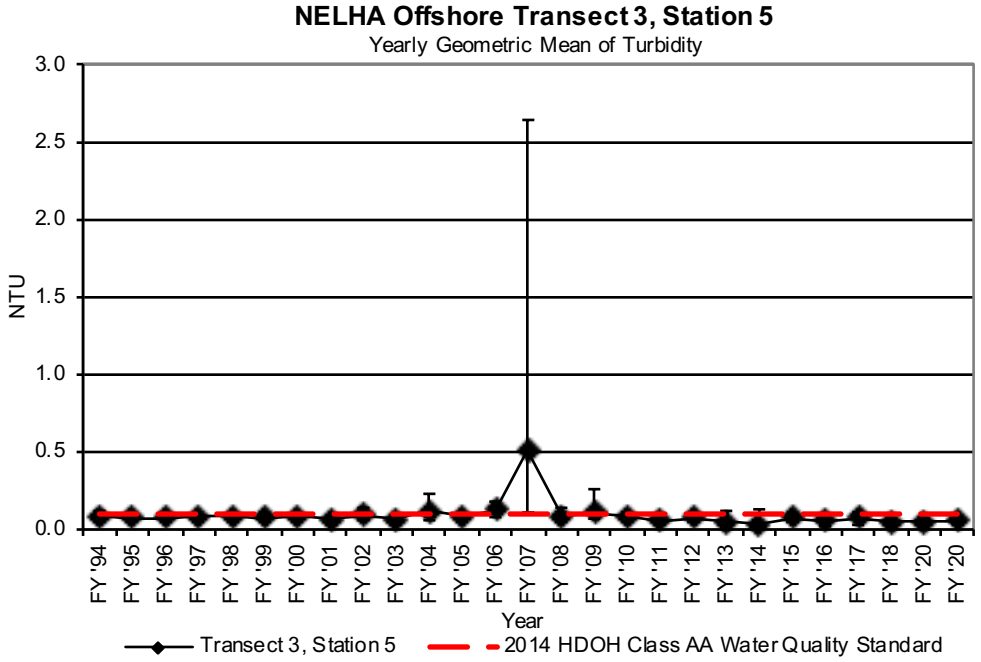


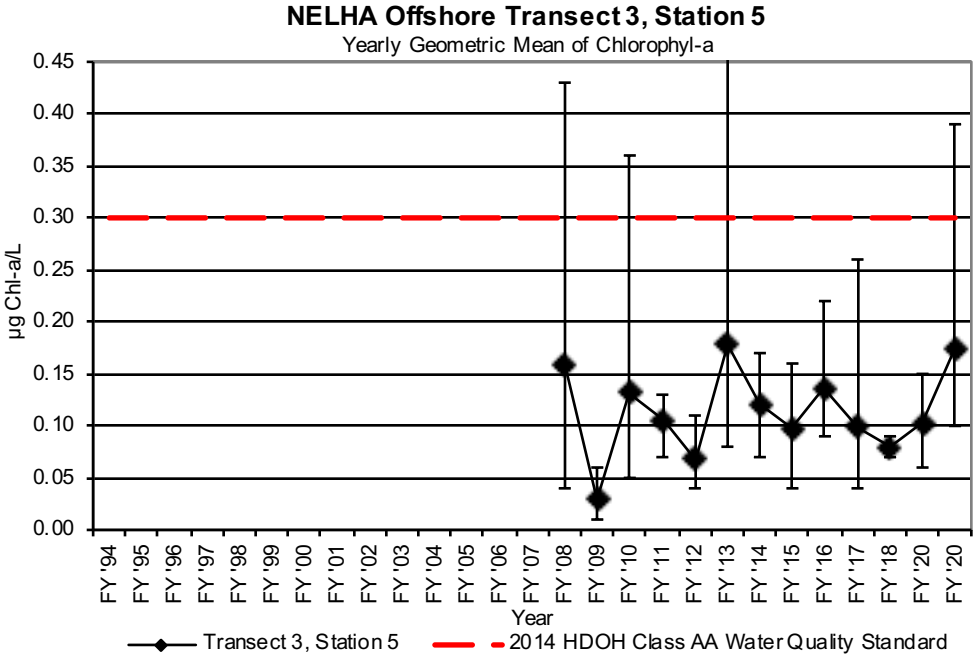
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Transect 3, Station 5

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Transect 4

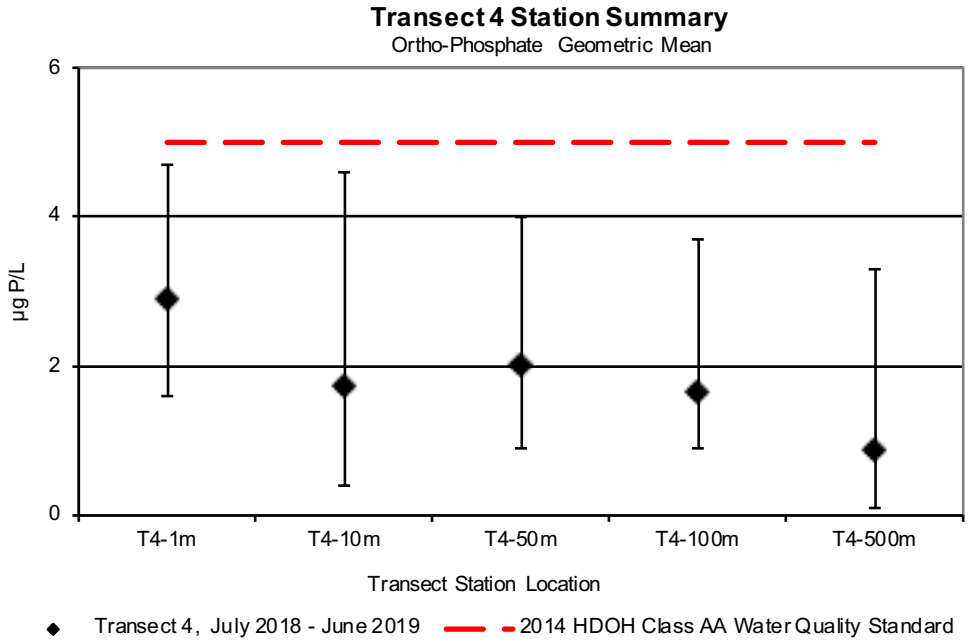
July 2018 - June 2019

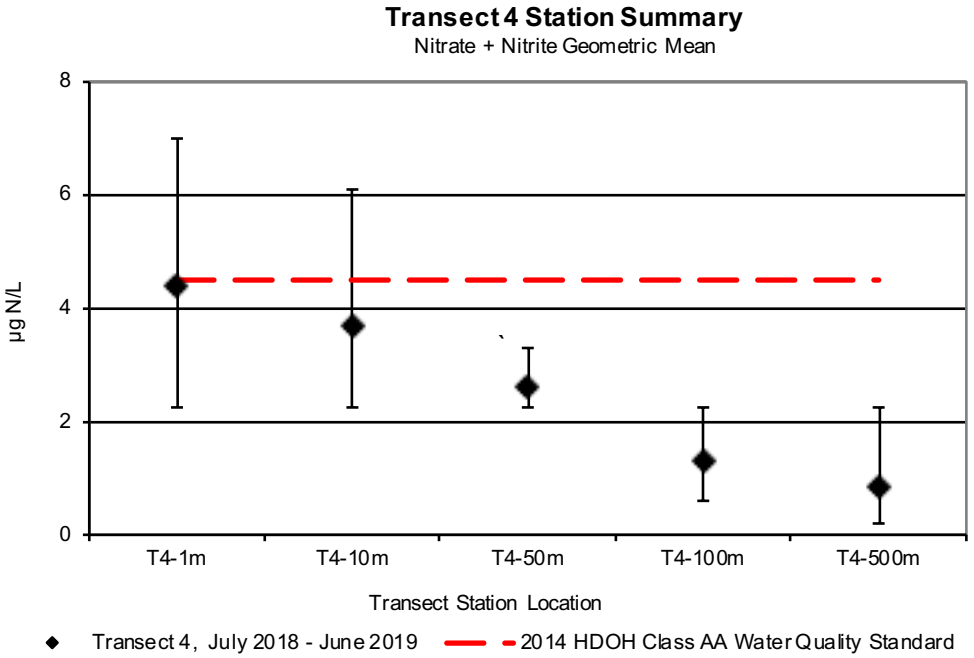
SITE ID	DATE	TIME	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T4-1m	9/26/18	1156	0.5	Flood	0.07	2.1	0.16	2.3	0.33	4.6	0.2	5	0.32	9.9	2.2	31	0.13	34.64	27.6	8.15	4.91	0.14
T4-1m	11/14/18	1015	1.7	High	0.05	1.6	0.29	4.1	0.31	4.3	0.1	3	0.33	10.3	6.9	97	0.08	34.90	27.3	8.19	6.09	0.15
T4-1m	1/23/19	959	0.8	Ebb	0.15	4.7	0.50	7.0	0.15	2.1	2.8	79	0.41	12.6	2.7	38	0.11	34.85	24.9	8.16	5.24	0.22
T4-1m	4/17/19	950	0.0	Flood	0.15	4.5	0.41	5.7	0.24	3.3	2.1	59	0.41	12.6	2.6	36	0.06	34.70	25.7	8.11	7.13	0.14
Geomean	**FY '19**				0.09	**2.9**	0.31	**4.4**	0.2	***3.4***			0.4	**11.3**	3.2	**45**	**0.09**					**0.16**
T4-10m	9/26/18	1201	0.5	Flood	0.01	0.4	0.16	2.3	0.23	3.2	0.0	1	0.36	11.3	3.7	51	0.08	34.71	27.5	8.40	4.79	0.17
T4-10m	11/14/18	1020	1.7	High	0.04	1.3	0.30	4.2	0.25	3.5	0.1	2	0.34	10.5	5.7	80	0.06	34.91	27.3	8.18	6.04	0.13
T4-10m	1/23/19	1003	0.8	Ebb	0.12	3.7	0.23	3.2	0.16	2.3	2.7	76	0.42	13.0	3.0	42	0.11	34.89	24.9	8.17	5.13	0.22
T4-10m	4/17/19	954	0.0	Flood	0.15	4.6	0.44	6.1	0.29	4.0	2.2	62	0.41	12.7	2.9	40	0.09	34.75	25.7	8.10	7.04	0.13
Geomean	**FY '19**				0.06	**1.7**	0.26	**3.7**	0.23	***3.2***			0.38	**11.8**	3.7	**51**	**0.08**					**0.16**
T4-50m	9/26/18	1208	0.5	Flood	0.03	0.9	0.16	2.3	0.42	5.9	0.5	13	0.33	10.1	2.0	28	0.09	34.72	27.7	8.15	4.70	0.18
T4-50m	11/14/18	1024	1.7	High	0.06	1.8	0.24	3.3	0.25	3.5	0.1	3	0.34	10.6	3.9	55	0.08	34.91	27.3	8.17	6.07	0.14
T4-50m	1/23/19	1008	0.8	Ebb	0.08	2.6	0.16	2.3	0.08	1.1	0.8	24	0.36	11.2	3.5	49	0.15	34.92	24.9	8.18	5.11	0.15
T4-50m	4/17/19	1000	0.0	Flood	0.13	4.0	0.20	2.8	0.11	1.5	1.3	37	0.38	11.8	2.7	37	0.03	34.76	25.7	8.10	6.91	0.10
Geomean	**FY '19**				0.07	**2.0**	0.19	**2.6**	0.17	**2.4**			0.35	**10.9**	2.9	**41**	**0.08**					**0.14**
T4-100m	9/26/18	1220	0.5	Flood	0.03	1.0	0.16	2.3	0.38	5.3	0.3	10	0.36	11.0	2.3	33	0.09	34.74	27.6	8.14	4.71	0.19
T4-100m	11/14/18	1029	1.7	High	0.03	0.9	0.14	2.0	0.19	2.7	3.2	89	0.35	10.8	4.1	58	0.08	34.91	27.3	8.19	6.11	0.16
T4-100m	1/23/19	1019	0.8	Ebb	0.07	2.3	0.04	0.6	0.14	2.0	3.0	83	0.36	11.1	2.5	35	0.06	34.94	24.9	8.19	5.02	0.22
T4-100m	4/17/19	1005	0.0	Flood	0.12	3.7	0.08	1.1	0.20	2.8	7.9	222	0.38	11.7	2.4	34	0.02	34.75	25.8	8.10	6.70	0.10
Geomean	**FY '19**				0.05	**1.7**	0.09	**1.3**	0.21	***3.0***			0.36	**11.1**	2.8	**39**	**0.05**					**0.16**
T4-500m	9/26/18	1229	0.5	Flood	0.00	0.1	0.16	2.3	0.27	3.8	0.0	1	0.36	11.1	3.05	43	0.08	34.77	27.8	8.14	4.61	0.11
T4-500m	11/14/18	1040	1.7	High	0.03	0.8	0.13	1.8	0.26	3.7	0.0	1	0.35	10.8	3.33	47	0.07	34.91	27.4	8.19	6.07	0.12
T4-500m	1/23/19	1028	0.8	Ebb	0.07	2.1	0.01	0.2	0.06	0.9	0.4	10	0.36	11.0	2.42	34	0.06	34.95	25.0	8.19	5.05	0.19
T4-500m	4/17/19	1012	0.0	Flood	0.11	3.3	0.04	0.6	0.33	4.6	0.9	26	0.38	11.7	2.16	30	0.04	34.75	25.8	8.10	6.67	0.10
Geomean	**FY '19**				0.03	**0.9**	0.06	**0.8**	0.20	***2.8***			0.36	**11.1**	2.7	**38**	**0.06**					**0.13**

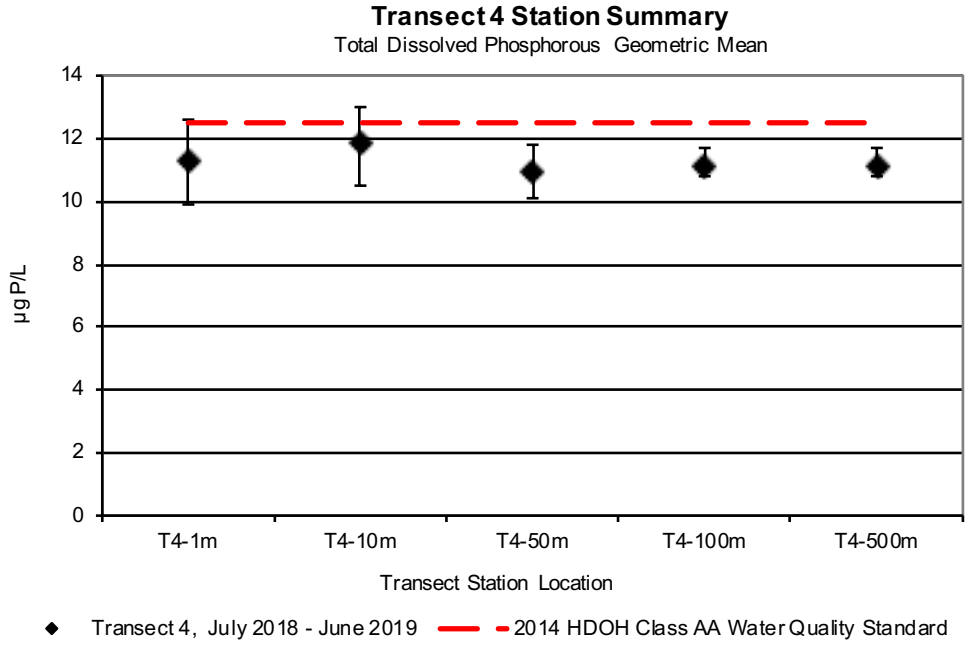
NELHA Water Quality Laboratory

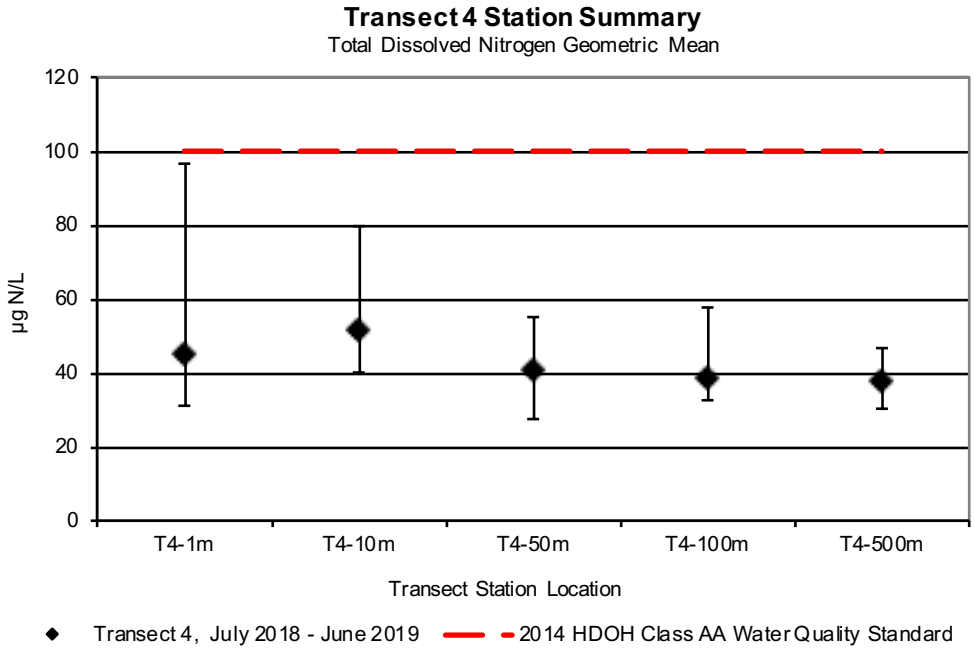
Transect 4

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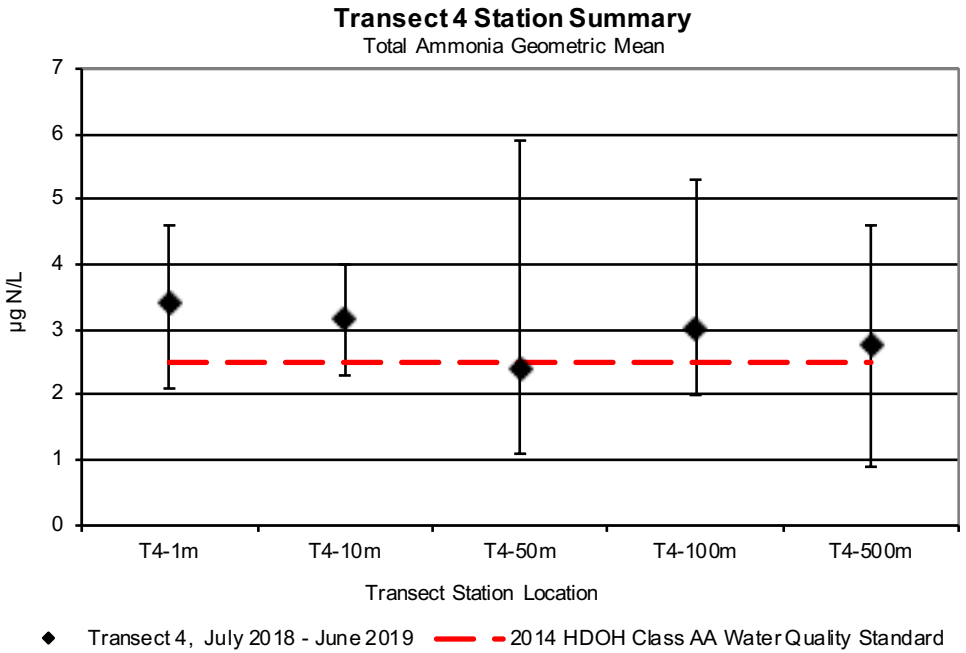


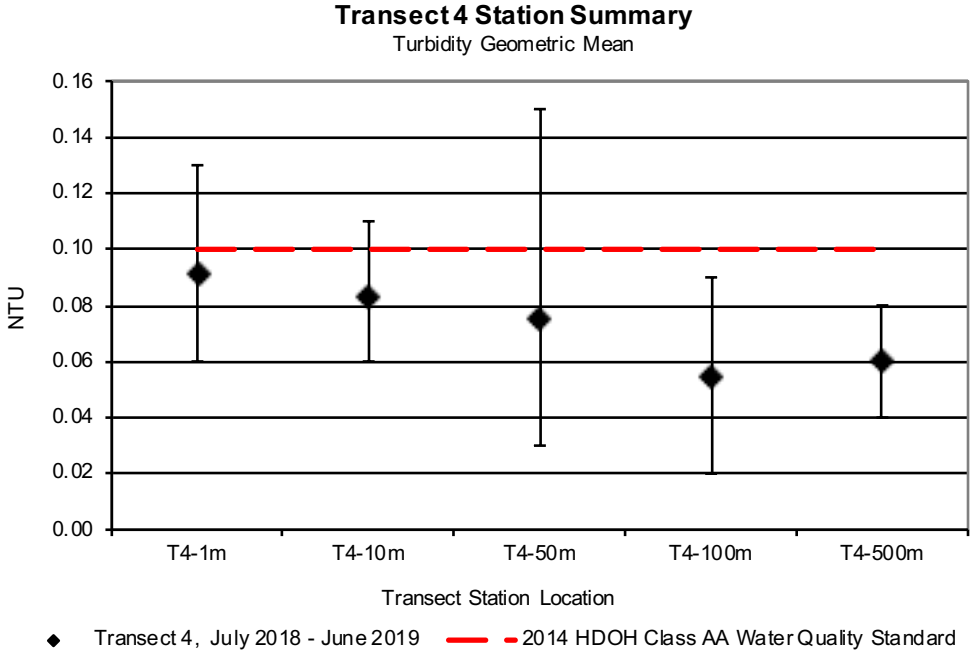


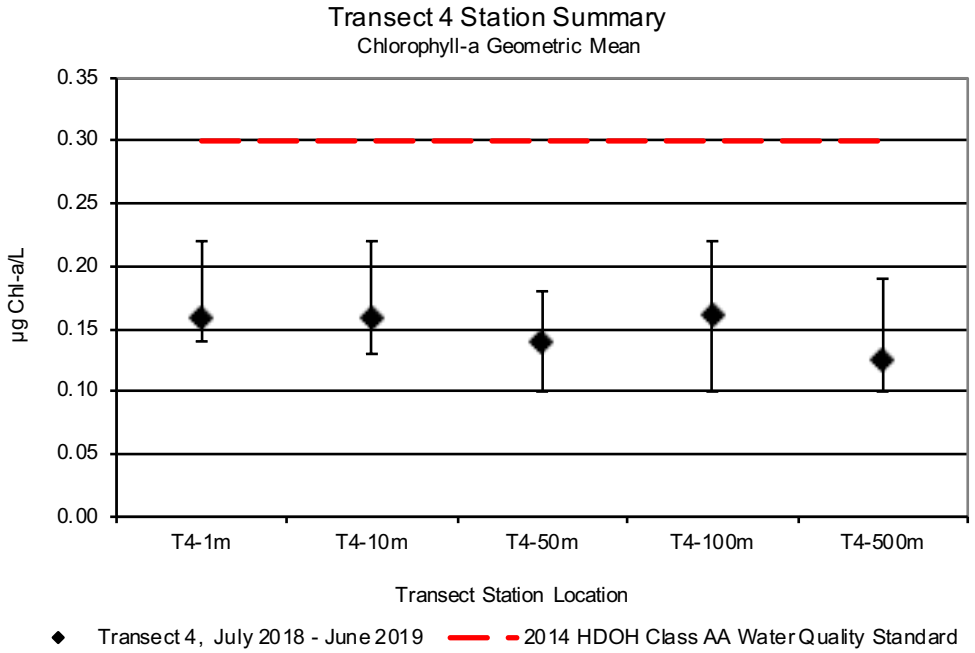
NELHA Water Quality Laboratory

Transect 4

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NELHA Water Quality Laboratory

Transect 4

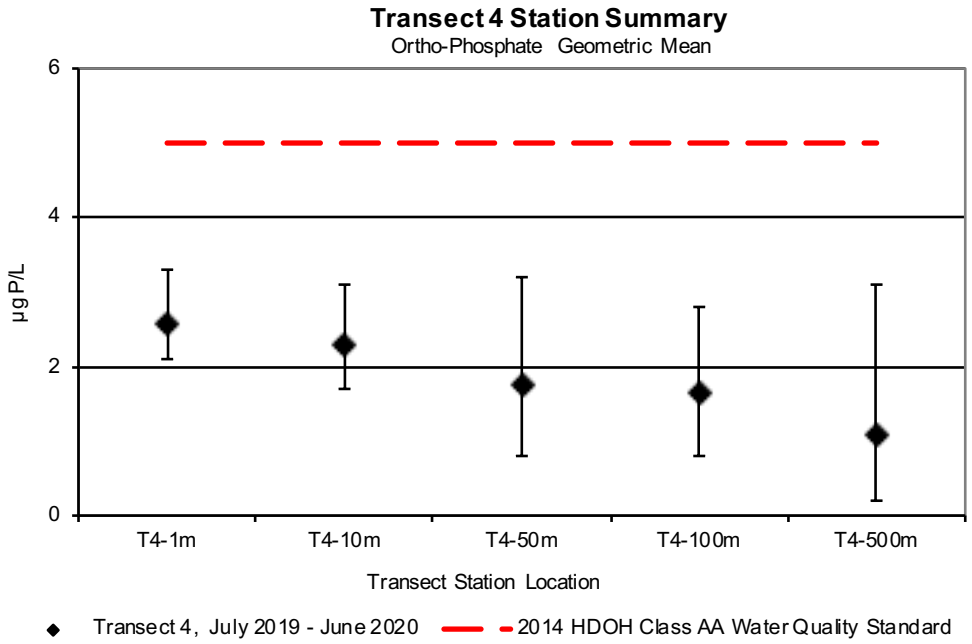
July 2018 - June 2019

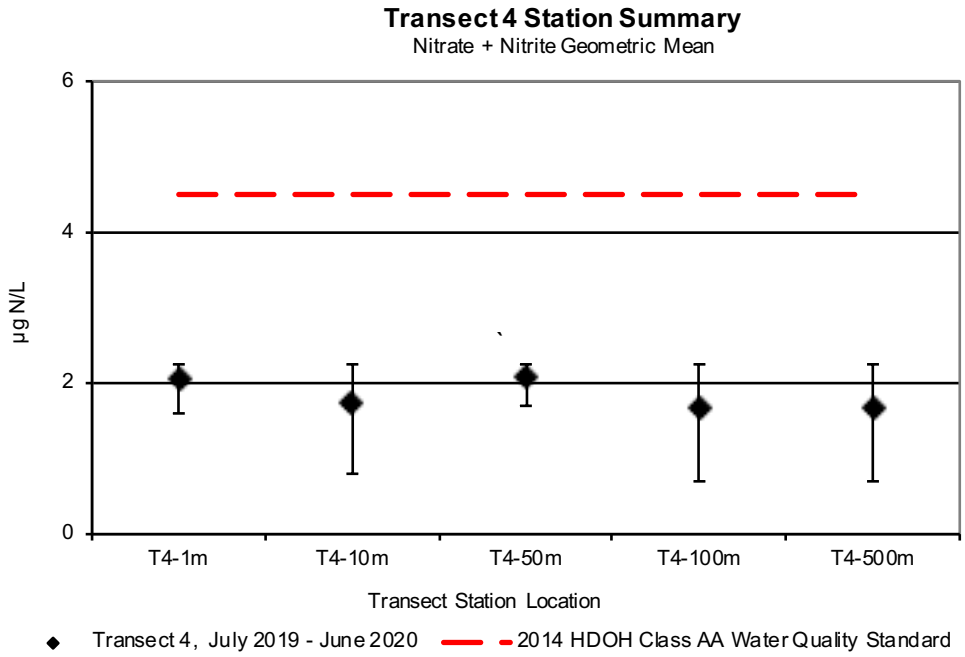
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T4-1m	8/15/19	929	0.0	Low	0.07	2.1	0.16	2.3	0.25	3.5	2.9	81	0.31	9.5	1.9	27	0.12	35.17	28.2	8.16	6.74	0.20
T4-1m	11/19/19	1101	1.7	High	0.11	3.3	0.11	1.6	0.19	2.6	0.2	5	0.39	12.1	2.5	35	0.13	34.43	27.7	8.28	6.61	0.16
T4-1m	1/23/20	943	0.4	Low	0.09	2.8	0.16	2.3	0.09	1.3	0.0	0	0.38	11.8	2.0	28	0.08	34.95	25.0	8.20	6.74	0.10
T4-1m	6/25/20	908	0.5	Ebb	0.07	2.2	0.16	2.3	0.40	5.6	0.8	23	0.30	9.2	2.3	33	0.10	35.45	26.1	8.19	6.84	0.20
Geomean	**FY '20**				0.08	**2.6**	0.15	**2.1**	0.2	***2.8***			0.3	**10.6**	2.2	**30**	***0.11***					**0.16**
T4-10m	8/15/19	934	0.0	Low	0.05	1.7	0.16	2.3	0.17	2.4	2.7	76	0.32	9.9	2.1	30	0.11	35.19	28.2	8.21	6.68	0.15
T4-10m	11/19/19	1108	1.7	High	0.10	3.1	0.06	0.8	0.34	4.7	0.3	7	0.39	12	2.4	34	0.08	34.87	27.7	8.24	6.54	0.16
T4-10m	1/23/20	946	0.4	Low	0.08	2.6	0.16	2.3	0.09	1.3	0.0	0	0.39	12.1	2.9	41	0.06	34.95	25.0	8.20	6.75	0.10
T4-10m	6/25/20	913	0.5	Ebb	0.06	2.0	0.16	2.3	0.61	8.5	0.4	12	0.26	8.1	2.6	37	0.07	35.46	26.2	8.17	6.77	0.22
Geomean	**FY '20**				0.07	**2.3**	0.12	**1.7**	0.24	***3.3***			0.34	**10.4**	2.5	**35**	**0.08**					**0.15**
T4-50m	8/15/19	942	0.0	Low	0.03	0.8	0.16	2.3	0.20	2.8	2.0	55	0.29	9.1	2.0	28	0.08	35.24	28.2	8.2	6.62	0.17
T4-50m	11/19/19	1116	1.7	High	0.10	3.2	0.12	1.7	0.45	6.3	0.3	7	0.39	12.2	2.7	38	0.08	34.87	27.7	8.22	6.49	0.12
T4-50m	1/23/20	956	0.4	Low	0.08	2.5	0.16	2.3	0.09	1.25	0.0	0	0.39	12.0	2.6	36	0.06	34.98	25.0	8.25	6.70	0.10
T4-50m	6/25/20	917	0.5	Ebb	0.05	1.5	0.16	2.3	0.52	7.3	0.4	12	0.28	8.6	2.9	40	0.08	35.47	26.2	8.16	6.73	0.20
Geomean	**FY '20**				0.06	**1.8**	0.15	**2.1**	0.25	***3.6***			0.33	**10.3**	2.5	**35**	**0.07**					**0.14**
T4-100m	8/15/19	946	0.0	Low	0.03	0.8	0.16	2.3	0.22	3.1	3.2	89	0.29	9.1	2.4	33	0.11	35.25	28.2	8.19	6.57	0.19
T4-100m	11/19/19	1121	1.7	High	0.09	2.8	0.05	0.7	0.73	10.2	0.1	4	0.38	11.9	2.5	35	0.07	34.85	27.7	8.23	6.46	0.11
T4-100m	1/23/20	1001	0.4	Low	0.07	2.1	0.16	2.3	0.09	1.3	1.7	47	0.39	12.1	2.1	30	0.04	34.98	25.0	8.22	6.78	0.10
T4-100m	6/25/20	923	0.5	Ebb	0.05	1.6	0.16	2.3	0.29	4.1	0.3	9	0.28	8.7	1.5	21	0.06	35.47	26.2	8.17	6.64	0.15
Geomean	**FY '20**				0.05	**1.7**	0.12	**1.7**	0.25	***3.6***			0.33	**10.3**	2.1	**29**	**0.07**					**0.13**
T4-500m	8/15/19	952	0.0	Low	0.01	0.2	0.16	2.3	0.17	2.4	1.4	41	0.23	7.2	1.40	20	0.06	35.29	28.3	8.20	6.57	0.16
T4-500m	11/19/19	1128	1.7	High	0.10	3.1	0.05	0.7	0.60	8.4	0.2	6	0.40	12.3	2.39	34	0.06	34.81	27.8	8.22	6.45	0.12
T4-500m	1/23/20	1009	0.4	Low	0.07	2.1	0.16	2.3	0.09	1.3	0.0	0	0.38	11.9	2.21	31	0.05	34.99	25.1	8.22	6.68	0.07
T4-500m	6/25/20	930	0.5	Ebb	0.04	1.1	0.16	2.3	0.26	3.7	0.2	6	0.24	7.4	2.50	35	0.05	35.50	26.3	8.18	6.60	0.14
Geomean	**FY '20**				0.04	**1.1**	0.12	**1.7**	0.22	***3.1***			0.30	**9.4**	2.1	**29**	**0.05**					**0.12**

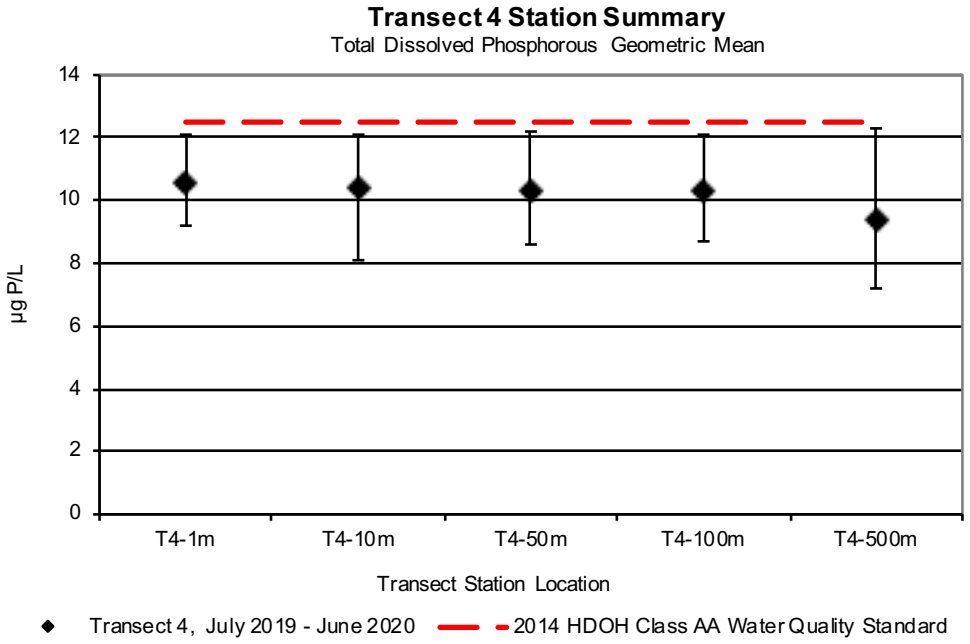
NELHA Water Quality Laboratory

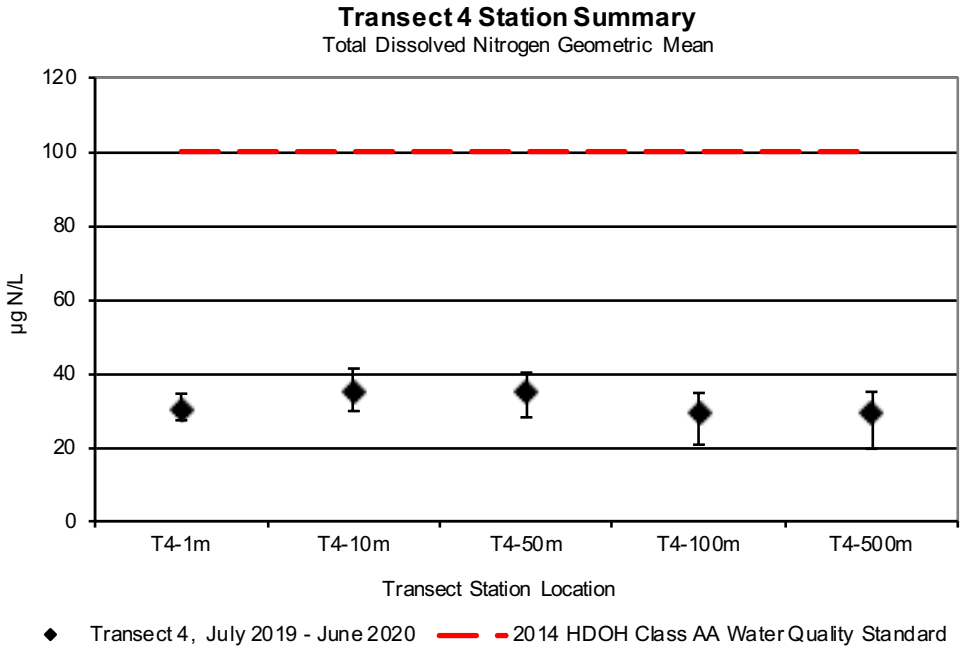
Transect 4

July 2018 - June 2019





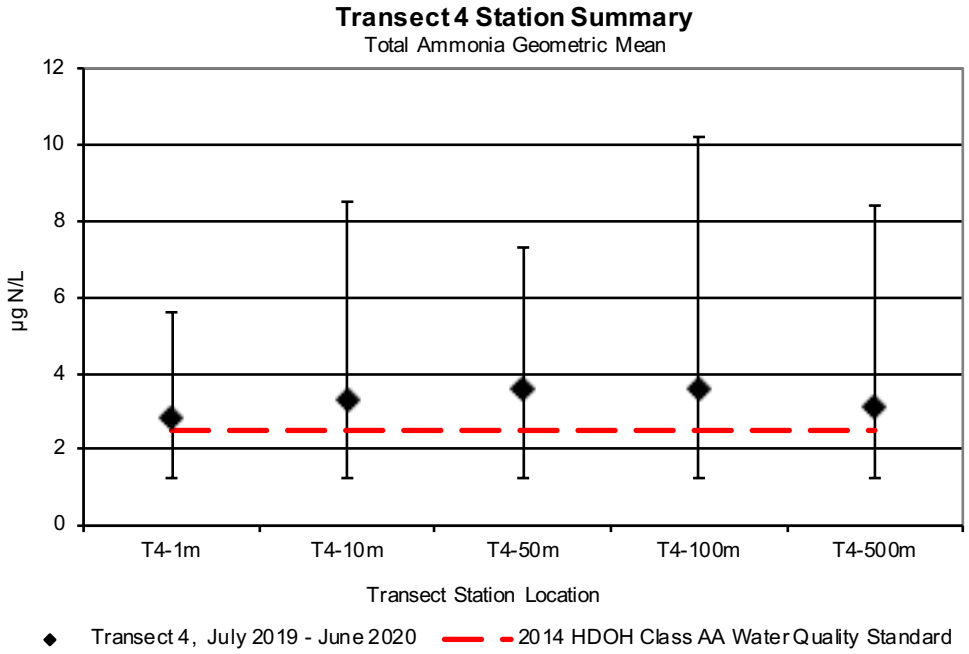


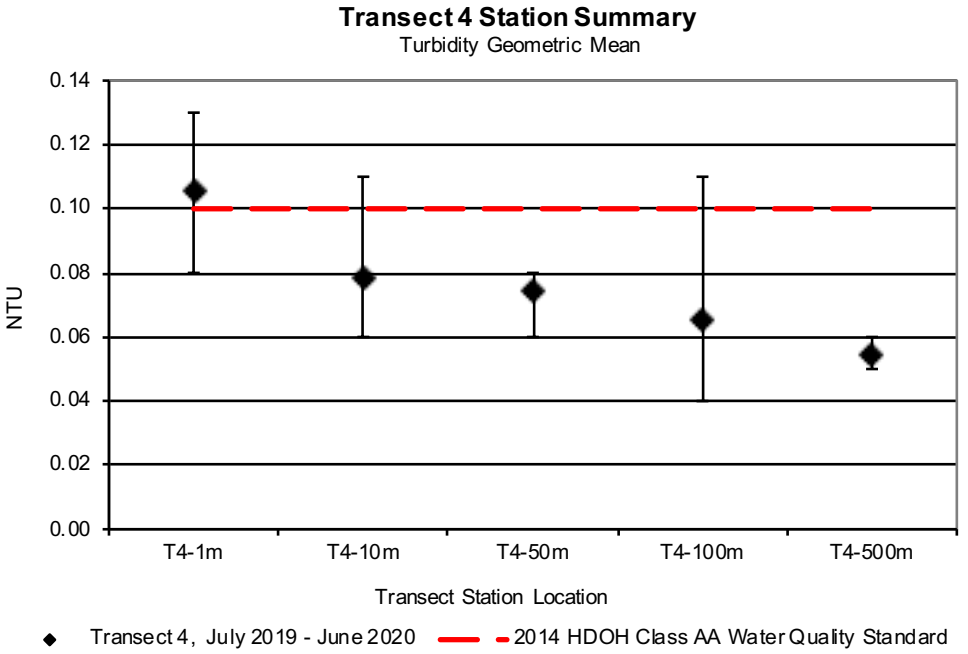


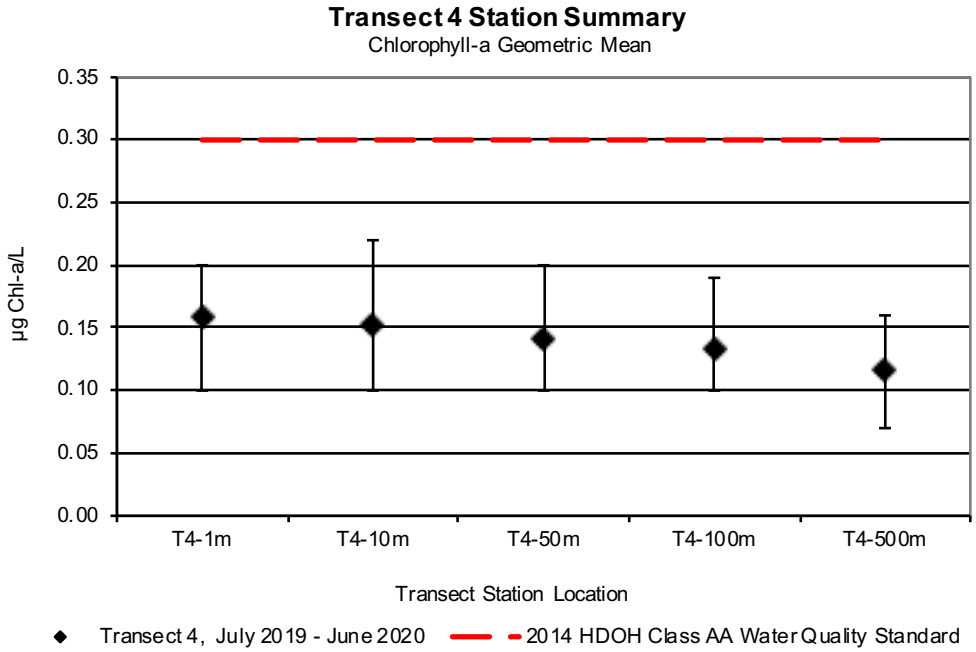
NELHA Water Quality Laboratory

Transect 4

July 2018 - June 2019







NELHA Water Quality Laboratory

Transect 4, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O4-1S-8m	8/3/93	926	0.12	3.7	0.15	2.1	0.42	5.9	2.6	74	0.30	9.3	7.7	108	0.37	11.46	1.45	0.08	34.46	26.9	8.25	6.94			
O4-1S-8m	12/8/93	928	0.09	2.8	0.12	1.7	0.20	2.8	2.8	78	0.25	7.7	5.6	78	0.25	7.74	1.28	0.07	34.79	25.6	8.26	6.76			
O4-1S-8m	3/8/94	903	0.20	6.2	0.54	7.6	0.26	3.6	4.4	124	0.38	11.8	5.6	78	0.39	12.08	1.26	0.08	34.17	25.2	8.24	7.06	0.08	2	1
O4-1S-8m	6/13/94	908	0.15	4.6	0.45	6.3	0.14	2.0	4.9	138	0.32	9.9	6.8	96	0.32	9.91	1.25	0.12	34.51	25.5	8.22	7.10	0.07	<1	<1
Geomean	**FY '94**			**4.2**		**3.6**		***3.3***				**9.6**		**89**				**0.09**					**0.07**		
O4-1S-8m	9/15/94	912	0.10	3.1	0.15	2.1	0.09	1.3	3.3	94	0.29	9.0	5.7	80	0.30	9.29	1.17	0.26	34.61	27.6	8.27	6.72	0.04	<1	<1
O4-1S-8m	11/15/94	822	0.17	5.3	0.48	6.7	0.45	6.3	5.4	153	0.36	11.2	5.8	81	0.39	12.08	1.02	0.09	34.54	26.0	8.24	6.83	0.19	3	1
O4-1S-8m	3/22/95	1208	0.21	6.5	0.39	5.5	0.43	6.0	4.9	138	0.34	10.5	5.4	75	0.34	10.53	1.02	0.11	34.15	25.3	8.26	7.34	0.20	<1	<1
O4-1S-8m	6/21/95	831	0.11	3.4	0.16	2.2	0.34	4.8	2.4	68	0.29	9.0	5.9	83	0.29	8.98	1.01	0.07	34.45	26.2	8.21	6.85	0.05	<1	<1
Geomean	**FY '95**			**4.4**		**3.6**		***3.9***				**9.9**		**80**				***0.12***					**0.09**		
O4-1S-8m	9/28/95	800	0.10	3.1	0.19	2.7	0.33	4.6	3.1	88	0.28	8.7	10.4	146	0.28	8.67	1.31	0.16	34.60	27.2	8.29	6.78	0.08	2	<1
O4-1S-8m	11/14/95	831	0.11	3.4	0.09	1.3	0.60	8.4	2.7	76	0.31	9.6	5.5	77	0.31	9.60	1.24	0.07	34.36	26.7	8.27	6.65	0.03	<1	<1
O4-1S-8m	3/12/96	908	0.17	5.3	0.35	4.9	0.53	7.4	3.4	94	0.32	9.9	5.2	73	0.32	9.91	0.99	0.06	34.16	25.1	8.22	7.03	0.16	<1	<1
O4-1S-8m	5/14/96	847	0.13	4.0	0.57	8.0	0.19	2.7	4.0	111	0.29	9.0	5.4	76	0.32	9.91	0.94	0.09	34.28	27.0	8.21	7.23	0.17	<1	3
Geomean	**FY '96**			**3.9**		**3.4**		***5.3***				**9.3**		**89**				**0.09**					**0.09**		
O4-1S-8m	7/31/96	930	0.07	2.2	0.07	1.0	0.33	4.6	2.1	59	0.25	7.7	5.1	72	0.25	7.74	1.07	0.07	34.50	27.9	8.26	6.66	0.11	<1	2
O4-1S-8m	10/2/96	858	0.06	1.9	0.07	1.0	0.16	2.2	3.5	97	0.29	9.0	4.4	62	0.29	8.98	1.09	0.09	34.65	28.1	8.22	6.49	0.09	<1	<1
O4-1S-8m	1/7/97	912	0.12	3.7	0.52	7.3	0.25	3.5	3.8	105	0.34	10.5	4.9	68	0.34	10.53	1.04	0.08	34.65	25.3	8.27	7.06	0.01	<1	1
O4-1S-8m	4/28/97	926	0.17	5.3	0.73	10.2	0.42	5.9	4.5	125	0.60	18.6	5.6	78	0.75	23.23	1.05	0.10	34.41	26.6	8.27	6.86	0.15	<1	<1
Geomean	**FY '97**			**3.0**		**2.9**		***3.8***				**10.8**		**70**				**0.08**					**0.06**		
O4-1S-8m	8/19/97	914	0.11	3.4	0.47	6.6	0.24	3.4	4.9	136	0.34	10.5	4.8	68	0.35	10.84	1.05	0.09	34.63	26.9	8.38	7.00	0.11	<1	<1
O4-1S-8m	10/7/97	1157	0.13	4.0	0.20	2.8	0.43	6.0	3.1	88	0.33	10.2	4.7	66	0.33	10.22	1.04	0.12	34.74	27.7	8.45	6.81	0.11	<1	<1
O4-1S-8m	3/4/98	916	0.09	2.8	0.15	2.1	0.18	2.5	3.0	83	0.28	8.7	4.9	68	0.31	9.60	1.01	0.09	35.02	24.9	8.23	6.83	0.04	<1	<1
O4-1S-8m	5/5/98	929	0.09	2.8	0.18	2.5	0.15	2.1	3.5	99	0.35	10.8	5.3	75	0.35	10.84	0.98	0.08	35.05	24.1	8.22	7.01	0.06	<1	<1
Geomean	**FY '98**			**3.2**		**3.1**		***3.2***				**10.0**		**69**				**0.09**					**0.07**		
O4-1S-8m	7/7/98	946	0.12	3.7	0.41	5.7	0.03	0.4	5.9	166	0.38	11.8	5.3	75	0.40	12.39	1.10	0.10	34.94	26.3	8.21	6.68	0.13	<1	<1
O4-1S-8m	10/6/98	905	0.11	3.4	0.26	3.6	0.06	0.8	2.4	67	0.38	11.8	5.9	82	0.43	13.32	1.07	0.08	35.10	27.1	8.22	7.23	0.13	<1	<1
O4-1S-8m	1/19/99	926	0.07	2.2	0.01	0.1	0.15	2.1	8.7	245	0.36	11.2	4.8	67	0.35	10.84	1.14	0.06	35.15	25.1	8.22	6.91	0.16	<1	<1
O4-1S-8m	4/13/99	1014	0.15	4.6	0.36	5.0	0.12	1.7	8.0	224	0.44	13.6	4.5	63	0.41	12.70	1.01	0.09	34.65	24.3	8.21	n/a	0.13	<1	<1
Geomean	**FY '99**			**3.4**		**2.0**		**1.1**				**12.0**		**71**				**0.08**					**0.14**		

NELHA Water Quality Laboratory

Transect 4, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O4-1S-8m	8/16/99	940	0.11	3.4	0.18	2.5	0.42	5.9	1.7	48	0.35	10.8	4.1	58	0.36	11.15	1.09	0.13	34.87	26.1	8.25	7.06	0.15	<1	1
O4-1S-8m	10/25/99	1035	0.13	4.0	0.28	3.9	0.27	3.8	3.9	109	0.37	11.5	5.3	74	0.37	11.46	1.06	0.11	34.93	26.2	8.28	7.02	0.11	<1	1
O4-1S-8m	1/12/00	946	0.10	3.1	0.03	0.4	0.26	3.6	1.9	52	0.30	9.3	5.1	72	0.30	9.29	0.98	0.05	35.13	24.7	8.26	6.84	0.11	<1	<1
O4-1S-8m	5/16/00	918	0.19	5.9	0.52	7.3	0.10	1.4	6.7	187	0.35	10.8	6.1	86	0.37	11.46	0.97	0.16	34.60	25.1	8.24	7.10	0.22	<1	<1
Geomean	**FY '00**			**4.0**		**2.3**		***3.3***				**10.6**		**72**				***0.10***					**0.14**		
O4-1S-8m	7/25/00	943	0.10	3.1	0.14	2.0	0.34	4.8	4.5	127	0.37	11.5	5.2	73	0.36	11.15	1.04	0.08	34.86	26.8	8.28	6.71	0.12	<1	2
O4-1S-8m	10/31/00	937	0.10	3.1	0.08	1.1	0.27	3.8	12.9	363	0.36	11.2	5.1	71	0.37	11.46	1.11	0.07	34.96	27.0	8.25	6.57	0.10	<1	3
O4-1S-8m	3/6/01	928	0.16	5.0	0.49	6.9	0.08	1.1	3.9	110	0.39	12.1	6.5	91	0.40	12.39	1.12	0.07	34.70	24.8	8.20	6.59	0.10	<1	<1
O4-1S-8m	5/8/01	1022	0.13	4.0	0.35	4.9	0.19	2.7	6.3	177	0.37	11.5	5.1	71	0.37	11.46	1.03	0.09	34.77	25.0	8.21	6.88	0.11	<1	<1
Geomean	**FY '01**			**3.7**		**2.9**		***2.7***				**11.5**		**76**				**0.08**					**0.11**		
O4-1S-8m	8/13/01	1032	0.10	3.1	0.01	0.1	0.51	7.1	2.6	72	0.34	10.5	5.3	74	0.34	10.53	1.06	0.09	34.89	26.6	8.23	6.77	0.12	<1	<1
O4-1S-8m	10/30/01	943	0.17	5.3	0.52	7.3	0.06	0.8	5.4	152	0.40	12.4	5.7	80	0.42	13.01	1.00	0.09	34.98	26.8	8.21	8.91	0.19	<1	<1
O4-1S-8m	3/4/02	1006	0.11	3.4	0.20	2.8	0.02	0.3	9.3	262	0.38	11.8	5.4	76	0.40	12.39	1.00	0.09	34.67	24.1	8.23	6.73	0.14	<1	<1
O4-1S-8m	4/16/02	1004	0.20	6.2	0.49	6.9	0.28	3.9	5.8	162	0.41	12.7	5.9	83	0.41	12.70	0.98	0.13	34.40	25.8	8.19	6.54	0.12	<1	<1
Geomean	**FY '02**			**4.3**		**2.1**		**1.6**				**11.8**		**78**				**0.10**					**0.14**		
O4-1S-8m	7/9/02	1117	0.12	3.7	0.07	1.0	0.15	2.1	2.6	72	0.36	11.2	5.2	73	0.36	11.15	1.08	0.12	34.66	26.8	8.22	6.70	0.09	<1	<1
O4-1S-8m	10/7/02	959	0.11	3.4	0.14	2.0	0.21	2.9	3.1	88	0.32	9.9	5.3	74	0.32	9.91	1.03	0.06	34.95	27.1	8.25	6.74	0.09	<1	1
O4-1S-8m	3/10/03	1138	0.09	2.8	0.23	3.2	0.06	0.8	3.8	106	0.40	12.4	6.3	88	0.37	11.46	0.97	0.06	34.76	24.9	8.26	6.97	0.06	<1	<1
O4-1S-8m	4/22/03	1000	0.09	2.8	0.19	2.7	0.06	0.8	2.9	80	0.31	9.6	4.7	66	0.32	9.91	0.87	0.08	35.05	24.8	8.27	7.87	0.09	<1	<1
Geomean	**FY '03**			**3.1**		**2.0**		**1.4**				**10.7**		**75**				**0.08**					**0.08**		
O4-1S-8m	8/19/03	1242	0.09	2.8	0.03	0.4	0.20	2.8	4.5	127	0.33	10.2	6.5	91	0.35	10.84	n/a	0.08	34.85	28.3	8.26	6.81	0.14	<1	<1
O4-1S-8m	10/30/03	948	0.10	3.1	0.20	2.8	0.20	2.8	1.6	44	0.38	11.8	6.7	94	0.37	11.46	n/a	0.10	34.83	27.5	8.23	n/a	0.07	<1	<1
O4-1S-8m	3/17/04	1023	0.14	4.3	0.10	1.4	0.15	2.1	2.6	73	0.35	10.8	3.7	51	0.34	10.53	n/a	n/a	34.37	26.0	8.28	6.32	0.14	<1	1
O4-1S-8m	5/24/04	947	0.16	5.0	0.40	5.6	0.12	1.7	3.9	108	0.46	14.2	6.0	83	0.47	14.56	n/a	n/a	33.39	26.7	8.24	6.10	0.01	<1	<1
Geomean	**FY '04**			**3.7**		**1.7**		**2.3**				**11.7**		**78**				**0.09**					**0.06**		
O4-1S-8m	9/22/04	1022	0.08	2.5	0.01	0.1	0.21	2.9	1.7	46	0.30	9.3	4.3	60	0.30	9.29	n/a	0.08	33.83	27.9	8.24	6.61	0.10	<1	<1
O4-1S-8m	11/29/04	928	0.09	2.8	0.22	3.1	0.22	3.1	3.4	95	0.32	9.9	4.4	61	0.32	9.91	n/a	0.09	33.74	27.0	8.30	9.68	0.07	<1	<1
O4-1S-8m	1/24/05	1004	0.09	2.8	0.52	7.3	0.18	2.5	3.6	100	0.32	9.9	5.2	72	0.31	9.60	n/a	0.11	34.58	25.6	8.31	6.85	0.10	<1	<1
O4-1S-8m	4/13/05	1009	0.14	4.3	0.58	8.1	0.18	2.5	4.4	122	0.37	11.5	5.1	71	0.38	11.77	n/a	0.15	34.37	25.5	8.31	7.05	0.15	<1	<1
Geomean	**FY '05**			**3.0**		**2.2**		***2.8***				**10.1**		**66**				***0.10***					**0.10**		

NELHA Water Quality Laboratory

Transect 4, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O4-1S-8m	7/21/05	923	0.06	1.9	0.14	2.0	0.32	4.5	0.5	15	0.32	9.9	4.8	68	0.32	9.91	n/a	0.09	34.65	27.4	8.26	6.55	0.02	<1	<1
O4-1S-8m	10/13/05	903	0.06	1.9	0.01	0.1	0.20	2.8	1.7	49	0.32	9.9	4.6	64	0.31	9.60	1.11	0.16	34.82	27.1	8.29	6.58	0.11	<1	1
O4-1S-8m	3/14/06	945	0.13	4.0	0.74	10.4	0.41	5.7	4.2	118	0.37	11.5	3.6	51	0.36	11.15	n/a	0.11	34.81	24.5	8.27	7.00	0.12	<1	<1
O4-1S-8m	5/17/06	916	0.19	5.9	0.66	9.2	0.31	4.3	3.2	91	0.43	13.3	5.5	77	0.46	14.25	1.02	0.17	34.64	24.7	8.27	6.91	0.15	<1	<1
Geomean	**FY '06**			**3.0**		**2.3**		***4.2***				**11.1**		**64**				***0.13***					**0.08**		
O4-1S-8m	8/16/06	919	0.14	4.3	0.28	3.9	0.27	3.8	2.0	55	0.36	11.2	5.3	75	0.39	12.08	0.96	0.12	34.64	26.8	8.23	7.08	0.09	<1	<1
O4-1S-8m	11/20/06	918	0.14	4.3	0.18	2.5	0.32	4.5	1.8	51	0.37	11.5	5.3	74	0.37	11.46	1.12	0.24	34.81	26.6	8.26	6.88	0.07	<1	<1
O4-1S-8m	2/12/07	1009	0.27	8.4	0.17	2.4	0.56	7.8	1.2	35	0.45	13.9	6.6	93	0.44	13.63	1.40	0.10	34.44	24.8	8.23	6.81	0.13	<1	<1
O4-1S-8m	4/16/07	1006	0.16	5.0	1.37	19.2	0.55	7.7	10.6	298	0.38	11.8	6.5	91	0.41	12.70	0.88	0.27	34.44	26.0	8.24	6.48	0.03	<1	<1
Geomean	**FY '07**			***5.3***		***4.6***		***5.7***				**12.0**		**83**				***0.17***					**0.07**		
T4-1m	9/26/07	1138	0.14	4.2	0.27	3.8	0.39	5.5	2.6	74	0.36	11.1	5.2	73				0.10	34.96	26.8	8.10	6.12	0.09		
T4-1m	12/14/07	902	0.09	2.8	0.07	1.0			2.8	79	0.34	10.6	5.2	73				0.07	34.71	25.7	8.25	6.82	0.31		
T4-1m	3/11/08	912	0.14	4.2	0.78	10.9	0.06	0.8	12.4	350	0.24	7.5	6.6	92				0.09	34.85	24.8	8.07	6.65	0.65		
T4-1m	6/9/08	950	0.09	2.9	0.37	5.2	0.16	2.2	10.7	299	0.28	8.7	5.9	83				0.19	34.66	25.1	8.09	6.04	0.3		
Geomean	**FY '08**			**3.5**		**3.8**		**2.1**				**9.4**		**80**				***0.10***					**0.27**		
T4-1m	9/23/08	1035	0.02	0.5	0.15	2.1	0.37	5.2	1.8	50	0.23	7.2	5.4	76				0.08	34.84	26.7	8.07	6.31	0.07		
T4-1m	12/8/08	937	0.16	5	0.28	3.9	0.14	1.9	2.1	59	0.26	8.1	5.4	76				0.13	34.97	26.0	8.29	5.64	0.10		
T4-1m	2/10/09	838	0.21	6.4	1.11	15.5	0.12	1.7	3.8	107	0.04	1.2	8.9	125				0.14	35.07	24.6	8.04	6.29	0.11		
T4-1m	6/30/09	923	0.25	7.8	0.33	4.6	0.81	11.4	4.2	118	0.35	10.8	4.4	61				0.27	34.89	26.8	8.21	5.95	0.15		
Geomean	**FY '09**			**3.3**		***4.9***		***3.7***				**5.2**		**81**				***0.14***					**0.10**		
T4-1m	9/10/09	904	0.19	5.9	0.16	2.3	0.22	3.1	9.9	279	0.27	8.3	7.6	106				0.08	35.21	27.2	8.21	5.62	0.21		
T4-1m	11/24/09	905	0.03	1	0.17	2.4	0.69	9.6	9.6	271	0.24	7.5	6.3	89				0.11	35.25	25.2	8.25	6.50	0.14		
T4-1m	2/24/10	937	0.14	4.3	0.24	3.3	0.36	5.1	2.6	72	0.15	4.6	4.1	58				0.14	35.06	24.7	8.21	6.38	0.16		
T4-1m	5/25/10	915	0.05	1.4	0.36	5.1	0.14	2	3.2	90	0.04	1.1	4.3	60				0.06	34.88	25.1	8.23	7.06	0.10		
Geomean	**FY '10**			**2.4**		**3.1**		***4.2***				**4.2**		**75**				**0.09**					**0.15**		
T4-1m	8/11/10	910	0.02	0.6	0.57	8	0.22	3.1	3.8	108	0.36	11.3	4.1	57				0.06	34.90	26.08	8.25	6.71	0.12		
T4-1m	11/9/10	910	0.05	1.7	0.25	3.5	0.10	1.4	4.8	135	0.46	14.4	6.8	95				0.07	34.92	26.31	8.26	6.35	0.05		
T4-1m	1/11/11	1126	0.15	4.8	0.28	3.9	0.20	2.8	2.5	70	0.44	13.7	3.9	55				0.09	35.01	24.98	8.21	6.42	0.08		
T4-1m	4/27/11	920	0.17	5.2	0.34	4.8	0.09	1.3	3.9	109	0.48	14.9	4.0	56				0.10	34.86	24.87	8.20	6.38	0.08		
Geomean	**FY '11**			**2.2**		***4.8***		**2.0**				***13.5***		**64**				**0.08**					**0.08**		

NELHA Water Quality Laboratory

Transect 4, Station 1

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T4-1m	7/27/11	910	0.21	6.6	0.39	5.4	0.41	5.8	2.8	79	0.51	15.9	5.0	70				0.07	34.77	26.03	8.21	6.27	0.12		
T4-1m	10/19/11	942	0.06	1.9	0.16	2.3	0.14	1.9	2.5	72	0.38	11.8	4.6	64				0.05	35.08	26.52	8.24	7.30	0.10		
T4-1m	1/26/12	910	0.11	3.4	0.34	4.7	0.12	1.7	2.9	82	0.37	11.4	4.3	60				0.04	34.98	24.41	8.21	6.77	0.13		
T4-1m	4/25/12	932	0.21	6.5	0.47	6.6	0.46	6.4	2.2	62	0.54	16.6	5.5	77				0.23	34.89	24.82	8.19	6.99	0.10		
Geomean	**FY '12**			**4.1**		**4.4**		***3.3***				***13.7***		**67**				**0.08**					**0.11**		
T4-1m	7/25/12	921	0.06	2	0.29	4	0.34	4.8	2.3	64	0.42	13	5.4	76				0.06	35.02	26.25	8.23	6.84	0.08		
T4-1m	11/28/12	924	0.12	3.6	0.19	2.6	0.31	4.4	2.0	57	0.45	13.9	5.7	80				0.10	35.20	25.28	8.20	6.82	0.08		
T4-1m	1/24/13	908	0.14	4.4	0.71	9.9	0.14	1.9	3.5	98	0.47	14.5	6.4	90				0.08	35.02	24.65	8.21	6.40	0.09		
T4-1m	4/17/13	1021	0.16	4.9	0.53	7.4	0.26	3.6	2.2	62	0.54	16.6	8.5	119				0.09	35.13	25.11	8.22	6.93	0.17		
Geomean	**FY '13**			**3.5**		***5.3***		***3.5***				***14.4***		**90**				**0.08**					**0.10**		
T4-1m	8/6/13	929	0.10	3.2	0.01	0.2	0.11	1.5	2.8	79	0.38	11.8	7.0	99				0.11	35.11	26.3	8.26	7.09	0.17		
T4-1m	10/30/13	909	0.15	4.7	0.34	4.8	0.22	3.1	1.7	47	0.47	14.6	6.4	90				0.08	34.92	27.0	8.23	5.81	0.17		
T4-1m	2/5/14	928	0.17	5.2	0.34	4.8	0.28	3.9	2.3	64	0.46	14.1	5.6	78				0.02	34.93	25.2	8.21	6.48	0.08		
T4-1m	5/7/14	923	0.16	5.0	0.49	6.9	0.34	4.7	1.7	47	0.47	14.6	8.8	123				0.11	34.75	25.7	8.20	5.87	0.12		
Geomean	**FY '14**			**4.4**		**2.4**		***3.0***				***13.7***		**96**				**0.07**					**0.13**		
T4-1m	8/6/14	919	0.18	5.5	0.11	1.5	0.31	4.4	0.8	23	0.50	15.4	6.4	89				0.10	34.92	26.8	8.23	6.51	0.13		
T4-1m	12/4/14	941	0.12	3.8	0.15	2.1	0.43	6.0	0.7	19	0.46	14.3	9.2	130				0.13	35.19	26.4	8.24	6.26	0.16		
T4-1m	3/5/15	932	0.07	2.3	0.55	7.7	0.41	5.8	1.2	34	0.26	8.0	7.6	106				0.11	34.72	25.4	8.20	6.88	0.14		
T4-1m	6/18/15	919	0.12	3.6	0.64	9.0	0.34	4.7	2.5	71	0.14	4.2	8.0	113				0.10	34.38	26.7	8.14	6.63	0.11		
Geomean	**FY '15**			**3.6**		**3.8**		***5.2***				**9.3**		***108***				***0.11***					**0.13**		
T4-1m	8/29/15	933	0.16	4.9	0.24	3.4	0.31	4.3	7.1	200	0.27	8.5	5.4	75				0.06	34.49	28.5	8.20	6.25	0.20		
T4-1m	11/18/15	944	0.16	5.0	0.53	7.4	0.14	2.0	3.0	84	0.54	16.7	7.2	100				0.08	34.63	27.3	8.27	6.90	0.17		
T4-1m	3/2/16	836	0.18	5.5	0.43	6.0	0.27	3.8	0.0	0	0.56	17.2	5.7	79				0.09	34.69	25.2	8.24	5.89	0.16		
T4-1m	5/4/16	919	0.13	4.0	0.21	2.9	0.18	2.5	1.0	28	0.37	11.4	6.7	94				0.10	34.65	25.8	8.19	6.22	0.16		
Geomean	**FY '16**			**4.8**		***4.6***		***3.0***				***12.9***		**87**				**0.08**					**0.17**		
T4-1m	7/7/16	930	0.13	4.0	0.14	1.9	0.59	8.3	0.9	26	0.46	14.1	3.6	50				0.14	34.67	26.8	8.30	6.89	0.17		
T4-1m	12/21/16	931	0.10	3.2	0.58	8.1	0.19	2.7	2.2	62	0.37	11.4	3.9	55				0.04	34.60	25.4	8.25	6.08	0.12		
T4-1m	3/1/17	1100	0.04	1.3	0.63	8.8	0.14	1.9	1.3	38	0.33	10.3	4.9	68				0.09	34.74	24.6	8.23	5.97	0.12		
T4-1m	5/10/17	1028	0.02	0.7	0.60	8.4	0.09	1.2	2.4	68	0.22	6.9	4.8	67				0.10	34.76	25.9	8.24	4.27	0.08		
Geomean	**FY '17**			**1.8**		***5.8***		***2.7***				**10.3**		**60**				**0.08**					**0.12**		

NELHA Water Quality Laboratory

Transect 4, Station 1

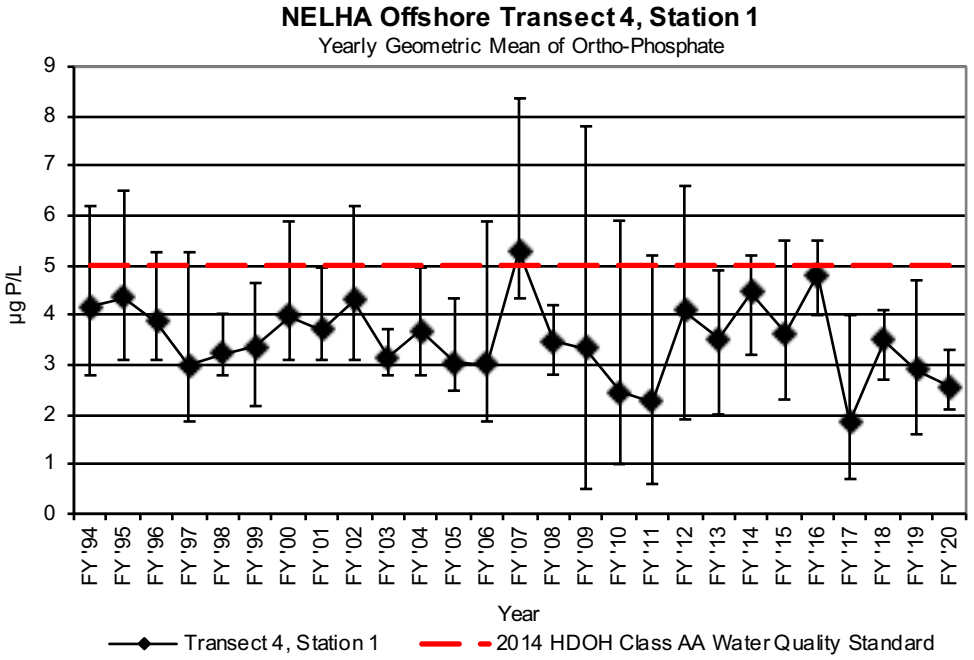
8/3/1993 - 7/16/20

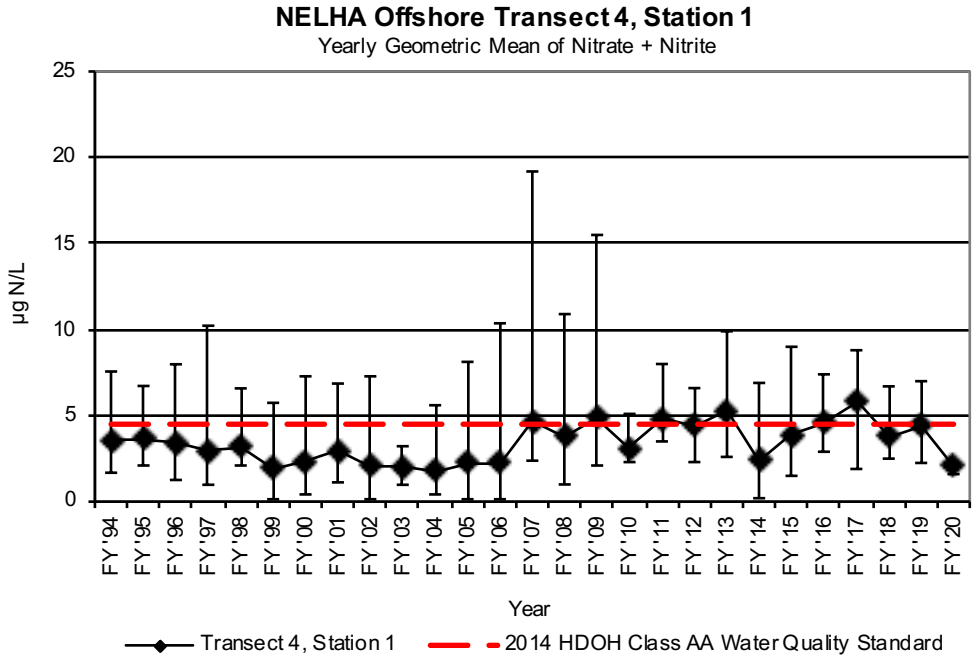
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T4-1m	9/28/17	923	0.12	3.6	0.18	2.5	0.14	1.9	0.3	9	0.40	12.4	2.8	39				0.08	34.82	27.9	8.16	5.10	0.08		
T4-1m	11/30/17	913	0.12	3.7	0.48	6.7	0.54	7.5	2.2	61	0.37	11.5	3.9	54				0.11	35.12	26.3	8.20	5.74	0.18		
T4-1m	2/6/18	954	0.09	2.7	0.19	2.6	0.45	6.3	1.7	47	0.35	10.7	3.1	43				0.10	34.81	24.9	8.16	5.98	0.08		
T4-1m	5/17/18	927	0.13	4.1	0.35	4.9	0.26	3.7	3.0	84	0.39	12.1	5.2	73				0.12	34.72	26.0	8.14	6.65	0.10		
Geomean	**FY '18**			**3.5**		**3.8**		***4.3***				**11.7**		**51**				***0.10***					**0.10**		
T4-1m	9/26/18	1156	0.07	2.1	0.16	2.3	0.33	4.6	0.2	5	0.32	9.9	2.2	31				0.13	34.64	27.6	8.15	4.91	0.14		
T4-1m	11/14/18	1015	0.05	1.6	0.29	4.1	0.31	4.3	0.1	3	0.33	10.3	6.9	97				0.08	34.90	27.3	8.19	6.09	0.15		
T4-1m	1/23/19	959	0.15	4.7	0.50	7.0	0.15	2.1	2.8	79	0.41	12.6	2.7	38				0.11	34.85	24.9	8.16	5.24	0.22		
T4-1m	4/17/19	950	0.15	4.5	0.41	5.7	0.24	3.3	2.1	59	0.41	12.6	2.6	36				0.06	34.70	25.7	8.11	7.13	0.14		
Geomean	**FY '19**			**2.9**		**4.4**		***3.4***				**11.3**		**45**				**0.09**					**0.16**		
T4-1m	8/15/19	929	0.07	2.1	0.16	2.3	0.25	3.5	2.9	81	0.31	9.5	1.9	27				0.12	35.17	28.2	8.16	6.74	0.20		
T4-1m	11/19/19	1101	0.11	3.3	0.11	1.6	0.19	2.6	0.2	5	0.39	12.1	2.5	35				0.13	34.43	27.7	8.28	6.61	0.16		
T4-1m	1/23/20	943	0.09	2.8	0.16	2.3	0.09	1.3	0.0	0	0.38	11.8	2.0	28				0.08	34.95	25.0	8.20	6.74	0.10		
T4-1m	6/25/20	908	0.07	2.2	0.16	2.3	0.40	5.6	0.8	23	0.30	9.2	2.3	33				0.10	35.45	26.1	8.19	6.84	0.20		
Geomean	**FY '20**			**2.6**		**2.1**		***2.8***				**10.6**		**30**				***0.11***					**0.16**		

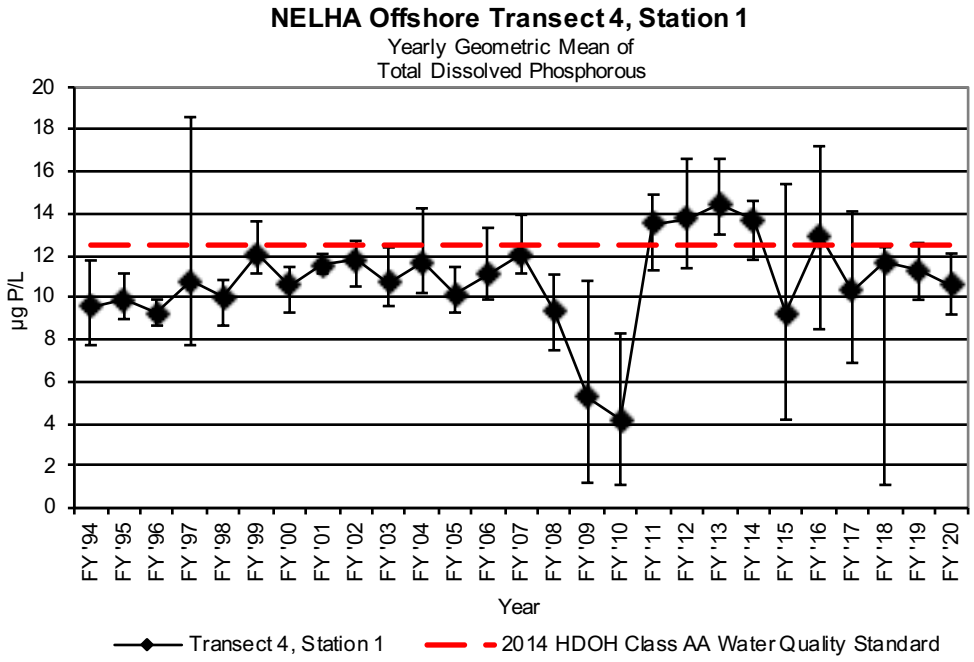
NELHA Water Quality Laboratory

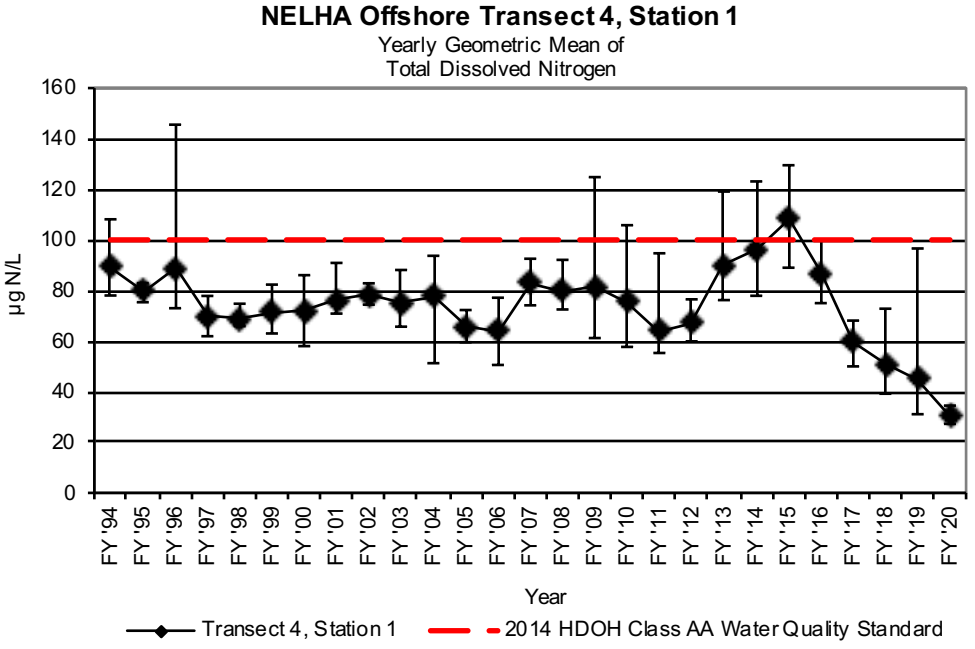
Transect 4, Station 1

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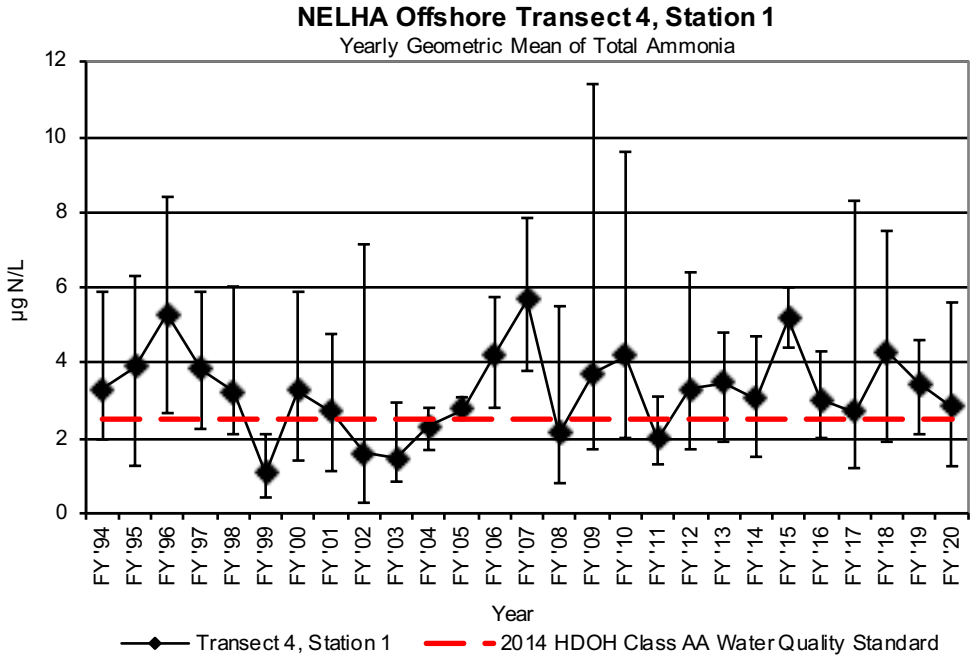


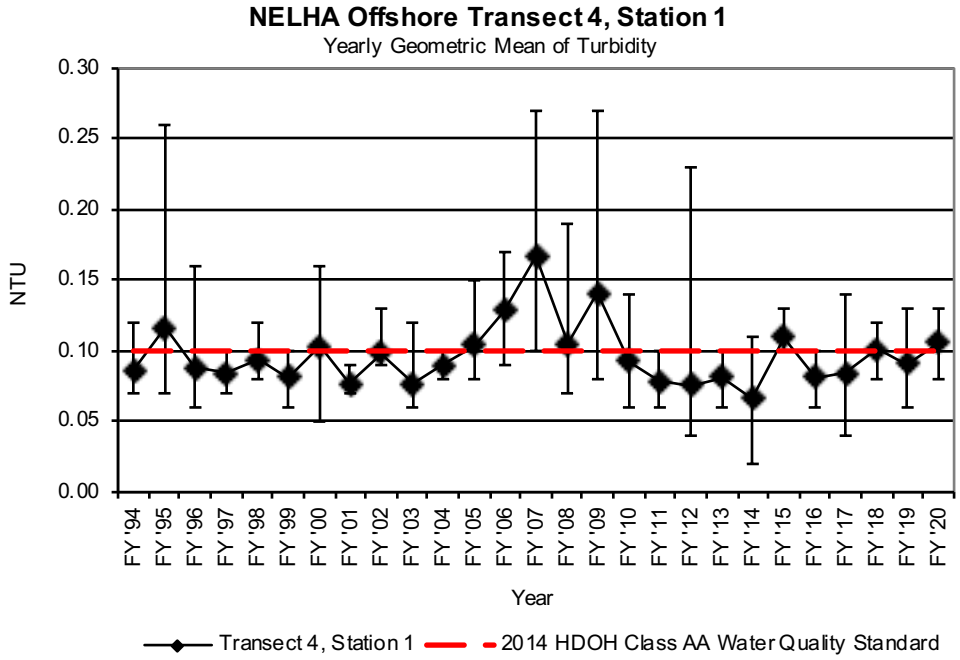


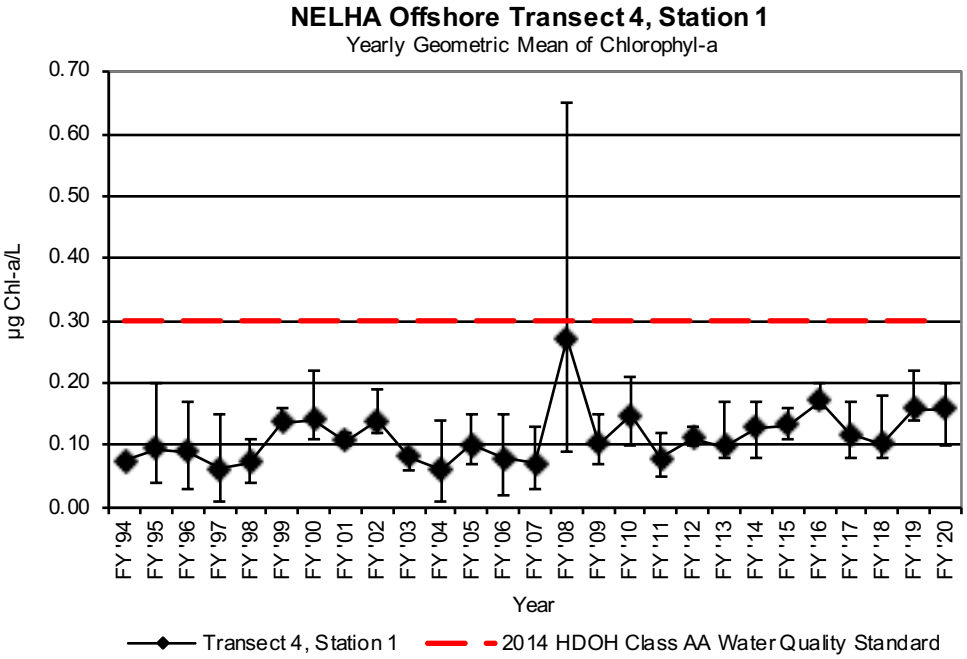
NELHA Water Quality Laboratory

Transect 4, Station 1

8/3/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 4, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-2S-23m	8/3/93	917	0.10	3.1	0.08	1.1	0.46	6.4	3.8	105					0.06	34.464	26.8			
O4-2S-23m	12/8/93	921	0.07	2.2	0.12	1.7	0.10	1.4	2.3	65					0.05	34.795	25.7			
O4-2S-23m	3/8/94	856	0.20	6.2	0.38	5.3	0.19	2.7	4.0	111			5.88	82.36	0.07	34.185	25.1			
O4-2S-23m	6/13/94	900	0.13	4.0	0.19	2.7	0.08	1.1	6.6	185					0.09	34.533	25.5			
Geomean	**FY '94**			**3.6**		**2.3**		**2.3**							**0.07**					
O4-2S-23m	9/15/94	857	0.08	2.5	0.09	1.3	0.14	2.0	3.2	91					0.11	34.610	27.6			
O4-2S-23m	11/15/94	814	0.15	4.6	0.37	5.2	0.45	6.3	4.7	131					0.07	34.567	26.0			
O4-2S-23m	3/22/95	1159	0.21	6.5	0.45	6.3	0.36	5.0	6.0	167					0.11	34.127	25.3			
O4-2S-23m	6/21/95	826	0.10	3.1	0.13	1.8	0.33	4.6	2.3	64					0.06	34.460	26.2			
Geomean	**FY '95**			**3.9**		**2.9**		***4.1***							**0.08**					
O4-2S-23m	9/28/95	1000	0.08	2.5	0.06	0.8	0.43	6.0	3.0	83					0.09	34.596	27.4			
O4-2S-23m	11/14/95	825	0.10	3.1	0.06	0.8	0.52	7.3	4.8	135					0.05	34.360	26.7			
O4-2S-23m	3/12/96	905	0.16	5.0	0.29	4.1	0.54	7.6	3.1	87					0.10	34.168	25.1			
O4-2S-23m	5/14/96	840	0.15	4.6	1.09	15.3	0.24	3.4	5.5	153					0.09	34.222	27.0			
Geomean	**FY '96**			**3.6**		**2.6**		***5.8***							**0.08**					
O4-2S-23m	7/31/96	920	0.07	2.2	0.05	0.7	0.35	4.9	3.4	96					0.09	34.503	27.9			
O4-2S-23m	10/2/96	853	0.07	2.2	0.03	0.4	0.15	2.1	2.8	77					0.07	34.649	28.0			
O4-2S-23m	1/7/97	908	0.11	3.4	0.44	6.2	0.22	3.1	4.5	127					0.07	34.655	25.4			
O4-2S-23m	4/28/97	920	0.15	4.6	0.50	7.0	0.46	6.4	5.2	145					0.11	34.400	26.6			
Geomean	**FY '97**			**2.9**		**1.9**		***3.8***							**0.08**					
O4-2S-23m	8/19/97	909	0.08	2.5	0.44	6.2	0.24	3.4	3.5	99					0.08	34.630	27.0			
O4-2S-23m	10/7/97	1152	0.14	4.3	0.17	2.4	0.44	6.2	3.3	92					0.10	34.732	27.7			
O4-2S-23m	3/4/98	912	0.09	2.8	0.09	1.3	0.23	3.2	3.8	105					0.06	35.011	24.9			
O4-2S-23m	5/5/98	923	0.08	2.5	0.18	2.5	0.14	2.0	3.6	100					0.07	35.028	24.1			
Geomean	**FY '98**			**2.9**		**2.6**		***3.4***							**0.08**					
O4-2S-23m	7/7/98	940	0.11	3.4	0.30	4.2	0.04	0.6	6.6	186					0.08	34.948	26.3			
O4-2S-23m	10/6/98	859	0.09	2.8	0.05	0.7	0.02	0.3	1.8	50					0.09	35.129	26.8			
O4-2S-23m	1/19/99	919	0.07	2.2	0.01	0.1	0.16	2.2	2.3	65					0.08	35.152	25.1			
O4-2S-23m	4/13/99	1009	0.15	4.6	0.32	4.5	0.10	1.4	5.0	140					0.09	34.646	24.3			
Geomean	**FY '99**			**3.1**		**1.2**		**0.8**							**0.08**					

NELHA Water Quality Laboratory

Transect 4, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-2S-23m	8/16/99	938	0.10	3.1	0.18	2.5	0.42	5.9	1.7	48					0.08	34.876	26.1			
O4-2S-23m	10/25/99	1030	0.10	3.1	0.01	0.1	0.21	2.9	2.6	74					0.09	34.966	26.1			
O4-2S-23m	1/12/00	942	0.10	3.1	0.02	0.3	0.27	3.8	1.9	53					0.05	35.139	24.7			
O4-2S-23m	5/16/00	911	0.19	5.9	0.47	6.6	0.10	1.4	8.2	231					0.15	34.588	25.1			
Geomean	**FY '00**			**3.6**		**0.9**		***3.1***							**0.09**					
O4-2S-23m	7/25/00	938	0.09	2.8	0.10	1.4	0.05	0.7	5.7	161					0.06	34.859	26.8			
O4-2S-23m	10/31/00	934	0.09	2.8	0.07	1.0	0.19	2.7	2.7	75					0.05	34.961	26.9			
O4-2S-23m	3/6/01	925	0.14	4.3	0.15	2.1	0.08	1.1	3.5	99					0.10	34.697	24.8			
O4-2S-23m	5/8/01	1019	0.13	4.0	0.06	0.8	0.15	2.1	4.0	112					0.06	34.746	25.0			
Geomean	**FY '01**			**3.4**		**1.2**		**1.4**							**0.07**					
O4-2S-23m	8/13/01	1028	0.09	2.8	0.01	0.1	0.29	4.1	5.0	140					0.10	34.866	26.7			
O4-2S-23m	10/30/01	937	0.16	5.0	0.50	7.0	0.03	0.4	3.2	90					0.07	34.985	26.7			
O4-2S-23m	3/4/02	1001	0.11	3.4	0.12	1.7	0.01	0.1	5.7	161					0.09	34.671	24.1			
O4-2S-23m	4/16/02	1001	0.21	6.5	0.38	5.3	0.27	3.8	6.9	195					0.09	34.393	25.6			
Geomean	**FY '02**			**4.2**		**1.7**		**1.0**							**0.09**					
O4-2S-23m	7/9/02	1114	0.11	3.4	0.07	1.0	0.12	1.7	2.6	72					0.10	34.658	26.7			
O4-2S-23m	10/7/02	955	0.11	3.4	0.04	0.6	0.17	2.4	3.5	99					0.05	34.948	27.0			
O4-2S-23m	3/10/03	1123	0.10	3.1	0.09	1.3	0.06	0.8	3.6	100					0.07	34.684	25.1			
O4-2S-23m	4/22/03	956	0.08	2.5	0.04	0.6	0.03	0.4	2.2	62					0.06	35.038	24.9			
Geomean	**FY '03**			**3.1**		**0.8**		**1.1**							**0.07**					
O4-2S-23m	8/19/03	1227	0.07	2.2	0.01	0.1	0.20	2.8	1.4	40					0.08	34.883	28.2			
O4-2S-23m	10/30/03	933	0.09	2.8	0.10	1.4	0.20	2.8	4.7	132					0.10	34.822	27.5			
O4-2S-23m	3/17/04	1017	0.13	4.0	0.10	1.4	0.19	2.7	1.6	46					n/a	34.334	26.0			
O4-2S-23m	5/24/04	941	0.15	4.6	0.26	3.6	0.06	0.8	3.7	103					n/a	33.44	26.8			
Geomean	**FY '04**			**3.3**		**1.0**		**2.0**							**0.09**					
O4-2S-23m	9/22/04	1044	0.06	1.9	0.01	0.1	0.23	3.2	1.8	50					0.07	33.77	28.1			
O4-2S-23m	11/29/04	922	0.06	1.9	0.10	1.4	0.14	2.0	1.1	32					0.08	33.70	27.0			
O4-2S-23m	1/24/05	1001	0.11	3.4	0.19	2.7	0.09	1.3	2.4	68					0.08	34.777	25.5			
O4-2S-23m	4/13/05	1002	0.14	4.3	0.55	7.7	0.19	2.7	4.8	135					0.09	34.374	25.4			
Geomean	**FY '05**			**2.7**		**1.4**		**2.1**							**0.08**					

NELHA Water Quality Laboratory

Transect 4, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-2S-23m	7/21/05	916	0.05	1.5	0.04	0.6	0.28	3.9	1.5	43					0.06	34.690	27.2			
O4-2S-23m	10/13/05	854	0.06	1.9	0.02	0.3	0.23	3.2	1.6	45					0.11	34.833	27.2			
O4-2S-23m	3/14/06	940	0.09	2.8	0.04	0.6	0.41	5.7	5.8	162					0.07	34.861	24.4			
O4-2S-23m	5/17/06	908	0.13	4.0	0.07	1.0	0.19	2.7	2.1	59					0.11	34.676	24.4			
Geomean	**FY '06**			**2.4**		**0.5**		***3.7***							**0.08**					
O4-2S-23m	8/16/06	912	0.12	3.7	0.30	4.2	0.16	2.2	2.4	69					0.14	34.633	26.8			
O4-2S-23m	11/20/06	909	0.11	3.4	0.13	1.8	0.24	3.4	1.6	46					0.19	34.807	26.7			
O4-2S-23m	2/12/07	1002	0.12	3.7	0.13	1.8	0.30	4.2	1.3	37					0.22	34.457	24.5			
O4-2S-23m	4/16/07	956	0.15	4.6	1.00	14.0	0.30	4.2	9.4	264					0.14	34.472	26.0			
Geomean	**FY '07**			**3.8**		**3.7**		***3.4***							***0.17***					
T4-10m	9/26/07	1147	0.13	4.0	0.61	8.5	0.25	3.5	13.6	383	0.41	12.6	5.9	82	0.10	34.929	26.9	8.24	6.78	0.17
T4-10m	12/14/07	904	0.08	2.4	0.05	0.7			3.4	95	0.31	9.5	6.1	85	0.12	34.722	25.6	8.22	6.70	0.31
T4-10m	3/11/08	914	0.21	6.5	0.55	7.7	0.06	0.8	3.1	86	0.26	7.9	5.0	70	0.11	34.865	24.8	8.08	6.63	0.51
T4-10m	6/9/08	955	0.07	2.2	0.32	4.5	0.16	2.2	7.6	214	0.34	10.4	6.0	84	0.12	34.6638	25.1	8.1	5.96	0.26
Geomean	**FY '08**			**3.4**		**3.8**		**1.8**				**10.0**		**80**	***0.11***					**0.29**
T4-10m	9/23/08	1042	0.03	0.8	0.14	1.9	0.44	6.2	1.7	48	0.31	9.7	4.6	64	0.08	34.836	26.8	8.06	6.21	0.1
T4-10m	12/8/08	949	0.17	5.4	0.32	4.5	0.29	4	2.2	62	0.55	17	5.2	73	0.08	34.982	26.1	8.30	5.64	0.07
T4-10m	2/10/09	846	0.11	3.4	0.58	8.1	0.12	1.7	2.3	64	0.22	6.8	8.0	113	0.18	35.079	24.7	8.05	5.98	0.08
T4-10m	6/30/09	929	0.27	8.5	0.30	4.2	0.12	1.7	6.1	171	0.39	12.1	5.2	72	0.12	34.876	26.7	8.20	6.13	0.08
Geomean	**FY '09**			**3.3**		**4.1**		***2.9***				**10.8**		**78**	***0.11***					**0.08**
T4-10m	9/10/09	910	0.10	3.2	0.16	2.2	0.10	1.4	4.7	133	0.44	13.6	5.6	79	0.06	35.18	27.2	8.26	5.88	0.06
T4-10m	11/24/09	908	0.03	0.8	0.16	2.2	0.19	2.7	23.6	662	0.32	9.9	5.8	81	0.05	35.26	25.2	8.26	6.58	0.15
T4-10m	2/24/10	941	0.15	4.5	0.25	3.5	0.37	5.2	3.0	84	0.27	8.5	4.2	59	0.15	35.08	24.7	8.24	5.96	0.27
T4-10m	5/25/10	921	0.04	1.2	0.39	5.4	0.11	1.5	2.9	80	0.14	4.4	6.4	89	0.06	34.89	25.1	8.22	7.10	0.03
Geomean	**FY '10**			**1.9**		**3.1**		**2.3**				**8.4**		**76**	**0.07**					**0.09**
T4-10m	8/11/10	915	0.05	1.4	0.53	7.4	0.28	3.9	3.0	85	0.32	9.9	3.5	50	0.07	34.92	26.07	8.24	6.72	0.10
T4-10m	11/9/10	914	0.05	1.5	0.25	3.5	0.10	1.4	7.7	217	0.45	14	5.0	70	0.09	34.91	26.28	8.27	6.39	0.05
T4-10m	1/11/11	1131	0.15	4.6	0.29	4.1	0.23	3.2	19.2	538	0.43	13.2	3.6	51	0.04	35.01	24.98	8.21	6.41	0.09
T4-10m	4/27/11	924	0.13	4	0.36	5.1	0.17	2.4	6.0	169	0.42	13	3.6	51	0.11	34.87	24.87	8.20	6.47	0.10
Geomean	**FY '11**			**2.5**		***4.8***		***2.5***				**12.4**		**55**	**0.07**					**0.08**

NELHA Water Quality Laboratory

Transect 4, Station 2

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-10m	7/27/11	915	0.18	5.7	0.36	5	0.13	1.8	2.2	62	0.49	15.3	4.5	64	0.10	34.78	26.00	8.21	6.17	0.11
T4-10m	10/19/11	945	0.09	2.9	0.15	2.1	0.10	1.4	1.6	45	0.39	12	4.7	65	0.06	35.08	26.51	8.25	7.30	0.10
T4-10m	1/26/12	915	0.09	2.9	0.39	5.5	0.26	3.7	2.4	67	0.34	10.4	3.5	49	0.08	34.99	24.40	8.23	6.78	0.10
T4-10m	4/25/12	934	0.17	5.3	0.46	6.5	0.34	4.8	1.9	53	0.53	16.3	7.3	102	0.12	34.89	24.81	8.19	7.04	0.08
Geomean	**FY '12**			**4.0**		**4.4**		***2.6***				***13.3***		**68**	**0.09**					**0.10**
T4-10m	7/25/12	924	0.05	1.4	0.26	3.7	0.31	4.3	1.7	47	0.36	11.3	4.4	61	0.05	35.02	26.28	8.23	7.08	0.18
T4-10m	11/28/12	928	0.09	2.9	0.19	2.6	0.16	2.2	1.9	53	0.44	13.5	6.2	87	0.04	35.22	25.32	8.20	6.57	0.03
T4-10m	1/24/13	912	0.12	3.8	0.71	10	0.16	2.3	3.2	90	0.47	14.7	5.5	76	0.07	35.02	24.65	8.20	6.27	0.13
T4-10m	4/17/13	1026	0.18	5.5	0.54	7.5	0.26	3.6	2.2	61	0.52	16	5.0	70	0.04	35.13	25.13	8.21	6.93	0.18
Geomean	**FY '13**			**3.0**		***5.2***		***3.0***				***13.8***		**73**	**0.05**					**0.11**
T4-10m	8/6/13	934	0.12	3.8	0.02	0.3	0.00	0.1	2.4	67	0.38	11.8	7.4	104	0.10	35.14	26.3	8.26	7.10	0.14
T4-10m	10/30/13	913	0.15	4.7	0.33	4.6	0.37	5.2	1.5	43	0.46	14.4	5.9	82	0.02	34.91	27.0	8.23	5.87	0.18
T4-10m	2/5/14	933	0.15	4.7	0.41	5.7	0.34	4.7	2.3	66	0.41	12.6	5.4	76	0.02	34.94	25.2	8.20	6.33	0.15
T4-10m	5/7/14	929	0.13	4.0	0.46	6.5	0.20	2.8	1.5	42	0.69	21.5	7.2	101	0.08	34.76	25.7	8.21	5.87	0.14
Geomean	**FY '14**			**4.3**		**2.7**		**1.4**				***14.6***		**90**	**0.04**					**0.15**
T4-10m	8/6/14	922	0.16	5.0	0.08	1.1	0.27	3.8	0.8	22	0.53	16.5	5.4	76	0.06	34.93	26.8	8.23	6.55	0.13
T4-10m	12/4/14	945	0.10	3.0	0.12	1.7	0.51	7.1	0.5	15	0.36	11.3	6.6	92	0.07	35.20	26.4	8.23	6.38	0.14
T4-10m	3/5/15	936	0.04	1.1	0.17	2.4	0.42	5.9	0.5	14	0.32	10.0	7.9	111	0.10	34.73	25.4	8.22	6.75	0.09
T4-10m	6/18/15	924	0.09	2.7	0.50	7.0	0.19	2.7	2.4	67	0.36	11.2	6.0	84	0.08	34.41	26.7	8.13	6.56	0.11
Geomean	**FY '15**			**2.6**		**2.4**		***4.6***				**12.0**		**90**	**0.08**					**0.12**
T4-10m	8/29/15	936	0.13	3.9	0.26	3.7	0.31	4.4	7.3	205	0.13	4.1	5.4	76	0.04	34.63	28.5	8.20	5.97	0.24
T4-10m	11/18/15	950	0.13	4.0	0.64	8.9	0.34	4.7	4.2	119	0.49	15.3	6.5	91	0.07	34.63	27.3	8.26	6.75	0.15
T4-10m	3/2/16	841	0.15	4.8	0.31	4.3	0.17	2.4	0.1	2	0.49	15.2	4.8	67	0.07	34.70	25.2	8.23	5.87	0.11
T4-10m	5/4/16	925	0.13	4.0	0.11	1.5	0.10	1.4	0.6	17	0.45	13.9	4.9	69	0.10	34.68	25.8	8.19	6.08	0.12
Geomean	**FY '16**			**4.2**		**3.8**		***2.9***				**10.7**		**75**	**0.07**					**0.15**
T4-10m	7/7/16	935	0.10	3.1	0.17	2.4	0.36	5.1	0.4	10	0.46	14.2	3.2	45	0.11	34.68	26.9	8.31	6.95	0.20
T4-10m	12/21/16	937	0.08	2.4	0.41	5.7	0.22	3.1	2.1	59	0.35	10.7	2.8	39	0.05	34.65	25.4	8.25	5.80	0.14
T4-10m	3/1/17	1056	0.04	1.2	0.59	8.2	0.17	2.4	1.2	35	0.32	10.0	4.8	67	0.10	34.75	24.6	8.23	6.00	0.13
T4-10m	5/10/17	1035	0.01	0.2	0.56	7.9	0.10	1.4	2.3	65	0.28	8.7	3.6	51	0.09	34.78	25.8	8.25	4.27	0.14
Geomean	**FY '17**			**1.2**		***5.5***		***2.7***				**10.7**		**49**	**0.08**					**0.15**

NELHA Water Quality Laboratory

Transect 4, Station 2

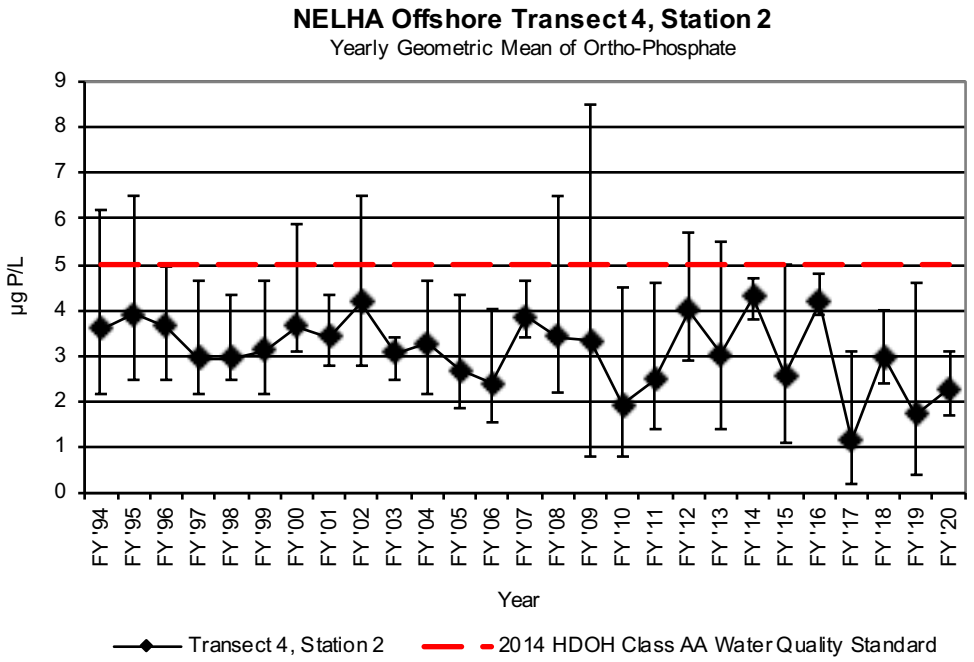
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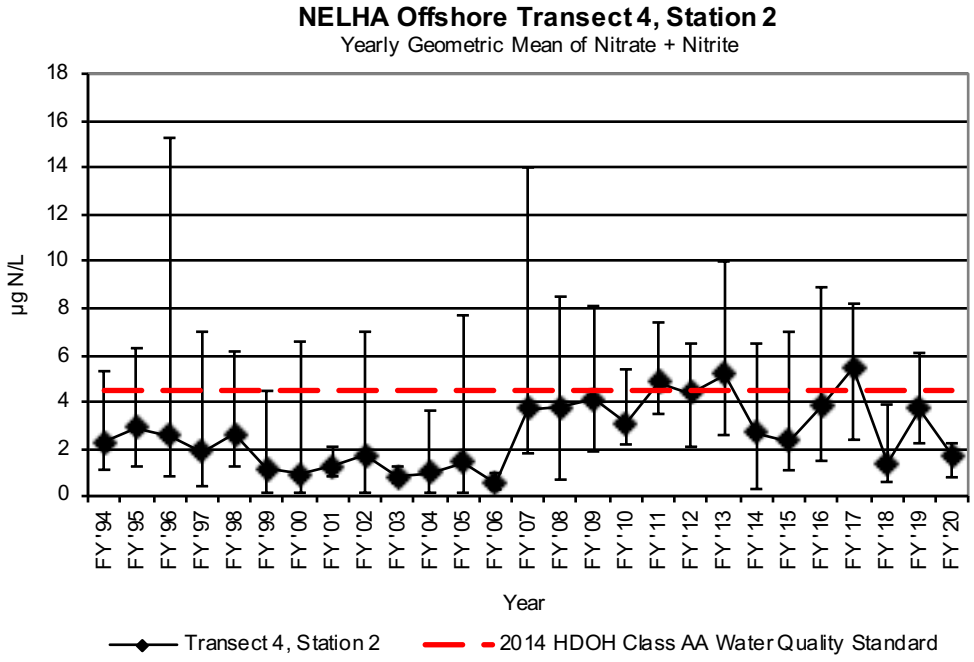
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-10m	9/28/17	931	0.13	4.0	0.16	2.3	0.19	2.7	0.4	11	0.42	13.1	3.2	44	0.07	34.82	27.9	8.16	5.05	0.18
T4-10m	11/30/17	917	0.09	2.9	0.28	3.9	0.35	4.9	1.8	50	0.38	11.7	3.9	55	0.08	35.15	26.3	8.21	5.65	0.16
T4-10m	2/6/18	958	0.08	2.4	0.05	0.7	0.39	5.4	1.3	37	0.35	10.8	1.9	27	0.11	34.83	24.9	8.16	5.91	0.08
T4-10m	5/17/18	931	0.09	2.8	0.04	0.6	0.20	2.8	2.0	56	0.38	11.7	3.7	52	0.03	34.79	26.1	8.14	6.48	0.07
Geomean	**FY '18**			**3.0**		**1.4**		***3.8***				**11.8**		**43**	**0.07**					**0.11**
T4-10m	9/26/18	1201	0.01	0.4	0.16	2.3	0.23	3.2	0.0	1	0.36	11.3	3.7	51	0.08	34.71	27.5	8.40	4.79	0.17
T4-10m	11/14/18	1020	0.04	1.3	0.30	4.2	0.25	3.5	0.1	2	0.34	10.5	5.7	80	0.06	34.91	27.3	8.18	6.04	0.13
T4-10m	1/23/19	1003	0.12	3.7	0.23	3.2	0.16	2.3	2.7	76	0.42	13.0	3.0	42	0.11	34.89	24.9	8.17	5.13	0.22
T4-10m	4/17/19	954	0.15	4.6	0.44	6.1	0.29	4.0	2.2	62	0.41	12.7	2.9	40	0.09	34.75	25.7	8.10	7.04	0.13
Geomean	**FY '19**			**1.7**		**3.7**		***3.2***				**11.8**		**51**	**0.08**					**0.16**
T4-10m	8/15/19	934	0.05	1.7	0.16	2.3	0.17	2.4	2.7	76	0.32	9.9	2.1	30	0.11	35.19	28.2	8.21	6.68	0.15
T4-10m	11/19/19	1108	0.10	3.1	0.06	0.8	0.34	4.7	0.3	7	0.39	12.0	2.4	34	0.08	34.87	27.7	8.24	6.54	0.16
T4-10m	1/23/20	946	0.08	2.6	0.16	2.3	0.09	1.3	0.0	0	0.39	12.1	2.9	41	0.06	34.95	25.0	8.20	6.75	0.10
T4-10m	6/25/20	913	0.06	2.0	0.16	2.3	0.61	8.5	0.4	12	0.26	8.1	2.6	37	0.07	35.46	26.2	8.17	6.77	0.22
Geomean	**FY '20**			**2.3**		**1.7**		***3.3***				**10.4**		**35**	**0.08**					**0.15**

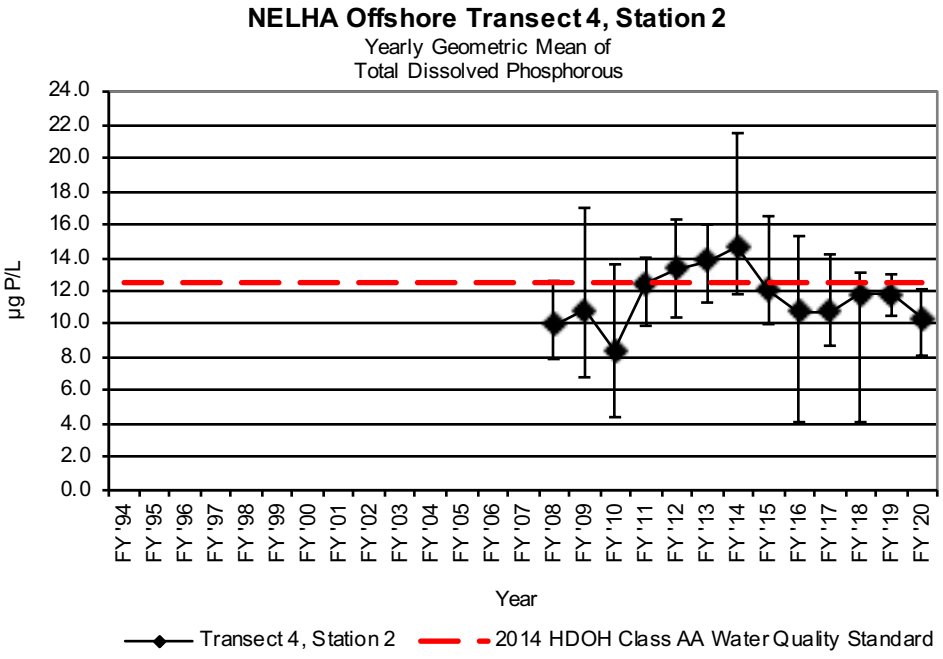
NELHA Water Quality Laboratory

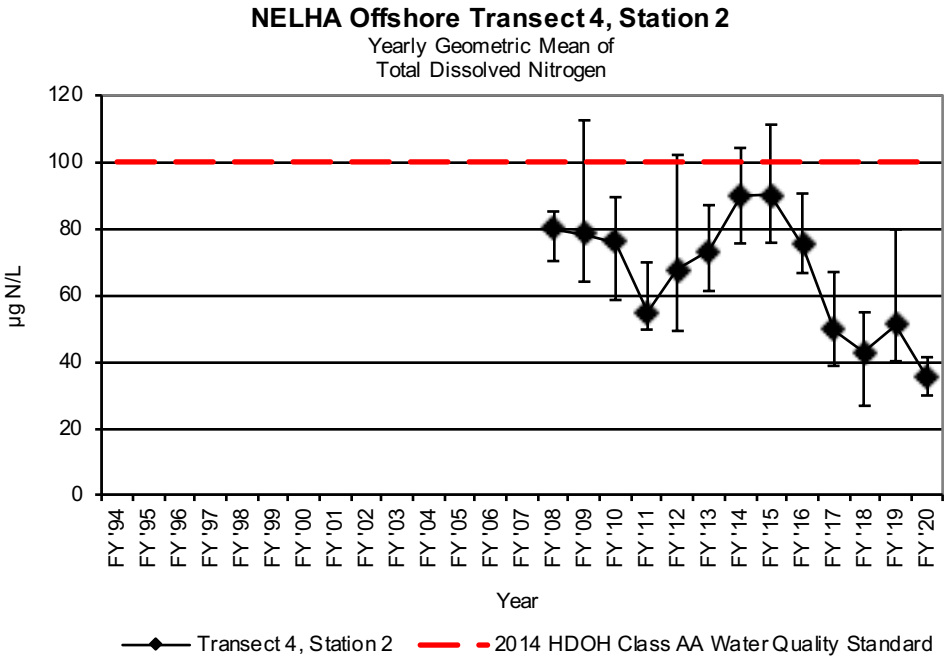
Transect 4, Station 2

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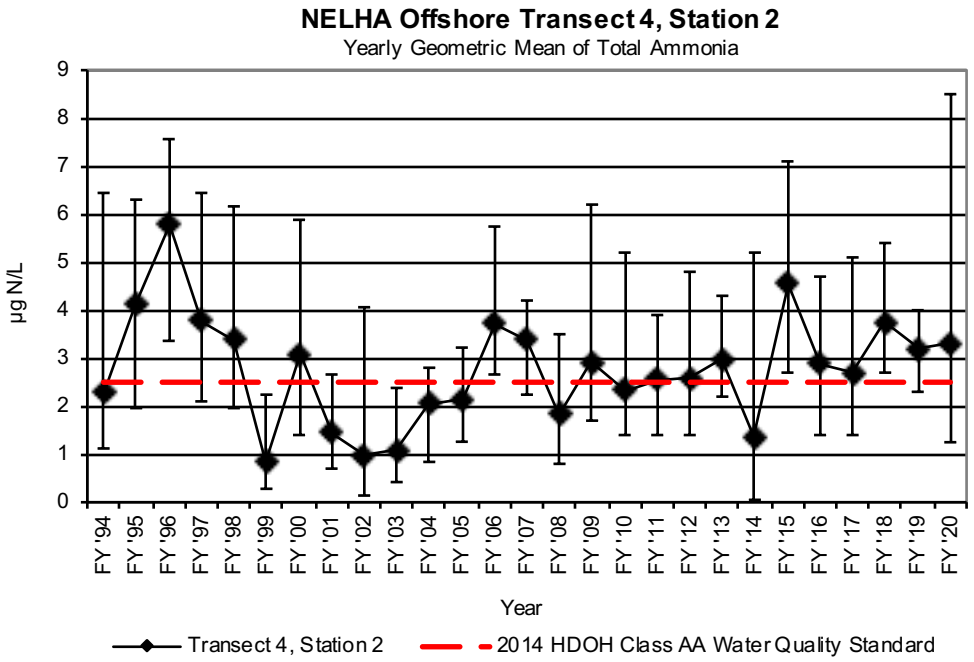


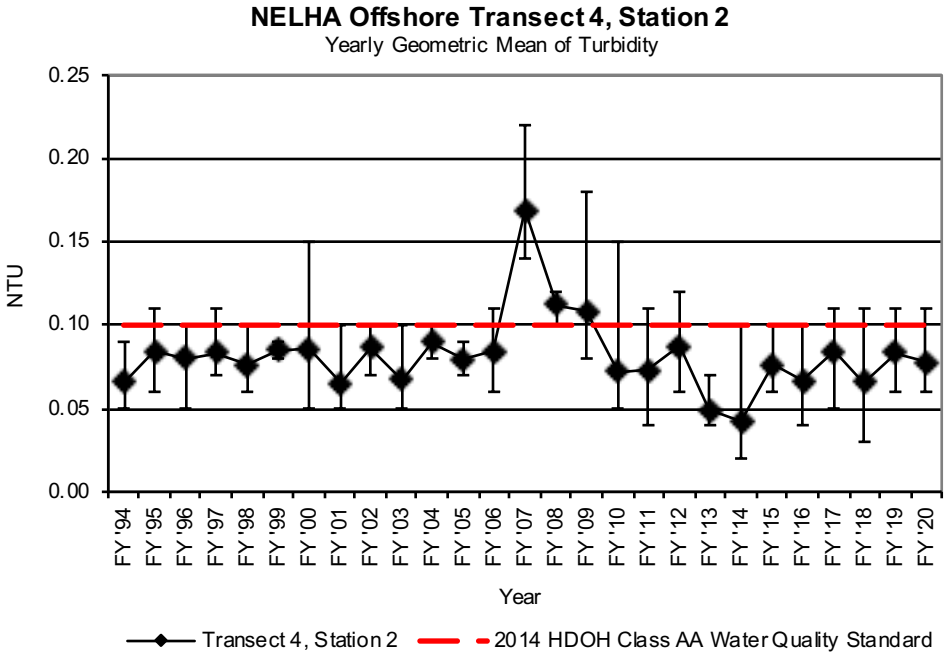


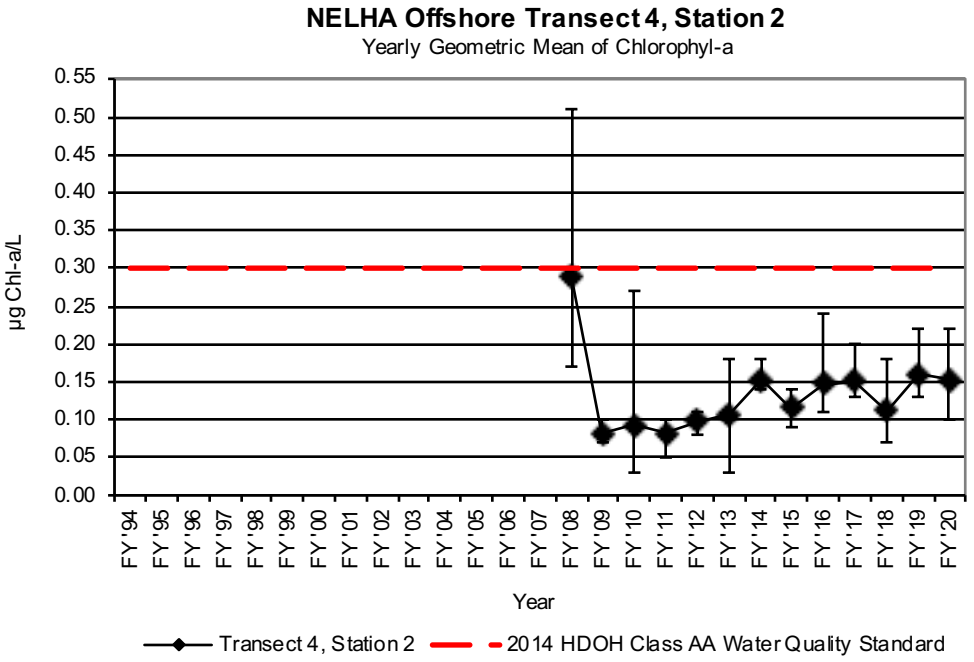
NELHA Water Quality Laboratory

Transect 4, Station 2

8/3/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 4, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-3S-38m	8/3/93	907	0.12	3.7	0.03	0.4	0.43	6.0	3.1	86					0.07	34.452	26.8			
O4-3S-38m	12/8/93	914	0.07	2.2	0.10	1.4	0.09	1.3	2.2	62					0.11	34.802	25.7			
O4-3S-38m	3/8/94	850	0.18	5.6	0.13	1.8	0.12	1.7	2.8	79					0.06	34.223	25.1			
O4-3S-38m	6/13/94	854	0.13	4.0	0.19	2.7	0.11	1.5	6.6	186					0.09	34.534	25.5			
Geomean	**FY '94**			**3.7**		**1.3**		**2.1**							**0.08**					
O4-3S-38m	9/15/94	851	0.08	2.5	0.06	0.8	0.17	2.4	2.5	70					0.08	34.626	27.6			
O4-3S-38m	11/15/94	812	0.13	4.0	0.20	2.8	0.52	7.3	3.3	94					0.08	34.609	26.0			
O4-3S-38m	3/22/95	1152	0.18	5.6	0.36	5.0	0.35	4.9	6.0	169					0.10	34.129	25.3			
O4-3S-38m	6/21/95	818	0.09	2.8	0.12	1.7	0.33	4.6	2.4	68					0.06	34.456	26.2			
Geomean	**FY '95**			**3.5**		**2.1**		***4.5***							**0.08**					
O4-3S-38m	9/28/95	1010	0.09	2.8	0.07	1.0	0.52	7.3	2.9	80					0.11	34.596	27.3			
O4-3S-38m	11/14/95	821	0.10	3.1	0.04	0.6	0.52	7.3	3.6	101					0.05	34.360	26.7			
O4-3S-38m	3/12/96	901	0.14	4.3	0.30	4.2	0.52	7.3	3.4	95					0.06	34.165	25.1			
O4-3S-38m	5/14/96	835	0.11	3.4	0.79	11.1	0.33	4.6	4.9	136					0.10	34.247	27.0			
Geomean	**FY '96**			**3.4**		**2.2**		***6.5***							**0.08**					
O4-3S-38m	7/31/96	910	0.07	2.2	0.04	0.6	0.35	4.9	2.9	80					0.07	34.483	28.0			
O4-3S-38m	10/2/96	848	0.06	1.9	0.02	0.3	0.17	2.4	2.8	77					0.08	34.644	27.9			
O4-3S-38m	1/7/97	903	0.10	3.1	0.31	4.3	0.20	2.8	3.5	98					0.07	34.671	25.4			
O4-3S-38m	4/28/97	915	0.15	4.6	0.24	3.4	0.44	6.2	5.2	146					0.11	34.406	26.7			
Geomean	**FY '97**			**2.8**		**1.2**		***3.8***							**0.08**					
O4-3S-38m	8/19/97	906	0.08	2.5	0.46	6.4	0.26	3.6	3.5	99					0.09	34.630	27.0			
O4-3S-38m	10/7/97	1144	0.13	4.0	0.21	2.9	0.45	6.3	4.0	111					0.11	34.729	27.8			
O4-3S-38m	3/4/98	907	0.07	2.2	0.05	0.7	0.16	2.2	3.1	86					0.06	35.029	25.0			
O4-3S-38m	5/5/98	918	0.08	2.5	0.13	1.8	0.15	2.1	6.8	192					0.06	35.051	24.1			
Geomean	**FY '98**			**2.7**		**2.2**		***3.2***							**0.08**					
O4-3S-38m	7/7/98	935	0.11	3.4	0.28	3.9	0.03	0.4	9.9	277					0.07	34.950	26.4			
O4-3S-38m	10/6/98	854	0.08	2.5	0.01	0.1	0.02	0.3	1.6	44					0.07	35.127	26.9			
O4-3S-38m	1/19/99	915	0.07	2.2	0.02	0.3	0.05	0.7	3.1	86					0.06	35.145	25.1			
O4-3S-38m	4/13/99	1004	0.15	4.6	0.44	6.2	0.10	1.4	6.1	172					0.07	34.647	24.3			
Geomean	**FY '99**			**3.0**		**1.0**		**0.6**							**0.07**					

NELHA Water Quality Laboratory

Transect 4, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-3S-38m	8/16/99	932	0.11	3.4	0.20	2.8	0.40	5.6	1.7	49					0.18	34.873	26.1			
O4-3S-38m	10/25/99	1026	0.11	3.4	0.02	0.3	0.21	2.9	4.2	117					0.08	34.963	26.1			
O4-3S-38m	1/12/00	937	0.10	3.1	0.03	0.4	0.27	3.8	1.8	51					0.05	35.134	24.7			
O4-3S-38m	5/16/00	907	0.17	5.3	0.33	4.6	0.09	1.3	5.6	156					0.08	34.606	25.1			
Geomean	**FY '00**			**3.7**		**1.1**		***3.0***							**0.09**					
O4-3S-38m	7/25/00	934	0.09	2.8	0.10	1.4	0.05	0.7	2.7	75					0.06	34.861	26.8			
O4-3S-38m	10/31/00	930	0.10	3.1	0.05	0.7	0.21	2.9	3.0	85					0.05	34.961	26.9			
O4-3S-38m	3/6/01	919	0.18	5.6	0.52	7.3	0.12	1.7	4.1	114					0.12	34.688	24.8			
O4-3S-38m	5/8/01	1016	0.10	3.1	0.08	1.1	0.18	2.5	6.4	178					0.06	34.731	25.0			
Geomean	**FY '01**			**3.5**		**1.7**		**1.7**							**0.07**					
O4-3S-38m	8/13/01	1024	0.09	2.8	0.01	0.1	0.26	3.6	12.3	345					0.12	34.880	26.5			
O4-3S-38m	10/30/01	932	0.15	4.6	0.39	5.5	0.06	0.8	3.2	90					0.06	34.982	26.7			
O4-3S-38m	3/4/02	956	0.13	4.0	0.13	1.8	0.01	0.1	1.9	53					0.11	34.685	24.2			
O4-3S-38m	4/16/02	954	0.16	5.0	0.52	7.3	0.21	2.9	6.8	192					0.08	34.407	25.5			
Geomean	**FY '02**			**4.0**		**1.8**		**1.1**							**0.09**					
O4-3S-38m	7/9/02	1109	0.10	3.1	0.07	1.0	0.11	1.5	2.5	71					0.07	34.668	26.8			
O4-3S-38m	10/7/02	949	0.06	1.9	0.02	0.3	0.30	4.2	2.3	63					0.05	34.945	27.0			
O4-3S-38m	3/10/03	1115	0.12	3.7	0.18	2.5	0.04	0.6	3.6	100					0.06	34.766	24.9			
O4-3S-38m	4/22/03	952	0.08	2.5	0.17	2.4	0.06	0.8	2.7	77					0.09	35.023	24.8			
Geomean	**FY '03**			**2.7**		**1.1**		**1.3**							**0.07**					
O4-3S-38m	8/19/03	1215	0.06	1.9	0.01	0.1	0.20	2.8	1.7	48					0.05	34.840	28.2			
O4-3S-38m	10/30/03	926	0.11	3.4	0.13	1.8	0.30	4.2	2.0	56					0.11	34.821	27.4			
O4-3S-38m	3/17/04	1014	0.12	3.7	0.06	0.8	0.15	2.1	1.5	43					n/a	34.417	26.0			
O4-3S-38m	5/24/04	936	0.15	4.6	0.18	2.5	0.06	0.8	3.5	97					n/a	33.36	26.8			
Geomean	**FY '04**			**3.2**		**0.9**		**2.1**							**0.07**					
O4-3S-38m	9/22/04	1008	0.06	1.9	0.01	0.1	0.20	2.8	1.5	42					0.11	33.80	27.9			
O4-3S-38m	11/29/04	918	0.06	1.9	0.16	2.2	0.12	1.7	1.2	33					0.05	33.74	26.9			
O4-3S-38m	1/24/05	951	0.09	2.8	0.02	0.3	0.09	1.3	1.8	49					0.10	34.809	25.5			
O4-3S-38m	4/13/05	955	0.13	4.0	0.46	6.4	0.23	3.2	3.5	99					0.11	34.431	25.4			
Geomean	**FY '05**			**2.5**		**0.9**		**2.1**							**0.09**					

NELHA Water Quality Laboratory

Transect 4, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-3S-38m	7/21/05	909	0.05	1.5	0.09	1.3	0.28	3.9	1.3	36					0.07	34.730	27.4			
O4-3S-38m	10/13/05	847	0.06	1.9	0.13	1.8	0.18	2.5	2.2	63					0.16	34.880	27.2			
O4-3S-38m	3/14/06	934	0.09	2.8	0.07	1.0	0.29	4.1	7.8	220					0.08	34.858	24.5			
O4-3S-38m	5/17/06	904	0.09	2.8	0.07	1.0	0.20	2.8	1.3	38					0.07	34.659	24.6			
Geomean	**FY '06**			**2.2**		**1.2**		***3.3***							**0.09**					
O4-3S-38m	8/16/06	906	0.14	4.3	0.27	3.8	0.21	2.9	2.9	83					0.15	34.644	26.8			
O4-3S-38m	11/20/06	901	0.10	3.1	0.11	1.5	0.56	7.8	1.7	47					0.12	34.819	26.7			
O4-3S-38m	2/12/07	954	0.14	4.3	0.14	2.0	0.40	5.6	0.7	21					0.17	34.431	24.5			
O4-3S-38m	4/16/07	951	0.17	5.3	1.32	18.5	0.31	4.3	12.8	359					0.11	34.35	26.1			
Geomean	**FY '07**			**4.2**		**3.8**		***4.9***							***0.14***					
T4-50m	9/26/07	1155	0.15	4.8	0.30	4.2	0.26	3.7	24.2	681	0.40	12.4	6.8	96	0.10	34.952	26.9	8.20	6.63	0.18
T4-50m	12/14/07	907	0.08	2.4	0.01	0.1			4.8	135	0.36	11.0	5.1	71	0.10	34.735	25.6	8.22	6.70	0.22
T4-50m	3/11/08	919	0.28	8.6	0.46	6.4	0.06	0.8	6.5	182	0.23	7.1	6.3	89	0.12	34.863	24.7	8.08	6.53	0.39
T4-50m	6/9/08	959	0.07	2.1	0.09	1.2	0.16	2.2	13.0	366	0.34	10.6	9.6	134	0.08	34.6742	25.2	8.1	5.82	0.13
Geomean	**FY '08**			**3.8**		**1.3**		**1.9**				**10.1**		**95**	**0.10**					**0.21**
T4-50m	9/23/08	1047	0.02	0.6	0.04	0.5	0.30	4.2	1.3	36	0.36	11.2	5.3	74	0.06	34.834	26.7	8.06	5.92	0.07
T4-50m	12/8/08	955	0.16	5.1	0.34	4.7	0.22	3.1	2.2	63	0.65	20	5.7	81	0.07	34.985	26.1	8.30	5.42	0.12
T4-50m	2/10/09	851	0.10	3	0.48	6.7	0.12	1.7	2.4	67	0.38	11.7	9.6	134	0.08	35.048	24.7	8.05	5.98	0.04
T4-50m	6/30/09	935	0.25	7.8	0.44	6.1	0.16	2.2	6.9	193	0.43	13.4	4.6	64	0.09	34.887	26.7	8.21	6.04	0.13
Geomean	**FY '09**			**2.9**		**3.1**		***2.6***				***13.7***		**85**	**0.07**					**0.08**
T4-50m	9/10/09	922	0.09	2.8	0.06	0.9	0.10	1.4	4.8	136	0.42	12.9	5.7	80	0.21	35.21	27.3	8.23	5.90	0.08
T4-50m	11/24/09	913	0.03	0.8	0.19	2.7	0.25	3.5	14.6	411	0.37	11.6	5.5	78	0.05	35.26	25.2	8.25	6.59	0.19
T4-50m	2/24/10	945	0.15	4.5	0.22	3.1	0.34	4.8	3.8	107	0.37	11.6	5.5	78	0.08	35.09	24.6	8.23	5.59	0.24
T4-50m	5/25/10	925	0.02	0.7	0.34	4.8	0.05	0.7	2.6	73	0.24	7.4	5.5	77	0.07	34.93	25.0	8.21	6.94	0.09
Geomean	**FY '10**			**1.6**		**2.5**		**2.0**				**10.6**		**78**	**0.09**					**0.13**
T4-50m	8/11/10	919	0.02	0.6	0.09	1.2	0.02	0.3	1.8	50	0.29	8.9	2.9	41	0.04	34.96	26.01	8.23	6.67	0.05
T4-50m	11/9/10	917	0.04	1.1	0.20	2.8	0.09	1.3	3.4	96	0.35	10.9	3.6	50	0.11	34.95	26.38	8.27	6.21	0.04
T4-50m	1/11/11	1138	0.14	4.3	0.34	4.8	0.12	1.7	5.1	144	0.42	12.9	3.7	51	0.03	35.02	24.97	8.20	6.46	0.09
T4-50m	4/27/11	928	0.12	3.6	0.46	6.5	0.14	2.0	4.2	117	0.45	13.9	4.3	61	0.09	34.89	24.91	8.21	6.31	0.09
Geomean	**FY '11**			**1.8**		**3.2**		**1.1**				**11.5**		**50**	**0.06**					**0.06**

NELHA Water Quality Laboratory

Transect 4, Station 3

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-50m	7/27/11	921	0.18	5.7	0.35	4.9	0.15	2.1	2.2	63	0.48	14.8	4.0	57	0.05	34.78	26.03	8.21	6.10	0.11
T4-50m	10/19/11	948	0.04	1.2	0.10	1.4	0.03	0.4	1.6	46	0.51	15.7	3.6	51	0.02	35.09	26.46	8.23	7.02	0.08
T4-50m	1/26/12	919	0.06	1.9	0.11	1.6	0.07	1	1.7	48	0.33	10.2	3.5	50	0.06	35.04	24.43	8.24	6.60	0.09
T4-50m	4/25/12	935	0.16	5	0.14	1.9	0.39	5.4	4.2	119	0.45	13.9	4.4	61	0.04	34.88	24.85	8.18	6.76	0.10
Geomean	**FY '12**			**2.8**		**2.1**		**1.5**				***13.5***		**54**	**0.04**					**0.09**
T4-50m	7/25/12	929	0.03	1	0.14	2	0.19	2.7	1.4	38	0.36	11.2	4.6	65	0.10	35.08	26.36	8.24	6.75	0.09
T4-50m	11/28/12	932	0.08	2.5	0.08	1.1	0.20	2.8	1.3	37	0.35	10.8	4.1	58	0.04	35.26	25.35	8.20	6.69	0.09
T4-50m	1/24/13	917	0.10	3.2	0.52	7.3	0.15	2.1	2.9	81	0.45	14	5.0	69	0.03	35.04	24.70	8.20	6.25	0.10
T4-50m	4/17/13	1031	0.18	5.5	0.51	7.1	0.34	4.8	1.8	51	0.48	14.8	4.7	65	0.04	35.16	25.07	8.20	6.90	0.10
Geomean	**FY '13**			**2.6**		**3.3**		***3.0***				***12.6***		**64**	**0.05**					**0.09**
T4-50m	8/6/13	940	0.11	3.4	0.12	1.7	0.14	1.9	2.0	55	0.40	12.5	8.3	116	0.07	35.17	26.3	8.27	6.99	0.11
T4-50m	10/30/13	916	0.17	5.3	0.53	7.4	0.24	3.3	2.6	74	0.47	14.7	5.2	72	0.02	34.86	27.0	8.23	5.85	0.10
T4-50m	2/5/14	937	0.14	4.4	0.29	4.0	0.28	3.9	2.5	71	0.50	15.4	4.1	58	0.02	34.92	25.1	8.20	6.24	0.14
T4-50m	5/7/14	933	0.12	3.6	0.29	4.1	0.15	2.1	1.6	45	0.56	17.5	7.0	98	0.07	34.79	25.8	8.21	5.67	0.15
Geomean	**FY '14**			**4.1**		**3.8**		***2.7***				***14.9***		**83**	**0.04**					**0.12**
T4-50m	8/6/14	927	0.16	5.1	0.06	0.8	0.24	3.4	0.8	22	0.47	14.7	3.5	49	0.05	34.93	26.9	8.23	6.54	0.11
T4-50m	12/4/14	952	0.10	3.2	0.12	1.7	0.54	7.6	0.6	16	0.40	12.3	6.0	84	0.11	35.21	26.4	8.23	6.23	0.17
T4-50m	3/5/15	942	0.02	0.5	0.15	2.1	0.24	3.3	0.5	15	0.31	9.7	6.5	91	0.08	34.70	25.4	8.22	6.80	0.09
T4-50m	6/18/15	928	0.11	3.5	0.19	2.6	0.13	1.8	2.7	77	0.16	4.9	7.3	103	0.06	34.41	26.6	8.12	6.36	0.09
Geomean	**FY '15**			**2.3**		**1.7**		***3.5***				**9.6**		**79**	**0.07**					**0.11**
T4-50m	8/29/15	940	0.20	6.2	0.26	3.6	0.27	3.8	4.3	121	0.35	10.9	6.9	96	0.04	34.64	28.5	8.24	6.01	0.11
T4-50m	11/18/15	957	0.13	4.1	0.50	7.0	0.29	4.0	4.6	130	0.48	14.9	4.6	64	0.02	34.63	27.4	8.27	6.57	0.09
T4-50m	3/2/16	847	0.15	4.7	0.32	4.5	0.42	5.9	0.4	11	0.47	14.5	4.2	59	0.08	34.71	25.2	8.23	5.82	0.08
T4-50m	5/4/16	932	0.20	6.1	0.19	2.6	0.21	3.0	0.8	22	0.42	13.1	6.3	89	0.06	34.68	25.8	8.18	6.19	0.15
Geomean	**FY '16**			***5.2***		**4.1**		***4.0***				***13.3***		**75**	**0.04**					**0.10**
T4-50m	7/7/16	941	0.06	1.9	0.27	3.8	0.16	2.2	0.5	13	0.41	12.8	1.9	26	0.08	34.72	27.1	8.32	6.88	0.25
T4-50m	12/21/16	943	0.07	2.3	0.31	4.4	0.01	0.1	1.7	47	0.35	10.7	3.0	42	0.04	34.66	25.4	8.26	5.89	0.14
T4-50m	3/1/17	1050	0.02	0.6	0.23	3.2	0.06	0.8	0.5	14	0.31	9.5	4.8	67	0.09	34.76	24.6	8.23	6.50	0.16
T4-50m	5/10/17	1040	0.05	1.6	0.14	2.0	0.13	1.8	0.7	20	0.23	7.2	3.2	44	0.09	34.79	25.8	8.25	4.29	0.08
Geomean	**FY '17**			**1.4**		**3.2**		**0.8**				**9.8**		**42**	**0.07**					**0.15**

NELHA Water Quality Laboratory

Transect 4, Station 3

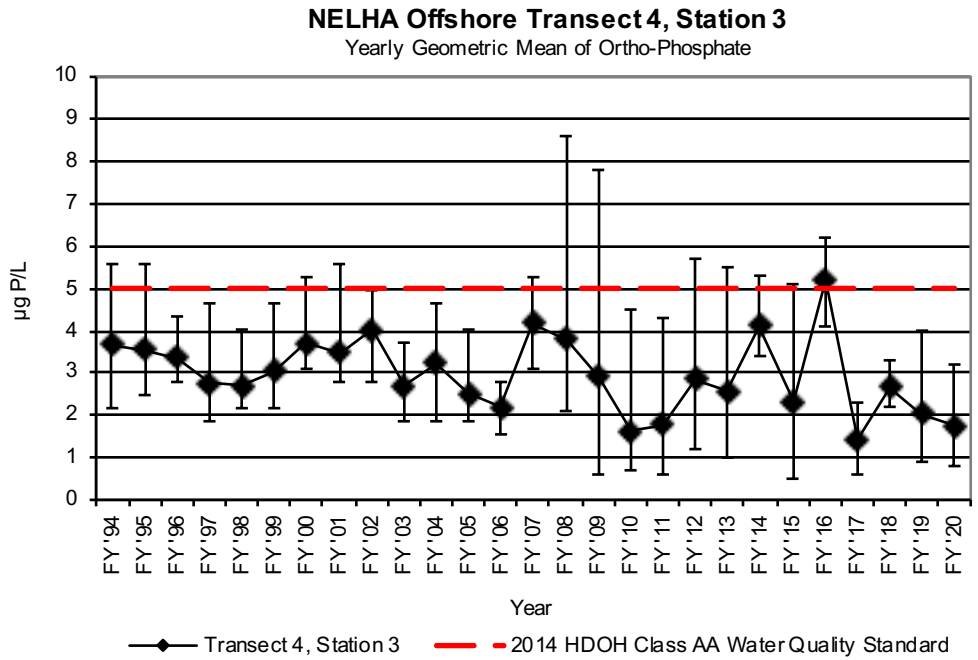
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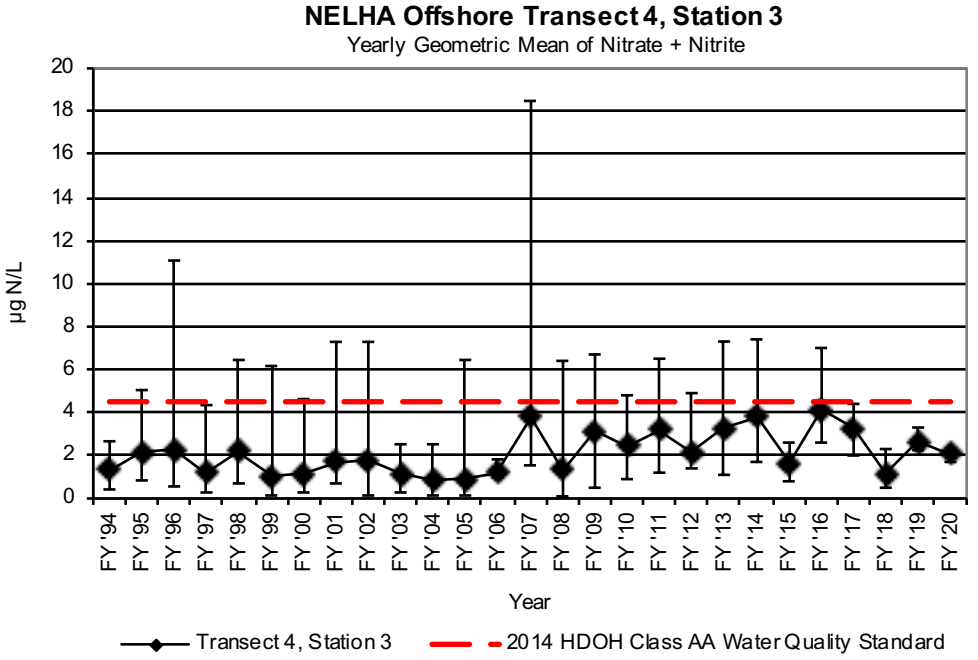
SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-50m	9/28/17	936	0.11	3.3	0.06	0.9	0.09	1.3	0.3	7	0.38	11.9	2.6	37	0.06	34.84	27.9	8.18	5.04	0.12
T4-50m	11/30/17	921	0.08	2.5	0.16	2.3	0.32	4.5	1.4	39	0.36	11.3	3.5	50	0.08	35.17	26.4	8.21	5.72	0.15
T4-50m	2/6/18	1003	0.07	2.2	0.04	0.5	0.31	4.3	1.3	36	0.34	10.5	3.1	44	0.10	34.84	24.9	8.16	5.89	0.08
T4-50m	5/17/18	937	0.09	2.7	0.11	1.6	0.12	1.7	1.2	34	0.37	11.6	1.8	26	0.02	34.82	26.1	8.15	6.46	0.07
Geomean	**FY '18**			**2.6**		**1.1**		***2.6***				**11.3**		**38**	**0.06**					**0.10**
T4-50m	9/26/18	1208	0.03	0.9	0.16	2.3	0.42	5.9	0.5	13	0.33	10.1	2.0	28	0.09	34.72	27.7	8.15	4.70	0.18
T4-50m	11/14/18	1024	0.06	1.8	0.24	3.3	0.25	3.5	0.1	3	0.34	10.6	3.9	55	0.08	34.91	27.3	8.17	6.07	0.14
T4-50m	1/23/19	1008	0.08	2.6	0.16	2.3	0.08	1.1	0.8	24	0.36	11.2	3.5	49	0.15	34.92	24.9	8.18	5.11	0.15
T4-50m	4/17/19	1000	0.13	4.0	0.20	2.8	0.11	1.5	1.3	37	0.38	11.8	2.7	37	0.03	34.76	25.7	8.10	6.91	0.10
Geomean	**FY '19**			**2.0**		**2.6**		**2.4**				**10.9**		**41**	**0.08**					**0.14**
T4-50m	8/15/19	942	0.03	0.8	0.16	2.3	0.20	2.8	2.0	55	0.29	9.1	2.0	28	0.08	35.24	28.2	8.20	6.62	0.17
T4-50m	11/19/19	1116	0.10	3.2	0.12	1.7	0.45	6.3	0.3	7	0.39	12.2	2.7	38	0.08	34.87	27.7	8.22	6.49	0.12
T4-50m	1/23/20	956	0.08	2.5	0.16	2.3	0.09	1.3	0.0	0	0.39	12.0	2.6	36	0.06	34.98	25.0	8.25	6.70	0.10
T4-50m	6/25/20	917	0.05	1.5	0.16	2.3	0.52	7.3	0.4	12	0.28	8.6	2.9	40	0.08	35.47	26.2	8.16	6.73	0.20
Geomean	**FY '20**			**1.8**		**2.1**		***3.6***				**10.3**		**35**	**0.07**					**0.14**

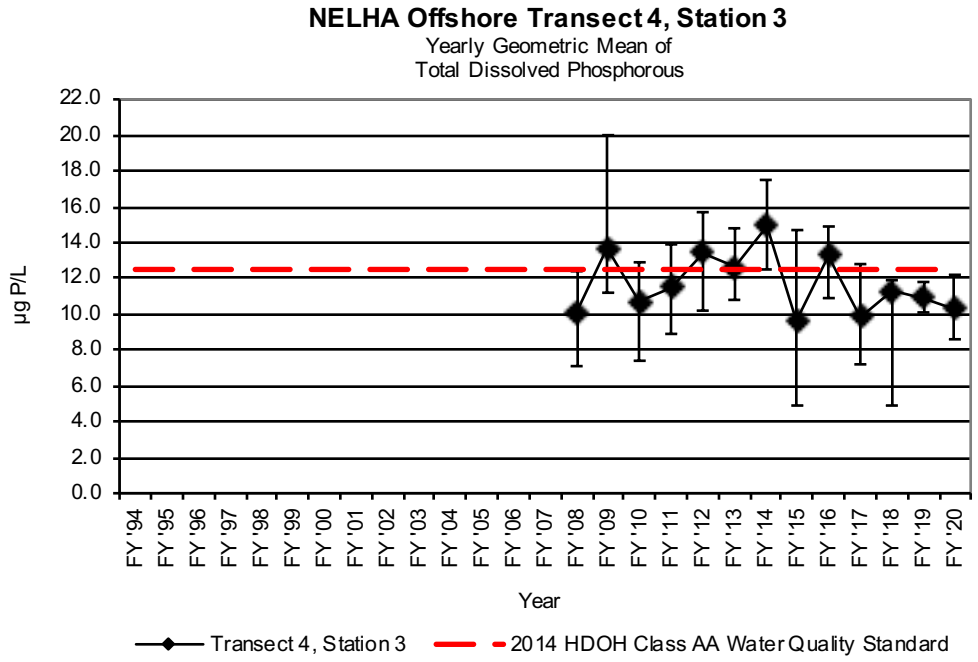
NELHA Water Quality Laboratory

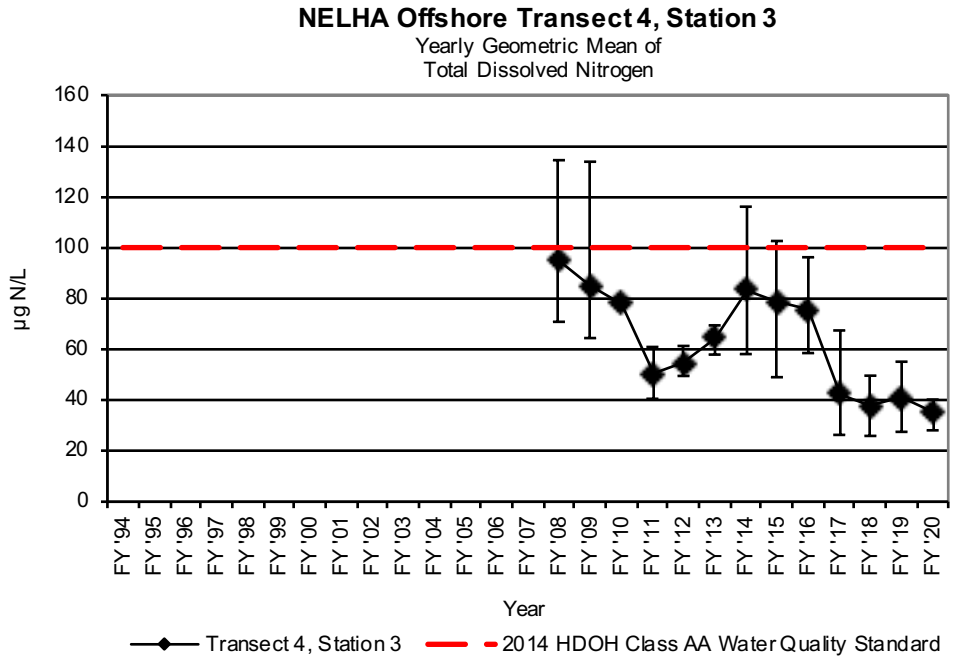
Transect 4, Station 3

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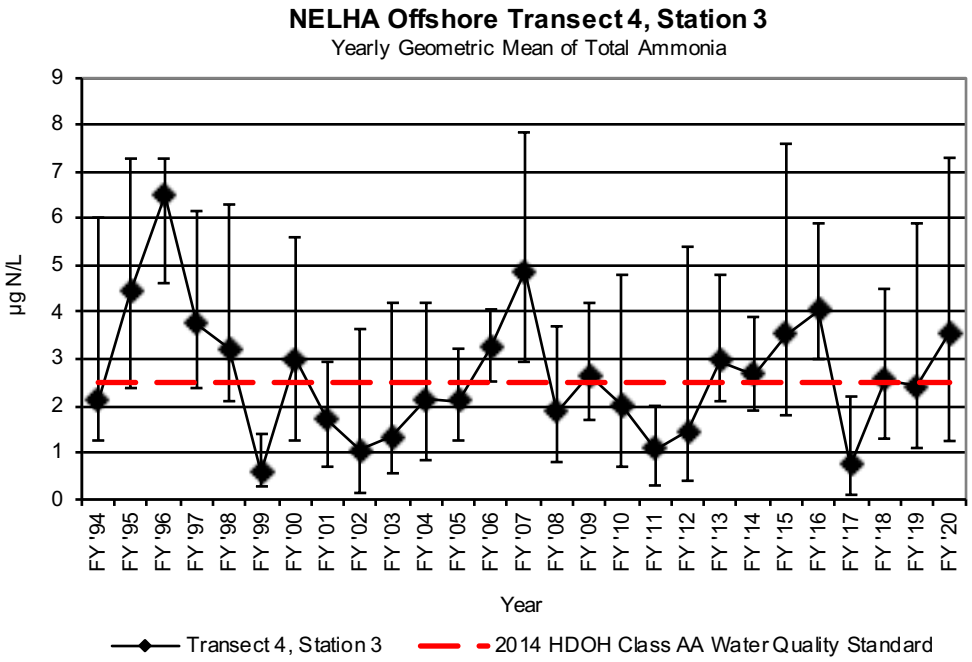


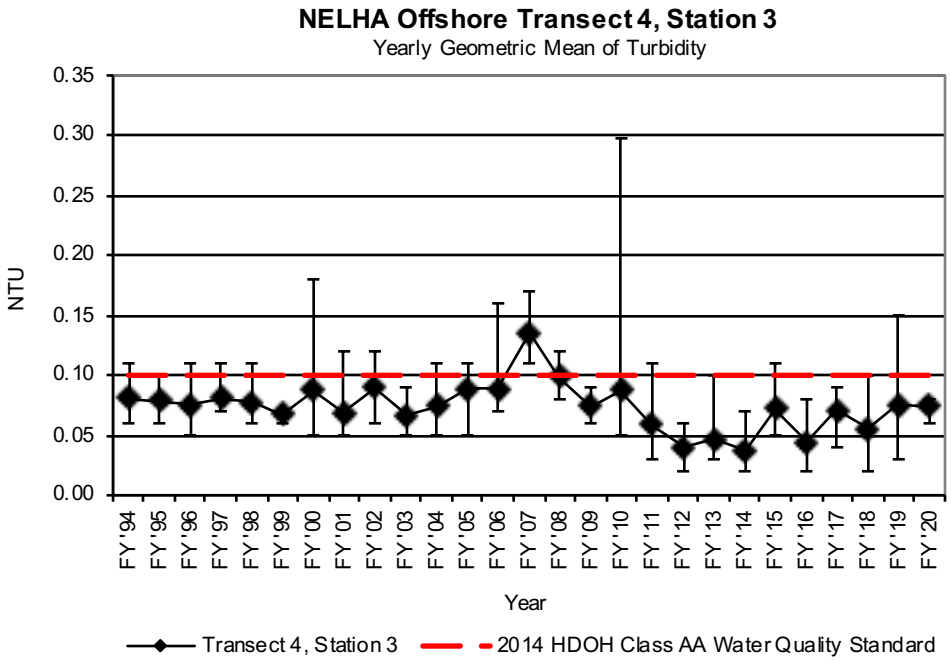


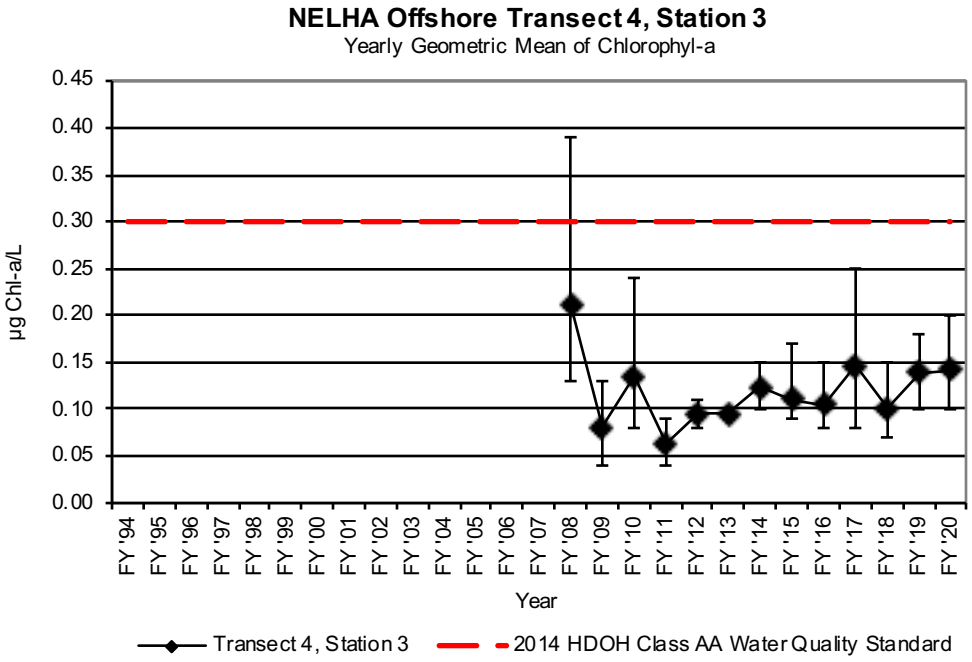
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Transect 4, Station 3

8/3/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 4, Station 4

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-4S-53m	8/3/93	854	0.12	3.7	0.02	0.3	0.41	5.7	1.9	54					0.06	34.457	26.8			
O4-4S-53m	12/8/93	905	0.07	2.2	0.09	1.3	0.10	1.4	4.3	120					0.05	34.793	25.7			
O4-4S-53m	3/8/94	843	0.18	5.6	0.18	2.5	0.18	2.5	3.9	108					0.09	34.214	25.1			
O4-4S-53m	6/13/94	848	0.13	4.0	0.19	2.7	0.21	2.9	6.4	181					0.09	34.529	25.5			
Geomean	**FY '94**			**3.7**		**1.2**		***2.8***							**0.07**					
O4-4S-53m	9/15/94	848	0.07	2.2	0.02	0.3	0.15	2.1	4.7	133					0.07	34.636	27.6			
O4-4S-53m	11/15/94	806	0.14	4.3	0.28	3.9	0.51	7.1	3.9	110					0.08	34.587	26.0			
O4-4S-53m	3/22/95	1145	0.18	5.6	0.36	5.0	0.35	4.9	5.4	151					0.09	34.144	25.3			
O4-4S-53m	6/21/95	811	0.09	2.8	0.13	1.8	0.35	4.9	2.5	70					0.06	34.455	26.2			
Geomean	**FY '95**			**3.5**		**1.8**		***4.4***							**0.07**					
O4-4S-53m	9/28/95	1017	0.08	2.5	0.07	1.0	0.46	6.4	1.9	54					0.07	34.613	27.3			
O4-4S-53m	11/14/95	817	0.11	3.4	0.11	1.5	0.43	6.0	3.7	103					0.05	34.363	26.7			
O4-4S-53m	3/12/96	854	0.14	4.3	0.27	3.8	0.46	6.4	3.1	88					0.06	34.165	25.0			
O4-4S-53m	5/14/96	830	0.10	3.1	0.80	11.2	0.25	3.5	4.9	138					0.08	34.242	26.9			
Geomean	**FY '96**			**3.3**		**2.8**		***5.4***							**0.06**					
O4-4S-53m	7/31/96	900	0.07	2.2	0.05	0.7	0.37	5.2	4.0	111					0.07	34.471	28.2			
O4-4S-53m	10/2/96	843	0.06	1.9	0.03	0.4	0.18	2.5	3.2	91					0.08	34.644	27.9			
O4-4S-53m	1/7/97	858	0.08	2.5	0.16	2.2	0.17	2.4	3.5	98					0.08	34.719	25.4			
O4-4S-53m	4/28/97	910	0.13	4.0	0.31	4.3	0.44	6.2	4.0	112					0.13	34.410	26.8			
Geomean	**FY '97**			**2.5**		**1.3**		***3.7***							**0.09**					
O4-4S-53m	8/19/97	902	0.06	1.9	0.21	2.9	0.20	2.8	2.7	77					0.10	34.661	27.1			
O4-4S-53m	10/7/97	1139	0.13	4.0	0.15	2.1	0.38	5.3	3.9	109					0.11	34.739	27.7			
O4-4S-53m	3/4/98	902	0.08	2.5	0.05	0.7	0.15	2.1	2.7	76					0.06	35.035	24.9			
O4-4S-53m	5/5/98	913	0.08	2.5	0.17	2.4	0.14	2.0	4.1	116					0.06	35.051	24.0			
Geomean	**FY '98**			**2.6**		**1.8**		***2.8***							**0.08**					
O4-4S-53m	7/7/98	929	0.11	3.4	0.36	5.0	0.01	0.1	5.3	149					0.09	34.950	26.3			
O4-4S-53m	10/6/98	848	0.08	2.5	0.01	0.1	0.02	0.3	1.5	42					0.08	35.125	26.9			
O4-4S-53m	1/19/99	909	0.07	2.2	0.02	0.3	0.03	0.4	2.7	75					0.06	35.150	25.1			
O4-4S-53m	4/13/99	1000	0.15	4.6	0.44	6.2	0.07	1.0	4.3	122					0.08	34.638	24.3			
Geomean	**FY '99**			**3.0**		**1.1**		**0.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 4, Station 4

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-4S-53m	8/16/99	924	0.11	3.4	0.30	4.2	0.40	5.6	1.8	52					0.11	34.877	26.1			
O4-4S-53m	10/25/99	1020	0.09	2.8	0.01	0.1	0.28	3.9	6.0	167					0.08	34.959	26.2			
O4-4S-53m	1/12/00	932	0.12	3.7	0.03	0.4	0.29	4.1	4.2	119					0.04	35.198	24.7			
O4-4S-53m	5/16/00	903	0.15	4.6	0.23	3.2	0.05	0.7	4.0	111					0.05	34.642	25.1			
Geomean	**FY '00**			**3.6**		**0.9**		***2.8***							**0.06**					
O4-4S-53m	7/25/00	929	0.10	3.1	0.13	1.8	0.05	0.7	2.7	75					0.05	34.862	26.7			
O4-4S-53m	10/31/00	923	0.09	2.8	0.04	0.6	0.24	3.4	3.2	88					0.09	34.964	26.9			
O4-4S-53m	3/6/01	915	0.18	5.6	0.50	7.0	0.04	0.6	4.5	126					0.09	34.696	24.8			
O4-4S-53m	5/8/01	1013	0.11	3.4	0.10	1.4	0.15	2.1	4.2	118					0.11	34.745	24.9			
Geomean	**FY '01**			**3.6**		**1.8**		**1.3**							**0.08**					
O4-4S-53m	8/13/01	1020	0.08	2.5	0.03	0.4	0.26	3.6	2.8	79					0.09	34.878	26.6			
O4-4S-53m	10/30/01	925	0.11	3.4	0.05	0.7	0.02	0.3	1.7	49					0.06	35.026	26.8			
O4-4S-53m	3/4/02	951	0.13	4.0	0.12	1.7	0.01	0.1	2.6	73					0.11	34.668	24.1			
O4-4S-53m	4/16/02	949	0.16	5.0	0.32	4.5	0.25	3.5	6.1	170					0.12	34.389	25.6			
Geomean	**FY '02**			**3.6**		**1.2**		**0.8**							**0.09**					
O4-4S-53m	7/9/02	1103	0.11	3.4	0.01	0.1	0.17	2.4	2.3	64					0.06	34.674	26.7			
O4-4S-53m	10/7/02	945	0.06	1.9	0.02	0.3	0.20	2.8	2.4	68					0.06	34.942	27.0			
O4-4S-53m	3/10/03	1108	1.10	34.1	0.14	2.0	0.04	0.6	2.9	83					0.06	34.760	25.0			
O4-4S-53m	4/22/03	948	0.07	2.2	0.03	0.4	0.03	0.4	3.4	95					0.06	35.041	24.8			
Geomean	**FY '03**			**4.7**		**0.4**		**1.1**							**0.06**					
O4-4S-53m	8/19/03	1204	0.06	1.9	0.01	0.1	0.20	2.8	1.5	42					0.05	34.841	28.2			
O4-4S-53m	10/30/03	919	0.10	3.1	0.13	1.8	0.24	3.4	1.8	52					0.08	34.823	27.5			
O4-4S-53m	3/17/04	1009	0.12	3.7	0.04	0.6	0.15	2.1	1.8	50					n/d	34.389	26.0			
O4-4S-53m	5/24/04	931	0.15	4.6	0.07	1.0	0.06	0.8	2.7	75					n/d	33.36	26.8			
Geomean	**FY '04**			**3.2**		**0.6**		**2.0**							**0.06**					
O4-4S-53m	9/22/04	1000	0.07	2.2	0.01	0.1	0.26	3.6	1.4	40					0.08	33.78	27.6			
O4-4S-53m	11/29/04	913	0.06	1.9	0.10	1.4	0.10	1.4	1.1	30					0.05	33.70	26.9			
O4-4S-53m	1/24/05	950	0.08	2.5	0.45	6.3	0.12	1.7	3.0	83					0.11	35.257	25.4			
O4-4S-53m	4/13/05	948	0.13	4.0	0.48	6.7	0.17	2.4	3.0	85					0.11	34.441	25.5			
Geomean	**FY '05**			**2.5**		**1.7**		**2.1**							**0.08**					

NELHA Water Quality Laboratory

Transect 4, Station 4

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-4S-53m	7/21/05	904	0.06	1.9	0.17	2.4	0.28	3.9	3.1	86					0.09	34.693	27.4			
O4-4S-53m	10/13/05	839	0.05	1.5	0.01	0.1	0.18	2.5	2.3	63					0.14	34.900	27.2			
O4-4S-53m	3/14/06	930	0.10	3.1	0.11	1.5	0.33	4.6	6.1	172					0.09	34.847	24.5			
O4-4S-53m	5/17/06	858	0.09	2.8	0.11	1.5	0.05	0.7	1.3	37					0.09	34.682	24.6			
Geomean	**FY '06**			**2.2**		**0.9**		**2.4**							***0.10***					
O4-4S-53m	8/16/06	901	0.11	3.4	0.27	3.8	0.20	2.8	2.5	71					0.14	34.641	26.8			
O4-4S-53m	11/20/06	854	0.10	3.1	0.13	1.8	0.53	7.4	1.6	45					0.14	34.798	26.7			
O4-4S-53m	2/12/07	947	0.17	5.3	0.15	2.1	0.35	4.9	0.9	26					0.14	34.448	24.5			
O4-4S-53m	4/16/07	944	0.16	5.0	0.40	5.6	0.32	4.5	6.6	186					0.13	34.547	25.9			
Geomean	**FY '07**			**4.1**		**3.0**		***4.6***							***0.14***					
T4-100m	9/26/07	1211	0.15	4.8	0.14	2.0	0.10	1.4	5.2	147	0.47	14.5	5.8	81	0.08	34.977	26.8	8.21	6.62	0.09
T4-100m	12/14/07	913	0.08	2.4	0.01	0.1			3.7	104	0.30	9.3	7.0	98	0.07	34.729	25.7	8.22	6.59	0.17
T4-100m	3/11/08	922	0.35	10.9	0.33	4.6	0.06	0.8	6.5	182	0.14	4.2	7.3	102	0.08	34.826	24.7	8.08	6.48	0.38
T4-100m	6/9/08	1014	0.07	2.1	0.08	1.1	0.02	0.3	10.4	293	0.24	7.5	6.3	88	0.13	34.6992	25.8	8.11	5.7	0.1
Geomean	**FY '08**			**4.0**		**1.0**		**0.7**				**8.1**		**92**	**0.09**					**0.16**
T4-100m	9/23/08	1052	0.17	5.3	0.00	0.01	0.19	2.6	1.7	47	0.36	11.2	5.1	71	0.08	34.830	26.6	8.06	5.81	0.07
T4-100m	12/8/08	1000	0.15	4.7	0.24	3.4	0.13	1.8	2.6	73	0.40	12.4	5.6	78	0.07	34.967	26.2	8.28	5.15	0.06
T4-100m	2/10/09	856	0.09	2.9	0.29	4	0.12	1.7	2.0	56	0.23	7	7.6	107	0.15	35.100	24.7	8.05	6.10	0.03
T4-100m	6/30/09	941	0.24	7.3	0.24	3.3	0.12	1.7	4.2	117	0.38	11.9	5.2	72	0.17	34.899	26.7	8.19	5.88	0.1
Geomean	**FY '09**			**4.8**		**0.8**		**1.9**				**10.4**		**81**	***0.11***					**0.06**
T4-100m	9/10/09	929	0.16	5	0.09	1.2	0.03	0.4	13.7	385	0.40	12.5	6.2	87	0.08	35.22	27.4	8.21	5.86	0.18
T4-100m	11/24/09	917	0.03	0.8	0.21	3	0.15	2.1	2.1	59	0.36	11.3	5.2	73	0.04	35.27	25.2	8.25	6.47	0.14
T4-100m	2/24/10	949	0.15	4.8	0.22	3.1	0.39	5.5	3.3	92	0.36	11.0	6.8	95	0.06	35.09	24.6	8.23	5.47	0.17
T4-100m	5/25/10	930	0.01	0.2	0.06	0.9	0.51	7.2	1.8	51	0.23	7.2	6.7	94	0.04	34.93	25.0	8.20	6.84	0.08
Geomean	**FY '10**			**1.4**		**1.8**		**2.4**				**10.3**		**86**	**0.05**					**0.14**
T4-100m	8/11/10	926	0.01	0.4	0.06	0.9	0.01	0.2	1.6	46	0.29	9.1	2.8	39	0.06	34.97	26.01	8.23	6.56	0.14
T4-100m	11/9/10	923	0.04	1.3	0.11	1.5	0.04	0.5	1.1	30	0.43	13.2	3.9	55	0.07	34.88	26.04	8.28	6.26	0.01
T4-100m	1/11/11	1147	0.16	5.1	0.51	7.2	0.40	5.6	3.0	85	0.43	13.4	3.9	55	0.08	35.01	24.97	8.21	6.47	0.11
T4-100m	4/27/11	932	0.13	3.9	0.37	5.2	0.19	2.7	3.4	96	0.45	13.9	4.2	59	0.08	34.91	24.91	8.22	6.31	0.18
Geomean	**FY '11**			**1.8**		**2.7**		**1.1**				**12.2**		**51**	**0.07**					**0.07**

NELHA Water Quality Laboratory

Transect 4, Station 4

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-100m	7/27/11	926	0.18	5.7	0.29	4.1	0.16	2.2	1.7	48	0.46	14.2	4.8	68	0.04	34.79	26.02	8.21	6.12	0.11
T4-100m	10/19/11	953	0.03	1	0.06	0.9	0.04	0.6	1.8	50	0.48	14.9	4.6	64	0.03	35.10	26.49	8.24	7.07	0.08
T4-100m	1/26/12	923	0.06	1.8	0.14	1.9	0.01	0.1	1.8	50	0.34	10.4	3.9	54	0.05	35.03	24.42	8.26	6.65	0.11
T4-100m	4/25/12	938	0.14	4.4	0.08	1.1	0.22	3.1	0.8	23	0.44	13.5	5.0	69	0.03	34.88	24.86	8.18	6.77	0.04
Geomean	**FY '12**			**2.6**		**1.7**		**0.8**				***13.1***		**63**	**0.04**					**0.08**
T4-100m	7/25/12	934	0.03	1	0.14	2	0.49	6.9	1.4	38	0.37	11.5	5.8	81	0.09	35.10	26.40	8.23	6.75	0.08
T4-100m	11/28/12	936	0.09	2.7	0.04	0.5	0.11	1.5	1.0	29	0.48	15	6.5	91	0.04	35.27	25.32	8.20	6.58	0.09
T4-100m	1/24/13	920	0.05	1.7	0.01	0.2	0.05	0.7	1.2	34	0.46	14.1	3.9	54	0.06	35.10	24.80	8.23	6.43	0.05
T4-100m	4/17/13	1037	0.17	5.2	0.31	4.3	0.15	2.1	1.2	32	1.18	36.7	5.5	77	0.02	35.17	25.00	8.20	6.56	0.09
Geomean	**FY '13**			**2.2**		**1.0**		**2.0**				***17.3***		**74**	**0.05**					**0.08**
T4-100m	8/6/13	946	0.11	3.5	0.01	0.1	0.20	2.8	0.5	15	0.36	11.3	5.3	74	0.02	35.21	26.6	8.27	7.01	0.05
T4-100m	10/30/13	921	0.14	4.2	0.22	3.1	0.14	2.0	1.8	49	0.43	13.4	5.5	77	0.08	34.90	27.0	8.23	5.80	0.17
T4-100m	2/5/14	941	0.14	4.2	0.23	3.2	0.24	3.3	2.5	70	0.46	14.3	5.4	75	0.02	34.94	25.1	8.20	6.28	0.12
T4-100m	5/7/14	938	0.10	3.1	0.06	0.8	0.11	1.5	0.9	27	0.46	14.1	6.3	88	0.10	34.33	26.0	8.21	5.59	0.13
Geomean	**FY '14**			**3.7**		**0.9**		**2.3**				***13.2***		**79**	**0.04**					**0.11**
T4-100m	8/6/14	931	0.16	4.9	0.01	0.2	0.28	3.9	0.5	14	0.49	15.3	4.2	59	0.07	34.96	27.0	8.22	6.50	0.11
T4-100m	12/4/14	1000	0.09	2.9	0.01	0.2	0.52	7.3	0.2	4	0.44	13.5	7.4	104	0.05	35.23	26.4	8.24	6.26	0.13
T4-100m	3/5/15	952	0.01	0.2	0.04	0.5	0.26	3.6	0.1	4	0.31	9.5	5.3	74	0.09	34.69	25.4	8.24	6.89	0.11
T4-100m	6/18/15	933	0.09	2.8	0.65	9.1	0.23	3.2	2.6	72	0.28	8.7	6.6	93	0.07	34.42	26.6	8.14	6.51	0.16
Geomean	**FY '15**			**1.7**		**0.7**		***4.3***				**11.4**		**81**	**0.07**					**0.13**
T4-100m	8/29/15	945	0.13	4.0	0.28	3.9	0.21	2.9	5.1	142	0.40	12.4	3.8	53	0.02	34.63	28.5	8.24	5.94	0.17
T4-100m	11/18/15	1004	0.14	4.4	0.61	8.5	0.11	1.6	8.7	245	0.49	15.3	4.1	58	0.07	34.65	27.4	8.27	6.69	0.12
T4-100m	3/2/16	851	0.14	4.2	0.26	3.6	0.31	4.3	0.8	23	0.46	14.1	3.1	44	0.09	34.69	25.2	8.23	5.87	0.12
T4-100m	5/4/16	938	0.18	5.7	0.12	1.7	0.14	1.9	1.3	37	0.42	12.9	8.0	112	0.08	34.69	25.9	8.19	6.17	0.15
Geomean	**FY '16**			**4.5**		**3.8**		**2.5**				***13.6***		**62**	**0.06**					**0.14**
T4-100m	7/7/16	947	0.06	1.8	0.27	3.8	0.15	2.1	0.3	8	0.44	13.5	4.3	61	0.07	34.71	26.9	8.30	6.72	0.23
T4-100m	12/21/16	951	0.06	1.9	0.42	5.9	0.34	4.8	3.3	92	0.35	10.8	4.2	59	0.04	34.67	25.4	8.25	5.77	0.14
T4-100m	3/1/17	1044	0.01	0.2	0.17	2.4	0.02	0.3	0.5	15	0.29	9.0	4.8	68	0.09	34.77	24.6	8.23	5.89	0.10
T4-100m	5/10/17	1046	0.02	0.7	0.26	3.6	0.20	2.8	1.3	38	0.23	7.2	4.8	67	0.06	34.82	25.8	8.23	4.24	0.09
Geomean	**FY '17**			**0.8**		**3.7**		**1.7**				**9.9**		**63**	**0.06**					**0.13**

NELHA Water Quality Laboratory

Transect 4, Station 4

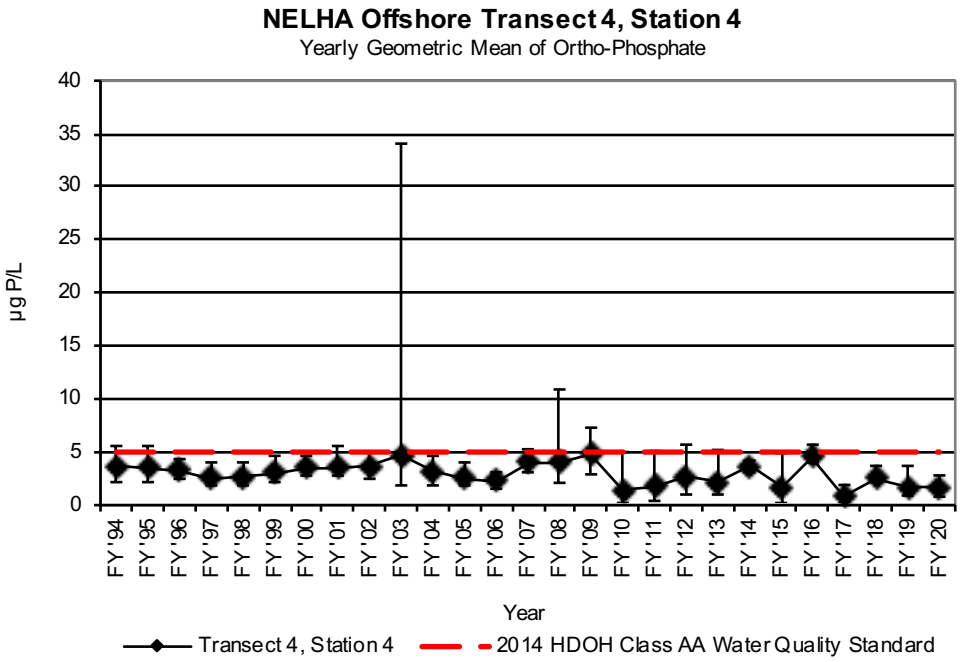
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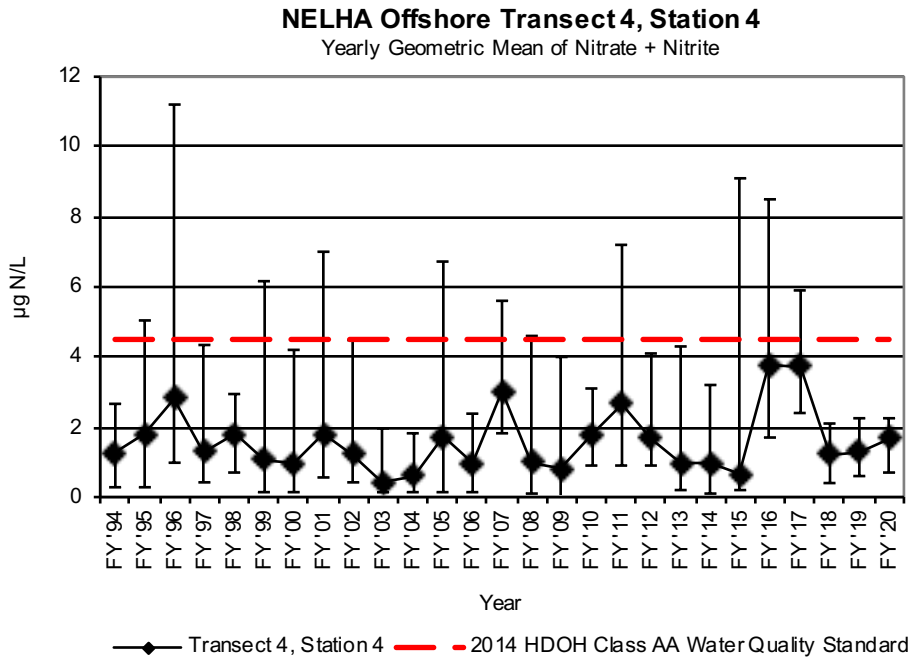
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-100m	9/28/17	941	0.12	3.7	0.10	1.4	0.09	1.2	0.5	13	0.38	11.8	4.0	57	0.05	34.83	27.8	8.17	5.04	0.10
T4-100m	11/30/17	926	0.07	2.2	0.14	2.0	0.28	3.9	1.1	30	0.28	8.8	5.9	83	0.08	35.21	26.4	8.21	5.70	0.11
T4-100m	2/6/18	1009	0.07	2.2	0.03	0.4	0.36	5.1	1.3	36	0.34	10.6	2.1	30	0.09	34.84	24.9	8.15	5.88	0.08
T4-100m	5/17/18	943	0.08	2.4	0.15	2.1	0.10	1.4	1.0	28	0.36	11.2	1.8	26	0.02	34.83	26.0	8.15	6.37	0.07
Geomean	**FY '18**			**2.6**		**1.2**		**2.4**				**10.5**		**43**	**0.05**					**0.09**
T4-100m	9/26/18	1220	0.03	1.0	0.16	2.3	0.38	5.3	0.3	10	0.36	11.0	2.3	33	0.09	34.74	27.6	8.14	4.71	0.19
T4-100m	11/14/18	1029	0.03	0.9	0.14	2.0	0.19	2.7	3.2	89	0.35	10.8	4.1	58	0.08	34.91	27.3	8.19	6.11	0.16
T4-100m	1/23/19	1019	0.07	2.3	0.04	0.6	0.14	2.0	3.0	83	0.36	11.1	2.5	35	0.06	34.94	24.9	8.19	5.02	0.22
T4-100m	4/17/19	1005	0.12	3.7	0.08	1.1	0.20	2.8	7.9	222	0.38	11.7	2.4	34	0.02	34.75	25.8	8.10	6.70	0.10
Geomean	**FY '19**			**1.7**		**1.3**		***3.0***				**11.1**		**39**	**0.05**					**0.16**
T4-100m	8/15/19	946	0.03	0.8	0.16	2.3	0.22	3.1	3.2	89	0.29	9.1	2.4	33	0.11	35.25	28.2	8.19	6.57	0.19
T4-100m	11/19/19	1121	0.09	2.8	0.05	0.7	0.73	10.2	0.1	4	0.38	11.9	2.5	35	0.07	34.85	27.7	8.23	6.46	0.11
T4-100m	1/23/20	1001	0.07	2.1	0.16	2.3	0.09	1.3	1.7	47	0.39	12.1	2.1	30	0.04	34.98	25.0	8.22	6.78	0.10
T4-100m	6/25/20	923	0.05	1.6	0.16	2.3	0.29	4.1	0.3	9	0.28	8.7	1.5	21	0.06	35.47	26.2	8.17	6.64	0.15
Geomean	**FY '20**			**1.7**		**1.7**		***3.6***				**10.3**		**29**	**0.07**					**0.13**

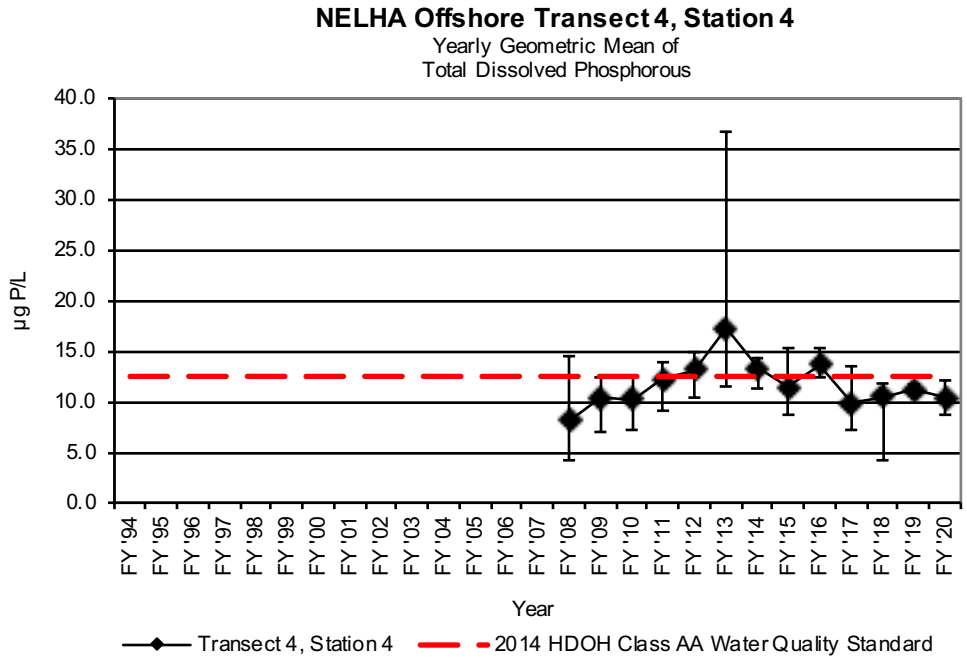
NELHA Water Quality Laboratory

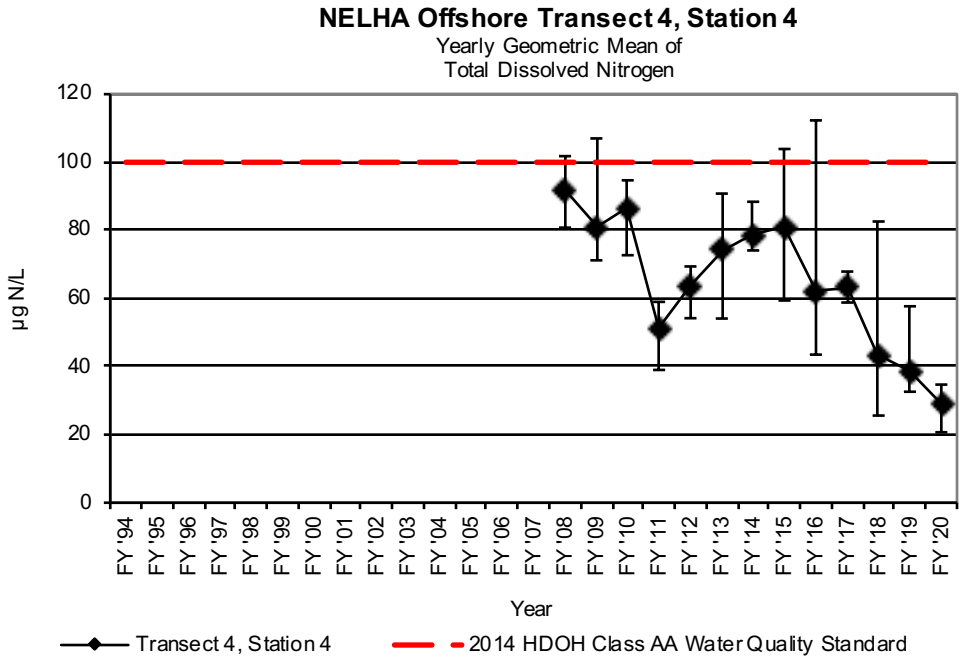
Transect 4, Station 4

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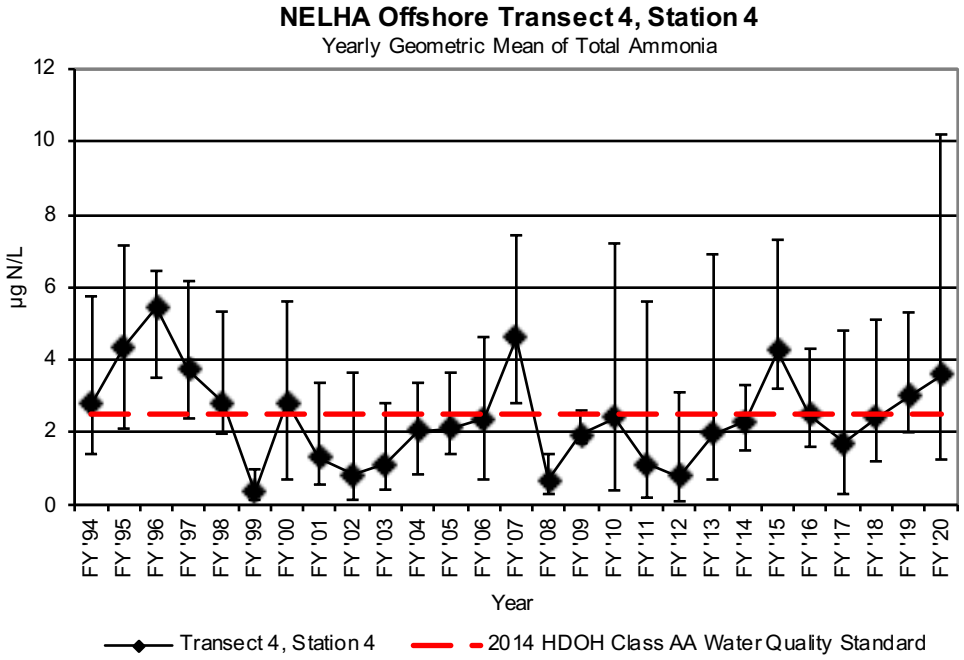


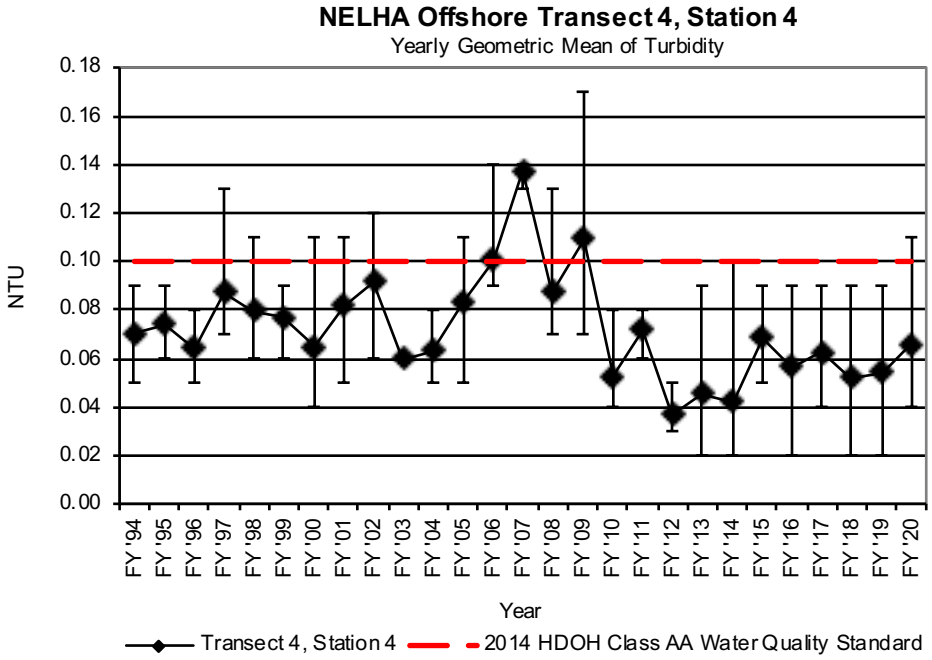


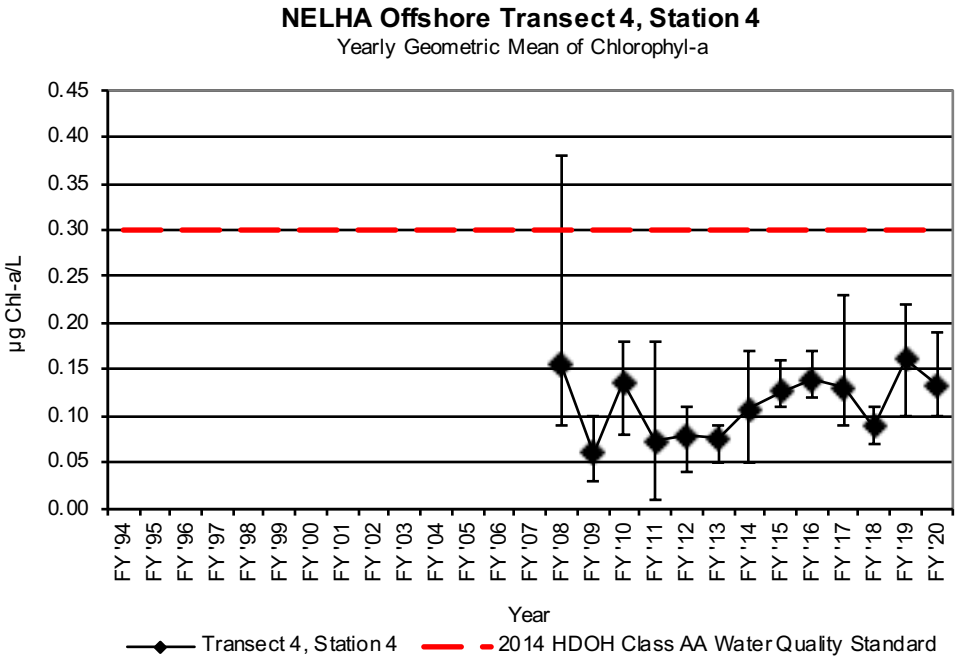
NELHA Water Quality Laboratory

Transect 4, Station 4

8/3/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 4, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-5S-69m	8/3/93	842	0.12	3.7	0.05	0.7	0.50	7.0	1.6	44					0.06	34.460	26.8			
O4-5S-69m	12/8/93	856	0.06	1.9	0.09	1.3	0.10	1.4	2.2	61					0.06	34.796	25.7			
O4-5S-69m	3/8/94	836	0.18	5.6	0.21	2.9	0.17	2.4	3.2	90					0.07	34.205	25.1			
O4-5S-69m	6/13/94	839	0.11	3.4	0.03	0.4	0.06	0.8	6.0	169					0.08	34.550	25.5			
Geomean	**FY '94**			**3.4**		**1.0**		**2.1**							**0.07**					
O4-5S-69m	9/15/94	842	0.07	2.2	0.06	0.8	0.14	2.0	2.5	69					0.08	34.633	27.8			
O4-5S-69m	11/15/94	802	0.14	4.3	0.52	7.3	0.62	8.7	5.2	146					0.08	34.545	26.0			
O4-5S-69m	3/22/95	1138	0.19	5.9	0.38	5.3	0.37	5.2	5.8	162					0.11	34.123	25.3			
O4-5S-69m	6/21/95	810	0.10	3.1	0.15	2.1	0.35	4.9	2.4	66					0.07	34.448	26.2			
Geomean	**FY '95**			**3.6**		**2.9**		***4.6***							**0.08**					
O4-5S-69m	9/28/95	1026	0.10	3.1	0.07	1.0	0.46	6.4	1.9	53					0.07	34.615	27.4			
O4-5S-69m	11/14/95	811	0.10	3.1	0.06	0.8	0.46	6.4	1.9	53					0.06	34.361	26.7			
O4-5S-69m	3/12/96	850	0.14	4.3	0.22	3.1	0.48	6.7	2.9	81					0.15	34.174	25.0			
O4-5S-69m	5/14/96	824	0.15	4.6	0.51	7.1	0.27	3.8	4.0	113					0.08	34.265	26.9			
Geomean	**FY '96**			**3.7**		**2.1**		***5.7***							**0.08**					
O4-5S-69m	7/31/96	842	0.08	2.5	0.23	3.2	0.37	5.2	8.0	225					0.08	34.410	27.8			
O4-5S-69m	10/2/96	837	0.05	1.5	0.01	0.1	0.18	2.5	2.8	79					0.08	34.641	27.9			
O4-5S-69m	1/7/97	852	0.08	2.5	0.17	2.4	0.20	2.8	2.7	76					0.09	34.718	25.4			
O4-5S-69m	4/28/97	905	0.17	5.3	0.21	2.9	0.40	5.6	9.1	256					0.12	34.411	26.8			
Geomean	**FY '97**			**2.7**		**1.3**		***3.8***							**0.09**					
O4-5S-69m	8/19/97	857	0.05	1.5	0.04	0.6	0.20	2.8	2.9	81					0.08	34.663	27.2			
O4-5S-69m	10/7/97	1132	0.12	3.7	0.08	1.1	0.44	6.2	2.9	83					0.11	34.752	27.8			
O4-5S-69m	3/4/98	857	0.08	2.5	0.07	1.0	0.16	2.2	4.2	118					0.06	35.023	25.0			
O4-5S-69m	5/5/98	905	0.09	2.8	0.14	2.0	0.15	2.1	3.2	90					0.08	35.062	24.1			
Geomean	**FY '98**			**2.5**		**1.0**		***3.0***							**0.08**					
O4-5S-69m	7/7/98	923	0.11	3.4	0.30	4.2	0.01	0.1	6.5	183					0.07	34.962	26.4			
O4-5S-69m	10/6/98	841	0.09	2.8	0.01	0.1	0.01	0.1	1.5	43					0.09	35.122	26.9			
O4-5S-69m	1/19/99	902	0.07	2.2	0.02	0.3	0.05	0.7	2.5	69					0.08	35.134	25.1			
O4-5S-69m	4/13/99	954	0.14	4.3	0.31	4.3	0.10	1.4	5.5	154					0.08	34.633	24.3			
Geomean	**FY '99**			**3.1**		**0.9**		**0.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 4, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-5S-69m	8/16/99	915	0.11	3.4	0.18	2.5	0.45	6.3	1.7	49					0.10	34.867	26.1			
O4-5S-69m	10/25/99	1015	0.09	2.8	0.02	0.3	0.28	3.9	5.4	151					0.08	34.963	26.1			
O4-5S-69m	1/12/00	925	0.11	3.4	0.04	0.6	0.27	3.8	2.1	59					0.09	35.132	24.8			
O4-5S-69m	5/16/00	857	0.14	4.3	0.36	5.0	0.05	0.7	5.1	142					0.08	34.628	25.2			
Geomean	**FY '00**			**3.4**		**1.2**		***2.8***							**0.09**					
O4-5S-69m	7/25/00	925	0.10	3.1	0.09	1.3	0.05	0.7	15.0	421					0.06	34.871	26.7			
O4-5S-69m	10/31/00	917	0.09	2.8	0.03	0.4	0.22	3.1	2.3	64					0.10	34.962	27.0			
O4-5S-69m	3/6/01	909	0.18	5.6	0.42	5.9	0.08	1.1	3.7	104					0.09	34.702	24.8			
O4-5S-69m	5/8/01	1008	0.14	4.3	0.22	3.1	0.13	1.8	4.7	131					0.07	34.752	24.9			
Geomean	**FY '01**			**3.8**		**1.8**		**1.4**							**0.08**					
O4-5S-69m	8/13/01	1016	0.08	2.5	0.03	0.4	0.32	4.5	7.7	217					0.09	34.882	26.5			
O4-5S-69m	10/30/01	920	0.11	3.4	0.02	0.3	0.03	0.4	1.7	48					0.11	35.028	26.8			
O4-5S-69m	3/4/02	945	0.12	3.7	0.08	1.1	0.01	0.1	3.3	92					0.08	34.668	24.2			
O4-5S-69m	4/16/02	945	0.17	5.3	0.40	5.6	0.27	3.8	9.7	271					0.07	34.375	25.6			
Geomean	**FY '02**			**3.6**		**0.9**		**1.0**							**0.09**					
O4-5S-69m	7/9/02	1058	0.09	2.8	0.01	0.1	0.16	2.2	4.3	119					0.07	34.658	26.7			
O4-5S-69m	10/7/02	940	0.07	2.2	0.02	0.3	0.20	2.8	2.2	60					0.05	34.939	27.0			
O4-5S-69m	3/10/03	1059	0.08	2.5	0.10	1.4	0.03	0.4	3.1	87					0.06	34.790	24.9			
O4-5S-69m	4/22/03	942	0.07	2.2	0.03	0.4	0.05	0.7	3.1	88					0.08	35.016	24.8			
Geomean	**FY '03**			**2.4**		**0.4**		**1.2**							**0.06**					
O4-5S-69m	8/19/03	1051	0.07	2.2	0.01	0.1	0.20	2.8	1.6	44					0.06	34.838	28.2			
O4-5S-69m	10/30/03	912	0.10	3.1	0.10	1.4	0.20	2.8	1.9	54					0.13	34.824	27.5			
O4-5S-69m	3/17/04	1003	0.11	3.4	0.04	0.6	0.21	2.9	1.4	39					n/a	34.354	26.0			
O4-5S-69m	5/24/04	925	0.15	4.6	0.18	2.5	0.09	1.3	3.2	88					n/a	33.37	26.8			
Geomean	**FY '04**			**3.2**		**0.7**		**2.3**							**0.09**					
O4-5S-69m	9/22/04	950	0.06	1.9	0.01	0.1	0.26	3.6	1.4	38					0.06	33.80	27.7			
O4-5S-69m	11/29/04	910	0.07	2.2	0.10	1.4	0.12	1.7	1.2	32					0.05	33.79	26.9			
O4-5S-69m	1/24/05	943	0.05	1.5	0.07	1.0	0.14	2.0	2.3	65					0.09	34.849	25.6			
O4-5S-69m	4/13/05	942	0.13	4.0	0.36	5.0	0.17	2.4	2.8	79					0.13	34.436	25.6			
Geomean	**FY '05**			**2.2**		**1.0**		**2.3**							**0.08**					

NELHA Water Quality Laboratory

Transect 4, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O4-5S-69m	7/21/05	858	0.05	1.5	0.03	0.4	0.37	5.2	3.3	92					0.08	34.711	27.4			
O4-5S-69m	10/13/05	830	0.08	2.5	0.13	1.8	0.18	2.5	3.3	92					0.14	34.863	27.4			
O4-5S-69m	3/14/06	922	0.09	2.8	0.07	1.0	0.33	4.6	1.6	45					0.10	34.849	24.5			
O4-5S-69m	5/17/06	851	0.10	3.1	0.09	1.3	0.09	1.3	1.3	36					0.08	34.615	24.8			
Geomean	**FY '06**			**2.4**		**1.0**		***3.0***							**0.10**					
O4-5S-69m	8/16/06	854	0.09	2.8	0.22	3.1	0.16	2.2	2.8	79					0.17	34.632	26.8			
O4-5S-69m	11/20/06	848	0.10	3.1	0.13	1.8	0.51	7.1	1.6	45					0.09	34.811	26.6			
O4-5S-69m	2/12/07	939	0.18	5.6	0.14	2.0	0.35	4.9	0.7	21					0.12	34.437	24.8			
O4-5S-69m	4/16/07	935	0.18	5.6	1.46	20.4	0.46	6.4	10.4	292					0.20	34.415	26.5			
Geomean	**FY '07**			**4.0**		**3.9**		***4.7***							***0.14***					
T4-500m	9/26/07	1220	0.15	4.6	0.01	0.1	0.16	2.2	2.3	66	0.01	0.3	5.9	83	0.05	34.975	26.9	8.17	6.26	0.06
T4-500m	12/14/07	818	0.08	2.6	0.01	0.1			2.3	66	0.34	10.6	6.4	89	0.08	34.747	25.8	8.23	6.59	0.09
T4-500m	3/11/08	928	0.03	0.8	0.14	1.9	0.06	0.8	8.3	232	0.07	2.2	6.8	95	0.12	34.867	24.8	8.1	6.54	0.36
T4-500m	6/9/08	1008	0.07	2.3	0.06	0.8	0.74	10.4	6.7	189	0.10	3.1	7.6	106	0.15	34.7106	25.8	8.11	5.66	0.17
Geomean	**FY '08**			**2.2**		**0.4**		***2.6***				**2.2**		**93**	**0.09**					**0.13**
T4-500m	9/23/08	1100	0.03	0.9	0.00	0.01	0.18	2.5	1.1	30	0.16	5.1	4.7	66	0.06	34.833	26.7	8.07	6.07	0.03
T4-500m	12/8/08	1008	0.14	4.3	0.04	0.6	0.09	1.2	1.9	54	0.21	6.6	4.7	66	0.06	34.982	26.2	8.30	5.07	0.04
T4-500m	2/10/09	903	0.08	2.4	0.10	1.4	0.12	1.7	2.0	56	0.24	7.3	6.5	90	0.08	35.096	24.7	8.07	6.08	0.03
T4-500m	6/30/09	951	0.26	7.9	0.39	5.5	0.56	7.9	5.1	144	0.37	11.4	4.4	62	0.05	34.908	26.8	8.20	5.82	0.1
Geomean	**FY '09**			**2.9**		**0.5**		***2.5***				**7.3**		**70**	**0.06**					**0.04**
T4-500m	9/10/09	942	0.12	3.6	0.06	0.8	0.69	9.7	47.4	1330	0.37	11.5	5.5	77	0.07	35.24	27.5	8.22	5.56	0.1
T4-500m	11/24/09	924	0.03	0.8	0.03	0.4	0.11	1.6	2.3	66	0.33	10.2	4.4	61	0.03	35.27	25.2	8.23	6.51	0.11
T4-500m	2/24/10	956	0.12	3.7	0.01	0.2	0.35	4.9	1.9	54	0.29	8.9	3.4	48	0.05	35.12	24.7	8.20	5.48	0.17
T4-500m	5/25/10	939	0.01	0.2	0.05	0.7	0.08	1.1	1.5	42	0.28	8.6	5.9	82	0.05	35.01	24.9	8.21	6.62	0.08
Geomean	**FY '10**			**1.2**		**0.5**		***3.0***				**9.7**		**66**	**0.05**					**0.11**
T4-500m	8/11/10	934	0.02	0.6	0.02	0.3	0.01	0.1	1.9	53	0.30	9.4	2.7	38	0.05	34.96	26.21	8.23	6.61	0.16
T4-500m	11/9/10	929	0.01	0.3	0.08	1.1	0.11	1.5	3.1	86	0.38	11.8	2.2	32	0.07	34.98	26.54	8.28	6.31	0.02
T4-500m	1/11/11	1155	0.12	3.6	0.01	0.2	0.27	3.8	3.5	97	0.41	12.7	2.9	41	0.04	35.04	25.12	8.21	6.34	0.13
T4-500m	4/27/11	940	0.09	2.8	0.34	4.8	0.11	1.5	4.8	134	0.44	13.7	3.9	55	0.09	34.85	25.03	8.22	6.13	0.14
Geomean	**FY '11**			**1.2**		**0.8**		**1.0**				**11.8**		**41**	**0.06**					**0.09**

NELHA Water Quality Laboratory

Transect 4, Station 5

8/3/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-500m	7/27/11	936	0.17	5.4	0.26	3.6	0.18	2.5	1.9	52	0.49	15.3	5.9	83	0.05	34.80	25.91	8.22	6.23	0.13
T4-500m	10/19/11	1001	0.01	0.3	0.04	0.5	0.04	0.5	2.1	60	0.34	10.6	4.5	64	0.08	35.10	26.61	8.25	7.01	0.11
T4-500m	1/26/12	930	0.05	1.4	0.04	0.6	0.02	0.3	1.3	36	0.40	12.3	6.2	87	0.02	35.06	24.59	8.25	6.63	0.10
T4-500m	4/25/12	944	0.15	4.6	0.15	2.1	0.26	3.6	1.9	53	0.54	16.8	9.2	128	0.11	34.82	24.88	8.19	6.71	0.04
Geomean	**FY '12**			**1.8**		**1.2**		**1.1**				***13.5***		**88**	**0.05**					**0.09**
T4-500m	7/25/12	941	0.02	0.6	0.21	2.9	0.26	3.7	2.7	75	0.36	11.1	4.9	69	0.07	35.06	26.37	8.24	6.78	0.11
T4-500m	11/28/12	943	0.07	2.3	0.03	0.4	0.21	2.9	4.0	114	0.42	13	5.9	82	0.06	35.29	25.47	8.21	6.79	0.05
T4-500m	1/24/13	929	0.05	1.5	0.01	0.1	0.04	0.5	1.1	30	0.61	18.9	4.8	67	0.04	35.10	24.69	8.22	6.33	0.09
T4-500m	4/17/13	1045	0.16	5	0.15	2.1	0.20	2.8	0.8	22	0.61	18.8	5.0	70	0.02	35.12	25.13	8.20	6.56	0.05
Geomean	**FY '13**			**1.8**		**0.7**		**2.0**				***15.0***		**72**	**0.04**					**0.07**
T4-500m	8/6/13	949	0.11	3.4	0.01	0.1	0.08	1.2	0.5	14	0.34	10.4	5.5	77	0.05	35.20	26.9	8.27	6.99	0.08
T4-500m	10/30/13	927	0.13	4.1	0.06	0.8	0.15	2.1	1.1	31	0.52	16.1	5.9	83	0.02	34.91	27.1	8.23	5.97	0.23
T4-500m	2/5/14	947	0.14	4.2	0.09	1.2	0.59	8.3	1.4	41	0.46	14.3	5.9	82	0.02	34.97	25.2	8.20	6.20	0.13
T4-500m	5/7/14	946	0.11	3.3	0.05	0.7	0.21	2.9	1.2	33	0.52	16.0	7.2	101	0.03	34.80	25.9	8.21	5.60	0.11
Geomean	**FY '14**			**3.7**		**0.5**		***2.8***				***14.0***		**85**	**0.03**					**0.13**
T4-500m	8/6/14	938	0.16	5.1	0.02	0.3	0.36	5.0	0.4	12	0.48	15.0	4.9	69	0.04	35.01	27.0	8.22	6.43	0.07
T4-500m	12/4/14	1008	0.09	2.7	0.01	0.2	0.38	5.3	0.0	0	0.25	7.8	6.3	88	0.11	35.25	26.5	8.24	6.35	0.10
T4-500m	3/5/15	959	0.02	0.7	0.01	0.1	0.18	2.5	0.1	4	0.30	9.2	5.1	72	0.07	34.73	25.4	8.24	6.84	0.08
T4-500m	6/18/15	940	0.07	2.2	0.21	2.9	0.26	3.6	1.9	53	0.28	8.6	5.4	76	0.06	34.48	26.9	8.14	6.40	0.08
Geomean	**FY '15**			**2.1**		**0.4**		***3.9***				**9.8**		**76**	**0.07**					**0.08**
T4-500m	8/29/15	951	0.12	3.7	0.03	0.4	0.18	2.5	1.1	31	0.39	12.2	4.8	67	0.03	34.65	28.6	8.24	5.91	0.14
T4-500m	11/18/15	1050	0.10	3.2	0.44	6.1	0.26	3.7	3.3	93	0.48	15.0	4.3	61	0.04	34.55	27.2	8.22	6.68	0.06
T4-500m	3/2/16	859	0.13	3.9	0.23	3.2	0.38	5.3	0.9	26	0.45	13.9	4.1	58	0.06	34.76	25.3	8.24	5.74	0.10
T4-500m	5/4/16	950	0.13	4.1	0.01	0.2	0.23	3.2	0.2	4	0.41	12.6	6.4	90	0.08	34.67	26.0	8.19	6.40	0.13
Geomean	**FY '16**			**3.7**		**1.1**		***3.5***				***13.4***		**68**	**0.05**					**0.10**
T4-500m	7/7/16	955	0.06	2.0	0.26	3.7	0.21	2.9	0.6	16	0.47	14.7	2.8	39	0.11	34.71	27.1	8.33	6.71	0.33
T4-500m	12/21/16	1000	0.04	1.1	0.06	0.9	0.49	6.9	1.2	33	0.33	10.1	2.6	36	0.05	34.67	25.6	8.27	5.96	0.14
T4-500m	3/1/17	1033	0.01	0.3	0.07	1.0	0.01	0.2	0.2	6	0.28	8.7	3.8	54	0.09	34.72	24.6	8.23	6.21	0.20
T4-500m	5/10/17	1052	0.08	2.4	0.01	0.1	0.16	2.3	0.2	5	0.21	6.5	2.4	33	0.09	34.85	26.1	8.23	4.05	0.05
Geomean	**FY '17**			**1.1**		**0.8**		**1.7**				**9.6**		**40**	**0.08**					**0.15**

NELHA Water Quality Laboratory

Transect 4, Station 5

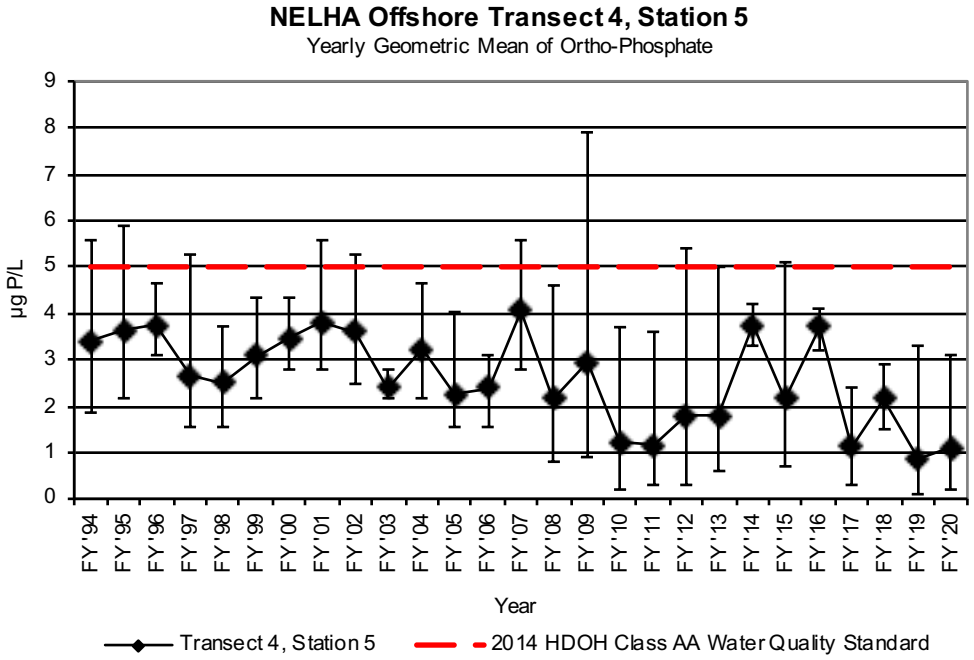
8/3/1993 - 7/16/20

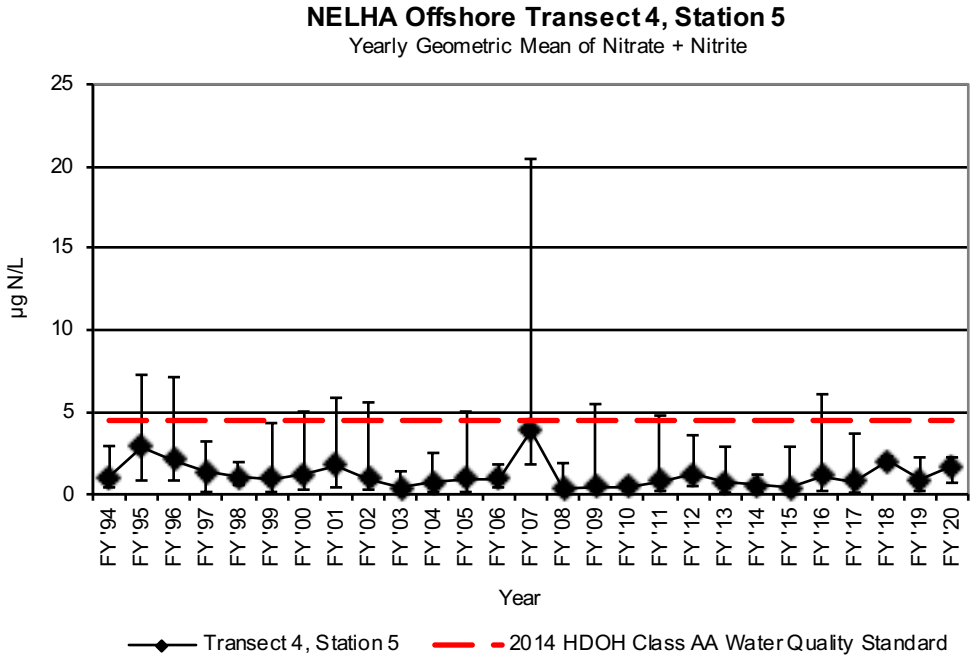
SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T4-500m	9/28/17	948	0.09	2.9	0.13	1.8	0.08	1.1	0.2	5	0.39	12.1	3.9	54	0.04	34.86	28.2	8.17	4.85	0.09
T4-500m	11/30/17	937	0.08	2.4	0.15	2.1	0.31	4.4	1.1	32	0.36	11.2	3.5	50	0.05	35.21	26.5	8.21	5.57	0.13
T4-500m	2/6/18	1016	0.05	1.5	0.13	1.8	0.37	5.2	0.4	11	0.33	10.2	4.0	57	0.08	34.91	25.1	8.16	5.74	0.04
T4-500m	5/17/18	951	0.07	2.1	0.16	2.3	0.14	2.0	0.9	25	0.35	10.8	2.2	31	0.02	34.87	26.3	8.16	6.39	0.09
Geomean	**FY '18**			**2.2**		**2.0**		***2.7***				**11.1**		**47**	**0.04**					**0.08**
T4-500m	9/26/18	1229	0.00	0.1	0.16	2.3	0.27	3.8	0.0	1	0.36	11.1	3.0	43	0.08	34.77	27.8	8.14	4.61	0.11
T4-500m	11/14/18	1040	0.03	0.8	0.13	1.8	0.26	3.7	0.0	1	0.35	10.8	3.3	47	0.07	34.91	27.4	8.19	6.07	0.12
T4-500m	1/23/19	1028	0.07	2.1	0.01	0.2	0.06	0.9	0.4	10	0.36	11.0	2.4	34	0.06	34.95	25.0	8.19	5.05	0.19
T4-500m	4/17/19	1012	0.11	3.3	0.04	0.6	0.33	4.6	0.9	26	0.38	11.7	2.2	30	0.04	34.75	25.8	8.10	6.67	0.10
Geomean	**FY '19**			**0.9**		**0.8**		***2.8***				**11.1**		**38**	**0.06**					**0.13**
T4-500m	8/15/19	952	0.01	0.2	0.16	2.3	0.17	2.4	1.4	41	0.23	7.2	1.4	20	0.06	35.29	28.3	8.20	6.57	0.16
T4-500m	11/19/19	1128	0.10	3.1	0.05	0.7	0.60	8.4	0.2	6	0.40	12.3	2.4	34	0.06	34.81	27.8	8.22	6.45	0.12
T4-500m	1/23/20	1009	0.07	2.1	0.16	2.3	0.09	1.3	0.0	0	0.38	11.9	2.2	31	0.05	34.99	25.1	8.22	6.68	0.07
T4-500m	6/25/20	930	0.04	1.1	0.16	2.3	0.26	3.7	0.2	6	0.24	7.4	2.5	35	0.05	35.50	26.3	8.18	6.60	0.14
Geomean	**FY '20**			**1.1**		**1.7**		***3.1***				**9.4**		**29**	**0.05**					**0.12**

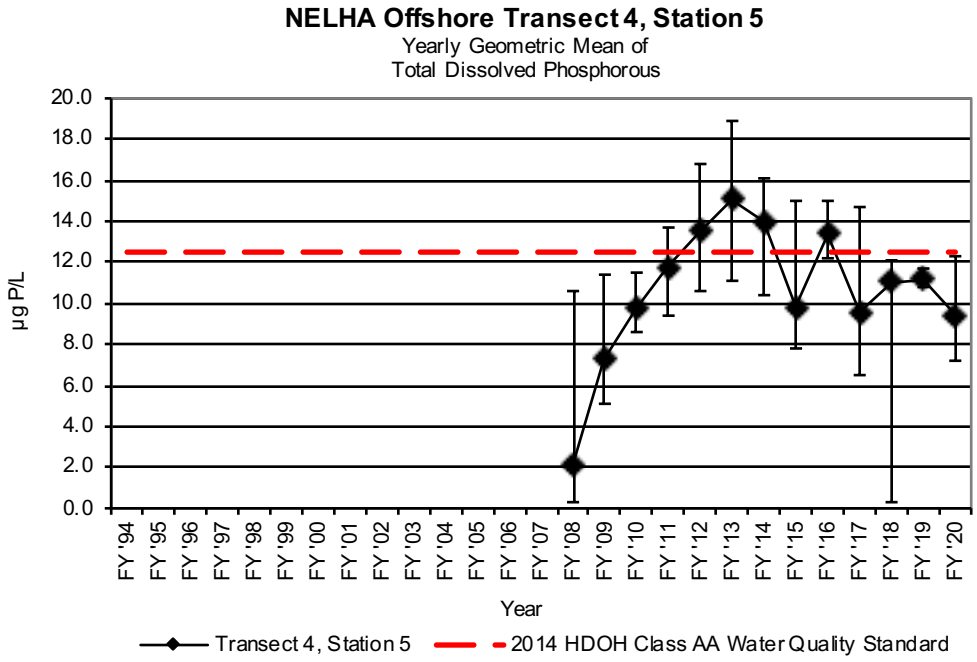
NELHA Water Quality Laboratory

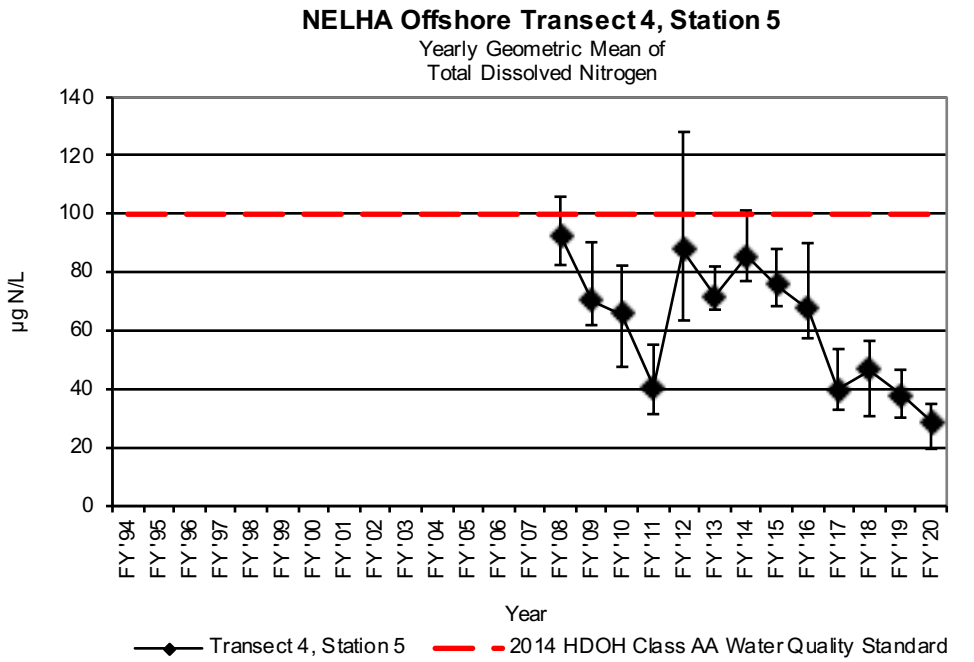
Transect 4, Station 5

8/3/1993 - 7/16/20





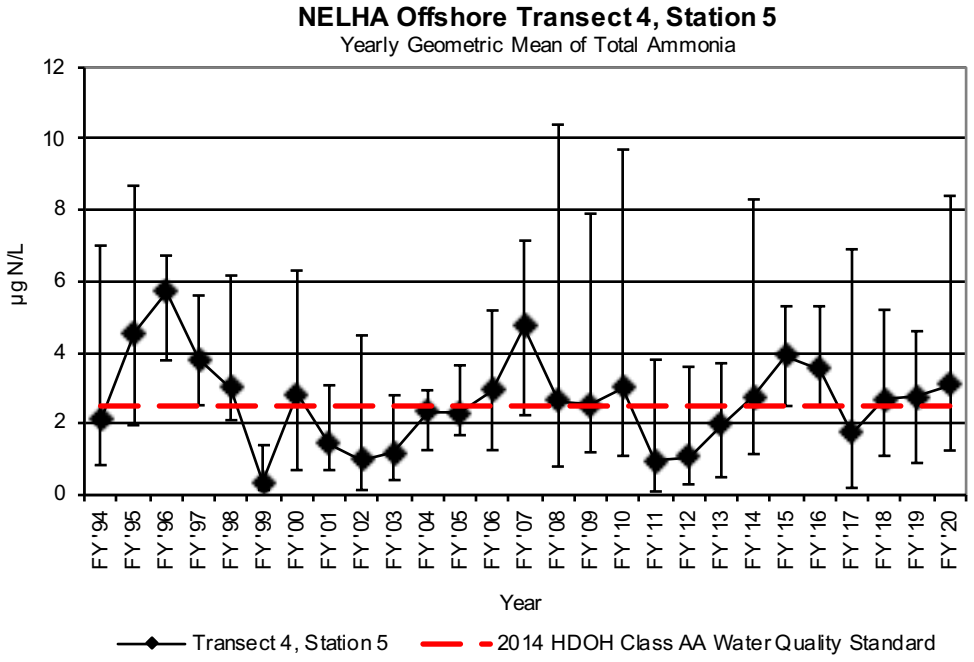


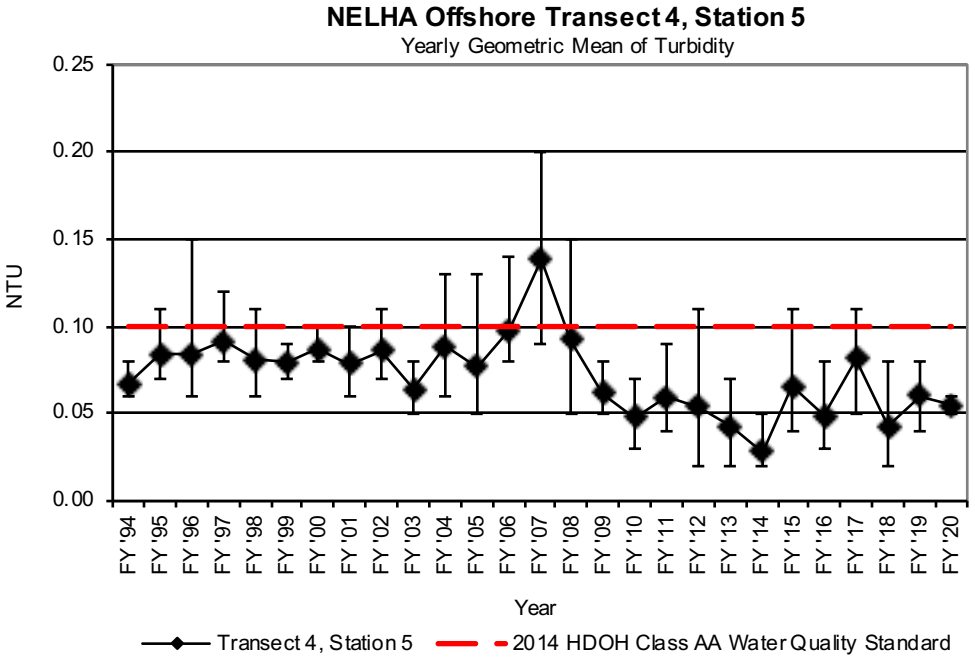


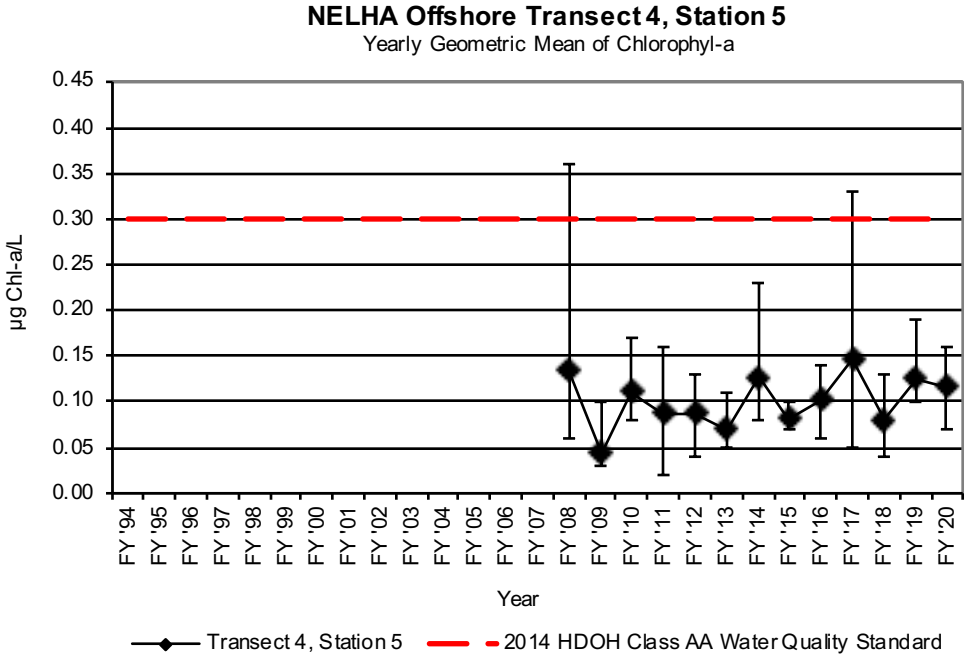
NELHA Water Quality Laboratory

Transect 4, Station 5

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Transect 5

July 2018 - June 2019

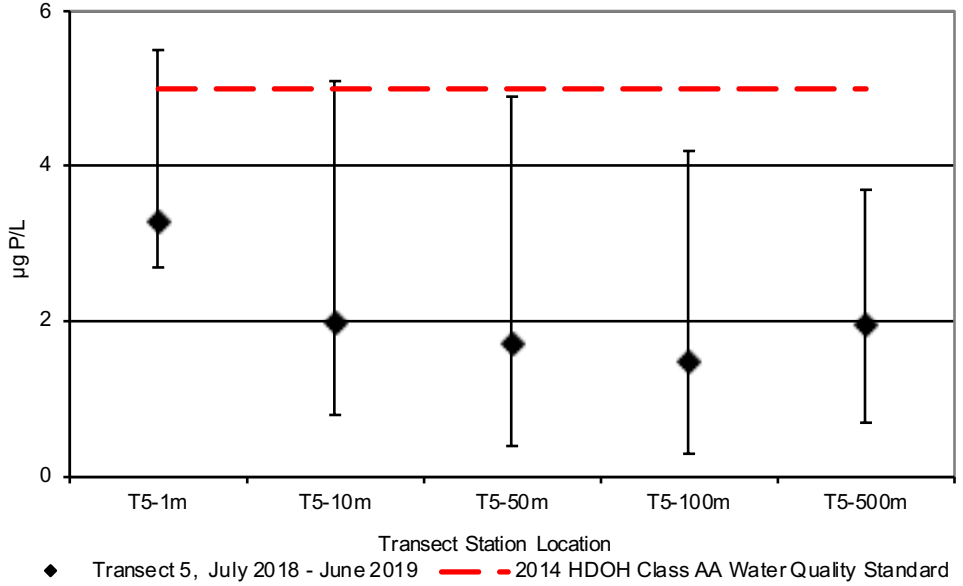
SITE ID	DATE	TIME	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.3**
T5-1m	9/26/18	1243	0.7	Flood	0.09	2.7	0.16	2.3	0.14	1.9	0.9	26	0.29	8.9	1.7	23	0.09	34.73	27.6	8.17	4.88	0.15
T5-1m	11/14/18	1051	1.6	Ebb	0.09	2.7	0.40	5.6	0.26	3.7	0.4	11	0.33	10.3	3.2	44	0.08	34.90	27.3	8.21	6.20	0.16
T5-1m	1/23/19	1038	0.5	Ebb	0.09	2.9	0.18	2.5	0.15	2.1	1.8	51	0.37	11.4	2.6	37	0.07	34.88	24.9	8.19	5.23	0.21
T5-1m	4/17/19	1028	0.5	Flood	0.18	5.5	0.56	7.9	0.23	3.2	4.1	115	0.42	13.1	3.2	45	0.05	34.65	25.7	8.12	7.21	0.13
Geomean	**FY '19**				0.11	**3.3**	0.28	**4.0**	0.2	***2.6***			0.3	**10.8**	2.6	**36**	**0.07**					**0.16**
T5-10m	9/26/18	1251	0.7	Flood	0.03	0.8	0.16	2.3	0.10	1.4	0.1	4	0.27	8.5	1.6	23	0.09	34.74	27.6	8.16	4.82	0.13
T5-10m	11/14/18	1056	1.6	Ebb	0.04	1.2	0.33	4.6	0.21	2.9	0.1	4	0.30	9.3	2.6	37	0.08	34.90	27.3	8.20	6.25	0.15
T5-10m	1/23/19	1043	0.5	Ebb	0.10	3.1	0.15	2.1	0.23	3.2	2.1	59	0.36	11.2	2.0	28	0.09	34.89	24.9	8.20	5.23	0.24
T5-10m	4/17/19	1033	0.5	Flood	0.16	5.1	0.51	7.2	0.31	4.4	4.2	117	0.38	11.7	2.6	36	0.08	34.69	25.7	8.12	7.03	0.14
Geomean	**FY '19**				0.06	**2.0**	0.25	**3.5**	0.20	***2.7***			0.33	**10.1**	2.2	**30**	**0.08**					**0.16**
T5-50m	9/26/18	1257	0.7	Flood	0.01	0.4	0.16	2.3	0.09	1.3	0.2	6	0.30	9.2	1.4	20	0.1	34.74	27.6	8.16	4.79	0.13
T5-50m	11/14/18	1102	1.6	Ebb	0.06	1.8	0.21	3.0	0.14	2.0	0.1	3	0.34	10.5	4.4	62	0.09	34.90	27.3	8.20	6.07	0.13
T5-50m	1/23/19	1048	0.5	Ebb	0.08	2.5	0.16	2.3	0.09	1.2	1.0	27	0.35	10.9	2.9	41	0.07	34.94	24.9	8.19	4.99	0.22
T5-50m	4/17/19	1039	0.5	Flood	0.16	4.9	0.33	4.6	0.17	2.4	9.2	257	0.41	12.7	2.9	41	0.06	34.72	25.7	8.12	7.01	0.12
Geomean	**FY '19**				0.06	**1.7**	0.21	**2.9**	0.12	**1.6**			0.35	**10.8**	2.7	**38**	**0.08**					**0.15**
T5-100m	9/26/18	1302	0.7	Flood	0.01	0.3	0.16	2.3	0.34	4.7	0.3	8	0.32	9.9	2.4	34	0.09	34.73	27.6	8.16	4.75	0.11
T5-100m	11/14/18	1107	1.6	Ebb	0.05	1.6	0.11	1.6	0.39	5.5	0.0	1	0.34	10.4	3.3	46	0.07	34.90	27.3	8.20	6.01	0.16
T5-100m	1/23/19	1053	0.5	Ebb	0.08	2.4	0.16	2.3	0.09	1.2	1.2	34	0.35	10.9	2.1	29	0.06	34.94	24.9	8.19	4.99	0.23
T5-100m	4/17/19	1045	0.5	Flood	0.14	4.2	0.24	3.3	0.23	3.2	0.9	25	0.38	11.8	2.4	34	0.04	34.74	25.7	8.12	6.87	0.10
Geomean	**FY '19**				0.05	**1.5**	0.16	**2.3**	0.23	***3.2***			0.35	**10.7**	2.5	**35**	**0.06**					**0.14**
T5-500m	9/26/18	1309	0.7	Flood	0.08	2.5	0.16	2.3	0.26	3.6	0.0	1	0.32	9.8	2.01	28	0.09	34.75	27.7	8.15	4.54	0.10
T5-500m	11/14/18	1116	1.6	Ebb	0.02	0.7	0.06	0.9	0.34	4.8	0.0	1	0.38	11.7	3.58	50	0.07	34.91	27.4	8.20	6.08	0.12
T5-500m	1/23/19	1100	0.5	Ebb	0.07	2.3	0.16	2.3	0.16	2.2	0.5	14	0.36	11.3	2.06	29	0.06	34.95	25.0	8.19	4.96	0.13
T5-500m	4/17/19	1054	0.5	Flood	0.12	3.7	0.14	1.9	0.15	2.1	1.0	27	0.38	11.8	2.92	41	0.05	34.73	25.7	8.12	6.85	0.09
Geomean	**FY '19**				0.06	**2.0**	0.12	**1.7**	0.21	***3.0***			0.36	**11.1**	2.6	**36**	**0.07**					**0.11**

NELHA Water Quality Laboratory

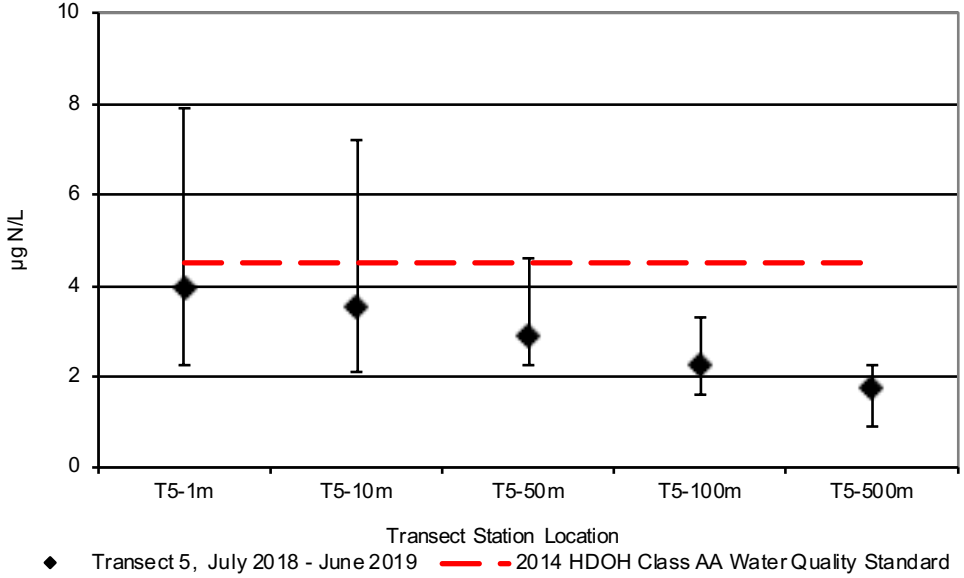
Transect 5

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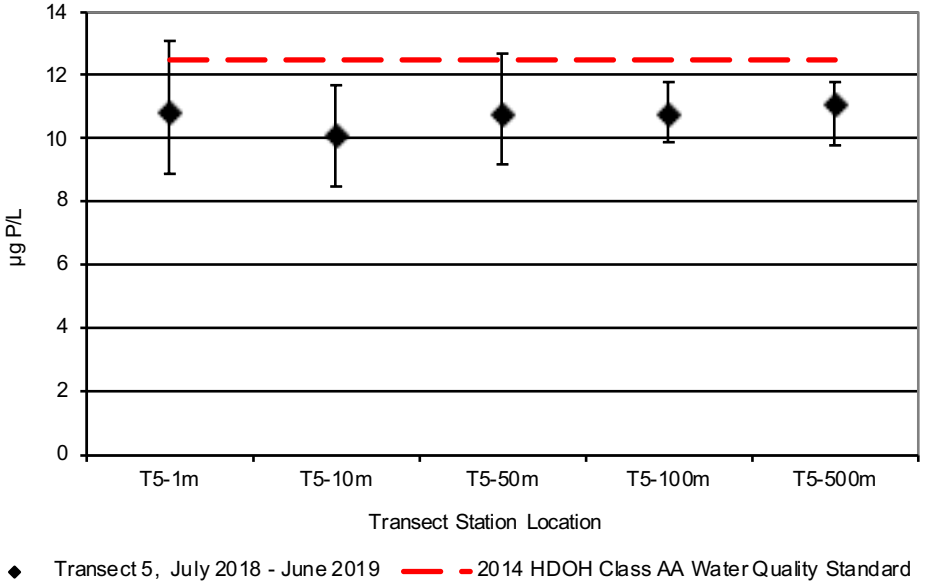
Transect 5 Station Summary
Ortho-Phosphate Geometric Mean



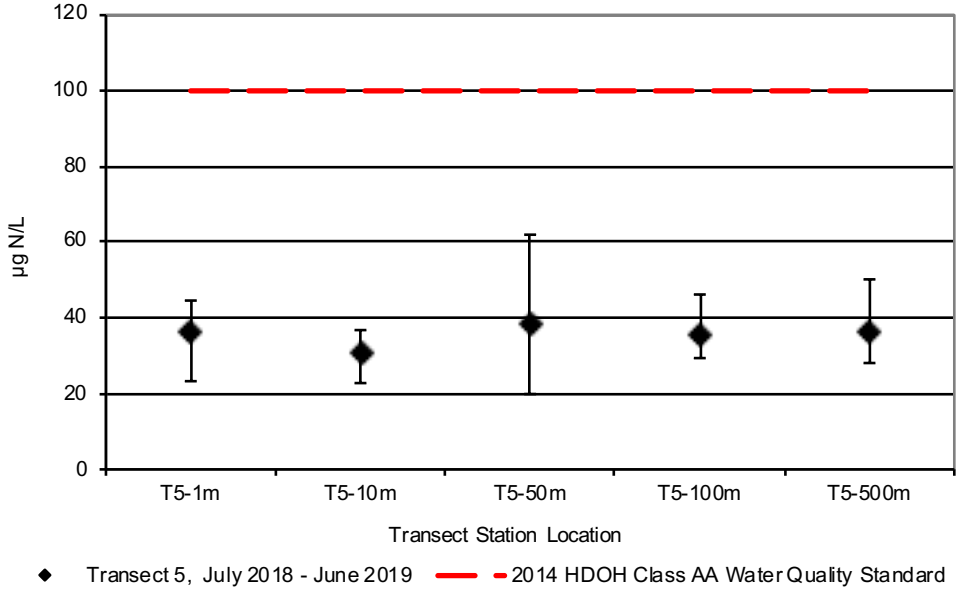
Transect 5 Station Summary
Nitrate + Nitrite Geometric Mean



Transect 5 Station Summary
Total Dissolved Phosphorous Geometric Mean



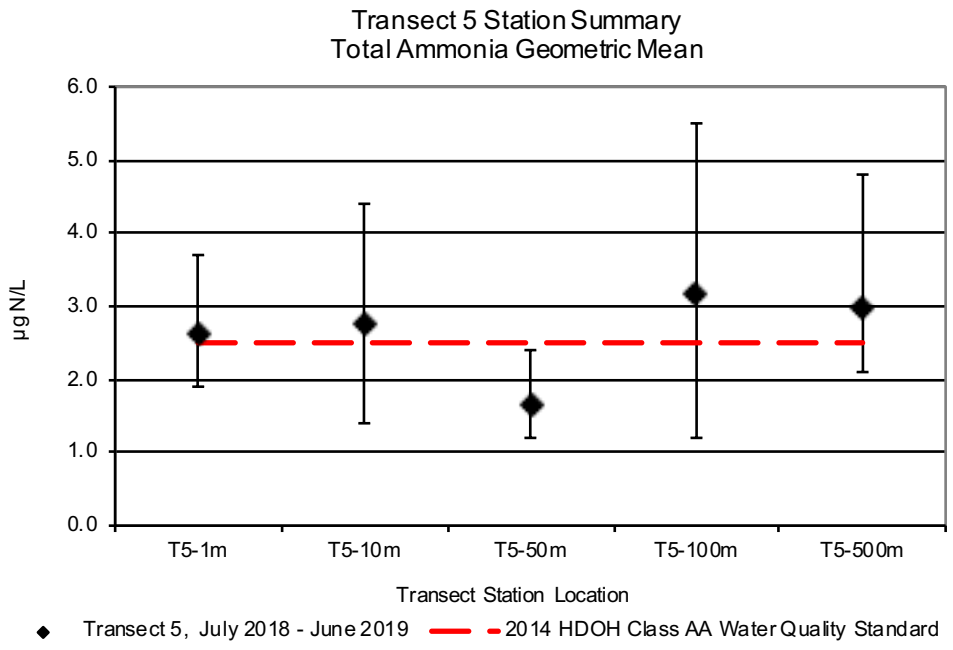
Transect 5 Station Summary
Total Dissolved Nitrogen Geometric Mean

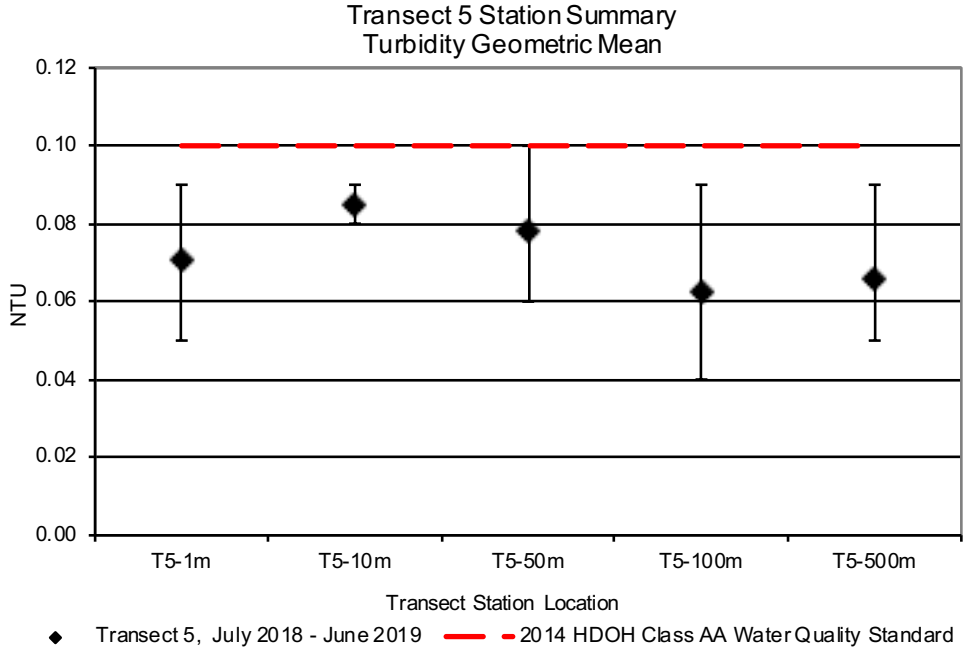


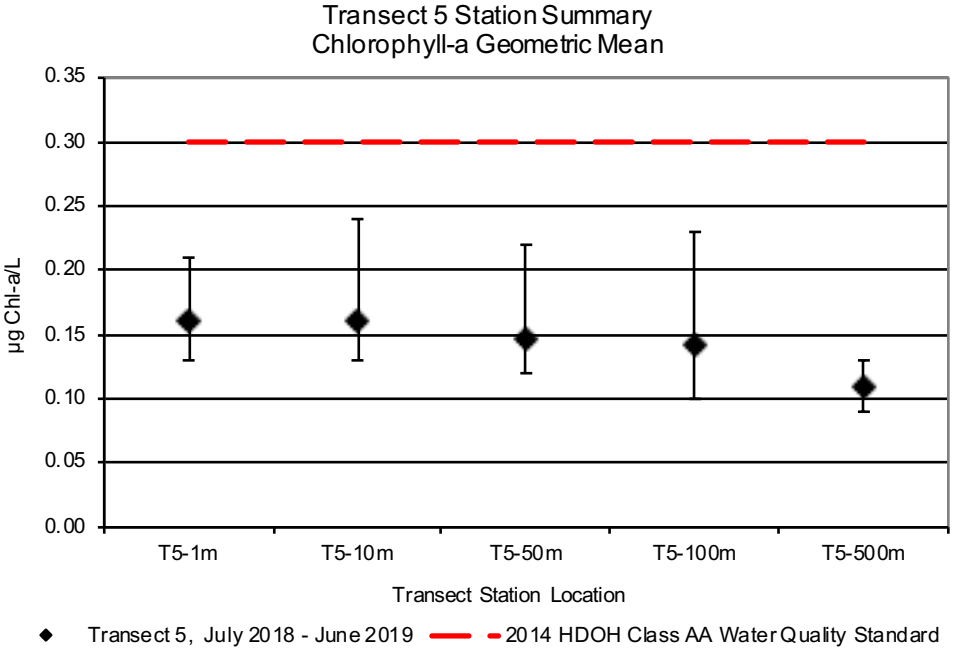
NELHA Water Quality Laboratory

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Transect 5

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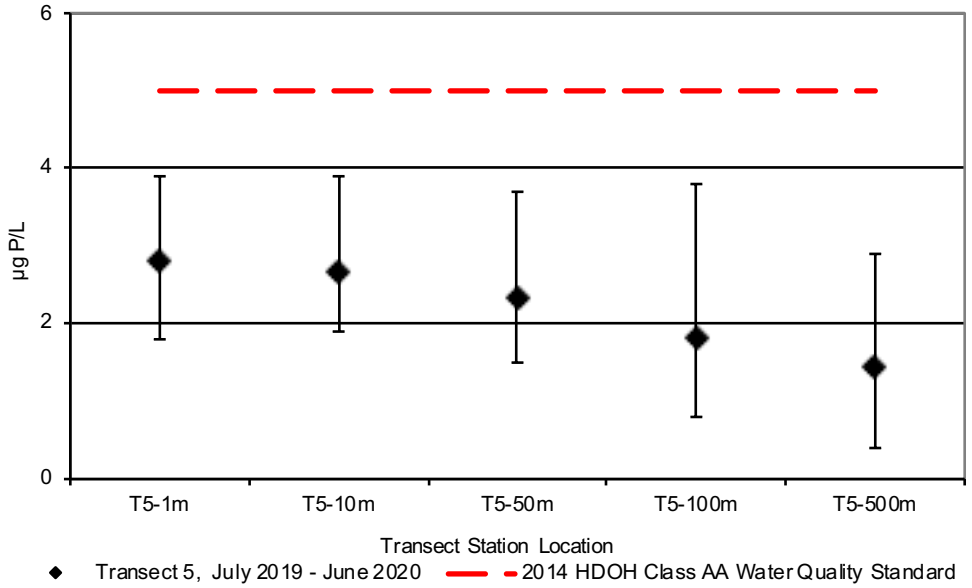
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.3**
T5-1m	8/15/19	1003	0.1	Flood	0.06	1.8	0.16	2.3	0.41	5.8	3.1	86	0.30	9.4	2.3	32	0.10	35.24	28.2	8.26	6.77	0.14
T5-1m	11/20/19	1108	1.9	High	0.13	3.9	0.31	4.3	0.17	2.4	0.8	24	0.44	13.7	3.2	45	0.09	35.20	27.5	8.22	6.88	0.13
T5-1m	1/23/20	1021	0.3	Low	0.12	3.8	0.16	2.3	0.09	1.3	1.1	31	0.42	12.9	2.3	33	0.08	34.92	24.9	8.22	7.09	0.10
T5-1m	6/25/20	942	0.4	Ebb	0.07	2.3	0.01	0.2	0.25	3.5	1.7	48	0.27	8.3	2.7	38	0.08	35.47	26.1	8.17	6.70	0.20
Geomean	**FY '20**				0.09	**2.8**	0.10	**1.4**	0.2	***2.8***			0.3	**10.8**	2.6	**37**	**0.09**					**0.14**
T5-10m	8/15/19	1007	0.1	Flood	0.06	2.0	0.16	2.3	0.31	4.3	3.5	100	0.30	9.2	1.8	25	0.08	35.24	28.2	8.26	6.75	0.17
T5-10m	11/20/19	1113	1.9	High	0.13	3.9	0.31	4.3	0.01	0.2	0.8	23	0.45	13.8	3.3	46	0.09	35.19	27.5	8.22	6.79	0.10
T5-10m	1/23/20	1026	0.3	Low	0.11	3.4	0.16	2.3	0.09	1.3	3.3	92	0.38	11.9	2.6	36	0.11	34.91	24.9	8.23	7.12	0.11
T5-10m	6/25/20	946	0.4	Ebb	0.06	1.9	0.16	2.3	0.06	0.8	1.6	46	0.28	8.7	1.5	21	0.07	35.48	26.1	8.18	6.73	0.22
Geomean	**FY '20**				0.09	**2.7**	0.19	**2.6**	0.07	**1.0**			0.35	**10.7**	2.2	**31**	**0.09**					**0.14**
T5-50m	8/15/19	1011	0.1	Flood	0.05	1.5	0.16	2.3	0.24	3.3	3.1	86	0.29	9.1	2.0	28	0.12	35.25	28.2	8.26	6.52	0.15
T5-50m	11/20/19	1117	1.9	High	0.12	3.7	0.29	4.0	0.07	1.0	0.9	24	0.43	13.4	3.3	46	0.09	35.20	27.5	8.21	6.71	0.10
T5-50m	1/23/20	1030	0.3	Low	0.11	3.3	0.16	2.3	0.09	1.3	0.8	24	0.41	12.8	3.0	42	0.07	34.94	25.0	8.22	6.98	0.10
T5-50m	6/25/20	950	0.4	Ebb	0.05	1.6	0.16	2.3	0.23	3.2	0.4	12	0.27	8.4	2.1	30	0.06	35.53	26.3	8.18	6.61	0.18
Geomean	**FY '20**				0.08	**2.3**	0.19	**2.6**	0.14	**1.9**			0.35	**10.7**	2.5	**35**	**0.08**					**0.13**
T5-100m	8/15/19	1017	0.2	Flood	0.04	1.3	0.16	2.3	0.51	7.1	3.9	108	0.29	9.1	2.6	37	0.09	35.25	28.2	8.26	6.46	0.17
T5-100m	11/20/19	1122	1.9	High	0.12	3.8	0.21	3.0	0.38	5.3	1.1	30	0.42	12.9	2.9	40	0.09	35.16	27.5	8.21	6.76	0.12
T5-100m	1/23/20	1035	0.3	Low	0.09	2.7	0.16	2.3	0.09	1.3	0.0	0	0.41	12.7	2.4	34	0.08	34.98	25.0	8.21	6.69	0.11
T5-100m	6/25/20	955	0.4	Ebb	0.03	0.8	0.16	2.3	0.25	3.5	0.4	12	0.28	8.7	2.1	30	0.06	35.53	26.3	8.18	6.57	0.20
Geomean	**FY '20**				0.06	**1.8**	0.17	**2.4**	0.26	***3.6***			0.34	**10.7**	2.5	**35**	**0.08**					**0.15**
T5-500m	8/15/19	1024	0.2	Flood	0.01	0.4	0.16	2.3	0.16	2.2	1.3	38	0.30	9.2	1.98	28	0.09	35.32	28.5	8.28	6.60	0.14
T5-500m	11/20/19	1134	1.9	High	0.09	2.9	0.04	0.5	0.22	3.1	0.0	1	0.36	11.3	1.89	27	0.06	35.20	27.6	8.20	6.56	0.12
T5-500m	1/23/20	1045	0.0	Low	0.08	2.5	0.16	2.3	0.09	1.3	0.3	8	0.38	11.8	4.13	58	0.05	34.98	25.0	8.22	6.68	0.11
T5-500m	6/25/20	1003	0.4	Ebb	0.05	1.5	0.16	2.3	0.36	5.0	0.3	9	0.24	7.3	2.42	34	0.05	35.54	26.5	8.19	6.54	0.12
Geomean	**FY '20**				0.05	**1.4**	0.11	**1.5**	0.18	***2.6***			0.31	**9.7**	2.5	**35**	**0.06**					**0.12**

NELHA Water Quality Laboratory

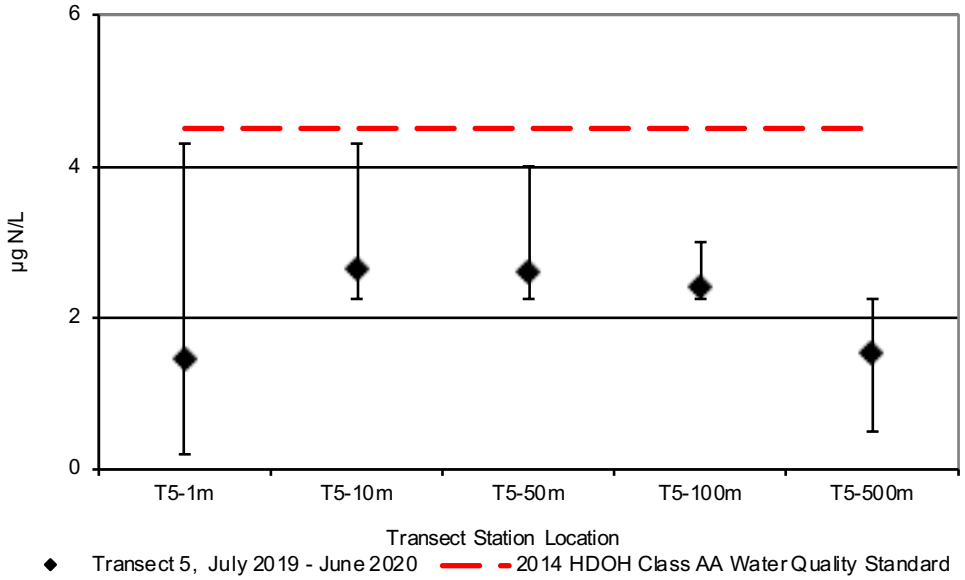
Transect 5

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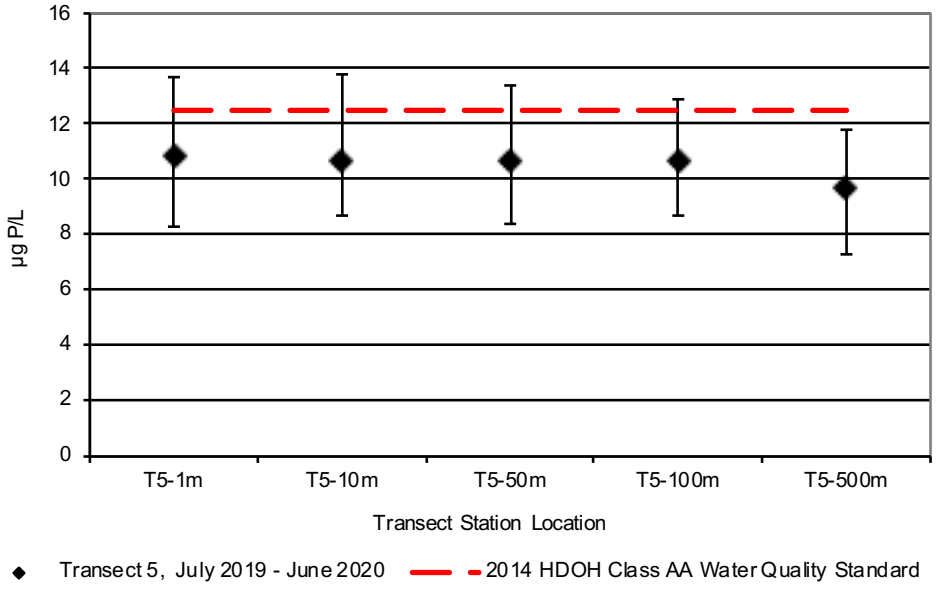
Transect 5 Station Summary
Ortho-Phosphate Geometric Mean



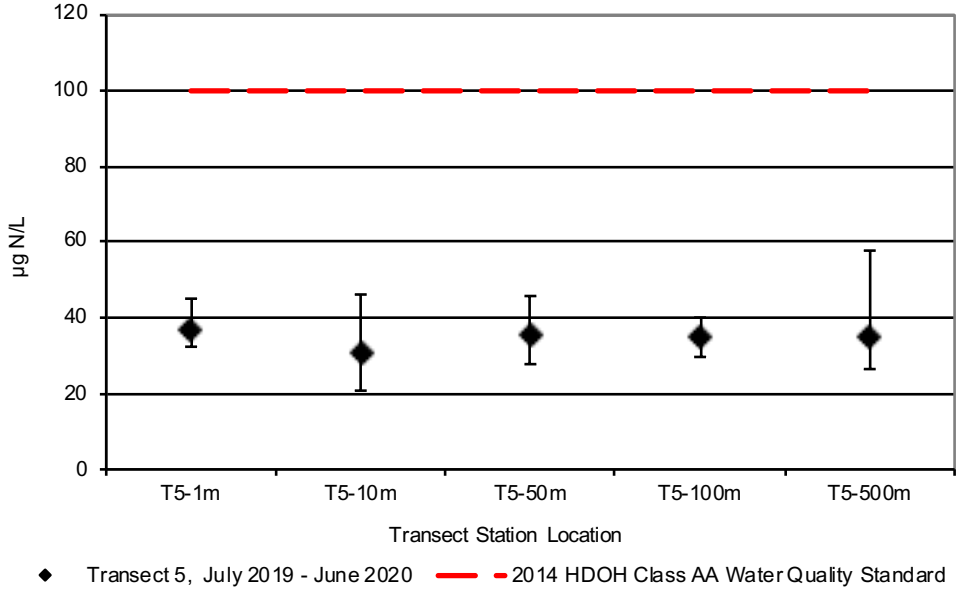
Transect 5 Station Summary
Nitrate + Nitrite Geometric Mean



Transect 5 Station Summary
Total Dissolved Phosphorous Geometric Mean



Transect 5 Station Summary
Total Dissolved Nitrogen Geometric Mean

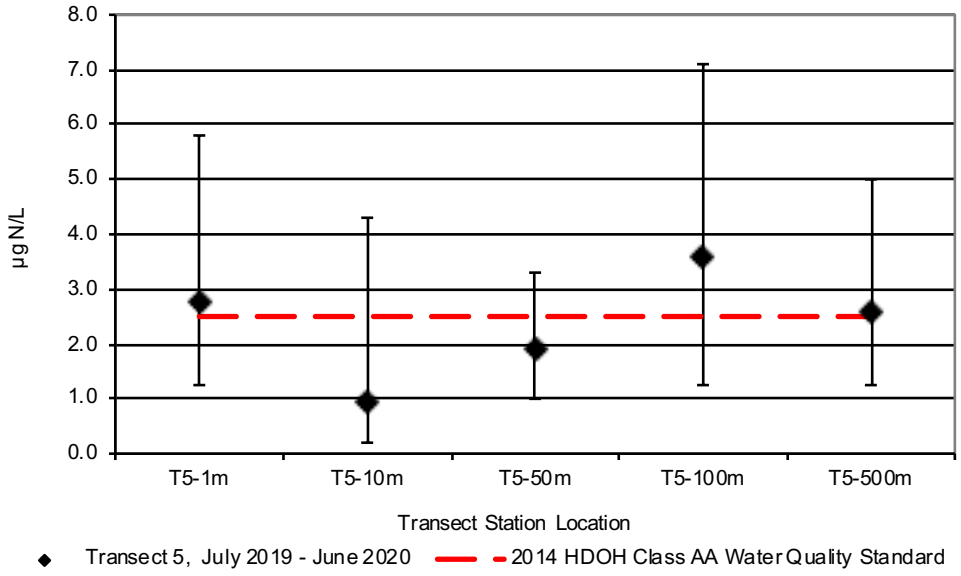


NELHA Water Quality Laboratory

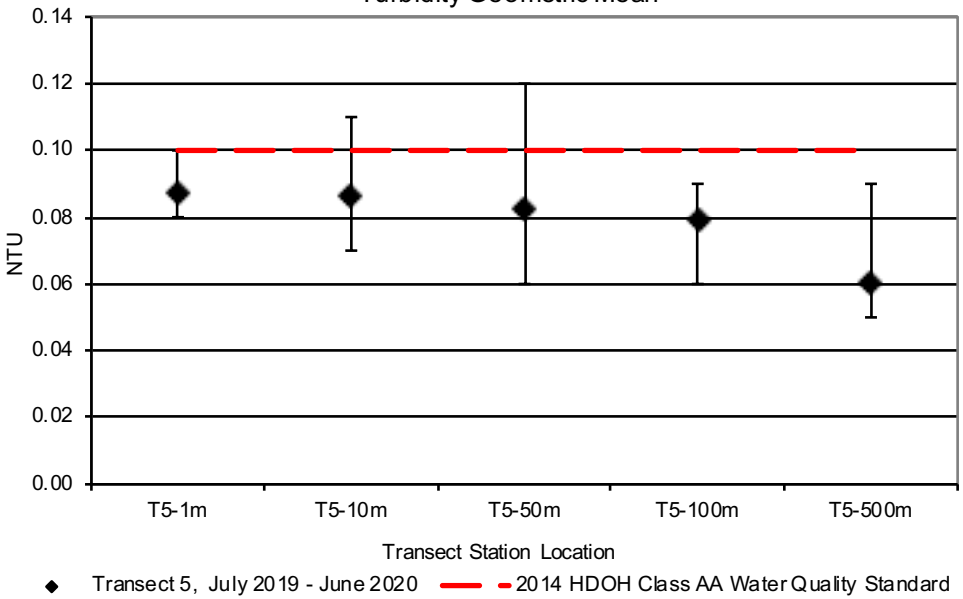
Transect 5

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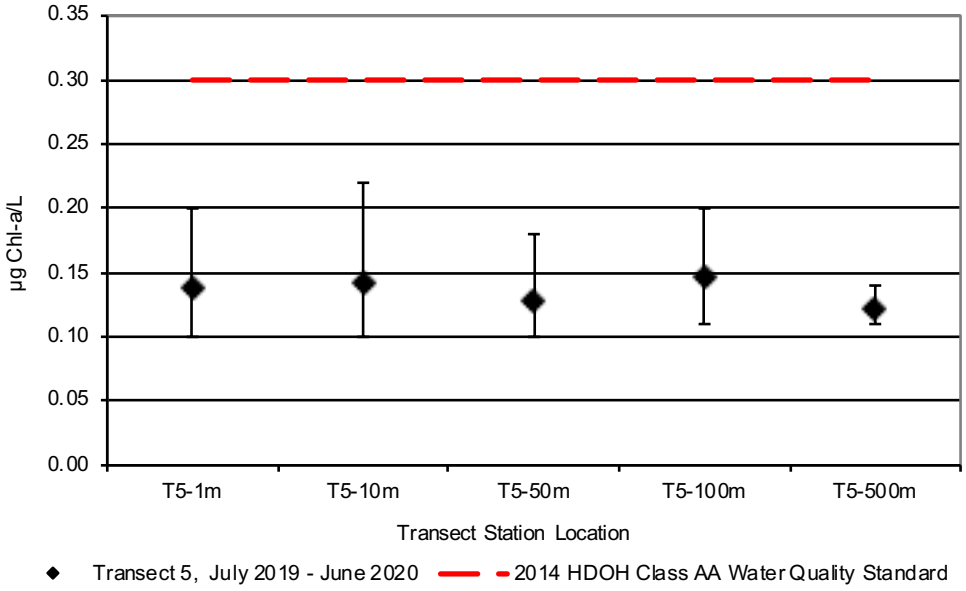
Transect 5 Station Summary
Total Ammonia Geometric Mean



Transect 5 Station Summary
Turbidity Geometric Mean



Transect 5 Station Summary
Chlorophyll-a Geometric Mean



NELHA Water Quality Laboratory

Transect 5, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O5-1S-8m	7/26/93	1221	0.18	5.6	0.12	1.7	0.43	6.0	5.2	147	0.21	6.5	8.2	114	0.28	8.67	1.21	0.10	34.423	27.3	8.29	7.15			
O5-1S-8m	12/6/93	1133	0.06	1.9	0.41	5.7	0.03	0.4	3.1	88	0.25	7.7	7.2	101	0.25	7.74	1.22	0.13	34.825	25.7	8.26	7.01			
O5-1S-8m	3/7/94	1039	0.24	7.4	0.86	12.0	0.17	2.4	7.5	211	0.31	9.6	7.2	101	0.31	9.60	1.12	0.08	34.080	25.0	8.23	7.21	0.01	3	<1
O5-1S-8m	6/15/94	1045	0.14	4.3	0.34	4.8	0.08	1.1	4.5	125	0.23	7.1	6.3	88	0.30	9.29	1.14	0.12	34.491	25.9	8.24	7.08	0.15	<1	<1
Geomean	**FY '94**			**4.3**		***4.9***		**1.6**				**7.7**		***101***				***0.11***					**0.04**		
O5-1S-8m	9/9/94	1005	0.11	3.4	0.54	7.6	0.21	2.9	5.0	140	0.30	9.3	7.1	99	0.31	9.60	1.24	0.11	34.524	27.8	8.24	6.87	0.01	<1	<1
O5-1S-8m	11/14/94	938	0.16	5.0	0.69	9.7	0.52	7.3	7.1	200	0.35	10.8	5.7	80	0.39	12.08	1.02	0.09	34.492	26.1	8.28	7.03	0.09	<1	<1
O5-1S-8m	3/22/95	1031	0.21	6.5	0.34	4.8	0.37	5.2	4.3	120	0.34	10.5	5.2	73	0.34	10.53	1.02	0.09	34.172	25.3	8.25	7.16	0.20	<1	<1
O5-1S-8m	6/20/95	1006	0.11	3.4	0.18	2.5	0.06	0.8	2.3	65	0.29	9.0	5.4	76	0.29	8.98	0.88	0.07	34.454	26.4	8.23	6.96	0.11	<1	<1
Geomean	**FY '95**			**4.4**		***5.4***		***3.1***				**9.9**		**81**				**0.09**					**0.07**		
O5-1S-8m	9/28/95	948	0.09	2.8	0.05	0.7	0.50	7.0	2.3	65	0.28	8.7	7.2	100	0.28	8.67	1.07	0.14	34.606	27.4	8.30	6.66	0.05	<1	<1
O5-1S-8m	11/14/95	958	0.12	3.7	0.16	2.2	0.46	6.4	2.2	63	0.31	9.6	4.2	60	0.31	9.60	1.02	0.10	34.366	26.8	8.27	6.88	0.01	<1	<1
O5-1S-8m	3/12/96	1033	0.15	4.6	0.31	4.3	0.56	7.8	4.0	113	0.34	10.5	4.5	63	0.34	10.53	0.99	0.07	34.141	25.6	8.22	7.21	0.14	<1	<1
O5-1S-8m	5/14/96	1035	0.12	3.7	0.33	4.6	0.22	3.1	6.0	168	0.30	9.3	6.6	92	0.30	9.29	1.12	0.10	34.231	27.3	8.21	7.15	0.09	1	2
Geomean	**FY '96**			**3.7**		**2.4**		***5.7***				**9.5**		**77**				**0.10**					**0.05**		
O5-1S-8m	7/31/96	1055	0.10	3.1	0.61	8.5	0.48	6.7	8.2	231	0.27	8.4	4.7	65	0.27	8.36	0.99	0.11	34.297	28.0	8.24	6.53	0.21	<1	<1
O5-1S-8m	10/2/96	1023	0.08	2.5	0.10	1.4	0.28	3.9	2.9	81	0.26	8.1	5.3	74	0.26	8.05	1.05	0.08	34.644	28.1	8.23	6.71	0.22	<1	1
O5-1S-8m	1/7/97	1026	0.12	3.7	0.65	9.1	0.22	3.1	5.6	158	0.29	9.0	5.2	73	0.29	8.98	1.02	0.21	34.572	25.7	8.28	6.99	0.06	<1	<1
O5-1S-8m	4/28/97	1047	0.16	5.0	0.40	5.6	0.43	6.0	5.7	159	1.07	33.1	5.1	71	1.56	48.32	1.04	0.13	34.323	26.7	8.28	6.77	0.04	<1	<1
Geomean	**FY '97**			**3.4**		***5.0***		***4.7***				**11.9**		**71**				***0.12***					**0.10**		
O5-1S-8m	8/19/97	1032	0.11	3.4	0.59	8.3	0.26	3.6	7.9	223	0.35	10.8	4.5	63	0.35	10.84	1.03	0.11	34.546	27.0	8.38	6.60	0.15	<1	<1
O5-1S-8m	10/7/97	930	0.10	3.1	0.09	1.3	0.36	5.0	4.0	113	0.29	9.0	5.9	82	0.29	8.98	1.13	0.08	34.744	27.5	8.45	6.87	0.16	<1	<1
O5-1S-8m	3/4/98	1036	0.14	4.3	0.69	9.7	0.25	3.5	8.4	237	0.33	10.2	5.5	77	0.34	10.53	1.01	0.08	34.908	25.1	8.22	7.01	0.06	<1	<1
O5-1S-8m	5/5/98	1041	0.13	4.0	0.70	9.8	0.27	3.8	7.6	213	0.36	11.2	5.4	76	0.36	11.15	0.90	0.08	34.911	24.2	8.24	7.24	0.09	<1	<1
Geomean	**FY '98**			**3.7**		***5.6***		***3.9***				**10.3**		**74**				**0.09**					**0.11**		
O5-1S-8m	7/7/98	1107	0.13	4.0	0.36	5.0	0.07	1.0	6.8	191	0.38	11.8	5.4	75	0.39	12.08	1.04	0.09	34.908	26.3	8.24	6.99	0.17	<1	<1
O5-1S-8m	10/6/98	1016	0.13	4.0	0.40	5.6	0.14	2.0	4.0	113	0.38	11.8	5.6	79	0.40	12.39	1.06	0.10	35.052	27.1	8.22	7.78	0.12	<1	<1
O5-1S-8m	1/19/99	1051	0.11	3.4	0.46	6.4	0.13	1.8	5.2	147	0.35	10.8	4.9	69	0.35	10.84	1.18	0.09	35.026	25.2	8.24	7.16	0.09	<1	<1
O5-1S-8m	4/13/99	1132	0.17	5.3	0.39	5.5	0.16	2.2	5.9	166	0.43	13.3	6.4	90	0.43	13.32	n/a	0.11	34.579	24.5	8.23	7.45	0.16	<1	<1
Geomean	**FY '99**			**4.1**		***5.6***		**1.7**				**11.9**		**78**				**0.10**					**0.13**		

NELHA Water Quality Laboratory

Transect 5, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O5-1S-8m	8/16/99	1104	0.11	3.4	0.05	0.7	0.37	5.2	1.9	52	0.35	10.8	4.3	60	0.35	10.84	1.05	0.08	34.855	26.0	8.26	6.98	0.19	<1	<1
O5-1S-8m	10/25/99	1153	0.17	5.3	0.72	10.1	0.39	5.5	8.1	228	0.37	11.5	5.5	77	0.37	11.46	1.03	0.11	34.797	26.2	8.29	7.12	0.10	<1	<1
O5-1S-8m	1/12/00	1053	0.13	4.0	0.32	4.5	0.36	5.0	4.2	117	0.34	10.5	5.7	80	0.35	10.84	0.93	0.06	35.056	24.9	8.26	7.14	0.06	<1	<1
O5-1S-8m	4/11/00	959	0.12	3.7	0.22	3.1	0.04	0.6	3.6	102	0.31	9.6	5.6	78	0.31	9.60	1.10	0.07	34.830	24.4	8.27	7.17	0.07	<1	1
Geomean	**FY '00**			**4.0**		**3.1**		***3.0***				**10.6**		**73**				**0.08**					**0.09**		
O5-1S-8m	7/25/00	1107	0.10	3.1	0.07	1.0	0.04	0.6	2.7	75	0.31	9.6	5.0	70	0.34	10.53	0.94	0.07	34.851	26.7	8.28	6.79	0.12	<1	<1
O5-1S-8m	10/31/00	1057	0.12	3.7	0.28	3.9	0.29	4.1	10.1	284	0.38	11.8	5.1	71	0.40	12.39	1.06	0.10	34.905	27.1	8.26	6.78	0.06	<1	<1
O5-1S-8m	3/6/01	1047	0.17	5.3	0.67	9.4	0.10	1.4	4.9	138	0.37	11.5	6.8	96	0.38	11.77	1.22	0.12	34.655	24.9	8.22	6.73	0.16	<1	<1
O5-1S-8m	5/8/01	1137	0.14	4.3	0.56	7.8	0.25	3.5	7.0	195	0.38	11.8	5.3	74	0.40	12.39	1.00	0.07	34.670	24.9	8.22	7.23	0.15	<1	<1
Geomean	**FY '01**			**4.0**		**4.1**		**1.8**				**11.1**		**77**				**0.09**					**0.11**		
O5-1S-8m	8/13/01	942	0.09	2.8	0.01	0.1	0.20	2.8	2.1	58	0.36	11.2	5.7	79	0.37	11.46	1.09	0.11	34.876	26.6	8.22	6.68	0.11	1	<1
O5-1S-8m	10/10/01	1050	0.18	5.6	0.06	0.8	0.06	0.8	3.2	89	0.40	12.4	5.4	76	0.40	12.39	1.07	0.12	34.926	27.5	8.23	6.95	0.16	<1	<1
O5-1S-8m	3/6/02	1002	0.17	5.3	0.24	3.4	0.06	0.8	5.7	160	0.38	11.8	4.9	69	0.40	12.39	0.99	0.11	34.645	24.2	8.22	6.88	0.19	<1	<1
O5-1S-8m	4/15/02	1007	0.20	6.2	1.03	14.4	0.07	1.0	7.5	211	0.45	13.9	6.3	88	0.46	14.25	1.05	0.08	34.343	25.5	8.21	6.81	0.09	<1	<1
Geomean	**FY '02**			**4.7**		**1.5**		**1.2**				**12.3**		**78**				***0.10***					**0.13**		
O5-1S-8m	7/10/02	1002	0.21	6.5	0.68	9.5	0.19	2.7	7.2	201	0.39	12.1	6.2	87	0.39	12.08	0.82	0.06	34.554	26.4	8.22	6.90	0.09	<1	<1
O5-1S-8m	10/8/02	1010	0.11	3.4	0.54	7.6	0.12	1.7	8.5	238	0.35	10.8	5.3	74	0.35	10.84	1.04	0.08	34.873	27.0	8.25	9.43	0.07	<1	3
O5-1S-8m	3/11/03	1138	0.11	3.4	0.21	2.9	0.06	0.8	3.7	104	0.34	10.5	5.3	74	0.35	10.84	1.06	0.09	34.688	25.1	8.27	7.09	0.16	<1	<1
O5-1S-8m	4/23/03	1006	0.12	3.7	0.03	0.4	0.03	0.4	4.4	123	0.36	11.2	5.7	80	0.36	11.15	0.94	0.18	34.983	25.1	8.28	7.49	0.11	<1	<1
Geomean	**FY '03**			**4.1**		**3.1**		**1.1**				**11.1**		**79**				**0.09**					**0.10**		
O5-1S-8m	8/21/03	1010	0.10	3.1	0.01	0.1	0.01	0.1	6.2	174	0.38	11.8	6.5	91	0.38	11.77	n/a	0.07	34.823	28.4	8.27	6.84	0.05	3	<1
O5-1S-8m	11/3/03	938	0.11	3.4	0.02	0.3	0.26	3.6	2.4	67	0.39	12.1	5.9	83	0.40	12.39	n/a	0.09	34.664	27.4	8.23	n/a	0.12	<1	<1
O5-1S-8m	3/18/04	1008	0.11	3.4	0.42	5.9	0.27	3.8	4.4	123	0.40	12.4	5.5	77	0.39	12.08	n/a	n/a	34.325	25.8	8.25	9.86	0.17	<1	<1
O5-1S-8m	5/24/04	1023	0.16	5.0	0.33	4.6	0.12	1.7	6.6	186	0.44	13.6	5.7	80	0.43	13.32	n/a	n/a	33.40	26.8	8.25	7.08	0.01	<1	<1
Geomean	**FY '04**			**3.7**		**1.0**		**1.3**				**12.4**		**83**				**0.08**					**0.06**		
O5-1S-8m	9/22/04	1058	0.08	2.5	0.01	0.1	0.28	3.9	3.0	85	0.30	9.3	4.8	67	0.32	9.91	n/a	0.08	33.73	27.9	8.26	6.76	0.10	<1	1
O5-1S-8m	11/29/04	1001	0.10	3.1	0.27	3.8	0.13	1.8	2.4	67	0.32	9.9	5.2	73	0.33	10.22	n/a	0.09	33.80	27.1	8.29	6.53	0.06	<1	<1
O5-1S-8m	1/24/05	1040	0.07	2.2	0.27	3.8	0.10	1.4	4.5	125	0.30	9.3	5.6	79	0.29	8.98	n/a	0.08	34.805	25.7	8.33	6.89	0.10	<1	<1
O5-1S-8m	4/13/05	1042	0.13	4.0	0.16	2.2	0.17	2.4	3.2	90	0.39	12.1	5.1	71	0.39	12.08	n/a	0.10	n/a	25.5	8.30	6.96	0.06	<1	<1
Geomean	**FY '05**			**2.9**		**1.5**		**2.2**				**10.1**		**72**				**0.09**					**0.08**		

NELHA Water Quality Laboratory

Transect 5, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O5-1S-8m	7/21/05	958	0.07	2.2	0.51	7.1	0.36	5.0	6.6	184	0.33	10.2	3.9	55	0.34	10.53	n/a	0.21	34.585	27.4	8.26	7.79	0.04	<1	<1
O5-1S-8m	10/13/05	949	0.07	2.2	0.34	4.8	0.21	2.9	4.6	129	0.34	10.5	3.7	52	0.34	10.53	0.99	0.12	34.915	27.3	8.27	6.48	0.07	<1	<1
O5-1S-8m	3/15/06	908	0.10	3.1	0.07	1.0	0.35	4.9	5.1	144	0.34	10.5	5.0	70	0.36	11.15	n/a	0.08	34.817	24.3	8.25	7.89	0.09	<1	<1
O5-1S-8m	5/17/06	949	0.19	5.9	1.32	18.5	0.05	0.7	8.8	247	0.50	15.5	6.0	85	0.51	15.80	1.28	0.17	34.505	24.9	8.25	6.94	0.18	<1	<1
Geomean	**FY '06**			**3.0**		***5.0***		***2.7***				**11.5**		**64**				***0.14***					**0.08**		
O5-1S-8m	8/16/06	958	0.12	3.7	0.45	6.3	0.34	4.8	2.1	60	0.35	10.8	5.3	74	0.41	12.70	0.95	0.18	34.665	26.8	8.23	7.13	0.08	<1	<1
O5-1S-8m	11/20/06	1000	0.12	3.7	0.35	4.9	0.24	3.4	2.0	55	0.36	11.2	5.4	75	0.37	11.46	1.11	0.12	34.797	26.7	8.27	6.78	0.08	<1	<1
O5-1S-8m	2/12/07	1053	0.15	4.6	0.35	4.9	0.41	5.7	1.9	53	0.39	12.1	6.0	84	0.41	12.70	1.43	0.17	34.404	24?	8.24	6.88	0.09	<1	<1
O5-1S-8m	4/16/07	1041	0.16	5.0	1.35	18.9	0.41	5.7	13.0	365	0.39	12.1	6.3	88	0.43	13.32	0.89	0.19	34.352	26.0	8.25	6.49	0.07		
Geomean	**FY '07**			**4.2**		***7.3***		***4.8***				**11.5**		**80**				***0.16***					**0.08**		
T5-1m	9/27/07	940	0.13	4.1	0.37	5.2	0.41	5.8	4.8	135	0.51	15.7	6.6	92				0.10	34.975	26.7	8.07	6.18	0.12		
T5-1m	12/14/07	942	0.10	3.1	0.31	4.3			4.8	135	0.35	10.8	6.7	94				0.14	34.722	25.7	8.21	6.72	0.23		
T5-1m	3/11/08	951	0.11	3.3	0.51	7.2	0.06	0.8	5.5	156	0.24	7.3	6.7	94				0.09	34.823	24.8	8.08	6.52	0.32		
T5-1m	6/9/08	1024	0.09	2.7	0.17	2.4	0.16	2.2	13.2	372	0.28	8.6	8.8	124				0.16	35.681	25.0	8.12	5.81	0.13		
Geomean	**FY '08**			**3.3**		**4.4**		**2.2**				**10.2**		***100***				***0.12***					**0.18**		
T5-1m	9/23/08	1108	0.03	1	0.19	2.7	0.31	4.3	2.3	64	0.35	10.9	5.9	83				0.08	34.837	26.7	8.07	6.31	0.09		
T5-1m	12/8/08	1017	0.23	7.2	0.15	2.1	0.73	10.2	1.3	35	0.03	0.8	6.2	87				0.10	35.001	26.2	8.30	6.25	0.05		
T5-1m	2/10/09	911	0.21	6.6	0.71	9.9	0.12	1.7	4.3	122	0.37	11.5	7.5	105				0.12	35.005	24.7	8.05	6.03	0.06		
T5-1m	6/30/09	1001	0.25	7.8	0.39	5.5	0.67	9.4	4.4	124	0.43	13.2	5.6	78				0.08	34.905	26.7	8.16	5.82	0.10		
Geomean	**FY '09**			**4.4**		**4.2**		***5.1***				**6.0**		**88**				**0.09**					**0.07**		
T5-1m	9/10/09	956	0.15	4.5	0.20	2.8	0.03	0.4	44.8	1259	0.52	16	5.9	83				0.05	35.26	27.3	8.23	5.56	0.09		
T5-1m	11/24/09	931	0.02	0.766	0.20	2.8	0.16	2.3	12.0	336	0.33	10.3	5.1	72				0.03	35.27	25.2	8.26	6.54	0.13		
T5-1m	2/24/10	1009	0.17	5.4	1.04	14.6	0.28	3.9	8.2	231	0.29	9.1	6.4	89				0.07	35.09	24.6	8.22	5.50	0.39		
T5-1m	5/25/10	924	0.03	1	0.34	4.7	0.20	2.8	3.1	88	0.29	9.1	7.4	104				0.06	34.73	25.2	8.27	6.72	0.06		
Geomean	**FY '10**			**2.1**		***4.8***		**1.8**				**10.8**		**86**				**0.05**					**0.13**		
T5-1m	8/11/10	943	0.02	0.6	0.57	8	0.22	3.1	3.8	108	0.36	11.3	4.1	57				0.06	34.94	26.00	8.23	6.69	0.08		
T5-1m	11/9/10	941	0.02	0.766	0.20	2.8	0.16	2.3	12.0	336	0.33	10.3	5.1	72				0.07	34.91	26.26	8.26	6.42	0.08		
T5-1m	1/11/11	1204	0.15	4.6	0.44	6.2	0.14	1.9	10.9	305	0.44	13.7	3.9	55				0.05	35.01	25.06	8.21	6.65	0.09		
T5-1m	4/27/11	948	0.13	4.1	0.66	9.2	0.24	3.3	4.6	130	0.47	14.6	4.3	61				0.08	34.82	24.90	8.23	6.47	0.12		
Geomean	**FY' 11**			**1.7**		***6.0***		***2.6***				**12.4**		**61**				**0.06**					**0.09**		

NELHA Water Quality Laboratory

Transect 5, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T5-1m	7/27/11	1031	0.19	5.9	0.40	5.6	0.22	3.1	1.7	48	0.54	16.7	5.5	77				0.13	34.79	25.98	8.22	6.47	0.08		
T5-1m	10/19/11	1009	0.03	1	0.20	2.8	0.13	1.8	1.7	48	0.36	11.1	5.2	73				0.04	35.12	26.52	8.26	7.26	0.08		
T5-1m	1/26/12	940	0.05	1.6	0.18	2.5	0.01	0.2	2.2	62	0.44	13.6	6.2	87				0.05	35.01	24.46	8.20	6.74	0.10		
T5-1m	4/25/12	1009	0.21	6.5	0.47	6.6	0.46	6.4	2.2	62	0.54	16.8	8.5	120				0.05	34.83	24.82	8.20	6.83	0.10		
Geomean	**FY '12**			**2.8**		**4.0**		**1.6**				***14.3***		**87**				**0.06**					**0.09**		
T5-1m	7/25/12	951	0.03	0.8	0.24	3.4	0.26	3.6	1.3	36	0.40	12.5	6.3	88				0.08	35.12	26.35	8.24	6.88	0.10		
T5-1m	11/28/12	951	0.07	2.2	0.51	7.2	0.18	2.5	3.7	103	0.68	21.1	8.6	121				0.03	35.18	25.24	8.20	6.68	0.05		
T5-1m	1/24/13	939	0.08	2.4	0.39	5.4	0.19	2.7	2.2	63	0.60	18.5	5.3	74				0.04	35.06	24.76	8.22	6.36	0.21		
T5-1m	4/17/13	1053	0.21	6.5	0.93	13	0.15	2.1	5.3	149	0.62	19.3	6.3	88				0.05	35.03	25.17	8.21	6.87	0.10		
Geomean	**FY '13**			**2.3**		***6.4***		***2.7***				***17.5***		**91**				**0.05**					**0.10**		
T5-1m	8/6/13	1029	0.14	4.4	2.11	29.5	0.36	5.0	14.6	409	0.67	20.7	5.9	82				0.03	34.81	26.3	8.28	7.07	0.08		
T5-1m	10/30/13	935	0.14	4.4	0.34	4.8	0.19	2.7	2.5	69	0.46	14.3	4.6	64				0.02	34.89	27.0	8.22	6.10	0.11		
T5-1m	2/5/14	959	0.15	4.5	0.42	5.9	0.29	4.1	2.9	80	0.50	15.5	5.4	76				0.02	34.95	25.2	8.20	6.38	0.15		
T5-1m	5/7/14	953	0.13	3.9	0.38	5.3	0.14	1.9	1.4	41	0.49	15.3	6.8	95				0.04	34.79	25.7	8.20	5.65	0.11		
Geomean	**FY '14**			**4.3**		***8.2***		***3.2***				***16.3***		**79**				**0.03**					**0.11**		
T5-1m	8/6/14	948	0.17	5.2	0.12	1.7	0.41	5.8	0.9	26	0.54	16.7	7.1	99				0.10	34.95	26.7	8.23	6.31	0.10		
T5-1m	12/4/14	1018	0.13	4.1	0.42	5.9	0.55	7.7	2.3	65	0.41	12.6	6.8	95				0.07	35.17	26.3	8.24	6.43	0.11		
T5-1m	3/5/15	1012	0.05	1.7	0.98	13.7	0.27	3.8	4.5	125	0.39	12.1	7.0	97				0.10	34.69	25.3	8.27	7.00	0.14		
T5-1m	6/18/15	950	0.18	5.6	0.69	9.7	0.35	4.9	5.9	166	0.47	14.7	8.5	119				0.08	34.31	26.6	8.15	6.70	0.08		
Geomean	**FY '15**			**3.8**		***6.0***		***5.4***				***13.9***		***102***				**0.09**					**0.11**		
T5-1m	8/27/15	958	0.15	4.8	0.39	5.4	0.25	3.5	3.2	90	0.39	12.0	4.7	66				0.03	34.46	28.5	8.26	6.25	0.27		
T5-1m	11/18/15	1022	0.14	4.3	0.59	8.3	0.54	7.5	3.5	98	0.50	15.4	4.9	68				0.07	34.62	27.4	8.28	6.96	0.13		
T5-1m	3/2/16	909	0.15	4.6	0.29	4.0	0.39	5.5	0.1	4	0.47	14.5	4.9	69				0.09	34.73	25.2	8.23	5.74	0.08		
T5-1m	5/4/16	1003	0.25	7.6	0.31	4.4	0.17	2.4	2.2	61	0.46	14.2	8.0	113				0.08	34.60	25.9	8.21	6.27	0.09		
Geomean	**FY '16**			***5.2***		***5.3***		***4.3***				***14.0***		**77**				**0.06**					**0.13**		
T5-1m	7/7/16	1006	0.15	4.6	0.21	2.9	0.46	6.4	2.9	81	0.51	15.9	3.6	50				0.09	34.58	26.8	8.32	6.80	0.18		
T5-1m	12/21/16	1016	0.07	2.2	0.35	4.9	0.46	6.5	1.9	52	0.34	10.5	3.5	50				0.06	34.59	25.5	8.28	6.98	0.20		
T5-1m	3/1/17	1137	0.04	1.1	0.59	8.2	0.08	1.1	2.3	66	0.30	9.4	4.0	57				0.10	34.70	24.6	8.24	5.98	0.17		
T5-1m	5/10/17	1104	0.02	0.7	0.36	5.1	0.09	1.2	2.2	62	0.23	7.1	3.7	52				0.08	34.75	25.8	8.23	4.33	0.10		
Geomean	**FY '17**			**1.7**		***4.9***		***2.7***				**10.3**		**52**				**0.08**					**0.16**		

NELHA Water Quality Laboratory

Transect 5, Station 1

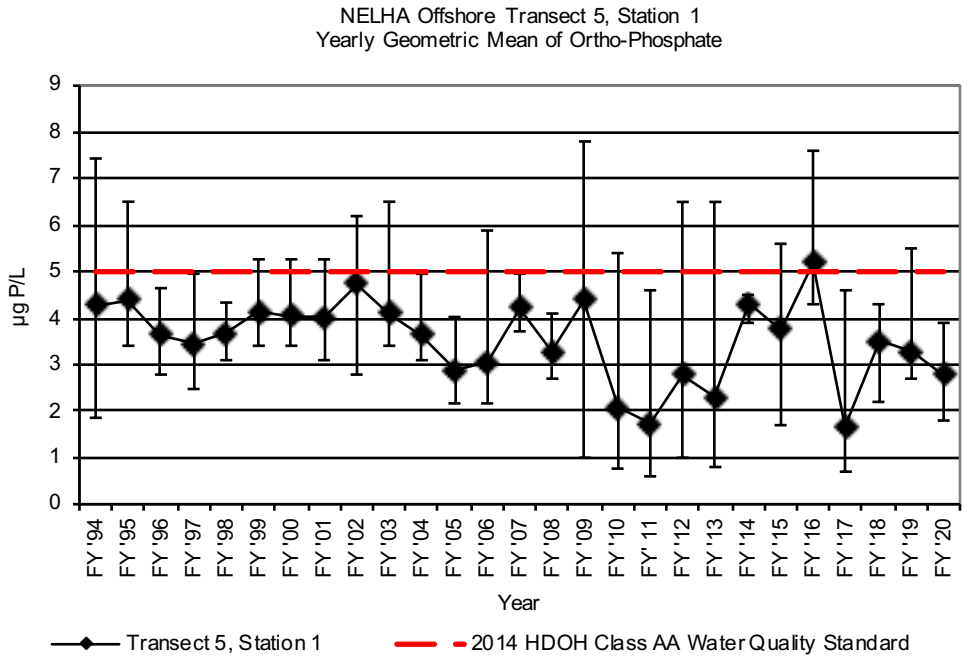
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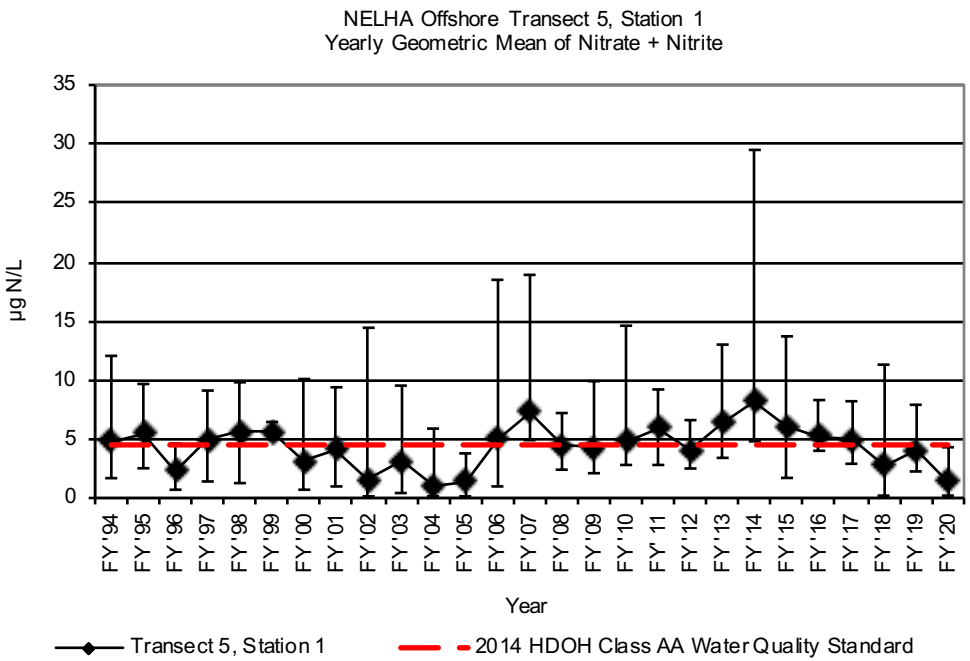
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T5-1m	9/28/17	1000	0.14	4.3	0.25	3.5	0.27	3.8	0.8	23	0.42	13.1	4.1	57				0.10	34.82	27.8	8.19	4.94	0.15		
T5-1m	11/30/17	947	0.13	4.1	0.81	11.3	0.39	5.5	4.6	129	0.40	12.4	5.0	70				0.09	35.09	26.3	8.23	5.79	0.15		
T5-1m	2/6/18	1029	0.07	2.2	0.01	0.2	0.39	5.5	1.2	34	0.31	9.7	4.4	62				0.10	34.84	24.9	8.16	5.79	0.11		
T5-1m	5/17/18	1001	0.13	3.9	0.55	7.7	0.31	4.3	5.0	141	0.38	11.9	2.2	31				0.04	34.70	25.9	8.17	6.69	0.13		
Geomean	**FY '18**			**3.5**		**2.8**		***4.7***				**11.7**		**53**				**0.08**					**0.13**		
T5-1m	9/26/18	1243	0.09	2.7	0.16	2.3	0.14	1.9	0.9	26	0.29	8.9	1.7	23				0.09	34.73	27.6	8.17	4.88	0.15		
T5-1m	11/14/18	1051	0.09	2.7	0.40	5.6	0.26	3.7	0.4	11	0.33	10.3	3.2	44				0.08	34.90	27.3	8.21	6.20	0.16		
T5-1m	1/23/19	1038	0.09	2.9	0.18	2.5	0.15	2.1	1.8	51	0.37	11.4	2.6	37				0.07	34.88	24.9	8.19	5.23	0.21		
T5-1m	4/17/19	1028	0.18	5.5	0.56	7.9	0.23	3.2	4.1	115	0.42	13.1	3.2	45				0.05	34.65	25.7	8.12	7.21	0.13		
Geomean	**FY '19**			**3.3**		**4.0**		***2.6***				**10.8**		**36**				**0.07**					**0.16**		
T5-1m	8/15/19	1003	0.06	1.8	0.16	2.3	0.41	5.8	3.1	86	0.30	9.4	2.3	32				0.10	35.24	28.2	8.26	6.77	0.14		
T5-1m	11/20/19	1108	0.13	3.9	0.31	4.3	0.17	2.4	0.8	24	0.44	13.7	3.2	45				0.09	35.20	27.5	8.22	6.88	0.13		
T5-1m	1/23/20	1021	0.12	3.8	0.16	2.3	0.09	1.3	1.1	31	0.42	12.9	2.3	33				0.08	34.92	24.9	8.22	7.09	0.10		
T5-1m	6/25/20	942	0.07	2.3	0.01	0.2	0.25	3.5	1.7	48	0.27	8.3	2.7	38				0.08	35.47	26.1	8.17	6.70	0.20		
Geomean	**FY '20**			**2.8**		**1.4**		***2.8***				**10.8**		**37**				**0.09**					**0.14**		

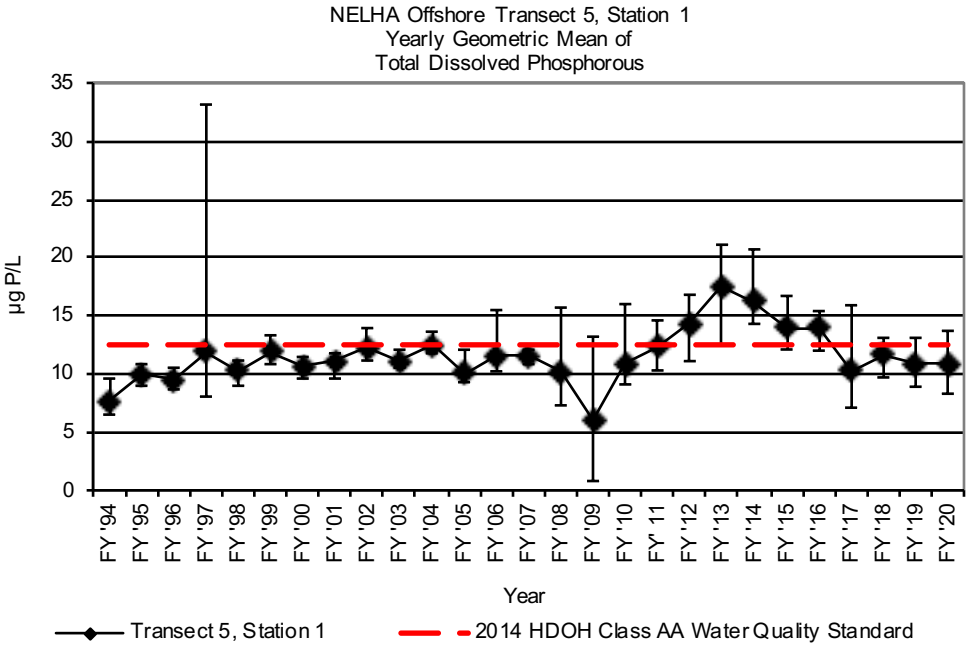
NELHA Water Quality Laboratory

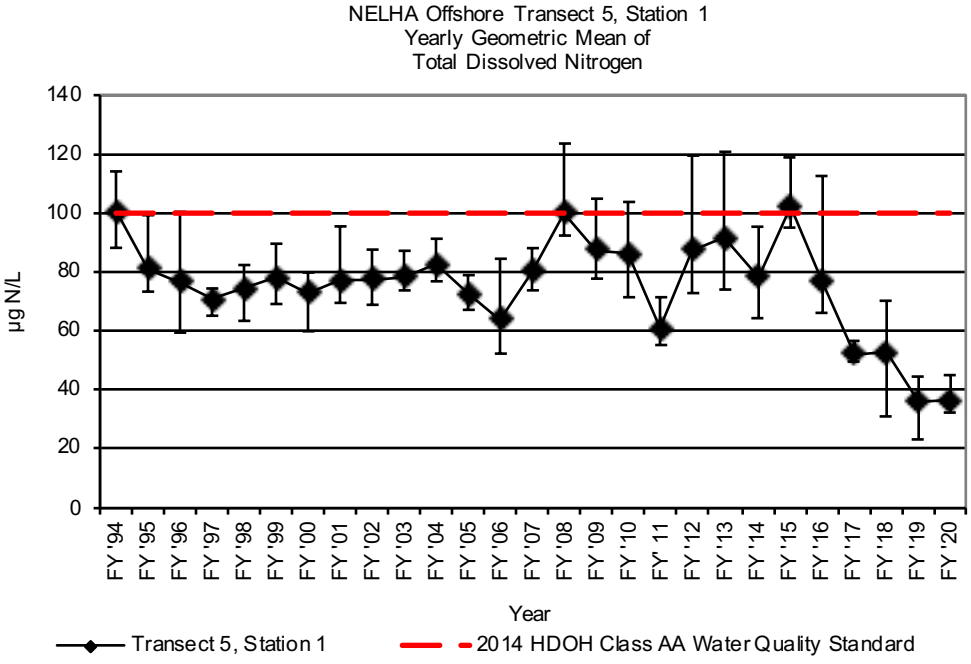
Transect 5, Station 1

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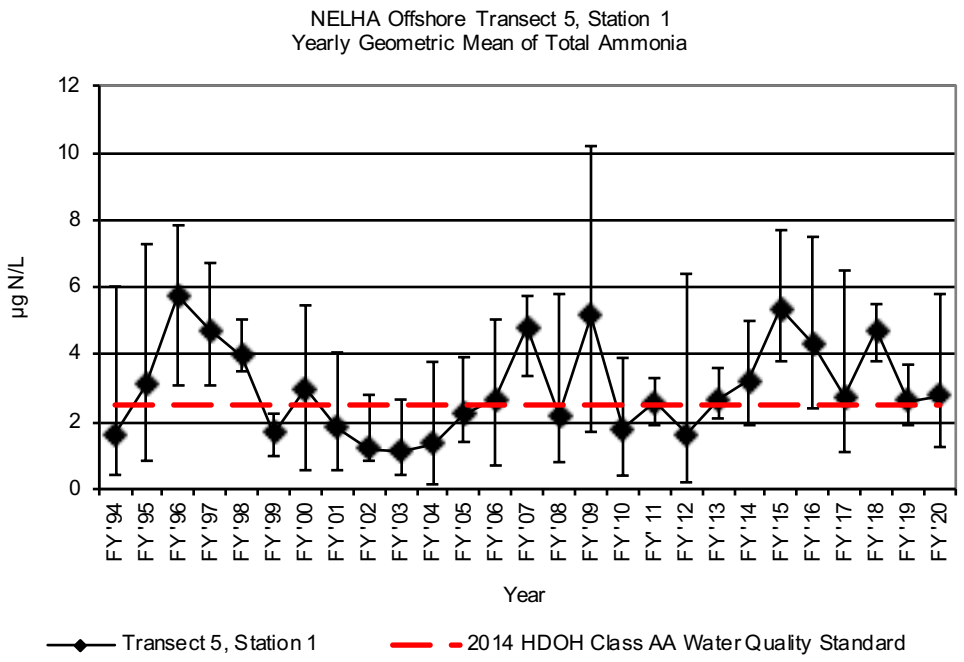


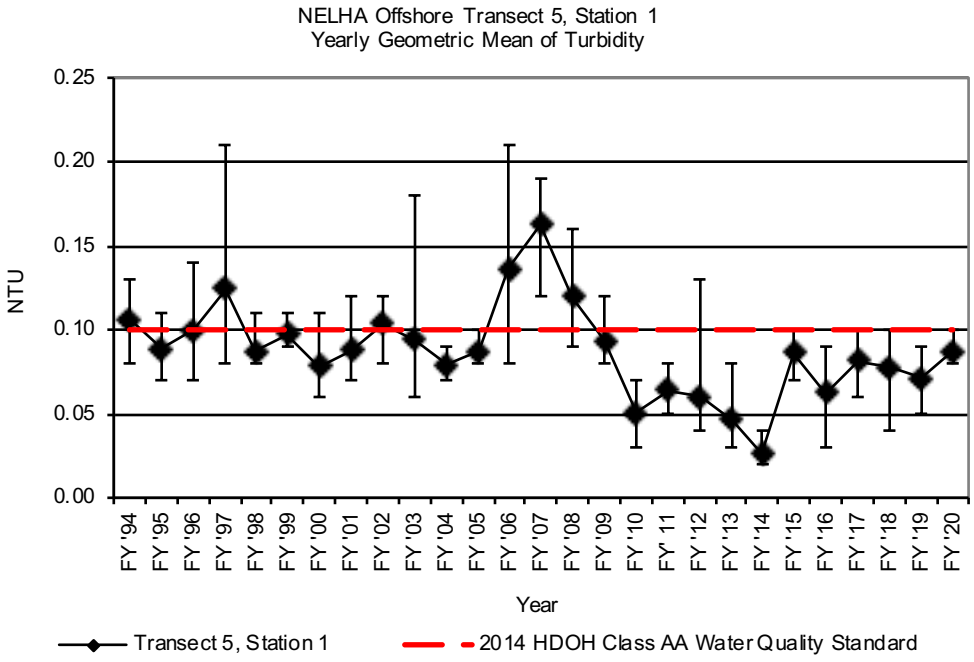


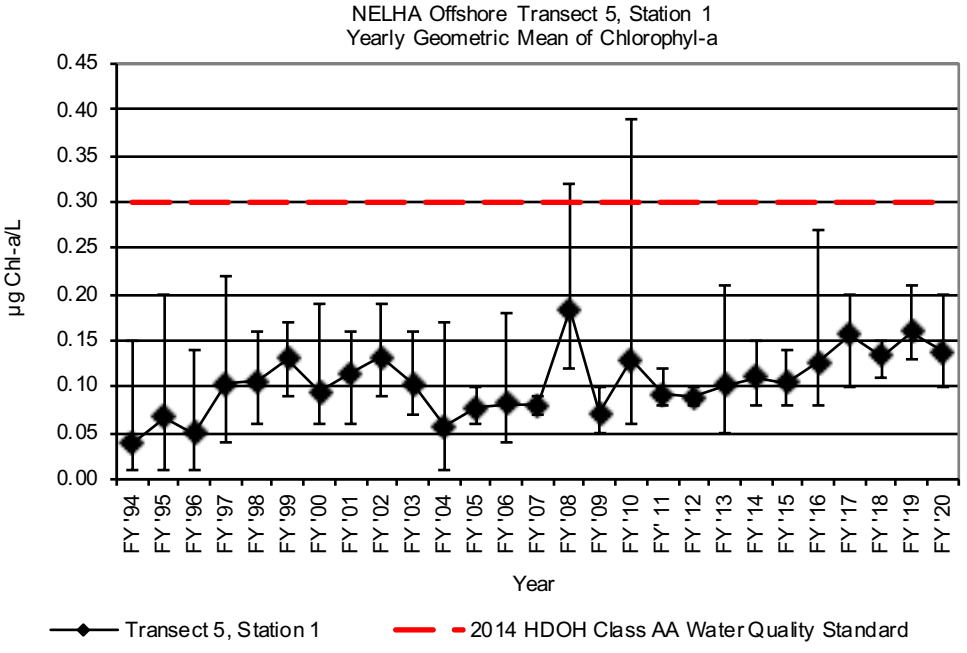
NELHA Water Quality Laboratory

Transect 5, Station 1

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 5, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.1**					**0.3**
O5-2S-23m	7/26/93	950	0.15	4.6	0.15	2.1	0.38	5.3	3.5	99					0.08	34.426	26.8			
O5-2S-23m	12/6/93	1123	0.06	1.9	0.22	3.1	0.06	0.8	2.9	81					0.09	34.876	25.7			
O5-2S-23m	3/7/94	1029	0.24	7.4	0.68	9.5	0.17	2.4	6.2	173			6.43	90.06	0.10	34.130	25.1			
O5-2S-23m	6/15/94	1025	0.22	6.8	0.21	2.9	0.06	0.8	3.4	95					0.11	34.527	25.7			
Geomean	**FY '94**			**4.6**		**3.7**		**1.7**							**0.09**					
O5-2S-23m	9/9/94	1040	0.10	3.1	0.46	6.4	0.19	2.7	4.4	123					0.13	34.538	27.7			
O5-2S-23m	11/14/94	924	0.16	5.0	0.73	10.2	0.55	7.7	7.4	208					0.12	34.496	26.1			
O5-2S-23m	3/22/95	1012	0.18	5.6	0.33	4.6	0.37	5.2	3.7	105					0.09	34.188	25.2			
O5-2S-23m	6/20/95	1000	0.15	4.6	0.10	1.4	0.14	2.0	3.5	99					0.07	34.464	26.4			
Geomean	**FY '95**			**4.5**		***4.5***		***3.8***							**0.10**					
O5-2S-23m	9/28/95	813	0.08	2.5	0.07	1.0	0.50	7.0	1.6	46					0.09	34.605	27.2			
O5-2S-23m	11/14/95	951	0.10	3.1	0.08	1.1	0.49	6.9	3.1	86					0.08	34.357	26.8			
O5-2S-23m	3/12/96	1029	0.15	4.6	0.33	4.6	0.56	7.8	4.4	124					0.07	34.135	25.6			
O5-2S-23m	5/14/96	1021	0.12	3.7	0.39	5.5	0.19	2.7	5.7	159					0.10	34.227	27.2			
Geomean	**FY '96**			**3.4**		**2.3**		***5.6***							**0.08**					
O5-2S-23m	7/31/96	1050	0.09	2.8	0.41	5.7	0.44	6.2	6.6	186					0.09	34.371	28.0			
O5-2S-23m	10/2/96	1019	0.07	2.2	0.03	0.4	0.26	3.6	2.6	72					0.08	34.640	28.1			
O5-2S-23m	1/7/97	1022	0.12	3.7	0.75	10.5	0.23	3.2	6.0	168					0.07	34.563	25.7			
O5-2S-23m	4/28/97	1044	0.15	4.6	0.23	3.2	0.39	5.5	6.3	176					0.10	34.408	26.8			
Geomean	**FY '97**			**3.2**		**3.0**		***4.5***							**0.08**					
O5-2S-23m	8/19/97	1026	0.11	3.4	0.55	7.7	0.28	3.9	5.9	164					0.10	34.558	27.1			
O5-2S-23m	10/7/97	926	0.09	2.8	0.08	1.1	0.34	4.8	2.4	68					0.10	34.751	27.6			
O5-2S-23m	3/4/98	1030	0.13	4.0	0.58	8.1	0.23	3.2	5.3	150					0.07	34.928	25.0			
O5-2S-23m	5/5/98	1036	0.09	2.8	0.16	2.2	0.22	3.1	3.5	99					0.09	35.055	24.3			
Geomean	**FY '98**			**3.2**		**3.5**		***3.7***							**0.09**					
O5-2S-23m	7/7/98	1100	0.12	3.7	0.33	4.6	0.07	1.0	6.4	181					0.13	34.912	26.3			
O5-2S-23m	10/6/98	1011	0.10	3.1	0.21	2.9	0.09	1.3	5.7	161					0.08	35.109	27.0			
O5-2S-23m	1/19/99	1046	0.08	2.5	0.23	3.2	0.11	1.5	4.6	128					0.07	35.095	25.3			
O5-2S-23m	4/13/99	1127	0.17	5.3	0.70	9.8	0.13	1.8	9.5	265					0.10	34.480	24.5			
Geomean	**FY '99**			**3.5**		***4.6***		**1.4**							**0.09**					

NELHA Water Quality Laboratory

Transect 5, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-2S-23m	8/16/99	1100	0.10	3.1	0.05	0.7	0.51	7.1	2.1	60					0.10	34.836	26.1			
O5-2S-23m	10/25/99	1148	0.14	4.3	0.66	9.2	0.39	5.5	7.6	214					0.10	34.813	26.3			
O5-2S-23m	1/12/00	1047	0.10	3.1	0.04	0.6	0.26	3.6	2.2	61					0.05	35.114	24.9			
O5-2S-23m	4/11/00	955	0.12	3.7	0.13	1.8	0.02	0.3	3.2	90					0.08	34.838	24.4			
Geomean	**FY '00**			**3.5**		**1.6**		***2.5***							**0.08**					
O5-2S-23m	7/25/00	1102	0.11	3.4	0.15	2.1	0.06	0.8	3.0	85					0.09	34.851	26.7			
O5-2S-23m	10/31/00	1049	0.12	3.7	0.04	0.6	0.27	3.8	2.9	82					0.06	34.949	27.1			
O5-2S-23m	3/6/01	1041	0.14	4.3	0.25	3.5	0.12	1.7	4.3	121					0.09	34.672	24.9			
O5-2S-23m	5/8/01	1134	0.13	4.0	0.47	6.6	0.21	2.9	7.0	195					0.07	34.708	24.9			
Geomean	**FY '01**			**3.9**		**2.3**		**2.0**							**0.08**					
O5-2S-23m	8/13/01	936	0.09	2.8	0.01	0.1	0.20	2.8	2.1	58					0.15	34.879	26.6			
O5-2S-23m	10/10/01	1044	0.15	4.6	0.09	1.3	0.06	0.8	3.4	95					0.08	34.920	27.5			
O5-2S-23m	3/6/02	956	0.14	4.3	0.18	2.5	0.06	0.8	4.4	124					0.12	34.664	24.2			
O5-2S-23m	4/15/02	1002	0.15	4.6	0.25	3.5	0.06	0.8	4.6	129					0.08	34.439	25.6			
Geomean	**FY '02**			**4.0**		**1.1**		**1.1**							***0.10***					
O5-2S-23m	7/10/02	957	0.18	5.6	0.28	3.9	0.15	2.1	4.9	136					0.08	34.620	26.4			
O5-2S-23m	10/8/02	1005	0.06	1.9	0.48	6.7	0.06	0.8	4.0	112					0.10	34.876	27.0			
O5-2S-23m	3/11/03	1132	0.10	3.1	0.13	1.8	0.03	0.4	3.3	92					0.08	34.705	25.3			
O5-2S-23m	4/23/03	1000	0.16	5.0	0.03	0.4	0.03	0.4	3.8	107					0.06	34.992	25.1			
Geomean	**FY '03**			**3.6**		**2.1**		**0.7**							**0.08**					
O5-2S-23m	8/21/03	956	5.94	184.0	0.09	1.3	0.10	1.4	2.5	70					0.08	34.827	28.3			
O5-2S-23m	11/3/03	929	0.11	3.4	0.01	0.1	0.26	3.6	2.5	71					0.10	34.651	27.2			
O5-2S-23m	3/18/04	1001	0.14	4.3	0.14	2.0	0.26	3.6	2.7	75					n/a	34.373	25.5			
O5-2S-23m	5/24/04	1018	0.15	4.6	0.27	3.8	0.09	1.3	3.9	110					n/a	33.33	26.8			
Geomean	**FY '04**			***10.6***		**1.1**		**2.2**							**0.09**					
O5-2S-23m	9/22/04	1052	0.07	2.2	0.01	0.1	0.28	3.9	6.7	188					0.08	33.76	27.8			
O5-2S-23m	11/29/04	956	0.08	2.5	0.27	3.8	0.14	2.0	2.0	56					0.07	33.79	27.0			
O5-2S-23m	1/24/05	1035	0.05	1.5	0.01	0.1	0.08	1.1	1.7	47					0.07	34.773	25.6			
O5-2S-23m	4/13/05	1036	0.13	4.0	0.20	2.8	0.20	2.8	3.2	90					0.10	34.424	25.4			
Geomean	**FY '05**			**2.4**		**0.7**		**2.2**							**0.08**					

NELHA Water Quality Laboratory

Transect 5, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-2S-23m	7/21/05	953	0.06	1.9	0.31	4.3	0.34	4.8	7.0	197					0.09	34.647	27.4			
O5-2S-23m	10/13/05	942	0.06	1.9	0.28	3.9	0.21	2.9	4.5	127					0.12	34.794	27.2			
O5-2S-23m	3/15/06	901	0.13	4.0	0.24	3.4	0.27	3.8	8.4	236					0.08	34.781	24.4			
O5-2S-23m	5/17/06	942	0.16	5.0	0.86	12.0	0.05	0.7	6.1	171					0.22	34.539	24.8			
Geomean	**FY '06**			**2.9**		***5.1***		**2.5**							***0.12***					
O5-2S-23m	8/16/06	951	0.11	3.4	0.43	6.0	0.34	4.8	2.5	70					0.25	34.653	26.8			
O5-2S-23m	11/20/06	952	0.10	3.1	0.18	2.5	0.22	3.1	2.0	56					0.08	34.809	26.9			
O5-2S-23m	2/12/07	1046	0.31	9.6	0.16	2.2	0.48	6.7	0.9	25					0.10	34.436	24.5			
O5-2S-23m	4/16/07	1036	0.15	4.6	0.82	11.5	0.39	5.5	10.2	286					0.41	34.436	26.1			
Geomean	**FY '07**			**4.7**		**4.4**		***4.8***							***0.17***					
T5-10m	9/27/07	920	0.16	5.0	0.29	4.0	0.36	5.1	6.1	173	0.36	11.0	5.3	74	0.06	34.922	26.8	8.06	6.07	0.20
T5-10m	12/14/07	945	0.06	2.0	0.69	9.7			5.4	151	0.35	10.9	4.8	68	0.10	34.727	25.7	8.21	6.69	0.2
T5-10m	3/11/08	953	0.12	3.6	0.48	6.7	0.06	0.8	19.8	557	0.28	8.7	6.8	96	0.12	34.834	24.8	8.1	6.53	0.37
T5-10m	6/9/08	1028	0.09	2.8	0.17	2.4	0.16	2.2	14.0	392	0.25	7.7	5.2	72	0.07	34.6758	25.0	8.12	5.83	0.08
Geomean	**FY '08**			**3.2**		***5.0***		**2.1**				**9.5**		**77**	**0.08**					**0.19**
T5-10m	9/23/08	1111	0.04	1.3	0.16	2.2	0.28	3.9	2.5	71	0.29	8.9	4.7	66	0.08	34.836	26.8	8.06	6.21	0.03
T5-10m	12/8/08	1022	0.21	6.5	0.35	4.9	1.03	14.4	1.9	53	0.10	3	5.9	83	0.05	34.990	26.1	8.30	5.85	0.07
T5-10m	2/10/09	918	0.13	3.9	0.41	5.8	0.56	7.9	3.6	101	0.37	11.6	10.8	152	0.10	35.060	24.8	8.05	6.05	0.05
T5-10m	6/30/09	1005	0.29	8.9	0.41	5.8	0.17	2.4	5.2	145	0.23	7	5.3	74	0.11	34.898	26.7	8.17	6.07	0.09
Geomean	**FY '09**			**4.1**		**4.4**		***5.7***				**6.8**		**89**	**0.08**					**0.06**
T5-10m	9/10/09	1003	0.15	4.5	0.19	2.6	0.92	12.9	43.6	1223	0.26	8.0	4.7	67	0.09	35.27	27.3	8.24	5.71	0.15
T5-10m	11/24/09	937	0.02	0.766	0.16	2.2	0.06	0.9	14.9	420	0.23	7	4.3	60	0.04	35.27	25.2	8.25	6.47	0.12
T5-10m	2/24/10	1013	0.18	5.5	1.09	15.2	0.38	5.3	8.4	236	0.38	11.7	5.4	76	0.07	35.09	24.6	8.23	5.51	0.38
T5-10m	5/25/10	928	0.05	1.4	0.43	6	0.15	2.1	4.0	111	0.19	5.8	4.4	61	0.05	34.77	25.2	8.28	6.67	0.07
Geomean	**FY '10**			**2.3**		***4.8***		***3.4***				**7.9**		**66**	**0.06**					**0.15**
T5-10m	8/11/10	942	0.05	1.4	0.53	7.4	0.28	3.9	3.0	85	0.32	9.9	3.5	50	0.07	34.94	26.00	8.23	6.70	0.07
T5-10m	11/9/10	944	0.02	0.766	0.16	2.2	0.06	0.9	14.9	420	0.23	7	4.3	60	0.10	34.90	26.23	8.26	6.46	0.09
T5-10m	1/11/11	1208	0.15	4.8	0.41	5.7	0.37	5.2	4.5	126	0.43	13.2	3.6	51	0.03	35.02	25.07	8.21	6.62	0.13
T5-10m	4/27/11	952	0.15	4.6	0.56	7.9	0.30	4.2	4.1	115	0.44	13.5	4.6	64	0.08	34.85	24.90	8.23	6.41	0.11
Geomean	**FY '11**			**2.2**		***5.2***		***3.0***				**10.5**		**56**	**0.06**					**0.10**

NELHA Water Quality Laboratory

Transect 5, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-10m	7/27/11	1035	0.20	6.3	0.44	6.2	0.32	4.5	2.0	57	0.50	15.4	5.4	76	0.07	34.79	26.02	8.22	6.49	0.07
T5-10m	10/19/11	1012	0.05	1.4	0.21	2.9	0.08	1.1	2.2	62	0.40	12.4	6.7	94	0.08	35.13	26.52	8.26	7.25	0.07
T5-10m	1/26/12	944	0.07	2.3	0.23	3.2	0.11	1.5	2.6	73	0.61	18.8	6.8	95	0.09	35.01	24.46	8.18	6.74	0.12
T5-10m	4/25/12	1011	0.17	5.3	0.46	6.5	0.34	4.8	1.9	53	0.46	14.4	7.5	105	0.06	34.84	24.82	8.20	6.84	0.17
Geomean	**FY '12**			**3.2**		**4.4**		**2.4**				***15.1***		**92**	**0.07**					**0.10**
T5-10m	7/25/12	954	0.05	1.6	0.21	2.9	0.19	2.7	1.4	38	0.57	17.7	6.3	89	0.23	35.12	26.35	8.24	6.86	0.20
T5-10m	11/28/12	956	0.11	3.5	0.60	8.4	0.20	2.8	4.0	112	0.56	17.3	8.7	122	0.02	35.19	25.24	8.20	6.69	0.12
T5-10m	1/24/13	943	0.08	2.5	0.41	5.7	0.11	1.6	2.5	71	0.52	16	5.7	80	0.04	35.06	24.76	8.21	6.37	0.17
T5-10m	4/17/13	1058	0.22	6.9	0.99	13.9	0.45	6.3	5.5	153	0.59	18.3	7.3	103	0.08	35.03	25.16	8.21	6.88	0.12
Geomean	**FY '13**			**3.1**		***6.6***		***3.0***				***17.3***		**97**	**0.06**					**0.15**
T5-10m	8/6/13	1034	0.16	5.0	1.49	20.8	0.37	5.2	10.8	304	0.34	10.6	6.7	94	0.07	34.94	26.3	8.27	7.17	0.08
T5-10m	10/30/13	938	0.16	4.9	0.32	4.5	0.24	3.4	2.3	65	0.47	14.6	6.8	95	0.02	34.90	27.0	8.23	6.13	0.12
T5-10m	2/5/14	1003	0.15	4.5	0.42	5.9	0.31	4.3	2.8	77	0.56	17.5	9.2	128	0.02	34.96	25.2	8.22	6.23	0.11
T5-10m	5/7/14	956	0.12	3.7	0.44	6.1	0.20	2.8	2.0	57	0.39	12.2	7.4	104	0.08	34.79	25.7	8.20	5.64	0.09
Geomean	**FY '14**			**4.5**		***7.6***		***3.8***				***13.5***		***104***	**0.04**					**0.10**
T5-10m	8/6/14	951	0.17	5.4	0.12	1.7	0.34	4.8	0.9	24	0.52	16.0	7.1	99	0.11	34.95	26.7	8.24	6.23	0.12
T5-10m	12/4/14	1023	0.14	4.2	0.78	10.9	0.61	8.5	3.8	106	0.06	2.0	7.4	103	0.11	35.17	26.4	8.25	6.55	0.11
T5-10m	3/5/15	1019	0.05	1.4	0.46	6.5	0.21	2.9	2.4	66	0.31	9.5	7.1	99	0.10	34.72	25.4	8.27	6.87	0.10
T5-10m	6/18/15	956	0.13	4.0	0.21	2.9	0.40	5.6	4.1	115	0.42	13.1	7.5	105	0.08	34.40	26.6	8.15	6.67	0.09
Geomean	**FY '15**			**3.4**		**4.3**		***5.1***				**7.9**		***101***	**0.10**					**0.10**
T5-10m	8/27/15	1003	0.14	4.3	0.02	0.3	0.19	2.7	2.9	80	0.33	10.2	4.6	64	0.02	34.63	28.6	8.27	5.97	0.23
T5-10m	11/18/15	1028	0.13	3.9	0.44	6.1	0.27	3.8	4.1	117	0.48	14.8	3.3	46	0.04	34.65	27.4	8.28	6.69	0.13
T5-10m	3/2/16	913	0.14	4.2	0.21	3.0	0.24	3.3	0.2	6	0.51	15.9	5.2	72	0.07	34.74	25.3	8.23	5.75	0.07
T5-10m	5/4/16	1008	0.01	0.4	0.19	2.7	0.21	2.9	1.8	49	0.46	14.3	6.8	96	0.08	34.65	25.9	8.20	6.16	0.17
Geomean	**FY '16**			**2.3**		**2.0**		***3.1***				***13.6***		**67**	**0.05**					**0.14**
T5-10m	7/7/16	1011	0.14	4.2	0.53	7.4	0.50	7.0	2.6	74	0.45	13.8	4.9	69	0.09	34.60	26.8	8.32	6.74	0.19
T5-10m	12/21/16	1022	0.06	2.0	0.30	4.2	0.49	6.9	1.9	53	0.33	10.2	2.7	38	0.05	34.62	25.5	8.29	5.98	0.18
T5-10m	3/1/17	1132	0.02	0.7	0.41	5.7	0.28	3.9	1.4	40	0.30	9.4	3.5	49	0.07	34.74	24.6	8.24	5.84	0.14
T5-10m	5/10/17	1108	0.04	1.2	0.36	5.1	0.13	1.8	2.0	57	0.24	7.3	2.2	31	0.12	34.79	25.8	8.24	4.31	0.13
Geomean	**FY '17**			**1.6**		***5.5***		***4.3***				**9.9**		**44**	**0.08**					**0.16**

NELHA Water Quality Laboratory

Transect 5, Station 2

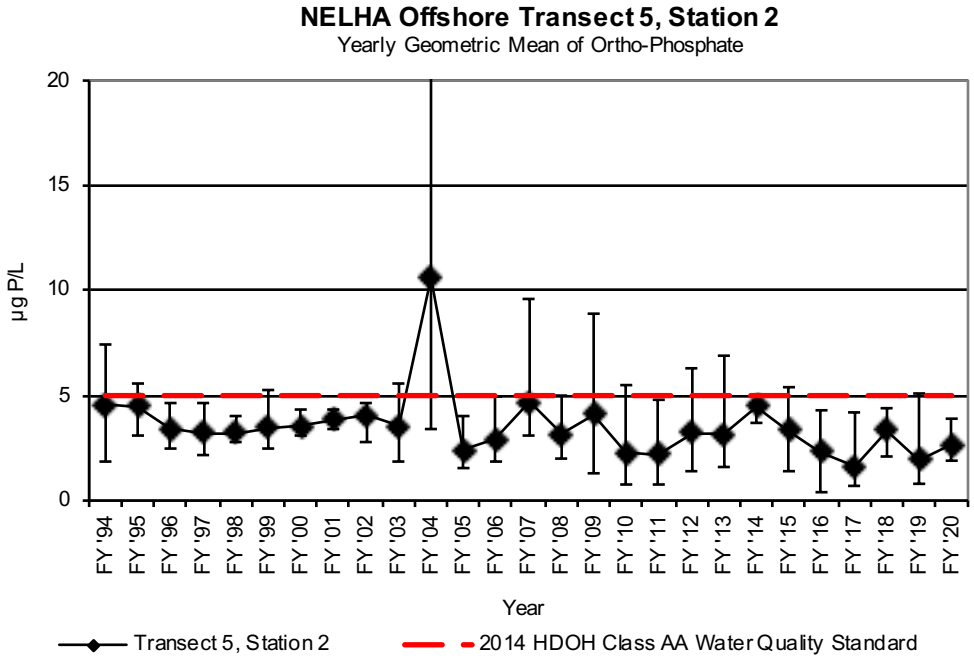
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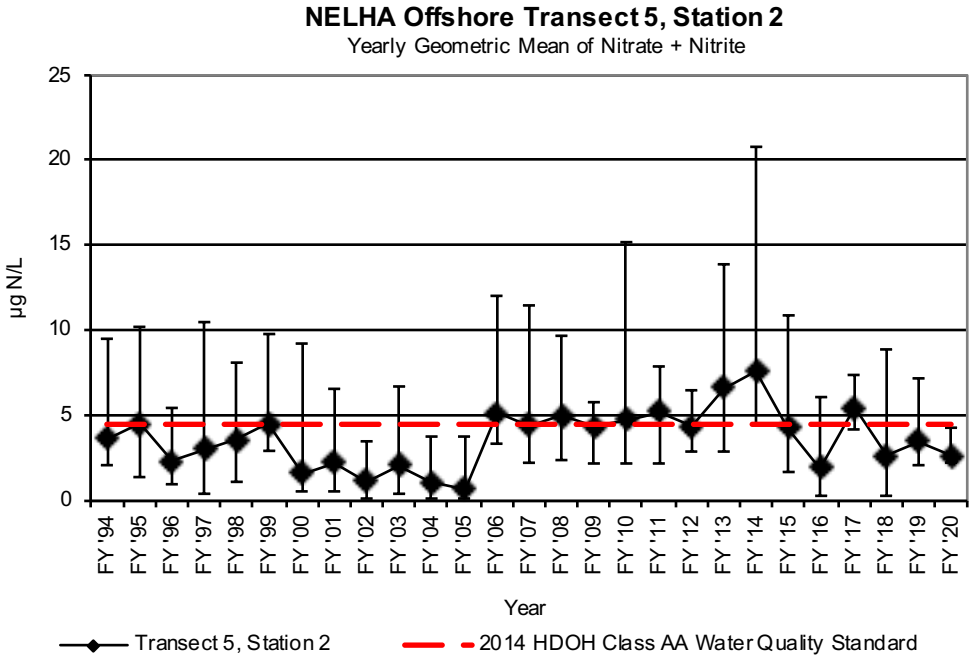
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-10m	9/28/17	1004	0.14	4.4	0.25	3.5	0.24	3.3	0.7	19	0.39	12.2	2.1	29	0.07	34.82	27.8	8.19	4.86	0.15
T5-10m	11/30/17	951	0.10	3.1	0.39	5.4	0.49	6.9	2.5	70	0.36	11.2	3.5	48	0.10	35.14	26.3	8.23	5.76	0.17
T5-10m	2/6/18	1033	0.07	2.1	0.02	0.3	0.45	6.3	1.2	33	0.33	10.1	2.1	29	0.10	34.84	24.9	8.16	5.84	0.07
T5-10m	5/17/18	1005	0.14	4.4	0.64	8.9	0.40	5.6	5.3	150	0.38	11.8	2.4	34	0.09	34.73	25.9	8.17	6.75	0.10
Geomean	**FY '18**			**3.4**		**2.7**		***5.3***				**11.3**		**34**	**0.09**					**0.12**
T5-10m	9/26/18	1251	0.03	0.8	0.16	2.3	0.10	1.4	0.1	4	0.27	8.5	1.6	23	0.09	34.74	27.6	8.16	4.82	0.13
T5-10m	11/14/18	1056	0.04	1.2	0.33	4.6	0.21	2.9	0.1	4	0.30	9.3	2.6	37	0.08	34.90	27.3	8.20	6.25	0.15
T5-10m	1/23/19	1043	0.10	3.1	0.15	2.1	0.23	3.2	2.1	59	0.36	11.2	2.0	28	0.09	34.89	24.9	8.20	5.23	0.24
T5-10m	4/17/19	1033	0.16	5.1	0.51	7.2	0.31	4.4	4.2	117	0.38	11.7	2.6	36	0.08	34.69	25.7	8.12	7.03	0.14
Geomean	**FY '19**			**2.0**		**3.5**		***2.7***				**10.1**		**30**	**0.08**					**0.16**
T5-10m	7/1/19	1007	0.06	2.0	0.16	2.3	0.31	4.3	3.5	100	0.30	9.2	1.8	25	0.08	35.24	28.2	8.26	6.75	0.17
T5-10m	9/1/19	1113	0.13	3.9	0.31	4.3	0.01	0.2	0.8	23	0.45	13.8	3.3	46	0.09	35.19	27.5	8.22	6.79	0.10
T5-10m	1/1/20	1026	0.11	3.4	0.16	2.3	0.09	1.3	3.3	92	0.38	11.9	2.6	36	0.11	34.91	24.9	8.23	7.12	0.11
T5-10m	4/1/20	946	0.06	1.9	0.16	2.3	0.06	0.8	1.6	46	0.28	8.7	1.5	21	0.07	35.48	26.1	8.18	6.73	0.22
Geomean	**FY '20**			**2.7**		**2.6**		**1.0**				**10.7**		**31**	**0.09**					**0.14**

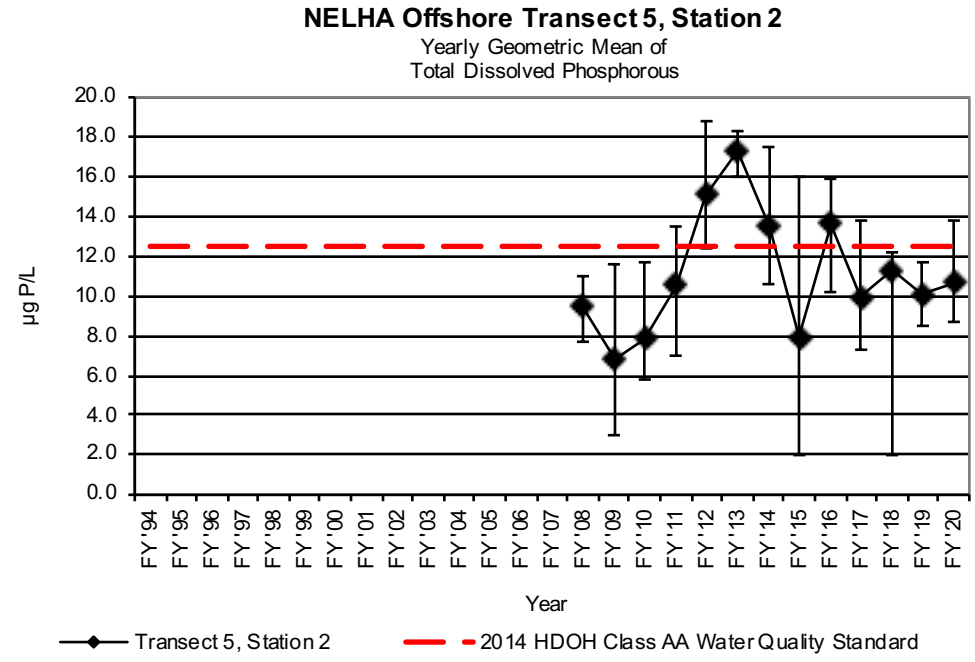
NELHA Water Quality Laboratory

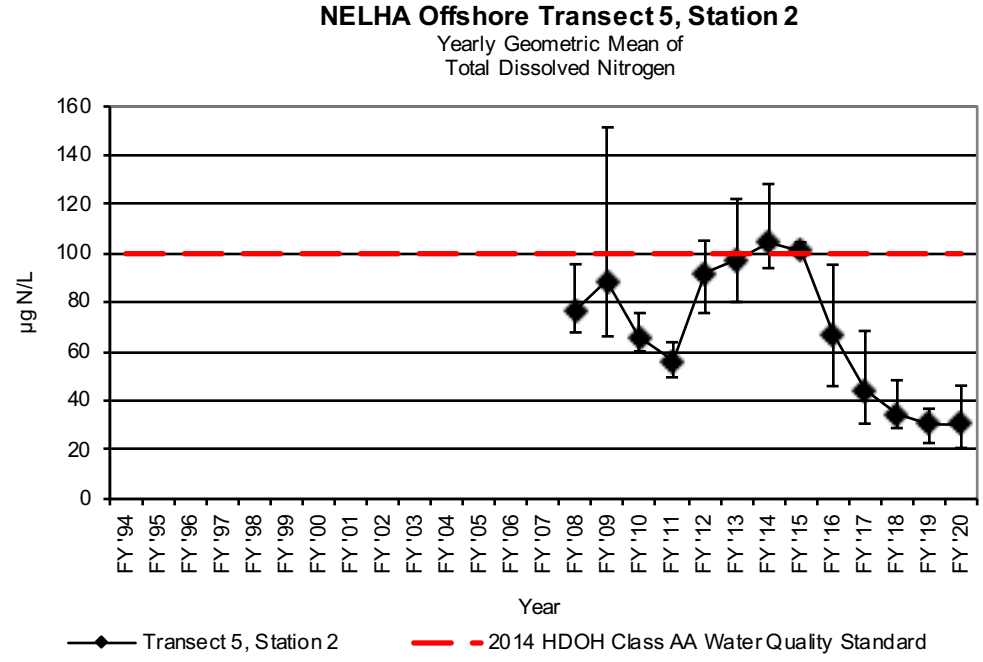
Transect 5, Station 2

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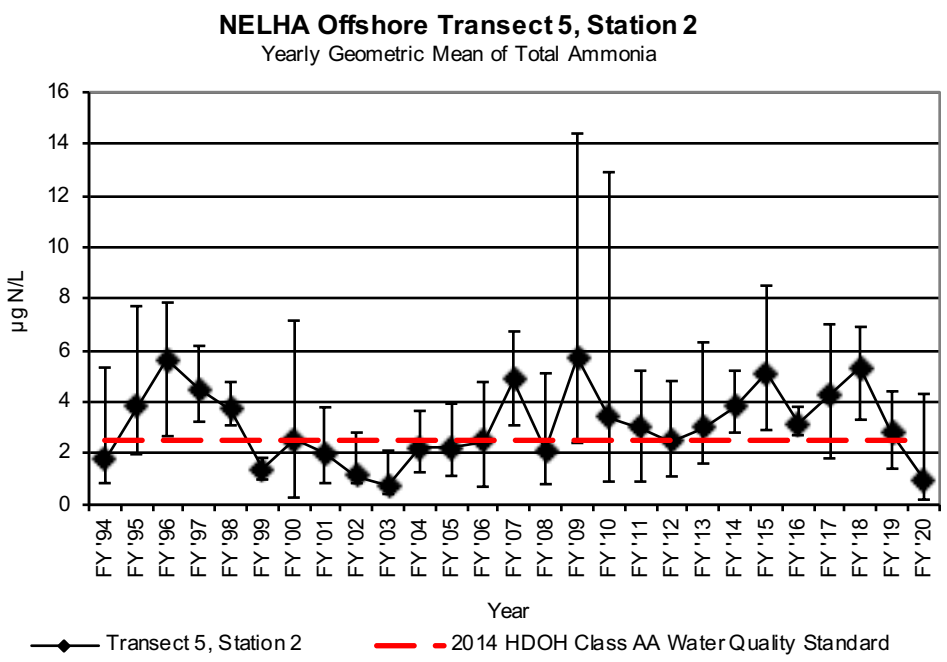


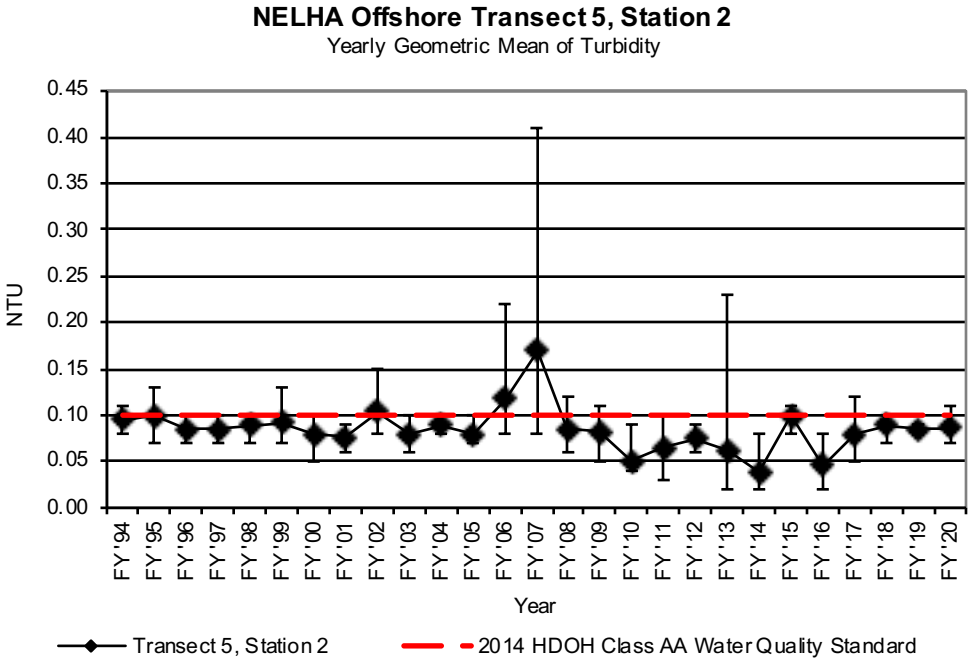


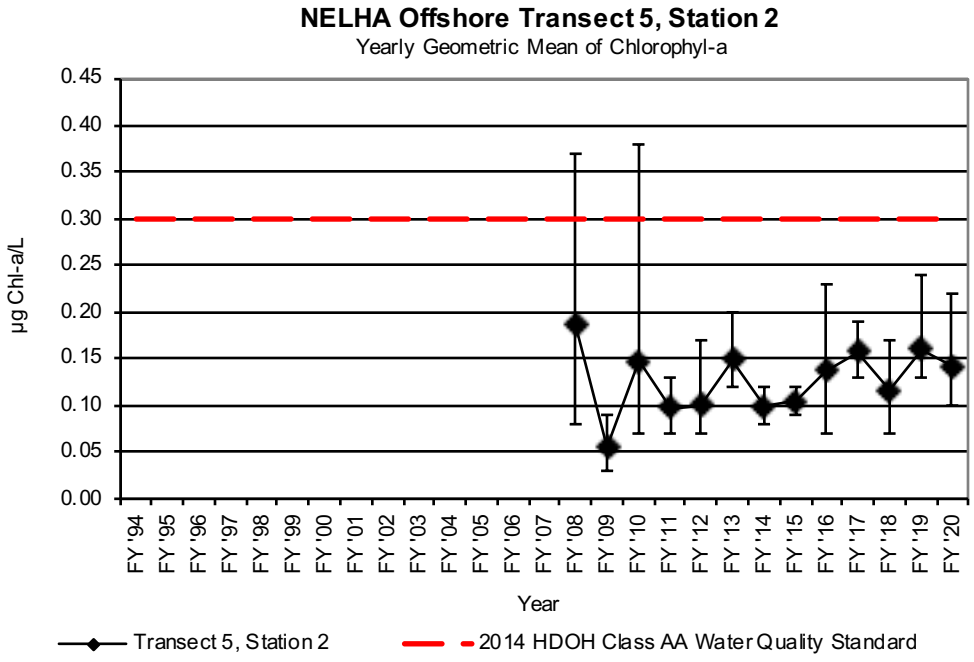
NELHA Water Quality Laboratory

Transect 5, Station 2

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 5, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-3S-38m	7/26/93	1008	0.12	3.7	0.12	1.7	0.38	5.3	2.9	82					0.07	34.427	26.9			
O5-3S-38m	12/6/93	1115	0.06	1.9	0.19	2.7	0.06	0.8	4.5	126					0.07	34.876	25.7			
O5-3S-38m	3/7/94	1023	0.23	7.1	0.70	9.8	0.18	2.5	6.1	171					0.07	34.139	25.1			
O5-3S-38m	6/15/94	1017	0.21	6.5	0.06	0.8	0.08	1.1	2.9	82					0.10	34.554	25.6			
Geomean	**FY '94**			**4.2**		**2.5**		**1.9**							**0.08**					
O5-3S-38m	9/9/94	1035	0.09	2.8	0.15	2.1	0.15	2.1	2.6	74					0.07	34.596	27.8			
O5-3S-38m	11/14/94	921	0.13	4.0	0.31	4.3	0.55	7.7	4.2	119					0.11	34.604	26.2			
O5-3S-38m	3/22/95	1006	0.18	5.6	0.31	4.3	0.37	5.2	4.9	136					0.11	34.159	25.2			
O5-3S-38m	6/20/95	958	0.11	3.4	0.10	1.4	0.14	2.0	2.1	60					0.08	34.463	26.3			
Geomean	**FY '95**			**3.8**		**2.7**		***3.6***							**0.09**					
O5-3S-38m	9/28/95	822	0.06	1.9	0.05	0.7	0.49	6.9	1.7	47					0.18	34.605	27.3			
O5-3S-38m	11/14/95	946	0.12	3.7	0.01	0.1	0.51	7.1	2.7	75					0.05	34.353	26.8			
O5-3S-38m	3/12/96	1019	0.16	5.0	0.22	3.1	0.53	7.4	3.5	97					0.05	34.159	25.6			
O5-3S-38m	5/14/96	1016	0.12	3.7	0.34	4.8	0.19	2.7	5.1	144					0.08	34.245	27.2			
Geomean	**FY '96**			**3.4**		**1.1**		***5.6***							**0.08**					
O5-3S-38m	7/31/96	1045	0.08	2.5	0.45	6.3	0.46	6.4	5.9	166					0.09	34.352	27.9			
O5-3S-38m	10/2/96	1014	0.08	2.5	0.03	0.4	0.28	3.9	3.0	85					0.09	34.634	28.1			
O5-3S-38m	1/7/97	1016	0.12	3.7	1.02	14.3	0.22	3.1	8.2	229					0.08	34.516	25.6			
O5-3S-38m	4/28/97	1039	0.21	6.5	0.79	11.1	0.39	5.5	13.1	368					0.10	34.197	26.8			
Geomean	**FY '97**			**3.5**		***4.5***		***4.5***							**0.09**					
O5-3S-38m	8/19/97	1022	0.11	3.4	0.67	9.4	0.28	3.9	6.4	181					0.10	34.533	27.0			
O5-3S-38m	10/7/97	919	0.10	3.1	0.07	1.0	0.36	5.0	2.4	68					0.08	34.747	27.5			
O5-3S-38m	3/4/98	1025	0.14	4.3	0.66	9.2	0.21	2.9	6.0	167					0.08	34.915	24.9			
O5-3S-38m	5/5/98	1032	0.08	2.5	0.04	0.6	0.15	2.1	2.9	82					0.07	35.084	24.2			
Geomean	**FY '98**			**3.3**		**2.6**		***3.3***							**0.08**					
O5-3S-38m	7/7/98	1055	0.12	3.7	0.40	5.6	0.06	0.8	7.7	216					0.09	34.894	26.3			
O5-3S-38m	10/6/98	1005	0.11	3.4	0.23	3.2	0.09	1.3	3.4	95					0.08	35.089	27.0			
O5-3S-38m	1/19/99	1041	0.08	2.5	0.24	3.4	0.03	0.4	4.4	123					0.08	35.086	25.3			
O5-3S-38m	4/13/99	1123	0.16	5.0	0.69	9.7	0.09	1.3	10.0	280					0.07	34.480	24.5			
Geomean	**FY '99**			**3.5**		***4.9***		**0.9**							**0.08**					

NELHA Water Quality Laboratory

Transect 5, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-3S-38m	8/16/99	1054	0.12	3.7	0.10	1.4	0.43	6.0	2.2	62					0.13	34.878	26.5			
O5-3S-38m	10/25/99	1143	0.13	4.0	0.39	5.5	0.35	4.9	5.9	165					0.09	34.847	26.4			
O5-3S-38m	1/12/00	1042	0.11	3.4	0.02	0.3	0.31	4.3	2.6	74					0.05	35.126	24.9			
O5-3S-38m	4/11/00	951	0.12	3.7	0.17	2.4	0.07	1.0	4.0	111					0.06	34.822	24.5			
Geomean	**FY '00**			**3.7**		**1.5**		***3.3***							**0.08**					
O5-3S-38m	7/25/00	1058	0.10	3.1	0.18	2.5	0.03	0.4	3.2	90					0.06	34.848	26.7			
O5-3S-38m	10/31/00	1045	0.09	2.8	0.02	0.3	0.25	3.5	2.2	61					0.04	34.975	27.1			
O5-3S-38m	3/6/01	1037	0.16	5.0	0.47	6.6	0.12	1.7	5.4	151					0.09	34.655	24.9			
O5-3S-38m	5/8/01	1130	0.10	3.1	0.28	3.9	0.22	3.1	4.9	138					0.08	34.732	24.9			
Geomean	**FY '01**			**3.4**		**2.1**		**1.7**							**0.06**					
O5-3S-38m	8/13/01	931	0.10	3.1	0.04	0.6	0.15	2.1	2.2	62					0.10	34.862	26.7			
O5-3S-38m	10/10/01	1038	0.16	5.0	0.11	1.5	0.04	0.6	3.5	98					0.11	34.921	27.5			
O5-3S-38m	3/6/02	952	0.15	4.6	0.09	1.3	0.06	0.8	4.5	127					0.09	34.676	24.2			
O5-3S-38m	4/15/02	957	0.16	5.0	0.30	4.2	0.07	1.0	4.4	124					0.07	34.440	25.6			
Geomean	**FY '02**			**4.3**		**1.5**		**1.0**							**0.09**					
O5-3S-38m	7/10/02	954	0.19	5.9	0.13	1.8	0.11	1.5	4.1	116					0.06	34.639	26.5			
O5-3S-38m	10/8/02	1000	0.08	2.5	0.43	6.0	0.12	1.7	3.8	107					0.07	34.876	27.0			
O5-3S-38m	3/11/03	1126	0.08	2.5	0.03	0.4	0.03	0.4	3.3	93					0.08	34.704	25.2			
O5-3S-38m	4/23/03	956	0.08	2.5	0.03	0.4	0.03	0.4	2.5	71					0.07	34.999	25.0			
Geomean	**FY '03**			**3.1**		**1.2**		**0.8**							**0.07**					
O5-3S-38m	8/21/03	947	0.08	2.5	0.01	0.1	0.10	1.4	2.1	58					0.06	34.842	28.3			
O5-3S-38m	11/3/03	922	0.12	3.7	0.01	0.1	0.17	2.4	4.0	111					0.12	34.651	27.4			
O5-3S-38m	3/18/04	951	0.13	4.0	0.21	2.9	0.59	8.3	2.9	81					n/a	34.376	25.8			
O5-3S-38m	5/24/04	1013	0.14	4.3	0.28	3.9	0.09	1.3	3.8	106					n/a	33.30	26.9			
Geomean	**FY '04**			**3.6**		**0.7**		**2.4**							**0.08**					
O5-3S-38m	9/22/04	1047	0.07	2.2	0.01	0.1	0.26	3.6	1.5	43					0.08	33.73	27.7			
O5-3S-38m	11/29/04	951	0.09	2.8	0.26	3.6	0.16	2.2	2.2	62					0.09	33.79	27.0			
O5-3S-38m	1/24/05	1030	0.09	2.8	0.29	4.1	0.12	1.7	4.2	117					0.10	34.772	25.7			
O5-3S-38m	4/13/05	1031	0.14	4.3	0.31	4.3	0.20	2.8	4.3	120					0.12	34.408	25.4			
Geomean	**FY '05**			**2.9**		**1.7**		**2.5**							**0.10**					

NELHA Water Quality Laboratory

Transect 5, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-3S-38m	7/21/05	947	0.06	1.9	0.43	6.0	0.36	5.0	5.4	152					0.09	34.635	27.4			
O5-3S-38m	10/13/05	935	0.06	1.9	0.28	3.9	0.20	2.8	5.3	149					0.12	34.830	27.3			
O5-3S-38m	3/15/06	855	0.09	2.8	0.07	1.0	0.27	3.8	4.6	128					0.08	34.829	24.5			
O5-3S-38m	5/17/06	938	0.13	4.0	0.54	7.6	0.05	0.7	5.6	158					0.14	34.576	24.7			
Geomean	**FY '06**			**2.5**		**3.6**		**2.5**							***0.10***					
O5-3S-38m	8/16/06	946	0.11	3.4	0.28	3.9	0.38	5.3	2.6	74					0.13	34.640	26.8			
O5-3S-38m	11/20/06	946	0.10	3.1	0.18	2.5	0.18	2.5	2.0	57					0.10	34.802	26.7			
O5-3S-38m	2/12/07	1039	0.14	4.3	0.13	1.8	0.35	4.9	1.1	30					0.52	34.425	24.5			
O5-3S-38m	4/16/07	1030	0.12	3.7	0.07	1.0	0.29	4.1	3.9	109					0.13	34.654	26.5			
Geomean	**FY '07**			**3.6**		**2.0**		***4.0***							***0.17***					
T5-50m	9/27/07	911	0.17	5.3	0.31	4.4	0.25	3.5	5.2	147	0.37	11.4	6.6	93	0.08	34.915	26.7	8.06	6.06	0.09
T5-50m	12/14/07	948	0.08	2.4	0.01	0.1			6.4	181	0.35	10.9	5.4	76	0.11	34.749	25.7	8.24	6.52	0.17
T5-50m	3/11/08	957	0.08	2.5	0.38	5.3	0.06	0.8	18.8	528	0.23	7.2	6.0	84	0.12	34.836	24.8	8.1	6.87	0.35
T5-50m	6/9/08	1032	0.14	4.2	0.48	6.7	0.16	2.2	18.2	511	0.29	8.9	6.4	90	0.12	34.5909	25.2	8.12	5.78	0.19
Geomean	**FY '08**			**3.4**		**2.0**		**1.8**				**9.4**		**85**	***0.11***					**0.18**
T5-50m	9/23/08	1117	0.03	1	0.11	1.6	0.38	5.3	2.5	70	0.35	10.8	4.1	58	0.06	34.834	26.7	8.06	5.92	0.09
T5-50m	12/8/08	1028	0.17	5.2	0.25	3.5	0.34	4.8	1.7	49	0.45	14	5.5	77	0.07	34.975	26.1	8.30	5.22	0.09
T5-50m	2/10/09	921	0.11	3.4	0.41	5.8	0.12	1.7	2.9	80	0.34	10.6	7.9	111	0.08	35.044	24.8	8.05	6.03	0.04
T5-50m	6/30/09	1013	0.27	8.5	0.46	6.4	0.41	5.7	5.4	152	0.30	9.3	6.0	84	0.10	34.904	26.7	8.21	5.93	0.15
Geomean	**FY '09**			**3.5**		**3.8**		***4.0***				**11.0**		**80**	**0.08**					**0.08**
T5-50m	9/10/09	1013	0.13	4	0.16	2.2	1.50	21	34.4	966	0.69	21.4	7.3	103	0.07	35.24	27.3	8.21	5.92	0.28
T5-50m	11/24/09	943	0.02	0.766	0.19	2.6	0.74	10.3	5.6	158	0.37	11.5	4.0	57	0.03	35.26	25.2	8.24	6.46	0.12
T5-50m	2/24/10	1016	0.16	5.1	1.02	14.3	0.36	5	9.2	259	0.46	14.1	8.7	122	0.09	35.12	24.7	8.23	5.46	0.58
T5-50m	5/25/10	933	0.02	0.7	0.06	0.8	0.28	3.9	2.9	82	0.23	7.1	3.6	50	0.04	34.79	25.2	8.25	6.64	0.06
Geomean	**FY '10**			**1.8**		**2.8**		***8.1***				***12.5***		**77**	**0.05**					**0.18**
T5-50m	8/11/10	950	0.02	0.6	0.09	1.2	0.02	0.3	1.8	50	0.29	8.9	2.9	41	0.05	34.93	26.07	8.24	6.83	0.13
T5-50m	11/9/10	948	0.02	0.766	0.19	2.6	0.74	10.3	5.6	158	0.37	11.5	4.0	57	0.10	34.91	26.25	8.29	6.36	0.05
T5-50m	1/11/11	1216	0.15	4.5	0.41	5.7	0.16	2.3	6.3	177	0.42	12.9	3.7	51	0.05	35.01	25.08	8.20	6.54	0.09
T5-50m	4/27/11	956	0.14	4.2	0.36	5.1	0.27	3.8	6.0	169	0.45	13.8	4.0	57	0.08	34.87	24.93	8.23	6.37	0.12
Geomean	**FY '11**			**1.7**		**3.1**		**2.3**				**11.6**		**51**	**0.07**					**0.09**

NELHA Water Quality Laboratory

Transect 5, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-50m	7/27/11	1039	0.19	5.8	0.48	6.7	0.18	2.5	3.1	87	0.50	15.4	5.0	70	0.05	34.75	26.10	8.22	6.40	0.08
T5-50m	10/19/11	1019	0.04	1.1	0.16	2.3	0.08	1.1	2.4	67	0.37	11.4	4.9	68	0.06	35.11	26.53	8.27	7.20	0.07
T5-50m	1/26/12	947	0.07	2.2	0.25	3.5	0.04	0.6	3.5	98	0.37	11.6	3.8	53	0.08	34.99	24.44	8.18	6.66	0.14
T5-50m	4/25/12	1014	0.16	5	0.14	1.9	0.39	5.4	4.2	119	0.52	16.2	11.1	156	0.07	34.81	24.88	8.20	6.77	0.04
Geomean	**FY '12**			**2.9**		**3.2**		**1.7**				***13.5***		**79**	**0.06**					**0.07**
T5-50m	7/25/12	1000	0.03	1	0.21	2.9	0.21	3	1.5	43	0.46	14.4	5.6	79	0.04	35.10	26.42	8.24	6.81	0.04
T5-50m	11/28/12	1001	0.11	3.3	0.41	5.7	0.22	3.1	3.3	93	0.43	13.3	6.2	87	0.03	35.19	25.25	8.20	6.77	0.08
T5-50m	1/24/13	949	0.09	2.8	0.42	5.9	0.16	2.2	3.0	84	0.49	15.2	5.9	83	0.02	35.05	24.77	8.22	6.44	0.27
T5-50m	4/17/13	1104	0.21	6.4	1.09	15.3	0.34	4.7	6.1	172	0.50	15.5	6.3	88	0.02	35.01	25.11	8.20	6.57	0.10
Geomean	**FY '13**			**2.8**		***6.2***		***3.1***				***14.6***		**84**	**0.03**					**0.10**
T5-50m	8/6/13	1038	0.15	4.7	2.36	33.0	0.28	3.9	16.8	471	0.39	12.1	7.0	98	0.04	34.76	26.3	8.26	7.07	0.12
T5-50m	10/30/13	943	0.16	5.0	0.39	5.4	0.14	1.9	3.5	98	0.47	14.5	7.2	101	0.02	34.87	27.1	8.22	6.15	0.10
T5-50m	2/5/14	1008	0.15	4.5	0.43	6.0	0.29	4.0	3.1	86	0.48	15.0	9.0	126	0.02	34.94	25.2	8.20	6.31	0.13
T5-50m	5/7/14	1003	0.15	4.6	1.31	18.3	0.27	3.8	7.8	219	0.43	13.2	9.6	134	0.04	34.57	25.6	8.20	5.42	0.15
Geomean	**FY '14**			**4.7**		***11.8***		***3.3***				***13.7***		***114***	**0.03**					**0.12**
T5-50m	8/6/14	956	0.15	4.8	0.04	0.6	0.34	4.7	0.7	19	0.53	16.3	6.6	93	0.05	34.98	26.8	8.24	6.11	0.11
T5-50m	12/4/14	1027	0.12	3.6	0.08	1.1	0.45	6.3	0.5	14	0.42	13.1	6.4	90	0.19	35.25	26.4	8.25	6.25	0.17
T5-50m	3/5/15	1025	0.01	0.2	0.04	0.6	0.12	1.7	0.1	3	0.31	9.7	5.3	74	0.09	34.77	25.3	8.28	6.70	0.11
T5-50m	6/18/15	1001	0.10	3.0	0.14	1.9	0.36	5.1	3.0	84	0.37	11.4	6.4	90	0.06	34.42	26.6	8.15	6.59	0.10
Geomean	**FY '15**			**1.8**		**0.9**		***4.0***				**12.4**		**86**	**0.08**					**0.12**
T5-50m	8/27/15	1007	0.13	4.0	0.02	0.3	0.17	2.4	1.4	40	0.34	10.4	4.7	66	0.02	34.65	28.7	8.27	6.01	0.16
T5-50m	11/18/15	1033	0.14	4.2	0.47	6.6	0.09	1.2	4.0	113	0.49	15.2	5.9	82	0.06	34.65	27.3	8.24	6.62	0.13
T5-50m	3/2/16	918	0.14	4.2	0.29	4.0	0.56	7.9	0.3	10	0.46	14.4	4.8	67	0.07	34.72	25.2	8.23	5.76	0.07
T5-50m	5/4/16	1013	0.09	2.9	0.04	0.6	0.11	1.5	0.4	12	0.40	12.4	3.4	48	0.07	34.70	25.9	8.19	6.16	0.19
Geomean	**FY '16**			**3.8**		**1.5**		**2.4**				***13.0***		**65**	**0.05**					**0.13**
T5-50m	7/7/16	1016	0.13	3.9	0.66	9.2	0.32	4.5	2.1	58	0.43	13.3	3.7	53	0.11	34.62	26.9	8.31	6.65	0.21
T5-50m	12/21/16	1029	0.04	1.3	0.17	2.4	0.54	7.5	1.7	49	0.34	10.4	4.1	58	0.05	34.64	25.5	8.28	5.77	0.14
T5-50m	3/1/17	1127	0.03	0.8	0.31	4.4	0.17	2.4	1.2	33	0.29	9.1	4.6	64	0.09	34.74	24.6	8.24	5.75	0.14
T5-50m	5/10/17	1113	0.03	0.8	0.34	4.8	0.28	3.9	2.1	59	0.23	7.0	3.2	44	0.08	34.80	25.8	8.24	4.30	0.07
Geomean	**FY '17**			**1.3**		***4.6***		***4.2***				**9.7**		**54**	**0.08**					**0.13**

NELHA Water Quality Laboratory

Transect 5, Station 3

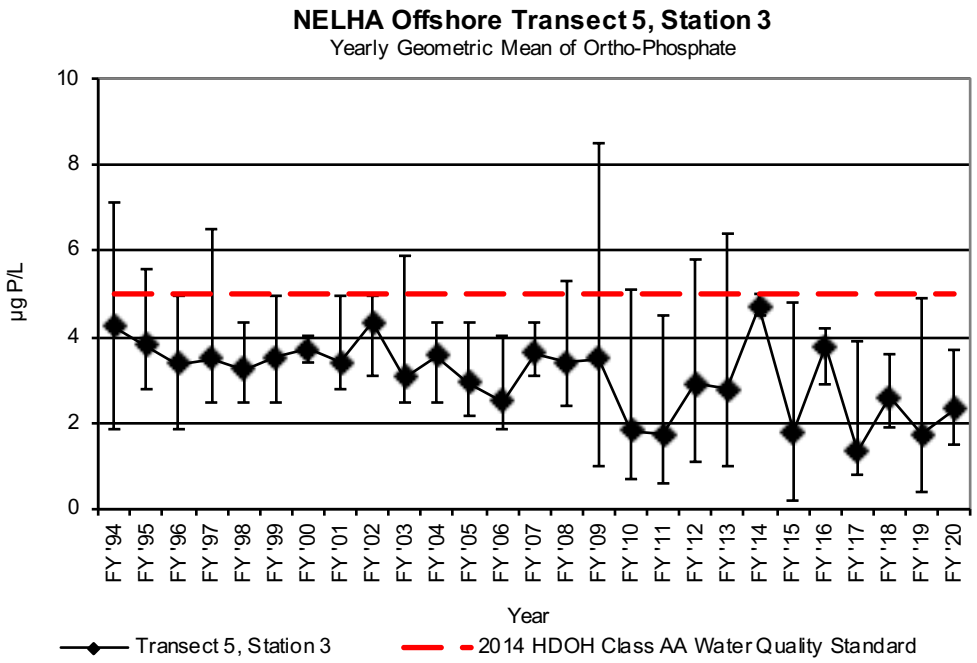
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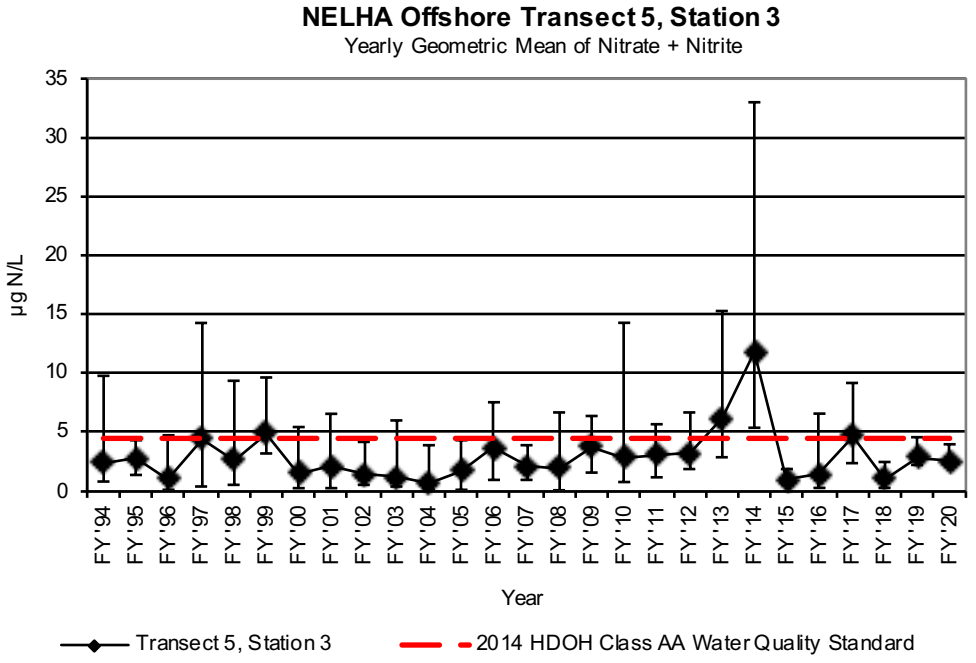
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-50m	9/28/17	1010	0.12	3.6	0.11	1.5	0.06	0.8	0.5	14	0.39	12.2	2.4	33	0.07	34.84	27.8	8.19	4.69	0.13
T5-50m	11/30/17	956	0.09	2.8	0.18	2.5	0.34	4.8	1.4	38	0.37	11.4	5.0	70	0.05	35.22	26.4	8.23	5.63	0.17
T5-50m	2/6/18	1038	0.06	1.9	0.02	0.3	0.29	4.1	1.0	29	0.33	10.1	2.5	35	0.08	34.85	24.9	8.16	5.78	0.07
T5-50m	5/17/18	1010	0.08	2.4	0.08	1.1	0.20	2.8	2.3	65	0.38	11.8	1.8	26	0.05	34.81	26.1	8.17	6.50	0.09
Geomean	**FY '18**			**2.6**		**1.1**		***2.6***				**11.3**		**38**	**0.06**					**0.11**
T5-50m	9/26/18	1257	0.01	0.4	0.16	2.3	0.09	1.3	0.2	6	0.30	9.2	1.4	20	0.10	34.74	27.6	8.16	4.79	0.13
T5-50m	11/14/18	1102	0.06	1.8	0.21	3.0	0.14	2.0	0.1	3	0.34	10.5	4.4	62	0.09	34.90	27.3	8.20	6.07	0.13
T5-50m	1/23/19	1048	0.08	2.5	0.16	2.3	0.09	1.2	1.0	27	0.35	10.9	2.9	41	0.07	34.94	24.9	8.19	4.99	0.22
T5-50m	4/17/19	1039	0.16	4.9	0.33	4.6	0.17	2.4	9.2	257	0.41	12.7	2.9	41	0.06	34.72	25.7	8.12	7.01	0.12
Geomean	**FY '19**			**1.7**		**2.9**		**1.6**				**10.8**		**38**	**0.08**					**0.15**
T5-50m	7/1/19	1011	0.05	1.5	0.16	2.3	0.24	3.3	3.1	86	0.29	9.1	2.0	28	0.12	35.25	28.2	8.26	6.52	0.15
T5-50m	9/1/19	1117	0.12	3.7	0.29	4.0	0.07	1.0	0.9	24	0.43	13.4	3.3	46	0.09	35.20	27.5	8.21	6.71	0.10
T5-50m	1/1/20	1030	0.11	3.3	0.16	2.3	0.09	1.3	0.8	24	0.41	12.8	3.0	42	0.07	34.94	25.0	8.22	6.98	0.10
T5-50m	4/1/20	950	0.05	1.6	0.16	2.3	0.23	3.2	0.4	12	0.27	8.4	2.1	30	0.06	35.53	26.3	8.18	6.61	0.18
Geomean	**FY '20**			**2.3**		**2.6**		**1.9**				**10.7**		**35**	**0.08**					**0.13**

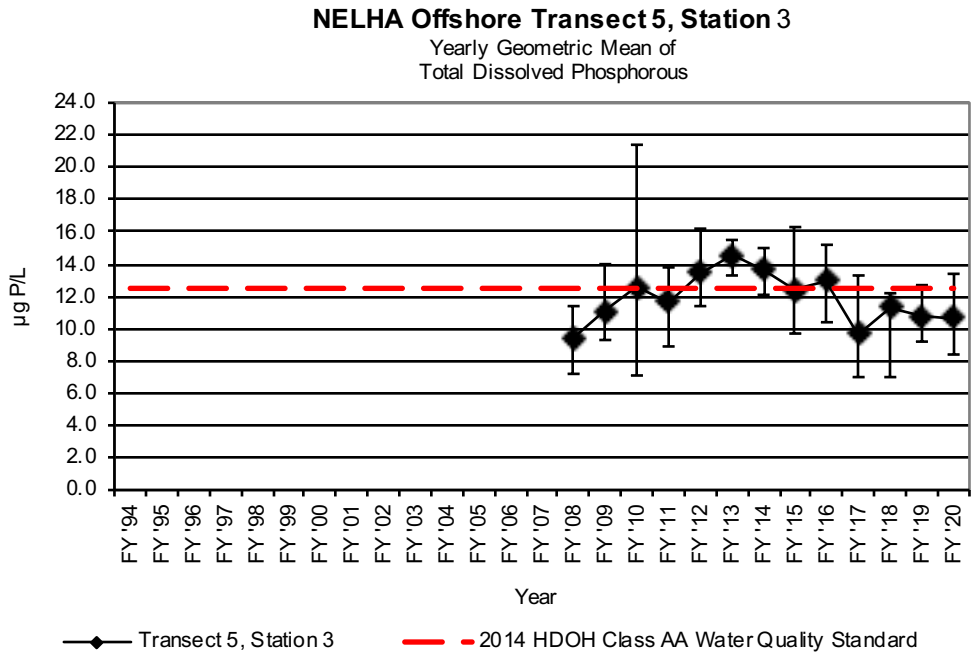
NELHA Water Quality Laboratory

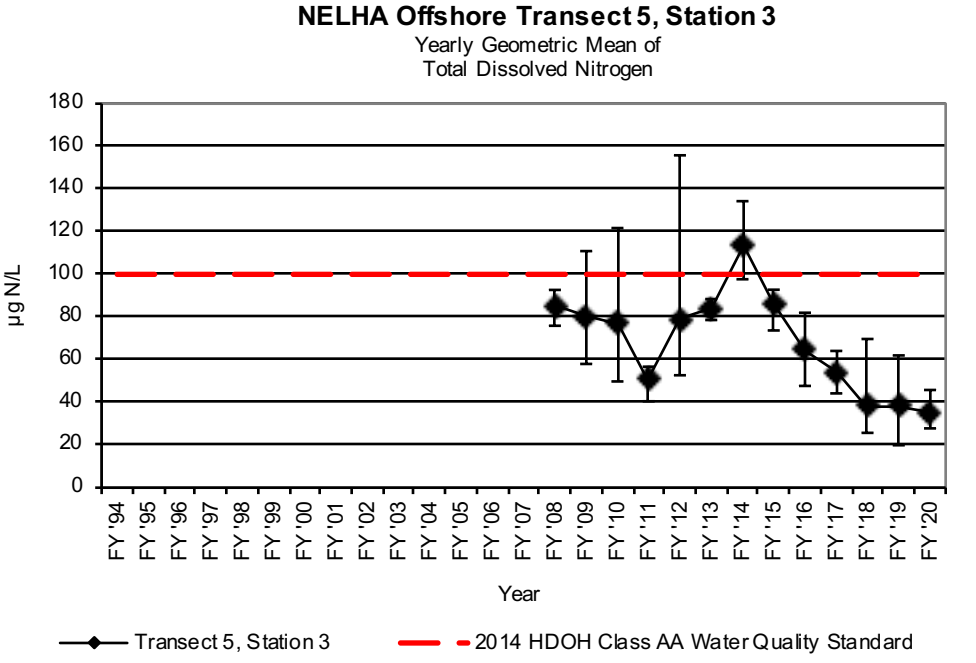
Transect 5, Station 3

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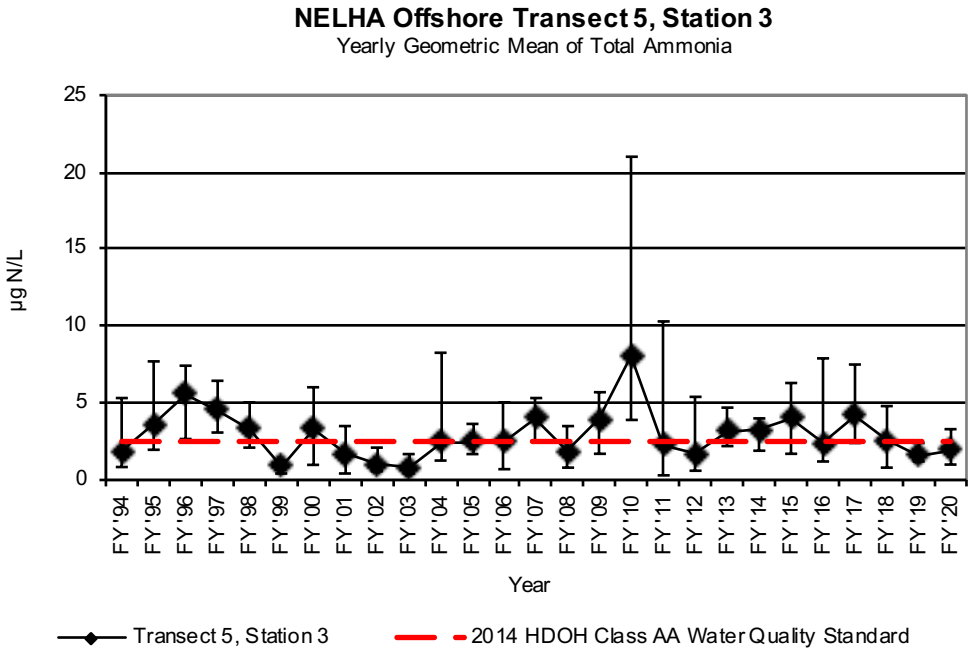


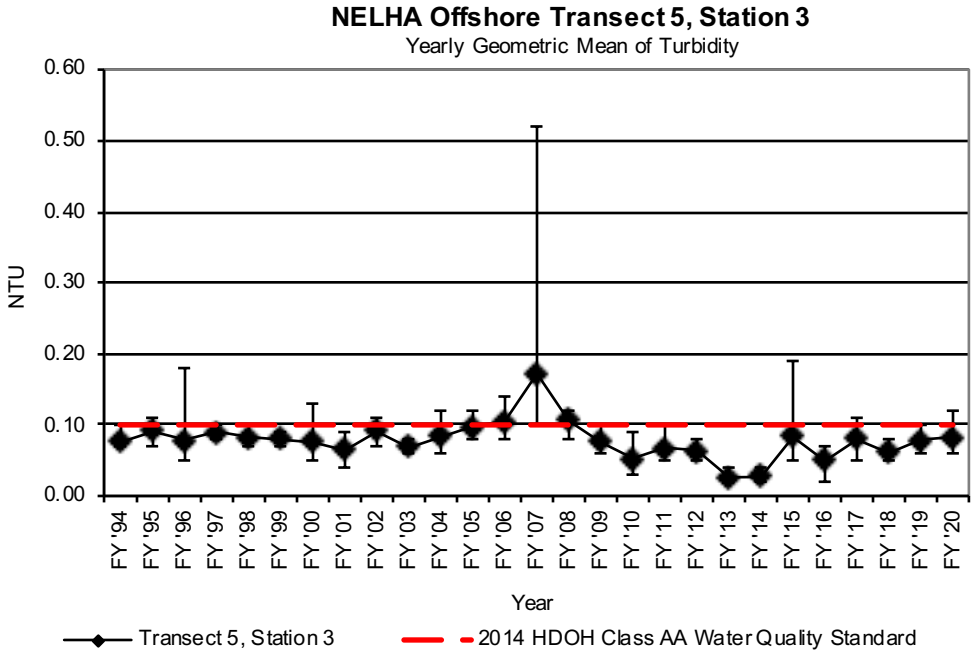


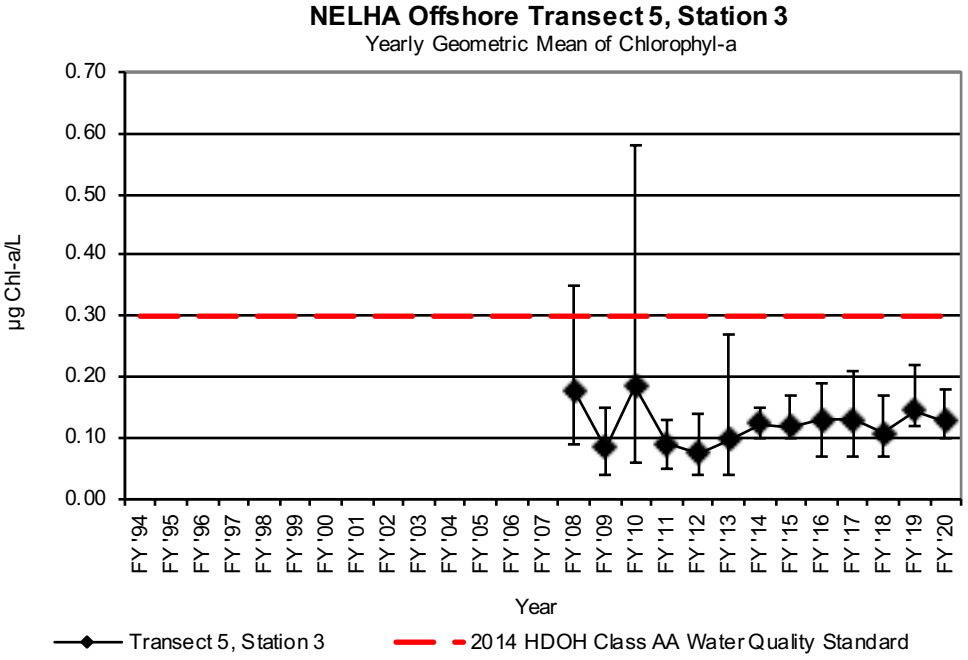
NELHA Water Quality Laboratory

Transect 5, Station 3

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 5, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-4S-53m	7/26/93	1020	0.11	3.4	0.13	1.8	0.38	5.3	3.3	93					0.08	34.417	26.8			
O5-4S-53m	12/6/93	1106	0.09	2.8	0.21	2.9	0.05	0.7	2.3	64					0.09	34.873	25.7			
O5-4S-53m	3/7/94	1017	0.23	7.1	0.59	8.3	0.26	3.6	5.1	142					0.07	34.164	25.1			
O5-4S-53m	6/15/94	1014	0.20	6.2	0.03	0.4	0.12	1.7	3.2	90					0.11	34.555	25.9			
Geomean 93	**FY '94**			**4.5**		**2.1**		**2.2**							**0.09**					
O5-4S-53m	9/9/94	1033	0.08	2.5	0.05	0.7	0.15	2.1	3.0	85					0.07	34.607	27.8			
O5-4S-53m	11/14/94	919	0.13	4.0	0.35	4.9	0.59	8.3	5.4	151					0.09	34.555	26.2			
O5-4S-53m	3/22/95	959	0.16	5.0	0.12	1.7	0.35	4.9	2.7	75					0.08	34.213	25.3			
O5-4S-53m	6/20/95	950	0.12	3.7	0.16	2.2	0.12	1.7	2.2	62					0.07	34.449	26.3			
Geomean	**FY '95**			**3.7**		**1.9**		***3.5***							**0.08**					
O5-4S-53m	9/28/95	831	0.06	1.9	0.07	1.0	0.49	6.9	1.6	45					0.08	34.605	27.2			
O5-4S-53m	11/14/95	941	0.09	2.8	0.07	1.0	0.49	6.9	1.4	40					0.07	34.352	26.8			
O5-4S-53m	3/12/96	1014	0.15	4.6	0.23	3.2	0.56	7.8	4.3	119					0.08	34.151	25.6			
O5-4S-53m	5/14/96	1012	0.10	3.1	0.27	3.8	0.16	2.2	4.7	131					0.08	34.258	27.2			
Geomean	**FY '96**			**2.9**		**1.8**		***5.4***							**0.08**					
O5-4S-53m	7/31/96	1042	0.09	2.8	0.71	9.9	0.50	7.0	8.5	239					0.12	34.263	27.8			
O5-4S-53m	10/2/96	1010	0.09	2.8	0.04	0.6	0.33	4.6	3.4	95					0.09	34.626	28.1			
O5-4S-53m	1/7/97	1011	0.13	4.0	1.20	16.8	0.22	3.1	8.3	232					0.12	34.496	25.6			
O5-4S-53m	4/28/97	1033	0.18	5.6	0.84	11.8	0.39	5.5	9.7	271					0.14	34.203	26.7			
Geomean	**FY '97**			**3.6**		***5.8***		***4.8***							***0.12***					
O5-4S-53m	8/19/97	1017	0.12	3.7	0.83	11.6	0.29	4.1	7.4	209					0.11	34.513	27.0			
O5-4S-53m	10/7/97	916	0.11	3.4	0.09	1.3	0.33	4.6	2.6	73					0.09	34.738	27.6			
O5-4S-53m	3/4/98	1018	0.14	4.3	0.78	10.9	0.23	3.2	12.7	358					0.08	34.891	25.0			
O5-4S-53m	5/5/98	1026	0.07	2.2	0.05	0.7	0.22	3.1	2.4	68					0.06	35.090	24.2			
Geomean	**FY '98**			**3.3**		**3.3**		***3.7***							**0.08**					
O5-4S-53m	7/7/98	1051	0.12	3.7	0.49	6.9	0.02	0.3	12.0	336					0.12	34.859	26.3			
O5-4S-53m	10/6/98	1000	0.11	3.4	0.29	4.1	0.11	1.5	4.0	113					0.10	35.088	27.1			
O5-4S-53m	1/19/99	1035	0.08	2.5	0.17	2.4	0.05	0.7	3.9	110					0.08	35.102	25.4			
O5-4S-53m	4/13/99	1117	0.16	5.0	0.64	9.0	0.07	1.0	8.8	248					0.08	34.486	24.5			
Geomean	**FY '99**			**3.5**		***4.9***		**0.7**							**0.09**					

NELHA Water Quality Laboratory

Transect 5, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-4S-53m	8/16/99	1050	0.13	4.0	0.21	2.9	0.42	5.9	3.1	87					0.15	34.832	26.4			
O5-4S-53m	10/25/99	1138	0.13	4.0	0.45	6.3	0.35	4.9	21.5	605					0.08	34.826	26.4			
O5-4S-53m	1/12/00	1038	0.11	3.4	0.01	0.1	0.29	4.1	7.3	206					0.07	35.131	25.0			
O5-4S-53m	4/11/00	946	0.11	3.4	0.14	2.0	0.08	1.1	3.8	108					0.06	34.825	24.5			
Geomean	**FY '00**			**3.7**		**1.5**		***3.4***							**0.08**					
O5-4S-53m	7/25/00	1054	0.11	3.4	0.15	2.1	0.05	0.7	3.6	101					0.07	34.848	26.8			
O5-4S-53m	10/31/00	1040	0.09	2.8	0.03	0.4	0.22	3.1	4.7	131					0.05	34.970	27.1			
O5-4S-53m	3/6/01	1029	0.15	4.6	0.39	5.5	0.12	1.7	4.5	127					0.08	34.668	24.9			
O5-4S-53m	5/8/01	1125	0.10	3.1	0.33	4.6	0.25	3.5	6.0	169					0.07	34.695	25.0			
Geomean	**FY '01**			**3.4**		**2.2**		**1.9**							**0.07**					
O5-4S-53m	8/13/01	923	0.10	3.1	0.03	0.4	0.17	2.4	2.4	68					0.10	34.858	26.6			
O5-4S-53m	10/10/01	1034	0.17	5.3	0.14	2.0	0.04	0.6	3.5	98					0.14	34.918	27.5			
O5-4S-53m	3/6/02	948	0.14	4.3	0.18	2.5	0.06	0.8	6.4	179					0.12	34.669	24.2			
O5-4S-53m	4/15/02	952	0.13	4.0	0.43	6.0	0.05	0.7	4.4	124					0.07	34.433	25.6			
Geomean	**FY '02**			**4.1**		**1.9**		**0.9**							***0.10***					
O5-4S-53m	7/10/02	949	0.18	5.6	0.03	0.4	0.09	1.3	2.3	64					0.10	34.700	26.6			
O5-4S-53m	10/8/02	956	0.06	1.9	0.45	6.3	0.12	1.7	4.1	114					0.07	34.870	27.1			
O5-4S-53m	3/11/03	1120	0.06	1.9	0.07	1.0	0.03	0.4	3.1	87					0.10	34.709	25.2			
O5-4S-53m	4/23/03	951	0.08	2.5	0.03	0.4	0.03	0.4	0.9	26					0.07	35.037	25.0			
Geomean	**FY '03**			**2.6**		**1.0**		**0.8**							**0.08**					
O5-4S-53m	8/21/03	939	0.07	2.2	0.01	0.1	0.10	1.4	1.9	54					0.08	34.843	28.2			
O5-4S-53m	11/3/03	910	0.12	3.7	0.01	0.1	0.10	1.4	2.2	63					0.10	34.627	29.3			
O5-4S-53m	3/18/04	940	0.13	4.0	0.14	2.0	0.27	3.8	2.8	78					n/a	34.383	25.7			
O5-4S-53m	5/24/04	1009	0.17	5.3	0.30	4.2	0.14	2.0	4.1	116					n/a	33.36	26.8			
Geomean	**FY '04**			**3.6**		**0.6**		**2.0**							**0.09**					
O5-4S-53m	9/22/04	1043	0.07	2.2	0.01	0.1	0.28	3.9	3.0	83					0.06	33.76	27.5			
O5-4S-53m	11/29/04	947	0.10	3.1	0.26	3.6	0.16	2.2	2.1	59					0.08	33.74	27.1			
O5-4S-53m	1/24/05	1024	0.09	2.8	0.51	7.1	0.13	1.8	5.7	159					0.08	34.841	25.6			
O5-4S-53m	4/13/05	1027	0.12	3.7	0.16	2.2	0.18	2.5	2.8	79					0.09	34.444	23.5			
Geomean	**FY '05**			**2.9**		**1.7**		***2.5***							**0.08**					

NELHA Water Quality Laboratory

Transect 5, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-4S-53m	7/21/05	942	0.05	1.5	0.24	3.4	0.36	5.0	3.8	107					0.11	34.663	27.4			
O5-4S-53m	10/13/05	927	0.05	1.5	0.09	1.3	0.16	2.2	2.4	67					0.11	34.862	27.3			
O5-4S-53m	3/15/06	839	0.08	2.5	0.07	1.0	0.27	3.8	3.0	85					0.12	34.851	24.3			
O5-4S-53m	5/17/06	932	0.13	4.0	0.85	11.9	0.05	0.7	7.8	220					0.08	34.496	24.7			
Geomean	**FY '06**			**2.2**		**2.7**		**2.3**							***0.10***					
O5-4S-53m	8/16/06	942	0.11	3.4	0.28	3.9	0.31	4.3	3.1	86					0.11	34.618	26.8			
O5-4S-53m	11/20/06	939	0.10	3.1	0.20	2.8	0.23	3.2	2.1	60					0.14	34.804	26.6			
O5-4S-53m	2/12/07	1031	0.13	4.0	0.16	2.2	0.49	6.9	0.8	21					0.13	34.436	24.5			
O5-4S-53m	4/16/07	1024	0.15	4.6	1.09	15.3	0.50	7.0	11.0	309					0.18	34.406	26.0			
Geomean	**FY '07**			**3.7**		**4.4**		***5.1***							***0.14***					
T5-100m	9/27/07	900	0.16	5.0	0.26	3.6	0.19	2.6	15.1	424	0.16	5.0	6.0	84	0.08	34.916	26.8	8.06	6.04	0.14
T5-100m	12/14/07	950	0.07	2.3	0.01	0.1			3.0	85	0.16	5.1	5.3	74	0.09	34.881	25.7	8.23	6.48	0.15
T5-100m	3/11/08	1001	0.12	3.6	0.79	11.1	0.06	0.8	13.7	386	0.10	3.1	6.4	90	0.11	34.695	24.8	8.09	6.71	0.36
T5-100m	6/9/08	1035	0.09	2.8	0.20	2.8	0.16	2.2	17.9	502	0.28	8.8	5.1	72	0.14	34.6419	25.3	8.11	5.62	0.23
Geomean	**FY '08**			**3.3**		**1.8**		**1.7**				**5.1**		**80**	***0.10***					**0.20**
T5-100m	9/23/08	1122	0.04	1.2	0.07	1	0.33	4.6	2.3	64	0.34	10.5	5.2	73	0.08	34.830	26.6	8.06	5.81	0.06
T5-100m	12/8/08	1036	0.15	4.8	0.26	3.7	0.27	3.8	1.8	51	0.33	10.2	5.0	70	0.05	34.983	26.0	8.30	5.10	0.08
T5-100m	2/10/09	927	0.16	5	0.10	1.4	0.12	1.7	1.7	47	0.36	11.3	10.7	150	0.07	35.129	24.7	8.07	6.01	0.02
T5-100m	6/30/09	1020	0.25	7.7	0.33	4.6	0.12	1.7	7.0	197	0.43	13.4	5.8	81	0.05	34.909	26.7	8.20	5.67	0.07
Geomean	**FY '09**			**3.9**		**2.2**		***2.7***				**11.3**		**89**	**0.06**					**0.05**
T5-100m	9/10/09	1022	0.11	3.4	0.07	1	0.13	1.8	4.2	119	0.50	15.5	5.3	74	0.06	35.24	27.4	8.21	5.56	0.29
T5-100m	11/24/09	948	0.02	0.766	0.19	2.6	0.11	1.6	8.9	250	0.33	10.3	4.2	60	0.04	35.27	25.2	8.24	6.51	0.1
T5-100m	2/24/10	1021	0.18	5.6	0.82	11.5	0.30	4.2	7.2	202	0.45	13.9	8.4	117	0.11	35.11	24.7	8.22	5.44	0.49
T5-100m	5/25/10	938	0.02	0.7	0.06	0.9	0.51	7.2	1.8	51	0.24	7.3	5.2	74	0.06	34.80	25.2	8.27	6.67	0.02
Geomean	**FY '10**			**1.8**		**2.3**		***3.1***				**11.3**		**79**	**0.06**					**0.13**
T5-100m	8/11/10	955	0.01	0.4	0.06	0.9	0.01	0.2	1.6	46	0.29	9.1	2.8	39	0.05	34.97	26.04	8.23	6.70	0.13
T5-100m	11/9/10	952	0.02	0.766	0.19	2.6	0.11	1.6	8.9	250	0.33	10.3	4.2	60	0.09	34.95	26.45	8.29	6.25	0.03
T5-100m	1/11/11	1225	0.18	5.6	1.45	20.3	0.29	4.0	10.2	286	0.43	13.4	3.9	55	0.04	34.66	25.06	8.18	6.57	0.08
T5-100m	4/27/11	1001	0.15	4.8	0.46	6.5	0.25	3.5	6.2	175	0.51	15.8	4.0	57	0.09	34.86	25.10	8.22	6.23	0.10
Geomean	**FY '11**			**1.7**		**4.2**		**1.5**				**11.9**		**52**	**0.06**					**0.07**

NELHA Water Quality Laboratory

Transect 5, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-100m	7/27/11	1045	0.19	5.8	0.39	5.4	0.15	2.1	3.4	95	0.49	15.1	3.9	55	0.10	34.76	26.07	8.22	6.33	0.09
T5-100m	10/19/11	1024	0.03	0.9	0.02	0.3	0.01	0.1	2.7	76	0.42	13.1	5.1	72	0.08	35.12	26.41	8.26	7.04	0.09
T5-100m	1/26/12	951	0.06	1.9	0.12	1.7	0.06	0.8	2.4	68	0.41	12.6	4.9	69	0.06	35.02	24.45	8.19	6.56	0.07
T5-100m	4/25/12	1017	0.14	4.4	0.08	1.1	0.22	3.1	0.8	23	0.56	17.5	7.1	99	0.05	34.85	24.90	8.19	6.64	0.06
Geomean	**FY '12**			**2.6**		**1.3**		**0.8**				***14.5***		**72**	**0.07**					**0.08**
T5-100m	7/25/12	1005	0.02	0.6	0.09	1.2	0.12	1.7	2.0	56	0.48	14.9	6.0	84	0.12	35.02	26.42	8.24	6.83	0.14
T5-100m	11/28/12	1006	0.07	2.3	0.03	0.4	0.16	2.3	1.4	39	0.37	11.6	5.1	71	0.05	35.29	25.38	8.21	6.78	0.19
T5-100m	1/24/13	954	0.10	3	0.51	7.2	0.04	0.6	4.1	116	0.47	14.5	5.1	72	0.03	35.00	24.75	8.20	6.25	0.16
T5-100m	4/17/13	1108	0.20	6.1	0.86	12	0.27	3.8	4.9	137	0.57	17.6	6.2	87	0.02	35.04	25.19	8.20	6.43	0.05
Geomean	**FY '13**			**2.2**		**2.5**		**1.7**				***14.5***		**78**	**0.04**					**0.12**
T5-100m	8/6/13	1045	0.06	1.9	0.22	3.1	0.06	0.9	2.5	71	0.35	10.9	5.6	79	0.03	35.23	26.6	8.26	6.92	0.11
T5-100m	10/30/13	947	0.13	3.9	0.10	1.4	0.12	1.7	1.2	35	0.57	17.6	6.3	88	0.02	34.94	27.1	8.22	6.05	0.06
T5-100m	2/5/14	1014	0.14	4.4	0.44	6.1	0.34	4.8	3.6	100	0.57	17.8	6.5	91	0.02	34.94	25.2	8.20	6.23	0.13
T5-100m	5/7/14	1009	0.13	4.0	0.91	12.8	0.15	2.1	6.1	170	0.44	13.7	7.2	101	0.02	34.67	25.7	8.20	5.43	0.18
Geomean	**FY '14**			**3.4**		**4.3**		**2.0**				***14.7***		**89**	**0.02**					**0.11**
T5-100m	8/6/14	1000	0.16	4.9	0.01	0.2	0.35	4.9	0.6	17	0.48	15.0	6.2	88	0.08	34.96	26.9	8.23	6.07	0.06
T5-100m	12/4/14	1034	0.10	3.2	0.04	0.6	0.51	7.1	0.4	13	0.46	14.1	6.3	88	0.05	35.25	26.4	8.26	6.25	0.19
T5-100m	3/5/15	1035	0.02	0.7	0.09	1.3	0.15	2.1	0.6	16	0.32	9.8	6.4	89	0.10	34.75	25.3	8.30	6.82	0.12
T5-100m	6/18/15	1006	0.11	3.5	0.64	9.0	0.46	6.5	4.3	121	0.31	9.5	5.8	81	0.04	34.37	26.7	8.18	6.52	0.19
Geomean	**FY '15**			**2.5**		**1.1**		***4.7***				**11.8**		**86**	**0.06**					**0.13**
T5-100m	8/27/15	1012	0.13	4.1	0.01	0.1	0.21	3.0	1.3	36	0.35	10.9	4.4	61	0.02	34.66	28.6	8.27	5.94	0.17
T5-100m	11/18/15	1039	0.13	3.9	0.36	5.0	0.23	3.2	3.7	103	0.48	15.0	4.9	68	0.07	34.65	27.4	8.27	6.69	0.10
T5-100m	3/2/16	923	0.12	3.6	0.20	2.8	0.44	6.2	0.2	6	0.43	13.2	3.7	52	0.07	34.68	25.3	8.24	5.81	0.07
T5-100m	5/4/16	1019	0.05	1.5	0.02	0.3	0.14	2.0	0.0	0	0.47	14.7	7.0	98	0.08	34.71	25.9	8.18	6.16	0.18
Geomean	**FY '16**			**3.0**		**0.8**		***3.3***				***13.3***		**68**	**0.05**					**0.12**
T5-100m	7/7/16	1021	0.11	3.4	0.64	9.0	0.36	5.0	2.7	75	0.42	13.0	4.5	63	0.09	34.60	27.0	8.31	6.62	0.19
T5-100m	12/21/16	1035	0.04	1.2	0.16	2.2	0.38	5.3	1.6	45	0.34	10.4	5.4	75	0.03	34.64	25.5	8.27	5.87	0.17
T5-100m	3/1/17	1122	0.02	0.6	0.31	4.4	0.17	2.4	1.4	41	0.30	9.4	5.2	73	0.10	34.73	24.6	8.24	5.78	0.18
T5-100m	5/10/17	1118	0.05	1.4	0.19	2.6	0.46	6.4	1.4	38	0.24	7.4	3.0	42	0.08	34.83	25.8	8.22	4.12	0.10
Geomean	**FY '17**			**1.4**		**3.9**		***4.5***				**9.8**		**62**	**0.07**					**0.16**

NELHA Water Quality Laboratory

Transect 5, Station 4

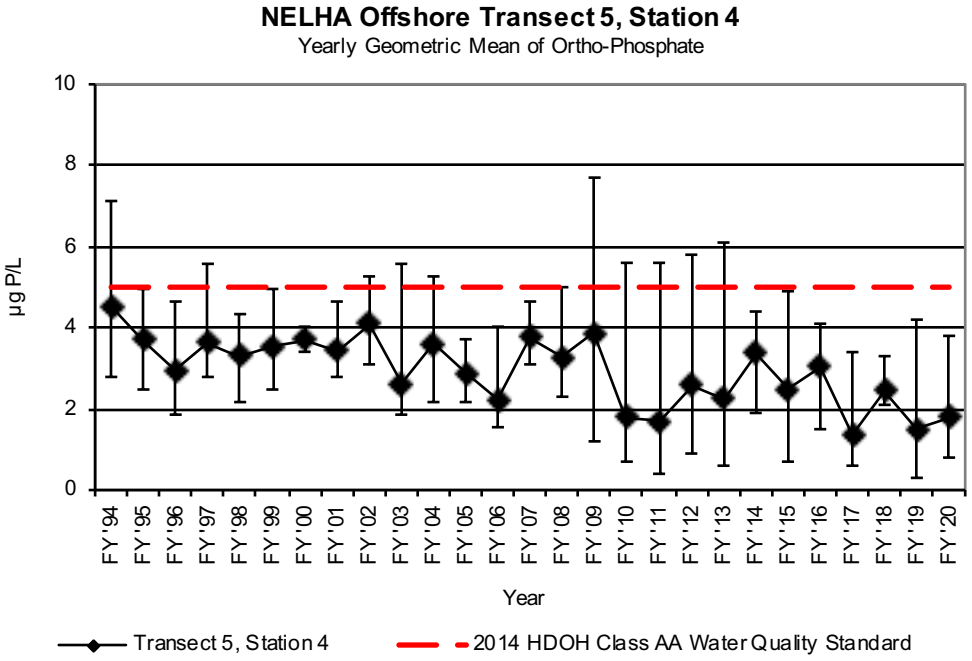
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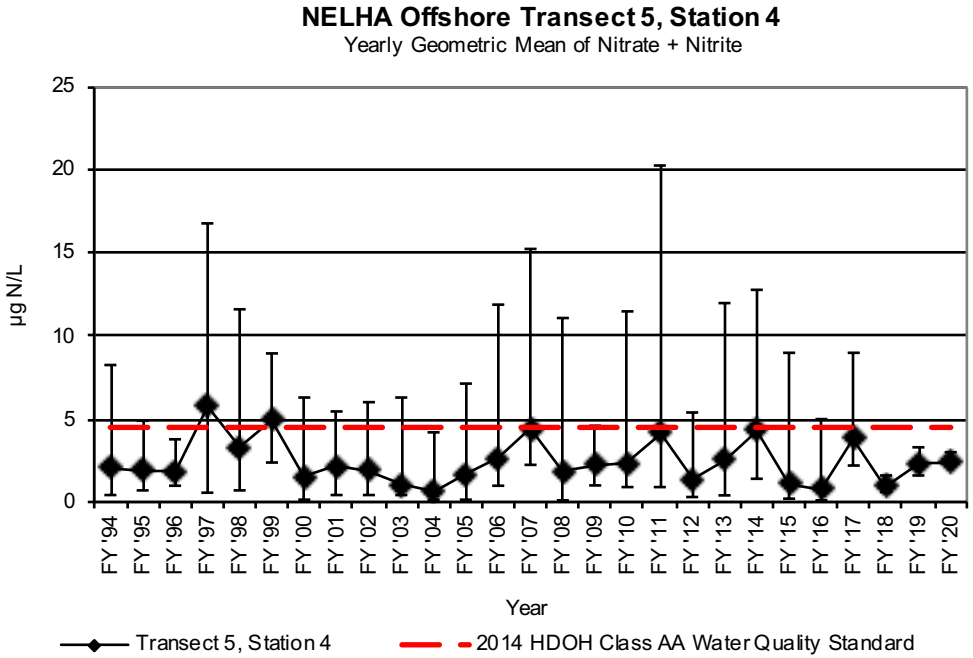
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-100m	9/28/17	1014	0.11	3.3	0.06	0.8	0.11	1.5	0.5	14	0.39	12.0	3.0	41	0.06	34.84	27.8	8.18	4.71	0.12
T5-100m	11/30/17	1001	0.07	2.1	0.11	1.6	0.33	4.6	1.2	33	0.35	10.9	3.2	45	0.06	35.23	26.6	8.24	5.65	0.13
T5-100m	2/6/18	1044	0.07	2.3	0.04	0.6	0.42	5.9	1.0	29	0.32	9.9	1.9	26	0.08	34.86	24.9	8.16	5.74	0.07
T5-100m	5/17/18	1016	0.07	2.3	0.09	1.2	0.16	2.2	1.1	30	0.36	11.2	1.6	23	0.05	34.89	26.3	8.17	6.26	0.05
Geomean	**FY '18**			**2.5**		**1.0**		**3.1**				**11.0**		**32**	**0.06**					**0.09**
T5-100m	9/26/18	1302	0.01	0.3	0.16	2.3	0.34	4.7	0.3	8	0.32	9.9	2.4	34	0.09	34.73	27.6	8.16	4.75	0.11
T5-100m	11/14/18	1107	0.05	1.6	0.11	1.6	0.39	5.5	0.0	1	0.34	10.4	3.3	46	0.07	34.90	27.3	8.20	6.01	0.16
T5-100m	1/23/19	1053	0.08	2.4	0.16	2.3	0.09	1.2	1.2	34	0.35	10.9	2.1	29	0.06	34.94	24.9	8.19	4.99	0.23
T5-100m	4/17/19	1045	0.14	4.2	0.24	3.3	0.23	3.2	0.9	25	0.38	11.8	2.4	34	0.04	34.74	25.7	8.12	6.87	0.10
Geomean	**FY '19**			**1.5**		**2.3**		**3.2**				**10.7**		**35**	**0.06**					**0.14**
T5-100m	7/1/19	1017	0.04	1.3	0.16	2.3	0.51	7.1	3.9	108	0.29	9.1	2.6	37	0.09	35.25	28.2	8.26	6.46	0.17
T5-100m	9/1/19	1122	0.12	3.8	0.21	3.0	0.38	5.3	1.1	30	0.42	12.9	2.9	40	0.09	35.16	27.5	8.21	6.76	0.12
T5-100m	1/1/20	1035	0.09	2.7	0.16	2.3	0.09	1.3	0.0	0	0.41	12.7	2.4	34	0.08	34.98	25.0	8.21	6.69	0.11
T5-100m	4/1/20	955	0.03	0.8	0.16	2.3	0.25	3.5	0.4	12	0.28	8.7	2.1	30	0.06	35.53	26.3	8.18	6.57	0.20
Geomean	**FY '20**			**1.8**		**2.4**		**3.6**				**10.7**		**35**	**0.08**					**0.15**

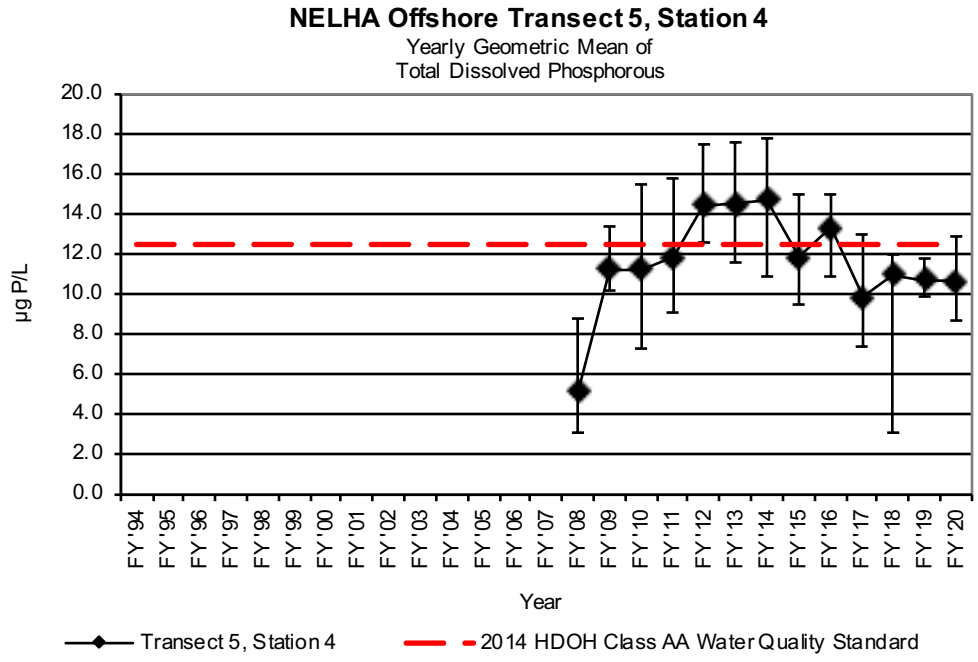
NELHA Water Quality Laboratory

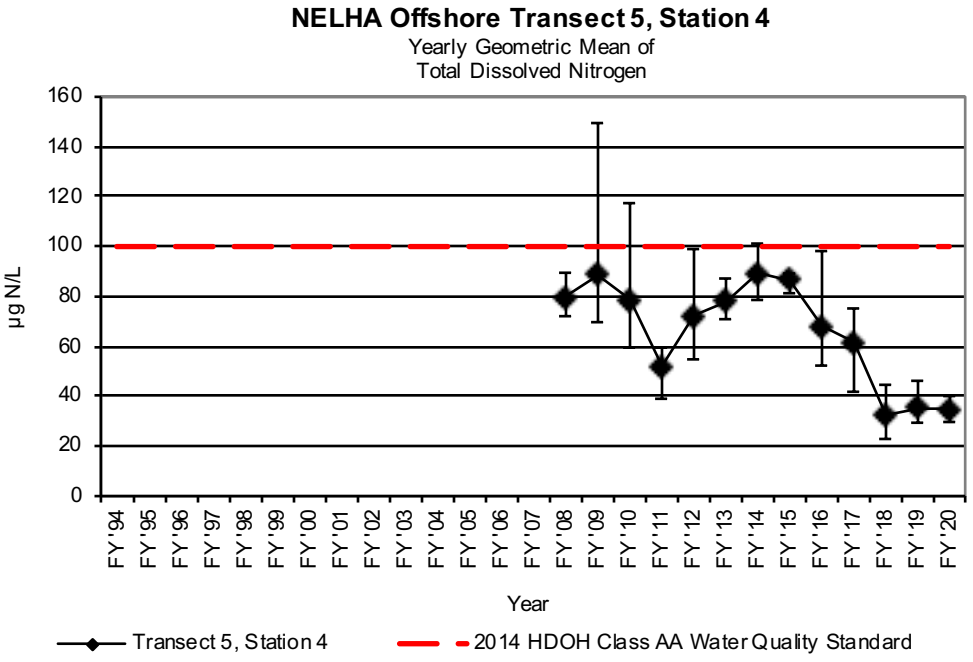
Transect 5, Station 4

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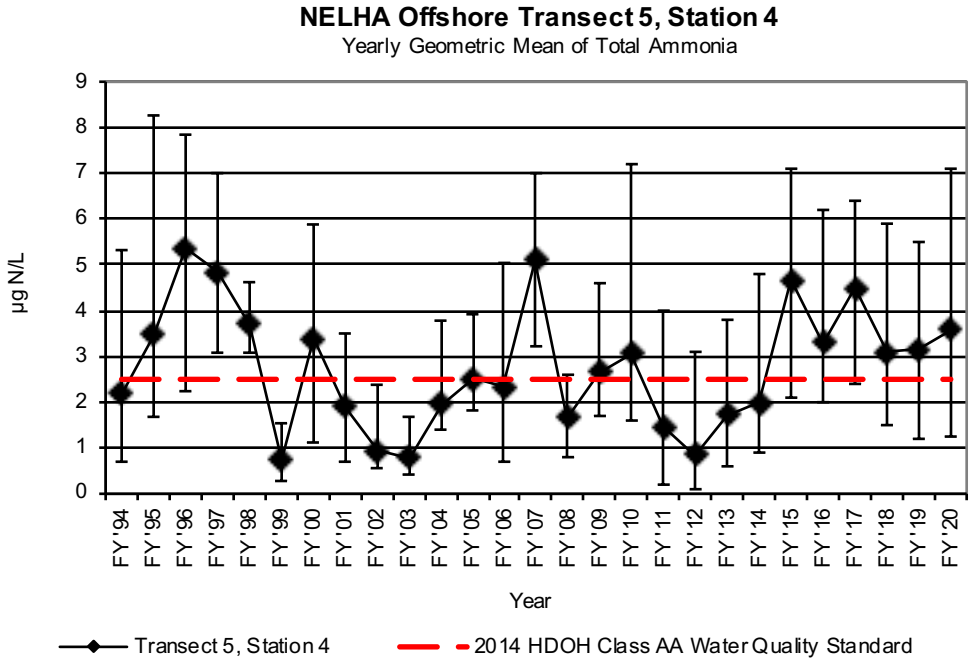


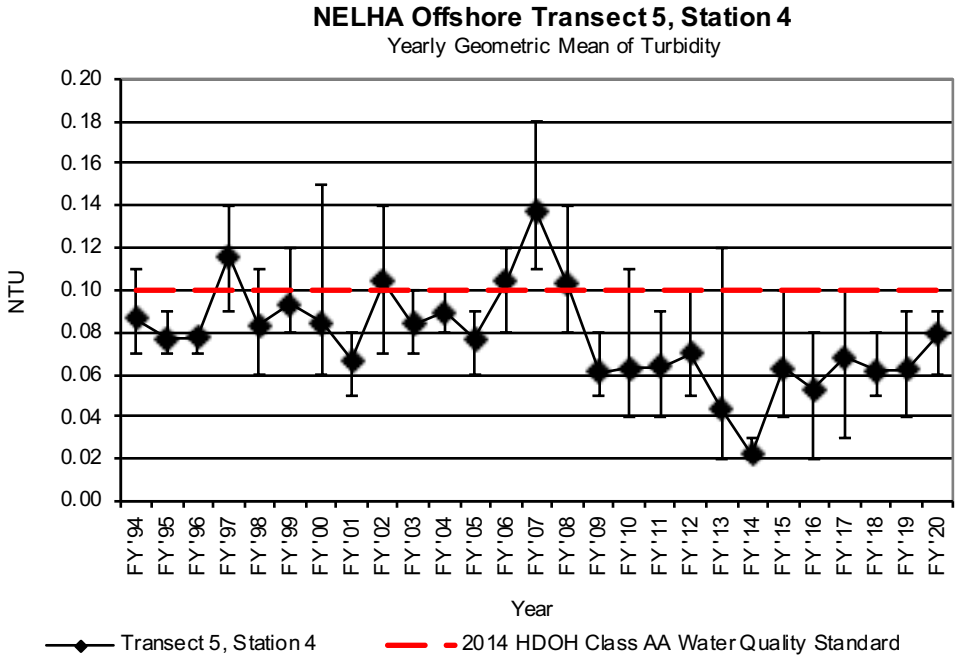


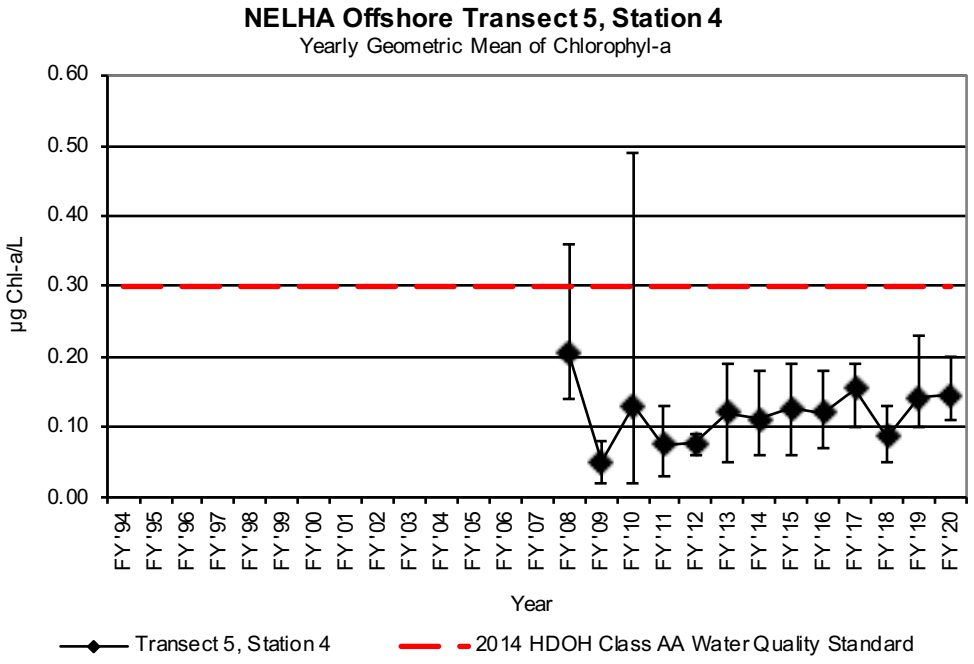
NELHA Water Quality Laboratory

Transect 5, Station 4

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 5, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-5S-69m	7/26/93	1031	0.11	3.4	0.13	1.8	0.45	6.3	3.2	90					0.08	34.418	26.9			
O5-5S-69m	12/6/93	1057	0.09	2.8	0.17	2.4	0.05	0.7	2.0	57					0.07	34.871	25.7			
O5-5S-69m	3/7/94	1010	0.20	6.2	0.19	2.7	0.26	3.6	2.5	70					0.07	34.275	25.0			
O5-5S-69m	6/15/94	1011	0.20	6.2	0.06	0.8	0.05	0.7	2.1	59					0.13	34.562	25.7			
Geomean	**FY '94**			**4.4**		**1.8**		**1.8**							**0.08**					
O5-5S-69m	9/9/94	1023	0.07	2.2	0.06	0.8	0.15	2.1	2.4	66					0.07	34.606	27.8			
O5-5S-69m	11/14/94	915	0.14	4.3	0.24	3.4	0.59	8.3	3.8	106					0.07	34.596	26.1			
O5-5S-69m	3/22/95	957	0.16	5.0	0.13	1.8	0.35	4.9	3.2	89					0.08	34.211	25.2			
O5-5S-69m	6/20/95	947	0.12	3.7	0.11	1.5	0.09	1.3	2.2	62					0.07	34.464	26.3			
Geomean	**FY '95**			**3.6**		**1.7**		***3.2***							**0.07**					
O5-5S-69m	9/28/95	841	0.06	1.9	0.07	1.0	0.42	5.9	2.0	56					0.16	34.606	27.2			
O5-5S-69m	11/14/95	936	0.09	2.8	0.07	1.0	0.45	6.3	1.9	53					0.04	34.350	26.9			
O5-5S-69m	3/12/96	1009	0.15	4.6	0.26	3.6	0.58	8.1	4.0	112					0.05	34.140	25.5			
O5-5S-69m	5/14/96	1006	0.13	4.1	0.09	1.3	0.16	2.2	2.6	74					0.07	34.317	27.3			
Geomean	**FY '96**			**3.1**		**1.4**		***5.1***							**0.07**					
O5-5S-69m	7/31/96	1038	0.08	2.5	0.75	10.5	0.50	7.0	9.5	268					0.10	34.238	27.9			
O5-5S-69m	10/2/96	1005	0.08	2.5	0.06	0.8	0.32	4.5	3.2	89					0.11	34.633	28.1			
O5-5S-69m	1/7/97	1006	0.12	3.7	0.82	11.5	0.22	3.1	7.3	206					0.09	34.570	25.5			
O5-5S-69m	4/28/97	1027	0.20	6.2	0.80	11.2	0.43	6.0	12.3	346					0.12	34.202	26.6			
Geomean	**FY '97**			**3.4**		***5.8***		***4.9***							***0.10***					
O5-5S-69m	8/19/97	1010	0.12	3.7	0.48	6.7	0.28	3.9	11.0	309					0.12	34.577	27.0			
O5-5S-69m	10/7/97	911	0.10	3.1	0.03	0.4	0.31	4.3	4.0	113					0.10	34.746	27.6			
O5-5S-69m	3/4/98	1010	0.12	3.7	0.63	8.8	0.23	3.2	6.5	183					0.09	34.914	25.0			
O5-5S-69m	5/5/98	1019	0.07	2.2	0.02	0.3	0.19	2.7	2.8	78					0.08	35.095	24.3			
Geomean	**FY '98**			**3.1**		**1.6**		***3.5***							**0.10**					
O5-5S-69m	7/7/98	1045	0.12	3.7	0.69	9.7	0.01	0.1	18.0	506					0.11	34.791	26.3			
O5-5S-69m	10/6/98	955	0.12	3.7	0.45	6.3	0.06	0.8	5.1	142					0.08	35.041	27.0			
O5-5S-69m	1/19/99	1030	0.07	2.2	0.01	0.1	0.05	0.7	4.4	123					0.07	35.141	25.3			
O5-5S-69m	4/13/99	1111	0.16	5.0	0.58	8.1	0.08	1.1	8.4	237					0.08	34.514	24.5			
Geomean	**FY '99**			**3.5**		**2.9**		**0.6**							**0.08**					

NELHA Water Quality Laboratory

Transect 5, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-5S-69m	8/16/99	1042	0.12	3.7	0.14	2.0	0.46	6.4	5.7	159					0.09	34.852	26.5			
O5-5S-69m	10/25/99	1134	0.10	3.1	0.29	4.1	0.35	4.9	5.8	163					0.08	34.864	26.4			
O5-5S-69m	1/12/00	1029	0.12	3.7	0.02	0.3	0.31	4.3	9.9	277					0.05	35.117	24.9			
O5-5S-69m	4/11/00	941	0.12	3.7	0.17	2.4	0.06	0.8	4.3	121					0.07	34.821	24.5			
Geomean	**FY '00**			**3.6**		**1.5**		***3.3***							**0.07**					
O5-5S-69m	7/25/00	1048	0.10	3.1	0.15	2.1	0.05	0.7	3.7	103					0.07	34.853	26.7			
O5-5S-69m	10/31/00	1034	0.09	2.8	0.02	0.3	0.25	3.5	2.3	63					0.09	34.957	27.2			
O5-5S-69m	3/6/01	1022	0.15	4.6	0.31	4.3	0.10	1.4	4.7	131					0.08	34.692	24.9			
O5-5S-69m	5/8/01	1122	0.11	3.4	0.41	5.7	0.25	3.5	7.2	202					0.09	34.672	25.0			
Geomean	**FY '01**			**3.4**		**2.0**		**1.9**							**0.08**					
O5-5S-69m	8/13/01	918	0.11	3.4	0.10	1.4	0.20	2.8	3.7	105					0.16	34.828	26.6			
O5-5S-69m	10/10/01	1027	0.13	4.0	0.04	0.6	0.01	0.1	3.8	107					0.06	34.948	27.6			
O5-5S-69m	3/6/02	944	0.14	4.3	0.17	2.4	0.06	0.8	4.6	128					0.05	34.657	24.2			
O5-5S-69m	4/15/02	945	0.14	4.3	0.29	4.1	0.03	0.4	5.8	162					0.07	34.438	25.5			
Geomean	**FY '02**			**4.0**		**1.7**		**0.6**							**0.08**					
O5-5S-69m	7/10/02	942	0.16	5.0	0.03	0.4	0.12	1.7	2.0	55					0.06	34.698	26.5			
O5-5S-69m	10/8/02	949	0.06	1.9	0.15	2.1	0.09	1.3	2.1	58					0.08	34.936	27.1			
O5-5S-69m	3/11/03	1111	0.07	2.2	0.03	0.4	0.03	0.4	2.4	69					0.08	34.699	25.3			
O5-5S-69m	4/23/03	946	0.09	2.8	0.03	0.4	0.03	0.4	2.9	81					0.09	35.027	25.1			
Geomean	**FY '03**			**2.7**		**0.6**		**0.8**							**0.08**					
O5-5S-69m	8/21/03	931	0.09	2.8	0.01	0.1	0.10	1.4	2.0	57					0.08	34.830	28.3			
O5-5S-69m	11/3/03	900	0.12	3.7	0.01	0.1	0.05	0.7	2.3	65					0.10	34.602	27.1			
O5-5S-69m	3/18/04	928	0.10	3.1	0.14	2.0	0.27	3.8	1.8	50					n/a	34.413	25.8			
O5-5S-69m	5/24/04	1004	0.15	4.6	0.42	5.9	0.20	2.8	5.7	159					n/a	n/a	26.8			
Geomean	**FY '04**			**3.5**		**0.7**		**1.8**							**0.09**					
O5-5S-69m	9/22/04	1038	0.07	2.2	0.01	0.1	0.28	3.9	1.7	48					0.08	33.73	27.5			
O5-5S-69m	11/29/04	943	0.08	2.5	0.18	2.5	0.16	2.2	1.6	45					0.04	33.75	27.1			
O5-5S-69m	1/24/05	1018	0.10	3.1	0.45	6.3	0.16	2.2	5.5	153					0.10	34.717	25.6			
O5-5S-69m	4/13/05	1021	0.12	3.7	0.11	1.5	0.13	1.8	7.2	202					0.10	34.449	25.4			
Geomean	**FY '05**			**2.8**		**1.4**		**2.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 5, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O5-5S-69m	7/21/05	936	0.06	1.9	0.50	7.0	0.35	4.9	5.7	160					0.13	34.586	27.3			
O5-5S-69m	10/13/05	921	0.05	1.5	0.11	1.5	0.18	2.5	5.2	147					0.11	34.842	27.1			
O5-5S-69m	3/15/06	843	0.09	2.8	0.07	1.0	0.35	4.9	1.7	48					0.07	34.861	24.5			
O5-5S-69m	5/17/06	927	0.13	4.0	0.69	9.7	0.05	0.7	8.0	225					0.10	34.579	24.7			
Geomean	**FY '06**			**2.4**		**3.2**		***2.6***							***0.10***					
O5-5S-69m	8/16/06	938	0.11	3.4	0.34	4.8	0.27	3.8	3.1	86					0.08	34.624	26.8			
O5-5S-69m	11/20/06	933	0.11	3.4	0.19	2.7	0.33	4.6	2.0	56					0.12	34.764	26.7			
O5-5S-69m	2/12/07	1022	0.16	5.0	0.12	1.7	0.36	5.0	0.5	15					0.19	34.439	24.6			
O5-5S-69m	4/16/07	1017	0.13	4.0	0.58	8.1	0.37	5.2	7.4	208					0.12	34.543	26.0			
Geomean	**FY '07**			**3.9**		**3.6**		***4.6***							***0.12***					
T5-500m	9/27/07	848	0.12	3.6	0.01	0.1	0.13	1.8	9.8	275	0.24	7.5	3.9	54	0.11	34.874	26.6	8.09	6.30	0.06
T5-500m	12/14/07	1000	0.10	3.1	0.01	0.1			2.5	70	0.38	11.9	6.7	94	0.16	34.741	25.8	8.24	6.58	0.1
T5-500m	3/11/08	1008	0.09	2.8	0.07	1.0	0.06	0.8	15.6	439	0.24	7.4	6.5	91	0.10	34.888	24.9	8.11	6.66	0.18
T5-500m	6/9/08	1044	0.07	2.3	0.05	0.7	0.16	2.2	14.2	400	0.21	6.6	5.1	72	0.18	34.4544	25.9	8.11	5.59	0.23
Geomean	**FY '08**			**2.9**		**0.3**		**1.5**				**8.1**		**76**	***0.13***					**0.13**
T5-500m	9/23/08	1133	0.03	0.9	0.00	0.01	2.44	34.2	1.5	42	0.29	9.1	6.8	95	0.06	34.833	26.7	8.07	6.07	0.13
T5-500m	12/8/08	1042	0.14	4.2	0.04	0.6	0.19	2.6	1.7	49	0.30	9.2	6.6	92	0.05	35.000	26.3	8.31	5.65	0.02
T5-500m	2/10/09	936	0.09	2.8	0.15	2.1	0.12	1.7	1.7	48	0.23	7.1	4.8	67	0.09	35.089	25.0	8.06	6.08	0.02
T5-500m	6/30/09	1028	0.24	7.5	0.23	3.2	0.12	1.7	5.1	144	0.52	16.1	6.0	84	0.08	34.897	26.8	8.20	5.70	0.07
Geomean	**FY '09**			**3.0**		**0.4**		***4.0***				**9.9**		**84**	**0.07**					**0.04**
T5-500m	9/10/09	1032	0.16	4.9	0.16	2.2	0.21	2.9	12.2	344	0.70	21.8	5.7	80	0.12	35.25	27.5	8.20	5.31	0.29
T5-500m	11/24/09	955	0.02	0.766	0.01	0.2	0.03	0.4	7.3	205	0.37	11.6	4.1	57	0.05	35.27	25.2	8.23	6.43	0.13
T5-500m	2/24/10	1028	0.14	4.3	1.10	15.4	0.32	4.5	10.0	280	0.42	12.9	6.8	95	0.07	35.15	24.6	8.22	5.50	0.34
T5-500m	5/25/10	946	0.02	0.7	0.03	0.4	0.37	5.2	1.6	44	0.29	9.1	5.8	82	0.04	34.82	25.3	8.28	6.67	0.06
Geomean	**FY '10**			**1.8**		**1.3**		**2.3**				***13.1***		**77**	**0.06**					**0.17**
T5-500m	8/11/10	1003	0.02	0.6	0.02	0.3	0.01	0.1	1.9	53	0.30	9.4	2.7	38	0.04	34.98	26.11	8.24	6.61	0.09
T5-500m	11/9/10	1001	0.02	0.766	0.01	0.2	0.03	0.4	7.3	205	0.37	11.6	4.1	57	0.08	34.94	26.47	8.29	6.20	0.08
T5-500m	1/11/11	1234	0.11	3.5	0.06	0.8	0.11	1.6	0.8	23	0.41	12.7	2.9	41	0.09	35.06	25.04	8.19	6.40	0.07
T5-500m	4/27/11	1007	0.12	3.8	0.29	4	0.26	3.7	4.1	116	0.46	14.3	3.6	50	0.06	34.87	25.02	8.22	6.16	0.18
Geomean	**FY '11**			**1.6**		**0.7**		**0.7**				**11.9**		**46**	**0.06**					**0.10**

NELHA Water Quality Laboratory

Transect 5, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-500m	7/27/11	1052	0.16	4.9	0.04	0.6	0.06	0.9	0.4	10	0.47	14.7	2.7	38	0.03	34.84	26.14	8.23	6.32	0.20
T5-500m	10/19/11	1032	0.03	0.9	0.09	1.2	0.04	0.5	3.5	99	0.35	10.9	3.7	52	0.05	35.10	26.67	8.26	7.05	0.19
T5-500m	1/26/12	958	0.06	1.8	0.01	0.1	0.01	0.2	1.4	39	0.34	10.5	3.5	49	0.07	35.05	24.45	8.20	6.63	0.09
T5-500m	4/25/12	1021	0.15	4.6	0.15	2.1	0.26	3.6	1.9	53	0.48	15	7.4	103	0.04	34.84	24.91	8.20	6.72	0.08
Geomean	**FY '12**			**2.5**		**0.6**		**0.8**				***12.6***		**56**	**0.05**					**0.13**
T5-500m	7/25/12	1014	0.00	0.1	0.01	0.1	0.16	2.2	1.5	43	0.37	11.5	4.0	56	0.09	35.01	26.53	8.24	6.84	0.25
T5-500m	11/28/12	1012	0.08	2.5	0.03	0.4	0.11	1.6	1.2	32	0.43	13.2	4.5	63	0.04	35.28	25.45	8.21	6.62	0.08
T5-500m	1/24/13	1002	0.06	1.8	0.01	0.1	0.02	0.3	1.2	34	0.40	12.5	4.3	61	0.04	35.11	24.83	8.23	6.30	0.09
T5-500m	4/17/13	1117	0.16	5.1	0.12	1.7	0.21	3	0.9	24	0.55	17	4.1	58	0.05	35.14	25.31	8.21	6.50	0.04
Geomean	**FY '13**			**1.2**		**0.3**		**1.3**				***13.4***		**59**	**0.05**					**0.09**
T5-500m	8/6/13	1051	0.06	1.8	0.00	0.1	0.06	0.9	1.7	48	0.33	10.2	4.4	62	0.02	35.26	26.9	8.22	6.77	0.09
T5-500m	10/30/13	952	0.11	3.5	0.04	0.5	0.06	0.8	0.9	26	0.47	14.7	5.7	80	0.03	34.99	27.1	8.22	6.06	0.08
T5-500m	2/5/14	1022	0.13	4.0	0.11	1.6	0.42	5.9	1.8	50	0.48	15.0	4.6	65	0.02	34.96	25.2	8.22	6.20	0.19
T5-500m	5/7/14	1016	0.09	2.7	0.12	1.7	0.10	1.4	2.3	65	0.42	12.9	5.5	77	0.04	34.79	26.0	8.20	5.51	0.25
Geomean	**FY '14**			**2.9**		**0.6**		**1.6**				***13.1***		**70**	**0.03**					**0.14**
T5-500m	8/6/14	1007	0.16	5.1	0.01	0.1	0.25	3.5	0.6	17	0.50	15.4	5.2	72	0.06	34.98	27.2	8.23	6.01	0.05
T5-500m	12/4/14	1045	0.10	3.2	0.03	0.4	0.41	5.7	0.2	5	0.46	14.3	7.0	98	0.09	35.24	26.5	8.25	6.37	0.16
T5-500m	3/5/15	1046	0.01	0.2	0.08	1.1	0.10	1.4	0.6	17	0.34	10.5	5.7	79	0.10	34.75	25.4	8.30	6.83	0.20
T5-500m	6/18/15	1013	0.09	2.8	0.01	0.2	0.49	6.9	0.9	25	0.18	5.6	6.2	87	0.10	34.54	26.8	8.21	6.53	0.08
Geomean	**FY '15**			**1.7**		**0.3**		***3.7***				**10.7**		**84**	**0.09**					**0.11**
T5-500m	8/27/15	1019	0.15	4.7	0.01	0.2	0.27	3.8	1.3	37	0.19	6.0	4.7	66	0.02	34.72	28.7	8.27	5.91	0.12
T5-500m	11/18/15	1050	0.14	4.4	0.37	5.2	0.21	3.0	3.3	93	0.52	16.1	5.3	74	0.05	34.56	27.4	8.28	6.89	0.11
T5-500m	3/2/16	930	0.12	3.8	0.17	2.4	0.36	5.0	0.5	15	0.47	14.7	5.6	78	0.05	34.65	25.3	8.25	5.80	0.09
T5-500m	5/4/16	1025	0.04	1.2	0.04	0.6	0.08	1.1	0.1	3	0.41	12.6	4.9	69	0.07	34.70	26.1	8.18	6.12	0.17
Geomean	**FY '16**			**3.1**		**1.1**		***2.8***				**11.6**		**71**	**0.04**					**0.12**
T5-500m	7/7/16	1029	0.06	1.8	1.17	16.4	0.23	3.2	0.1	3	0.38	11.8	1.7	24	0.07	34.73	27.1	8.33	6.60	0.21
T5-500m	12/21/16	1044	0.02	0.7	0.08	1.1	0.04	0.5	1.2	33	0.34	10.5	3.7	52	0.03	34.72	25.6	8.28	5.88	0.12
T5-500m	3/1/17	1111	0.01	0.2	0.04	0.5	0.11	1.5	0.1	4	0.28	8.7	2.6	36	0.08	34.79	24.6	8.25	5.83	0.18
T5-500m	5/10/17	1126	0.06	1.8	0.04	0.5	0.29	4.1	0.4	12	0.21	6.4	2.9	41	0.05	34.88	25.8	8.23	4.08	0.12
Geomean	**FY '17**			**0.8**		**1.5**		**1.8**				**9.1**		**37**	**0.05**					**0.15**

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Transect 5, Station 5

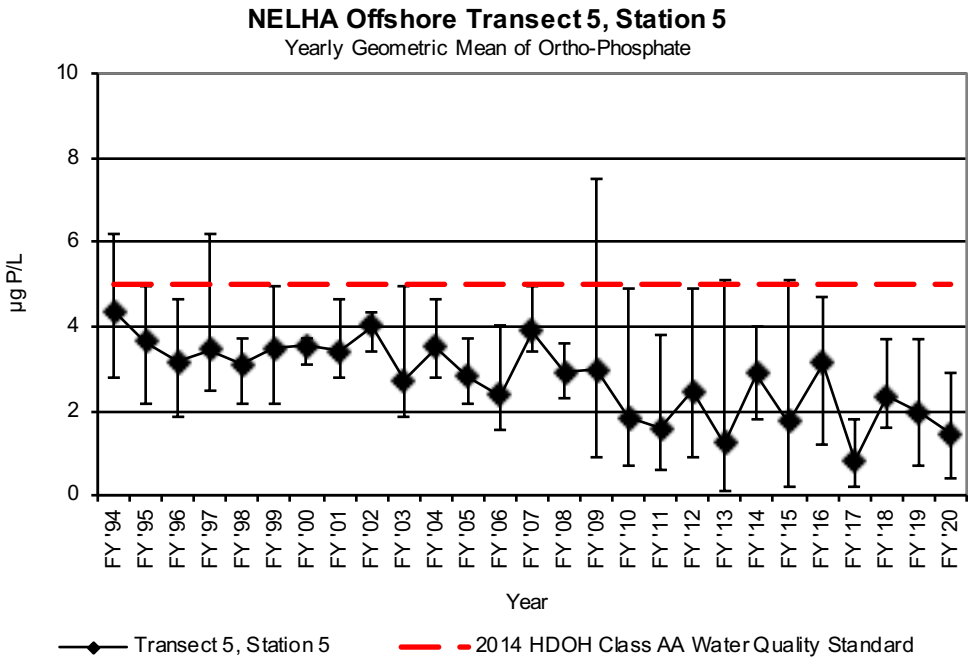
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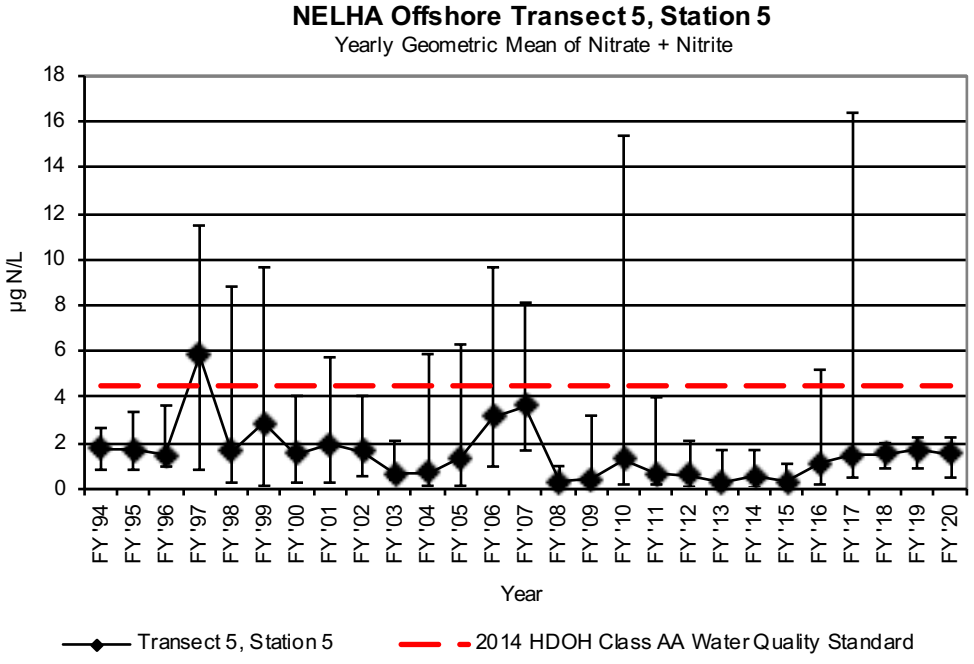
SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T5-500m	9/28/17	1021	0.12	3.7	0.06	0.9	0.11	1.5	0.5	14	0.37	11.5	3.0	42	0.06	34.85	28.0	8.18	4.72	0.11
T5-500m	11/30/17	1007	0.08	2.4	0.12	1.7	0.30	4.2	1.1	32	0.35	10.9	3.5	49	0.09	35.23	26.6	8.24	5.58	0.14
T5-500m	2/6/18	1052	0.05	1.6	0.12	1.7	0.39	5.4	0.6	17	0.32	9.8	1.6	22	0.09	34.86	25.0	8.16	5.72	0.09
T5-500m	5/17/18	1034	0.07	2.1	0.14	2.0	0.10	1.4	1.0	27	0.35	10.9	1.5	21	0.09	34.50	26.0	8.16	6.53	0.09
Geomean	**FY '18**			**2.3**		**1.5**		***2.6***				**10.8**		**31**	**0.08**					**0.11**
T5-500m	9/26/18	1309	0.08	2.5	0.16	2.3	0.26	3.6	0.0	1	0.32	9.8	2.0	28	0.09	34.75	27.7	8.15	4.54	0.10
T5-500m	11/14/18	1116	0.02	0.7	0.06	0.9	0.34	4.8	0.0	1	0.38	11.7	3.6	50	0.07	34.91	27.4	8.20	6.08	0.12
T5-500m	1/23/19	1100	0.07	2.3	0.16	2.3	0.16	2.2	0.5	14	0.36	11.3	2.1	29	0.06	34.95	25.0	8.19	4.96	0.13
T5-500m	4/17/19	1054	0.12	3.7	0.14	1.9	0.15	2.1	1.0	27	0.38	11.8	2.9	41	0.05	34.73	25.7	8.12	6.85	0.09
Geomean	**FY '19**			**2.0**		**1.7**		***3.0***				**11.1**		**36**	**0.07**					**0.11**
T5-500m	7/1/19	1024	0.01	0.4	0.16	2.3	0.16	2.2	1.3	38	0.30	9.2	2.0	28	0.09	35.32	28.5	8.28	6.60	0.14
T5-500m	9/1/19	1134	0.09	2.9	0.04	0.5	0.22	3.1	0.0	1	0.36	11.3	1.9	27	0.06	35.20	27.6	8.20	6.56	0.12
T5-500m	1/1/20	1045	0.08	2.5	0.16	2.3	0.09	1.3	0.3	8	0.38	11.8	4.1	58	0.05	34.98	25.0	8.22	6.68	0.11
T5-500m	4/1/20	1003	0.05	1.5	0.16	2.3	0.36	5.0	0.3	9	0.24	7.3	2.4	34	0.05	35.54	26.5	8.19	6.54	0.12
Geomean	**FY '20**			**1.4**		**1.5**		***2.6***				**9.7**		**35**	**0.06**					**0.12**

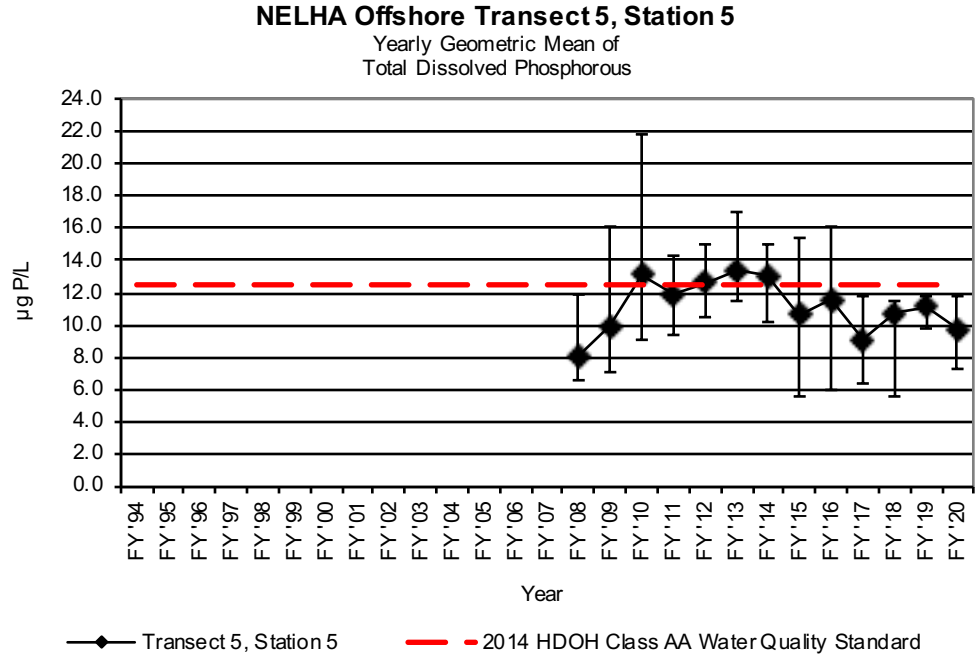
NELHA Water Quality Laboratory

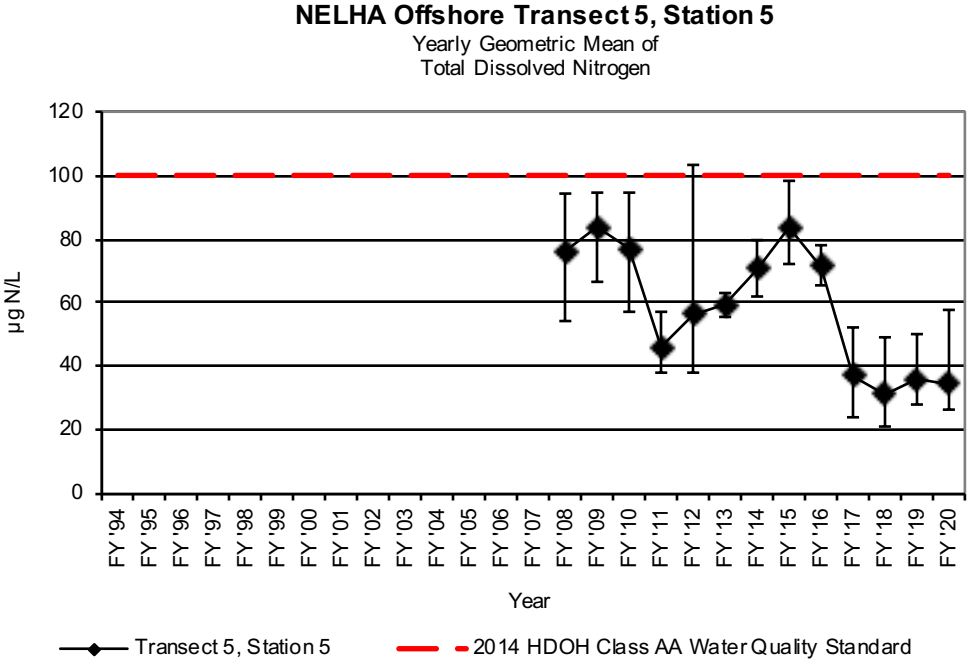
Transect 5, Station 5

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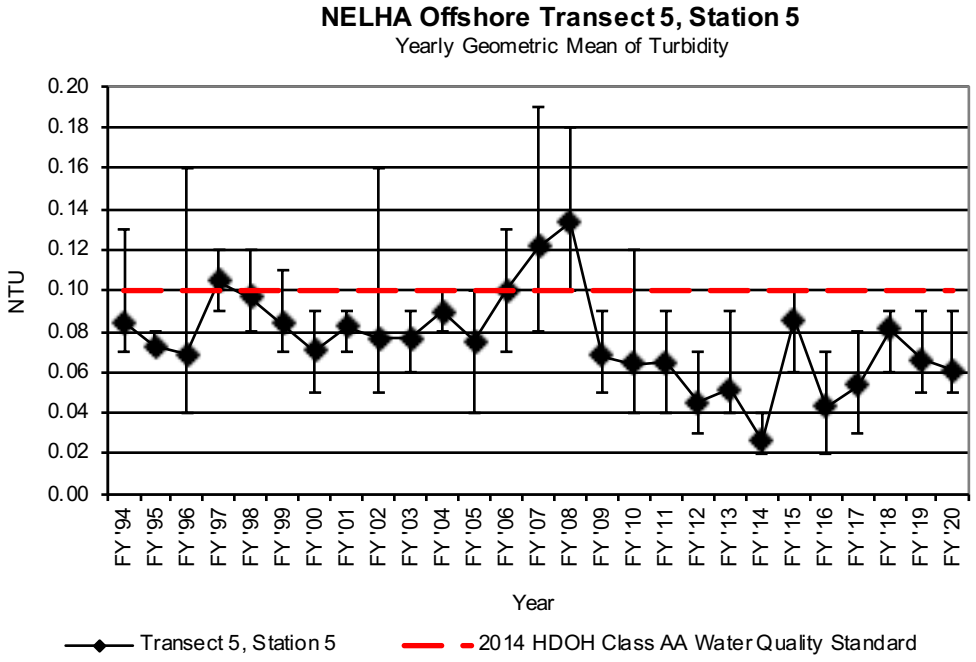


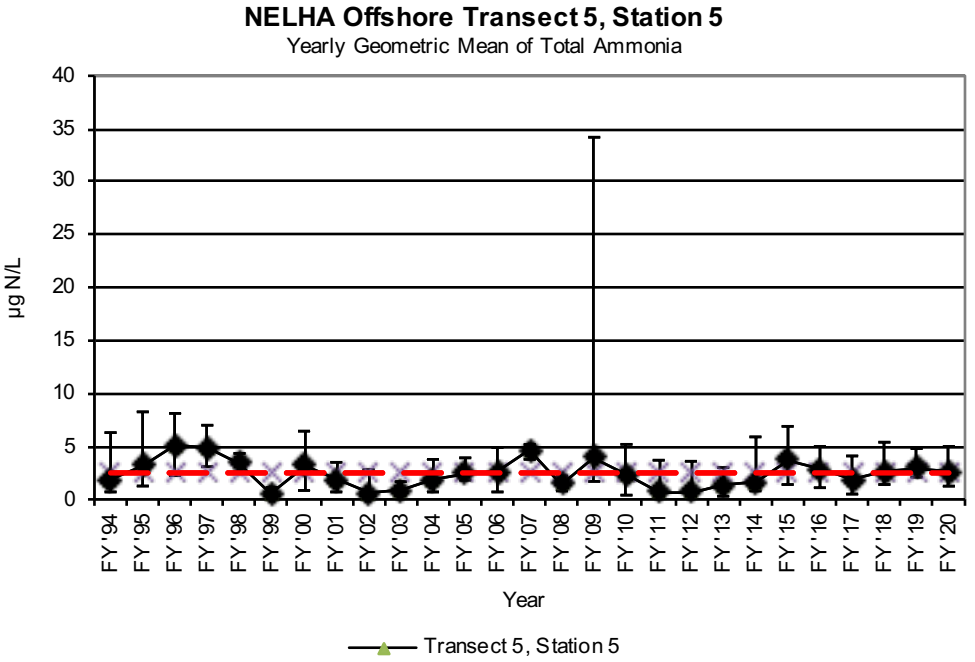


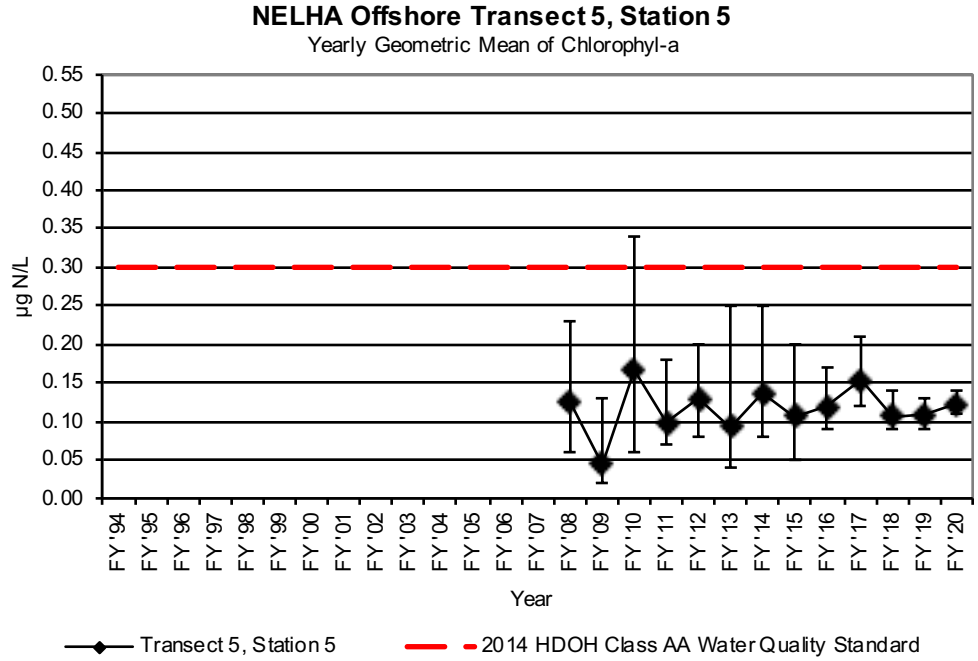
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Transect 5, Station 5

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Transect 6

July 2018 - June 2019

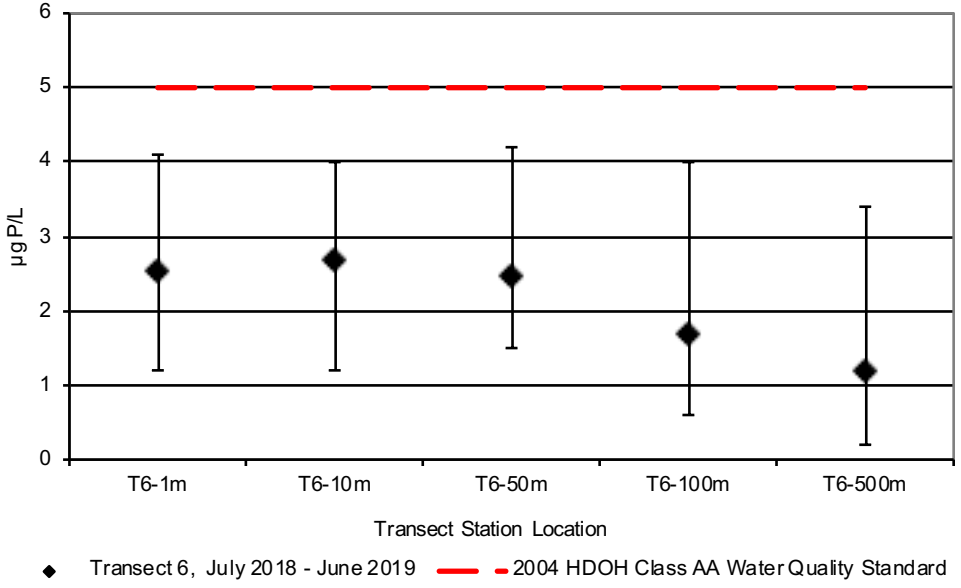
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T6-1m	9/26/18	1324	0.8	Flood	0.04	1.2	0.08	1.1	0.26	3.6	4.5	125	0.35	10.9	2.9	40	0.09	34.58	27.8	8.16	4.73	0.15
T6-1m	11/14/18	1129	1.5	Ebb	0.08	2.6	0.86	12.0	0.48	6.7	3.2	89	0.36	11.0	4.9	69	0.10	34.77	27.3	8.22	6.58	0.20
T6-1m	1/23/19	1113	0.2	Low	0.11	3.3	0.35	4.9	0.20	2.8	4.4	123	0.38	11.8	2.5	35	0.10	34.83	24.9	8.19	5.08	0.20
T6-1m	4/17/19	1108	0.6	Flood	0.13	4.1	0.29	4.0	0.20	2.8	2.0	55	0.39	12.0	3.1	44	0.06	34.67	25.7	8.13	7.07	0.1
Geomean	**FY '19**				0.08	**2.5**	0.29	**4.0**	0.3	***3.7***			0.4	**11.4**	3.2	**45**	**0.09**					**0.16**
T6-10m	9/26/18	1329	0.8	Flood	0.04	1.2	0.16	2.3	0.16	2.2	1.4	38	0.35	10.7	3.2	45	0.10	34.67	27.7	8.15	4.75	0.13
T6-10m	11/14/18	1133	1.5	Ebb	0.10	3.1	1.61	22.5	0.48	6.7	6.9	195	0.35	10.9	6.3	89	0.10	34.71	27.3	8.22	6.54	0.26
T6-10m	1/23/19	1118	0.2	Low	0.11	3.5	0.55	7.7	0.10	1.4	5.3	149	0.37	11.6	4.8	68	0.10	34.77	24.9	8.19	5.09	0.18
T6-10m	4/17/19	1112	0.6	Flood	0.13	4.0	0.32	4.5	0.25	3.5	2.2	61	0.36	11.2	2.5	35	0.04	34.67	25.7	8.13	7.03	0.1
Geomean	**FY '19**				0.09	**2.7**	0.46	***6.5***	0.21	***2.9***			0.36	**11.1**	3.9	**55**	**0.08**					**0.16**
T6-50m	9/26/18	1335	0.8	Flood	0.05	1.5	0.16	2.3	0.11	1.5	2.2	61	0.37	11.5	3.3	46	0.10	34.66	27.6	8.16	4.50	0.12
T6-50m	11/14/18	1139	1.5	Ebb	0.05	1.7	0.49	6.9	0.19	2.7	1.4	38	0.34	10.6	5.6	78	0.09	34.87	27.3	8.20	6.18	0.27
T6-50m	1/23/19	1123	0.2	Low	0.11	3.4	0.49	6.8	0.17	2.4	5.6	156	0.39	12.1	2.5	35	0.08	34.78	24.9	8.18	5.13	0.2
T6-50m	4/17/19	1120	0.6	Flood	0.14	4.2	0.39	5.4	0.23	3.2	2.8	77	0.39	12.0	2.5	35	0.07	34.67	25.7	8.13	7.07	0.12
Geomean	**FY '19**				0.08	**2.5**	0.35	***4.9***	0.17	**2.4**			0.37	**11.5**	3.3	**46**	**0.08**					**0.17**
T6-100m	9/26/18	1341	0.8	Flood	0.02	0.6	0.16	2.3	0.09	1.3	1.7	47	0.33	10.3	1.9	27	0.13	34.67	27.6	8.16	4.82	0.15
T6-100m	11/14/18	1144	1.5	Ebb	0.03	1.0	0.25	3.5	0.44	6.1	0.7	21	0.33	10.1	6.0	84	0.07	34.90	27.4	8.20	6.17	0.14
T6-100m	1/23/19	1128	0.2	Low	0.11	3.5	0.52	7.3	0.19	2.7	4.5	127	0.39	12.0	2.7	38	0.05	34.92	25.0	8.19	4.98	0.14
T6-100m	4/17/19	1125	0.6	Flood	0.13	4.0	0.31	4.3	0.46	6.4	2.2	62	0.39	12.1	2.9	41	0.02	34.67	25.8	8.12	6.96	0.1
Geomean	**FY '19**				0.05	**1.7**	0.28	**4.0**	0.24	***3.4***			0.36	**11.1**	3.1	**43**	**0.05**					**0.13**
T6-500m	9/26/18	1348	0.8	Flood	0.01	0.2	0.16	2.3	0.09	1.3	0.8	22	0.33	10.3	1.76	25	0.1	34.70	27.6	8.15	4.70	0.16
T6-500m	11/14/18	1151	1.5	Ebb	0.04	1.1	0.12	1.7	0.56	7.8	0.0	1	0.37	11.5	3.43	48	0.06	34.93	27.3	8.20	6.02	0.20
T6-500m	1/23/19	1137	0.2	Low	0.08	2.6	0.04	0.5	0.08	1.1	0.1	2	0.37	11.4	2.21	31	0.06	34.82	25.2	8.20	5.01	0.23
T6-500m	4/17/19	1134	0.6	Flood	0.11	3.4	0.03	0.4	0.17	2.4	0.6	17	0.37	11.6	3.07	43	0.03	34.74	26.0	8.13	6.77	0.07
Geomean	**FY '19**				0.04	**1.2**	0.07	**0.9**	0.16	**2.3**			0.36	**11.2**	2.5	**35**	**0.06**					**0.15**

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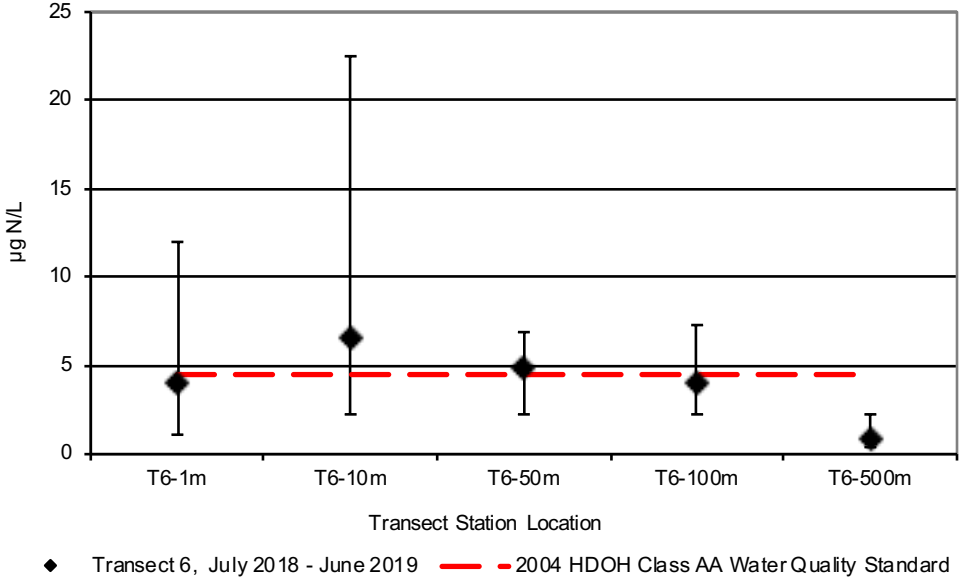
Transect 6

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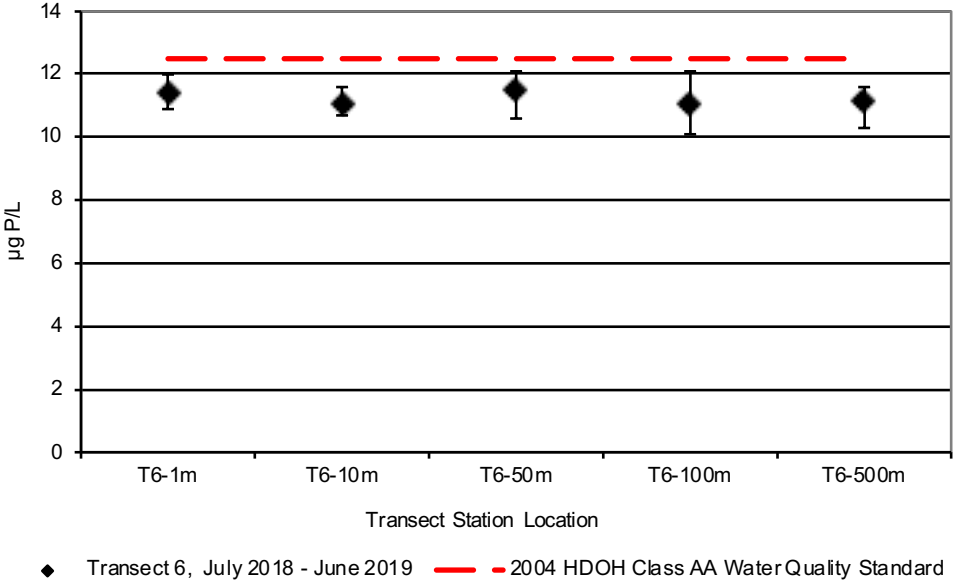
Transect 6 Station Summary
Ortho-Phosphate Geometric Mean



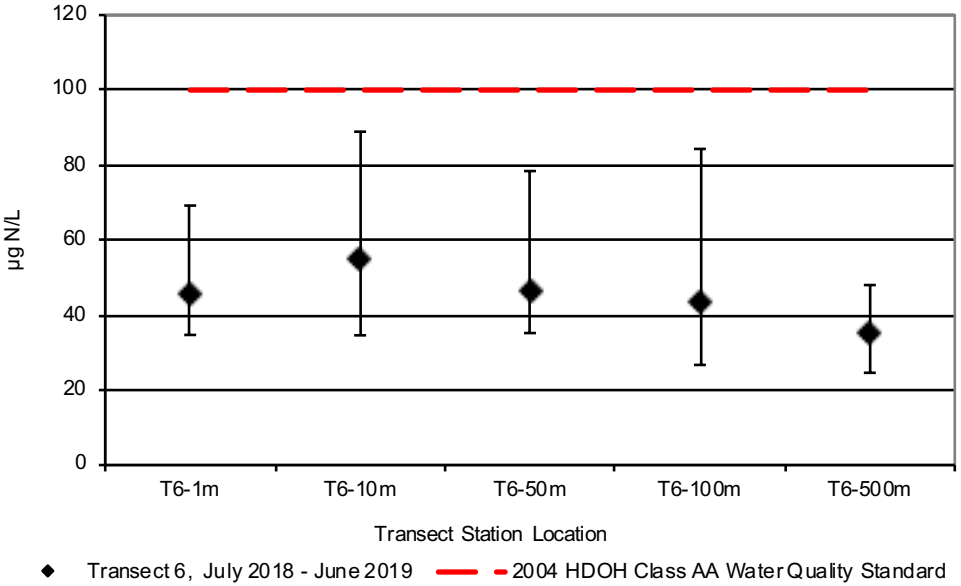
Transect 6 Station Summary
Nitrate + Nitrite Geometric Mean



Transect 6 Station Summary
Total Dissolved Phosphorous Geometric Mean



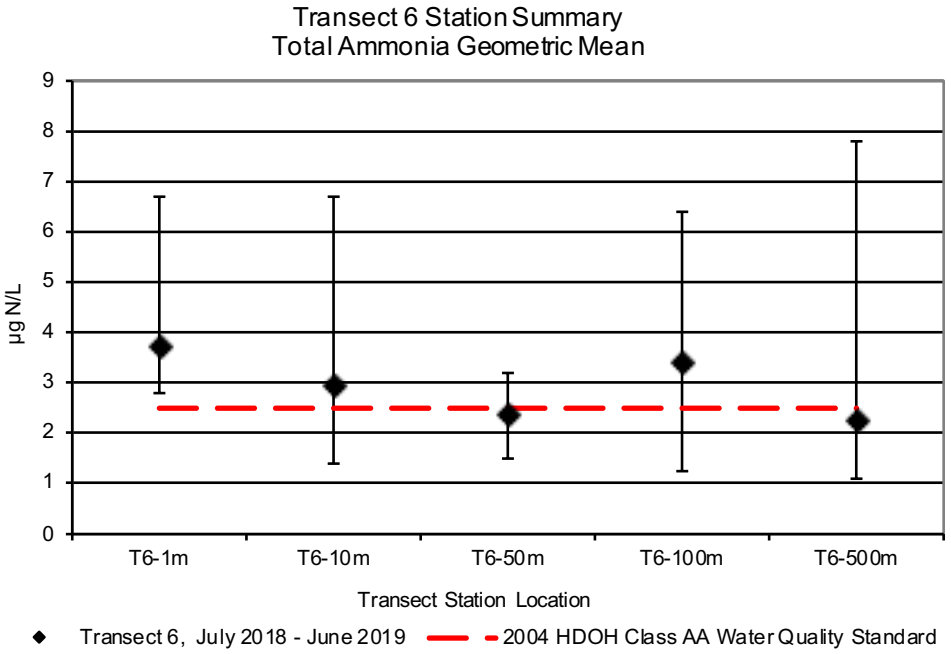
Transect 6 Station Summary
Total Dissolved Nitrogen Geometric Mean

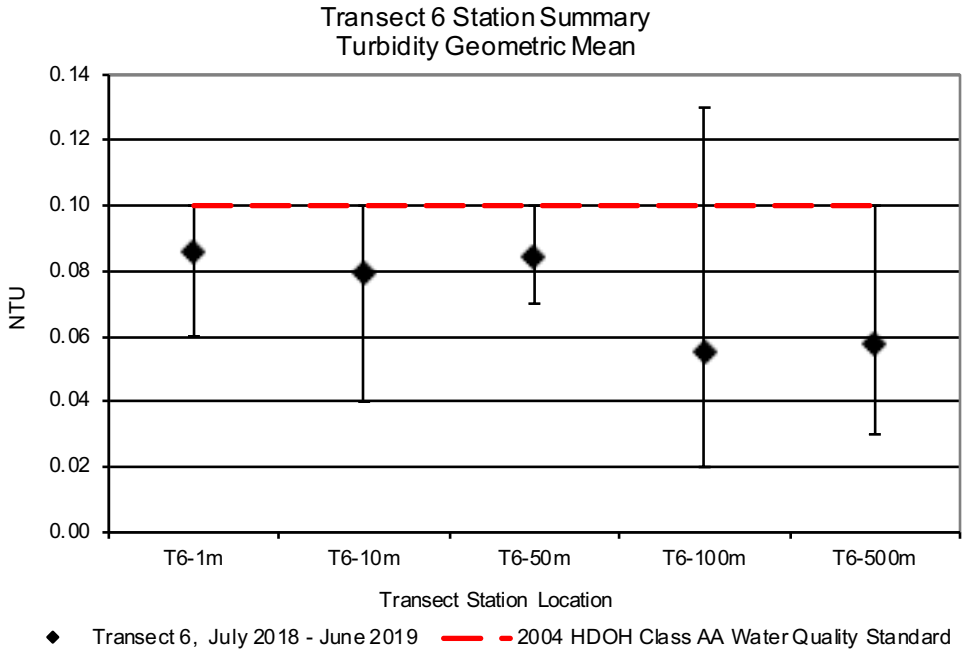


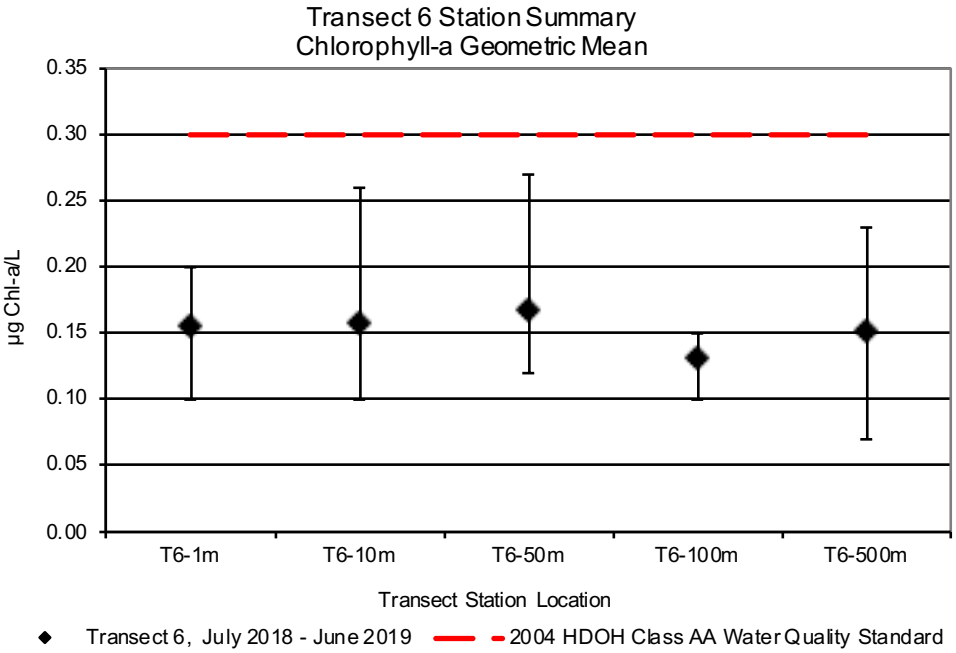
NELHA Water Quality Laboratory

Transect 6

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Transect 6

July 2018 - June 2019

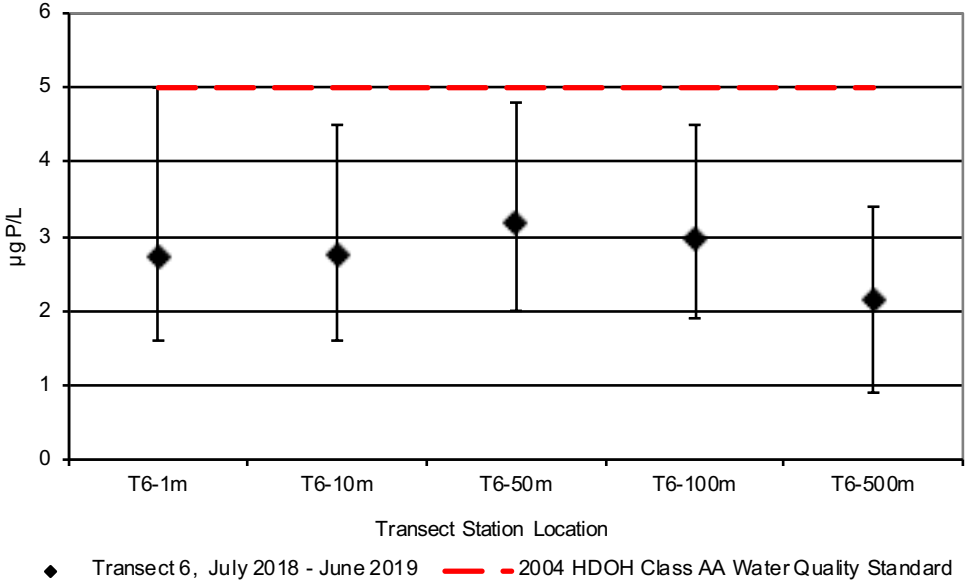
SITE ID	DATE	TIME	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT					0.16	**5**	0.32	**4.5**	0.18	**2.5**			0.40	**12.5**	7.1	**100**	**0.10**					**0.30**
T6-1m	8/15/19	1036	0.2	Flood	0.05	1.7	0.11	1.6	0.14	2.0	4.7	133	0.31	9.5	2.28	32	0.11	35.19	28.2	8.27	6.78	0.14
T6-1m	11/20/19	1149	1.8	High	0.13	4.0	0.34	4.7	0.75	10.5	0.0	37	0.37	11.6	2.82	40	0.11	35.15	27.6	8.23	6.84	0.13
T6-1m	1/23/20	1058	0.5	Flood	0.16	5.0	0.65	9.1	0.06	0.9	0.0	185	0.42	13.0	4.46	63	0.25	34.76	24.8	8.22	7.07	0.15
T6-1m	6/25/20	1018	0.3	Ebb	0.05	1.6	0.34	4.8	0.15	2.1	0.0	97	0.27	8.3	2.98	42	0.06	35.44	26.0	8.18	6.61	0.21
Geomean	**FY '20**				0.09	**2.7**	0.30	**4.3**	0.18	**2.5**			0.34	***10.4***	3.04	***42.6***	**0.12**					**0.15**
T6-10m	8/15/19	1041	0.2	Flood	0.05	1.6	0.03	0.4	0.08	1.1	4.6	130	0.31	9.6	2.14	30	0.12	35.20	28.2	8.27	6.66	0.13
T6-10m	11/20/19	1155	1.8	High	0.13	3.9	0.28	3.9	0.51	7.2	0.0	38	0.40	12.4	2.74	38	0.08	35.15	27.6	8.24	6.97	0.13
T6-10m	1/1/20	1101	0.5	Flood	0.15	4.5	0.56	7.8	0.09	1.2	0.0	178	0.40	12.5	4.01	56	0.15	34.78	24.8	8.24	7.05	0.20
T6-10m	6/25/20	1022	0.3	Ebb	0.07	2.1	0.14	2.0	0.20	2.8	0.0	79	0.30	9.4	2.76	39	0.06	35.48	26.0	8.18	6.55	0.21
Geomean	**FY '20**				0.09	**2.8**	0.16	**2.2**	0.16	**2.3**			0.35	***10.9***	2.84	***39.8***	**0.10**					**0.16**
T6-50m	8/15/19	1048	0.3	Flood	0.06	2.0	0.08	1.1	0.09	1.3	5.2	146	0.33	10.3	2.14	30	0.10	35.20	28.2	8.28	6.67	0.16
T6-50m	11/20/19	1201	1.8	High	0.11	3.3	0.12	1.7	0.33	4.6	0.0	20	0.41	12.8	4.01	56	0.08	35.18	27.6	8.23	6.67	0.15
T6-50m	1/1/20	1106	0.5	Flood	0.15	4.8	0.49	6.8	0.41	5.7	0.0	157	0.43	13.3	4.01	56	0.21	34.77	24.8	8.25	7.07	0.14
T6-50m	6/25/20	1027	0.3	Ebb	0.11	3.3	0.14	1.9	0.19	2.7	0.0	110	0.32	9.8	2.58	36	0.07	35.42	26.1	8.19	6.69	0.21
Geomean	**FY '20**				0.10	**3.2**	0.16	**2.2**	0.22	**3.1**			0.37	***11.4***	3.07	***43.0***	**0.10**					**0.16**
T6-100m	8/15/19	1053	0.3	Flood	0.06	1.9	0.08	1.1	0.09	1.3	5.3	149	0.33	10.2	2.43	34	0.09	35.21	28.3	8.28	6.70	0.17
T6-100m	11/20/19	1206	1.8	High	0.10	3.2	0.05	0.7	0.09	1.3	0.0	9	0.42	13.0	2.77	39	0.06	35.19	27.7	8.22	6.44	0.14
T6-100m	1/1/20	1113	0.5	Flood	0.15	4.5	0.14	2.0	0.09	1.3	0.0	102	0.42	12.9	4.18	59	0.13	34.87	24.9	8.25	6.93	0.16
T6-100m	6/25/20	1032	0.3	Ebb	0.09	2.8	0.01	0.2	0.09	1.3	0.0	97	0.35	10.7	3.16	44	0.08	35.41	26.1	8.18	6.63	0.24
Geomean	**FY '20**				0.10	**3.0**	0.05	**0.7**	0.09	**1.3**			0.38	***11.6***	3.07	***43.0***	**0.09**					**0.17**
T6-500m	8/15/19	1102	0.3	Flood	0.03	0.9	0.16	2.3	0.09	1.3	2.3	66	0.31	9.6	2.21	31	0.07	35.31	28.4	8.28	6.54	0.17
T6-500m	11/20/19	1215	1.8	High	0.11	3.4	0.04	0.5	0.09	1.3	0.0	13	0.42	13.1	3.01	42	0.06	35.21	27.7	8.22	6.49	0.12
T6-500m	1/1/20	1118	0.5	Flood	0.10	3.0	0.16	2.3	0.09	1.3	0.0	-20	0.38	11.9	3.53	50	0.09	34.98	25.0	8.23	6.62	0.15
T6-500m	6/25/20	1039	0.3	Ebb	0.07	2.3	0.16	2.3	0.06	0.9	0.0	13	0.33	10.3	2.54	36	0.06	35.54	26.4	8.18	6.60	0.22
Geomean	**FY '20**				0.07	**2.1**	0.11	**1.6**	0.08	**1.2**			0.36	***11.1***	2.78	***38.9***	**0.07**					**0.16**

NELHA Water Quality Laboratory

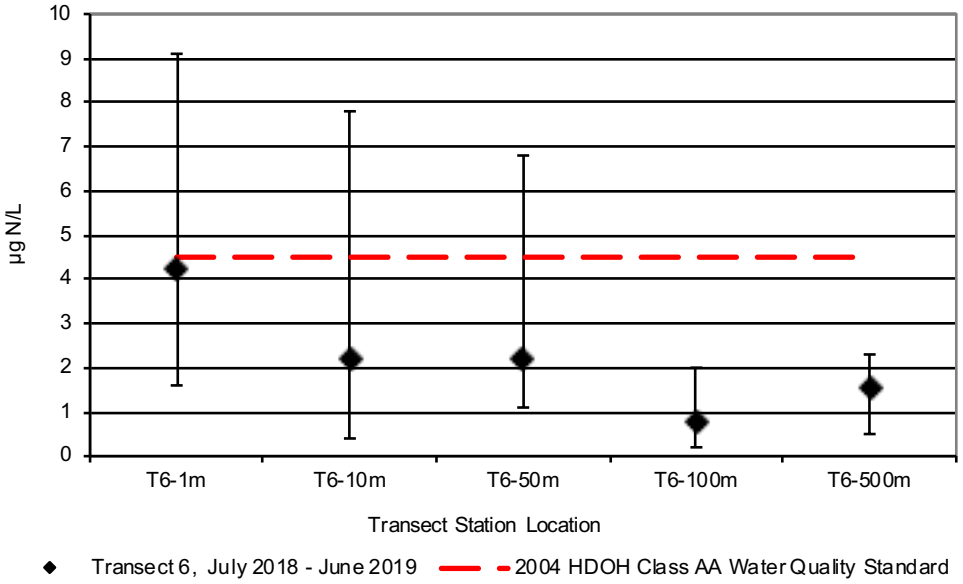
Transect 6

July 2018 - June 2019

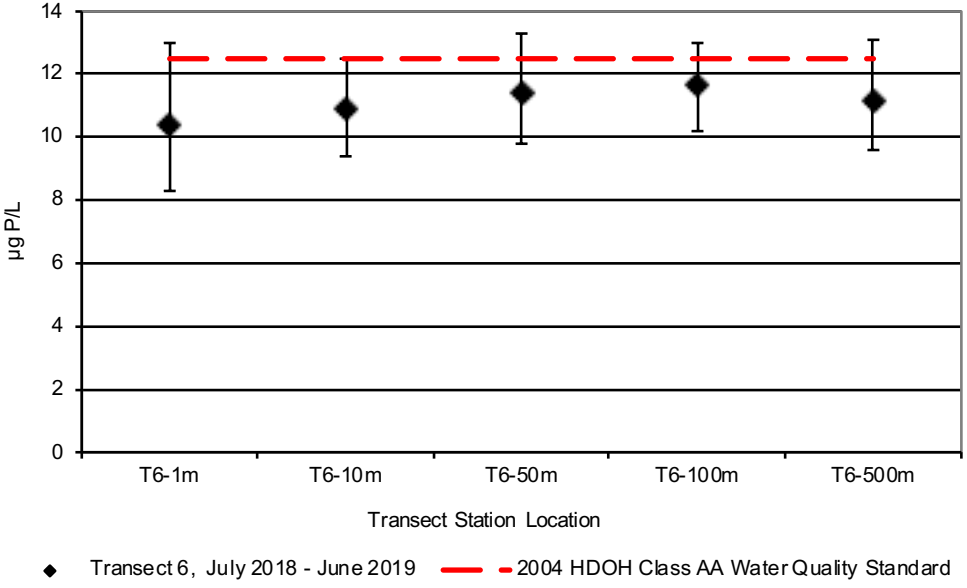
Transect 6 Station Summary
Ortho-Phosphate Geometric Mean



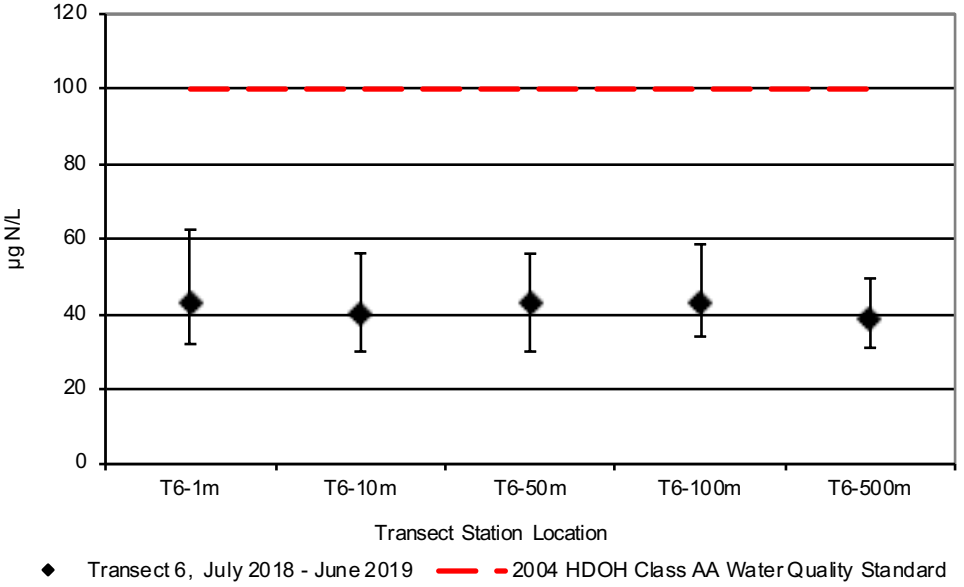
Transect 6 Station Summary
Nitrate + Nitrite Geometric Mean



Transect 6 Station Summary
Total Dissolved Phosphorous Geometric Mean



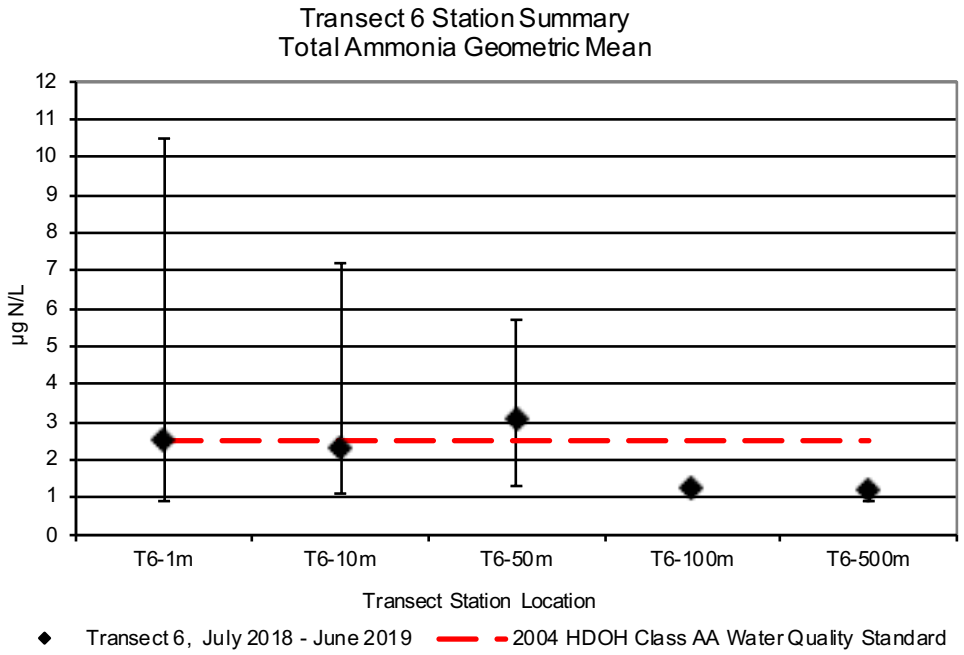
Transect 6 Station Summary
Total Dissolved Nitrogen Geometric Mean

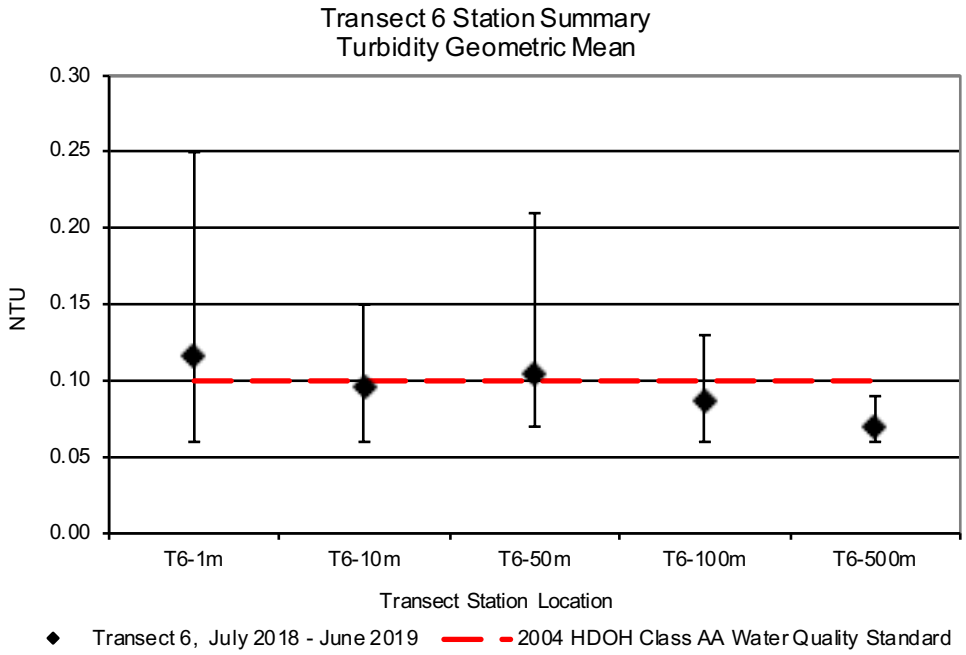


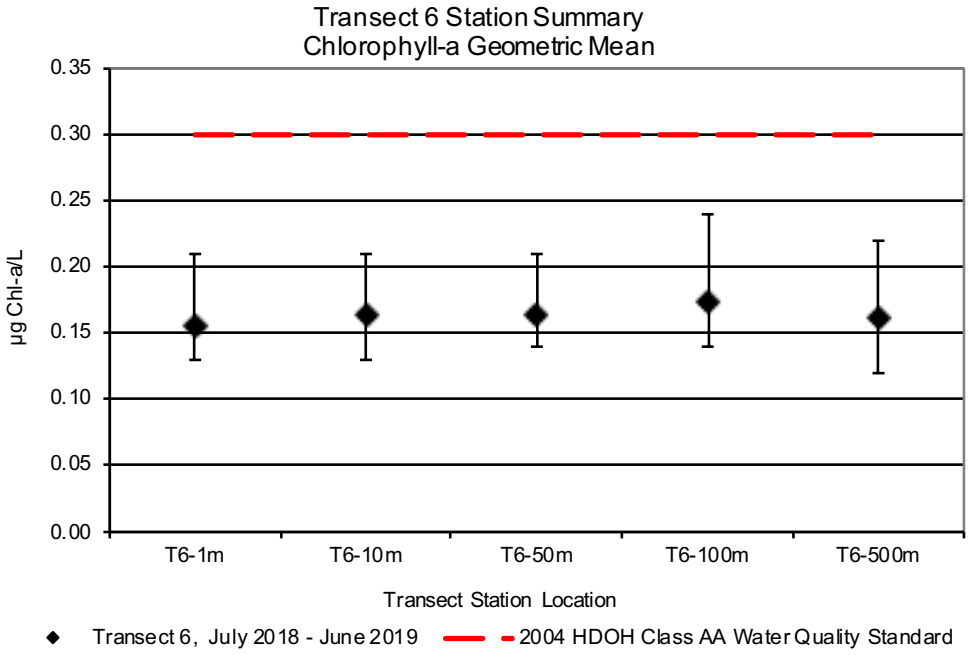
NELHA Water Quality Laboratory

Transect 6

July 2018 - June 2019







NELHA Water Quality Laboratory

Transect 6, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O6-1S-8m	7/26/93	926	0.18	5.6	0.12	1.7	0.45	6.3	3.3	92	0.28	8.7	7.3	102	0.29	8.98	1.26	0.11	34.436	26.8	8.26	6.85	0.06		
O6-1S-8m	12/6/93	950	0.09	2.8	0.32	4.5	0.09	1.3	4.0	111	0.27	8.4	6.4	90	0.27	8.36	1.16	0.09	34.791	25.8	8.25	6.83	0.11		
O6-1S-8m	3/7/94	915	0.24	7.4	1.03	14.4	0.18	2.5	12.6	353	0.30	9.3	6.2	86	0.30	9.29	1.18	0.10	33.936	24.8	8.22	6.94	0.02	3	<1
O6-1S-8m	6/15/94	919	0.22	6.8	2.24	31.4	0.54	7.6	4.7	131	0.22	6.9	8.2	115	0.29	8.98	1.12	0.10	34.480	25.7	8.22	6.86	0.08	<1	<1
Geomean	**FY '94**			***5.3***		***7.6***		***3.5***				**8.3**		**98**				**0.10**					**0.06**		
O6-1S-8m	9/9/94	1012	0.09	2.8	0.32	4.5	0.21	2.9	5.5	155	0.30	9.3	6.9	96	0.32	9.91	1.13	0.08	34.487	27.6	8.23	6.58	0.11	<1	<1
O6-1S-8m	11/14/94	818	0.14	4.3	0.69	9.7	0.50	7.0	8.6	240	0.34	10.5	5.5	77	0.38	11.77	1.00	0.11	34.485	26.0	8.26	6.58	0.06	<1	<1
O6-1S-8m	3/22/95	854	0.19	5.9	0.30	4.2	0.35	4.9	4.5	126	0.33	10.2	5.8	82	0.34	10.53	1.06	0.08	34.170	25.1	8.25	7.03	0.17	<1	<1
O6-1S-8m	6/20/95	837	0.13	4.0	0.36	5.0	0.09	1.3	4.3	122	0.27	8.4	6.3	88	0.28	8.67	0.96	0.06	34.379	26.2	8.21	6.66	0.34	<1	<1
Geomean	**FY '95**			**4.1**		***5.5***		***3.4***				**9.6**		**85**				**0.08**					**0.14**		
O6-1S-8m	9/26/95	922	0.14	4.3	0.45	6.3	0.47	6.6	7.7	217	0.31	9.6	5.4	75	0.31	9.60	0.89	0.25	34.386	27.0	8.23	6.66	0.14	1	4
O6-1S-8m	11/14/95	1114	0.12	3.7	0.42	5.9	0.55	7.7	6.1	171	0.31	9.6	5.4	76	0.31	9.60	1.11	0.10	34.218	26.9	8.28	6.79	0.08	<1	<1
O6-1S-8m	3/12/96	1137	0.14	4.3	0.16	2.2	0.48	6.7	3.7	105	0.34	10.5	4.8	68	0.34	10.53	1.09	0.06	34.144	25.5	8.23	7.06	0.05	<1	<1
O6-1S-8m	5/14/96	1130	0.13	4.0	0.41	5.7	0.22	3.1	7.7	215	0.30	9.3	4.6	64	0.30	9.29	1.11	0.06	34.155	27.4	8.21	7.07	0.09	<1	<1
Geomean	**FY '96**			**4.1**		***4.7***		***5.7***				**9.7**		**71**				**0.10**					**0.08**		
O6-1S-8m	7/31/96	1200	0.15	4.6	2.05	28.7	0.53	7.4	27.0	757	0.29	9.0	4.3	60	0.29	8.98	0.80	0.14	33.614	27.9	8.27	6.84	0.08	<1	<1
O6-1S-8m	10/2/96	1131	0.11	3.4	1.11	15.5	0.50	7.0	15.5	435	0.28	8.7	5.5	76	0.28	8.67	1.01	0.13	34.171	28.4	8.24	6.75	0.16	<1	<1
O6-1S-8m	1/7/97	1138	0.09	2.8	0.40	5.6	0.25	3.5	6.4	181	0.27	8.4	5.2	72	0.27	8.36	1.33	0.11	34.557	25.7	8.29	6.97	0.01	<1	<1
O6-1S-8m	4/28/97	1155	0.12	3.7	0.27	3.8	0.43	6.0	5.7	161	0.79	24.5	5.0	70	0.79	24.47	1.10	0.11	34.474	26.4	8.29	6.76	0.01	<1	<1
Geomean	**FY '97**			**3.6**		***9.9***		***5.8***				**11.2**		**69**				***0.12***					**0.03**		
O6-1S-8m	8/19/97	1138	0.08	2.5	0.22	3.1	0.18	2.5	6.2	173	0.36	11.2	4.9	68	0.38	11.77	1.09	0.10	34.536	27.2	8.40	6.44	0.19	<1	<1
O6-1S-8m	10/7/97	1044	0.11	3.4	0.09	1.3	0.33	4.6	3.7	104	0.30	9.3	4.7	66	0.30	9.29	1.09	0.08	34.722	27.6	8.45	6.52	0.08	<1	<1
O6-1S-8m	3/4/98	1213	0.14	4.3	0.84	11.8	0.25	3.5	11.3	318	0.31	9.6	5.4	76	0.31	9.60	0.97	0.08	34.769	25.0	8.24	6.96	0.01	<1	<1
O6-1S-8m	5/5/98	1205	0.14	4.3	1.20	16.8	0.36	5.0	17.7	497	0.41	12.7	8.7	122	0.42	13.01	1.11	0.10	34.537	24.4	8.28	7.62	0.08	<1	<1
Geomean	**FY '98**			**3.5**		***5.3***		***3.8***				**10.6**		**80**				**0.09**					**0.06**		
O6-1S-8m	7/7/98	1225	0.12	3.7	0.53	7.4	0.08	1.1	10.2	286	0.38	11.8	6.8	95	0.41	12.70	1.15	0.11	34.807	26.3	8.24	7.08	0.17	<1	<1
O6-1S-8m	10/6/98	1131	0.12	3.7	0.60	8.4	0.09	1.3	9.7	273	0.39	12.1	6.9	97	0.39	12.08	1.10	0.08	34.944	27.2	8.22	7.24	0.07	<1	<1
O6-1S-8m	1/19/99	1207	0.15	4.6	1.44	20.2	0.08	1.1	22.2	623	0.41	12.7	5.4	76	0.46	14.25	1.09	0.09	34.645	25.1	8.21	6.93	0.17	<1	<1
O6-1S-8m	4/12/99	1213	0.13	4.0	0.23	3.2	0.11	1.5	8.1	228	0.38	11.8	4.7	66	0.39	12.08	1.07	0.08	34.637	24.3	8.23	7.31	0.26	<1	<1
Geomean	**FY '99**			**4.0**		***8.0***		**1.2**				**12.1**		**82**				**0.09**					**0.15**		

NELHA Water Quality Laboratory

Transect 6, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O6-1S-8m	7/6/99	1244	0.11	3.4	0.23	3.2	0.07	1.0	5.5	154	0.30	9.3	5.9	82	0.34	10.53	1.02	0.12	34.831	25.7	8.22	7.89	0.12	<1	<1
O6-1S-8m	10/4/99	1301	0.14	4.3	0.19	2.7	0.09	1.3	3.1	87	0.35	10.8	4.9	69	0.35	10.84	1.02	0.11	34.941	26.3	8.28	7.10	0.12	<1	<1
O6-1S-8m	1/12/00	1208	0.17	5.3	1.62	22.7	0.41	5.7	27.2	764	0.36	11.2	6.9	97	0.38	11.77	0.88	0.05	34.575	24.7	8.25	6.80	0.09	<1	<1
O6-1S-8m	4/11/00	1104	0.14	4.3	0.83	11.6	0.08	1.1	12.4	348	0.28	8.7	6.6	92	0.28	8.67	1.10	0.07	34.592	24.4	8.27	7.08	0.05	<1	<1
Geomean	**FY '00**			**4.3**		***6.9***		**1.7**				**9.9**		**84**				**0.08**					**0.09**		
O6-1S-8m	7/25/00	1221	0.11	3.4	0.40	5.6	0.15	2.1	8.3	234	0.34	10.5	5.9	82	0.34	10.53	0.97	0.19	34.672	26.7	8.31	7.16	0.25	<1	1
O6-1S-8m	10/31/00	1209	0.16	5.0	0.80	11.2	0.26	3.6	16.9	475	0.39	12.1	5.3	75	0.39	12.08	1.10	0.16	34.650	26.8	8.24	6.69	0.08	<1	<1
O6-1S-8m	3/6/01	1156	0.17	5.3	0.33	4.6	0.10	1.4	6.2	173	0.37	11.5	5.4	75	0.37	11.46	1.11	0.14	34.623	24.9	8.22	6.70	0.07	<1	<1
O6-1S-8m	5/7/01	1254	0.16	5.0	1.53	21.4	0.36	5.0	17.5	490	0.38	11.8	6.1	85	0.40	12.39	1.00	0.13	34.388	24.7	8.22	7.32	0.14	<1	<1
Geomean	**FY '01**			**4.6**		***8.9***		***2.7***				**11.4**		**79**				***0.15***					**0.12**		
O6-1S-8m	8/14/01	1100	0.13	4.0	0.07	1.0	0.31	4.3	4.0	111	0.38	11.8	5.1	71	0.38	11.77	1.06	0.13	34.806	26.8	8.24	7.01	0.17	<1	<1
O6-1S-8m	10/30/01	1109	0.15	4.6	0.82	11.5	0.03	0.4	7.3	206	0.42	13.0	5.6	78	0.44	13.63	1.02	0.08	34.851	26.8	8.22	6.88	0.14	<1	<1
O6-1S-8m	3/6/02	1112	0.12	3.7	0.45	6.3	0.02	0.3	13.0	364	0.42	13.0	6.6	92	0.50	15.49	0.97	0.08	34.383	24.1	8.23	6.93	0.16	<1	<1
O6-1S-8m	4/15/02	1133	0.19	5.9	2.33	32.6	0.03	0.4	14.8	416	0.40	12.4	7.0	99	0.40	12.39	0.98	0.07	34.105	25.5	8.23	6.80	0.13	<1	<1
Geomean	**FY '02**			**4.5**		***6.9***		**0.7**				***12.5***		**84**				**0.09**					**0.15**		
O6-1S-8m	7/10/02	1122	0.12	3.7	2.32	32.5	0.17	2.4	14.4	404	0.38	11.8	7.8	109	0.39	12.08	0.87	0.08	34.311	26.2	8.22	7.19	0.07	<1	<1
O6-1S-8m	10/8/02	1115	0.15	4.6	2.25	31.5	0.04	0.6	12.1	341	0.38	11.8	6.8	96	0.39	12.08	0.96	0.11	34.644	27.0	8.24	6.87	0.07	<1	1
O6-1S-8m	3/12/03	1018	0.12	3.7	0.45	6.3	0.03	0.4	13.0	364	0.47	14.6	5.9	82	0.50	15.49	1.08	0.07	34.652	25.0	8.26	7.05	0.10	<1	2
O6-1S-8m	4/23/03	1120	0.19	5.9	2.33	32.6	0.03	0.4	14.8	416	0.40	12.4	6.8	95	0.40	12.39	0.98	0.09	34.564	24.9	8.29	7.59	0.12	<1	<1
Geomean	**FY '03**			**4.4**		***21.4***		**0.7**				***12.6***		**95**				**0.09**					**0.09**		
O6-1S-8m	8/21/03	1110	0.10	3.1	0.11	1.5	0.10	1.4	5.1	143	0.36	11.2	6.6	93	0.38	11.77	n/a	0.09	34.758	28.5	8.27	6.70	0.03	<1	<1
O6-1S-8m	11/3/03	952	0.13	4.0	0.09	1.3	0.17	2.4	4.5	128	0.38	11.8	7.0	98	0.45	13.94	n/a	0.16	34.661	27.3	8.24	n/a	0.18	<1	<1
O6-1S-8m	3/18/04	1053	0.20	6.2	0.10	1.4	0.33	4.6	14.8	415	0.49	15.2	5.7	79	0.56	17.35	n/a	n/a	34.017	25.4	8.24	6.90	0.21	<1	<1
O6-1S-8m	5/24/04	1104	0.17	5.3	0.50	7.0	0.20	2.8	10.4	291	0.47	14.6	6.3	88	0.46	14.25	n/a	n/a	33.26	26.8	8.23	7.00	0.01	<1	<1
Geomean	**FY '04**			**4.5**		**2.1**		***2.6***				***13.0***		**89**				***0.12***					**0.06**		
O6-1S-8m	9/22/04	1138	0.09	2.8	0.02	0.3	0.31	4.3	2.4	67	0.29	9.0	4.0	56	0.31	9.60	n/a	0.08	24.90	n/a	8.28	6.95	0.13	<1	<1
O6-1S-8m	11/29/04	1046	0.09	2.8	0.41	5.7	0.14	2.0	4.5	127	0.32	9.9	4.3	60	0.31	9.60	n/a	0.07	33.69	27.1	8.30	9.79	0.05	<1	<1
O6-1S-8m	1/24/05	1124	0.07	2.2	0.19	2.7	0.14	2.0	4.8	134	0.30	9.3	4.7	66	0.30	9.29	n/a	0.07	34.770	25.5	8.33	6.87	0.07	<1	<1
O6-1S-8m	4/13/05	1130	0.13	4.0	0.42	5.9	0.16	2.2	6.4	178	0.39	12.1	4.5	63	0.40	12.39	n/a	0.10	34.350	25.4	8.30	6.82	0.08	1	1
Geomean	**FY '05**			**2.9**		**2.2**		**2.5**				**10.0**		**61**				**0.08**					**0.08**		

NELHA Water Quality Laboratory

Transect 6, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
O6-1S-8m	7/21/05	1107	0.06	1.9	0.33	4.6	0.44	6.2	4.8	135	0.31	9.6	4.0	56	0.34	10.53	n/a	0.12	34.678	27.4	8.27	6.67	0.02	<1	<1
O6-1S-8m	10/13/05	1035	0.05	1.5	0.03	0.4	0.17	2.4	1.7	47	0.37	11.5	4.6	64	0.35	10.84	1.00	0.10	34.923	27.4	8.30	6.76	0.06	<1	<1
O6-1S-8m	3/15/06	1005	0.36	11.2	1.77	24.8	0.33	4.6	13.8	388	0.48	14.9	5.2	73	0.48	14.87	n/a	0.08	34.513	24.3	8.25	7.06	0.11	<1	1
O6-1S-8m	5/17/06	1045	0.17	5.3	1.78	24.9	0.05	0.7	13.1	368	0.52	16.1	6.3	88	0.52	16.11	0.98	0.14	34.322	24.8	8.28	7.14	0.07	<1	<1
Geomean	**FY '06**			**3.6**		***5.9***		***2.6***				***12.7***		**69**				***0.11***					**0.06**		
O6-1S-8m	8/16/06	1051	0.12	3.7	0.34	4.8	0.36	5.0	2.9	82	0.36	11.2	5.2	72	0.41	12.70	0.94	0.16	34.589	26.8	8.24	9.17	0.09	<1	<1
O6-1S-8m	11/20/06	1047	0.17	5.3	1.49	20.9	0.52	7.3	11.0	309	0.39	12.1	5.5	77	0.41	12.70	1.08	0.34	34.478	26.6	8.27	6.85	0.15	1	<1
O6-1S-8m	2/12/07	1147	0.19	5.9	1.65	23.1	0.48	6.7	11.6	326	0.45	13.9	6.2	86	0.43	13.32	1.38	0.20	34.084	24.6	8.25	7.16	0.12	<1	<1
O6-1S-8m	4/16/07	1130	0.28	8.7	4.19	58.7	0.60	8.4	33.5	941	0.52	16.1	8.8	123	0.53	16.42	0.89	0.28	33.611	25.5	8.31	7.40	0.12	<1	<1
Geomean	**FY '07**			***5.6***		***19.2***		***6.7***				***13.2***		**88**				***0.23***					**0.12**		
T6-1m	9/27/07	1027	0.17	5.3	0.73	10.2	0.01	0.1	7.7	217	0.32	9.9	5.4	76				0.16	34.725	26.6	8.08	6.56	0.08		
T6-1m	12/14/07	1025	0.08	2.6	0.44	6.1	0.00		4.8	134	0.31	9.7	9.1	127				0.07	34.625	25.6	8.19	6.72	0.34		
T6-1m	3/11/08	1033	0.12	3.8	1.10	15.4	0.06	0.8	8.4	237	0.16	5.0	7.1	100				0.14	34.782	24.7	8.11	6.53	0.35		
T6-1m	6/9/08	1055	0.10	3.2	0.44	6.2	0.16	2.2	19.8	557	0.26	8.2	5.4	76				0.1	34.578	25.1	8.11	5.77	0.21		
Geomean	**FY '08**			**3.6**		***8.8***		**0.6**				**7.9**		**93**				***0.11***					**0.21**		
T6-1m	9/23/08	1151	0.02	0.5	0.37	5.2	0.51	7.1	3.0	84	0.30	9.3	5.1	72				0.10	34.787	27.0	8.09	6.50	0.13		
T6-1m	12/8/08	1055	0.18	5.5	0.42	5.9	1.20	16.8	3.9	109	0.37	11.5	5.3	74				0.08	34.900	26.0	8.32	5.76	0.04		
T6-1m	2/10/09	949	0.17	5.3	2.61	36.6	0.18	2.5	15.4	432	0.22	6.9	7.0	98				0.17	34.814	24.6	8.06	6.04	0.05		
T6-1m	6/30/09	1041	0.25	7.8	0.57	8	0.28	3.9	5.8	162	0.43	13.3	4.7	67				0.09	34.828	26.7	8.21	6.15	0.08		
Geomean	**FY '09**			**3.3**		***9.7***		***5.8***				**10.0**		**77**				***0.11***					**0.07**		
T6-1m	9/10/09	1045	0.10	3.1	0.39	5.5	0.71	9.9	11.6	327	0.52	16	5.7	80				0.08	35.17	27.5	8.21	5.74	0.25		
T6-1m	11/24/09	1009	0.02	0.766	0.35	4.9	0.07	1	30.8	864	0.29	9.1	5.0	70				0.06	35.20	25.1	8.24	6.48	0.10		
T6-1m	2/24/10	1043	0.15	4.5	0.31	4.4	0.39	5.5	3.4	95	0.36	11	7.4	104				0.08	34.78	24.6	8.22	5.57	0.20		
T6-1m	5/26/10	959	0.02	0.6	0.40	5.6	0.35	4.9	4.4	124	0.21	6.6	7.2	102				0.04	34.73	25.1	8.28	6.85	0.09		
Geomean	**FY '10**			**1.6**		***5.1***		***4.0***				**10.1**		**88**				**0.06**					**0.15**		
T6-1m	8/11/10	1018	0.07	2.3	1.09	15.2	0.21	2.9	9.1	255	0.36	11.3	4.1	57				0.05	34.75	25.93	8.22	6.77	0.11		
T6-1m	11/9/10	1014	0.05	1.4	0.37	5.2	0.21	3.0	7.2	203	0.42	13	5.9	83				0.12	34.90	26.37	8.28	6.21	0.08		
T6-1m	1/11/11	1242	0.18	5.6	2.11	29.5	0.11	1.5	14.6	409	0.44	13.5	3.9	55				0.06	34.82	24.80	8.25	6.48	0.15		
T6-1m	4/27/11	1016	0.15	4.7	0.46	6.5	0.15	2.1	8.0	225	0.46	14.2	3.4	48				0.06	34.82	24.82	8.23	6.39	0.19		
Geomean	**FY '11**			**3.0**		***11.1***		**2.3**				***13.0***		**59**				**0.07**					**0.13**		

NELHA Water Quality Laboratory

Transect 6, Station 1

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T6-1m	7/27/11	1101	0.18	5.7	0.26	3.6	0.13	1.8	2.0	57	0.50	15.4	3.3	47				0.05	34.77	25.97	8.23	6.65	0.11		
T6-1m	10/19/11	1043	0.06	1.8	0.34	4.8	0.15	2.1	3.3	92	0.37	11.6	4.0	56				0.05	35.10	26.55	8.27	7.16	0.11		
T6-1m	1/26/12	1007	0.08	2.6	0.53	7.4	0.01	0.1	5.6	157	0.36	11.1	3.6	50				0.07	34.91	24.43	8.20	6.67	0.11		
T6-1m	4/25/12	1028	0.16	5.1	0.69	9.6	0.36	5.1	6.3	176	0.48	14.9	5.3	74				0.06	34.76	24.88	8.20	6.88	0.14		
Geomean	**FY '12**			**3.4**		***5.9***		**1.2**				***13.1***		**56**				**0.06**					**0.12**		
T6-1m	7/25/12	1027	0.05	1.5	0.46	6.5	0.41	5.8	3.6	100	0.42	12.9	5.1	71				0.09	34.99	26.45	8.27	7.65	0.10		
T6-1m	11/28/12	1025	0.11	3.4	1.10	15.4	0.27	3.8	6.1	171	0.54	16.6	6.8	96				0.05	35.08	25.13	8.20	6.70	0.15		
T6-1m	1/24/13	1012	0.12	3.7	1.05	14.7	0.11	1.6	5.7	160	0.49	15.1	5.8	81				0.03	34.95	24.72	8.23	6.51	0.10		
T6-1m	4/24/13	936	0.22	6.95	2.11	29.5	0.14	1.95	6.3	176	0.57	17.8	9.2	129				0.07	34.87	24.84	8.21	6.73	0.12		
Geomean	**FY '13**			**3.4**		***14.4***		***2.9***				***15.5***		**92**				**0.06**					**0.12**		
T6-1m	8/6/13	1100	0.14	4.3	1.94	27.2	0.39	5.5	10.3	288	0.67	20.7	5.9	82				0.07	34.97	26.2	8.22	7.49	0.20		
T6-1m	10/30/13	1005	0.15	4.6	0.41	5.7	0.14	1.9	2.8	80	0.49	15.2	6.4	89				0.02	34.90	27.0	8.22	5.97	0.14		
T6-1m	2/5/14	1032	0.16	5.1	0.60	8.4	0.47	6.6	3.3	93	0.44	13.6	4.3	61				0.02	34.97	25.2	8.20	6.58	0.04		
T6-1m	5/7/14	1026	0.11	3.5	0.41	5.7	0.31	4.4	2.5	69	0.45	14.0	6.3	88				0.02	34.76	25.7	8.20	5.65	0.12		
Geomean	**FY '14**			**4.3**		***9.3***		***4.2***				***15.6***		**79**				**0.03**					**0.11**		
T6-1m	8/6/14	1018	0.18	5.7	0.62	8.7	0.54	7.6	4.1	114	0.50	15.6	5.1	71				0.04	34.84	26.6	8.24	6.10	0.15		
T6-1m	12/4/14	1057	0.17	5.2	1.64	23.0	0.61	8.5	8.7	244	0.52	16.2	7.9	111				0.05	34.71	25.9	8.26	6.51	0.02		
T6-1m	3/5/15	1102	0.13	4.0	2.55	35.7	0.25	3.5	9.5	266	0.39	12.1	8.7	122				0.10	34.54	25.1	8.27	6.90	0.16		
T6-1m	6/18/15	1028	0.16	5.1	2.61	36.6	0.47	6.6	10.1	285	0.25	7.7	12.3	173				0.06	34.18	26.5	8.21	6.89	0.17		
Geomean	**FY '15**			**5.0**		***22.6***		***6.2***				**12.4**		***113***				**0.06**					**0.10**		
T6-1m	8/27/15	1030	0.16	5.0	0.54	7.5	0.27	3.8	5.1	142	0.19	6.0	5.3	74				0.02	34.60	28.3	8.27	6.16	0.20		
T6-1m	11/18/15	1101	0.18	5.5	0.57	8.0	0.48	6.7	5.3	148	0.53	16.5	5.3	74				0.08	34.63	27.4	8.27	6.73	0.15		
T6-1m	3/2/16	944	0.15	4.8	0.31	4.3	0.48	6.7	0.2	7	0.48	14.9	4.0	56				0.11	34.75	25.3	8.26	5.84	0.09		
T6-1m	5/4/16	1040	0.09	2.9	0.99	13.8	0.15	2.1	5.1	142	0.35	10.8	6.0	84				0.06	34.51	25.8	8.18	6.12	0.17		
Geomean	**FY '16**			**4.4**		***7.7***		***4.4***				**11.2**		**71**				**0.06**					**0.15**		
T6-1m	7/7/16	1043	0.18	5.7	0.89	12.5	0.43	6.0	8.9	250	0.52	16.1	5.2	73				0.09	34.38	26.4	8.32	6.65	0.13		
T6-1m	12/21/16	1102	0.08	2.4	0.42	5.9	0.27	3.8	2.7	77	0.36	11.1	3.8	53				0.03	34.61	25.6	8.28	5.87	0.12		
T6-1m	3/1/17	1150	0.05	1.5	0.89	12.4	0.17	2.4	6.0	170	0.32	9.9	4.5	63				0.10	34.58	24.5	8.25	5.85	0.16		
T6-1m	5/10/17	1140	0.05	1.4	0.23	3.2	0.25	3.5	2.2	62	0.26	8.0	3.8	53				0.10	34.82	25.9	8.22	4.22	0.05		
Geomean	**FY '17**			**2.3**		***7.4***		***3.7***				**10.9**		**60**				**0.07**					**0.11**		

NELHA Water Quality Laboratory

Transect 6, Station 1

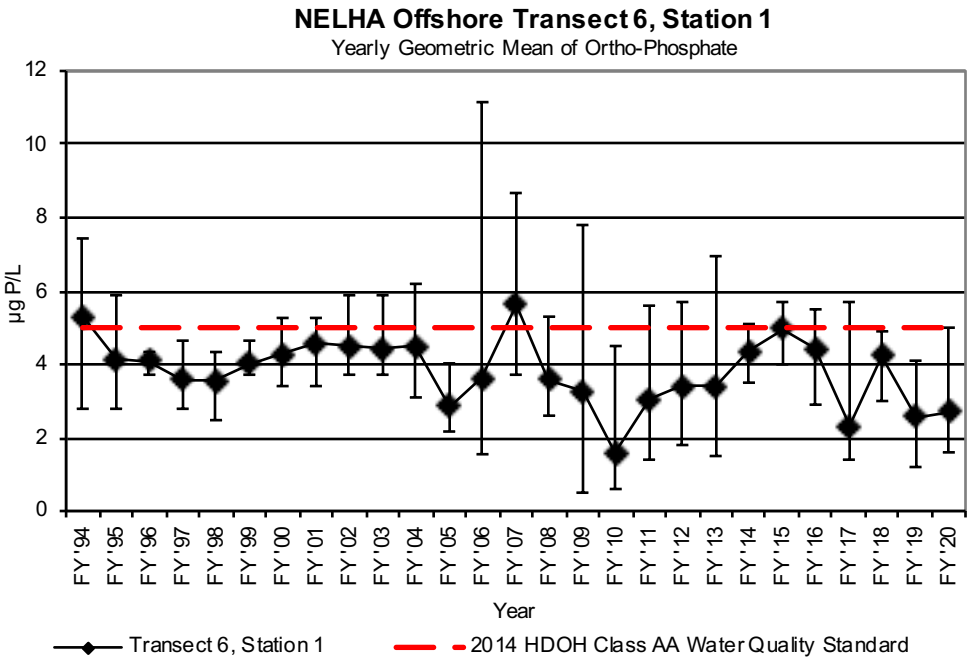
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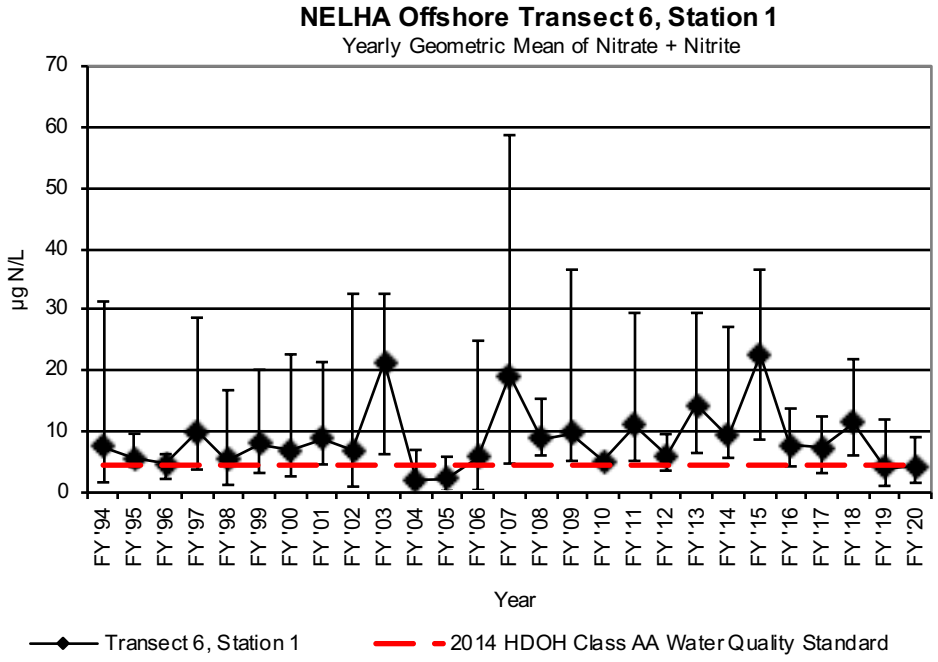
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TP		TOC	Turbidity	Salinity	Temp.	pH	DO	Chl a	Fecal Coli.	Entero.
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg P/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	(Bact/100 ml)	(Bact/100 ml)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**				**0.10**					**0.30**		
T6-1m	9/28/17	1033	0.16	4.9	0.56	7.8	0.39	5.5	4.3	122	0.41	12.6	3.3	46				0.10	34.67	27.6	8.18	4.84	0.22		
T6-1m	11/30/17	1019	0.16	4.9	1.56	21.9	0.61	8.5	7.6	212	0.41	12.6	5.3	74				0.08	35.00	26.2	8.24	5.59	0.16		
T6-1m	2/6/18	1110	0.10	3.0	0.44	6.1	0.52	7.3	3.6	102	0.38	11.8	2.8	39				0.11	34.75	24.8	8.16	5.79	0.10		
T6-1m	5/17/18	1034	0.14	4.4	1.23	17.2	0.26	3.6	10.2	288	0.42	13.0	3.1	44				0.09	34.50	26.0	8.16	6.53	0.14		
Geomean	**FY '18**			**4.2**		***11.6***		***5.9***				**12.5**		**49**				**0.09**					**0.15**		
T6-1m	9/26/18	1324	0.04	1.2	0.08	1.1	0.26	3.6	4.5	125	0.35	10.9	2.9	40				0.09	34.58	27.8	8.16	4.73	0.15		
T6-1m	11/14/18	1129	0.08	2.6	0.86	12.0	0.48	6.7	3.2	89	0.36	11.0	4.9	69				0.10	34.77	27.3	8.22	6.58	0.20		
T6-1m	1/23/19	1113	0.11	3.3	0.35	4.9	0.20	2.8	4.4	123	0.38	11.8	2.5	35				0.10	34.83	24.9	8.19	5.08	0.20		
T6-1m	4/17/19	1108	0.13	4.1	0.29	4.0	0.20	2.8	2.0	55	0.39	12.0	3.1	44				0.06	34.67	25.7	8.13	7.07	0.10		
Geomean	**FY '19**			**2.5**		**4.0**		***3.7***				**11.4**		**45**				**0.09**					**0.16**		
T6-1m	8/15/19	1036	0.05	1.7	0.11	1.6	0.14	2.0	4.7	133	0.31	9.5	2.3	32				0.11	35.19	28.2	8.27	6.78	0.14		
T6-1m	11/20/19	1149	0.13	4.0	0.34	4.7	0.75	10.5	1.3	37	0.37	11.6	2.8	40				0.11	35.15	27.6	8.23	6.84	0.13		
T6-1m	1/23/20	1058	0.16	5.0	0.65	9.1	0.06	0.9	6.6	185	0.42	13.0	4.5	63				0.25	34.76	24.8	8.22	7.07	0.15		
T6-1m	6/25/20	1018	0.05	1.6	0.34	4.8	0.15	2.1	3.4	97	0.27	8.3	3.0	42				0.06	35.44	26.0	8.18	6.61	0.21		
Geomean	**FY '20**			**2.7**		**4.3**		***2.5***				**10.4**		**43**				***0.12***					**0.15**		

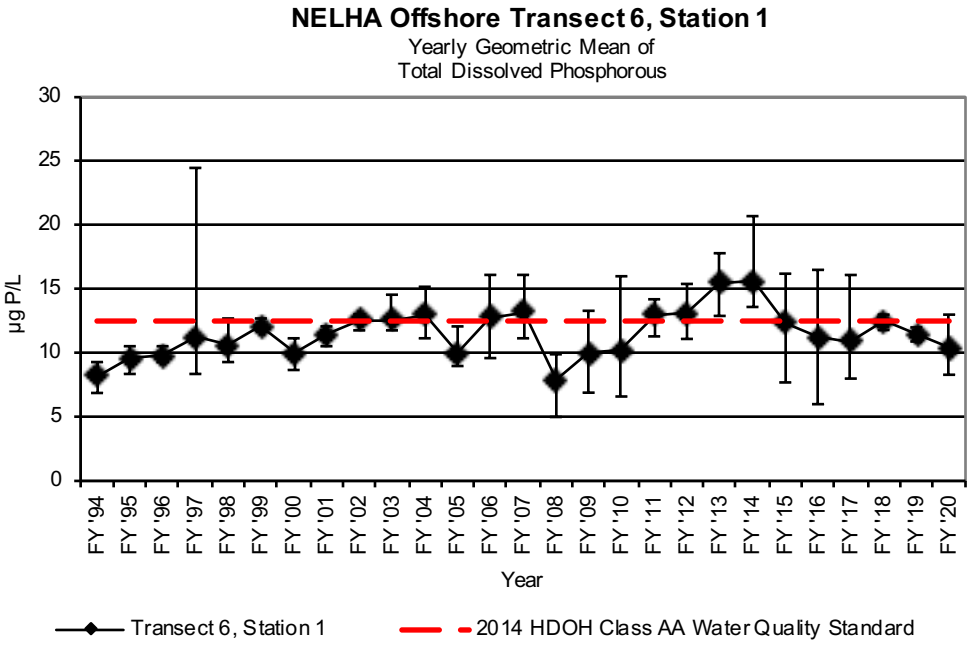
NELHA Water Quality Laboratory

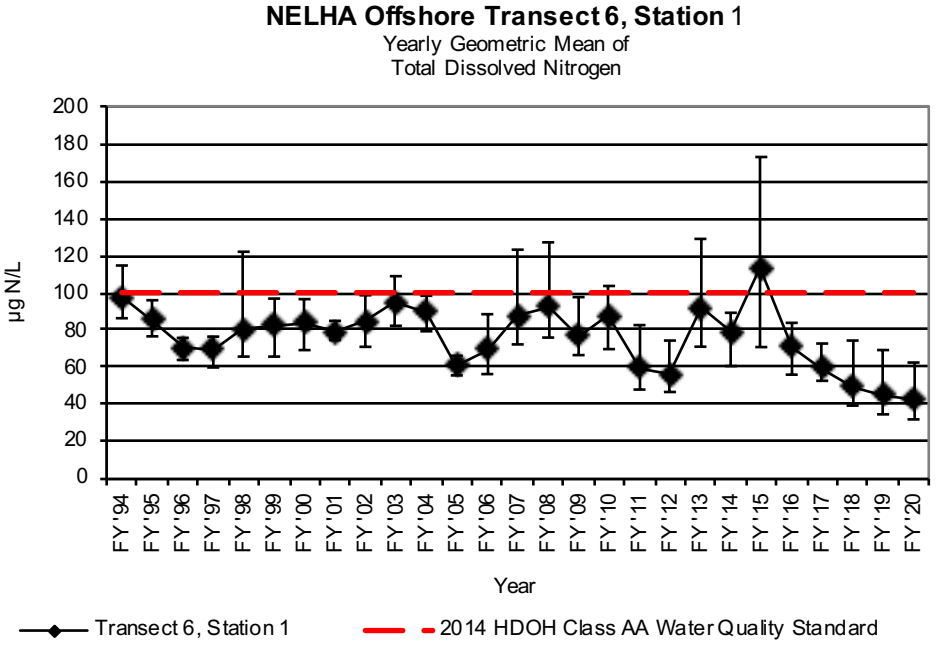
Transect 6, Station 1

7/26/1993 - 7/16/20





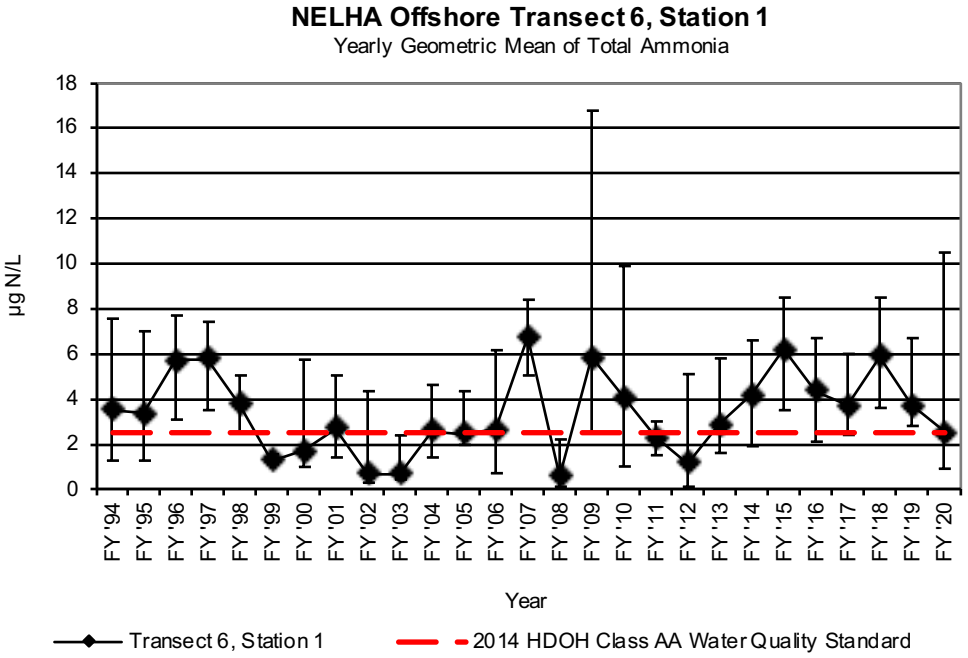


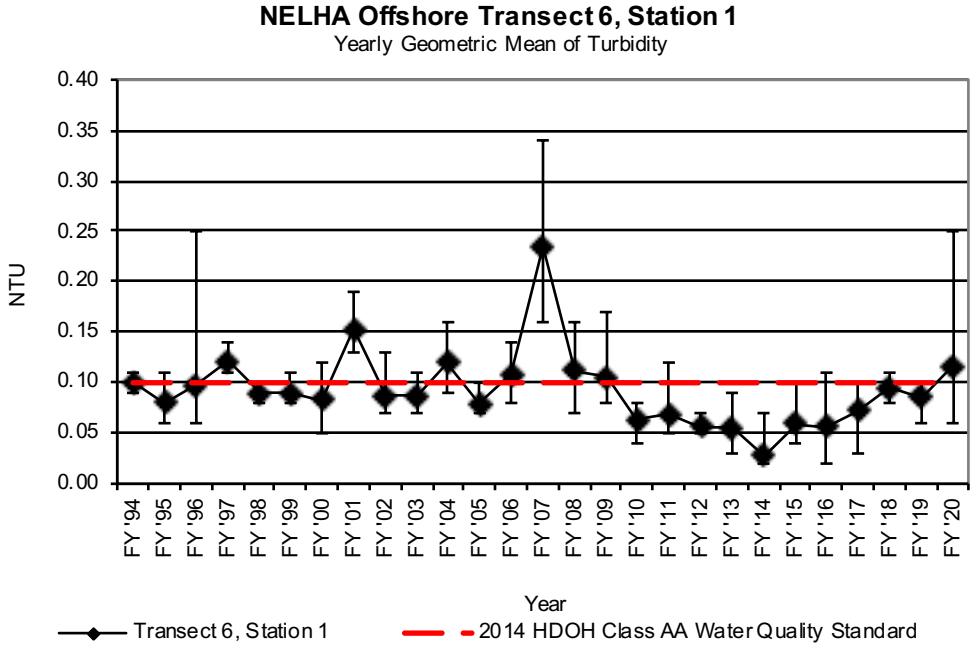


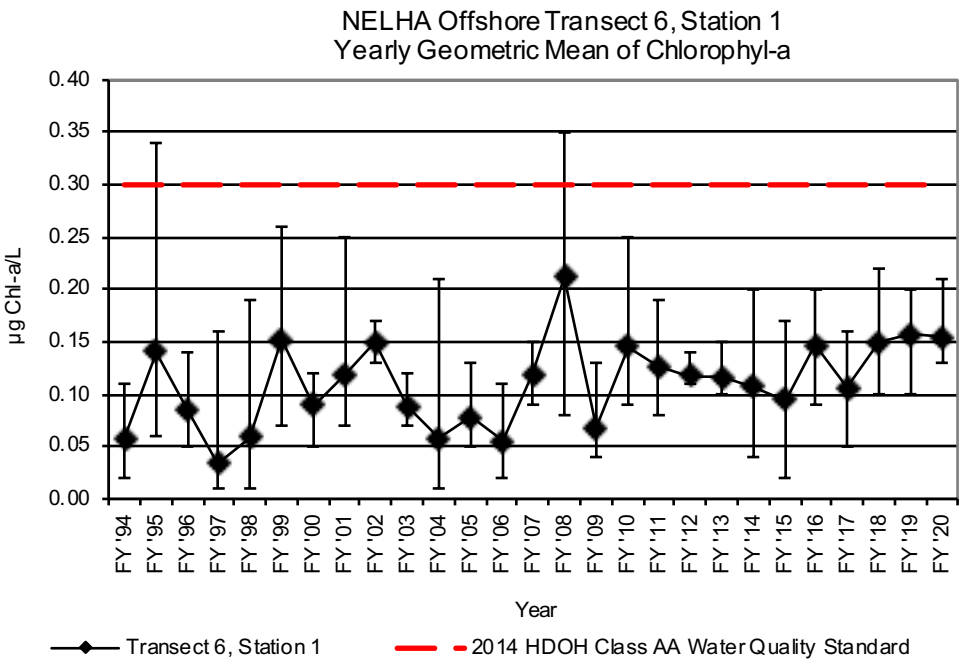
NELHA Water Quality Laboratory

Transect 6, Station 1

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 6, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.1**					**0.3**
O6-2S-23m	7/26/93	1152	0.13	4.0	0.15	2.1	0.40	5.6	3.4	96					0.07	34.430	27.0			
O6-2S-23m	12/6/93	935	0.08	2.5	0.28	3.9	0.09	1.3	3.2	90					0.11	34.795	25.8			
O6-2S-23m	3/7/94	904	0.22	6.8	0.45	6.3	0.17	2.4	6.1	171					0.08	34.156	24.9			
O6-2S-23m	6/15/94	904	0.22	6.8	0.38	5.3	0.12	1.7	4.0	111					0.11	34.499	25.6			
Geomean	**FY '94**			**4.6**		**4.1**		**2.3**							**0.09**					
O6-2S-23m	9/9/94	853	0.08	2.5	0.27	3.8	0.21	2.9	4.9	138					0.13	34.488	27.6			
O6-2S-23m	11/14/94	807	0.15	4.6	0.66	9.2	0.61	8.5	8.8	246					0.08	34.461	26.0			
O6-2S-23m	3/22/95	836	0.16	5.0	0.18	2.5	0.35	4.9	4.0	112					0.08	34.179	25.1			
O6-2S-23m	6/20/95	830	0.12	3.7	0.23	3.2	0.12	1.7	3.6	101					0.08	34.399	26.2			
Geomean	**FY '95**			**3.8**		**4.1**		***3.8***							**0.09**					
O6-2S-23m	9/26/95	933	0.14	4.3	0.63	8.8	0.53	7.4	9.7	273					0.17	34.310	27.0			
O6-2S-23m	11/14/95	1108	0.11	3.4	0.29	4.1	0.49	6.9	4.3	121					0.11	34.271	26.9			
O6-2S-23m	3/12/96	1132	0.15	4.6	0.18	2.5	0.50	7.0	3.8	107					0.08	34.145	25.4			
O6-2S-23m	5/14/96	1126	0.12	3.7	0.27	3.8	0.19	2.7	6.9	194					0.11	34.212	27.4			
Geomean	**FY '96**			**4.0**		**4.3**		***5.6***							***0.11***					
O6-2S-23m	7/31/96	1155	0.15	4.6	2.11	29.6	0.53	7.4	26.2	736					0.14	33.604	27.8			
O6-2S-23m	10/2/96	1127	0.09	2.8	0.81	11.3	0.45	6.3	11.9	333					0.13	34.319	28.4			
O6-2S-23m	1/7/97	1134	0.08	2.5	0.09	1.3	0.23	3.2	3.7	103					0.08	34.670	25.7			
O6-2S-23m	4/28/97	1153	0.12	3.7	0.31	4.3	0.45	6.3	5.7	161					0.10	34.328	26.5			
Geomean	**FY '97**			**3.3**		***6.5***		***5.6***							***0.11***					
O6-2S-23m	8/19/97	1132	0.09	2.8	0.38	5.3	0.22	3.1	7.9	220					0.15	34.471	27.1			
O6-2S-23m	10/7/97	1037	0.11	3.4	0.13	1.8	0.37	5.2	4.1	114					0.10	34.678	27.6			
O6-2S-23m	3/4/98	1209	0.12	3.7	0.76	10.6	0.25	3.5	15.9	446					0.09	34.729	25.1			
O6-2S-23m	5/5/98	1158	0.14	4.3	1.24	17.4	0.29	4.1	18.3	514					0.14	34.528	24.4			
Geomean	**FY '98**			**3.5**		***6.5***		***3.9***							***0.12***					
O6-2S-23m	7/7/98	1217	0.14	4.3	0.87	12.2	0.07	1.0	13.2	371					0.09	34.698	26.3			
O6-2S-23m	10/6/98	1126	0.10	3.1	0.42	5.9	0.10	1.4	5.1	143					0.08	34.989	27.1			
O6-2S-23m	1/19/99	1202	0.11	3.4	0.77	10.8	0.18	2.5	12.5	351					0.10	34.874	25.1			
O6-2S-23m	4/12/99	1208	0.12	3.7	0.20	2.8	0.11	1.5	4.5	126					0.08	34.631	24.2			
Geomean	**FY '99**			**3.6**		***6.8***		**1.5**							**0.09**					

NELHA Water Quality Laboratory

Transect 6, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.1**					**0.3**
O6-2S-23m	7/6/99	1235	0.10	3.1	0.28	3.9	0.05	0.7	7.6	212					0.14	34.802	25.7			
O6-2S-23m	10/4/99	1255	0.12	3.7	0.26	3.6	0.13	1.8	3.3	92					0.14	34.956	26.3			
O6-2S-23m	1/12/00	1203	0.16	5.0	1.37	19.2	0.41	5.7	20.6	579					0.15	34.518	24.8			
O6-2S-23m	4/11/00	1100	0.11	3.4	0.51	7.1	0.06	0.8	9.1	255					0.07	34.658	24.4			
Geomean	**FY '00**			**3.7**		***6.7***		**1.6**							***0.12***					
O6-2S-23m	7/25/00	1219	0.11	3.4	0.33	4.6	0.10	1.4	7.2	201					0.14	34.716	26.7			
O6-2S-23m	10/31/00	1205	0.13	4.0	0.42	5.9	0.08	1.1	10.1	285					0.13	34.736	26.9			
O6-2S-23m	3/6/01	1150	0.17	5.3	0.26	3.6	0.12	1.7	6.2	174					0.14	34.621	24.9			
O6-2S-23m	5/7/01	1250	0.16	5.0	1.53	21.4	0.38	5.3	17.7	498					0.16	34.373	24.7			
Geomean	**FY '01**			**4.3**		***6.8***		**1.9**							***0.14***					
O6-2S-23m	8/14/01	1055	0.12	3.7	0.14	2.0	0.31	4.3	3.9	109					0.19	34.814	26.8			
O6-2S-23m	10/30/01	1106	0.13	4.0	0.47	6.6	0.03	0.4	4.7	133					0.10	34.911	26.7			
O6-2S-23m	3/6/02	1109	0.27	8.4	3.13	43.8	0.08	1.1	51.3	1441					0.08	33.836	24.3			
O6-2S-23m	4/15/02	1128	0.17	5.3	2.05	28.7	0.07	1.0	12.4	348					0.08	34.168	25.5			
Geomean	**FY '02**			***5.1***		***11.3***		**1.2**							***0.11***					
O6-2S-23m	7/10/02	1117	0.09	2.8	1.73	24.2	0.18	2.5	12.6	355					0.11	34.368	26.2			
O6-2S-23m	10/8/02	1110	0.10	3.1	1.91	26.8	0.06	0.8	13.0	364					0.08	34.594	27.1			
O6-2S-23m	3/12/03	1010	0.11	3.4	0.38	5.3	0.03	0.4	5.4	151					0.09	34.646	25.0			
O6-2S-23m	4/23/03	1117	0.15	4.6	1.17	16.4	0.03	0.4	11.3	318					0.12	34.705	24.9			
Geomean	**FY '03**			**3.4**		***15.4***		**0.8**							**0.10**					
O6-2S-23m	8/21/03	1054	0.09	2.8	0.06	0.8	0.10	1.4	4.5	126					0.08	34.770	28.5			
O6-2S-23m	11/3/03	1035	0.12	3.7	0.13	1.8	0.26	3.6	5.0	140					0.10	34.628	27.5			
O6-2S-23m	3/18/04	1046	0.18	5.6	1.54	21.6	0.35	4.9	13.7	384					n/a	34.031	25.4			
O6-2S-23m	5/24/04	1058	0.14	4.3	0.12	1.7	0.20	2.8	5.2	147					n/a	33.32	26.7			
Geomean	**FY '04**			**4.0**		**2.7**		***2.9***							**0.09**					
O6-2S-23m	9/22/04	1133	0.08	2.5	0.01	0.1	0.27	3.8	2.4	67					0.09	30.76	27.9			
O6-2S-23m	11/29/04	1040	0.09	2.8	0.35	4.9	0.13	1.8	4.5	127					0.07	33.62	27.0			
O6-2S-23m	1/24/05	1117	0.10	3.1	0.64	9.0	0.12	1.7	8.3	232					0.07	34.730	25.5			
O6-2S-23m	4/13/05	1124	0.20	6.2	0.43	6.0	0.18	2.5	9.2	258					0.12	34.457	25.1			
Geomean	**FY '05**			**3.4**		**2.5**		**2.3**							**0.09**					

NELHA Water Quality Laboratory

Transect 6, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.1**					**0.3**
O6-2S-23m	7/21/05	1058	0.08	2.5	0.41	5.7	0.45	6.3	8.7	243					0.13	34.767	27.4			
O6-2S-23m	10/13/05	1031	0.06	1.9	0.12	1.7	0.16	2.2	3.5	98					0.11	34.864	27.4			
O6-2S-23m	3/15/06	958	0.10	3.1	0.60	8.4	0.40	5.6	8.0	224					0.10	34.649	24.3			
O6-2S-23m	5/17/06	1038	0.17	5.3	1.98	27.7	0.07	1.0	16.6	466					0.13	34.191	24.9			
Geomean	**FY '06**			**2.9**		***6.9***		***3.0***							***0.12***					
O6-2S-23m	8/16/06	1047	0.11	3.4	0.35	4.9	0.35	4.9	3.1	87					0.14	34.518	26.8			
O6-2S-23m	11/20/06	1040	0.19	5.9	1.83	25.6	0.52	7.3	15.4	433					0.16	34.352	26.6			
O6-2S-23m	2/12/07	1141	0.27	8.4	2.01	28.2	0.55	7.7	13.2	371					0.24	34.015	24.6			
O6-2S-23m	4/16/07	1121	0.21	6.5	2.26	31.7	0.47	6.6	16.4	461					0.17	34.225	26.5			
Geomean	**FY '07**			***5.7***		***18.3***		***6.5***							***0.17***					
T6-10m	9/27/07	1020	0.17	5.2	0.64	9.0	0.15	2.1	4.9	138	0.33	10.1	5.7	80	0.13	34.707	26.7	8.10	6.37	0.07
T6-10m	12/14/07	1028	0.12	3.6	0.44	6.1	0.00		4.9	138	0.38	11.9	5.9	83	0.10	34.566	25.6	8.18	6.70	0.31
T6-10m	3/11/08	1035	0.13	4.0	1.23	17.2	0.06	0.8	21.3	598	0.29	9.1	7.6	107	0.09	34.680	24.7	8.1	6.57	0.29
T6-10m	6/9/08	1102	0.09	2.9	0.35	4.9	0.16	2.2	17.4	489	0.25	7.8	4.7	66	0.08	34.553	25.1	8.12	5.8	0.13
Geomean	**FY '08**			**3.8**		***8.2***		**1.5**				**9.6**		**82**	**0.10**					**0.17**
T6-10m	9/23/08	1157	0.03	1	0.43	6	0.47	6.6	3.5	98	0.34	10.4	5.8	82	0.08	34.755	26.9	8.10	6.43	0.11
T6-10m	12/8/08	1058	0.16	5	0.36	5.1	0.34	4.7	3.8	106	0.27	8.3	4.9	68	0.06	34.899	26.1	8.31	5.71	0.04
T6-10m	2/10/09	954	0.15	4.8	1.76	24.7	0.18	2.5	12.3	344	0.32	9.8	11.9	167	0.15	34.724	24.8	8.05	6.11	0.07
T6-10m	6/30/09	1045	0.27	8.3	0.41	5.8	0.12	1.7	4.6	129	0.47	14.6	5.1	72	0.34	34.862	26.7	8.20	6.28	0.12
Geomean	**FY '09**			**3.8**		***8.1***		***3.4***				**10.5**		**91**	***0.13***					**0.08**
T6-10m	9/10/09	1054	0.16	5.1	0.41	5.7	0.24	3.4	7.0	197	0.57	17.6	6.1	85	0.11	35.26	27.2	8.22	5.70	0.3
T6-10m	11/24/09	1013	0.02	0.766	0.30	4.2	0.10	1.4	5.2	145	0.27	8.5	4.8	68	0.04	35.20	25.1	8.25	6.51	0.12
T6-10m	2/24/10	1047	0.14	4.3	0.27	3.8	0.32	4.5	3.6	102	0.12	3.7	8.7	121	0.07	34.78	24.6	8.22	5.61	0.11
T6-10m	5/26/10	1004	0.02	0.7	0.39	5.4	0.28	3.9	13.1	367	0.19	6	4.4	61	0.05	34.73	25.1	8.28	6.88	0.07
Geomean	**FY '10**			**1.9**		***4.7***		***3.0***				**7.6**		**81**	**0.06**					**0.13**
T6-10m	8/11/10	1022	0.05	1.7	0.67	9.4	0.20	2.8	8.6	241	0.32	9.9	3.5	50	0.09	34.84	26.01	8.23	9.92	0.11
T6-10m	11/9/10	1018	0.05	1.5	0.36	5	0.26	3.6	3.4	96	0.37	11.6	5.0	71	0.09	34.88	26.40	8.28	6.20	0.06
T6-10m	1/11/11	1245	0.13	4.1	0.61	8.5	0.20	2.8	11.2	314	0.42	12.9	3.6	51	0.03	34.91	25.01	8.25	6.51	0.09
T6-10m	4/27/11	1020	0.15	4.6	0.44	6.1	0.20	2.8	9.8	275	0.43	13.4	3.6	50	0.07	34.79	24.84	8.23	6.44	0.19
Geomean	**FY '11**			**2.6**		***7.0***		***3.0***				**11.9**		**55**	**0.06**					**0.10**

NELHA Water Quality Laboratory

Transect 6, Station 2

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.1**					**0.3**
T6-10m	7/27/11	1105	0.18	5.6	0.26	3.7	0.09	1.3	2.1	60	0.47	14.5	3.3	47	0.10	34.77	25.99	8.23	6.59	0.11
T6-10m	10/19/11	1047	0.06	1.9	0.34	4.8	0.15	2.1	3.2	89	0.34	10.5	3.9	55	0.08	35.08	26.54	8.25	7.11	0.12
T6-10m	1/26/12	1011	0.08	2.4	0.41	5.8	0.09	1.3	4.7	132	0.34	10.5	3.8	54	0.03	34.94	24.44	8.20	6.76	0.12
T6-10m	4/25/12	1030	0.16	5	0.69	9.7	0.27	3.8	6.9	194	0.46	14.1	5.2	73	0.09	34.77	24.87	8.19	6.79	0.06
Geomean	**FY '12**			**3.4**		***5.6***		**1.9**				**12.3**		**56**	**0.07**					**0.10**
T6-10m	7/25/12	1030	0.05	1.6	0.41	5.8	0.41	5.8	3.5	98	0.56	17.4	8.7	121	0.12	35.01	26.49	8.27	7.53	0.15
T6-10m	11/28/12	1030	0.11	3.4	1.00	14	0.23	3.2	5.7	161	0.43	13.2	4.8	67	0.05	35.12	25.14	8.20	6.75	0.19
T6-10m	1/24/13	1015	0.12	3.7	1.06	14.8	0.14	1.9	5.7	161	0.44	13.7	5.1	71	0.02	34.98	24.72	8.22	6.40	0.09
T6-10m	4/24/13	940	0.22	6.85	2.10	29.35	0.16	2.25	6.9	194	0.53	16.5	6.6	93	0.04	34.91	24.89	8.21	6.73	0.12
Geomean	**FY '13**			**3.4**		***13.7***		***3.0***				***15.1***		**86**	**0.05**					**0.13**
T6-10m	8/6/13	1102	0.14	4.2	1.72	24.1	0.38	5.3	10.2	288	0.34	10.6	6.7	94	0.08	34.83	26.2	8.20	7.50	0.12
T6-10m	10/30/13	1009	0.15	4.6	0.47	6.6	0.25	3.5	3.0	84	0.43	13.4	5.2	72	0.03	34.89	27.0	8.22	5.92	0.08
T6-10m	2/5/14	1036	0.14	4.3	0.49	6.8	0.47	6.6	2.8	79	0.42	13.0	5.3	74	0.02	34.99	25.2	8.20	6.55	0.16
T6-10m	5/7/14	1029	0.14	4.2	0.41	5.7	0.32	4.5	2.4	67	0.40	12.5	6.3	88	0.04	34.78	25.7	8.20	5.57	0.11
Geomean	**FY '14**			**4.3**		***8.9***		***4.8***				**12.3**		**82**	**0.04**					**0.11**
T6-10m	8/6/14	1022	0.17	5.3	0.51	7.1	0.44	6.2	3.4	95	0.53	16.3	4.8	67	0.08	34.85	26.6	8.23	6.16	0.04
T6-10m	12/4/14	1101	0.18	5.6	2.33	32.6	0.54	7.6	10.8	304	0.52	16.1	8.0	112	0.07	34.81	26.1	8.26	6.55	0.21
T6-10m	3/5/15	1109	0.09	2.7	1.51	21.2	0.55	7.7	6.0	168	0.36	11.1	7.2	100	0.08	34.69	25.3	8.27	6.91	0.15
T6-10m	6/18/15	1034	0.15	4.7	2.51	35.1	0.44	6.2	11.6	325	0.24	7.3	9.7	135	0.08	34.11	26.5	8.21	6.89	0.12
Geomean	**FY '15**			**4.4**		***20.4***		***6.9***				**12.1**		***101***	**0.08**					**0.11**
T6-10m	8/27/15	1036	0.16	4.9	0.44	6.1	0.43	6.0	18.0	505	0.39	12.2	4.4	61	0.02	34.64	28.3	8.28	6.14	0.21
T6-10m	11/18/15	1107	0.17	5.3	0.84	11.7	0.41	5.7	7.2	202	0.48	14.8	6.4	90	0.07	34.63	27.4	8.27	6.70	0.17
T6-10m	3/2/16	948	0.15	4.6	0.34	4.7	0.33	4.6	1.2	35	0.48	14.9	5.1	71	0.09	34.75	25.2	8.26	5.79	0.11
T6-10m	5/4/16	1046	0.12	3.7	0.59	8.3	0.24	3.4	5.2	145	0.49	15.1	4.7	66	0.09	34.54	25.8	8.19	6.14	0.18
Geomean	**FY '16**			**4.6**		***7.3***		***4.8***				***14.2***		**71**	**0.06**					**0.16**
T6-10m	7/7/16	1049	0.15	4.8	0.42	5.9	0.59	8.3	8.5	238	0.46	14.2	3.6	51	0.09	34.38	26.6	8.32	6.75	0.20
T6-10m	12/21/16	1115	0.05	1.5	0.26	3.7	0.06	0.9	1.9	54	0.35	10.7	3.3	46	0.03	34.62	25.6	8.29	5.86	0.13
T6-10m	3/1/17	1155	0.05	1.5	0.77	10.8	0.09	1.2	5.7	159	0.31	9.7	5.2	73	0.10	34.60	24.6	8.26	5.83	0.18
T6-10m	5/10/17	1144	0.05	1.4	0.20	2.8	0.16	2.2	2.0	55	0.23	7.2	2.6	37	0.07	34.84	25.8	8.24	4.25	0.09
Geomean	**FY '17**			**2.0**		***5.1***		**2.1**				**10.1**		**50**	**0.07**					**0.14**

NELHA Water Quality Laboratory

Transect 6, Station 2

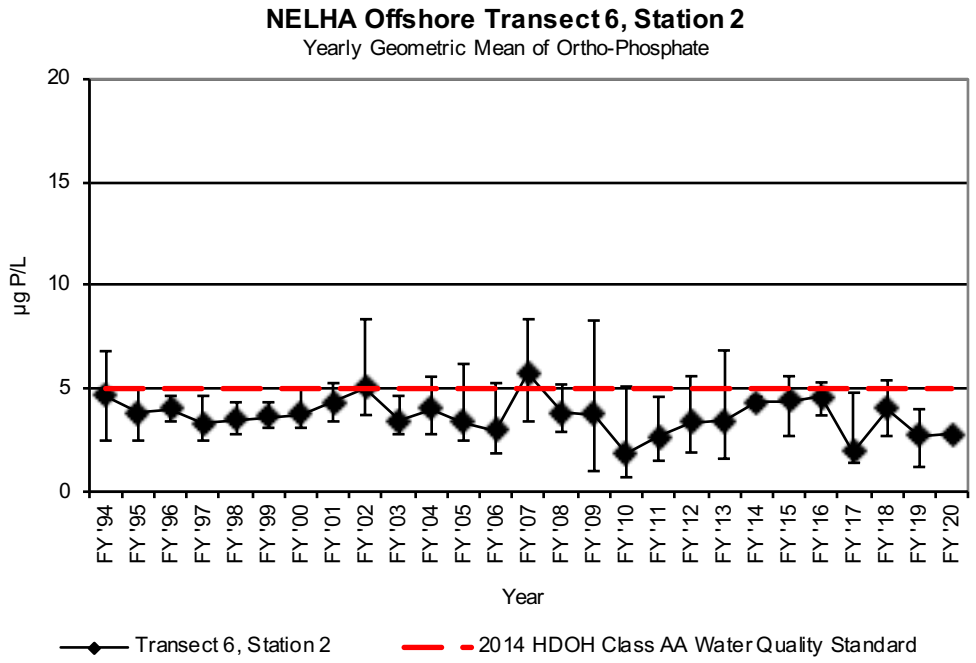
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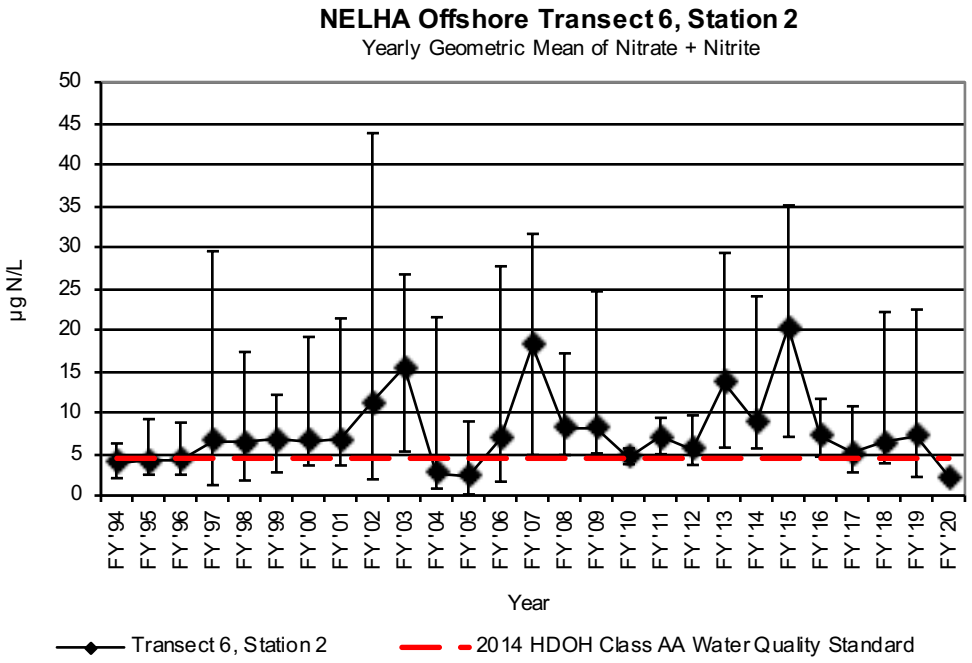
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.1**					**0.3**
T6-10m	9/28/17	1039	0.17	5.4	0.46	6.5	0.27	3.8	3.8	107	0.39	12.2	3.8	54	0.10	34.72	27.6	8.18	4.76	0.20
T6-10m	11/30/17	1023	0.12	3.7	0.73	10.2	0.54	7.5	3.9	110	0.36	11.3	3.1	43	0.10	35.12	26.2	8.24	5.66	0.17
T6-10m	2/6/18	1115	0.09	2.7	0.28	3.9	0.46	6.5	2.8	79	0.34	10.4	1.9	26	0.16	34.72	24.8	8.16	5.83	0.11
T6-10m	5/17/18	1039	0.15	4.7	1.58	22.2	0.23	3.2	11.2	314	0.42	12.9	5.0	70	0.07	34.49	25.8	8.17	6.42	0.12
Geomean	**FY '18**			**4.0**		***6.4***		***4.9***				**11.7**		**45**	***0.10***					**0.15**
T6-10m	9/26/18	1329	0.04	1.2	0.16	2.3	0.16	2.2	1.4	38	0.35	10.7	3.2	45	0.10	34.67	27.7	8.15	4.75	0.13
T6-10m	11/14/18	1133	0.10	3.1	1.61	22.5	0.48	6.7	6.9	195	0.35	10.9	6.3	89	0.10	34.71	27.3	8.22	6.54	0.26
T6-10m	1/23/19	1118	0.11	3.5	0.55	7.7	0.10	1.4	5.3	149	0.37	11.6	4.8	68	0.10	34.77	24.9	8.19	5.09	0.18
T6-10m	4/17/19	1112	0.13	4.0	0.32	4.5	0.25	3.5	2.2	61	0.36	11.2	2.5	35	0.04	34.67	25.7	8.13	7.03	0.10
Geomean	**FY '19**			**2.7**		***7.3***		***2.9***				**11.1**		**55**	**0.08**					**0.16**
T6-10m	8/15/19	1041	0.05	1.6	0.03	0.4	0.08	1.1	4.6	130	0.31	9.6	2.1	30	0.12	35.20	28.2	8.27	6.66	0.13
T6-10m	11/20/19	1155	0.13	3.9	0.28	3.9	0.51	7.2	1.3	38	0.40	12.4	2.7	38	0.08	35.15	27.6	8.24	6.97	0.13
T6-10m	1/23/20	1101	0.15	4.5	0.56	7.8	0.09	1.2	6.3	178	0.40	12.5	4.0	56	0.15	34.78	24.8	8.24	7.05	0.20
T6-10m	6/25/20	1022	0.07	2.1	0.14	2.0	0.20	2.8	2.8	79	0.30	9.4	2.8	39	0.06	35.48	26.0	8.18	6.55	0.21
Geomean	**FY '20**			**2.8**		**2.3**		**2.3**				**10.9**		**40**	**0.10**					**0.16**

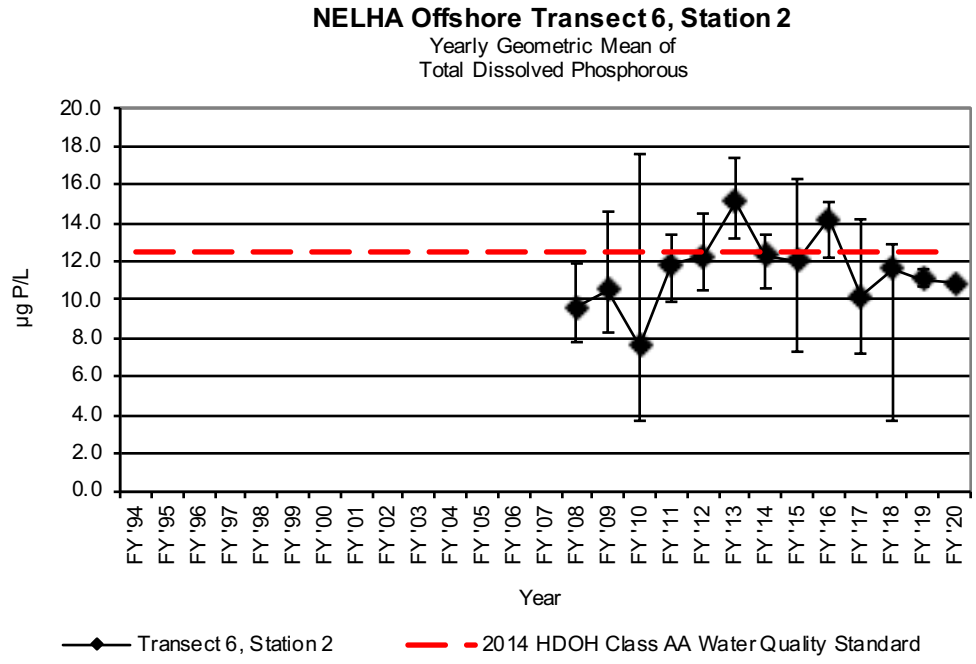
NELHA Water Quality Laboratory

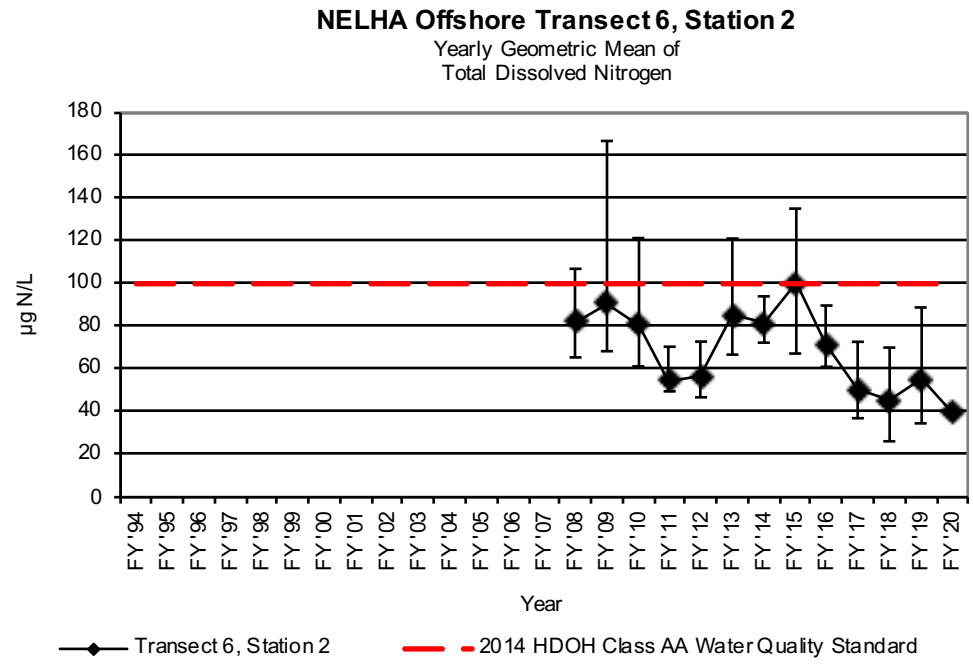
Transect 6, Station 2

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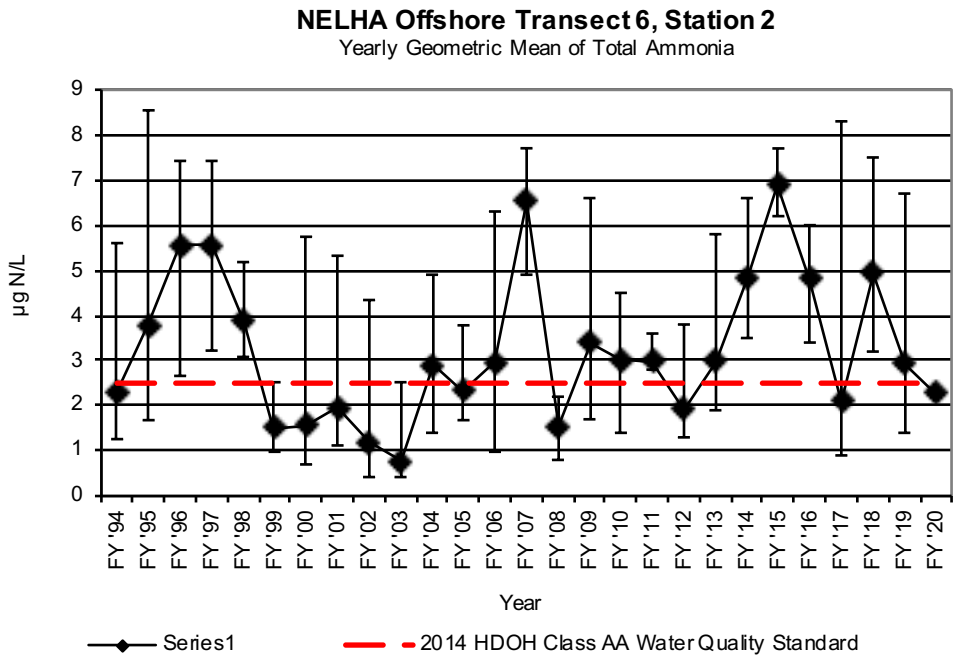


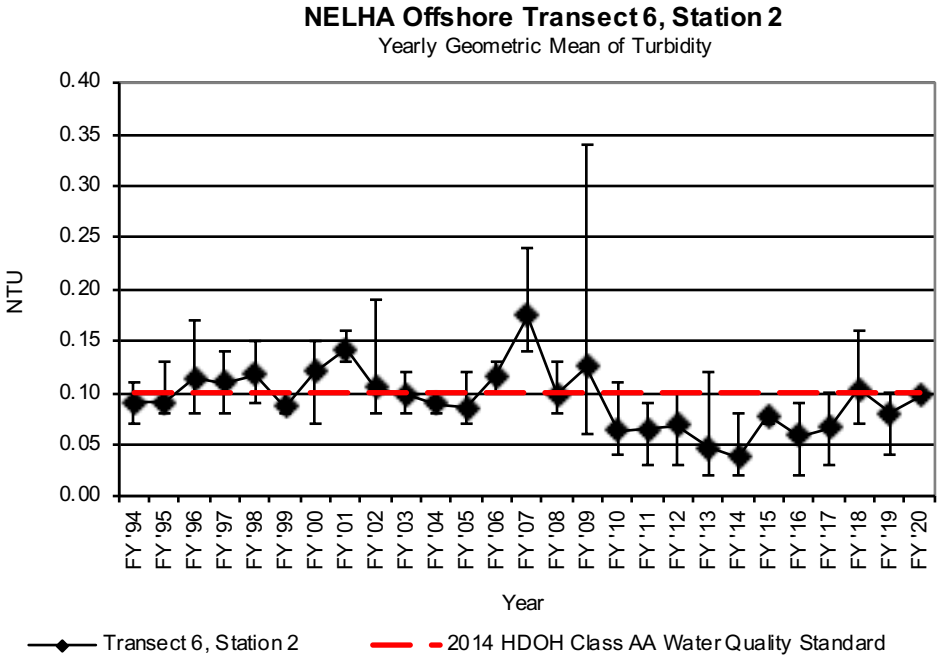


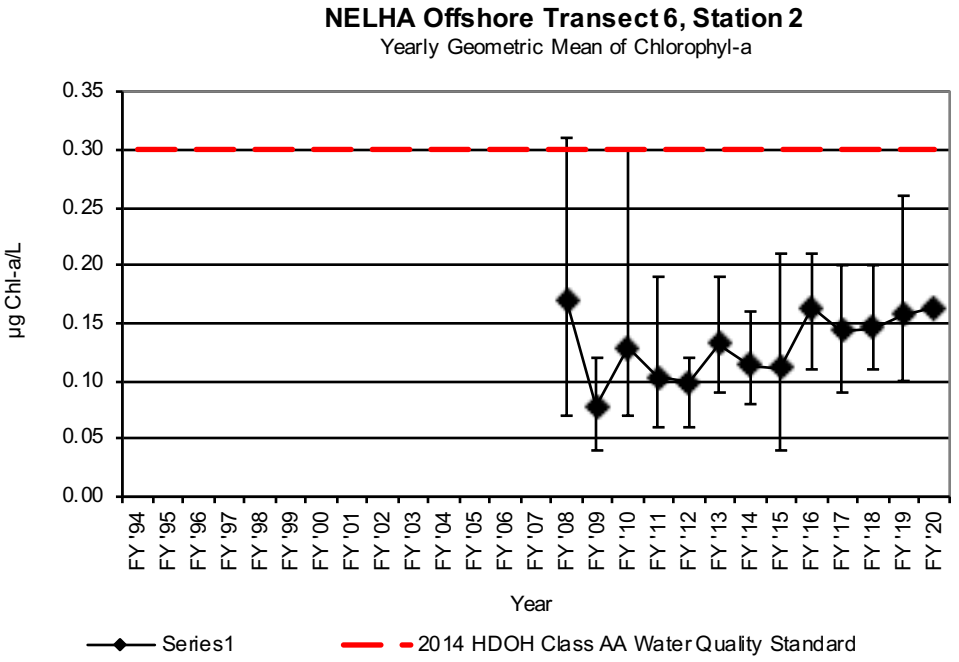
NELHA Water Quality Laboratory

Transect 6, Station 2

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 6, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-3S-38m	7/26/93	1141	0.11	3.4	0.11	1.5	0.33	4.6	2.3	65					0.06	34.432	27.0			
O6-3S-38m	12/6/93	926	0.07	2.2	0.44	6.2	0.13	1.8	4.0	112					0.09	34.763	25.7			
O6-3S-38m	3/7/94	856	0.22	6.8	0.80	11.2	0.22	3.1	10.3	288					0.09	34.014	24.9			
O6-3S-38m	6/15/94	901	0.21	6.5	0.25	3.5	0.12	1.7	4.0	112					0.09	34.481	25.6			
Geomean	**FY '94**			**4.3**		**4.4**		***2.6***							**0.08**					
O6-3S-38m	9/9/94	849	0.08	2.5	0.33	4.6	0.18	2.5	5.7	160					0.11	34.476	27.5			
O6-3S-38m	11/14/94	803	0.15	4.6	0.67	9.4	0.55	7.7	8.9	251					0.09	34.446	26.0			
O6-3S-38m	3/22/95	828	0.16	5.0	0.26	3.6	0.32	4.5	4.9	139					0.09	34.143	25.1			
O6-3S-38m	6/20/95	828	0.12	3.7	0.23	3.2	0.14	2.0	3.8	106					0.07	34.398	26.2			
Geomean	**FY '95**			**3.8**		***4.7***		***3.6***							**0.09**					
O6-3S-38m	9/26/95	941	0.13	4.0	0.78	10.9	0.47	6.6	12.0	338					0.13	34.221	27.0			
O6-3S-38m	11/14/95	1103	0.12	3.7	0.32	4.5	0.58	8.1	4.8	133					0.09	34.256	26.9			
O6-3S-38m	3/12/96	1127	0.14	4.3	0.19	2.7	0.50	7.0	3.8	107					0.06	34.135	25.5			
O6-3S-38m	5/14/96	1121	0.13	4.0	0.37	5.2	0.22	3.1	7.7	217					0.08	34.161	27.4			
Geomean	**FY '96**			**4.0**		***5.1***		***5.8***							**0.09**					
O6-3S-38m	7/31/96	1150	0.13	4.0	1.61	22.6	0.51	7.1	21.2	596					0.10	33.799	27.7			
O6-3S-38m	10/2/96	1123	0.08	2.5	0.58	8.1	0.43	6.0	9.2	259					0.15	34.400	28.4			
O6-3S-38m	1/7/97	1128	0.08	2.5	0.10	1.4	0.23	3.2	4.3	120					0.10	34.670	25.7			
O6-3S-38m	4/28/97	1150	0.23	7.1	0.58	8.1	0.49	6.9	16.0	449					0.11	34.218	26.4			
Geomean	**FY '97**			**3.6**		***6.8***		***5.6***							***0.11***					
O6-3S-38m	8/19/97	1128	0.08	2.5	0.45	6.3	0.21	2.9	9.0	252					0.12	34.427	27.0			
O6-3S-38m	10/7/97	1032	0.11	3.4	0.11	1.5	0.38	5.3	5.8	163					0.10	34.673	27.6			
O6-3S-38m	3/4/98	1203	0.12	3.7	0.67	9.4	0.25	3.5	10.3	289					0.13	34.746	25.2			
O6-3S-38m	5/5/98	1154	0.12	3.7	0.84	11.8	0.31	4.3	12.8	359					0.09	34.734	24.3			
Geomean	**FY '98**			**3.3**		***5.7***		***3.9***							***0.11***					
O6-3S-38m	7/7/98	1211	0.14	4.3	1.08	15.1	0.02	0.3	16.0	450					0.10	34.628	26.3			
O6-3S-38m	10/6/98	1120	0.13	4.0	0.88	12.3	0.11	1.5	11.3	317					0.08	34.819	27.2			
O6-3S-38m	1/19/99	1157	0.10	3.1	0.76	10.6	0.08	1.1	11.2	315					0.10	34.867	25.1			
O6-3S-38m	4/12/99	1203	0.12	3.7	0.15	2.1	0.14	2.0	4.4	125					0.07	34.634	24.2			
Geomean	**FY '99**			**3.8**		***8.0***		**1.0**							**0.09**					

NELHA Water Quality Laboratory

Transect 6, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-3S-38m	7/6/99	1229	0.10	3.1	0.28	3.9	0.05	0.7	7.3	206					0.12	34.827	25.7			
O6-3S-38m	10/4/99	1250	0.12	3.7	0.25	3.5	0.11	1.5	3.9	108					0.10	34.927	26.4			
O6-3S-38m	1/12/00	1157	0.16	5.0	1.63	22.8	0.46	6.4	28.9	810					0.08	34.351	24.9			
O6-3S-38m	4/11/00	1055	0.11	3.4	0.58	8.1	0.06	0.8	13.6	382					0.10	34.625	24.5			
Geomean	**FY '00**			**3.7**		***7.1***		**1.6**							**0.10**					
O6-3S-38m	7/25/00	1215	0.11	3.4	0.19	2.7	0.05	0.7	10.4	293					0.08	34.775	26.7			
O6-3S-38m	10/31/00	1159	0.13	4.0	0.45	6.3	0.28	3.9	10.6	298					0.08	34.721	27.0			
O6-3S-38m	3/6/01	1145	0.18	5.6	0.24	3.4	0.06	0.8	5.6	158					0.07	34.674	24.8			
O6-3S-38m	5/7/01	1246	0.17	5.3	1.58	22.1	0.33	4.6	19.1	537					0.12	34.367	24.7			
Geomean	**FY '01**			**4.5**		***5.9***		**1.8**							**0.09**					
O6-3S-38m	8/14/01	1050	0.12	3.7	0.15	2.1	0.32	4.5	3.8	107					0.14	34.811	26.7			
O6-3S-38m	10/30/01	1100	0.14	4.3	0.60	8.4	0.02	0.3	5.5	155					0.07	34.888	26.7			
O6-3S-38m	3/6/02	1106	0.24	7.4	2.85	39.9	0.08	1.1	20.8	584					0.12	34.060	24.2			
O6-3S-38m	4/15/02	1123	0.18	5.6	1.93	27.0	0.04	0.6	12.3	345					0.09	34.167	25.6			
Geomean	**FY '02**			***5.1***		***11.7***		**0.9**							***0.10***					
O6-3S-38m	7/10/02	1112	0.11	3.4	2.00	28.0	0.18	2.5	14.3	401					0.10	34.304	26.2			
O6-3S-38m	10/8/02	1106	0.14	4.3	1.81	25.4	0.06	0.8	13.8	386					0.09	34.547	27.0			
O6-3S-38m	3/12/03	1004	0.14	4.3	0.70	9.8	0.03	0.4	8.7	245					0.10	34.527	25.0			
O6-3S-38m	4/23/03	1114	0.14	4.3	0.93	13.0	0.03	0.4	10.5	294					0.08	34.709	24.9			
Geomean	**FY '03**			**4.1**		***17.4***		**0.8**							**0.09**					
O6-3S-38m	8/21/03	1045	0.08	2.5	0.03	0.4	0.10	1.4	4.1	115					0.07	34.770	28.4			
O6-3S-38m	11/3/03	1029	0.13	4.0	0.17	2.4	0.23	3.2	6.0	169					0.12	34.597	27.4			
O6-3S-38m	3/18/04	1040	0.18	5.6	1.12	15.7	0.37	5.2	11.8	331					n/a	34.075	25.5			
O6-3S-38m	5/24/04	1053	0.17	5.3	0.24	3.4	0.16	2.2	4.7	131					n/a	33.25	26.8			
Geomean	**FY '04**			**4.1**		**2.7**		***2.7***							**0.09**					
O6-3S-38m	9/22/04	1128	0.08	2.5	0.01	0.1	0.36	5.0	2.5	69					0.09	33.66	27.8			
O6-3S-38m	11/29/04	1036	0.08	2.5	0.29	4.1	0.11	1.5	3.8	106					0.07	33.64	26.9			
O6-3S-38m	1/24/05	1112	0.10	3.1	0.74	10.4	0.18	2.5	9.4	264					0.09	34.587	25.7			
O6-3S-38m	4/13/05	1119	0.14	4.3	0.28	3.9	0.13	1.8	5.8	161					0.09	34.381	25.0			
Geomean	**FY '05**			**3.0**		**2.2**		**2.4**							**0.08**					

NELHA Water Quality Laboratory

Transect 6, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-3S-38m	7/21/05	1053	0.06	1.9	0.32	4.5	0.35	4.9	12.8	358					0.12	34.631	27.4			
O6-3S-38m	10/13/05	1026	0.06	1.9	0.11	1.5	0.20	2.8	3.6	101					0.11	34.928	27.4			
O6-3S-38m	3/15/06	952	0.11	3.4	0.74	10.4	0.38	5.3	9.2	258					0.08	34.630	24.3			
O6-3S-38m	5/17/06	1035	0.09	2.8	0.07	1.0	0.05	0.7	2.0	56					0.13	34.672	24.9			
Geomean	**FY '06**			**2.4**		**2.9**		***2.7***							***0.11***					
O6-3S-38m	8/16/06	1042	0.11	3.4	0.36	5.0	0.36	5.0	3.0	85					0.14	34.596	26.8			
O6-3S-38m	11/20/06	1035	0.26	8.1	2.56	35.9	0.56	7.8	20.7	581					0.22	34.150	26.6			
O6-3S-38m	2/12/07	1136	0.21	6.5	2.14	30.0	0.65	9.1	14.3	402					0.34	33.991	24.5			
O6-3S-38m	4/16/07	1117	0.21	6.5	2.52	35.3	0.41	5.7	20.9	587					0.20	34.335	26.7			
Geomean	**FY '07**			***5.8***		***20.9***		***6.7***							***0.21***					
T6-50m	9/27/07	1010	0.16	5.1	0.38	5.3	0.03	0.4	8.4	235	0.33	10.1	7.1	100	0.10	34.785	26.7	8.10	6.39	0.11
T6-50m	12/14/07	1031	0.12	3.7	1.02	14.3	0.00		9.2	259	0.42	13.1	5.9	83	0.08	34.398	25.7	8.18	6.96	0.3
T6-50m	3/11/08	1037	0.12	3.7	0.79	11.0	0.06	0.8	13.0	366	0.27	8.4	6.9	96	0.11	34.720	24.7	8.1	6.59	0.29
T6-50m	6/9/08	1104	0.11	3.3	0.48	6.7	0.16	2.2	19.9	559	0.27	8.4	5.8	81	0.15	34.5592	25.2	8.12	5.79	0.2
Geomean	**FY '08**			**3.9**		***8.6***		**0.9**				**9.8**		**90**	***0.11***					**0.21**
T6-50m	9/23/08	1204	0.03	0.8	0.19	2.6	0.37	5.2	2.3	64	0.29	9.1	4.8	68	0.07	34.786	26.9	8.08	6.40	0.15
T6-50m	12/8/08	1105	0.18	5.6	0.95	13.3	0.44	6.1	8.2	231	0.32	9.9	6.6	92	0.12	34.671	26.2	8.31	5.46	0.07
T6-50m	2/10/09	958	0.09	2.9	0.76	10.7	0.18	2.5	6.8	191	0.26	8	8.3	116	0.08	34.847	24.7	8.06	6.10	0.07
T6-50m	6/30/09	1050	0.23	7.2	0.44	6.1	0.44	6.2	5.0	142	0.46	14.1	4.3	60	0.24	34.785	26.8	8.22	6.36	0.11
Geomean	**FY '09**			**3.1**		***6.9***		***4.7***				**10.0**		**81**	***0.11***					**0.09**
T6-50m	9/10/09	1102	0.13	3.9	0.46	6.5	0.30	4.2	6.7	189	0.58	18.0	6.3	88	0.10	35.02	27.4	8.20	5.70	0.17
T6-50m	11/24/09	1020	0.02	0.766	0.39	5.4	0.14	1.9	25.6	719	0.28	8.7	5.2	73	0.04	35.18	25.1	8.26	6.61	0.13
T6-50m	2/24/10	1050	0.12	3.8	0.09	1.2	0.36	5	7.4	208	0.28	8.8	7.6	107	0.08	34.78	24.6	8.23	5.61	0.27
T6-50m	5/26/10	1011	0.02	0.6	0.33	4.6	0.16	2.2	4.8	134	0.27	8.4	6.4	90	0.10	34.73	25.1	8.28	6.91	0.09
Geomean	**FY '10**			**1.6**		**3.7**		***3.1***				**10.4**		**88**	**0.08**					**0.15**
T6-50m	8/11/10	1027	0.05	1.5	0.58	8.1	0.05	0.7	5.1	142	0.29	8.9	2.9	41	0.05	34.92	25.98	8.22	6.64	0.10
T6-50m	11/9/10	1022	0.05	1.7	0.51	7.1	0.16	2.3	10.0	281	0.40	12.4	4.8	67	0.09	34.85	26.38	8.29	6.26	0.04
T6-50m	1/11/11	1249	0.15	4.8	0.87	12.2	0.15	2.1	17.3	486	0.51	15.7	4.5	64	0.04	34.96	25.00	8.25	6.49	0.11
T6-50m	4/27/11	1023	0.16	5.1	0.56	7.9	0.19	2.7	22.6	635	0.43	13.3	3.9	54	0.09	34.77	24.84	8.23	6.48	0.17
Geomean	**FY '11**			**2.8**		***8.6***		**1.7**				**12.3**		**55**	**0.06**					**0.09**

NELHA Water Quality Laboratory

Transect 6, Station 3

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T6-50m	7/27/11	1109	0.19	5.8	0.26	3.6	0.10	1.4	2.7	75	0.48	14.9	4.0	56	0.07	34.76	26.06	8.23	6.42	0.10
T6-50m	10/19/11	1051	0.06	1.8	0.30	4.2	0.28	3.9	3.1	88	0.36	11.2	4.1	58	0.04	35.08	26.54	8.26	7.12	0.14
T6-50m	1/26/12	1016	0.08	2.6	0.56	7.8	0.15	2.1	5.8	163	0.36	11.2	3.4	48	0.07	34.90	24.42	8.20	6.69	0.14
T6-50m	4/25/12	1032	0.18	5.6	0.94	13.2	0.35	4.9	9.5	267	0.43	13.4	3.9	55	0.07	34.65	24.79	8.20	6.94	0.08
Geomean	**FY '12**			**3.5**		***6.3***		***2.7***				***12.6***		**54**	**0.06**					**0.11**
T6-50m	7/25/12	1041	0.03	0.8	0.23	3.2	0.21	2.9	2.4	68	0.42	12.9	4.7	67	0.16	35.06	26.49	8.24	6.74	0.20
T6-50m	11/28/12	1034	0.15	4.8	2.23	31.3	0.28	3.9	13.5	380	0.46	14.4	6.2	86	0.02	34.79	25.06	8.20	6.85	0.22
T6-50m	1/24/13	1020	0.10	3.2	0.65	9.1	0.15	2.1	5.0	141	0.45	13.8	5.0	70	0.02	34.97	24.76	8.23	6.48	0.07
T6-50m	4/24/13	946	0.22	6.7	1.87	26.2	0.16	2.3	9.5	267	0.55	16.95	5.6	79	0.03	34.92	24.91	8.22	6.73	0.10
Geomean	**FY '13**			**3.0**		***12.4***		***2.7***				***14.4***		**75**	**0.04**					**0.13**
T6-50m	8/6/13	1107	0.15	4.7	1.91	26.8	0.43	6.0	11.9	333	0.39	12.1	7.0	98	0.02	34.90	26.2	8.21	7.41	0.14
T6-50m	10/30/13	1014	0.15	4.8	0.47	6.6	0.21	2.9	3.2	89	0.56	17.2	6.2	87	0.03	34.89	27.0	8.22	5.81	0.15
T6-50m	2/5/14	1039	0.15	4.5	0.34	4.7	0.33	4.6	2.4	68	0.43	13.4	4.2	59	0.02	35.00	25.2	8.20	6.56	0.13
T6-50m	5/7/14	1034	0.13	4.0	0.50	7.0	0.30	4.2	6.2	173	0.42	12.9	5.4	76	0.08	34.72	25.8	8.20	5.57	0.13
Geomean	**FY '14**			**4.5**		***8.7***		***4.3***				***13.8***		**79**	**0.03**					**0.14**
T6-50m	8/6/14	1026	0.20	6.2	0.84	11.7	0.52	7.3	5.1	143	0.51	15.9	5.3	75	0.07	34.80	26.7	8.24	6.29	0.18
T6-50m	12/4/14	1107	0.19	5.8	1.91	26.7	0.85	11.9	11.2	314	0.58	18.1	8.9	125	0.07	34.82	26.2	8.26	6.99	0.29
T6-50m	3/5/15	1116	0.10	3.2	2.21	30.9	0.31	4.3	10.8	302	0.39	12.2	7.1	99	0.07	34.44	25.3	8.30	6.90	0.16
T6-50m	6/18/15	1041	0.21	6.4	2.68	37.5	0.43	6.0	12.5	350	0.46	14.2	8.5	120	0.08	34.06	26.5	8.21	6.99	0.18
Geomean	**FY '15**			***5.2***		***24.5***		***6.9***				***14.9***		***103***	**0.07**					**0.20**
T6-50m	8/27/15	1041	0.17	5.4	0.17	2.4	0.19	2.6	4.2	117	0.40	12.4	4.8	67	0.02	34.67	28.5	8.28	6.03	0.17
T6-50m	11/18/15	1114	0.19	6.0	0.89	12.4	2.11	29.5	6.0	170	0.43	13.3	6.9	97	0.08	34.61	27.4	8.29	6.96	0.24
T6-50m	3/2/16	953	0.13	3.9	0.34	4.7	0.25	3.5	1.3	37	0.50	15.4	7.7	108	0.09	34.72	25.2	8.25	5.84	0.11
T6-50m	5/4/16	1051	0.14	4.3	0.56	7.8	0.33	4.6	5.7	161	0.26	8.0	4.5	63	0.09	34.53	25.8	8.19	6.15	0.20
Geomean	**FY '16**			**4.8**		***5.7***		***5.9***				**11.9**		**82**	**0.06**					**0.17**
T6-50m	7/7/16	1054	0.13	3.9	0.27	3.8	0.51	7.2	6.5	182	0.46	14.3	3.0	42	0.10	34.47	26.7	8.32	6.75	0.26
T6-50m	12/21/16	1125	0.05	1.4	0.29	4.0	0.36	5.1	2.8	80	0.36	11.0	4.4	62	0.04	34.62	25.6	8.28	5.98	0.13
T6-50m	3/1/17	1200	0.03	1.0	0.64	8.9	0.08	1.1	5.1	142	0.15	4.6	5.3	74	0.08	34.61	24.6	8.25	5.83	0.18
T6-50m	5/10/17	1149	0.05	1.4	0.18	2.5	0.10	1.4	1.7	48	0.22	6.8	4.4	61	0.09	34.83	25.8	8.24	4.15	0.15
Geomean	**FY '17**			**1.7**		**4.3**		***2.7***				**8.4**		**58**	**0.07**					**0.17**

NELHA Water Quality Laboratory

Transect 6, Station 3

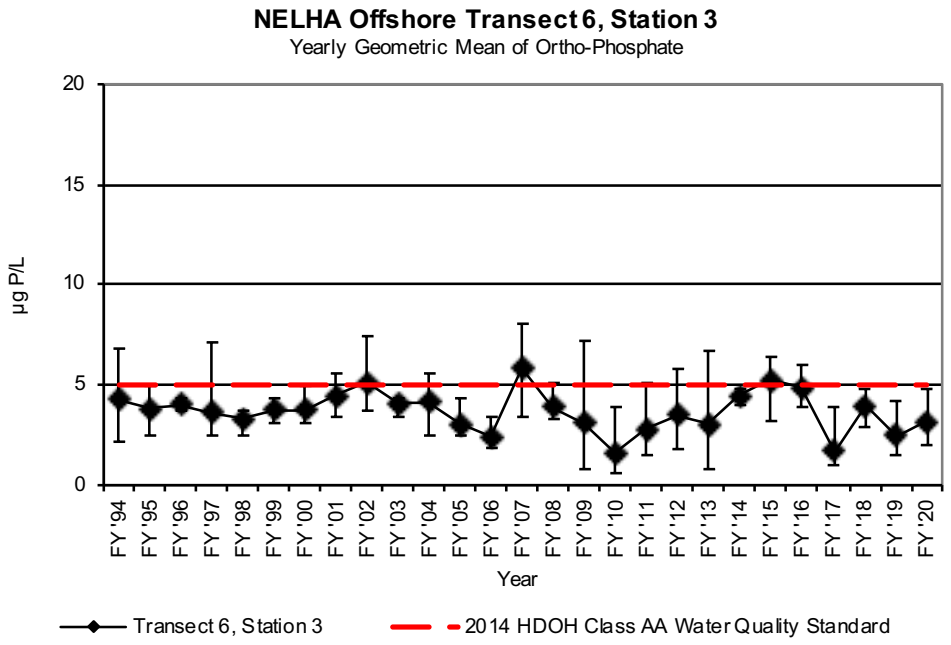
7/26/1993 - 7/16/20

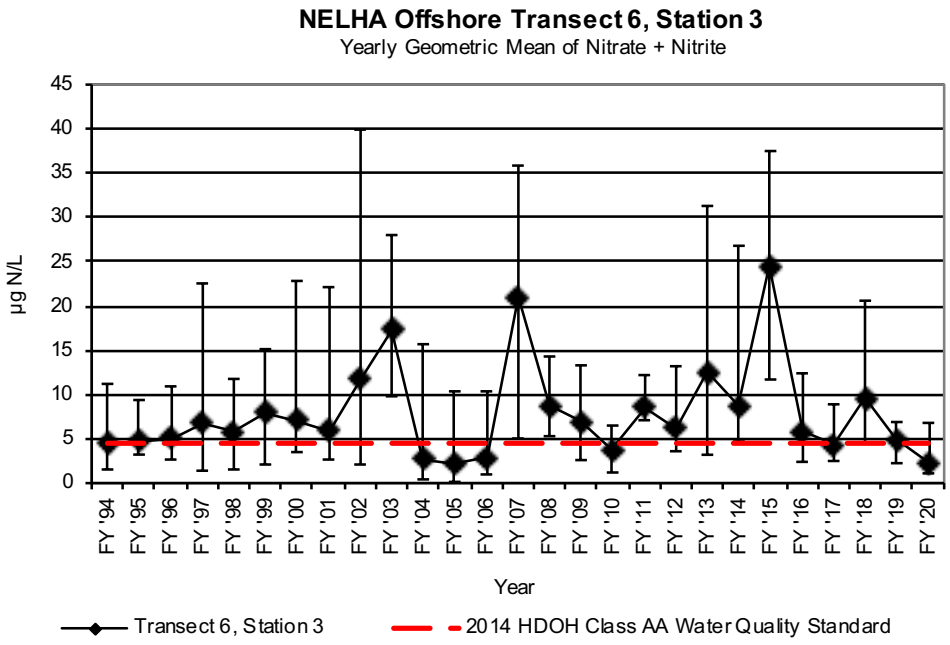
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T6-50m	9/28/17	1045	0.13	4.0	0.33	4.6	0.20	2.8	1.7	49	0.39	12.1	2.1	29	0.06	34.81	27.7	8.18	4.64	0.14
T6-50m	11/30/17	1028	0.14	4.4	1.24	17.3	0.59	8.2	6.8	190	0.40	12.4	3.8	53	0.07	35.02	26.2	8.24	5.65	0.22
T6-50m	2/6/18	1121	0.09	2.9	0.36	5.1	0.46	6.5	3.8	106	0.35	10.7	4.3	61	0.11	34.75	24.8	8.17	5.85	0.12
T6-50m	5/17/18	1044	0.15	4.8	1.47	20.6	0.21	2.9	11.1	312	0.40	12.3	3.5	49	0.06	34.55	25.8	8.17	6.46	0.16
Geomean	**FY '18**			**4.0**		***9.6***		***4.6***				**11.9**		**46**	**0.07**					**0.16**
T6-50m	9/26/18	1335	0.05	1.5	0.16	2.3	0.11	1.5	2.2	61	0.37	11.5	3.3	46	0.10	34.66	27.6	8.16	4.50	0.12
T6-50m	11/14/18	1139	0.05	1.7	0.49	6.9	0.19	2.7	1.4	38	0.34	10.6	5.6	78	0.09	34.87	27.3	8.20	6.18	0.27
T6-50m	1/23/19	1123	0.11	3.4	0.49	6.8	0.17	2.4	5.6	156	0.39	12.1	2.5	35	0.08	34.78	24.9	8.18	5.13	0.20
T6-50m	4/17/19	1120	0.14	4.2	0.39	5.4	0.23	3.2	2.8	77	0.39	12.0	2.5	35	0.07	34.67	25.7	8.13	7.07	0.12
Geomean	**FY '19**			**2.5**		***4.9***		**2.4**				**11.5**		**46**	**0.08**					**0.17**
T6-50m	8/15/19	1048	0.06	2.0	0.08	1.1	0.09	1.3	5.2	146	0.33	10.3	2.1	30	0.10	35.20	28.2	8.28	6.67	0.16
T6-50m	11/20/19	1201	0.11	3.3	0.12	1.7	0.33	4.6	0.7	20	0.41	12.8	4.0	56	0.08	35.18	27.6	8.23	6.67	0.15
T6-50m	1/23/20	1106	0.15	4.8	0.49	6.8	0.41	5.7	5.6	157	0.43	13.3	4.0	56	0.21	34.77	24.8	8.25	7.07	0.14
T6-50m	6/25/20	1027	0.11	3.3	0.14	1.9	0.19	2.7	3.9	110	0.32	9.8	2.6	36	0.07	35.42	26.1	8.19	6.69	0.21
Geomean	**FY '20**			**3.2**		**2.2**		***3.1***				**11.4**		**43**	***0.10***					**0.16**

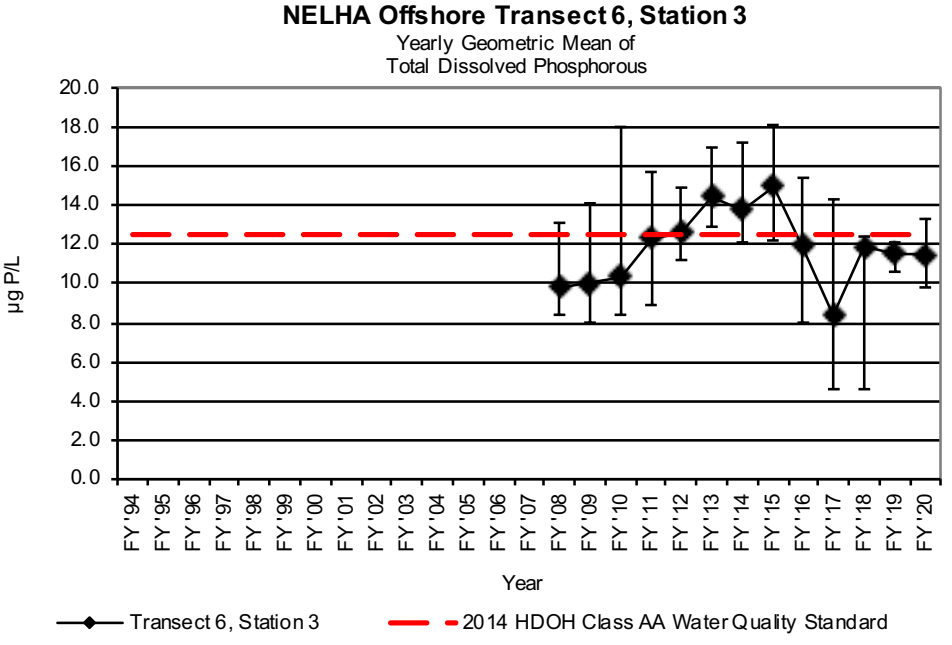
NELHA Water Quality Laboratory

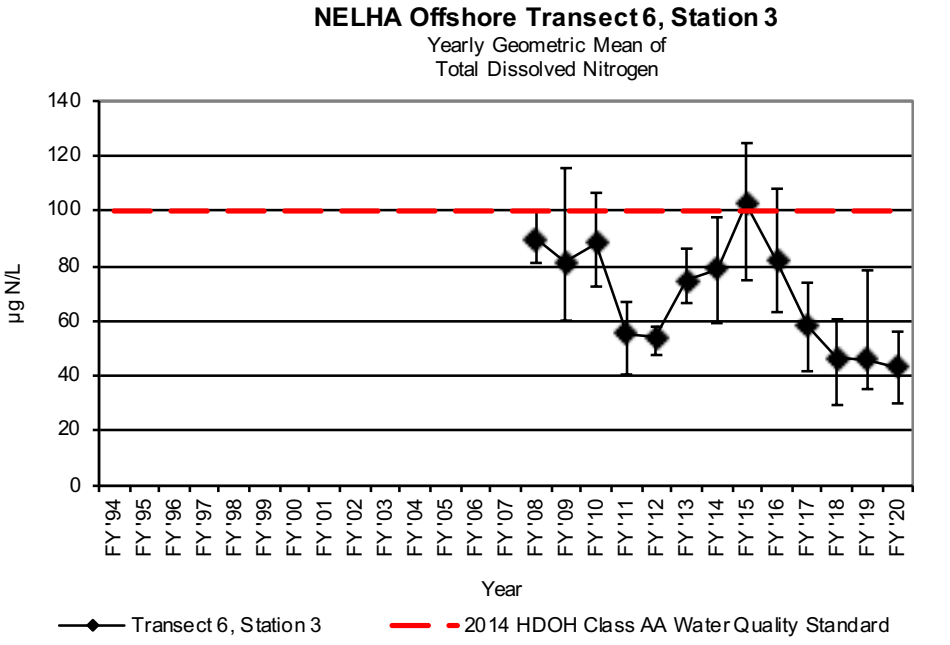
Transect 6, Station 3

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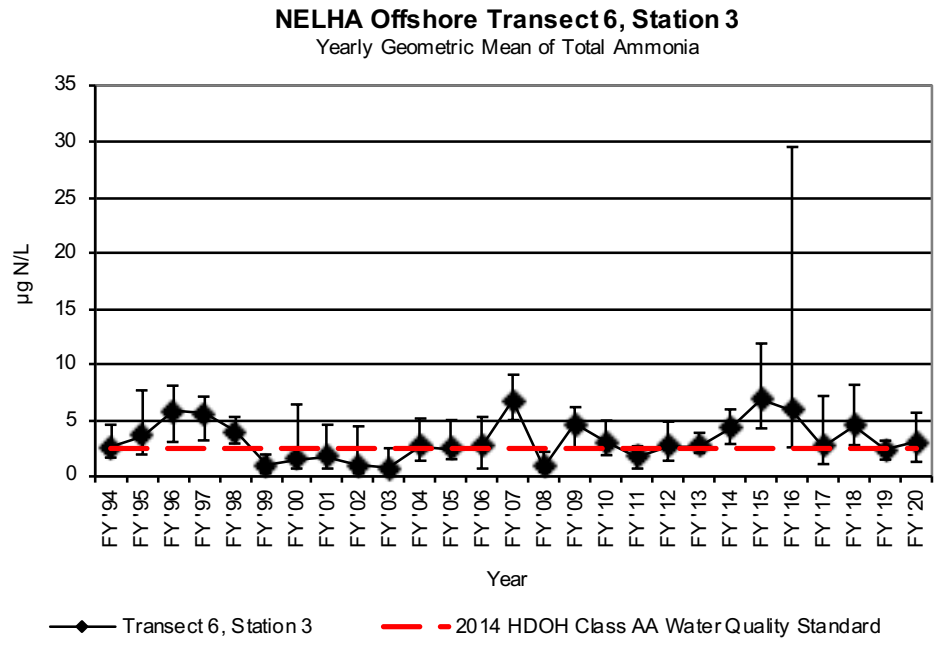


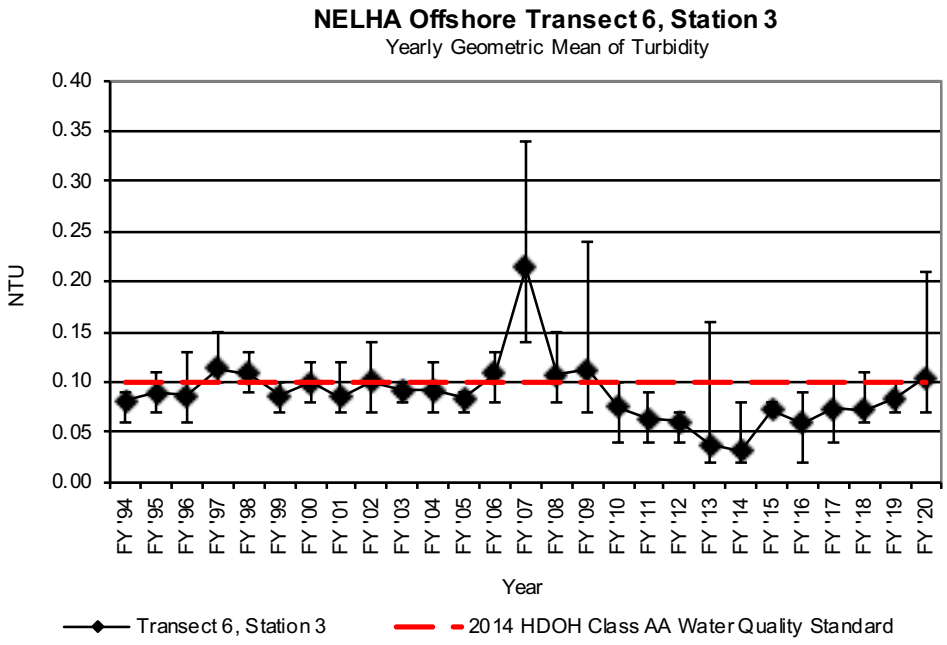


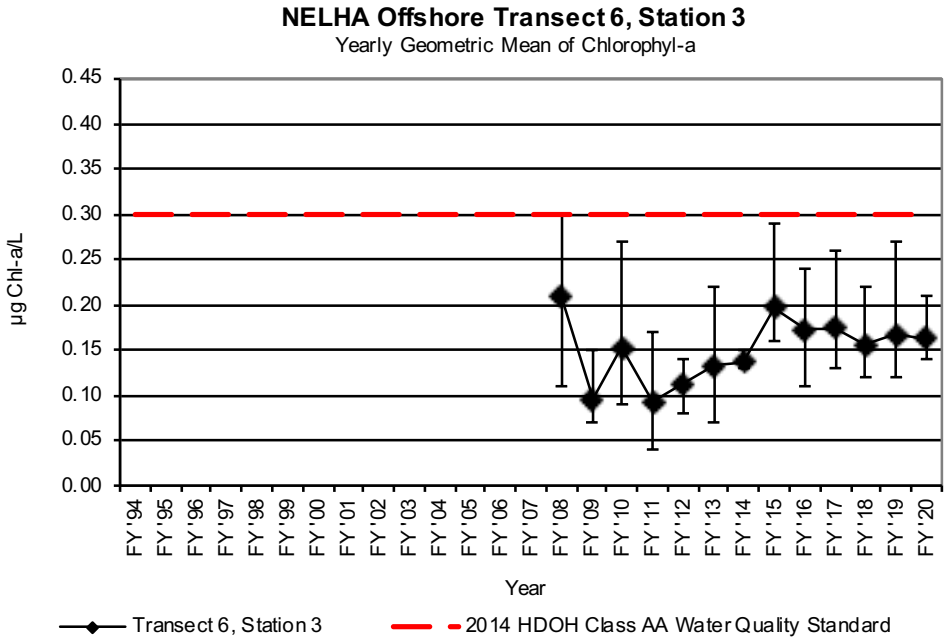
NELHA Water Quality Laboratory

Transect 6, Station 3

7/26/1993 - 7/16/20







NELHA Water Quality Laboratory

Transect 6, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-4S-53m	7/26/93	1130	0.09	2.8	0.12	1.7	0.42	5.9	2.1	58					0.07	34.440	27.0			
O6-4S-53m	12/6/93	917	0.06	1.9	0.53	7.4	0.09	1.3	4.2	118					0.09	34.755	25.7			
O6-4S-53m	3/7/94	849	0.22	6.8	0.91	12.7	0.18	2.5	11.4	320					0.08	33.964	24.9			
O6-4S-53m	6/15/94	857	0.22	6.8	0.27	3.8	0.40	5.6	4.2	117					0.13	34.497	25.6			
Geomean	**FY '94**			**3.9**		***5.0***		***3.2***							**0.09**					
O6-4S-53m	9/9/94	847	0.06	1.9	0.01	0.1	0.10	1.4	2.5	70					0.07	34.580	27.6			
O6-4S-53m	11/14/94	759	0.14	4.3	0.48	6.7	0.55	7.7	6.7	188					0.11	34.521	26.0			
O6-4S-53m	3/22/95	830	0.17	5.3	0.29	4.1	0.34	4.8	5.5	154					0.11	34.128	25.1			
O6-4S-53m	6/20/95	820	0.12	3.7	0.24	3.4	0.10	1.4	3.8	106					0.07	34.389	26.2			
Geomean	**FY '95**			**3.5**		**1.9**		***2.9***							**0.09**					
O6-4S-53m	9/26/95	953	0.14	4.3	0.58	8.1	0.56	7.8	10.0	281					0.17	34.295	27.0			
O6-4S-53m	11/14/95	1058	0.11	3.4	0.30	4.2	0.52	7.3	4.5	125					0.09	34.315	26.8			
O6-4S-53m	3/12/96	1121	0.14	4.3	0.27	3.8	0.52	7.3	4.9	138					0.06	34.095	25.5			
O6-4S-53m	5/14/96	1117	0.10	3.1	0.14	2.0	0.16	2.2	4.1	114					0.08	34.273	27.5			
Geomean	**FY '96**			**3.8**		**4.0**		***5.5***							**0.09**					
O6-4S-53m	7/31/96	1146	0.13	4.0	1.73	24.2	0.53	7.4	23.1	649					0.12	33.745	27.8			
O6-4S-53m	10/2/96	1119	0.08	2.5	0.06	0.8	0.46	6.4	10.6	299					0.13	34.343	28.4			
O6-4S-53m	1/7/97	1124	0.09	2.8	0.59	8.3	0.24	3.4	9.5	267					0.09	34.486	25.6			
O6-4S-53m	4/28/97	1141	0.17	5.3	0.56	7.8	0.53	7.4	9.3	260					0.09	34.227	26.5			
Geomean	**FY '97**			**3.5**		***6.0***		***5.9***							***0.11***					
O6-4S-53m	8/19/97	1123	0.12	3.7	0.53	7.4	0.24	3.4	10.9	306					0.12	34.387	27.0			
O6-4S-53m	10/7/97	1025	0.11	3.4	0.19	2.7	0.37	5.2	7.1	199					0.10	34.654	27.6			
O6-4S-53m	3/4/98	1157	0.14	4.3	1.65	23.1	0.36	5.0	26.3	739					0.10	34.160	25.2			
O6-4S-53m	5/5/98	1148	0.14	4.3	1.38	19.3	0.31	4.3	17.6	495					0.12	34.579	24.4			
Geomean	**FY '98**			**3.9**		***9.7***		***4.4***							***0.11***					
O6-4S-53m	7/7/98	1204	0.14	4.3	0.95	13.3	0.04	0.6	14.3	402					0.11	34.647	26.3			
O6-4S-53m	10/6/98	1113	0.12	3.7	0.85	11.9	0.13	1.8	10.0	282					0.08	34.817	27.1			
O6-4S-53m	1/19/99	1152	0.08	2.5	0.52	7.3	0.13	1.8	8.4	237					0.07	34.946	25.2			
O6-4S-53m	4/12/99	1156	0.12	3.7	0.18	2.5	0.14	2.0	5.1	144					0.09	34.620	24.2			
Geomean	**FY '99**			**3.5**		***7.3***		**1.4**							**0.09**					

NELHA Water Quality Laboratory

Transect 6, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-4S-53m	7/6/99	1222	0.09	2.8	0.28	3.9	0.08	1.1	6.0	170					0.12	34.811	25.7			
O6-4S-53m	10/4/99	1242	0.11	3.4	0.26	3.6	0.06	0.8	4.4	124					0.09	34.923	26.4			
O6-4S-53m	1/12/00	1149	0.15	4.6	1.53	21.4	0.42	5.9	25.9	726					0.07	34.375	24.8			
O6-4S-53m	4/11/00	1049	0.12	3.7	0.72	10.1	0.04	0.6	11.1	311					0.05	34.560	24.5			
Geomean	**FY '00**			**3.6**		***7.5***		**1.3**							**0.08**					
O6-4S-53m	7/25/00	1209	0.11	3.4	0.21	2.9	0.07	1.0	5.8	164					0.07	34.763	26.7			
O6-4S-53m	10/31/00	1153	0.12	3.7	0.39	5.5	0.27	3.8	9.3	260					0.11	34.773	26.9			
O6-4S-53m	3/6/01	1140	0.17	5.3	0.20	2.8	0.10	1.4	5.6	157					0.12	34.678	24.8			
O6-4S-53m	5/7/01	1241	0.17	5.3	1.50	21.0	0.35	4.9	23.5	660					0.09	34.363	24.8			
Geomean	**FY '01**			**4.3**		***5.5***		**2.2**							**0.10**					
O6-4S-53m	8/14/01	1044	0.12	3.7	0.14	2.0	0.29	4.1	3.6	100					0.10	34.814	26.7			
O6-4S-53m	10/30/01	1056	0.15	4.6	0.74	10.4	0.05	0.7	7.1	199					0.08	34.833	26.8			
O6-4S-53m	3/6/02	1102	0.25	7.7	3.10	43.4	0.08	1.1	23.3	654					0.09	34.958	24.2			
O6-4S-53m	4/15/02	1117	0.12	3.7	1.85	25.9	0.06	0.8	12.3	346					0.09	34.173	25.6			
Geomean	**FY '02**			**4.7**		***12.3***		**1.3**							**0.09**					
O6-4S-53m	7/10/02	1106	0.07	2.2	2.10	29.4	0.20	2.8	14.0	393					0.07	34.319	26.2			
O6-4S-53m	10/8/02	1102	0.14	4.3	1.76	24.7	0.09	1.3	11.8	331					0.10	34.617	27.1			
O6-4S-53m	3/12/03	959	0.14	4.3	0.80	11.2	0.03	0.4	10.5	295					0.09	34.472	24.9			
O6-4S-53m	4/23/03	1110	0.15	4.6	1.32	18.5	0.03	0.4	14.6	409					0.09	35.561	25.0			
Geomean	**FY '03**			**3.7**		***19.7***		**0.9**							**0.09**					
O6-4S-53m	8/21/03	1038	0.09	2.8	0.03	0.4	0.10	1.4	3.8	106					0.05	34.779	28.4			
O6-4S-53m	11/3/03	1016	0.10	3.1	0.01	0.1	0.17	2.4	2.4	67					0.08	34.647	27.3			
O6-4S-53m	3/18/04	1033	0.12	3.7	0.52	7.3	0.38	5.3	6.8	190					n/a	34.195	25.7			
O6-4S-53m	5/24/04	1041	0.16	5.0	0.50	7.0	0.23	3.2	5.5	154					n/a	33.35	26.8			
Geomean	**FY '04**			**3.6**		**1.3**		***2.7***							**0.06**					
O6-4S-53m	9/22/04	1123	0.07	2.2	0.01	0.1	0.27	3.8	2.3	64					0.08	33.68	27.8			
O6-4S-53m	11/29/04	1031	0.09	2.8	0.38	5.3	0.17	2.4	4.6	129					0.04	33.69	26.9			
O6-4S-53m	1/24/05	1108	0.06	1.9	0.01	0.1	0.14	2.0	2.1	59					0.07	34.341	25.7			
O6-4S-53m	4/13/05	1112	0.14	4.3	0.34	4.8	0.16	2.2	6.2	175					0.08	34.844	25.0			
Geomean	**FY '05**			**2.6**		**0.8**		***2.5***							**0.07**					

NELHA Water Quality Laboratory

Transect 6, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-4S-53m	7/21/05	1049	0.06	1.9	0.18	2.5	0.38	5.3	4.6	130					0.09	34.664	27.4			
O6-4S-53m	10/13/05	1021	0.06	1.9	0.05	0.7	0.20	2.8	2.8	77					0.10	34.901	27.4			
O6-4S-53m	3/15/06	945	0.11	3.4	0.63	8.8	0.33	4.6	11.1	313					0.08	34.655	24.4			
O6-4S-53m	5/17/06	1030	0.10	3.1	0.08	1.1	0.05	0.7	1.5	43					0.11	34.665	24.8			
Geomean	**FY '06**			**2.5**		**2.0**		***2.6***							**0.09**					
O6-4S-53m	8/16/06	1032	0.12	3.7	0.49	6.9	0.33	4.6	3.9	109					0.09	34.585	26.8			
O6-4S-53m	11/20/06	1030	0.18	5.6	1.28	17.9	0.63	8.8	11.7	329					0.41	34.480	26.7			
O6-4S-53m	2/12/07	1130	0.19	5.9	2.03	28.4	0.42	5.9	15.8	444					0.18	33.994	24.9			
O6-4S-53m	4/16/07	1112	0.14	4.3	0.63	8.8	0.39	5.5	9.6	269					0.19	34.453	26.5			
Geomean	**FY '07**			**4.8**		***13.3***		***6.0***							***0.19***					
T6-100m	9/27/07	1000	0.14	4.4	0.01	0.1	0.13	1.8	9.4	263	0.33	10.2	6.2	87	0.15	34.797	26.7	8.09	6.31	0.08
T6-100m	12/14/07	1033	0.13	4.0	0.89	12.5	0.00		9.1	255	0.39	12.1	7.8	109	0.11	34.470	25.7	8.16	6.84	0.22
T6-100m	3/11/08	1041	0.12	3.7	0.54	7.6	0.06	0.8	17.1	481	0.24	7.5	6.0	84	0.11	34.723	24.8	8.11	6.56	0.32
T6-100m	6/9/08	1109	0.09	2.8	0.07	1.0	0.16	2.2	14.6	410	0.29	9.1	6.7	93	0.12	34.5697	25.2	8.11	5.75	0.22
Geomean	**FY '08**			**3.7**		**1.8**		**1.5**				**9.6**		**93**	***0.12***					**0.19**
T6-100m	9/23/08	1210	0.03	0.8	0.14	2	0.31	4.3	2.2	63	0.35	10.7	5.4	75	0.06	34.787	26.8	8.07	6.05	0.12
T6-100m	12/8/08	1114	0.16	5	0.58	8.1	0.30	4.2	5.3	149	0.35	10.8	5.8	81	0.08	34.690	26.3	8.30	5.63	0.04
T6-100m	2/10/09	1005	0.09	2.8	0.55	7.7	0.18	2.5	5.7	159	0.24	7.4	8.7	122	0.09	34.908	24.8	8.06	5.87	0.04
T6-100m	6/30/09	1055	0.29	9	1.44	20.1	0.63	8.8	13.6	381	0.49	15.1	5.3	75	0.10	34.516	26.7	8.18	6.28	0.16
Geomean	**FY '09**			**3.2**		***7.1***		***4.5***				**10.7**		**86**	**0.08**					**0.07**
T6-100m	9/10/09	1108	0.18	5.7	0.60	8.4	0.52	7.3	8.5	239	0.60	18.5	6.7	94	0.09	35.11	27.3	8.19	5.77	0.32
T6-100m	11/24/09	1027	0.02	0.766	0.45	6.3	0.16	2.3	16.4	461	0.31	9.5	5.5	77	0.06	35.13	25.1	8.24	6.59	0.18
T6-100m	2/24/10	1054	0.12	3.7	0.16	2.2	0.38	5.3	2.6	73	0.32	10.0	7.3	103	0.07	34.83	24.6	8.22	5.56	0.27
T6-100m	5/26/10	1016	0.01	0.4	0.13	1.8	0.19	2.7	4.5	128	0.23	7.2	4.6	65	0.06	34.77	25.1	8.28	6.65	0.09
Geomean	**FY '10**			**1.6**		**3.8**		***3.9***				**10.6**		**83**	**0.07**					**0.19**
T6-100m	8/11/10	1032	0.08	2.6	1.26	17.7	0.30	4.2	12.1	339	0.29	9.1	2.8	39	0.05	34.68	25.96	8.21	6.46	0.08
T6-100m	11/9/10	1028	0.05	1.5	0.49	6.8	0.11	1.5	4.9	138	0.45	14	5.3	74	0.09	34.84	26.43	8.29	6.28	0.07
T6-100m	1/11/11	1255	0.15	4.7	0.58	8.1	0.21	2.9	6.5	183	0.45	13.8	3.9	55	0.04	34.87	25.09	8.25	6.52	0.13
T6-100m	4/27/11	1027	0.15	4.7	0.26	3.6	0.11	1.5	4.6	129	0.40	12.5	3.8	53	0.08	34.83	24.94	8.22	6.30	0.14
Geomean	**FY '11**			**3.0**		***7.7***		**2.3**				**12.2**		**54**	**0.06**					**0.10**

NELHA Water Quality Laboratory

Transect 6, Station 4

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T6-100m	7/27/11	1114	0.19	6	0.24	3.3	0.06	0.9	2.9	83	0.49	15.1	3.7	53	0.09	34.76	26.21	8.22	6.37	0.13
T6-100m	10/19/11	1056	0.06	1.8	0.25	3.5	0.08	1.1	3.9	109	0.36	11.2	3.7	51	0.07	35.09	26.56	8.25	6.86	0.13
T6-100m	1/26/12	1022	0.06	2	0.14	2	0.11	1.5	3.0	84	0.35	10.8	3.8	54	0.04	34.98	24.48	8.21	6.68	0.13
T6-100m	4/25/12	1035	0.22	6.9	0.83	11.6	0.42	5.9	9.5	266	0.43	13.3	4.3	60	0.07	34.68	24.83	8.20	6.81	0.17
Geomean	**FY '12**			**3.5**		**4.0**		**1.7**				**12.5**		**54**	**0.06**					**0.14**
T6-100m	7/25/12	1045	0.03	0.8	0.14	2	0.33	4.6	2.5	70	0.43	13.3	4.9	68	0.07	35.05	26.43	8.23	6.82	0.26
T6-100m	11/28/12	1039	0.21	6.5	3.43	48.1	0.39	5.5	20.5	577	0.52	16.1	8.0	112	0.03	34.63	25.02	8.20	6.45	0.09
T6-100m	1/24/13	1027	0.12	3.6	0.96	13.4	0.16	2.3	7.4	207	0.46	14.2	6.2	87	0.04	34.91	24.75	8.22	6.43	0.12
T6-100m	4/24/13	951	0.18	5.5	0.82	11.55	0.12	1.65	9.5	266	0.49	15.15	4.8	67	0.03	34.95	24.97	8.21	6.70	0.11
Geomean	**FY '13**			**3.2**		***11.0***		***3.1***				***14.7***		**82**	**0.04**					**0.13**
T6-100m	8/6/13	1111	0.11	3.3	1.27	17.8	0.28	3.9	7.8	218	0.35	10.9	5.6	79	0.02	34.94	26.4	8.21	7.05	0.14
T6-100m	10/30/13	1019	0.15	4.6	0.41	5.8	0.20	2.8	3.4	94	0.51	15.8	6.2	87	0.02	34.89	27.0	8.22	5.94	0.13
T6-100m	2/5/14	1043	0.14	4.4	0.25	3.5	0.35	4.9	2.3	63	0.46	14.1	4.6	65	0.02	35.00	25.2	8.21	6.36	0.13
T6-100m	5/7/14	1039	0.13	4.0	0.41	5.7	0.06	0.9	3.4	96	0.43	13.3	5.4	76	0.13	34.71	25.7	8.18	5.45	0.14
Geomean	**FY '14**			**4.0**		***6.7***		***2.6***				***13.4***		**76**	**0.03**					**0.13**
T6-100m	8/6/14	1033	0.18	5.5	0.15	2.1	0.24	3.3	1.5	41	0.49	15.1	5.4	76	0.05	34.96	26.6	8.22	5.88	0.05
T6-100m	12/4/14	1112	0.18	5.5	1.85	25.9	0.47	6.6	14.3	402	0.61	19.0	8.9	125	0.03	34.74	26.3	8.26	6.47	0.18
T6-100m	3/5/15	1122	0.04	1.1	0.43	6.0	0.40	5.6	2.3	64	0.22	6.8	7.6	106	0.08	34.51	25.4	8.27	6.86	0.15
T6-100m	6/18/15	1047	0.20	6.2	2.63	36.8	0.43	6.0	13.3	373	0.46	14.1	11.4	160	0.07	33.91	26.6	8.19	6.63	0.28
Geomean	**FY '15**			**3.8**		***10.5***		***5.2***				***12.9***		***113***	**0.05**					**0.14**
T6-100m	8/27/15	1045	0.14	4.4	0.09	1.2	0.19	2.7	3.5	99	0.20	6.3	4.5	63	0.03	34.66	28.5	8.28	6.02	0.35
T6-100m	11/18/15	1120	0.15	4.8	0.66	9.2	0.23	3.2	4.7	132	0.50	15.6	5.8	82	0.07	34.64	27.5	8.29	6.51	0.22
T6-100m	3/2/16	958	0.13	3.9	0.37	5.2	0.34	4.7	1.0	27	0.47	14.6	7.5	105	0.10	34.73	25.3	8.25	5.84	0.14
T6-100m	5/4/16	1058	0.12	3.6	0.64	8.9	0.29	4.0	6.4	181	0.28	8.7	5.3	75	0.09	34.50	25.8	8.19	6.01	0.24
Geomean	**FY '16**			**4.1**		***4.8***		***3.6***				**10.6**		**80**	**0.07**					**0.23**
T6-100m	7/7/16	1059	0.15	4.5	0.09	1.2	0.57	8.0	8.4	236	0.55	16.9	4.6	64	0.10	34.42	26.8	8.31	6.49	0.16
T6-100m	12/21/16	1136	0.05	1.7	0.30	4.2	0.21	3.0	2.5	70	0.36	11.3	3.3	46	0.06	34.63	25.6	8.28	6.15	0.10
T6-100m	3/1/17	1206	0.00	0.1	0.17	2.4	0.06	0.8	1.5	42	0.29	9.1	3.6	50	0.10	34.73	24.6	8.25	5.65	0.21
T6-100m	5/10/17	1154	0.05	1.4	0.09	1.2	0.39	5.4	0.3	8	0.21	6.6	3.2	45	0.05	34.87	25.8	8.24	4.07	0.07
Geomean	**FY '17**			**1.0**		**2.0**		***3.2***				**10.3**		**51**	**0.07**					**0.12**

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Transect 6, Station 4

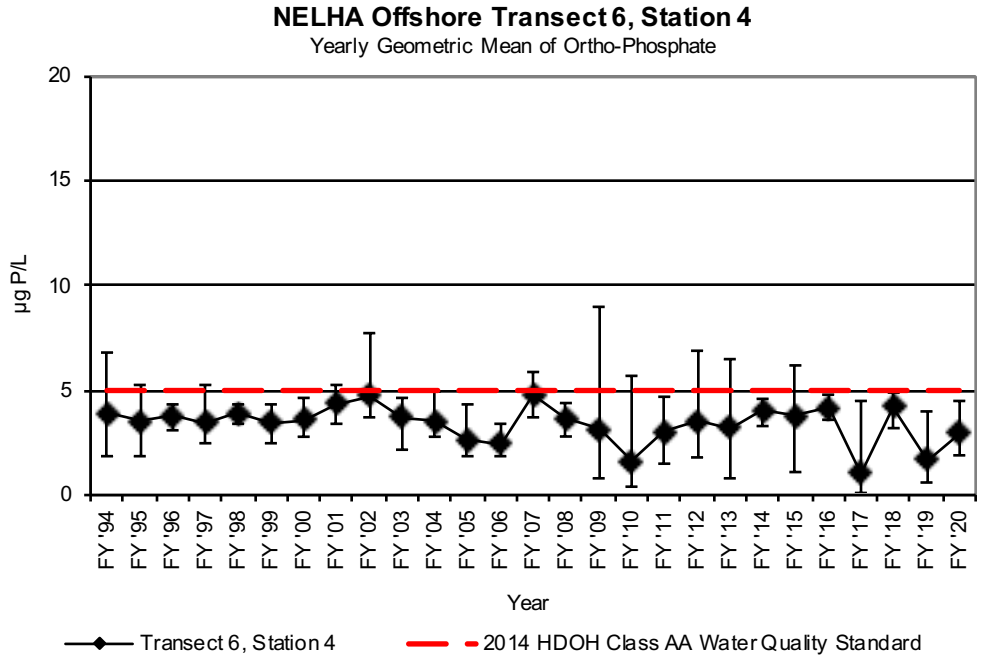
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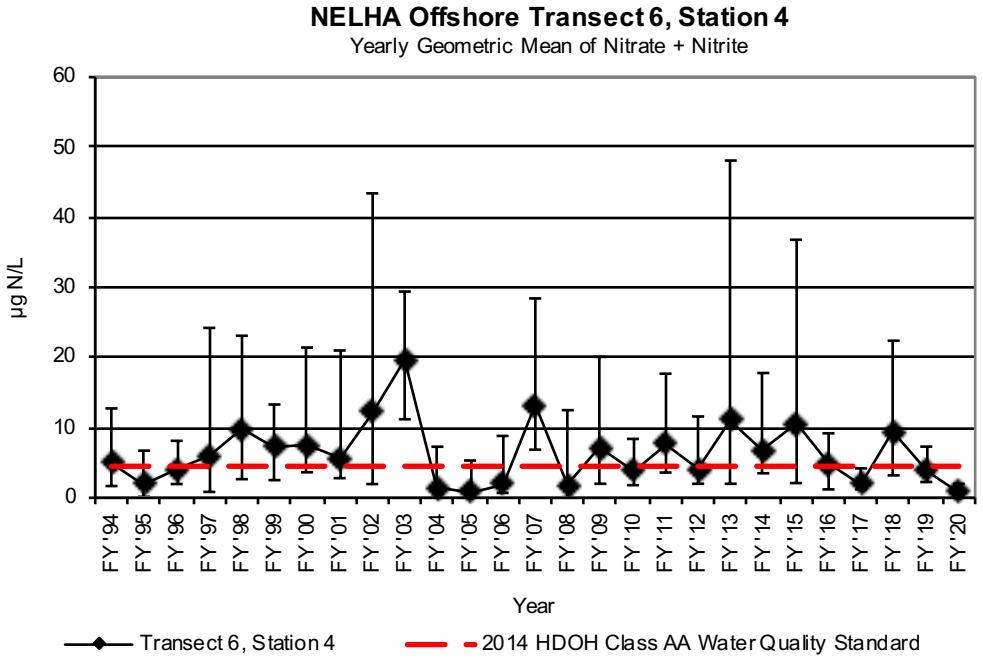
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T6-100m	9/28/17	1052	0.16	4.9	0.23	3.2	0.19	2.6	1.5	41	0.43	13.4	2.5	35	0.07	34.83	27.8	8.19	4.65	0.11
T6-100m	11/30/17	1032	0.15	4.7	1.60	22.4	0.74	10.3	8.5	239	0.41	12.8	4.7	66	0.09	34.99	26.2	8.24	5.62	0.20
T6-100m	2/6/18	1127	0.10	3.2	0.51	7.1	0.54	7.6	4.8	135	0.35	10.9	3.7	52	0.11	34.77	24.8	8.17	5.90	0.14
T6-100m	5/17/18	1100	0.14	4.4	1.11	15.5	0.34	4.8	10.6	299	0.39	12.2	2.7	38	0.06	34.57	25.9	8.17	6.49	0.18
Geomean	**FY '18**			**4.2**		***9.4***		***5.6***				**12.3**		**46**	**0.08**					**0.15**
T6-100m	9/26/18	1341	0.02	0.6	0.16	2.3	0.09	1.3	1.7	47	0.33	10.3	1.9	27	0.13	34.67	27.6	8.16	4.82	0.15
T6-100m	11/14/18	1144	0.03	1.0	0.25	3.5	0.44	6.1	0.7	21	0.33	10.1	6.0	84	0.07	34.90	27.4	8.20	6.17	0.14
T6-100m	1/23/19	1128	0.11	3.5	0.52	7.3	0.19	2.7	4.5	127	0.39	12.0	2.7	38	0.05	34.92	25.0	8.19	4.98	0.14
T6-100m	4/17/19	1125	0.13	4.0	0.31	4.3	0.46	6.4	2.2	62	0.39	12.1	2.9	41	0.02	34.67	25.8	8.12	6.96	0.10
Geomean	**FY '19**			**1.7**		**4.0**		***3.4***				**11.1**		**43**	**0.05**					**0.13**
T6-100m	8/15/19	1053	0.06	1.9	0.08	1.1	0.09	1.3	5.3	149	0.33	10.2	2.4	34	0.09	35.21	28.3	8.28	6.70	0.17
T6-100m	11/20/19	1206	0.10	3.2	0.05	0.7	0.09	1.3	0.3	9	0.42	13.0	2.8	39	0.06	35.19	27.7	8.22	6.44	0.14
T6-100m	1/23/20	1113	0.15	4.5	0.14	2.0	0.09	1.3	3.6	102	0.42	12.9	4.2	59	0.13	34.87	24.9	8.25	6.93	0.16
T6-100m	6/25/20	1032	0.09	2.8	0.01	0.2	0.09	1.3	3.4	97	0.35	10.7	3.2	44	0.08	35.41	26.1	8.18	6.63	0.24
Geomean	**FY '20**			**3.0**		**0.7**		**1.3**				**11.6**		**43**	**0.09**					**0.17**

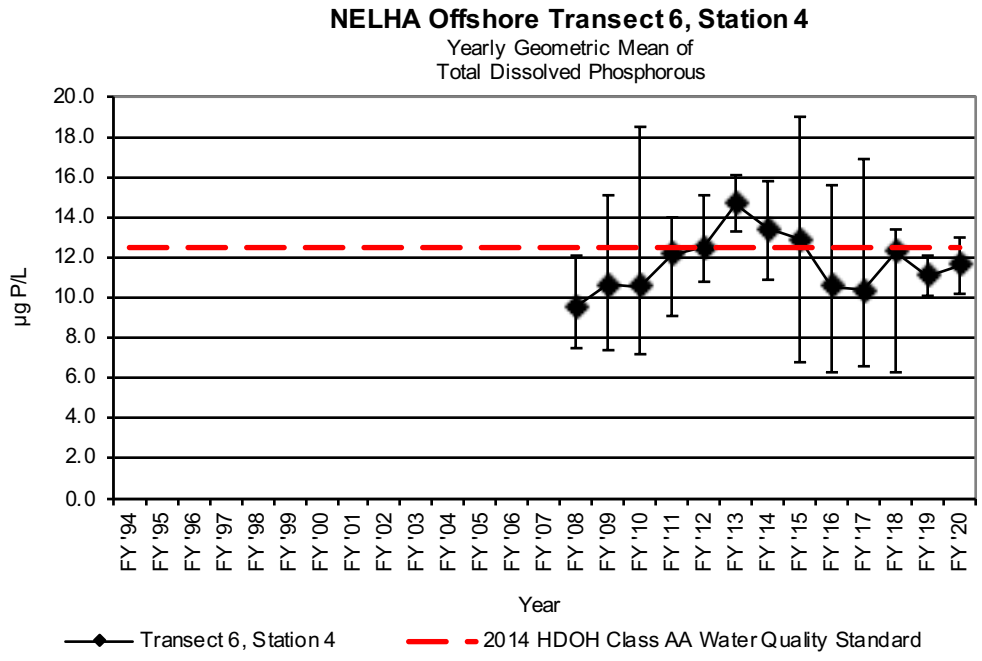
NELHA Water Quality Laboratory

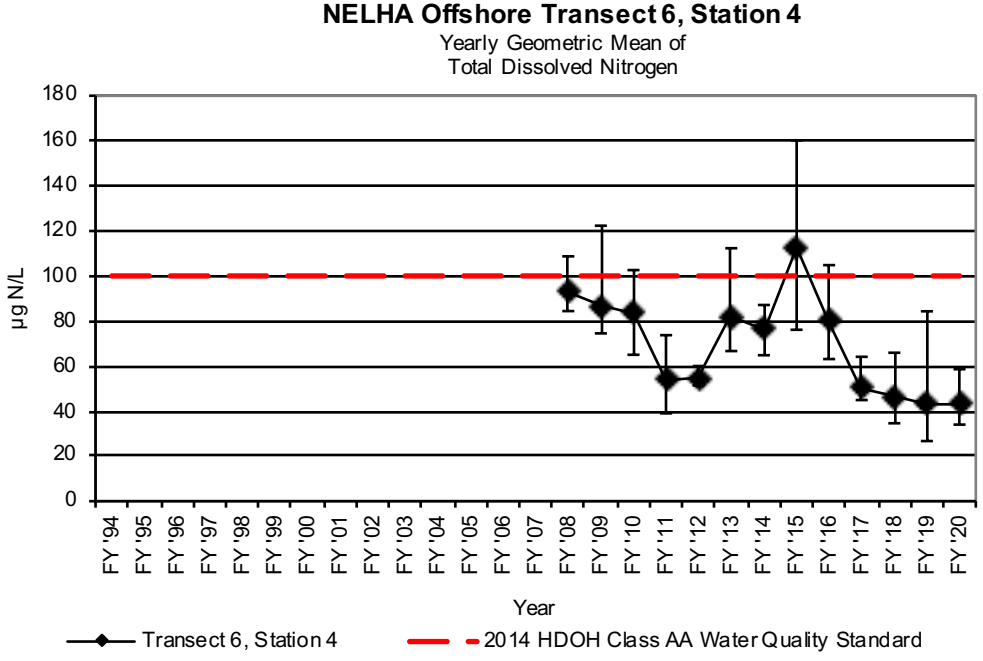
Transect 6, Station 4

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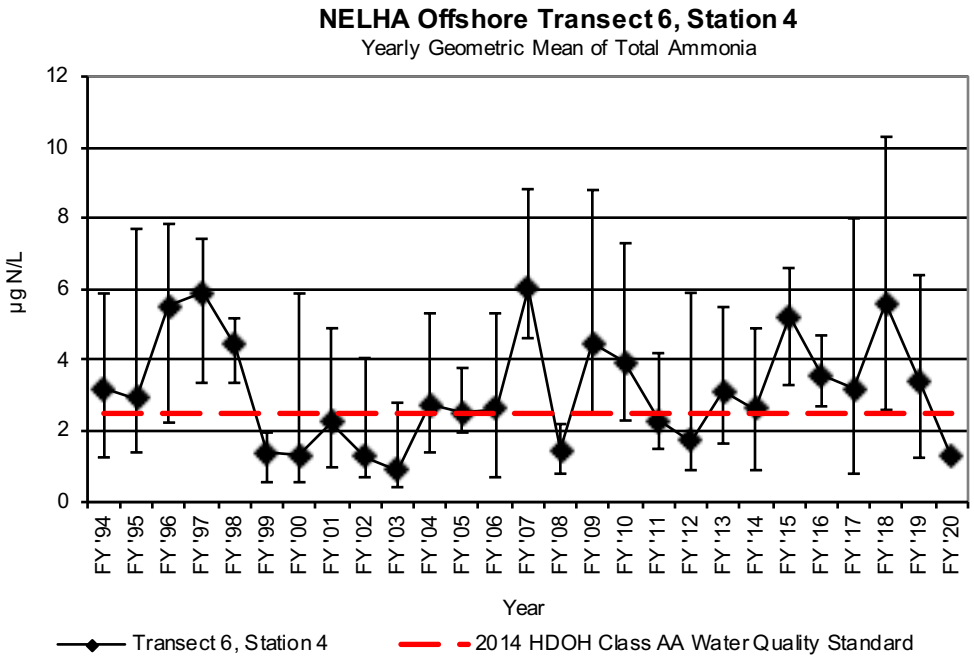


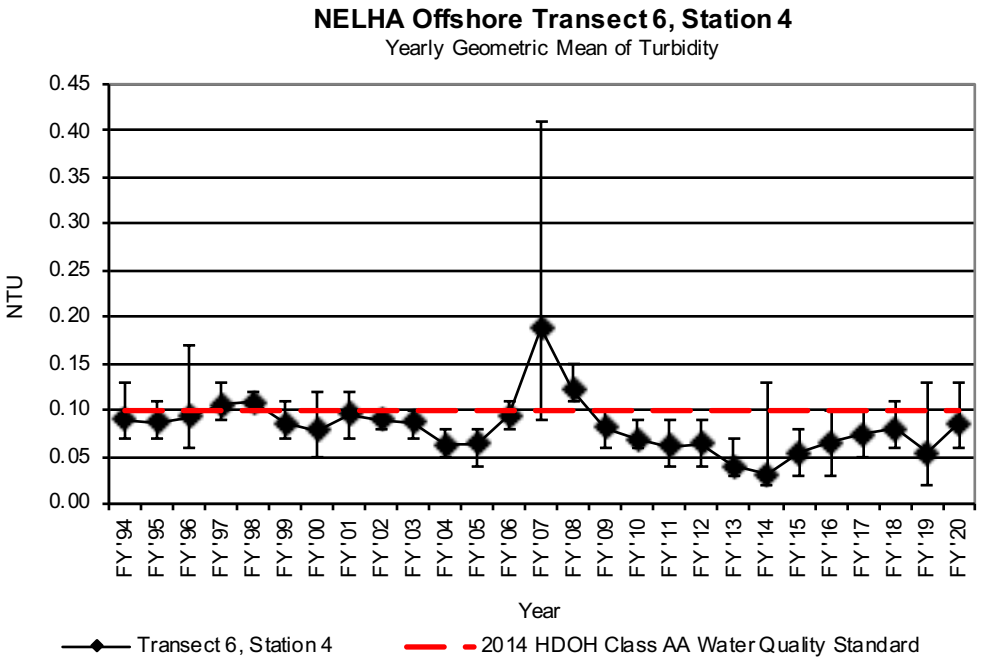


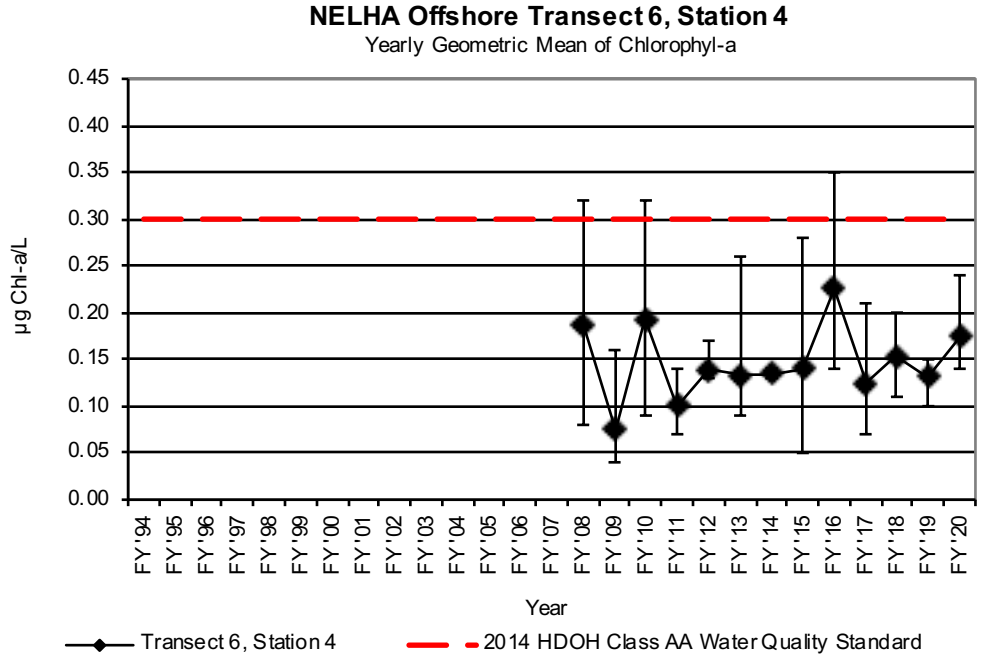
NELHA Water Quality Laboratory

Transect 6, Station 4

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NELHA Water Quality Laboratory

Transect 6, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-5S-69m	7/26/93	1119	0.08	2.5	0.14	2.0	0.39	5.5	2.1	60					0.08	34.431	26.9			
O6-5S-69m	12/6/93	907	0.06	1.9	0.51	7.1	0.06	0.8	3.9	109					0.08	34.772	25.7			
O6-5S-69m	3/7/94	840	0.22	6.8	0.84	11.8	0.18	2.5	10.6	298					0.08	33.989	24.9			
O6-5S-69m	6/15/94	853	0.20	6.2	0.21	2.9	0.12	1.7	4.1	116					0.10	34.476	25.6			
Geomean	**FY '94**			**3.7**		***4.7***		**2.1**							**0.08**					
O6-5S-69m	9/9/94	842	0.07	2.2	0.03	0.4	0.04	0.6	2.6	72					0.09	34.598	27.6			
O6-5S-69m	11/14/94	755	0.15	4.6	0.61	8.5	0.55	7.7	8.3	232					0.09	34.473	26.0			
O6-5S-69m	3/22/95	814	0.17	5.3	0.24	3.4	0.34	4.8	4.8	135					0.11	34.152	25.0			
O6-5S-69m	6/20/95	815	0.14	4.3	0.40	5.6	0.09	1.3	5.4	151					0.06	34.342	26.2			
Geomean	**FY '95**			**3.9**		**2.9**		**2.3**							**0.09**					
O6-5S-69m	9/26/95	1002	0.12	3.7	0.40	5.6	0.47	6.6	9.6	269					0.11	34.363	27.0			
O6-5S-69m	11/14/95	1054	0.12	3.7	0.37	5.2	0.60	8.4	5.3	148					0.12	34.233	26.8			
O6-5S-69m	3/12/96	1115	0.18	5.6	0.21	2.9	0.58	8.1	4.0	113					0.06	34.129	25.5			
O6-5S-69m	5/14/96	1113	0.09	2.8	0.02	0.3	0.11	1.5	2.3	65					0.05	34.317	27.5			
Geomean	**FY '96**			**3.8**		**2.2**		***5.1***							**0.08**					
O6-5S-69m	7/31/96	1148	0.14	4.3	1.83	25.6	0.55	7.7	24.9	698					0.12	33.672	27.7			
O6-5S-69m	10/2/96	1115	0.09	2.8	0.72	10.1	0.50	7.0	11.1	313					0.15	34.317	28.4			
O6-5S-69m	1/7/97	1120	0.09	2.8	0.55	7.7	0.25	3.5	7.5	210					0.11	34.547	25.6			
O6-5S-69m	4/28/97	1136	0.17	5.3	0.59	8.3	0.55	7.7	8.8	248					0.09	34.222	26.6			
Geomean	**FY '97**			**3.6**		***11.3***		***6.2***							***0.12***					
O6-5S-69m	8/19/97	1117	0.12	3.7	0.63	8.8	0.24	3.4	11.0	308					0.11	34.358	27.0			
O6-5S-69m	10/7/97	1016	0.10	3.1	0.11	1.5	0.37	5.2	4.4	125					0.13	34.709	27.6			
O6-5S-69m	3/4/98	1149	0.10	3.1	0.47	6.6	0.24	3.4	8.0	226					0.14	34.849	25.2			
O6-5S-69m	5/5/98	1141	0.14	4.3	1.47	20.6	0.31	4.3	16.6	466					0.08	34.647	24.5			
Geomean	**FY '98**			**3.5**		***6.6***		***4.0***							***0.11***					
O6-5S-69m	7/7/98	1154	0.14	4.3	1.00	14.0	0.07	1.0	13.8	388					0.12	34.664	26.2			
O6-5S-69m	10/6/98	1106	0.13	4.0	0.02	0.3	0.13	1.8	13.6	381					0.09	34.838	27.3			
O6-5S-69m	1/19/99	1148	0.09	2.8	0.67	9.4	0.08	1.1	10.2	285					0.13	34.894	25.0			
O6-5S-69m	4/12/99	1145	0.12	3.7	0.20	2.8	0.14	2.0	6.1	172					0.09	34.614	24.2			
Geomean	**FY '99**			**3.7**		**3.2**		**1.4**							***0.11***					

NELHA Water Quality Laboratory

Transect 6, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-5S-69m	7/6/99	1213	0.09	2.8	0.26	3.6	0.08	1.1	5.0	139					0.08	34.854	25.8			
O6-5S-69m	10/4/99	1234	0.10	3.1	0.28	3.9	0.06	0.8	4.1	115					0.11	34.921	26.4			
O6-5S-69m	1/12/00	1140	0.14	4.3	0.96	13.4	0.40	5.6	13.9	389					0.07	34.680	24.9			
O6-5S-69m	4/11/00	1042	0.10	3.1	0.22	3.1	0.06	0.8	6.5	184					0.07	34.726	24.6			
Geomean	**FY '00**			**3.3**		***4.9***		**1.5**							**0.08**					
O6-5S-69m	7/25/00	1205	0.10	3.1	0.17	2.4	0.05	0.7	5.0	140					0.07	34.789	26.7			
O6-5S-69m	10/31/00	1148	0.12	3.7	0.54	7.6	0.30	4.2	12.9	362					0.12	34.701	27.0			
O6-5S-69m	3/6/01	1134	0.15	4.6	0.18	2.5	0.10	1.4	4.2	117					0.07	34.684	24.8			
O6-5S-69m	5/7/01	1236	0.20	6.2	1.94	27.2	0.35	4.9	30.1	845					0.09	34.257	24.8			
Geomean	**FY '01**			**4.3**		***5.9***		**2.1**							**0.09**					
O6-5S-69m	8/14/01	1038	0.12	3.7	0.10	1.4	0.25	3.5	3.0	85					0.14	34.852	26.8			
O6-5S-69m	10/30/01	1050	0.14	4.3	0.70	9.8	0.03	0.4	8.1	227					0.08	34.801	26.8			
O6-5S-69m	3/6/02	1057	0.21	6.5	3.43	48.0	0.08	1.1	17.1	480					0.13	34.231	24.3			
O6-5S-69m	4/15/02	1111	0.16	5.0	2.64	37.0	0.04	0.6	18.8	529					0.08	34.516	25.6			
Geomean	**FY '02**			**4.8**		***12.5***		**1.0**							***0.10***					
O6-5S-69m	7/10/02	1101	0.06	1.9	1.74	24.4	0.20	2.8	12.2	342					0.07	34.379	26.2			
O6-5S-69m	10/8/02	1056	0.10	3.1	1.01	14.1	0.09	1.3	6.9	194					0.11	34.774	27.0			
O6-5S-69m	3/12/03	953	0.14	4.3	0.84	11.8	0.03	0.4	10.6	298					0.09	34.480	25.0			
O6-5S-69m	4/23/03	1105	0.14	4.3	1.40	19.6	0.03	0.4	13.9	391					0.10	34.578	24.9			
Geomean	**FY '03**			**3.2**		***16.8***		**0.9**							**0.09**					
O6-5S-69m	8/21/03	1030	0.09	2.8	0.04	0.6	0.10	1.4	4.3	122					0.07	34.748	28.3			
O6-5S-69m	11/3/03	1000	0.10	3.1	0.01	0.1	0.14	2.0	2.5	71					0.08	34.651	26.8			
O6-5S-69m	3/18/04	1027	0.19	5.9	1.82	25.5	0.37	5.2	17.3	485					n/a	34.859	25.8			
O6-5S-69m	5/24/04	1043	0.15	4.6	0.42	5.9	0.23	3.2	5.8	163					n/a	33.31	26.8			
Geomean	**FY '04**			**3.9**		**1.9**		***2.6***							**0.07**					
O6-5S-69m	9/22/04	1119	0.07	2.2	0.07	1.0	0.31	4.3	5.1	144					0.05	33.69	27.7			
O6-5S-69m	11/29/04	1026	0.09	2.8	0.34	4.8	0.17	2.4	4.6	129					0.05	33.63	27.0			
O6-5S-69m	1/24/05	1102	0.05	1.5	0.01	0.1	0.16	2.2	2.4	67					0.08	34.834	25.7			
O6-5S-69m	4/13/05	1108	0.14	4.3	0.34	4.8	0.16	2.2	8.6	242					0.07	34.333	25.0			
Geomean	**FY '05**			**2.5**		**1.3**		***2.7***							**0.06**					

NELHA Water Quality Laboratory

Transect 6, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
O6-5S-69m	7/21/05	1041	0.06	1.9	0.26	3.6	0.39	5.5	6.0	169					0.08	34.364	27.4			
O6-5S-69m	10/13/05	1015	0.06	1.9	0.14	2.0	0.20	2.8	3.6	101					0.11	34.817	27.5			
O6-5S-69m	3/15/06	939	0.12	3.7	0.64	9.0	0.40	5.6	8.6	242					0.09	34.659	24.5			
O6-5S-69m	5/17/06	1023	0.09	2.8	0.07	1.0	0.17	2.4	3.0	84					0.07	34.662	24.7			
Geomean	**FY '06**			**2.4**		**2.8**		***3.8***							**0.09**					
O6-5S-69m	8/16/06	1028	0.13	4.0	0.50	7.0	0.37	5.2	4.4	123					0.14	34.580	26.8			
O6-5S-69m	11/20/06	1023	0.14	4.3	0.65	9.1	0.52	7.3	6.8	192					0.12	34.660	26.7			
O6-5S-69m	2/12/07	1122	0.13	4.0	0.30	4.2	0.38	5.3	2.1	60					0.33	34.407	24.8			
O6-5S-69m	4/16/07	1105	0.16	5.0	1.03	14.4	0.41	5.7	12.9	362					0.13	34.021	26.5			
Geomean	**FY '07**			**4.3**		***7.9***		***5.8***							***0.16***					
T6-500m	9/27/07	945	0.14	4.4	0.01	0.1	0.13	1.8	5.4	151	0.35	10.8	7.8	110	0.15	34.905	26.7	8.08	6.28	0.06
T6-500m	12/14/07	1038	0.09	2.9	0.01	0.1	0.00		2.0	55	0.35	10.8	6.2	87	0.08	34.727	25.7	8.16	6.52	0.12
T6-500m	3/11/08	1048	0.07	2.3	0.05	0.7	0.06	0.8	3.4	97	0.18	5.5	6.5	91	0.19	34.909	24.8	8.12	6.62	0.23
T6-500m	6/9/08	1114	0.05	1.6	0.05	0.7	0.16	2.2	14.8	416	0.23	7.2	8.9	124	0.09	34.7104	25.8	8.11	5.58	0.33
Geomean	**FY '08**			**2.6**		**0.3**		**1.5**				**8.2**		***102***	***0.12***					**0.15**
T6-500m	9/23/08	1219	0.11	3.4	0.04	0.6	0.28	3.9	2.3	66	0.47	14.6	4.5	63	0.06	34.802	26.8	8.07	5.75	0.15
T6-500m	12/8/08	1121	0.16	5.1	0.40	5.6	0.33	4.6	4.2	119	0.34	10.6	5.6	78	0.07	34.889	26.4	8.29	5.59	0.02
T6-500m	2/10/09	1009	0.06	2	0.10	1.4	0.18	2.5	1.3	37	0.48	14.9	7.9	110	0.06	35.107	24.7	8.06	5.97	0.03
T6-500m	6/30/09	1102	0.27	8.3	0.45	6.3	0.12	1.7	6.2	173	0.49	15.3	4.8	67	0.14	34.917	27.0	8.20	5.92	0.09
Geomean	**FY '09**			**4.1**		**2.3**		***3.0***				***13.7***		**78**	**0.08**					**0.05**
T6-500m	9/10/09	1123	0.17	5.3	0.09	1.3	0.56	7.8	5.0	139	0.54	16.8	5.3	74	0.06	35.21	27.4	8.18	5.22	0.32
T6-500m	11/24/09	1035	0.02	0.766	0.02	0.3	0.12	1.7	4.8	136	0.34	10.4	4.7	65	0.03	35.27	25.2	8.25	6.38	0.12
T6-500m	2/24/10	1104	0.11	3.3	0.03	0.4	0.40	5.6	2.2	62	0.43	13.2	6.9	97	0.11	34.68	24.6	8.20	5.44	0.24
T6-500m	5/26/10	1025	0.01	0.2	0.04	0.5	0.15	2.1	2.5	70	0.19	6	4.2	60	0.05	34.85	25.1	8.27	6.71	0.09
Geomean	**FY '10**			**1.3**		**0.5**		***3.5***				**10.8**		**73**	**0.06**					**0.17**
T6-500m	8/11/10	1042	0.02	0.6	0.16	2.2	0.07	1	2.7	75	0.30	9.4	2.7	38	0.04	34.99	26.10	8.22	6.55	0.15
T6-500m	11/9/10	1037	0.03	0.8	0.13	1.8	0.15	2.1	2.5	71	0.38	11.9	4.1	57	0.08	34.94	26.50	8.29	6.13	0.03
T6-500m	1/11/11	1302	0.11	3.4	0.01	0.2	0.09	1.3	4.1	114	0.42	13.1	3.0	43	0.08	35.03	25.13	8.25	6.39	0.05
T6-500m	4/27/11	1034	0.14	4.4	0.12	1.7	0.06	0.8	6.1	171	0.41	12.7	4.0	56	0.11	34.87	24.89	8.22	6.22	0.20
Geomean	**FY '11**			**1.6**		**1.1**		**1.2**				**11.7**		**48**	**0.07**					**0.08**

NELHA Water Quality Laboratory

Transect 6, Station 5

7/26/1993 - 7/16/20

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T6-500m	7/27/11	1120	0.17	5.3	0.02	0.23	0.05	0.7	0.2	5	0.46	14.2	2.9	41	0.03	34.86	26.31	8.23	6.36	0.09
T6-500m	10/19/11	1104	0.04	1.2	0.06	0.9	0.05	0.7	2.9	82	0.39	12	3.5	49	0.05	35.09	26.71	8.26	6.98	0.15
T6-500m	1/26/12	1030	0.05	1.6	0.04	0.6	0.06	0.8	1.1	31	0.35	10.9	3.2	45	0.09	35.06	24.49	8.22	6.66	0.15
T6-500m	4/25/12	1042	0.17	5.4	0.15	2.1	0.36	5.1	3.2	89	0.44	13.6	3.8	54	0.10	34.91	24.88	8.19	6.69	0.04
Geomean	**FY '12**			**2.7**		**0.7**		**1.2**				***12.6***		**47**	**0.06**					**0.09**
T6-500m	7/25/12	1049	0.01	0.2	0.03	0.4	0.34	4.7	1.5	41	0.35	10.9	3.1	43	0.06	35.11	26.50	8.24	7.21	0.16
T6-500m	11/28/12	1041	0.12	3.6	1.06	14.9	0.31	4.4	7.4	209	0.55	16.9	4.8	67	0.03	34.96	25.23	8.20	6.59	0.15
T6-500m	1/24/13	1035	0.07	2.2	0.01	0.1	0.04	0.6	1.1	30	0.43	13.3	3.8	53	0.05	35.13	24.87	8.23	6.30	0.05
T6-500m	4/24/13	1000	0.15	4.75	0.01	0.1	0.13	1.85	3.2	89	0.55	17.15	3.6	51	0.03	35.15	25.17	8.22	6.80	0.05
Geomean	**FY '13**			**1.7**		**0.5**		**2.2**				***14.3***		**53**	**0.04**					**0.09**
T6-500m	8/6/13	1118	0.06	1.8	0.02	0.3	0.16	2.3	2.1	59	0.33	10.2	4.4	62	0.02	35.24	26.8	8.20	6.85	0.10
T6-500m	10/30/13	1027	0.13	4.1	0.17	2.4	0.06	0.8	2.0	57	0.53	16.4	5.3	75	0.02	34.90	27.1	8.22	5.84	0.11
T6-500m	2/5/14	1051	0.13	4.0	0.14	2.0	0.21	3.0	2.4	68	0.46	14.3	3.7	52	0.02	34.94	25.2	8.21	6.27	0.20
T6-500m	5/7/14	1049	0.13	3.9	0.31	4.4	0.11	1.5	2.8	78	0.45	13.9	5.4	75	0.06	34.75	25.8	8.20	5.36	0.15
Geomean	**FY '14**			**3.3**		**1.6**		**1.7**				***13.5***		**65**	**0.03**					**0.13**
T6-500m	8/6/14	1040	0.16	4.9	0.01	0.2	0.24	3.4	0.6	16	0.48	14.9	3.6	51	0.07	34.98	27.1	8.22	5.97	0.08
T6-500m	12/4/14	1120	0.03	4.6	0.16	12.6	0.09	7.8	2.3	155	0.31	15.3	2.2	73	0.06	35.10	26.3	8.26	6.15	0.20
T6-500m	3/5/15	1137					0.17	2.4							0.10	34.70	25.5	8.29	6.60	0.11
T6-500m	6/18/15	1058	0.10	3.2	0.02	0.3	0.29	4.0	1.5	42	0.35	10.7	6.4	90	0.06	34.48	27.1	8.21	6.50	0.14
Geomean	**FY '15**			**4.2**		**0.9**		***4.0***				***13.5***		**69**	**0.07**					**0.13**
T6-500m	8/27/15	1054	0.14	4.2	0.06	0.8	0.18	2.5	2.7	77	0.19	5.9	4.7	67	0.03	34.69	28.6	8.28	5.99	0.03
T6-500m	11/18/15	1128	0.15	4.5	0.45	6.3	0.16	2.3	3.6	102	0.54	16.8	7.3	103	0.06	34.58	27.4	8.30	6.68	0.10
T6-500m	3/2/16	1005	0.11	3.3	0.06	0.8	0.39	5.5	1.1	31	0.46	14.4	6.1	85	0.08	34.81	25.4	8.26	5.71	0.09
T6-500m	5/4/16	1106	0.12	3.6	0.09	1.2	0.21	3.0	1.5	42	0.27	8.4	4.1	58	0.08	34.69	26.0	8.19	6.01	0.28
Geomean	**FY '16**			**3.9**		**1.5**		***3.1***				**10.5**		**76**	**0.06**					**0.09**
T6-500m	7/7/16	1106	0.07	2.1	1.06	14.8	0.49	6.8	0.4	12	0.41	12.8	2.1	29	0.10	34.68	27.1	8.33	6.70	0.22
T6-500m	12/21/16	1147	0.04	1.1	0.16	2.3	0.04	0.5	1.6	45	0.35	10.9	4.4	62	0.03	34.67	25.6	8.28	5.76	0.19
T6-500m	3/1/17	1215	0.01	0.3	0.01	0.1	0.07	1.0	0.2	5	0.30	9.2	3.6	51	0.09	34.78	24.6	8.25	5.61	0.17
T6-500m	5/10/17	1201	0.05	1.7	0.01	0.2	0.05	0.7	0.1	3	0.22	6.9	3.3	46	0.08	34.87	25.6	8.22	4.11	0.07
Geomean	**FY '17**			**1.0**		**0.9**		**1.2**				**9.7**		**45**	**0.07**					**0.15**

NELHA Water Quality Laboratory

Transect 6, Station 5

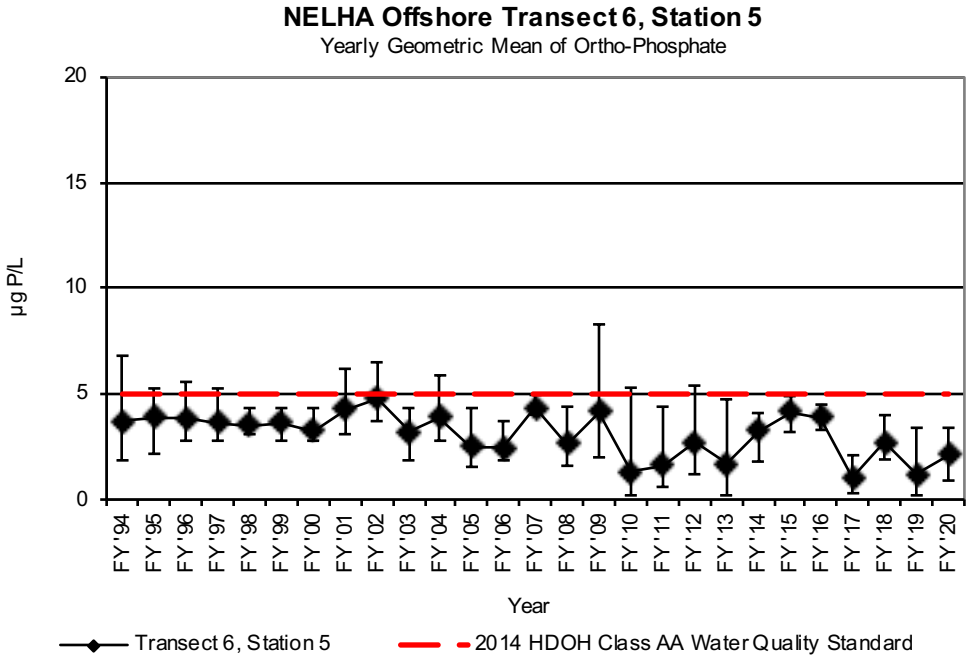
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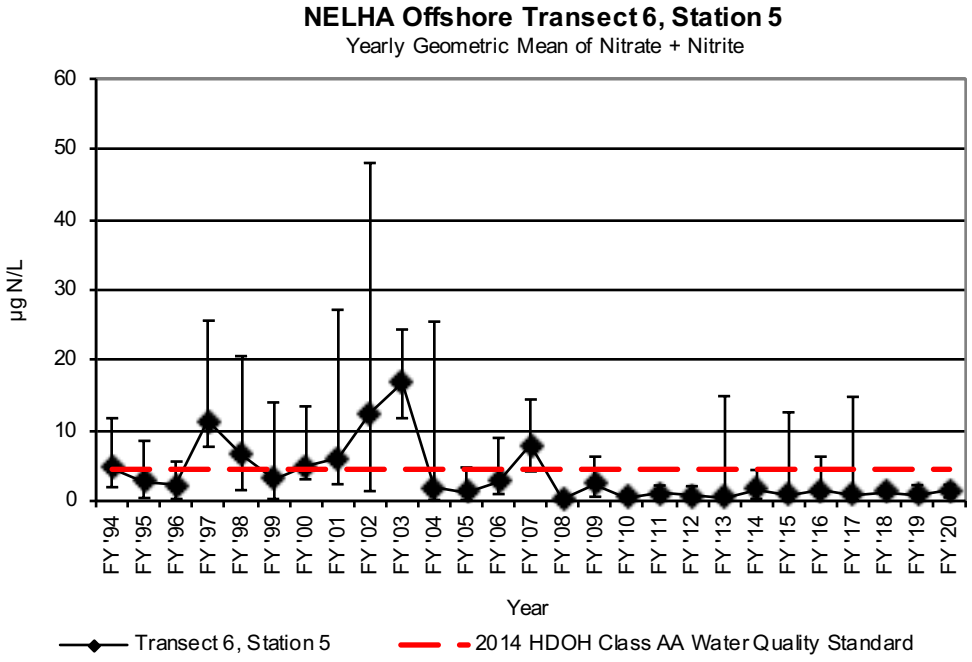
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(o/oo)	(˚C)		(ppm)	(µg/L)
DOH LIMIT				**5**		**4.5**		**2.5**				**12.5**		**100**	**0.10**					**0.30**
T6-500m	9/28/17	1059	0.13	4.0	0.09	1.3	0.19	2.6	0.4	12	0.39	12.1	2.5	36	0.05	34.86	28.1	8.19	4.64	0.07
T6-500m	11/30/17	1039	0.09	2.7	0.10	1.4	0.51	7.2	1.2	33	0.36	11.2	3.6	51	0.04	35.23	26.5	8.25	5.50	0.13
T6-500m	2/6/18	1135	0.06	1.9	0.06	0.9	0.36	5.1	1.0	27.5	0.33	10.2	2.0	27.8	0.09	34.90	25.0	8.16	5.71	0.14
T6-500m	5/17/18	1051	0.08	2.5	0.13	1.8	0.17	2.4	3.3	93	0.36	11.2	3.1	43	0.05	34.81	26.2	8.16	6.31	0.12
Geomean	**FY '18**			**2.7**		**1.3**		***3.9***				**11.2**		**38**	**0.05**					**0.11**
T6-500m	9/26/18	1348	0.01	0.2	0.16	2.3	0.09	1.3	0.8	22	0.33	10.3	1.8	25	0.10	34.70	27.6	8.15	4.70	0.16
T6-500m	11/14/18	1151	0.04	1.1	0.12	1.7	0.56	7.8	0.0	1	0.37	11.5	3.4	48	0.06	34.93	27.3	8.20	6.02	0.20
T6-500m	1/23/19	1137	0.08	2.6	0.04	0.5	0.08	1.1	0.1	2.0	0.37	11.4	2.2	31.0	0.06	34.82	25.2	8.20	5.01	0.23
T6-500m	4/17/19	1134	0.11	3.4	0.03	0.4	0.17	2.4	0.6	17	0.37	11.6	3.1	43	0.03	34.74	26.0	8.13	6.77	0.07
Geomean	**FY '19**			**1.2**		**0.9**		**2.3**				**11.2**		**35**	**0.06**					**0.15**
T6-500m	8/15/19	1102	0.03	0.9	0.16	2.3	0.09	1.3	2.3	66	0.31	9.6	2.2	31	0.07	35.31	28.4	8.28	6.54	0.17
T6-500m	11/20/19	1215	0.11	3.4	0.04	0.5	0.09	1.3	0.5	13	0.42	13.1	3.0	42	0.06	35.21	27.7	8.22	6.49	0.12
T6-500m	1/23/20	1118	0.10	3.0	0.16	2.3	0.09	1.3	-0.7	-20.2	0.38	11.9	3.5	49.5	0.09	34.98	25.0	8.23	6.62	0.15
T6-500m	6/25/20	1039	0.07	2.3	0.16	2.3	0.06	0.9	0.5	13	0.33	10.3	2.5	36	0.06	35.54	26.4	8.18	6.60	0.22
Geomean	**FY '20**			**2.1**		**1.6**		**1.2**				**11.1**		**39**	**0.07**					**0.16**

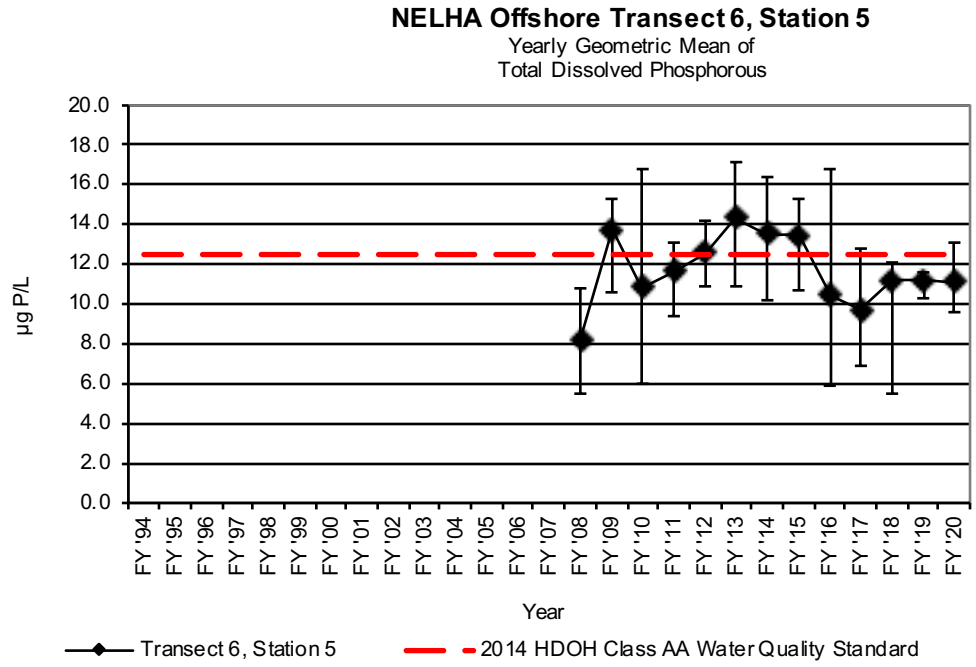
NELHA Water Quality Laboratory

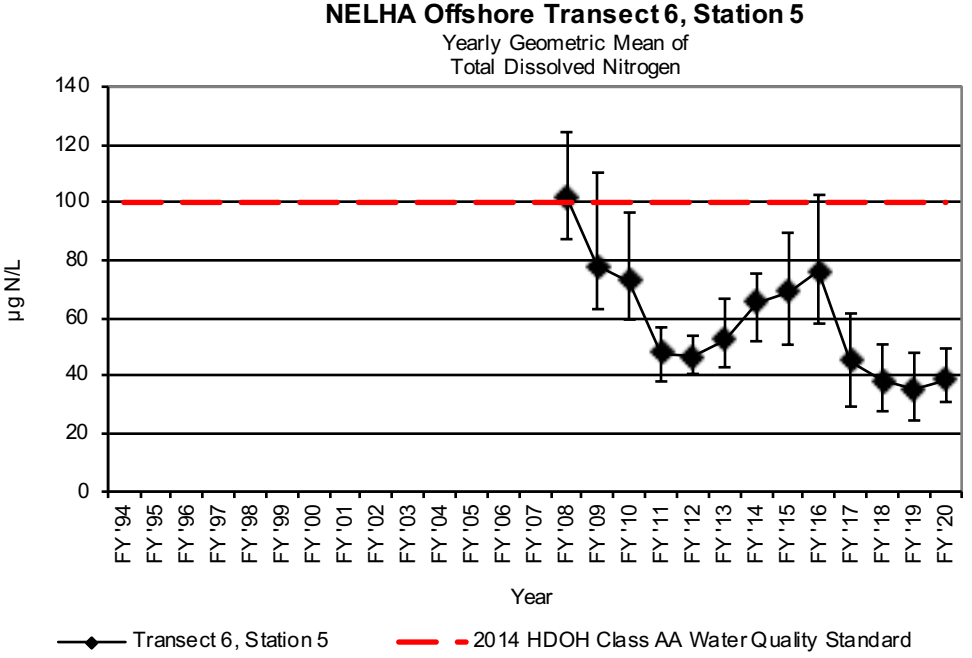
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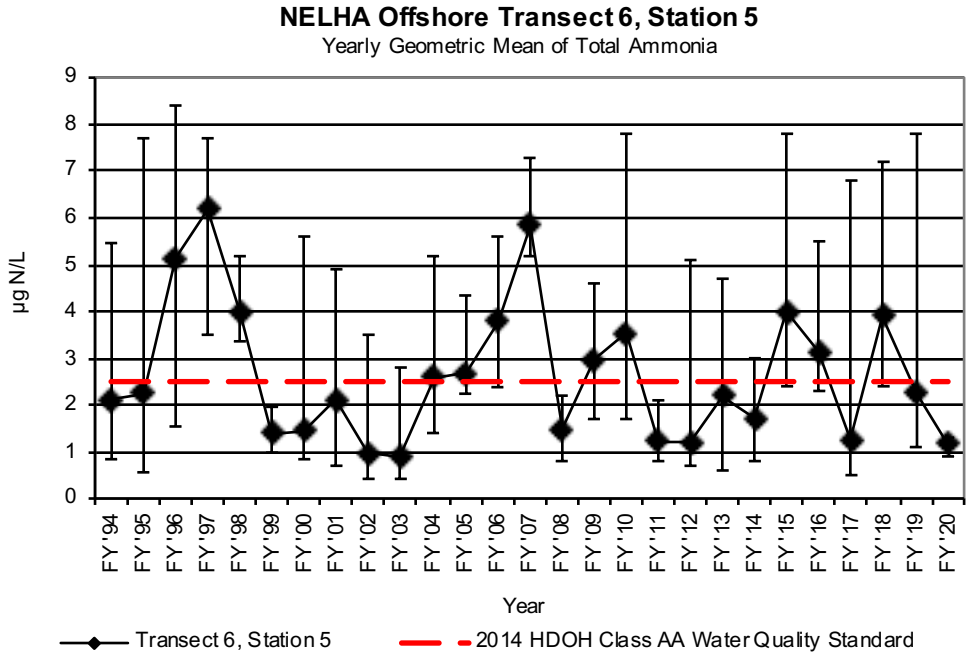


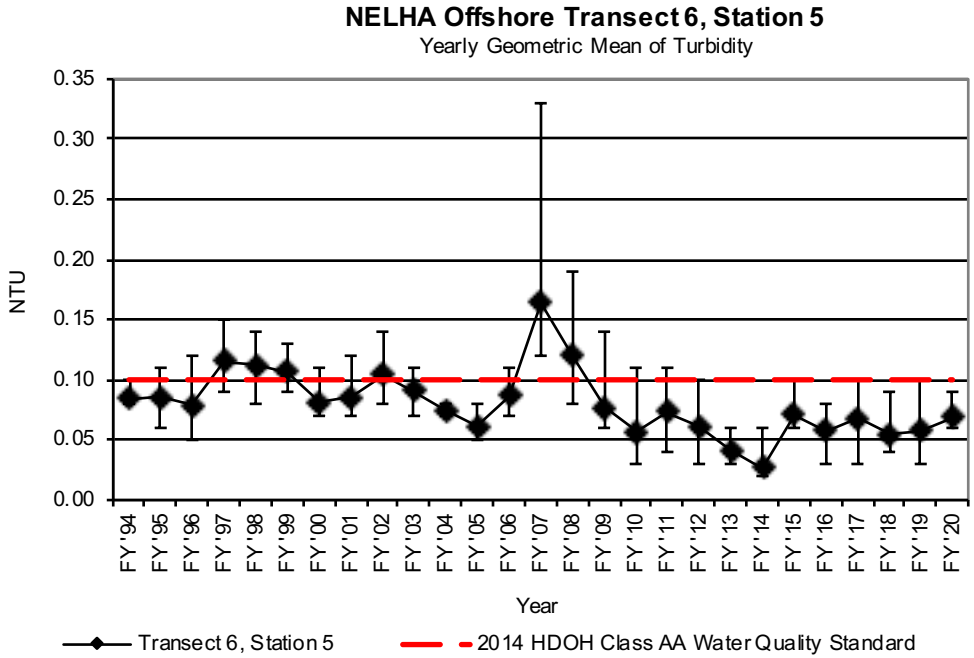


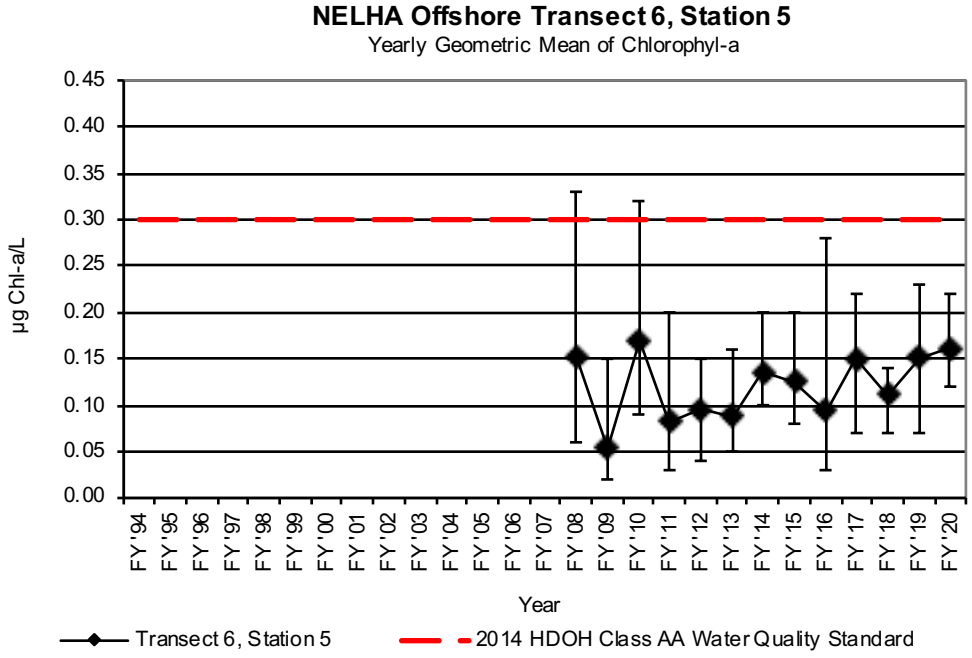
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Transect 6, Station 5

7/26/1993 - 7/16/20





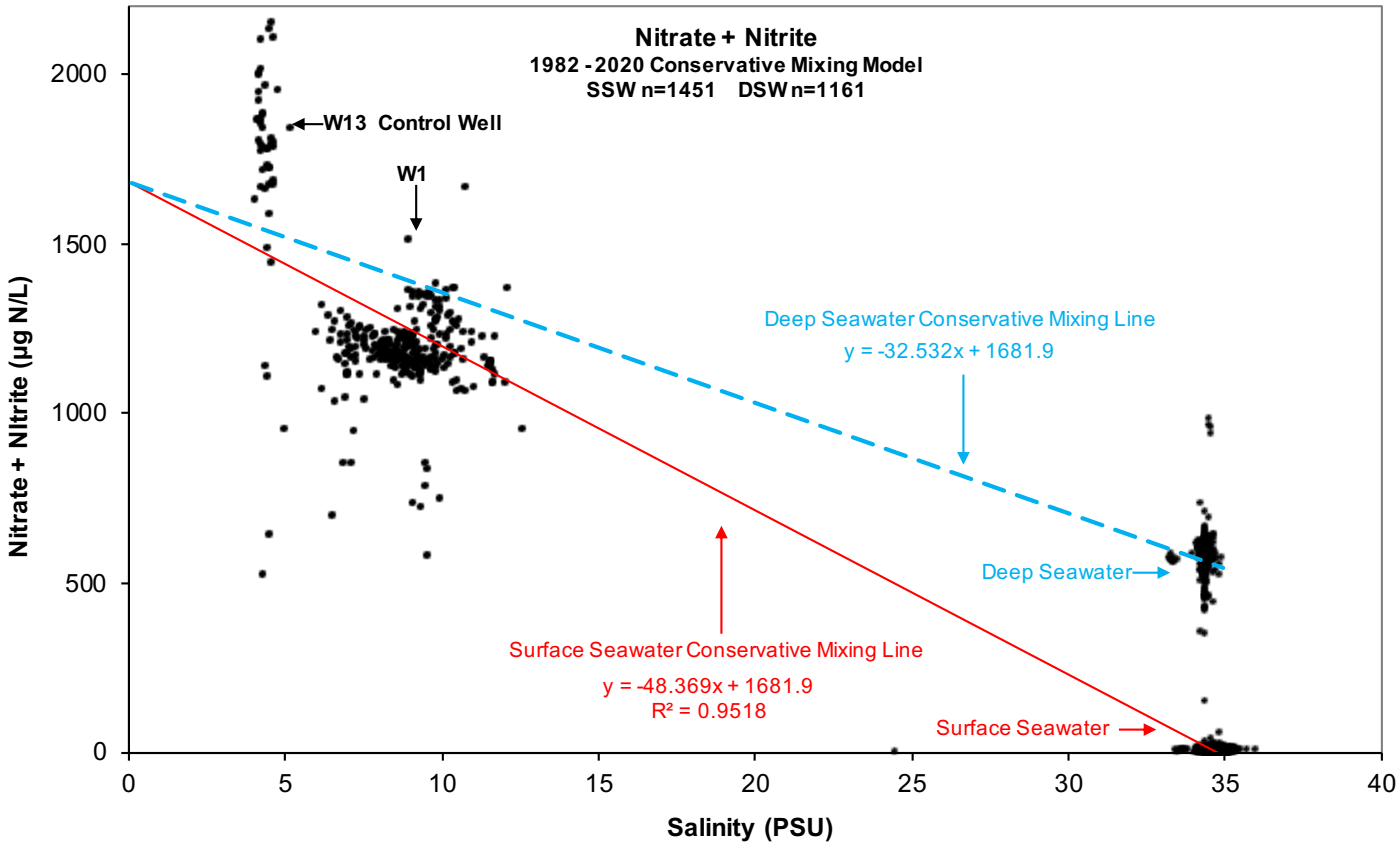


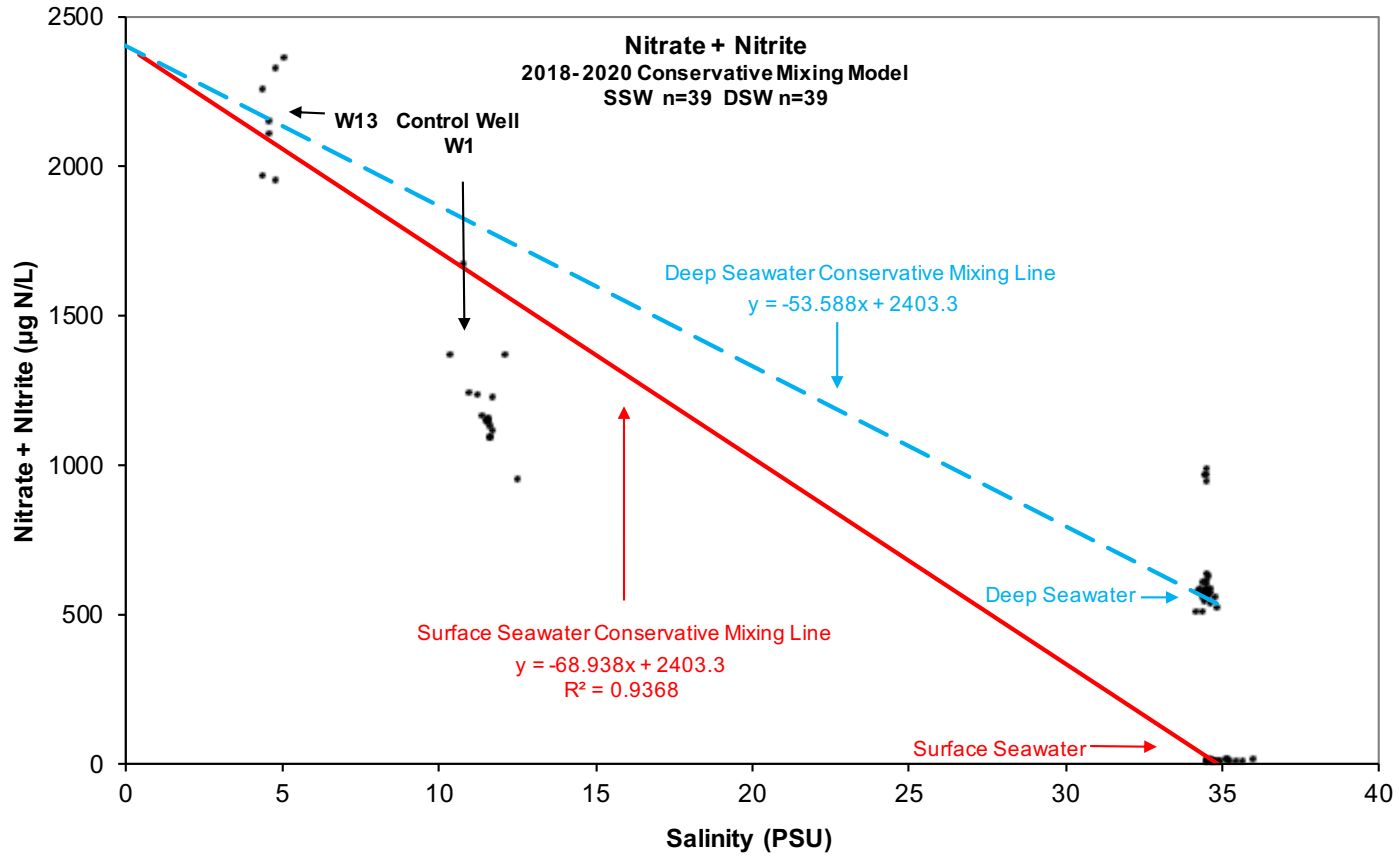
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Conservative Mixing Model

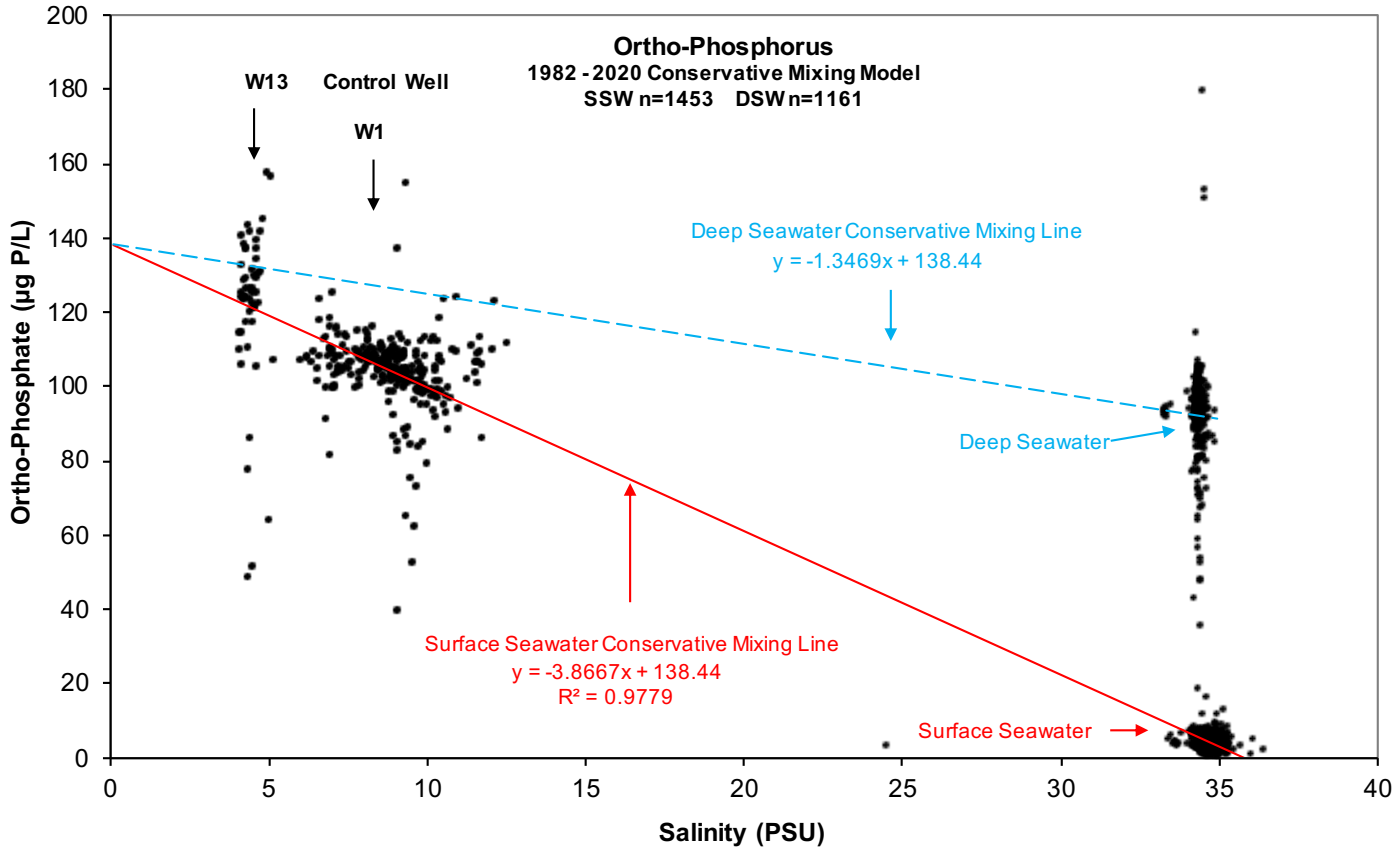
Control Well to Surface and Deep Seawater

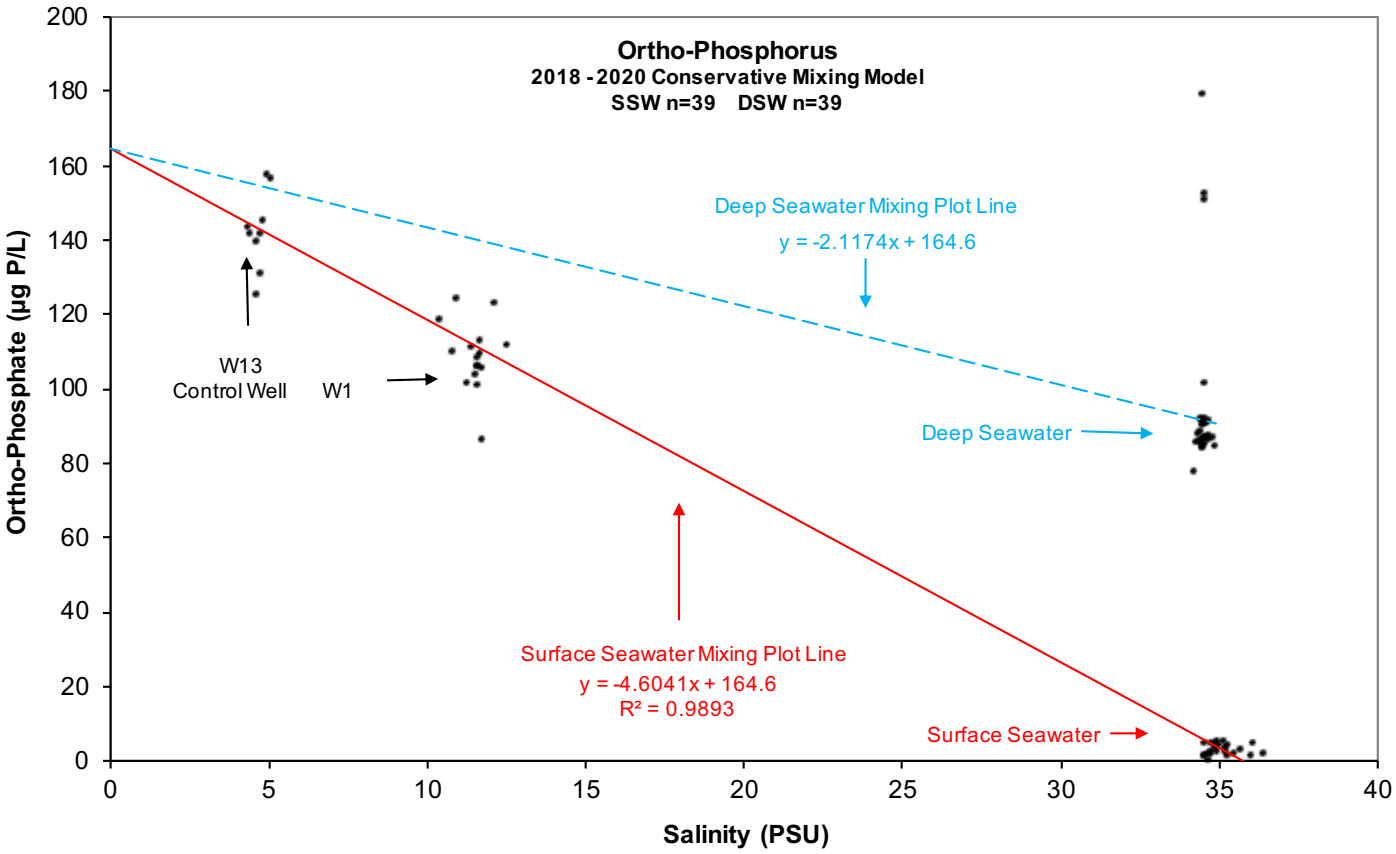




Conservative Mixing Model

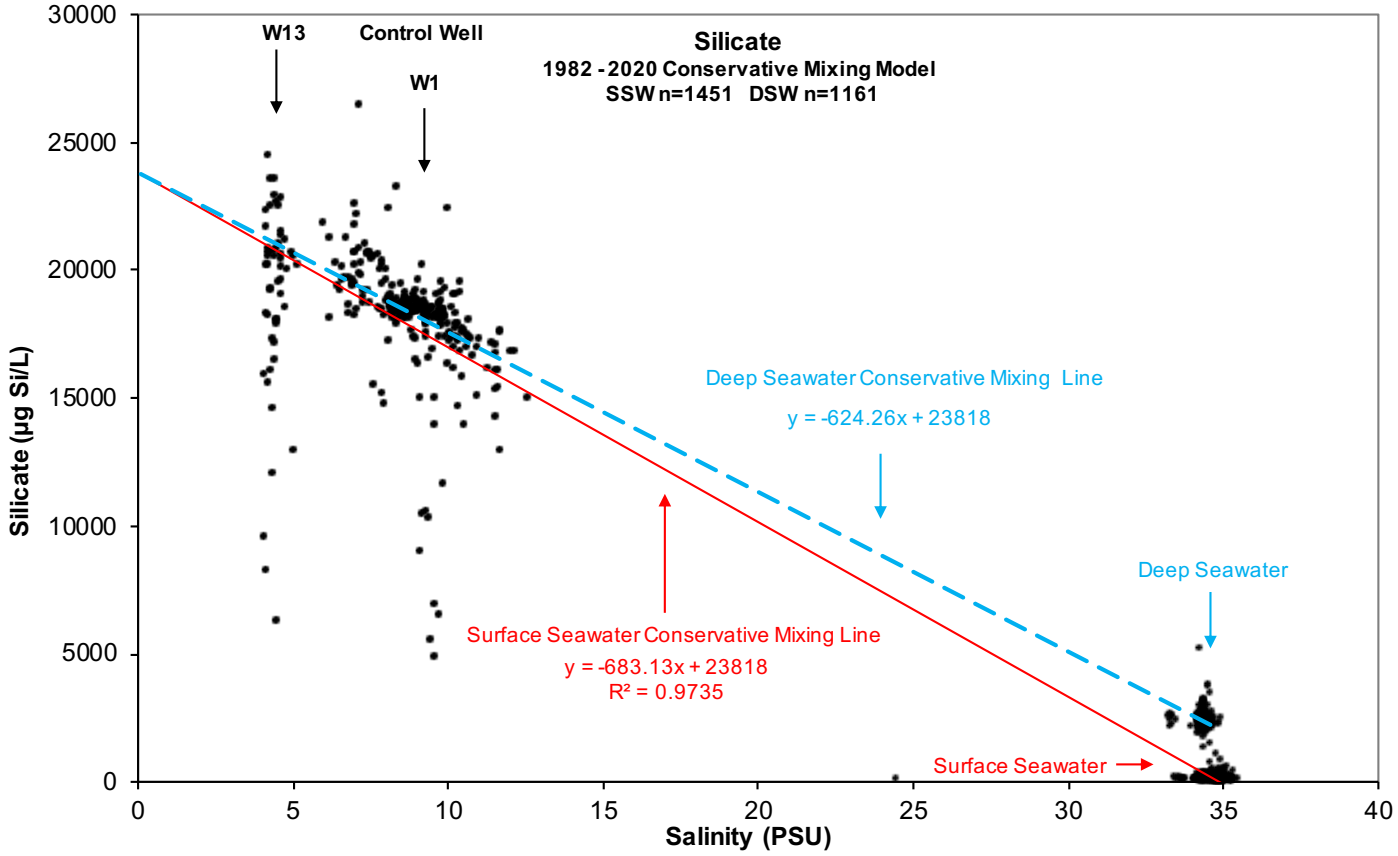
Control Well to Surface and Deep Seawater

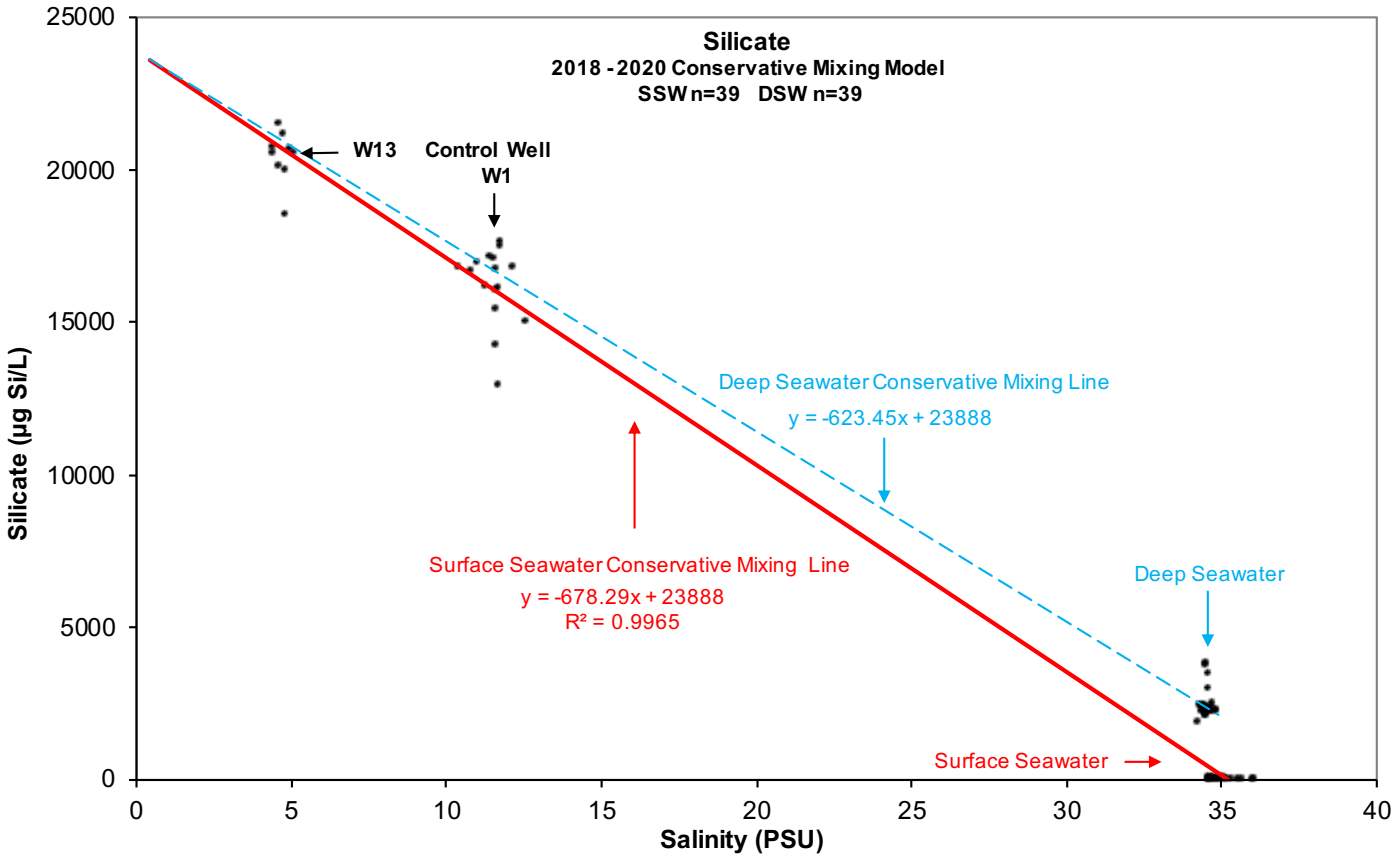




Conservative Mixing Model

Control Well to Surface and Deep Seawater





NELHA Water Quality Laboratory

Well 1 Data Table

7/3/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	7/3/89				3.74	116	88.6	1241	0.19	2.7								20.9	7.89	7.200	3985	7.89		NA	NA
W1	-36.58	8/11/89	923			3.49	108	60.8	852	0.06	0.8								19.9	7.82	6.920	3830	7.27		<1	NA
W1	-36.58	8/16/89	1115			3.26	101	49.5	693	0.06	0.8								19.8	7.80	6.555	3628	6.52		<1	NA
W1	-36.58	8/23/89	1335			3.49	108	60.7	850	0.06	0.8								20.0	7.85	7.181	3975	6.54		<1	NA
W1	-36.58	8/30/89	1430			3.66	113	67.5	945	0.06	0.8								20.1	7.81	7.261	4019	7.90		<1	NA
W1	-36.58	8/30/89	1430			3.72	115	67.5	945	0.06	0.8												NA		NA	NA
W1	-36.58	10/31/89	840			3.72	115	90.0	1261	0.06	0.8	740	20783	3.88	120	97.2	1361	0.45	20.0	7.75	7.156	3961	7.83		<1	NA
W1	-36.58	11/16/89	705			3.71	115	87.3	1223	0.00	0.0	713	20025	3.81	118	94.5	1324	1.05	20.1	7.70	7.862	4352	7.70		<1	NA
W1	-36.58	12/13/89	930			3.81	118	91.3	1279	0.05	0.7	735	20643	3.92	121	91.8	1286	0.76	19.6	7.76	7.013	3882	8.13		<1	NA
W1	-36.58	1/10/90	1142			3.62	112	82.4	1154	0.01	0.1	756	21233	3.17	98	85.6	1199	0.62	20.5	7.91	6.792	3760	7.77		<1	NA
W1	-36.58	2/14/90	850			3.73	116	79.9	1119	0.09	1.3	774	21738	3.95	122	80.8	1132	0.81	19.9	7.82	7.008	3879	7.96		<1	NA
W1	-36.58	3/6/90	1110			3.42	106	91.5	1282	0.03	0.4	722	20278	3.64	113	93.0	1303	0.59	20.0	7.93	6.412	3549	7.86		<1	NA
W1	-36.58	4/2/90	1315			3.45	107	88.1	1234	0.44	6.2	775	21766	3.62	112	94.9	1329	0.60	20.8	8.03	6.041	3344	7.67		<1	NA
W1	-36.58	5/16/90	1446			3.51	109	86.3	1209	0.00	0.0	689	19351	3.56	110	91.9	1288	0.60	19.5	7.92	6.476	3585	7.64		<1	NA
W1	-36.58	6/6/90	1447			3.66	113	79.3	1111	0.17	2.4	683	19182	3.63	112	84.1	1178	0.57	20.0	7.96	7.462	4130	7.54		<1	NA
W1	-36.58	7/12/90	1412			3.98	123	83.0	1163	0.02	0.3	700	19660	4.10	127	88.1	1234	0.67	20.3	7.95	6.680	3698	7.52		<1	NA
W1	-36.58	8/7/90	1351			3.20	99	83.9	1175	0.11	1.5	690	19379	3.58	111	84.2	1180	0.57	20.4	7.95	7.026	3889	7.58		<1	NA
W1	-36.58	9/6/90	1157			3.04	94	84.7	1186	0.00	0.0			3.67	114	86.0	1205	0.35	20.4	7.93	6.835	3783	7.58		<1	NA
W1	-36.58	10/3/90	1205			3.54	110	81.6	1143	0.00	0.0	690	19379	3.62	112	81.7	1145	1.21	20.4	7.95	6.950	3847	7.53		<1	NA
W1	-36.58	10/31/90	1400			3.36	104	81.9	1147	0.19	2.7	673	18902	3.48	108	83.9	1175	1.01	20.4	7.94	7.276	4028	7.53		<1	NA
W1	-36.58	12/7/90	1123			3.37	104	83.2	1165	0.08	1.1	682	19154	3.59	111	87.8	1230	0.65	20.3	7.94	7.289	4034	7.39		<1	NA
W1	-36.58	1/10/91	1020			3.79	117	90.6	1269	0.28	3.9	697	19576	3.93	122	90.8	1272	1.12	21.5	7.96	6.640	3675	7.42		<1	NA
W1	-36.58	2/6/91	712			3.48	108	76.2	1067	0.13	1.8	645	18115	3.53	109	76.5	1072	0.71	19.9	7.96	6.242	3455	7.54		<1	NA
W1	-36.58	3/6/91	1050			3.47	107	94.1	1318	0.04	0.6	756	21233	3.51	109	94.8	1328	0.91	20.4	7.96	6.222	3444	8.02		<1	NA
W1	-36.58	4/2/91	903			3.38	105	88.7	1242	0.35	4.9	683	19182	3.40	105	89.7	1256	2.13	20.1	7.94	6.552	3627	7.61		<1	NA
W1	-36.58	5/21/91	1102			3.50	108	79.1	1108	0.00	0.0	719	20193	3.60	112	49.6	695	0.56	20.0	7.92	7.038	3896	7.28		<1	NA
W1	-36.58	6/25/91	1027			3.49	108	73.6	1031	0.00	0.0	714	20053	3.55	110	76.8	1076	0.46	20.3	7.94	6.626	3668	7.75		<1	<1
W1	-36.58	7/23/91	1117			2.63	81	74.3	1041	0.00	0.0	689	19351	2.76	85	81.2	1137	0.65	17.6	7.93	6.984	3866	7.75		<1	<1
W1	-36.58	8/22/91	1028			2.93	91	87.8	1230	0.00	0.0	700	19660	3.33	103	93.6	1311	0.60	20.2	7.94	6.823	3777	7.85		<1	<1
W1	-36.58	9/23/91	1112			3.65	113	92.4	1294	0.15	2.1	662	18593	3.73	116	94.9	1329	0.64	20.6	7.91	6.837	3784	7.80		<1	<1
W1	-36.58	10/22/91	919			3.21	99	82.9	1161	0.00	0.0	942	26457	3.25	101	87.5	1226	0.49	20.0	7.91	7.148	3957	7.63		<1	<1
W1	-36.58	11/20/91	1118			4.03	125	79.3	1111	0.00	0.0	803	22553	4.17	129	82.7	1158	1.41	20.2	7.91	7.021	3886	7.76		<1	<1
W1	-36.58	12/10/91	1109			3.34	103	85.2	1193	0.00	0.0	703	19744	3.43	106	88.8	1244	0.66	20.3	7.92	7.268	4023	7.69		<1	<1
W1	-36.58	1/28/92	1055			3.45	107	84.6	1185	0.00	0.0	705	19800	3.55	110	86.1	1206	1.55	20.5	7.94	7.148	3957	7.81		<1	<1
W1	-36.58	2/18/92	1038			3.20	99	85.8	1202	0.13	1.8	650	18256	3.31	103	92.2	1291	0.52	20.4	7.92	6.859	3797	7.78		<1	62
W1	-36.58	3/17/92	1107			3.39	105	83.7	1172	0.00	0.0	698	19604	3.42	106	88.5	1240	0.90	20.1	7.94	6.990	3869	7.85		<1	<1
W1	-36.58	4/7/92	1103			3.31	103	85.1	1192	0.00	0.0	787	22103	3.38	105	87.0	1219	0.63	20.2	7.93	7.087	3923	8.24		<1	<1
W1	-36.58	5/5/92	1101			3.55	110	86.3	1209	0.00	0.0	734	20615	3.58	111	91.0	1275	0.88	20.1	7.92	7.002	3876	7.79		<1	<1
W1	-36.58	6/22/92	1037			3.20	99	82.2	1151	0.00	0.0	733	20587	3.26	101	83.1	1164	0.73	20.0	7.89	7.793	4314	7.64		<1	<1
W1	-36.58	7/28/92	1013			3.54	110	87.6	1227	0.20	2.8	648	18199	3.55	110	89.0	1246	0.67	20.4	7.90	7.055	3905	7.84		<1	<1
W1	-36.58	8/25/92	1057			3.52	109	74.2	1039	0.00	0.0	735	20643	3.53	109	86.6	1214	0.55	20.3	7.91	7.538	4172	7.63		<1	<1
W1	-36.58	9/21/92	1015			3.23	100	83.0	1162	0.15	2.1	656	18435	3.32	103	89.6	1255	0.63	20.3	7.92	7.936	4393	7.53		<1	<1
W1	-36.58	10/26/92	1028			3.58	111	87.0	1219	0.00	0.0	746	20952	3.60	112	89.5	1253	0.61	20.3	7.91	7.361	4075	7.61		<1	<1
W1	-36.58	11/16/92	1047			3.36	104	84.9	1189	0.03	0.4	713	20025	3.36	104	90.0	1260	0.81	20.1	7.92	8.064	4464	7.53		<1	<1
W1	-36.58	12/7/92	1033			3.39	105	87.3	1223	0.00	0.0	721	20250	3.54	110	89.6	1256	0.68	20.1	7.93	7.271	4025	7.73		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

7/3/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	1/25/93	1031				3.42	106	87.2	1221	0.01	0.1	730	20508	3.31	103	92.6	1296	0.66	20.2	7.94	7.595	4204	7.56		<1	<1
W1	-36.58	2/22/93	1003				3.37	104	85.6	1198	0.03	0.4	728	20441	3.38	105	93.2	1306	0.53	20.1	7.95	7.581	4196	7.62		<1	<1
W1	-36.58	3/15/93	959				3.28	102	85.0	1190	0.00	0.0	722	20283	3.23	100	86.8	1216	0.59	19.7	7.95	7.943	4397	7.56		<1	<1
W1	-36.58	4/26/93	1002				3.32	103	88.7	1242	0.00	0.0	728	20446	3.36	104	91.7	1285	0.54	20.1	7.94	7.638	4228	7.64		<1	<1
W1	-36.58	5/24/93	1019				3.35	104	89.4	1252	0.00	0.0	735	20643	3.35	104	88.7	1242	0.49	20.1	7.93	7.412	4103	7.68		<1	<1
W1	-36.58	6/21/93	1023				3.40	105	89.1	1248	0.12	1.7	731	20531	3.50	108	93.6	1312	0.47	20.0	7.93	7.425	4110	7.71		<1	<1
W1	-36.58	8/30/93	1115				3.34	103	87.8	1230	0.00	0.0	718	20165	3.35	104	99.6	1395	0.65	20.5	7.90	7.890	4367	7.66		<1	<1
W1	-36.58	10/25/93	1008				3.46	107	83.9	1175	0.10	1.4	674	18930	3.55	110	85.2	1194	0.58	20.1	7.92	8.115	4492	7.52		<1	<1
W1	-36.58	3/1/94	929				3.56	110	88.1	1235	0.11	1.5	654	18368	3.56	110	109	1524	0.63	20.1	7.90	8.253	4568	7.08		<1	<1
W1	-36.58	6/20/94	954				3.40	105	85.2	1193	0.08	1.1	667	18740	3.41	106	99.0	1387	0.62	20.1	7.90	8.085	4475	7.48		<1	<1
W1	-36.58	8/22/94	805				3.50	108	86.1	1206	0.06	0.8	798	22412	3.56	110	96.5	1352	0.62	20.2	7.90	8.104	4486	7.55		<1	<1
W1	-36.58	10/24/94	1041				3.38	105	81.1	1135	0.04	0.6	657	18438	3.39	105	82.7	1158	0.47	20.2	7.91	8.485	4697	7.40		<1	<1
W1	-36.58	1/23/95	1116				3.38	105	82.8	1159	0.09	1.3	643	18070	3.45	107	86.1	1205	0.44	20.6	7.89	8.482	4695	7.34		<1	<1
W1	-36.58	2/13/95	1101				3.49	108	84.9	1190	0.21	2.9	646	18129	3.49	108	91.5	1281	0.50	20.1	7.92	8.262	4573	7.40		<1	<1
W1	-36.58	3/13/95	1145				3.53	109	84.0	1177	0.04	0.6	827	23227	3.57	111	86.1	1206	0.51	20.3	7.92	8.361	4628	7.42		<1	<1
W1	-36.58	4/24/95	1033				3.49	108	84.1	1179	0.11	1.5	688	19312	3.50	108	86.6	1213	0.48	20.1	7.91	8.237	4559	7.43		<1	<1
W1	-36.58	5/8/95	1132				3.49	108	83.6	1171	0.14	2.0	651	18292	3.50	108	90.3	1265	0.54	20.4	7.89	8.324	4608	7.41		<1	<1
W1	-36.58	6/19/95	1112				3.53	109	85.1	1191	0.16	2.2	663	18621	3.53	109	88.4	1238	0.54	20.3	7.87	8.547	4731	7.43		<1	<1
W1	-36.58	7/24/95	1039				3.44	107	85.4	1196	0.15	2.1	671	18851	3.55	110	87.9	1231	0.76	20.3	7.89	8.213	4546	6.98		<1	<1
W1	-36.58	8/21/95	1126				3.42	106	82.6	1157	0.23	3.2	653	18326	3.45	107	86.4	1210	0.46	20.3	7.93	8.528	4720	7.21		<1	<1
W1	-36.58	9/11/95	1002				3.42	106	84.6	1185	0.20	2.8	659	18506	3.47	107	88.3	1236	0.57	20.5	7.90	8.170	4522	7.38		<1	<1
W1	-36.58	10/16/95	1034				3.37	104	79.5	1113	0.20	2.8	653	18348	3.46	107	81.1	1136	0.67	20.7	7.92	8.760	4849	broken		<1	<1
W1	-36.58	11/6/95	1035				3.46	107	85.2	1193	0.18	2.5	677	19017	3.52	109	91.0	1274	0.61	20.3	7.94	8.178	4527	7.27		<1	<1
W1	-36.58	12/4/95	1028				3.44	107	84.3	1181	0.01	0.1	665	18674	3.45	107	86.3	1209	0.68	20.1	7.91	8.259	4572	7.27		1	3
W1	-36.58	1/29/96	1111				3.43	106	81.2	1138	0.13	1.8	663	18618	3.51	109	85.4	1196	0.85	21.0	7.91	8.420	4661	7.43		<1	<1
W1	-36.58	2/26/96	1138				3.43	106	82.6	1156	0.13	1.8	648	18204	3.51	109	85.3	1194	0.60	21.8	7.89	8.514	4713	7.33		<1	<1
W1	-36.58	3/5/96	1037				3.52	109	85.2	1193	0.14	2.0	664	18642	3.53	109	88.7	1242	0.66	20.5	7.90	8.164	4519	7.49		1556	1248
W1	-36.58	4/1/96	1111				3.46	107	83.8	1174	0.22	3.1	652	18299	3.47	107	86.8	1216	0.70	20.8	7.87	8.212	4546	7.50		<1	<1
W1	-36.58	5/8/96	1123				3.46	107	82.4	1154	0.05	0.7	652	18322	3.47	107	85.9	1204	0.53	20.8	7.86	8.360	4627	7.32		3	19
W1	-36.58	6/17/96	1038				3.55	110	85.2	1194	0.33	4.6	698	19600	3.62	112	88.4	1238	0.51	20.4	7.89	8.045	4453	7.43		<1	<1
W1	-36.58	7/16/96	1045				3.47	107	85.6	1199	0.13	1.8	690	19383	3.59	111	88.3	1237	0.57	20.5	7.90	7.919	4383	7.40		<1	<1
W1	-36.58	8/5/96	1128				3.50	108	82.9	1162	0.19	2.7	644	18090	3.52	109	87.0	1218	0.50	21.0	7.88	8.689	4810	7.27		1	<1
W1	-36.58	9/3/96	1049				3.41	106	81.8	1146	0.17	2.4	671	18839	3.52	109	85.5	1198	0.45	21.1	7.88	8.666	4797	7.29		<1	<1
W1	-36.58	10/8/96	1209				3.50	108	83.6	1171	0.11	1.5	636	17866	3.65	113	88.9	1246	0.58	20.7	7.92	8.410	4655	7.36		<1	136
W1	-36.58	11/4/96	1115				3.44	107	83.1	1164	0.18	2.5	670	18826	3.48	108	86.3	1209	0.56	21.0	7.86	8.642	4784	7.34		<1	<1
W1	-36.58	12/16/96	1050				3.45	107	82.7	1159	0.20	2.8	654	18358	3.49	108	86.2	1207	0.59	20.4	7.89	8.874	4912	7.24		<1	<1
W1	-36.58	1/13/97	1131				3.64	113	87	1212	0.02	0.3	664	18652	3.83	119	89.4	1252	0.62	20.9	7.91	7.533	4170	7.73		<1	<1
W1	-36.58	2/11/97	1136				3.23	100	89	1253	0.21	2.9	658	18469	3.24	100	92.5	1296	0.59	21.1	7.91	7.088	3923	7.86		<1	<1
W1	-36.58	3/11/97	1108				3.48	108	88	1235	0.04	0.6	665	18671	3.5*	0	90.3	1265	0.56	20.4	7.93	7.290	4035	7.77		<1	<1
W1	-36.58	4/22/97	1118				3.43	106	85	1184	0.20	2.8	552	15495	3.46	107	94.8	1328	0.56	20.6	7.92	7.664	4242	7.24		<1	<1
W1	-36.58	5/27/97	1023				3.52	109	88	1230	0.09	1.3	540	15175	3.61	112	95.3	1335	0.51	19.9	7.92	7.923	4386	7.44		<1	<1
W1	-36.58	6/16/97	1042				3.45	107	84	1175	0.19	2.7	524	14708	3.49	108	93.7	1313	0.55	19.6	7.97	8.009	4433	7.40		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

7/3/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	7/16/97	952			3.50	108	84	1181	0.30	4.2	657	18461	3.62	112	91.2	1277	0.52	19.8	7.92	7.854	4347	7.45		<1	<1
W1	-36.58	8/25/97	1050			3.42	106	78	1091	0.07	1.0	691	19404	3.44	107	80.9	1133	0.53	19.1	7.98	8.535	4724	7.14		<1	<1
W1	-36.58	9/22/97	1131			3.30	102	77	1081	0.07	1.0	657	18461	3.34	103	78.5	1100	0.51	20.3	8.03	8.625	4774	7.12		<1	<1
W1	-36.58	10/15/97	1008			3.54	110	89	1247	0.07	1.0	660	18531	3.69	114	100	1402	0.51	20.0	8.03	7.801	4318	7.32		<1	<1
W1	-36.58	11/3/97	953			3.45	107	86.5	1212	0.12	1.7	642	18034	3.56	110	96.2	1347	0.49	20.0	8.00	8.365	4630	7.29		<1	<1
W1	-36.58	12/15/97	1110			3.48	108	79.3	1111	0.11	1.5	649	18219	3.68	114	84.0	1177	0.58	20.3	8.04	7.966	4409	7.48		<1	<1
W1	-36.58	1/6/98	930			3.49	108	83.4	1168	0.01	0.1	658	18475	3.77	117	88.9	1245	0.62	19.8	8.04	8.321	4606	7.45		<1	<1
W1	-36.58	2/2/98	1127			3.42	106	82.6	1157	0.04	0.6	658	18491	3.59	111	85.9	1203	0.59	20.1	8.02	8.231	4556	7.41		<1	<1
W1	-36.58	3/9/98	1121			3.67	114	83.4	1168	0.33	4.6	660	18539	3.69	114	85.3	1195	0.60	20.1	7.89	8.174	4525	7.40		<1	<1
W1	-36.58	4/13/98	955			3.62	112	84	1172	0.23	3.2	662	18604	3.68	114	86.6	1212	0.61	19.9	7.90	8.158	4516	7.46		<1	<1
W1	-36.58	5/11/98	1048			3.71	115	83	1156	0.03	0.4	612	17188	3.86	120	84.8	1188	0.58	20.0	7.89	8.135	4503	7.41		<1	<1
W1	-36.58	6/1/98	1038			3.55	110	86.2	1208	0.18	2.5	661	18569	3.61	112	89.8	1258	0.55	20.1	7.89	8.667	4797	7.32		<1	<1
W1	-36.58	7/13/98	1039			3.58	111	82	1151	0.04	0.6	660	18545	3.78	117	86	1207	0.55	20.3	7.87	8.571	4744	7.22		<1	<1
W1	-36.58	8/10/98	1055			3.74	116	86.6	1213	0.06	0.8	660	18522	3.80	118	90.5	1268	0.54	20.0	7.86	8.335	4614	7.53		7	<1
W1	-36.58	9/14/98	1052			3.62	112	79.9	1119	0.11	1.5	656	18435	3.67	114	81	1138	0.53	20.2	7.86	8.941	4949	7.28		<1	<1
W1	-36.58	10/12/98	950			3.53	109	81.2	1137	0.05	0.7	654	18379	3.66	113	86	1198	0.57	20.5	7.90	8.885	4918	7.66		<1	<1
W1	-36.58	11/2/98	1017			3.61	112	86.4	1210	0.06	0.8	670	18823	3.73	116	89.3	1251	0.65	20.1	7.89	8.167	4521	7.41		<1	<1
W1	-36.58	12/15/98	1056			3.59	111	82.5	1156	0.15	2.1	665	18677	3.63	112	84.2	1180	0.60	20.1	7.89	8.556	4736	7.30		<1	<1
W1	-36.58	1/11/99	1025			3.39	105	82	1151	0.31	4.3	658	18477	3.34	103	86	1200	0.62	20.1	7.87	8.758	4848	7.27		<1	<1
W1	-36.58	2/2/99	1028			3.41	106	84	1178	0.13	1.8	658	18489	3.51	109	92	1286	0.65	19.9	7.88	8.643	4784	7.32		<1	2
W1	-36.58	3/1/99	1033			3.43	106	80.5	1128	0.01	0.1	659	18517	3.55	110	83.3	1167	0.53	20.2	7.87	8.592	4756	7.99		<1	<1
W1	-36.58	4/5/99	1025			3.44	107	82.7	1158	0.11	1.5	660	18525	3.52	109	85.5	1198	0.58	20.0	7.87	8.752	4844	7.30		<1	<1
W1	-36.58	5/3/99	1049			3.45	107	84.1	1178	0.17	2.4	662	18590	3.56	110	91.7	1284	0.55	20.2	7.86	8.581	4750	7.29		<1	<1
W1	-36.58	6/1/99	1020			3.43	106	84.1	1178	0.24	3.4	661	18556	3.56	110	87.7	1228	0.57	20.2	7.87	8.550	4733	7.33		<1	<1
W1	-36.58	7/14/99	1038			3.49	108	82.6	1157	0.08	1.1	656	18418	3.52	109	86.3	1209	0.55	20.0	7.87	8.478	4693	7.33		<1	<1
W1	-36.58	8/23/99	1048			3.42	106	79.8	1118	0.14	2.0	656	18416	3.61	112	80.8	1132	0.53	20.1	7.90	8.825	4885	7.16		<1	<1
W1	-36.58	9/7/99	1042			3.51	109	88.1	1234	0.05	0.7	651	18272	3.60	112	99.9	1399	0.56	20.2	7.91	8.872	4911	7.20		<1	<1
W1	-36.58	10/5/99	1024			3.48	108	83.9	1175	0.09	1.3	654	18362	3.52	109	85.4	1196	0.51	20.0	7.92	8.726	4830	7.23		<1	<1
W1	-36.58	11/1/99	1056			3.37	104	79.6	1115	0.10	1.4	634	17817	3.43	106	83.5	1170	0.53	20.1	7.91	9.363	5183	7.10		<1	<1
W1	-36.58	12/14/99	1047			3.48	108	85.5	1198	0.06	0.8	653	18326	3.55	110	87.1	1220	0.51	20.0	7.89	9.021	4993	6.84		<1	<1
W1	-36.58	1/10/00	1106			3.47	107	80.9	1133	0.13	1.8	655	18382	3.51	109	85.7	1200	0.52	20.0	7.89	8.776	4858	7.13		<1	<1
W1	-36.58	2/7/00	1107			3.50	108	83.4	1168	0.13	1.8	644	18095	3.56	110	87.0	1219	0.53	20.1	7.92	8.773	4856	7.07		<1	<1
W1	-36.58	3/21/00	1106			3.25	101	83.0	1163	0.11	1.5	664	18660	3.09	96	86.1	1206	0.60	20.2	7.91	8.581	4750	7.19		<1	1
W1	-36.58	4/10/00	1140			3.40	105	82.7	1158	0.04	0.6	660	18522	3.24	100	88.9	1245	0.59	19.8	7.92	8.903	4928	7.03		<1	<1
W1	-36.58	5/15/00	1049			3.34	103	82.5	1156	0.25	3.5	627	17607	3.35	104	88.6	1241	0.58	20.4	7.91	8.901	4927	7.26		35	<1
W1	-36.58	6/5/00	1052			3.36	104	83.6	1171	0.09	1.3	647	18183	3.36	104	90.0	1261	0.57	20.4	7.91	8.523	4718	7.29		<1	<1
W1	-36.58	7/26/00	1115			3.35	104	79.4	1112	0.09	1.3	650	18267	3.38	105	79.9	1119	0.72	20.2	7.92	9.293	5144	7.01		<1	<1
W1	-36.58	8/29/00	1025			3.43	106	83.4	1168	0.05	0.7	655	18382	3.48	108	85.4	1196	0.49	20.6	7.87	8.655	4791	7.19		<1	<1
W1	-36.58	9/5/00	1041			3.31	103	80.1	1122	0.10	1.4	654	18365	3.40	105	80.4	1126	0.50	21.1	7.87	9.407	5207	6.92		<1	5
W1	-36.58	10/24/00	1055			3.50	108	80.8	1132	0.18	2.5	676	18997	3.74	116	83.0	1163	0.53	20.2	7.88	8.918	4936	6.89		<1	<1
W1	-36.58	11/13/00	1036			3.08	95	81.0	1134	0.20	2.8	658	18483	3.22	100	88.8	1244	0.51	20.3	7.87	8.854	4901	6.90		<1	<1
W1	-36.58	12/18/00	1028			3.36	104	83.1	1164	0.21	2.9	656	18410	3.44	107	90.3	1264	0.69	20.3	7.89	9.248	5119	6.81		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

7/3/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	1/22/01	1044			3.30	102	85.0	1191	0.10	1.4	660	18525	3.54	110	86.3	1209	0.67	20.0	7.86	8.827	4886	6.75		<1	<1
W1	-36.58	2/5/01	1056			3.28	102	82.0	1149	0.10	1.4	660	18548	3.54	110	84.8	1188	0.67	20.1	7.89	8.950	4954	6.74		<1	<1
W1	-36.58	3/5/01	1050			3.36	104	87.8	1230	0.10	1.4	653	18351	3.56	110	89.6	1255	0.58	20.1	7.85	9.012	4988	6.74		<1	<1
W1	-36.58	4/17/01	1037			3.49	108	82.0	1149	0.05	0.7	668	18747	3.54	110	86.7	1214	0.60	20.5	7.85	8.974	4967	7.32		<1	<1
W1	-36.58	5/15/01	1019			3.34	103	85.0	1191	0.14	2.0	657	18455	3.34	103	88.9	1245	0.53	20.1	7.86	8.986	4974	7.28		<1	<1
W1	-36.58	6/12/01	1057			3.38	105	82.2	1151	0.07	1.0	654	18374	3.44	107	86.0	1204	0.52	20.0	7.88	9.045	5007	7.25		<1	<1
W1	-36.58	7/23/01	1033			3.27	101	87.4	1225	0.09	1.3	669	18800	3.30	102	91.7	1284	0.61	20.3	7.86	8.692	4811	8.20		<1	<1
W1	-36.58	8/8/01	1022			3.36	104	86.1	1206	0.07	1.0	682	19154	3.36	104	88.1	1235	0.53	20.0	7.85	9.003	4983	7.16		<1	<1
W1	-36.58	9/17/01	924			3.40	105	88.0	1232	0.07	1.0	680	19093	3.50	108	90.5	1267	0.58	20.5	7.87	8.668	4798	7.39		<1	1
W1	-36.58	10/22/01	930			3.48	108	81.7	1144	0.09	1.3	644	18079	3.48	108	80.9	1133	0.59	20.0	7.87	9.685	5361	6.99		<1	<1
W1	-36.58	11/5/01	948			3.26	101	81.9	1147	0.06	0.8	649	18222	3.44	107	93.2	1306	0.54	19.9	7.85	9.607	5318	7.00		<1	<1
W1	-36.58	12/12/01	930			3.26	101	87.1	1220	0.36	5.0	669	18800	3.35	104	97.6	1367	0.56	21.8	7.87	8.940	4949	7.27		<1	<1
W1	-36.58	1/7/02	914			3.48	108	81.7	1144	0.08	1.1	681	19121	3.56	110	83.0	1163	0.48	20.0	7.87	9.280	5137	6.75		<1	<1
W1	-36.58	2/19/02	940			3.52	109	83.1	1163	0.08	1.1	663	18621	3.68	114	86.1	1206	0.41	19.8	7.86	9.287	5141	6.72		<1	<1
W1	-36.58	3/18/02	921			3.46	107	80.7	1130	0.13	1.8	658	18477	3.62	112	83.3	1166	0.43	20.0	7.89	9.226	5107	6.78		<1	<1
W1	-36.58	4/8/02	953			3.58	111	85.6	1199	0.08	1.1	656	18433	3.74	116	88.9	1245	0.48	20.0	7.68	9.002	4983	6.75		<1	<1
W1	-36.58	5/29/02	935			3.36	104	85.9	1204	0.09	1.3	653	18326	3.42	106	87.4	1224	0.57	20.0	7.89	8.888	4920	7.24		<1	<1
W1	-36.58	6/17/02	1110			3.52	109	80.5	1128	0.17	2.4	637	17890	3.64	113	84.9	1190	0.42	20.0	7.87	9.332	5166	7.11		<1	<1
W1	-36.58	7/15/02	11:12			3.48	108	84.5	1184	0.07	1.0	637	17902	3.55	110	85.5	1198	0.57	20.0	7.93	9.326	5162	7.12		<1	<1
W1	-36.58	8/20/02	11:00			3.42	106	78.9	1105	0.09	1.3	658	18472	3.60	112	78.6	1101	0.49	20.1	7.89	9.141	5060	7.31		<1	<1
W1	-36.58	9/23/02	11:37			3.38	105	87.5	1225	0.15	2.1	657	18455	3.58	111	75.7	1061	0.43	20.7	7.90	8.966	4963	7.35		<1	<1
W1	-36.58	10/14/02	10:50			3.27	101	83.0	1163	0.08	1.1	651	18272	3.44	107	71.9	1006	0.42	20.3	7.94	9.711	5375	7.12		<1	<1
W1	-36.58	11/4/02	10:58			3.49	108	87.9	1232	0.02	0.3	658	18491	3.58	111	78.9	1105	0.44	20.2	7.92	9.085	5029	7.32		<1	<1
W1	-36.58	12/17/02	11:30			3.26	101	81.8	1146	0.16	2.2	659	18503	3.47	107	76.4	1071	0.42	21.0	7.92	9.176	5079	7.18		<1	<1
W1	-36.58	1/29/03	10:37			3.38	105	86.7	1215	0.48	6.7	656	18424	3.45	107	93.5	1310	0.62	20.3	7.90	9.023	4994	7.31		<1	<1
W1	-36.58	2/10/03	10:25			3.20	99	82.5	1156	0.13	1.8	668	18761	3.43	106	87.4	1224	0.51	20.1	7.90	9.295	5145	7.12		<1	<1
W1	-36.58	3/19/03	11:10			3.46	107	79.5	1114	0.11	1.5	668	18770	3.69	114	87.5	1226	0.56	20.1	7.97	9.048	5008	7.21		<1	<1
W1	-36.58	4/28/03	10:45			3.53	109	86.4	1210	0.17	2.4	659	18506	3.54	110	91.2	1277	0.45	20.6	7.97	9.105	5040	7.28		<1	<1
W1	-36.58	5/12/03	10:26			3.50	108	85.3	1195	0.19	2.7	717	20137	3.57	111	92.0	1289	0.42	20.4	7.99	9.198	5091	7.30		<1	<1
W1	-36.58	6/3/03	10:57			3.53	109	85.6	1199	0.51	7.1	656	18430	3.75	116	90.0	1260	0.41	20.3	7.86	8.995	4979	7.26		<1	<1
W1	-36.58	7/29/03	11:14			3.41	106	87.9	1231	0.16	2.2	663	18607	3.55	110	97.7	1369		20.4	7.95	8.791	4866	7.51		<1	1
W1	-36.58	8/26/03	11:00			3.32	103	86.1	1206	0.52	7.3	654	18362	3.44	107	95.7	1340		21.3	7.86	8.950	4954	7.14		<1	<1
W1	-36.58	9/15/03	11:03			3.46	107	88.7	1242	0.30	4.2	658	18466	3.77	117	91.6	1283		20.9	7.85	9.235	5112	7.31		<1	<1
W1	-36.58	10/6/03	10:59			3.62	112	80.8	1131	0.54	7.6	662	18593	3.70	115	86.6	1214		20.4	7.88	9.211	5099	NA		<1	<1
W1	-36.58	10/28/03	11:41			3.38	105	86.2	1207	0.30	4.2	664	18635	3.54	110	99.6	1395		19.8	7.86	9.217	5102	NA		<1	<1
W1	-36.58	11/14/03	14:33																20.7				7.38			
W1	-36.58	12/15/03	10:43			3.35	104	80.4	1127	0.90	12.6	666	18708	3.42	106	81.9	1147		20.4	7.87	9.751	5397	7.07		<1	<1
W1	-36.58	1/26/04	11:14			3.22	100	84.0	1177	0.20	2.8	661	18553	3.34	103	85.6	1199		20.1	7.94	9.340	5170	7.02		<1	1
W1	-36.58	2/5/04	10:48			3.36	104	93.6	1310	0.17	2.4	669	18800	3.52	109	104	1450		20.6	7.88	9.017	4991	7.20		<1	<1
W1	-36.58	3/2/04	10:20			3.46	107	86.6	1214	**1.04**	14.6	668	18772	3.54	110	92.1	1290		20.4	7.92	8.770	4854	6.89		<1	<1
W1	-36.58	4/22/04	9:00			3.42	106	88.7	1243	0.13	1.8	661	18559	3.48	108	94.4	1322		20.5	7.91	8.521	4717	7.44		<1	5
W1	-36.58	5/18/04	8:37			3.30	102	85.3	1195	0.14	2.0	670	18829	3.37	104	88.0	1233		20.6	7.91	8.41	4655	8.73		<1	<1
W1	-36.58	6/8/04	8:40			3.40	105	85.7	1201	**2.45**	34.3	674	18924	3.47	107	92.0	1289		20.3	7.86	8.64	4782	7.38		<1	TNTC

NELHA Water Quality Laboratory

Well 1 Data Table

7/3/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	7/19/04	9:36				3.32	103	93.1	1304	0.16	2.2	643	18062	3.30	102	**128**	1790		20.3	7.85	8.65	4788	7.34		<1	TNTC
W1	-36.58	8/25/04	8:54				3.18	98	84.1	1178	0.16	2.2	667	18725	3.35	104	90.5	1268		20.4	7.86	8.82	4882	7.21		<1	<1
W1	-36.58	9/28/04	8:46				3.22	100	87.9	1232	0.18	2.5	660	18522	3.36	104	100	1406		20.4	7.86	9.11	5043	9.38		<1	<1
W1	-36.58	10/5/04	9:07				3.22	100	80.5	1127	0.18	2.5	643	18059	3.42	106	84.5	1183		20.4	7.88	9.85	5452	6.80		<1	<1
W1	-36.58	11/9/04	9:56				3.30	102	81.4	1141	0.09	1.3	648	18205	3.46	107	86.2	1208		20.6	7.87	9.30	5148	7.13		<1	<1
W1	-36.58	12/6/04	10:30				3.18	98	80.0	1121	0.20	2.8	645	18124	3.28	102	84.4	1182		20.9	7.88	9.75	5397	6.94		<1	<1
W1	-36.58	1/10/05	9:59				3.34	103	81.8	1146	0.10	1.4	658	18486	3.42	106	84.4	1182		20.8	7.91	9.556	5289	7.01		<1	<1
W1	-36.58	2/9/05	9:59				3.32	103	87.8	1230	0.13	1.8	657	18449	3.41	106	107	1497		20.7	7.91	9.114	5045	7.13		<1	<1
W1	-36.58	3/15/05	10:24				3.28	102	84.7	1186	0.23	3.2	659	18500	3.48	108	90.3	1265	0.37	20.9	7.91	9.148	5064	7.19		<1	<1
W1	-36.58	4/19/05	9:38				3.32	103	81.0	1134	0.16	2.2	658	18477	3.36	104	85.7	1200		21.2	7.93	9.105	5040	7.23		<1	<1
W1	-36.58	5/23/05	10:23				3.30	102	87.6	1227	0.10	1.4	662	18579	3.36	104	91.9	1287		20.6	7.89	9.098	5036	8.10		<1	<1
W1	-36.58	6/15/05	9:27				3.28	102	84.6	1185	0.14	2.0	646	18135	3.58	111	94.1	1318		20.5	7.85	9.517	5268	7.03		<1	<1
W1	-36.58	7/18/05	9:55				3.32	103	82.1	1150	0.18	2.5	665	18682	3.50	108	84.4	1182	0.56	20.6	7.86	9.184	5084	7.10		1	3
W1	-36.58	8/9/05	10:06				3.24	100	81.8	1145	0.26	3.6	647	18157	3.36	104	84.8	1188	0.38	21.0	7.91	9.435	5223	7.01		1	3
W1	-36.58	9/20/05	9:55				3.28	102	81.0	1134	0.14	2.0	656	18413	3.44	107	81.4	1140	0.59	20.8	7.88	9.499	5258	7.11		<1	76
W1	-36.58	10/17/05	9:53				3.34	103	82.8	1160	0.20	2.8	656	18421	3.54	110	87.7	1228		20.7	7.88	9.461	5237	7.12		169	<1
W1	-36.58	11/7/05	9:23				3.12	97	77.5	1086	0.02	0.3	637	17890	3.36	104	82.2	1152		20.2	7.87	10.387	5749	6.83		3	<1
W1	-36.58	12/21/05	8:52				3.18	98	75.6	1058	0.16	2.2	625	17562	3.38	105	78.6	1101	0.57	20.4	7.89	10.528	5828	6.78		<1	1
W1	-36.58	1/23/06	9:52				3.28	102	82.3	1153	0.08	1.1	655	18399	3.42	106	83.6	1170		20.9	7.87	9.869	5463	6.98		<1	<1
W1	-36.58	2/14/06	9:48				3.31	103	85.4	1196	0.18	2.5	651	18275	3.34	103	87.7	1229	0.48	20.6	7.85	9.878	5468	6.97		<1	<1
W1	-36.58	3/20/06	10:31				3.33	103	79.9	1119	0.11	1.5	654	18368	3.43	106	84.7	1186	1.09	20.4	7.92	9.821	5436	6.98		<1	<1
W1	-36.58	4/25/06	10:54				3.22	100	83.6	1171	0.14	2.0	634	17806	3.33	103	76.2	1068	0.45	21.3	7.95	9.827	5439	6.83		<1	<1
W1	-36.58	5/22/06	10:10				3.15	98	81.5	1142	0.58	8.1	618	17357	3.59	111	73.9	1034	0.42	20.5	7.91	9.939	5501	6.81		<1	<1
W1	-36.58	6/26/06	10:19				3.06	95	82.3	1153	0.22	3.1	623	17497	3.31	103	77.3	1083	0.44	20.8	7.92	10.065	5571	6.81		<1	<1
W1	-36.58	7/20/06	10:29				3.11	96	75.8	1062	0.16	2.2	615	17273	3.33	103	74.3	1040	0.42	21.2	7.87	10.789	5972	7.07		<1	1
W1	-36.58	8/7/06	10:45				3.06	95	77.8	1090	0.06	0.8	628	17638	3.20	99	70.8	991	0.45	20.7	7.90	10.551	5840	7.14		<1	<1
W1	-36.58	9/18/06	10:10				2.99	93	76.3	1069	0.21	2.9	621	17441	3.26	101	68.8	963	0.40	20.9	7.89	10.649	5894	6.96		<1	<1
W1	-36.58	10/23/06	10:50				3.14	97	82.7	1158	0.18	2.5	629	17666	3.24	100	64.4	902	0.40	21.4	7.87	10.294	5698	7.08		<1	<1
W1	-36.58	11/27/06	9:55				3.03	94	76.6	1073	0.31	4.3	615	17273	3.15	98	65.2	913	0.38	20.5	7.88	11.038	6110	6.72		<1	1
W1	-36.58	12/11/06	11:29				3.20	99	82.6	1157	0.20	2.8	641	18003	3.28	102	74.9	1050	0.43	20.5	7.88	10.695	5920	6.78		1	1
W1	-36.58	1/8/07	10:17				3.13	97	84.8	1188	0.30	4.2	604	16964	3.25	101	77.4	1085	0.39	20.2	7.95	10.639	5889	6.83		1684	860
W1	-36.58	2/20/07	10:42				3.19	99	80.6	1129	0.32	4.5	619	17385	3.36	104	89.6	1255	0.47	20.7	7.89	10.146	5616	6.98		1	<1
W1	-36.58	3/5/07	10:20				3.18	98	87.9	1231	0.25	3.5	648	18199	3.35	104	92.9	1301	0.47	21.4	7.93	9.971	5519	7.00		<1	<1
W1	-36.58	4/18/07	10:45				3.19	99	92.3	1293	0.3	4.2	647	18171	3.33	103	77.4	1085	0.40	21.1	7.91	9.737	5390	6.79		1	1
W1	-36.58	5/1/07	10:33				3.21	99	84.5	1184	0.22	3.1	637	17890	3.40	105	78.7	1103	0.42	20.7	7.90	9.808	5429	6.76		<1	<1
W1	-36.58	6/18/07	10:24				3.23	100	91.0	1275	0.18	2.5	655	18396	3.40	105	77.1	1081	0.38	21.0	7.94	9.854	5454	7.26		<1	<1
W1	-36.58	7/26/07	14:42	-30.78	0.64	High	2.85	88	88.1	1234	0.01	0.1	618	17348	3.03	94	87.1	1220		20.3	7.80	10.71	5928	6.25			
W1	-36.58	8/28/07	12:22		0.21	Flood	2.55	79	53.1	744	0.59	8.2	796	22365	2.63	82	54.5	763		20.4	7.86	10.02	5546	6.54			
W1	-36.58	9/13/07	10:16		0.15	Ebb	3.35	104	90.4	1266	0.16	2.2	667	18745	3.31	103	90.8	1271		20.2	7.72	9.83	5441	7.40			
W1	-36.58	10/24/07	15:24	-31.58	0.46	Ebb	2.95	91	92.0	1289	0.92	12.9	614	17249	2.99	93	89.3	1250		20.1	7.78	10.34	5723	6.41			
W1	-36.58	11/26/07	10:46		0.30	Ebb	3.17	98	93.5	1309	0.91	12.8	681	19118	2.74	85	100.7	1410		20.2	7.87	9.83	5441	6.51			
W1	-36.58	12/20/07	13:11		0.24	Ebb	2.72	84	60.7	850	0.20	2.8	601	16878						20.0	7.99	9.54	5281	6.58			

NELHA Water Quality Laboratory

Well 1 Data Table

7/3/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	1/28/08	11:25	-30.78	0.18	Ebb	2.10	65	51.2	717	0.54	7.6	376	10548						20.3	7.78	9.35	5175	6.22			
W1	-36.58	2/27/08	9:37		0.15	Ebb	3.27	101	95.9	1343	0.11	1.6	618	17358						20.1	7.79	9.32	5159	6.90			
W1	-36.58	3/18/08	11:27	-29.93	0.06	Flood	2.78	86	77.9	1091	0.56	7.9	651	18295						20.6	7.79	9.36	5181	5.71			
W1	-36.58	4/28/08	10:27	-31.39	0.15	Flood	2.84	88	96.8	1355	0.19	2.6	625	17541						20.6	7.81	9.34	5170	6.64			
W1	-36.58	5/30/08	11:24		0.24	Flood	2.69	83	89.5	1254	0.21	2.9	619	17384						20.7	7.81	9.75	5397	6.35			
W1	-36.58	6/20/08	10:04		-0.06	Low	2.66	82	96.4	1350	0.68	9.5	697	19579						25.4	7.67	9.10	5037	6.10			
W1	-36.58	7/25/08	10:53	-30.78	0.55	High	2.73	85	85.5	1198	0.63	8.8	414	11616						20.2	7.87	9.91	5485	6.08			
W1	-36.58	8/30/08	9:00		0.00	Low	1.26	39	52.3	733	0.71	9.9	318	8922						20.7	7.81	9.13	5054	7.86			
W1	-36.58	9/19/08	1022	-30.92	0.37	Ebb	2.05	64	67.6	947	1.05	14.7	461	12937						24.1	7.88	5.03	2784	8.12	0.50		
W1	-36.58	10/27/08	1136	-31.35	0.24	Flood	2.97	92	97.1	1361	0.49	6.9	619	17390						22.1	7.54	8.96	4960	7.80	0.41		
W1	-36.58	11/10/08	946	-31.26	0.18	Flood	4.41	137	95.6	1339	0.11	1.5	579	16260						23.3	7.90	9.10	5037	6.74	0.19		
W1	-36.58	12/15/08	908	-31.01	0.43	Ebb	3.77	117	151.8	2126	0.06	0.8	642	18025						24.1	8.08	4.55	2519	8.29			
W1	-36.58	1/23/09	1025	-31.35	0.08	Low	3.17	98	107.6	1507	0.54	7.6	586	16456						22.8	7.93	9.00	4982	6.64	0.17		
W1	-36.58	2/23/09	1254	-31.36	0.15	Flood	2.86	89	96.3	1348	0.23	3.2	588	16513						21.3	7.79	9.44	5225	7.09	0.23		
W1	-36.58	3/13/09	1118	-31.43	-0.03	Ebb	2.79	87	81.3	1139	0.13	1.8	616	17301						21.6	7.82	8.98	4971	7.04	0.25		
W1	-36.58	4/20/09	1021	-31.36	0.15	Flood	3.66	114	90.4	1266	0.41	5.7	373	10480						21.8	7.78	9.21	5098	7.07			
W1	-36.58	5/21/09	955	-31.44	0.08	Flood	3.38	105	93.0	1302	0.16	2.2	643	18057						23.7	8.32	9.37	5187	6.56	0.21		
W1	-36.58	6/16/09	934	-31.26	0.30	Flood	2.41	75	56.0	784	0.74	10.4	196	5510						23.8	7.34	9.51	5264	6.64	0.13		
W1	-36.58	7/13/09	1106	-31.29	0.37	Ebb	1.69	53	41.1	575	0.32	4.5	246	6897						23.0	7.9	9.6	5314	6.90	0.06		
W1	-36.58	8/20/09	1020	-31.40	0.03	Low	2.73	85	83.9	1176	0.06	0.8	532	14936						23.7	7.92	9.12	5048	6.58	0.13		
W1	-36.58	9/21/09	1019	-31.22	0.30	Ebb	1.99	62	59.4	832	0.19	2.7	171	4812						24.0	8.66	9.61	5319	6.58	0.06		
W1	-36.58	10/19/09	958	-31.12	0.37	Ebb	2.34	73	87.0	1218	1.97	27.6	231	6476						21.1	8.71	9.74	5391	6.85	0.02		
W1	-36.58	11/16/09	935	-31.31	0.18	Ebb	4.98	154	79.1	1108	0.96	13.4	365	10247						21.4	7.80	9.38	5192	6.89	0.02		
W1	-36.58	12/7/09	947	-31.14	0.55	Ebb	3.00	93	97.2	1361	0.45	6.3	574	16134						21.1	7.88	10.21	5652	6.28	0.07		
W1	-36.58	1/5/10	924	-31.10	0.43	Ebb	3.52	109	85.8	1202	1.93	27.0	537	15090						21.1	7.80	11.00	6089	6.34	0.05		
W1	-36.58	2/1/10	909	-31.07	0.24	Ebb	3.20	99	97.7	1368	0.50	7.0	521	14630						21.0	7.91	10.36	5735	6.82	0.27		
W1	-36.58	3/9/10	830	-31.38	0.09	Low	3.36	104	93.3	1307	0.14	2.0	580	16294						21.1	7.81	10.00	5535	6.42	0.30		
W1	-36.58	4/6/10	802	-31.42	0.24	Low	3.39	105	95.5	1338	0.29	4.0	496	13936						21.9	7.88	9.60	5314	6.93	0.12		
W1	-36.58	5/11/10	818	-31.49	-0.03	Low	3.10	96	82.5	1155	2.28	32.0	533	14970						21.1	7.99	9.64	5336	6.98	0.13		
W1	-36.58	6/15/10	859	-31.38	0.12	Ebb	3.39	105	95.0	1331	0.79	11.0	653	18337						21.9	7.88	9.87	5463	6.74	0.11		
W1	-36.58	7/13/10	832	-31.30	0.12	Ebb	3.07	95	90.8	1272	0.36	5.0	641	17994						22.0	7.91	9.82	5436	6.46	0.11		
W1	-36.58	8/3/10	829	-31.22	0.37	Flood	3.52	109	95.5	1338	0.50	7.0	663	18614						22.2	7.91	9.73	5386	6.66	0.19		
W1	-36.58	9/14/10	826	-31.14	0.55	Flood	3.26	101	91.5	1282	0.49	6.8	676	18972						22.1	7.87	10.28	5690	6.80	0.08		
W1	-36.58	10/12/10	817	-30.99	0.67	High	3.26	101	90.0	1260	0.37	5.2	680	19099						22.1	7.89	10.45	5784	6.37	0.08		
W1	-36.58	11/16/10	808	-31.19	0.21	Low	3.26	101	96.5	1352	0.24	3.4	676	18986						21.9	7.89	9.68	5358	6.78	0.07		
W1	-36.58	12/14/10	828	-31.18	0.30	Flood	3.23	100	92.4	1294	0.56	7.8	645	18102						21.8	7.89	9.96	5513	6.77	0.04		
W1	-36.58	1/4/11	830	-31.07	0.30	Ebb	3.62	112	98.2	1376	0.34	4.7	694	19504						21.8	7.87	9.84	5447	6.69	0.03		
W1	-36.58	4/5/11	822	-31.28	0.06	Ebb	3.42	106	88.7	1243	0.29	4.1	656	18420						22.1	7.82	9.78	5413	5.99	0.10		
W1	-36.58	7/12/11	824	-31.53	-0.06	Flood	3.58	111	94.0	1317	0.09	1.3	658	18477						21.8	7.84	9.46	5236	6.60	0.05		
W1	-36.58	10/11/11	842	-31.18	0.18	Ebb	3.20	99	83.5	1169	0.39	5.4	613	17218						22.1	7.79	10.11	5596	6.88	0.18		
W1	-36.58	1/10/12	843	-31.13	0.37	Ebb	3.16	98	85.0	1191	0.56	7.8	619	17376						21.6	7.76	10.32	5712	6.33	0.09		
W1	-36.58	5/1/12	839	-31.35	0.03	Flood	3.65	113	91.1	1276	0.37	5.2	686	19266						21.9	7.79	9.95	5508	6.60	0.10		
W1	-36.58	7/18/12	823	-31.38	0.03	Ebb	3.49	108	94.6	1325	1.02	14.3	635	17842						21.5	7.84	9.99	5530	6.87	0.11		
W1	-36.58	10/16/12	853	-31.11	0.34	Ebb	3.42	106	89.4	1252	0.36	5.1	631	17710						21.6	7.82	10.52	5823	6.51	0.05		
W1	-36.58	1/8/13	912	-31.27	0.05	Low	3.65	113	95.4	1336	0.44	6.2	678	19043						21.5	7.90	10.22	5657	6.66	0.33		
W1	-36.58	4/9/13	843	-31.38	-0.06	Low	3.62	112	87.6	1227	0.48	6.7	659	18517						21.3	7.88	10.19	5640	6.85	0.02		

NELHA Water Quality Laboratory

Well 1 Data Table

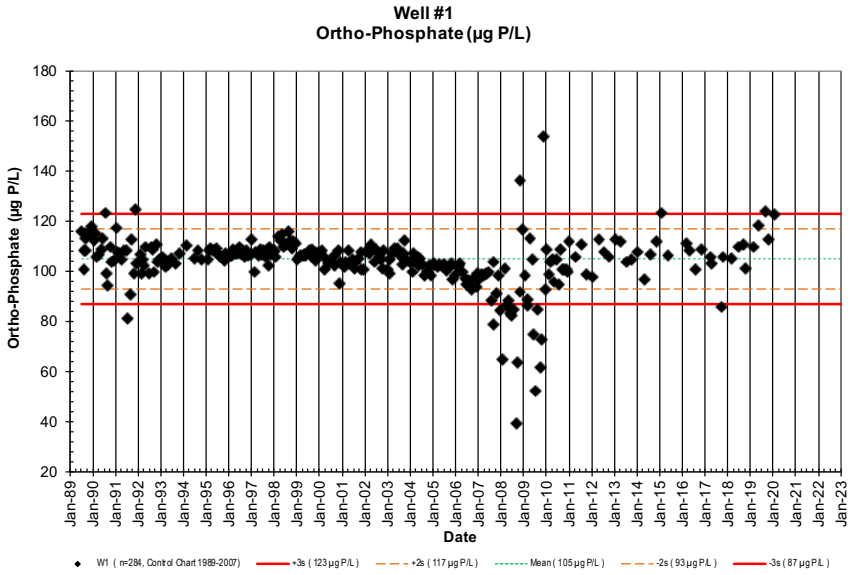
7/3/1989 - 7/16/20

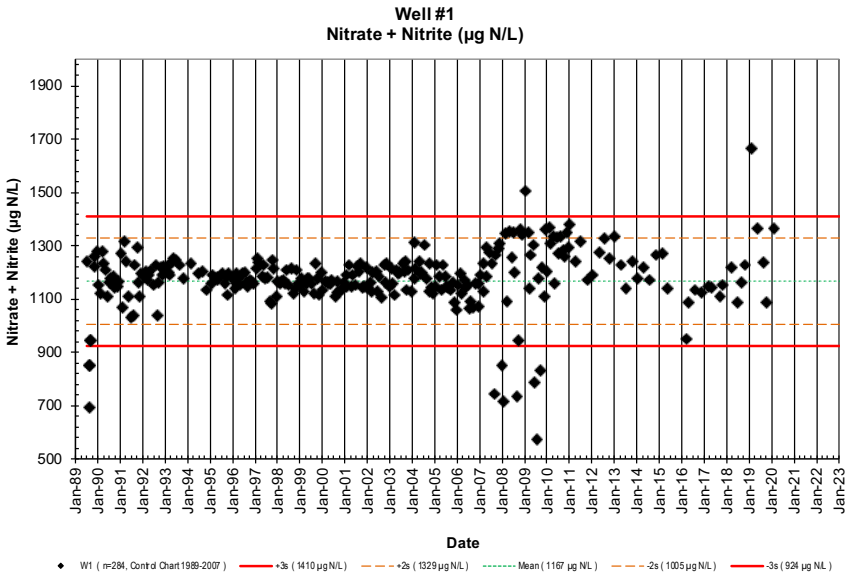
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W1	-36.58	7/17/13	912	-31.38	0.40	Flood	3.36	104	81.4	1140	0.69	9.7	651	18284						21.3	7.81	10.29	5696	6.50	0.08		
W1	-36.58	10/15/13	844	-31.33	0.15	Flood	3.39	105	88.8	1244	0.58	8.1	635	17840						21.5	7.82	10.30	5701	6.88	0.12		
W1	-36.58	1/15/14	823	-31.06	0.30	Ebb	3.49	108	83.8	1174	0.63	8.8	564	15829						20.7	7.90	10.47	5795	6.73	0.02		
W1	-36.58	4/29/14	940	-31.43	-0.06	Low	3.13	97	87.0	1218	0.76	10.6	604	16974						21.5	7.91	10.20	5646	7.28	0.09		
W1	-36.58	7/29/14	912	-31.29	0.18	Ebb	3.45	107	83.7	1173	0.71	10.0	693	19472						21.3	7.88	10.46	5790	6.93	0.13		
W1	-36.58	11/5/14	913	-31.15	0.09	Low	3.62	112	90.3	1265	0.39	5.5	612	17189						24.1	7.79	10.36	5735	6.09	0.43		
W1	-36.58	2/9/15	1444	-31.31	0.01	Low	3.98	123	90.7	1271	0.44	6.1	494	13866						21.4	7.74	10.60	5867	6.65	0.07		
W1	-36.58	5/20/15	1637	-31.18	0.61	High	3.43	106	81.2	1137	0.25	3.5	545	15317						21.2	7.98	11.56	6399	6.21	0.13		
W1	-36.58	7/1/15	No Sample - equipment malfunction																								
W1	-36.58	10/1/15	No Sample - equipment malfunction																								
W1	-36.58	3/9/16	1040	-31.38	-0.05	Low	3.59	111	67.7	948	0.71	9.9	533	14973						20.5	7.78	12.60	6974	5.19	0.07		
W1	-36.58	4/22/16	1426	-31.26	0.50	Flood	3.49	108	77.4	1085	0.65	9.1	548	15385						20.5	7.78	11.67	6460	6.50	0.05		
W1	-36.58	7/27/16	1626	-31.21	0.40	Ebb	3.25	101	81.0	1135	0.48	6.7	505	14195						20.5	7.83	11.61	6426	6.07	0.05		
W1	-36.58	11/7/16	1432	-31.10	0.25	Ebb	3.52	109	80.3	1124	1.15	16.1	459	12902						20.5	7.82	11.69	6471	6.82	0.07		
W1	-36.58	3/22/17	1609	-31.22	0.10	Ebb	3.42	106	81.9	1147	0.55	7.7	595	16706						20.7	7.79	11.62	6432	6.30	0.10		
W1	-36.58	4/19/17	1549	-31.24	0.09	Low	3.34	103	81.7	1145	0.41	5.7	607	17034						20.7	7.73	11.60	6421	5.08	0.07		
W1	-36.58	9/19/17	1417	-31.08	0.60	Flood	2.77	86	79.2	1110	0.04	0.6	627	17613						20.6	7.94	11.75	6504	6.03	0.02		
W1	-36.58	10/19/17	1645	-31.07	0.45	Ebb	3.42	106	82.2	1151	0.34	4.7	570	16005						20.7	7.86	11.61	6426	5.88	0.02		
W1	-36.58	3/16/18	1429	-31.28	0.45	High	3.40	105	87.1	1221	0.12	1.7	623	17503						20.4	7.81	11.75	6504	8.48	0.08		
W1	-36.58	6/20/18	1119	-31.19	0.34	High	3.54	110	77.7	1089	0.34	4.7	598	16789						20.4	7.68	12.08	6687	5.37	0.05		
W1	-36.58	8/29/18	1255	-31.24	0.18	Low	3.58	111	82.8	1160	0.62	8.7	610	17122						20.8	7.77	11.43	6327	5.91	0.06		
W1	-36.58	10/24/18	1157	-31.25	0.25	Flood	3.27	101	87.5	1226	0.06	0.8	575	16139						20.8	7.72	11.30	6255	5.19	0.07		
W1	-36.58	2/8/19	1518	-31.36	0.25	Flood	3.54	110	118.8	1664	0.06	0.9	593	16647						20.8	7.71	10.82	5989	6.91	0.08		
W1	-36.58	5/10/19	1453	-31.36	0.05	Flood	3.81	118	97.4	1365	0.03	0.4	599	16809						21.2	7.62	10.44	5779	6.92	0.02		
W1	-36.58	8/29/19	1155	-31.29	0.30	Flood	3.99	124	88.4	1238	0.26	3.6	603	16935						21.5	7.83	11.00	6089	6.85	0.12		
W1	-36.58	10/16/19	940	-31.02	0.28	Ebb	3.64	113	77.5	1086	0.22	3.1	572	16065						20.8	7.85	11.68	6465	7.57	0.10		
W1	-36.58	1/31/20	930	-31.15	0.35	Ebb	3.96	123	97.4	1364	-0.66	-9.3	598	16783						20.7	7.77	12.17	6736	6.41	0.06		
W1	-36.58	6/5/20	No Sample - equipment malfunction																								
W1	-36.58	7/1/20																									
W1	-36.58	10/1/20																									
W1	-36.58	1/1/21																									
W1	-36.58	4/1/21																									
W1	-36.58	7/1/21																									
W1	-36.58	10/1/21																									
W1	-36.58	1/1/22																									
W1	-36.58	4/1/22																									
W1	-36.58	7/1/22																									
W1	-36.58	10/1/22																									
W1	-36.58	1/1/23																									
W1	-36.58	4/1/23																									
Mean				-31.22	0.23		3.35	104	84	1180	0.24	3.3	643	18055	3.48	107.4	87.1	1221	0.59	20.7	7.89	8.92	4939	7.14	0.12		
Std. Dev.				0.23	0.18		0.34	10	9	127	0.32	4.5	84	2372	0.19	9.6	7.9	111	0.20	0.9	0.10	1.31	723	0.55	0.10		
Maximum				-29.93	0.67		4.98	154	152	2126	2.45	34.3	942	26457	4.17	129.2	127.8	1790	2.13	25.4	8.71	12.60	6974	9.38	0.50		
Minimum				-31.58	-0.06		1.26	39	41	575	-0.66	-9.3	171	4812	2.63	0.0	49.6	695	0.35	17.6	7.34	4.55	2519	5.08	0.02		
n				69	77		284	284	284	284	284	284	277	277	205	206	206	206	175	284	283	283	283	281	61		

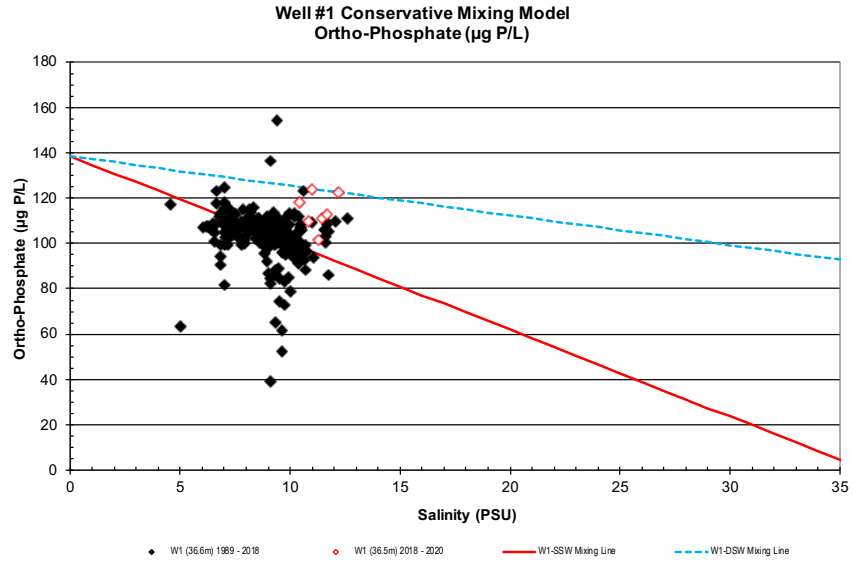
NELHA Water Quality Laboratory

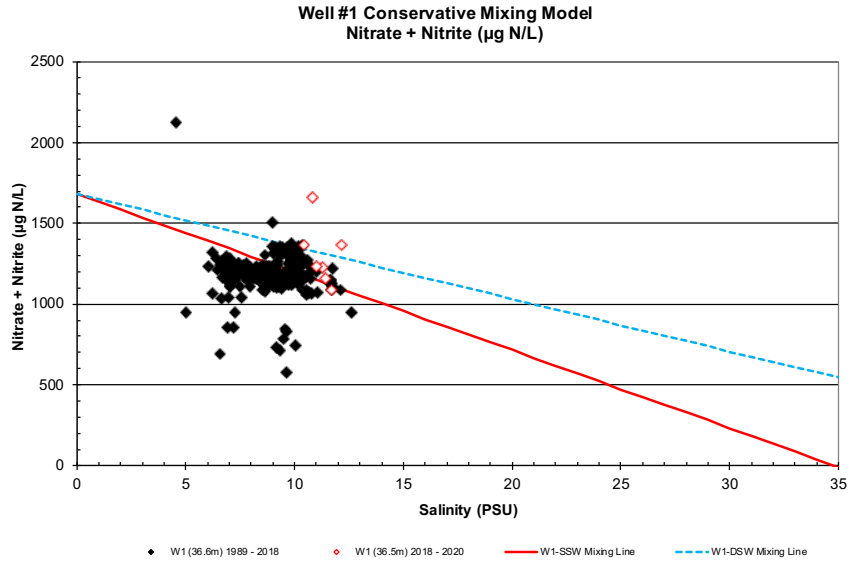
Well 1 Charts

7/3/1989 - 7/16/20







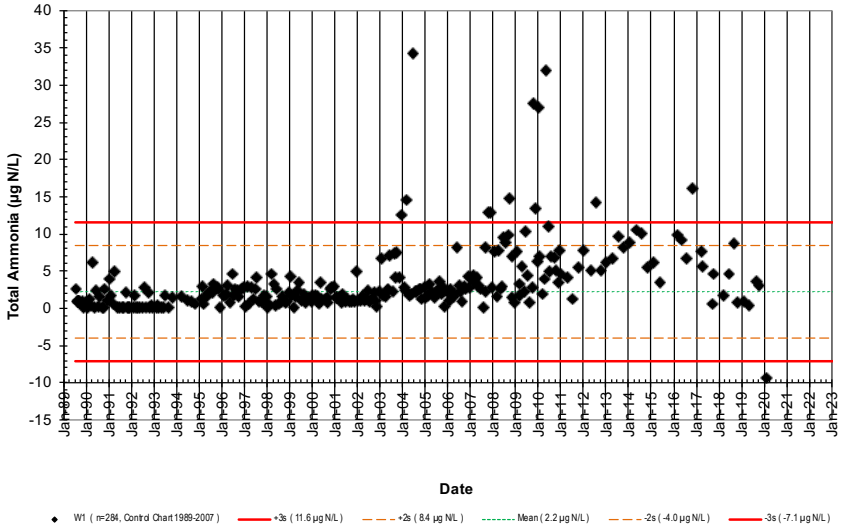


NELHA Water Quality Laboratory

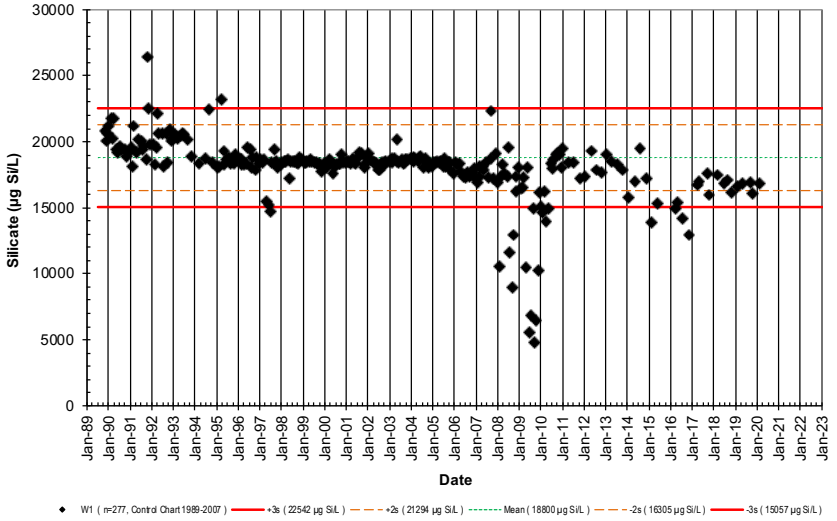
Well 1 Charts

7/3/1989 - 7/16/20

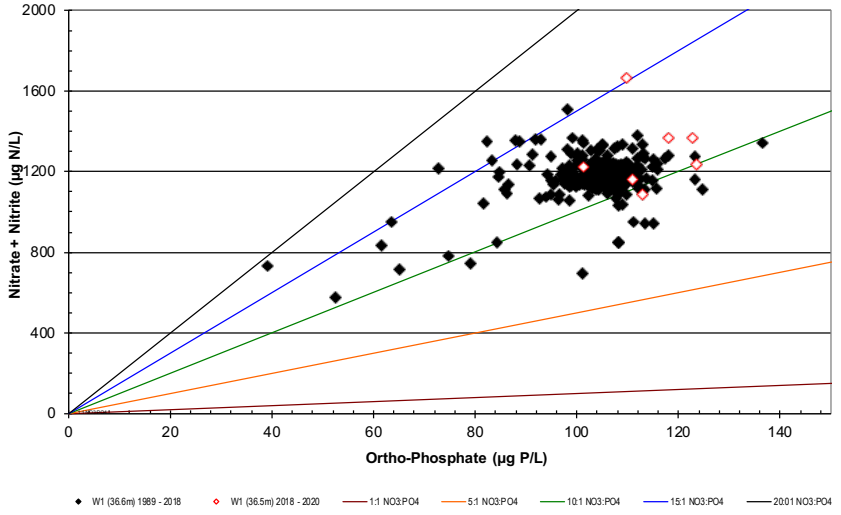
Well #1
Total Ammonia (µg N/L)



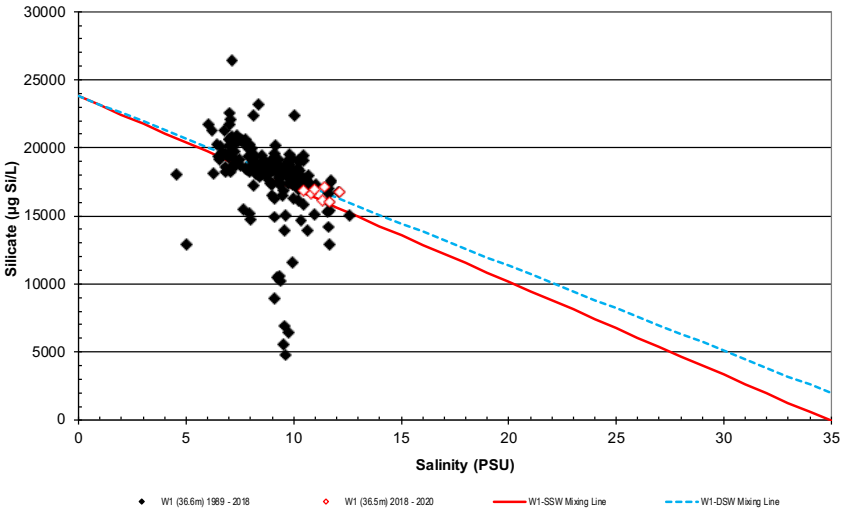
Well #1
Silicate (µg Si/L)



Relationship Between Ortho-Phosphate and Nitrate + Nitrite in Well #1



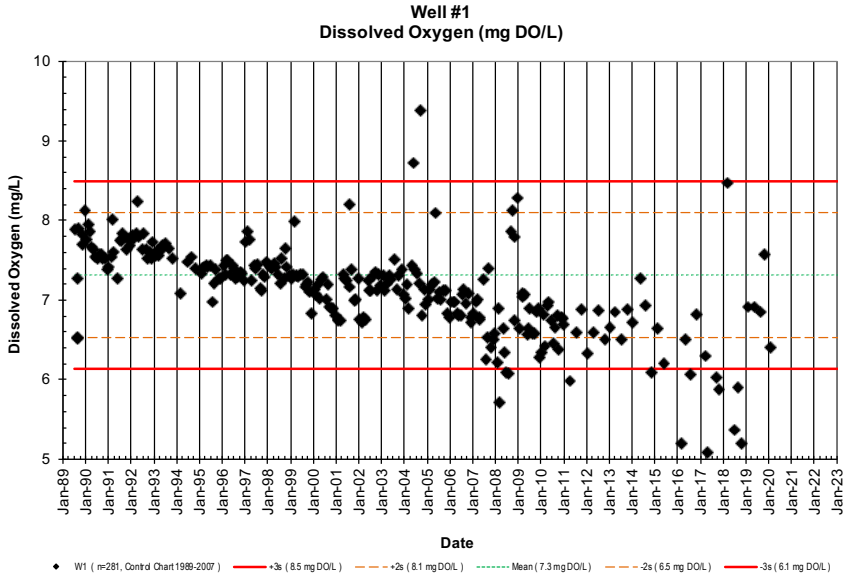
Well #1 Conservative Mixing Model
Silicate (µg Si/L)

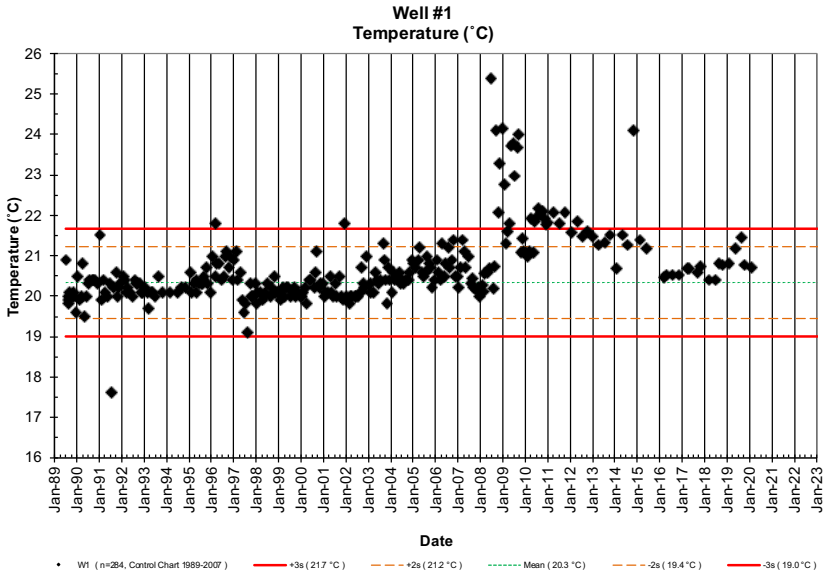


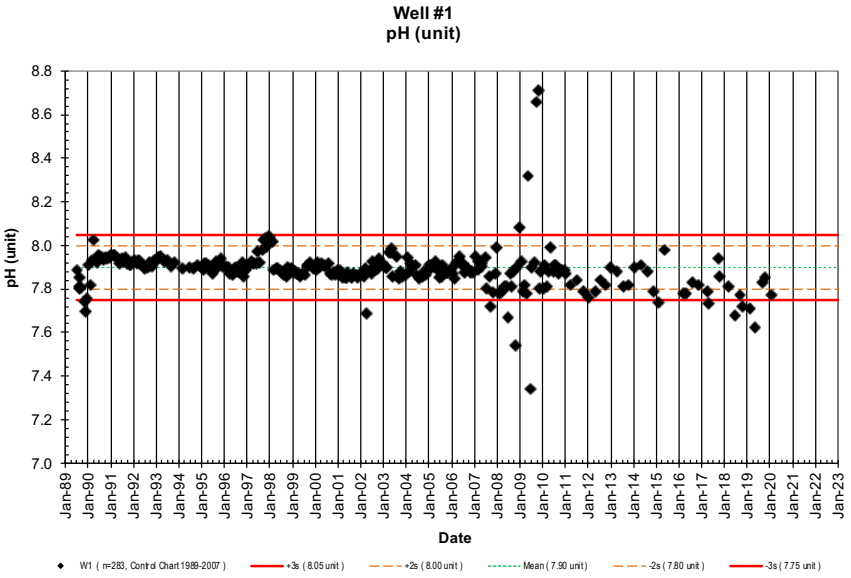
NELHA Water Quality Laboratory

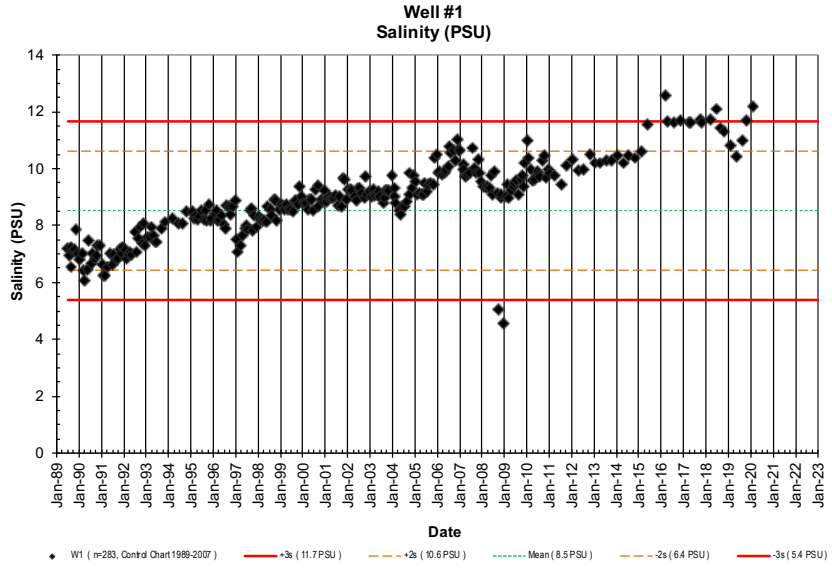
Well 1 Charts

7/3/1989 - 7/16/20





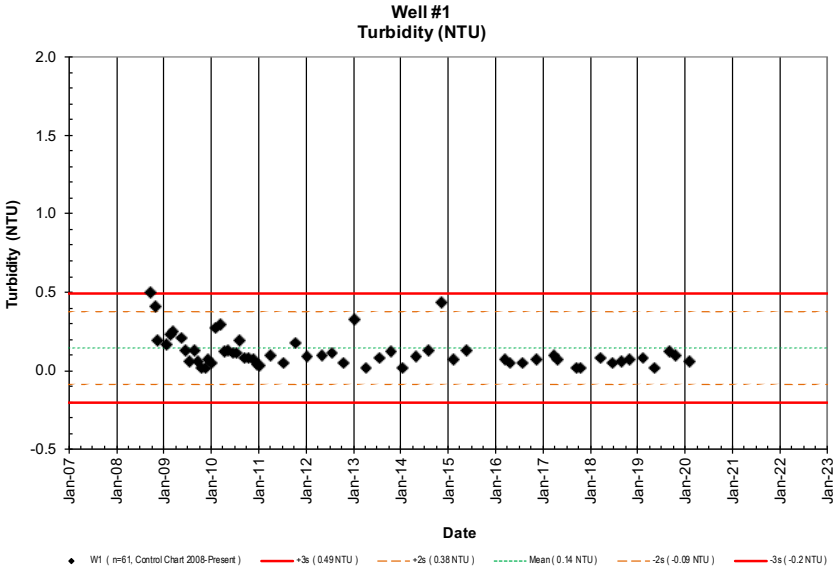


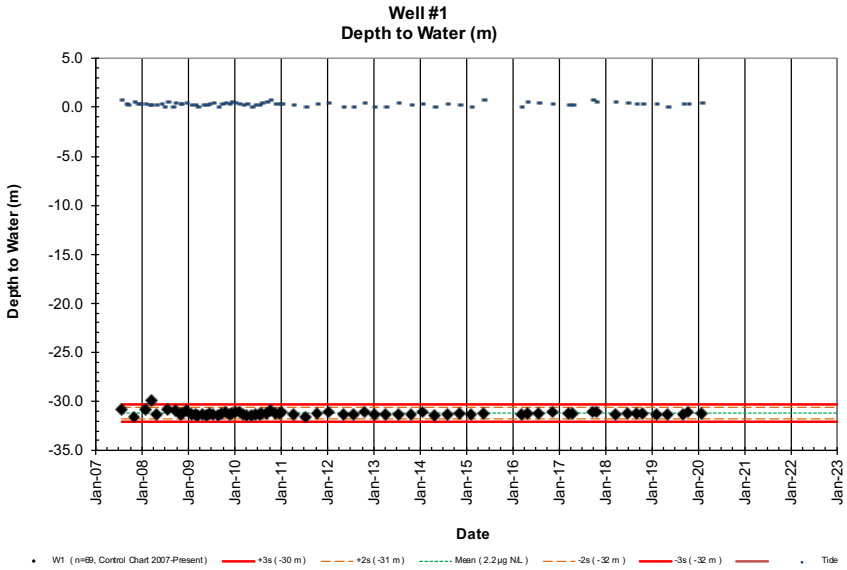


NELHA Water Quality Laboratory

Well 1 Charts

7/3/1989 - 7/16/20





NELHA Water Quality Laboratory

Well 2 Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	6/28/89				0.95	29.4	35.4	496	0.38	5.3								18.4	7.73	26.36	14593	4.47		NA	NA
W2	-13.11	8/11/89	1020			1.16	35.9	22.3	312	0.31	4.3								18.5	7.70	27.26	15090	4.19		<1	NA
W2	-13.11	8/16/89	935			1.28	39.6	23.9	335	0.52	7.3								18.5	7.68	27.28	15099	4.27		<1	NA
W2	-13.11	8/23/89	917			1.34	41.5	25.7	360	0.52	7.3								17.9	7.70	27.65	15304	4.39		<1	NA
W2	-13.11	8/30/89	935			1.19	36.9	23.9	335	0.31	4.3								18.2	7.70	27.38	15158	4.07		<1	NA
W2	-13.11	8/30/89	935			1.19	36.9	23.9	335	0.31	4.3														NA	NA
W2	-13.11	10/31/89	915			1.20	37.2	22.7	318	0.19	2.7	308	8650	1.46	45	27	376	0.44	18.2	7.73	27.59	15270	4.20		<1	NA
W2	-13.11	11/16/89	750			1.29	40.0	27.5	385	0.01	0.1	315	8847	1.50	46	28	392	0.57	18.7	7.90	26.95	14916	5.02		<1	NA
W2	-13.11	12/13/89	1016			1.16	35.9	26.5	371	0.04	0.6	286	8032	1.40	43	27	371	0.45	18.4	7.74	28.31	15673	6.36		<1	NA
W2	-13.11	1/11/90	802			0.93	28.8	23.9	335	0.06	0.8	300	8426	1.07	33	25	350	0.44	18.4	7.72	27.89	15436	4.30		<1	NA
W2	-13.11	2/14/90	940			1.24	38.4	25.6	359	0.03	0.4	270	7583	1.53	47	27	377	0.54	18.5	7.70	27.49	15214	4.03		<1	NA
W2	-13.11	3/6/90	1316			0.61	18.9	14.2	199	0.22	3.1	278	7808	1.51	47	26	360	0.42	18.5	7.84	28.23	15628	3.90		<1	NA
W2	-13.11	4/4/90	1100			1.18	36.5	24.7	346	0.01	0.1	326	9156	1.32	41	24	342	0.60	18.5	7.89	27.92	15453	4.04		<1	NA
W2	-13.11	5/17/90	1351			1.14	35.3	22.5	315	0.08	1.1	268	7527	1.38	43	23	328	0.43	18.8	7.83	28.72	15899	4.03		<1	NA
W2	-13.11	6/16/90	1305			1.26	39.0	23.2	325	0.08	1.1	277	7780	1.45	45	25	345	0.46	18.9	7.92	28.31	15671	3.85		<1	NA
W2	-13.11	7/17/90	1340			1.33	41.2	23.7	332	0.02	0.3	296	8313	1.87	58	27	371	0.34	18.9	7.90	27.74	15355	3.93		<1	NA
W2	-13.11	8/8/90	1327			0.97	30.0	24.7	346	0.20	2.8	283	7948	1.51	47	25	352	0.81	18.9	7.88	28.09	15547	3.83		<1	NA
W2	-13.11	9/5/90	1340			1.49	46.2	23.6	330	0.12	1.7			1.49	46	24	341	0.38	18.9	7.90	28.12	15566	3.83		<1	NA
W2	-13.11	10/4/90	1340			1.22	37.8	23.0	323	0.03	0.4	293	8229	1.61	50	23	329	1.15	18.9	7.89	27.83	15402	3.85		<1	NA
W2	-13.11	11/1/90	1355			1.09	33.8	25.2	354	0.09	1.3	288	8089	1.56	48	26	366	0.39	18.9	7.89	27.67	15313	3.80		<1	NA
W2	-13.11	12/10/90	1357			1.03	31.9	25.1	351	0.01	0.1	270	7580	1.34	42	25	353	0.23	19.0	7.89	28.55	15801	3.69		<1	NA
W2	-13.11	1/9/91	1000			1.01	31.3	27.0	378	0.01	0.1	285	8004	1.08	33	28	387	0.29	17.2	7.94	27.61	15281	3.83		10	NA
W2	-13.11	2/6/91	957			0.77	23.8	23.8	333	0.01	0.1	255	7162	1.06	33	25	353	0.51	18.8	7.90	27.87	15427	3.73		<1	NA
W2	-13.11	3/6/91	1020			0.96	29.7	24.6	345	0.08	1.1	289	8117	1.08	33	26	367	0.58	18.6	7.91	27.60	15275	3.78		<1	NA
W2	-13.11	4/3/91	1005			0.88	27.3	29.1	408	0.01	0.1	263	7386	1.07	33	31	434	0.46	18.8	7.90	28.57	15813	3.72		<1	NA
W2	-13.11	5/22/91	1026			0.95	29.4	12.7	178	0.09	1.3	343	9633	1.02	32	13	183	0.24	18.7	7.90	27.16	15032	3.83		<1	NA
W2	-13.11	6/26/91	1031			0.78	24.2	23.2	325	0.32	4.5	290	8145	1.10	34	24	335	0.39	18.8	7.90	28.27	15645	3.74		<1	<1
W2	-13.11	7/24/91	1101			1.04	32.2	22.2	311	0.28	3.9	292	8201	1.08	33	23	324	0.31	18.7	7.90	27.94	15464	3.78		<1	<1
W2	-13.11	8/23/91	1024			0.88	27.3	21.2	297	0.46	6.4	307	8622	1.07	33	25	346	0.33	18.7	7.87	27.66	15311	3.79		<1	<1
W2	-13.11	9/24/91	957			0.84	26.0	20.8	291	0.80	11.2	273	7667	0.91	28	23	318	0.33	18.7	7.86	28.92	16009	3.72		<1	<1
W2	-13.11	10/23/91	1016			1.43	44.3	23.4	328	0.01	0.1	379	10644	2.88	89	25	345	0.43	18.7	7.98	28.23	15624	3.71		<1	<1
W2	-13.11	11/20/91	958			1.39	43.1	25.1	352	0.10	1.4	341	9577	1.45	45	27	381	0.39	18.7	7.87	27.18	15042	3.89		<1	<1
W2	-13.11	12/11/91	1100			1.25	38.7	25.9	363	0.01	0.1	311	8735	1.51	47	28	389	0.37	18.7	7.91	27.01	14951	3.85		<1	<1
W2	-13.11	1/29/92	1058			1.00	31.0	26.7	374	0.01	0.1	314	8819	1.05	33	28	394	1.12	18.6	7.91	26.47	14651	3.94		<1	<1
W2	-13.11	2/19/92	1119			0.94	29.1	31.4	440	0.01	0.1	277	7780	1.15	36	40	553	0.30	18.7	7.91	27.66	15310	3.78		<1	<1
W2	-13.11	3/17/92	1033			0.93	28.8	25.8	361	0.01	0.1	111	3117	0.99	31	28	394	0.41	18.6	7.90	27.36	15143	3.85		<1	<1
W2	-13.11	4/8/92	1030			0.93	28.8	24.3	340	0.28	3.9	285	8004	1.06	33	27	374	0.43	18.8	7.89	27.83	15402	3.83		<1	<1
W2	-13.11	5/6/92	1105			0.91	28.2	23.7	332	0.25	3.5	313	8791	1.01	31	26	360	1.04	18.7	7.89	27.64	15301	3.84		<1	<1
W2	-13.11	6/23/92	1041			1.03	31.9	25.2	353	0.80	11.2	325	9128	1.11	34	28	395	0.62	18.8	7.89	27.18	15044	3.94		<1	<1
W2	-13.11	7/29/92	1037			0.93	28.8	24.5	343	0.01	0.1	303	8510	1.02	32	26	368	0.45	18.9	7.87	27.53	15237	3.86		<1	<1
W2	-13.11	8/25/92	1023			1.14	35.3	24.2	339	0.16	2.2	312	8763	1.14	35	27	373	0.78	18.8	7.86	27.97	15482	3.79		<1	<1
W2	-13.11	9/22/92	1103			1.08	33.5	20.9	293	0.10	1.4	345	9689	1.24	38	19	260	0.31	18.8	7.89	27.07	14982	3.85		<1	<1
W2	-13.11	10/27/92	1049			1.19	36.9	28.8	403	0.21	2.9	352	9886	1.26	39	32	444	0.68	18.8	7.90	25.98	14382	4.00		<1	<1
W2	-13.11	11/17/92	1112			1.06	32.8	28.8	403	0.31	4.3	338	9479	1.19	37	31	435	0.54	18.6	7.91	26.07	14432	3.99		<1	<1
W2	-13.11	12/8/92	1013			0.97	30.0	25.8	361	0.35	4.9	325	9122	1.09	34	29	407	0.47	18.6	7.91	26.94	14913	3.91		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	1/26/93	1031			0.98	30.4	24.9	348	0.20	2.8	308	8639	1.07	33	26	369	0.37	18.7	7.92	27.85	15415	3.82		<1	<1
W2	-13.11	2/23/93	1018			0.98	30.4	25.3	355	0.15	2.1	328	9215	1.03	32	29	410	0.28	18.6	7.93	27.40	15164	3.83		<1	1
W2	-13.11	3/16/93	1010			1.01	31.3	24.9	349	0.19	2.7	327	9173	1.15	36	26	366	0.46	18.6	7.92	27.67	15316	3.88		<1	<1
W2	-13.11	4/27/93	1007			0.97	30.0	25.1	352	0.33	4.6	349	9802	1.07	33	27	371	0.29	18.7	7.91	27.46	15198	3.86		<1	<1
W2	-13.11	5/25/93	1001			0.97	30.0	23.9	335	0.32	4.5	324	9100	1.00	31	25	353	0.22	18.7	7.90	27.88	15434	3.83		<1	<1
W2	-13.11	6/28/93	1027			0.96	29.7	25.8	361	0.16	2.2	339	9521	1.12	35	28	391	0.25	18.7	7.90	27.07	14982	3.93		<1	<1
W2	-13.11	8/31/93	929			1.07	33.1	24.4	341	0.06	0.8	333	9352	1.08	33	28	389	0.31	18.8	7.89	27.50	15224	3.90		<1	<1
W2	-13.11	10/26/93	916			1.01	31.3	25.3	354	0.27	3.8	318	8931	1.05	33	26	371	0.33	18.7	7.90	27.36	15144	3.89		<1	<1
W2	-13.11	3/1/94	857			1.12	34.7	23.7	333	0.21	2.9	272	7639	1.16	36	31	428	0.41	18.7	7.88	27.84	15408	3.66		<1	<1
W2	-13.11	6/21/94	953			1.07	33.1	23.5	329	0.09	1.3	265	7432	1.16	36	27	379	0.39	18.7	7.89	28.18	15597	3.80		<1	<1
W2	-13.11	8/23/94	1024			1.17	36.2	28.0	392	0.09	1.3	321	9015	1.20	37	31	429	0.35	18.9	7.89	26.20	14502	4.03		<1	<1
W2	-13.11	10/25/94	1043			1.11	34.4	24.6	344	0.74	10.4	274	7690	1.13	35	27	378	0.28	18.8	7.92	27.37	15152	3.94		1	<1
W2	-13.11	1/24/95	1039			1.06	32.8	22.8	319	0.01	0.1	263	7378	1.11	34	24	335	0.25	18.6	7.91	28.08	15544	3.79		<1	14
W2	-13.11	2/14/95	1016			1.04	32.2	24.0	336	0.15	2.1	272	7636	1.09	34	24	338	0.21	18.8	7.92	27.97	15483	3.81		<1	<1
W2	-13.11	3/14/95	1106			1.08	33.5	24.2	339	0.14	2.0	269	7541	1.19	37	25	346	0.24	18.8	7.90	27.38	15158	3.88		<1	<1
W2	-13.11	4/26/95	1056			1.09	33.8	24.6	344	0.15	2.1	275	7715	1.24	38	26	363	0.32	18.9	7.89	27.26	15087	3.90		<1	<1
W2	-13.11	5/8/95	1058			1.10	34.1	23.2	324	0.30	4.2	273	7679	1.14	35	25	355	0.33	18.9	7.86	27.62	15291	3.85		<1	<1
W2	-13.11	6/27/95	1035			1.06	32.8	23.8	333	0.42	5.9	278	7797	1.12	35	25	352	0.30	18.9	7.91	27.54	15244	3.91		<1	<1
W2	-13.11	7/25/95	1047			1.00	31.0	23.7	332	0.06	0.8	270	7569	1.05	33	25	350	0.36	18.9	7.89	27.74	15356	3.76		<1	<1
W2	-13.11	8/22/95	1140			1.07	33.1	23.7	332	0.18	2.5	277	7780	1.11	34	25	351	0.24	19.1	7.88	27.55	15247	3.80		<1	<1
W2	-13.11	9/11/95	1108			0.99	30.7	23.1	323	0.26	3.6	269	7563	0.99	31	25	343	0.26	18.8	7.91	27.69	15324	3.83		<1	<1
W2	-13.11	10/16/95	1126			1.00	31.0	22.1	309	0.37	5.2	264	7420	1.06	33	23	323	0.45	18.9	7.93	28.39	15716	3.69		<1	<1
W2	-13.11	11/6/95	1133			1.09	33.8	23.1	324	0.23	3.2	281	7878	1.13	35	25	350	0.35	18.9	7.93	27.81	15393	3.76		<1	<1
W2	-13.11	12/4/95	1118			1.03	31.9	23.3	326	0.15	2.1	267	7502	1.18	37	24	342	0.40	18.9	7.90	27.85	15415	3.71		<1	<1
W2	-13.11	1/29/96	1138			1.04	32.2	23.0	323	0.01	0.1	269	7561	1.09	34	25	356	0.40	19.1	7.90	27.85	15416	3.80		<1	<1
W2	-13.11	2/26/96	1229			1.03	31.9	23.0	322	0.26	3.6	293	8221	1.11	34	24	338	0.33	19.5	7.89	27.86	15420	3.86		<1	<1
W2	-13.11	3/5/96	1125			1.05	32.5	32.5	456	0.25	3.5	272	7644	1.12	35	25	350	0.35	19.0	7.88	27.67	15314	3.88		3	3
W2	-13.11	4/1/96	1157			1.08	33.5	23.3	327	0.59	8.3	292	8187	1.13	35	25	347	0.38	19.7	7.88	27.75	15363	3.85		<1	<1
W2	-13.11	5/8/96	1208			1.08	33.5	22.4	314	0.15	2.1	266	7484	1.10	34	24	336	0.21	19.4	7.86	28.18	15598	3.80		<1	<1
W2	-13.11	6/17/96	1123			1.10	34.1	24.8	348	0.19	2.7	304	8530	1.20	37	27	372	0.26	19.3	7.89	26.95	14915	3.82		<1	<1
W2	-13.11	7/16/96	1133			1.07	33.1	25.4	355	0.34	4.8	291	8166	1.20	37	27	378	0.29	19.3	7.89	26.79	14830	3.85		<1	<1
W2	-13.11	8/5/96	1212			1.12	34.7	26.0	364	0.43	6.0	291	8184	1.19	37	29	399	0.35	19.5	7.90	26.57	14704	3.92		<1	<1
W2	-13.11	9/3/96	1136			1.08	33.5	25.1	351	0.45	6.3	311	8747	1.12	35	27	377	0.31	19.5	7.89	26.93	14905	3.86		<1	<1
W2	-13.11	10/8/96	1143			1.09	33.8	24.7	346	0.21	2.9	302	8475	1.16	36	27	378	0.30	19.2	7.88	27.05	14970	3.89		3	1
W2	-13.11	11/4/96	1201			1.03	31.9	24.3	340	0.27	3.8	283	7944	1.05	33	26	365	0.35	19.4	7.87	27.29	15104	3.94		<1	<1
W2	-13.11	12/16/96	1136			1.11	34.4	23.9	334	0.34	4.8	320	8978	1.14	35	26	365	0.32	19.3	7.90	27.22	15065	3.90		<1	<1
W2	-13.11	1/13/97	1216			1.11	34.4	18	257	0.14	2.0	255	7170	1.26	39	22	303	0.57	19.8	7.97	28.77	15924	4.78		<1	<1
W2	-13.11	2/11/97	1224			1.03	31.9	25	346	0.18	2.5	290	8153	0.96	30	27	373	0.40	19.6	7.92	26.93	14908	3.97		<1	<1
W2	-13.11	3/11/97	1155			0.95	29.4	24	329	0.19	2.7	280	7861	1.00	31	25	346	0.35	19.3	7.93	27.55	15252	3.85		<1	<1
W2	-13.11	4/22/97	1206			1.03	31.9	22	314	0.39	5.5	270	7577	1.11	34	25	347	0.35	19.3	7.91	28.05	15525	3.64		<1	1
W2	-13.11	5/27/97	1058			1.03	31.9	24	334	0.04	0.6	279	7839	1.13	35	28	391	0.31	18.2	7.94	27.49	15218	3.85		24	1104
W2	-13.11	6/16/97	1110			1.05	32.5	23	324	0.45	6.3	280	7870	1.13	35	25	354	0.33	18.5	7.95	27.42	15175	3.85		<1	267

NELHA Water Quality Laboratory

Well 2 Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	7/16/97	1022			1.08	33.5	25	343	0.16	2.2	272	7628	1.16	36	26	361	0.48	18.9	7.95	27.21	15063	3.87		<1	6
W2	-13.11	8/25/97	1118			1.09	33.8	26	363	0.26	3.6	306	8597	1.20	37	27	375	0.33	19.1	8.04	26.62	14734	3.84		<1	<1
W2	-13.11	9/22/97	1057			1.09	33.8	23	325	0.24	3.4	263	7398	1.19	37	24	333	0.32	19.3	8.07	27.81	15392	3.74		<1	1
W2	-13.11	10/15/97	1034			1.06	32.8	24	332	0.15	2.1	268	7538	1.17	36	25	353	0.30	18.8	8.07	27.61	15284	3.74		<1	1
W2	-13.11	11/3/97	1022			1.05	32.5	22.9	321	0.17	2.4	256	7187	1.17	36	25	346	0.27	19.0	8.04	28.03	15514	3.82		<1	1576
W2	-13.11	12/15/97	1039			1.01	31.3	23.0	322	0.19	2.7	266	7457	1.12	35	25	346	0.35	18.9	8.07	27.82	15399	3.87		35	11
W2	-13.11	1/6/98	957			1.12	34.7	23.9	335	0.02	0.3	279	7844	1.25	39	26	364	0.40	18.9	8.07	27.52	15232	3.90		<1	<1
W2	-13.11	2/2/98	1055			1.04	32.2	23.5	329	0.04	0.6	276	7738	1.14	35	26	363	0.40	19.0	8.06	27.38	15153	3.80		<1	<1
W2	-13.11	3/9/98	1052			1.10	34.1	22.1	310	0.02	0.3	268	7538	1.14	35	24	333	0.34	18.9	7.88	28.34	15684	3.80		<1	<1
W2	-13.11	4/13/98	1022			1.07	33.1	22	311	0.21	2.9	266	7479	1.13	35	24	342	0.34	18.9	7.89	28.22	15622	3.82		<1	<1
W2	-13.11	5/11/98	1119			1.11	34.4	21	295	0.07	1.0	247	6929	1.21	37	22	310	0.39	19.0	7.89	28.88	15984	3.74		<1	<1
W2	-13.11	6/1/98	1107			1.03	31.9	21.1	296	0.14	2.0	252	7076	1.14	35	23	315	0.26	19.3	7.88	28.93	16015	3.79		<1	<1
W2	-13.11	7/13/98	1107			1.13	35.0	22	304	0.03	0.4	261	7328	1.22	38	23	323	0.32	18.9	7.88	28.44	15740	3.77		<1	<1
W2	-13.11	8/10/98	1122			1.07	33.1	21.3	298	0.11	1.5	256	7179	1.17	36	23	315	0.37	18.9	7.85	28.61	15836	3.81		<1	<1
W2	-13.11	9/14/98	1128			1.24	38.4	24.2	338	0.16	2.2	291	8159	1.38	43	26	363	0.36	18.9	7.87	27.21	15059	3.96		<1	<1
W2	-13.11	10/12/98	1016			1.16	35.9	25.9	363	0.05	0.7	321	9013	1.27	39	28	388	0.32	19.3	7.88	26.37	14596	4.34		2	120
W2	-13.11	11/2/98	1042			1.04	32.2	23.5	329	0.05	0.7	272	7628	1.16	36	25	347	0.44	19.3	7.89	27.54	15242	3.94		<1	9
W2	-13.11	12/15/98	1026			1.07	33.1	21.8	305	0.07	1.0	267	7485	1.14	35	25	344	0.40	18.9	7.87	28.75	15912	3.77		<1	6
W2	-13.11	1/11/99	1051			1.03	31.9	20	286	0.18	2.5	259	7260	1.13	35	22	308	0.38	19.0	7.88	28.47	15756	3.88		<1	3
W2	-13.11	2/2/99	1055			0.97	30.0	21	292	0.08	1.1	257	7207	1.05	33	23	317	0.40	18.9	7.87	28.80	15944	3.82		<1	<1
W2	-13.11	3/1/99	1107			0.96	29.7	19.7	276	0.04	0.6	249	6993	1.04	32	23	318	0.32	19.2	7.86	29.23	16181	4.12		<1	<1
W2	-13.11	4/5/99	1052			1.07	33.1	22.4	314	0.05	0.7	271	7600	1.14	35	25	346	0.35	19.1	7.88	28.05	15525	3.89		<1	<1
W2	-13.11	5/3/99	1117			0.96	29.7	20.8	291	0.16	2.2	262	7353	1.10	34	23	317	0.32	18.1	7.85	28.96	16032	3.85		<1	<1
W2	-13.11	6/1/99	1046			1.10	34.1	22.1	310	0.40	5.6	288	8097	1.18	37	24	338	0.33	19.1	7.86	28.14	15575	3.78		<1	<1
W2	-13.11	7/14/99	1105			1.00	31.0	20.1	282	0.04	0.6	262	7353	1.10	34	22	308	0.29	19.2	7.86	28.84	15963	3.74		<1	<1
W2	-13.11	8/23/99	1114			1.03	31.9	20.8	291	0.16	2.2	273	7667	1.16	36	25	354	0.27	19.3	7.91	28.37	15703	3.81		<1	<1
W2	-13.11	9/7/99	1115			1.31	40.6	25.4	356	0.09	1.3	288	8100	1.42	44	30	419	0.31	19.2	7.93	27.93	15458	3.93		<1	<1
W2	-13.11	10/5/99	1052			1.06	32.8	23.2	325	0.01	0.1	266	7471	1.13	35	25	343	0.26	19.0	7.92	26.92	14902	3.79		<1	<1
W2	-13.11	11/1/99	1124			1.06	32.8	22.2	311	0.08	1.1	265	7451	1.16	36	24	342	0.30	18.9	7.93	28.34	15687	3.73		<1	94
W2	-13.11	12/14/99	1117			1.04	32.2	22.7	318	0.13	1.8	266	7474	1.14	35	26	366	0.30	19.0	7.87	28.00	15498	3.67		<1	<1
W2	-13.11	1/10/00	1135			1.04	32.2	20.5	287	0.13	1.8	256	7181	1.07	33	28	388	0.34	19.0	7.88	28.82	15952	3.73		<1	<1
W2	-13.11	2/7/00	1134			0.98	30.4	20.1	282	0.17	2.4	243	6814	1.05	33	21	297	0.28	19.0	7.92	29.36	16249	3.68		<1	<1
W2	-13.11	3/21/00	1134			0.90	27.9	20.6	289	0.14	2.0	259	7283	0.99	31	23	326	0.31	19.1	7.91	28.67	15867	3.68		<1	<1
W2	-13.11	4/10/00	1215			0.97	30.0	20.1	282	0.02	0.3	250	7013	1.06	33	22	312	0.31	19.1	7.91	29.13	16123	3.65		<1	<1
W2	-13.11	5/15/00	1116			1.03	31.9	22.4	314	0.17	2.4	269	7541	1.04	32	25	352	0.29	19.0	7.92	28.10	15552	3.79		<1	<1
W2	-13.11	6/5/00	1119			1.00	31.0	20.4	286	0.04	0.6	273	7670	1.00	31	23	317	0.31	19.0	7.91	28.20	15611	3.80		<1	<1
W2	-13.11	7/26/00	1145			0.98	30.4	20.0	280	0.03	0.4	258	7254	0.95	29	23	321	0.24	19.0	7.92	28.93	16014	3.72		<1	<1
W2	-13.11	8/29/00	1055			1.08	33.5	22.0	308	0.07	1.0	254	7128	1.15	36	23	321	0.32	19.3	7.87	28.42	15730	3.77		<1	<1
W2	-13.11	9/5/00	1109			1.11	34.4	23.6	331	0.06	0.8	272	7645	1.21	37	25	343	0.34	19.1	7.88	27.79	15384	3.78		<1	<1
W2	-13.11	10/24/00	1122			1.02	31.6	17.5	245	0.20	2.8	248	6954	1.20	37	23	328	0.52	20.8	8.02	28.83	15958	4.47		<1	<1
W2	-13.11	11/13/00	1102			0.90	27.9	21.8	305	0.27	3.8	254	7142	0.95	29	30	414	0.34	20.6	7.92	28.75	15911	3.65		<1	<1
W2	-13.11	12/18/00	1054			1.07	33.1	21.9	307	0.21	2.9	271	7617	1.15	36	24	342	0.38	19.2	7.90	28.66	15862	3.61		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	1/22/01	1118			1.12	34.7	23.8	333	0.18	2.5	278	7813	1.28	40	24	343	0.44	19.1	7.88	27.91	15447	3.58		<1	<1
W2	-13.11	2/5/01	1123			0.94	29.1	22.3	312	0.21	2.9	276	7746	1.04	32	26	366	0.40	18.9	7.89	28.42	15733	3.53		<1	<1
W2	-13.11	3/5/01	1115			1.02	31.6	31.4	440	0.07	1.0	259	7280	1.18	37	40	564	0.35	19.1	7.86	28.69	15879	3.74		<1	<1
W2	-13.11	4/17/01	1105			1.22	37.8	49.2	689	0.02	0.3	271	7606	1.26	39	56	784	0.41	18.9	7.85	28.44	15743	4.07		<1	<1
W2	-13.11	5/15/01	1045			1.38	42.7	89.7	1256	0.16	2.2	260	7311	1.34	42	92	1293	0.52	19.0	7.83	28.44	15740	4.32		<1	<1
W2	-13.11	6/12/01	1134			1.66	51.4	102	1429	0.04	0.6	261	7325	1.68	52	106	1478	0.59	19.1	7.83	28.18	15596	4.55		<1	<1
W2	-13.11	7/25/01	916			2.25	69.7	107	1500	0.03	0.4	268	7535	2.22	69	112	1573	0.65	18.9	7.81	27.71	15338	7.40		<1	5
W2	-13.11	8/20/01	906			2.82	87.3	121	1695	0.09	1.3	259	7269	2.82	87	128	1796	0.73	18.7	7.78	27.89	15436	5.13		<1	<1
W2	-13.11	9/19/01	1028			2.62	81.2	112	1572	0.05	0.7	258	7240	2.90	90	120	1677	0.73	18.8	7.80	27.66	15308	5.38		<1	<1
W2	-13.11	10/24/01	1020			3.31	102.5	118	1654	0.01	0.1	252	7080	3.42	106	135	1885	0.83	18.4	7.76	27.54	15244	5.33		TNTC	<1
W2	-13.11	11/7/01	1055			3.12	96.6	126	1765	0.02	0.3	253	7117	3.12	97	175	2450	0.81	18.3	7.77	27.63	15292	5.33		14	<1
W2	-13.11	12/19/01	1036			3.28	101.6	137	1925	0.19	2.7	234	6572	3.12	97	209	2927	0.78	18.2	7.77	28.10	15554	5.33		<1	<1
W2	-13.11	1/9/02	1026			3.57	110.6	126	1766	0.19	2.7	258	7249	3.44	107	130	1822	0.76	17.9	7.74	27.75	15361	5.50		<1	<1
W2	-13.11	2/25/02	1105			3.10	96.0	98.9	1385	0.05	0.7	238	6687	3.14	97	115	1614	0.68	17.9	7.82	28.27	15648	6.03		<1	<1
W2	-13.11	3/20/02	1044			3.02	93.5	98.1	1374	0.10	1.4	232	6521	3.12	97	103	1437	0.62	17.6	7.78	28.36	15699	6.09		<1	<1
W2	-13.11	4/10/02	1117			2.98	92.3	90.0	1260	0.10	1.4	226	6333	3.14	97	94	1312	0.69	17.7	7.78	28.25	15639	6.13		<1	<1
W2	-13.11	5/22/02	933			3.18	98.5	103	1441	0.16	2.2	233	6555	3.18	98	108	1517	1.03	17.3	7.81	28.12	15562	6.36		<1	<1
W2	-13.11	6/19/02	953			3.66	113.4	124	1742	0.19	2.7	242	6791	3.78	117	138	1937	0.75	17.2	7.78	27.64	15299	6.28		<1	<1
W2	-13.11	7/22/02	942			3.42	105.9	127	1783	0.07	1.0	226	6359	3.60	112	137	1918	0.77	17.5	7.80	28.29	15656	6.27		<1	<1
W2	-13.11	8/21/02	953			3.84	118.9	123	1716	0.19	2.7	232	6519	4.00	124	133	1856	0.72	17.1	7.77	27.98	15485	6.23		<1	1
W2	-13.11	9/25/02	1138			3.60	111.5	112	1566	0.24	3.4	238	6679	3.76	116	109	1524	0.65	17.2	7.77	27.98	15489	6.28		27	<1
W2	-13.11	10/15/02	924			3.98	123.3	124	1735	0.13	1.8	230	6446	4.13	128	133	1861	0.77	17.1	7.80	27.99	15494	6.26		<1	<1
W2	-13.11	11/17/02	1118			4.23	131.0	118	1653	0.10	1.4	237	6667	4.50	139	116	1619	0.63	17.1	7.80	27.86	15418	6.15		<1	72
W2	-13.11	12/18/02	1146			3.96	122.7	115	1614	0.05	0.7	230	6462	4.25	132	89	1245	0.74	17.3	7.74	27.84	15409	6.28		<1	<1
W2	-13.11	1/29/03	1037			3.96	122.7	105	1474	0.10	1.4	232	6516	4.12	128	125	1751	0.72	20.3	7.90	27.68	15319	6.50		<1	<1
W2	-13.11	2/10/03	1058			4.03	124.8	99.3	1391	0.15	2.1	236	6634	4.30	133	114	1597	0.69	16.9	7.76	29.70	16438	6.60		<1	<1
W2	-13.11	3/20/03	1020			3.72	115.2	89.3	1251	0.04	0.6	228	6415	3.85	119	108	1510	0.69	17.4	7.75	28.22	15619	6.39		<1	<1
W2	-13.11	4/30/03	1117			3.65	113.1	95.0	1330	0.15	2.1	222	6229	3.87	120	103	1443	0.70	17.1	7.77	34.44	19063	6.30		<1	1
W2	-13.11	5/14/03	1027			3.77	116.8	89.0	1246	0.09	1.3	227	6373	3.87	120	95	1328	0.61	17.3	7.81	28.16	15589	6.12		<1	133
W2	-13.11	6/4/03	1115			3.54	109.6	88.7	1242	0.01	0.1	222	6241	3.74	116	102	1423	0.64	17.6	7.69	28.38	15709	6.08		<1	<1
W2	-13.11	7/30/03	1044			3.51	108.7	83.4	1169	0.02	0.3	224	6291	3.67	114	90	1259		19.3	7.91	28.34	15688	6.16		<1	<1
W2	-13.11	8/28/03	1025			3.50	108.4	87.4	1224	0.02	0.3	224	6297	3.72	115	115	1604		18.1	7.74	28.09	15547	6.01		<1	311
W2	-13.11	9/16/03	1101			3.92	121.4	91.8	1286	0.38	5.3	246	6903	3.96	123	100	1406		17.8	7.75	27.25	15086	5.84		<1	TNTC
W2	-13.11	10/8/03	1101			3.64	112.7	77.5	1086	0.30	4.2	231	6496	3.74	116	95	1331		17.8	7.75	27.94	15465	NA		<1	TNTC
W2	-13.11	11/5/03	1102			3.64	112.7	87.1	1220	0.40	5.6	240	6732	3.82	118	94	1312		17.6	7.75	27.70	15333			<1	8
W2	-13.11	11/14/03	1452																17.8				5.65			
W2	-13.11	12/22/03	1003			3.74	115.8	79.0	1106	0.10	1.4	235	6586	3.97	123	83	1165		17.8	7.73	28.06	15530	5.61		<1	<1
W2	-13.11	1/26/04	1043			3.78	117.1	86.4	1210	0.10	1.4	234	6575	4.02	125	93	1305		17.6	7.71	27.88	15432	5.55		<1	<1
W2	-13.11	2/11/04	1030			3.72	115.2	72.0	1009	0.13	1.8	226	6336	3.94	122	80	1114	1.27	17.8	7.70	28.06	15531	5.57		<1	<1
W2	-13.11	3/16/04	1302			3.76	116.5	61.7	865	0.22	3.1	239	6718	4.06	126	72	1010		18.7	7.73	27.67	15314	4.94		<1	<1
W2	-13.11	4/20/04	1104			3.58	110.9	64.6	905	0.02	0.3	230	6457	3.80	118	70	979		17.8	7.71	27.60	15279	5.34		<1	1
W2	-13.11	5/11/04	1010			3.26	101.0	53.5	749	0.25	3.5	326	9156	3.32	103	59	831		18.5	7.90	27.05	14973	5.65		<1	<1
W2	-13.11	6/2/04	1104			3.40	105.3	52.7	739	0.18	2.5	231	6496	3.52	109	54	752		18.1	7.71	26.83	14851	5.29		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	7/14/04	1113				3.34	103.5	57.3	803	0.18	2.5	237	6651	3.64	113	70	982		18.7	7.71	26.93	14906	5.48		<1	<1
W2	-13.11	8/23/04	1108				3.28	101.6	52.2	731	0.35	4.9	240	6741	3.70	115	58	815		18.6	7.73	26.85	14862	5.41		<1	<1
W2	-13.11	9/27/04	950				3.38	104.7	52.5	735	0.17	2.4	249	6988	3.56	110	65	903		18.7	7.71	26.82	14846	5.35		<1	<1
W2	-13.11	10/5/04	951				3.44	106.5	53.1	743	0.17	2.4	246	6920	3.62	112	59	824		18.5	7.74	26.52	14680	5.45		<1	<1
W2	-13.11	11/9/04	1032				3.28	101.6	58.2	815	0.15	2.1	226	6345	3.54	110	62	875		NA	7.68	27.14	15023	5.66		<1	<1
W2	-13.11	12/6/04	1105				3.50	108.4	62.2	871	0.13	1.8	235	6586	3.66	113	69	966		18.8	7.74	26.72	14790	5.72		<1	<1
W2	-13.11	1/10/05	1032				3.48	107.8	61.5	862	0.07	1.0	221	6196	3.56	110	65	917		19.0	7.75	28.28	15655	5.81		<1	<1
W2	-13.11	2/9/05	1029				3.42	105.9	58.8	824	0.08	1.1	220	6176	3.60	112	73	1023		18.9	7.76	28.21	15613	5.90		<1	<1
W2	-13.11	3/15/05	1055				3.22	99.7	50.7	710	0.22	3.1	219	6148	3.48	108	63	879	0.57	18.9	7.77	28.01	15504	5.82		<1	<1
W2	-13.11	4/19/05	1007				3.20	99.1	52.0	729	0.15	2.1	218	6109	3.44	107	54	753		19.0	7.76	28.17	15590	5.88		<1	<1
W2	-13.11	5/23/05	1053				3.16	97.9	59.9	838	0.18	2.5	218	6123	3.40	105	58	815		19.3	7.71	28.47	15756	6.04		<1	<1
W2	-13.11	6/13/05	915				3.32	102.8	60.8	852	0.10	1.4	216	6052	3.50	108	65	910		19.1	7.73	28.24	15632	5.81		<1	<1
W2	-13.11	7/18/05	1025				3.28	101.6	50.1	702	0.06	0.8	224	6300	3.70	115	55	773	0.61	19.1	7.72	28.02	15508	5.58		<1	<1
W2	-13.11	8/9/05	1035				3.14	97.3	52.9	741	0.16	2.2	217	6097	3.36	104	57	794	0.53	19.1	7.75	28.17	15591	5.70		<1	<1
W2	-13.11	9/20/05	1023				3.24	100.4	58.2	815	0.23	3.2	218	6131	3.44	107	63	886	0.73	19.0	7.73	28.15	15582	5.81		<1	<1
W2	-13.11	10/17/05	1023				3.38	104.7	59.1	828	0.14	2.0	219	6151	3.66	113	63	881		18.9	7.72	28.29	15658	5.80		<1	<1
W2	-13.11	11/7/05	952				3.50	108.4	73.7	1033	0.02	0.3	218	6134	3.70	115	76	1070		18.6	7.73	28.42	15732	6.04		<1	<1
W2	-13.11	12/21/05	921				3.62	112.1	62.5	875	0.2	2.8	223	6249	3.80	118	67	937	0.83	18.5	7.75	27.92	15454	5.82		<1	<1
W2	-13.11	1/23/06	1023				3.54	109.6	57.7	808	0.25	3.5	220	6179	3.70	115	60	835		18.6	7.70	28.36	15696	5.9		<1	<1
W2	-13.11	2/14/06	1038				3.54	109.6	53.3	747	0.27	3.8	219	6151	3.74	116	55	769	0.57	18.4	7.72	28.36	15700	5.88		<1	<1
W2	-13.11	3/20/06	941				3.38	104.7	50.1	702	0.30	4.2	214	6010	3.56	110	53	742	0.58	18.5	7.74	28.77	15924	5.65		<1	<1
W2	-13.11	4/25/06	1010				3.30	102.2	49.2	689	0.11	1.5	203	5701	3.42	106	45	625	0.55	18.6	7.75	28.77	15924	5.59		<1	<1
W2	-13.11	5/22/06	1040				3.22	99.7	52.3	733	0.21	2.9	200	5617	3.64	113	48	676	0.60	18.9	7.74	28.87	15979	5.66		<1	<1
W2	-13.11	6/26/06	1053				3.01	93.2	50.8	712	0.12	1.7	206	5786	3.19	99	51	708	0.57	18.6	7.77	28.64	15854	5.41		<1	<1
W2	-13.11	7/20/06	1058				3.16	97.9	56.0	784	0.24	3.4	210	5898	3.48	108	49	691	0.54	18.7	7.77	28.68	15877	5.99		912	>5,000
W2	-13.11	7/27/06															46	643	0.63			28.87		5.95		1	5372
W2	-13.11	8/7/06	1115				3.02	93.5	57.6	807	0.25	3.5	210	5898	3.37	104	58	809	0.64	19.4	7.80	28.49	15772	6.78		20	1140
W2	-13.11	9/18/06	1038				2.97	92.0	55.9	783	0.28	3.9	212	5954	3.32	103	62	873	0.62	19.1	7.77	28.45	15750	5.57		<1	2
W2	-13.11	10/23/06	1015				2.83	87.7	52.0	728	0.32	4.5	209	5870	3.00	93	51	713	0.58	18.6	7.75	28.18	15596	5.75		<1	<1
W2	-13.11	11/27/06	1034				3.10	96.0	66.4	930	0.17	2.4	215	6038	3.23	100	53	746	0.56	18.4	7.78	28.26	15643	5.65		<1	<1
W2	-13.11	12/11/06	1056				3.12	96.6	68.8	964	0.28	3.9	215	6038	3.31	103	54	752	0.60	18.3	7.78	28.20	15609	5.84		<1	<1
W2	-13.11	1/8/07	1146				3.12	96.6	63.2	885	0.27	3.8	202	5673	3.32	103	60	836	0.54	18.7	7.78	28.304	15667	5.85		<1	<1
W2	-13.11	2/20/07	1115				3.35	103.8	70.8	992	0.32	4.5	196	5505	3.53	109	78	1091	0.62	18.1	7.86	28.408	15725	6.04		<1	<1
W2	-13.11	3/5/07	1113				3.20	99.1	68.1	954	0.35	4.9	209	5870	3.35	104	72	1005	0.59	18.2	7.82	28.445	15745	5.73		<1	<1
W2	-13.11	4/18/07	1112				3.25	100.7	62.5	875	0.20	2.8	210	5898	3.30	102	58	816	0.53	18.6	7.85	28.582	15821	5.55		<1	<1
W2	-13.11	5/1/07	1101				3.25	100.7	62.2	871	0.30	4.2	209	5870	3.37	104	59	831	0.55	18.3	7.84	28.485	15767	5.56		<1	<1
W2	-13.11	6/18/07	1055				3.23	98.0	61.2	857	0.18	2.5	215	6038					0.47	18.6	7.87	28.413	15727	5.75		<1	<1
W2	-13.11	7/26/07	1339	-1.68	0.61	Flood	3.46	107	70.2	983	1.91	26.7	237	6649	3.55	110	69	972		17.9	7.72	28.35	15692	5.34			
W2	-13.11	8/28/07	1140	-1.95	0.08	Flood	3.30	102	62.5	876	0.01	0.1	191	5371	3.19	98.80	63	888		18.0	7.72	28.29	15659	5.40			
W2	-13.11	9/13/07	1108	-1.88	0.15	Low	3.36	104	59.0	827	0.01	0.2	208	5845	3.56	110.30	64	901		18.2	7.83	28.34	15687	5.42			
W2	-13.11	10/24/07	1439	-1.88	0.46	High	3.16	98	61.2	857	0.16	2.3	208	5849	3.16	97.94	60	838		18.2	7.83	28.11	15560	5.42			
W2	-13.11	11/26/07	1139	-2.03	0.15	Ebb	2.55	79	68.2	955	0.01	0.1	210	5910	2.96	91.75	74	1030		18.5	7.77	28.47	15759	5.05			
W2	-13.11	12/20/07	1232	-1.88	0.23	High	2.63	82	46.5	651	0.61	8.6	176	4939						18.1	7.85	28.23	15626	5.05			

NELHA Water Quality Laboratory

Well 2 Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	1/28/08	1314	-1.83	0.06	Ebb	2.21	68	26.1	365	0.25	3.5	167	4676						18.4	7.62	28.70	15886	4.74			
W2	-13.11	2/27/08	1107	-1.80	0.09	Ebb	3.25	101	62.0	869	0.60	8.4	198	5564						18.0	7.63	28.37	15704	5.33			
W2	-13.11	3/20/08	1131	-2.03	0.00	Low	2.91	90	59.4	832	0.06	0.8	131	3673						18.0	7.71	28.54	15798	5.14			
W2	-13.11	4/28/08	1125	-1.98	0.18	High	2.73	85	57.5	805	0.19	2.6	198	5568						18.3	7.66	28.28	15654	4.98			
W2	-13.11	5/30/08	1225	-1.55	0.49	Flood	2.69	83	51.2	718	0.21	2.9	203	5714						18.2	7.67	28.26	15643	5.28			
W2	-13.11	6/26/08	1032	-1.62	0.43	High	2.78	86	54.4	762	0.29	4.0	239	6721						18.5	7.70	28.19	15604	5.57	0.40		
W2	-13.11	7/25/08	1212	-1.62	0.52	Ebb	2.58	80	47.1	660	0.20	2.8	176	4951						17.9	7.62	28.25	15637	5.50			
W2	-13.11	8/30/08	953		0.03	Low	2.52	78	52.5	735	0.13	1.8	205	5753						17.9	7.66	28.64	15853	6.05			
W2	-13.11	9/19/08	926	-1.63	0.58	Ebb	2.46	76	46.0	644	0.33	4.6	143	4008						21.2	7.53	28.26	15643	6.31	0.10		
W2	-13.11	10/27/08	1220	-1.90	0.27	Flood	2.72	84	52.4	734	0.34	4.8	199	5576						19.4	7.47	28.02	15510	3.17	0.21		
W2	-13.11	11/10/08	1034	-1.91	0.24	Flood	4.02	125	54.0	757	0.16	2.2	203	5697						19.7	7.67	28.06	15532	5.70	0.49		
W2	-13.11	12/15/08	1002	-1.90	0.43	Ebb	2.86	89	65.4	917	0.41	5.7	200	5612						19.9	7.91	27.68	15322	6.48			
W2	-13.11	1/23/09	1339	-2.04	0.15	High	3.42	106	65.2	913	0.01	0.1	184	5160						20.0	7.86	28.30	15665	5.74	0.55		
W2	-13.11	2/23/09	1444	-1.94	0.24	Flood	2.84	88	22.2	310	0.15	2.1	67	1883						19.1	7.83	26.56	14702	6.08	0.09		
W2	-13.11	3/13/09	1455	-2.06	0.24	Flood	3.25	101	63.9	896	0.13	1.8	189	5310						19.3	7.77	28.64	15853	5.82	0.05		
W2	-13.11	4/20/09	1209	-2.11	0.30	Flood	3.83	119	56.5	791	1.26	18	157	4422						19.1	7.70	29.09	16102	5.73	0.63		
W2	-13.11	5/21/09	1442	-1.83	0.61	High	2.85	88	48.2	676	0.55	7.7	210	5905						17.8	7.84	28.73	15903	5.16	0.13		
W2	-13.11	6/16/09	1113	-1.90	0.40	Flood	2.23	69	38.0	533	0.77	11	154	4322						17.9	7.51	27.65	15305	5.00	0.04		
W2	-13.11	7/13/09	1519	-2.15	0.21	Flood	2.46	76	38.7	543	0.32	4.5	118	3311						17.9	7.70	28.83	15958	4.79	0.06		
W2	-13.11	8/18/09	1419	-1.66	0.70	Flood	2.76	86	50.1	702	0.58	8.1	176	4936						18.2	7.20	27.52	15233	5.02	0.06		
W2	-13.11	9/21/09	1418	-2.20	0.18	Flood	2.17	67	33.5	470	0.58	8.1	106	2976						18.6	8.24	28.75	15914	4.69	0.07		
W2	-13.11	10/19/09	1209	-2.19	0.12	Low	2.49	77	48.8	684	0.53	7.4	83	2339						18.7	7.94	29.03	16069	4.81	0.04		
W2	-13.11	11/16/09	1357	-2.26	0.18	Flood	3.27	101	51.8	726	0.90	13	194	5439						18.5	7.73	29.43	16290	4.98	0.04		
W2	-13.11	12/7/09	1313	-2.20	0.18	Ebb	3.33	103	59.9	839	1.10	15	195	5469						19.0	7.78	29.17	16146	5.01	0.08		
W2	-13.11	1/5/10	1038	-1.94	0.30	Ebb	2.94	91	52.5	736	1.50	21	206	5792						18.8	7.75	28.10	15554	4.88	0.10		
W2	-13.11	2/1/10	1107	-2.14	0.00	Ebb	2.65	82	59.5	833	0.79	11	199	5577						18.6	7.83	27.79	15382	4.86	0.24		
W2	-13.11	3/9/10	1057	-2.23	0.12	Flood	3.23	100	60.6	849	0.36	5.0	215	6033						18.0	7.75	28.69	15881	5.04	0.19		
W2	-13.11	4/6/10	953	-2.28	0.15	Flood	3.49	108	55.3	775	0.93	13	213	5980						19.2	7.79	28.78	15930	5.46	0.04		
W2	-13.11	5/11/10	1033	-2.28	0.09	Flood	2.62	81	45.7	640	0.93	13	196	5503						19.5	7.88	28.49	15770	4.74	0.24		
W2	-13.11	6/15/10	1127	-2.35	0.06	Low	2.91	90	51.4	720	0.36	5.0	225	6318						17.9	7.76	28.61	15836	4.60	0.13		
W2	-13.11	7/13/10	1043	-2.32	0.00	Low	2.49	77	60.5	848	0.21	3.0	212	5945						17.8	7.73	28.83	15958	4.70	0.12		
W2	-13.11	8/3/10	1037	-1.86	0.52	Flood	2.84	88	64.3	900	0.21	3.0	226	6351						17.7	7.80	28.45	15748	4.88	0.07		
W2	-13.11	9/14/10	1039	-1.75	0.58	Ebb	2.71	84	69.4	972	0.22	3.1	224	6295						17.6	7.81	28.45	15748	5.61	0.08		
W2	-13.11	10/12/10	1034	-1.78	0.55	Ebb	2.81	87	66.7	934	0.11	1.6	236	6640						17.7	7.83	28.27	15648	5.33	0.11		
W2	-13.11	11/16/10	949	-1.97	0.27	Flood	2.91	90	68.4	958	0.10	1.4	231	6483						17.7	7.84	28.05	15526	5.30	0.10		
W2	-13.11	12/14/10	1030	-1.94	0.37	High	2.81	87	71.6	1003	0.25	3.5	220	6181						17.7	7.84	28.10	15554	5.14	0.05		
W2	-13.11	1/4/11	1019	-2.16	0.06	Ebb	3.26	101	80.3	1125	0.89	12.4	223	6274						17.7	7.84	28.36	15698	5.36	0.04		
W2	-13.11	4/5/11	1108	-2.28	-0.06	Low	3.10	96	69.1	968	0.15	2.1	211	5921						17.4	7.76	28.47	15759	4.77	0.13		
W2	-13.11	7/12/11	1036	-2.27	0.18	Flood	3.23	100	76.7	1074	0.11	1.5	199	5595						16.9	7.88	28.69	15881	5.49	0.02		
W2	-13.11	10/11/11	1051	-2.16	0.12	Low	3.10	96	68.7	962	0.24	3.4	202	5671						17.1	7.89	28.96	16030	4.87	0.11		
W2	-13.11	1/10/12	1048	-2.21	0.06	Ebb	2.87	89	77.2	1081	0.18	2.5	189	5320						17.1	7.87	29.08	16097	5.55	0.05		
W2	-13.11	5/1/12	1046	-2.03	0.34	Flood	3.39	105	75.0	1051	0.14	1.9	212	5947						17.1	7.88	28.94	16019	4.99	0.06		
W2	-13.11	7/18/12	1006	-2.18	0.00	Flood	3.39	105	86.8	1216	0.34	4.8	202	5680						16.8	7.98	29.09	16102	5.93	0.05		
W2	-13.11	10/16/12	1047	-2.11	0.09	Ebb	3.29	102	82.4	1154	0.18	2.5	203	5712						16.8	7.94	28.78	15930	5.95	0.10		
W2	-13.11	1/8/13	1111	-2.12	0.15	Flood	3.49	108	76.8	1076	0.21	3.0	239	6710						16.8	7.89	28.73	15903	6.23	0.04		
W2	-13.11	4/9/13	1054	-2.31	-0.03	Flood	3.81	118	87.0	1218	0.19	2.7	191	5351						16.6	7.94	29.05	16080	6.25	0.15		

NELHA Water Quality Laboratory

Well 2 Data Table

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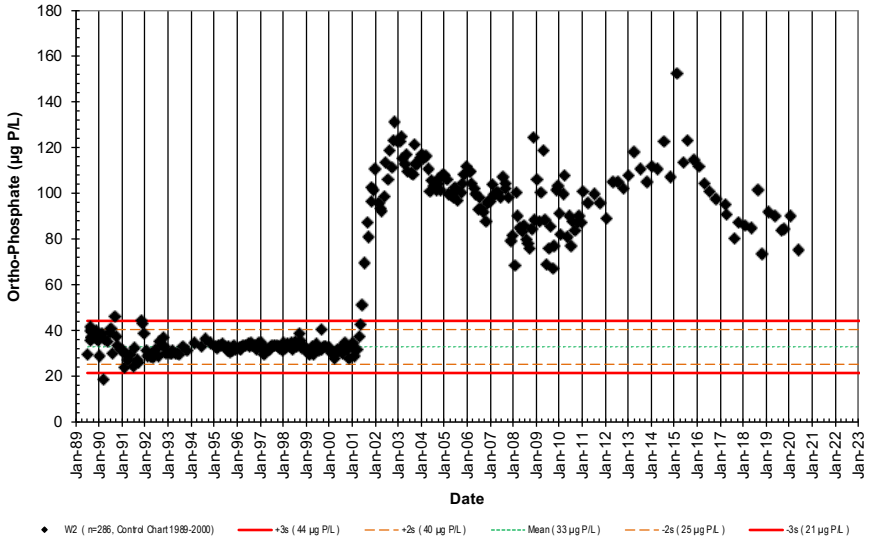
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2	-13.11	7/17/13	1143	-1.89	0.58	Flood	3.58	111	82.5	1155	0.16	2.3	225	6316						16.8	7.91	28.19	15604	5.87	0.02		
W2	-13.11	10/15/13	1035	-1.96	0.30	Flood	3.39	105	89.0	1247	0.15	2.1	199	5591						16.7	7.90	29.34	16240	6.27	0.05		
W2	-13.11	1/15/14	1032	-1.98	0.06	Ebb	3.62	112	84.7	1187	0.32	4.5	197	5546						17.0	7.95	29.18	16152	5.80	0.07		
W2	-13.11	4/1/14	1132	-2.33	0.00	Flood	3.58	111	82.4	1154	0.34	4.8	201	5646						17.0	7.81	28.82	15953	6.24	0.15		
W2	-13.11	7/29/14	1111	-2.21	0.12	Low	3.97	123	76.5	1071	0.23	3.2	197	5534						16.8	7.85	28.96	16030	7.77	0.15		
W2	-13.11	11/5/14	1108	-2.05	0.15	Flood	3.45	107	79.5	1114	0.21	3.0	208	5840						17.4	7.74	27.80	15388	6.10	0.22		
W2	-13.11	2/10/15	1104	-1.97	0.80	High	4.93	153	104.0	1457	0.51	7.2	246	6909						17.9	7.71	28.34	15687	6.28	0.09		
W2	-13.11	5/19/15	1533	-1.76	1.60	Flood	3.66	113	82.2	1152	0.40	5.6	197	5544						18.2	7.84	27.52	15233	5.54	0.02		
W2	-13.11	7/21/15	1210	-1.93	0.50	Low	3.99	124	72.6	1017	0.01	0.1	186	5226						17.6	7.85	29.97	16589	6.08	0.02		
W2	-13.11	11/9/15	1015	-2.08	0.20	Flood	3.71	115	72.7	1019	0.01	0.1	202	5678						17.4	7.78	27.03	14962	7.18	0.05		
W2	-13.11	1/26/16	1456	-2.00	0.25	Flood	3.60	112	79.2	1110	0.05	0.7	197	5539						16.9	7.79	28.26	15643	6.69	0.15		
W2	-13.11	4/21/16	1108	-2.05	-0.05	Low	3.37	104	71.2	997	0.36	5.0	201	5654						17.1	7.68	27.82	15399	6.57	0.04		
W2	-13.11	7/20/16	1532	-1.85	0.45	Flood	3.27	101	60.5	848	0.31	4.3	180	5050						16.9	7.68	27.88	15432	5.90	0.05		
W2	-13.11	11/7/16	1156	-1.76	0.45	Ebb	3.14	97	63.8	894	0.03	0.4	185	5196						16.9	7.68	27.63	15294	7.48	0.02		
W2	-13.11	3/21/17	1441	-1.84	0.13	Ebb	3.07	95	56.2	788	0.34	4.8	223	6272						17.2	7.78	28.07	15537	6.93	0.04		
W2	-13.11	4/13/17	1052	-2.20	0.07	Low	2.93	91	53.8	753	0.24	3.4	205	5760						17.1	7.80	28.45	15748	5.65	0.03		
W2	-13.11	8/4/17	1043	-1.99	0.25	Flood	2.59	80	50.4	705	0.04	0.5	223	6260						16.9	7.80	27.94	15466	6.96	0.08		
W2	-13.11	10/18/17	1638	-1.70	0.50	Ebb	2.82	88	54.9	769	0.26	3.6	211	5918						16.7	7.00	27.86	15421	6.49	0.04		
W2	-13.11	1/17/18	1144	-2.14	0.11	Low	2.79	86	59.0	827	0.24	3.4	218	6118						16.6	7.81	28.05	15526	5.75	0.04		
W2	-13.11	5/9/18	1034	-2.09	0.25	Flood	2.75	85	59.7	837	0.07	1.0	207	5814						16.9	7.74	28.19	15604	6.30	0.03		
W2	-13.11	8/20/18	1006	-1.96	0.37	Flood	3.27	101	61.7	864	0.34	4.7	211	5935						17.7	7.78	27.98	15488	6.07	0.04		
W2	-13.11	10/24/18	953	-2.06	0.10	Low	2.37	73	61.7	864	0.01	0.1	212	5952						17.6	7.74	27.85	15416	4.89	0.05		
W2	-13.11	2/7/19	947	-2.01	0.30	Ebb	2.96	92	73.3	1027	0.11	1.5	209	5874						17.8	7.59	29.43	16290	6.66	0.07		
W2	-13.11	5/15/19	1149	-2.12	0.40	Flood	2.92	90	60.5	848	0.04	0.5	209	5876						17.0	7.60	28.65	15859	6.26	0.05		
W2	-13.11	8/28/19	940	-2.17	0.05	Flood	2.70	84	57.8	809	0.32	4.5	208	5833						16.6	7.80	28.13	15571	6.38	0.05		
W2	-13.11	10/10/19	1527	-1.67	0.55	High	2.72	84	49.9	699	0.10	1.4	215	6051						16.9	7.90	27.94	15466	7.10	0.08		
W2	-13.11	1/31/20	1443	-2.06	0.07	Low	2.90	90	56.9	797	0.53	7.4	213	5976						16.9	7.83	31.21	17276	6.82	0.02		
W2	-13.11	6/2/20	1427	-1.55	0.59	High	2.43	75	50.9	713	0.24	3.3	222	6248						18.0	7.97	28.81	15947	6.39	0.07		
W2	-13.11	7/1/20																									
W2	-13.11	10/1/20																									
W2	-13.11	1/1/21																									
W2	-13.11	4/1/21																									
W2	-13.11	7/1/21																									
W2	-13.11	10/1/21																									
W2	-13.11	1/1/22																									
W2	-13.11	4/1/22																									
W2	-13.11	7/1/22																									
W2	-13.11	10/1/22																									
W2	-13.11	1/1/23																									
W2	-13.11	4/1/23																									
Mean				-2.00	0.27		2.21	68	49	683	0.22	3.1	245	6870	2.06	63.9	48.0	673	0.47	18.5	7.83	28.07	15533	4.88	0.11		
Std. Dev.				0.20	0.25		1.13	35	28	398	0.23	3.2	47	1315	1.18	36.4	34.6	484	0.19	0.8	0.12	0.78	435	1.05	0.12		
Maximum				-1.55	1.60		4.93	153	137	1925	1.91	26.7	379	10644	4.50	139.4	209.0	2927	1.27	21.2	8.24	34.44	19063	7.77	0.63		
Minimum				-2.35	-0.06		0.61	19	13	178	0.01	0.1	67	1883	0.91	28.2	13.1	183	0.21	16.6	7.00	25.98	14382	3.17	0.02		
n				79	80		286	286	286	286	286	286	280	280	205	205	206	206	177	285	285	286	286	285	66		

NELHA Water Quality Laboratory

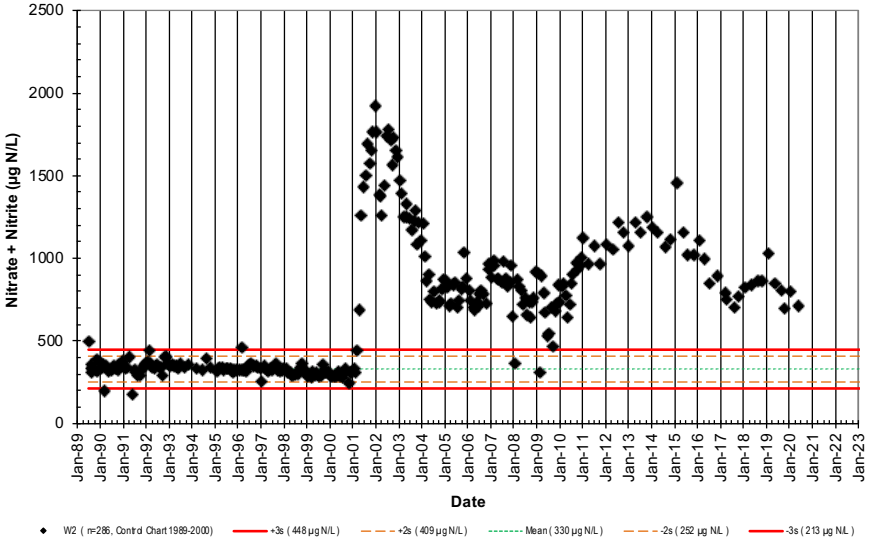
Well 2 Charts

6/28/1989 - 7/16/20

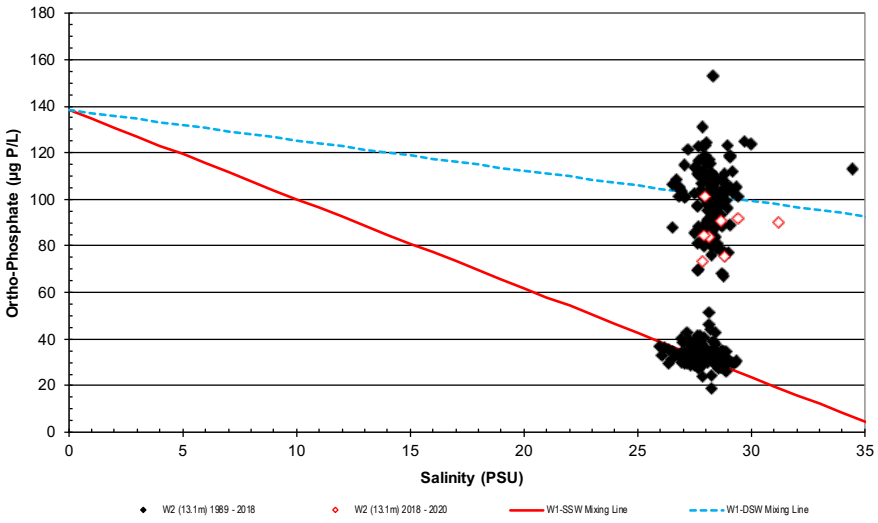
Well #2
Ortho-Phosphate (µg P/L)



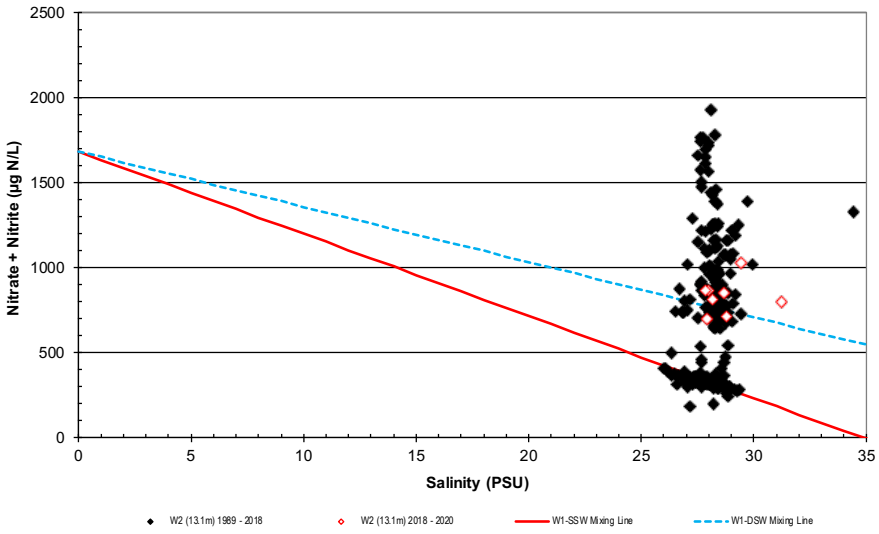
Well #2
Nitrate + Nitrite (µg N/L)



Well #2 Conservative Mixing Model
Ortho-Phosphate (µg P/L)



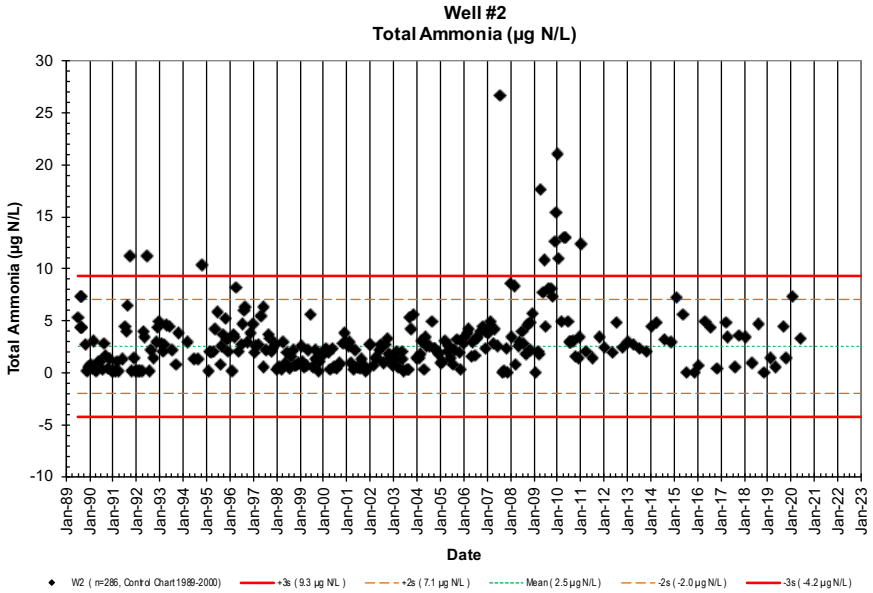
Well #2 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)

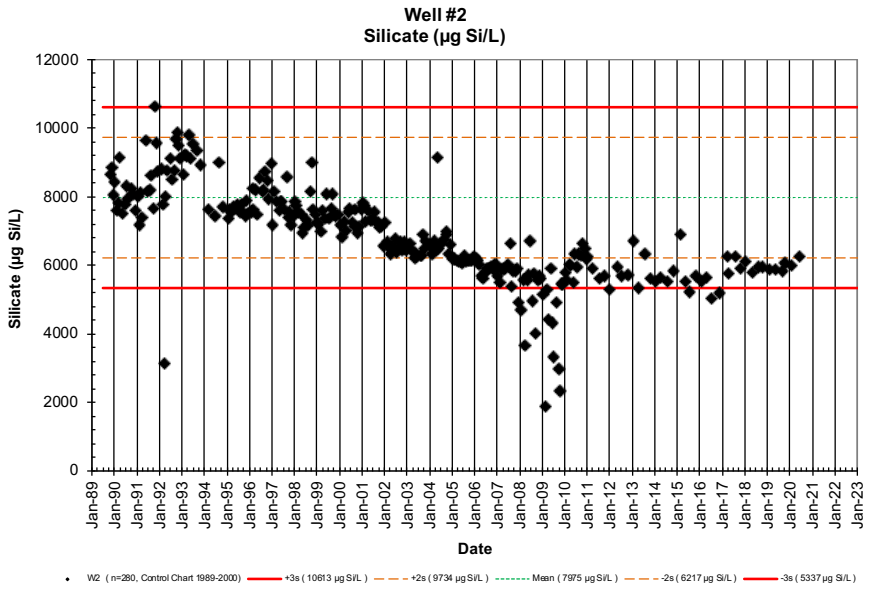


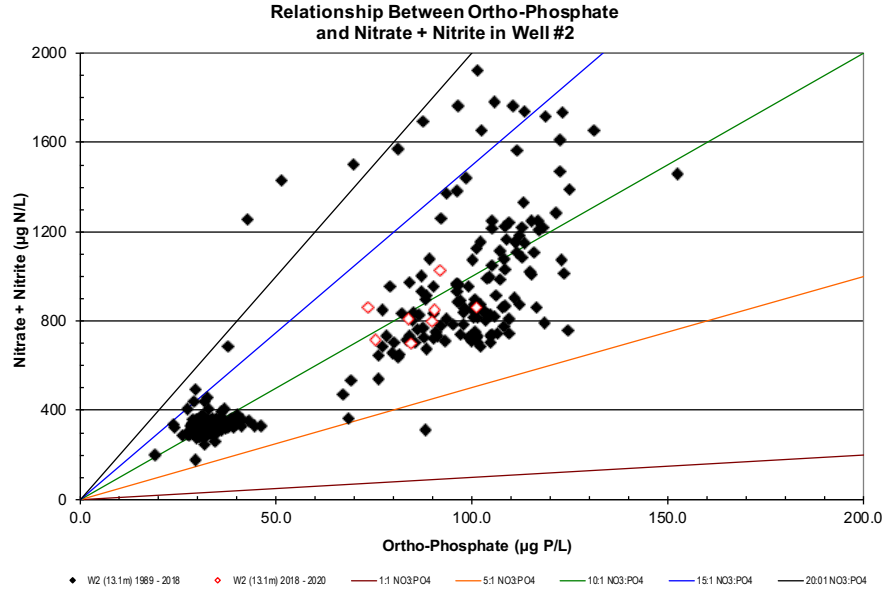
NELHA Water Quality Laboratory

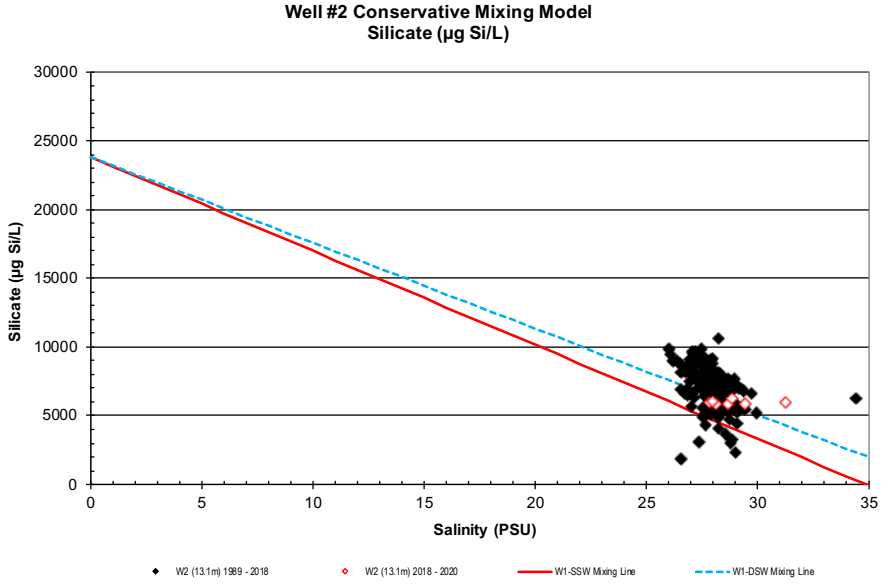
Well 2 Charts

6/28/1989 - 7/16/20







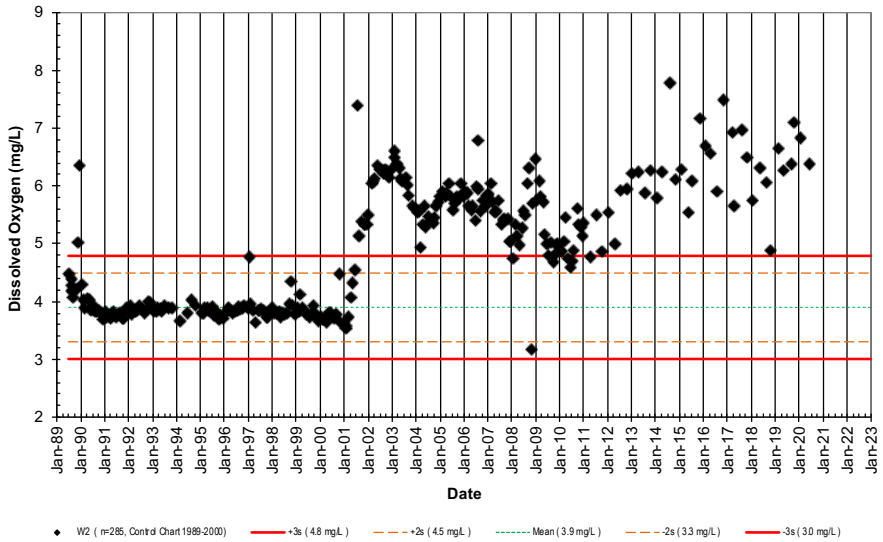


NELHA Water Quality Laboratory

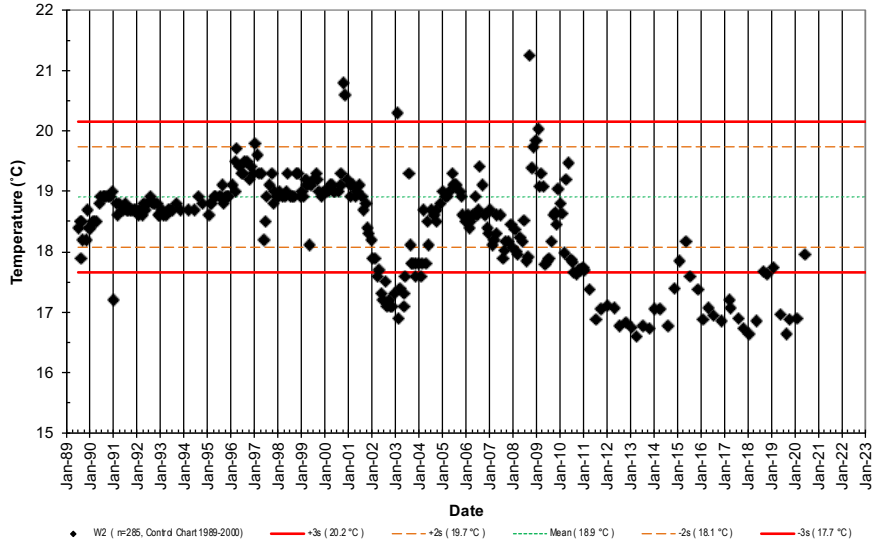
Well 2 Charts

6/28/1989 - 7/16/20

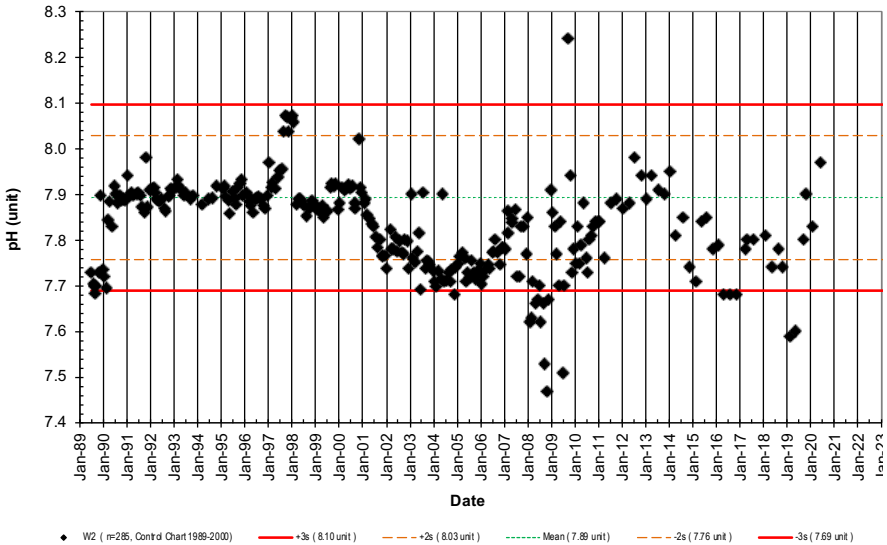
Well #2
Dissolved Oxygen (mg/L)



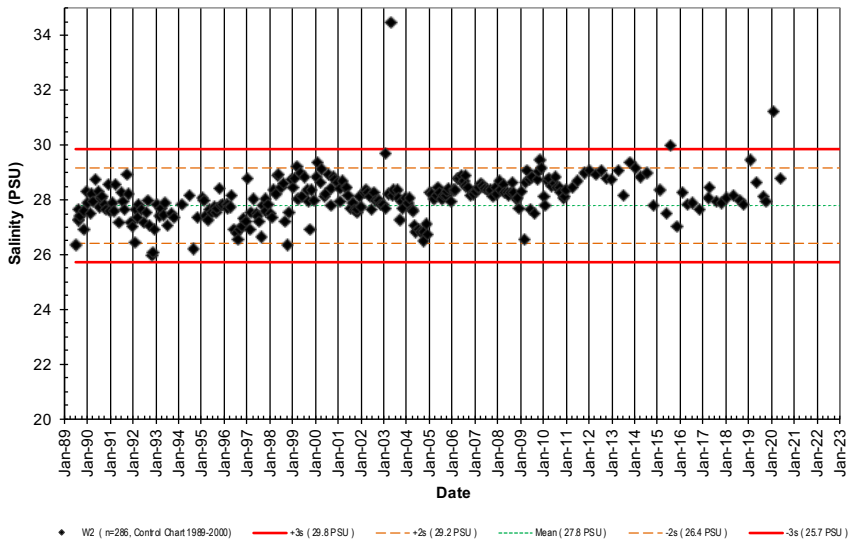
Well #2
Temperature (˚C)



Well #2
pH (unit)



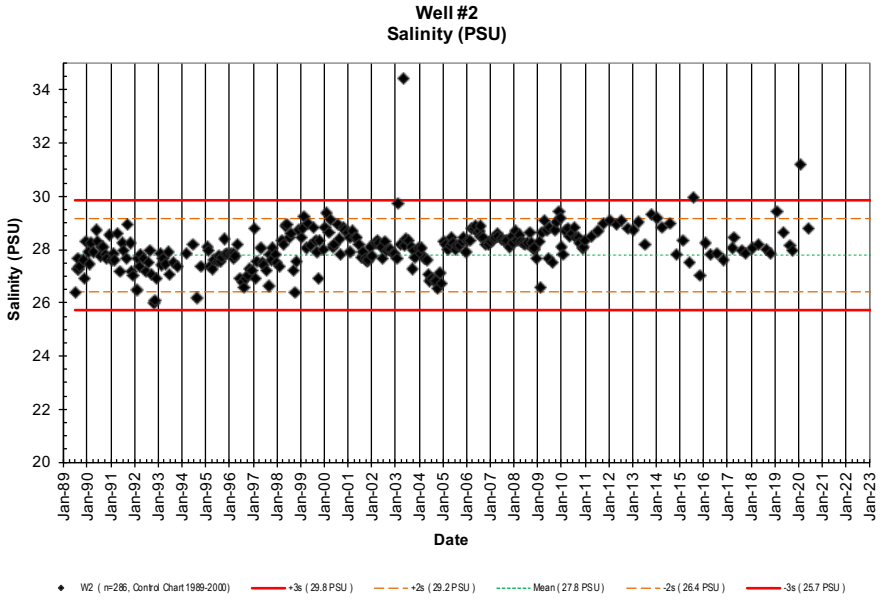
Well #2
Salinity (PSU)

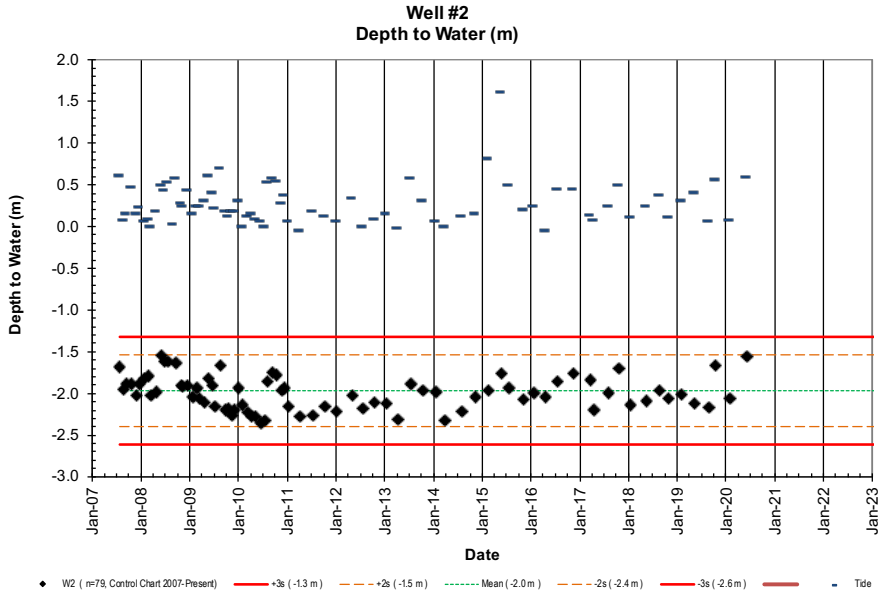


NELHA Water Quality Laboratory

Well 2 Charts

6/28/1989 - 7/16/20





NELHA Water Quality Laboratory

Well 2A Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	6/28/89				2.42	75	56.3	789	3.60	50.4								19.3	7.765	16.524	9146	5.89		NA	NA
W2A	-6.71	8/11/89	1050			2.21	68	44.0	616	0.31	4.3								19.3	7.750	16.574	9174	5.46		<1	NA
W2A	-6.71	8/16/89	1000			2.44	76	48.4	678	0.42	5.9								19.2	7.705	15.049	8330	6.12		<1	NA
W2A	-6.71	8/23/89	1015			2.27	70	45.7	640	0.27	3.8								18.9	7.729	18.099	10018	5.77		<1	NA
W2A	-6.71	8/30/89	1035			2.56	79	53.2	745	0.42	5.9								19.1	7.755	15.759	8723	6.60		<1	NA
W2A	-6.71	8/30/89	1035			2.56	79	53.2	745	0.42	5.9														NA	NA
W2A	-6.71	10/31/89	940			2.60	81	59.1	828	0.05	0.7	570	16009	2.76	85.5	60.6	849	0.48	19.1	7.816	15.824	8759	6.02		1	NA
W2A	-6.71	11/16/89	814			2.32	72	49.1	688	0.06	0.8	500	14043	2.61	80.8	51.8	726	0.69	19.4	7.774	18.471	10224	6.60		1	NA
W2A	-6.71	12/13/89	1045			2.82	87	64.8	908	0.08	1.1	557	15644	3.07	95.1	66.3	929	0.34	19.6	7.838	14.620	8093	6.66		<1	NA
W2A	-6.71	1/11/90	826			2.05	63	54.6	765	0.01	0.1	571	16037	2.26	70.0	56.0	784	1.85	19.2	7.775	16.089	8906	7.76		<1	NA
W2A	-6.71	2/14/90	1005			2.44	76	54.9	769	0.00	0.0	535	15026	2.89	89.5	44.2	619	0.61	19.4	7.756	15.801	8746	6.19		<1	NA
W2A	-6.71	3/6/90	1345			2.28	71	54.3	761	0.11	1.5	528	14829	2.71	83.9	54.3	761	0.56	19.2	7.889	16.258	8999	5.76		<1	NA
W2A	-6.71	4/4/90	1130			2.45	76	52.1	730	0.41	5.7	587	16486	2.56	79.3	53.5	749	0.50	19.3	7.932	16.460	9111	5.24		4	NA
W2A	-6.71	5/17/90	1430			2.51	78	53.3	747	0.05	0.7	519	14576	2.74	84.9	28.5	399	0.44	19.3	7.895	15.853	8775	5.83		<1	NA
W2A	-6.71	6/16/90	1335			3.25	101	47.9	671	0.36	5.0	491	13790	3.60	111.5	83.2	1165	0.75	19.4	7.936	17.880	9897	5.33		3	NA
W2A	-6.71	7/17/90	1407			2.53	78	47.0	658	0.00	0.0	496	13930	2.77	85.8	50.0	700	0.65	19.8	7.918	18.216	10083	5.59		<1	NA
W2A	-6.71	8/8/90	1355			2.10	65	51.6	723	0.17	2.4	504	14155	2.77	85.8	52.8	740	0.84	19.9	7.909	17.192	9516	5.36		<1	NA
W2A	-6.71	9/5/90	1432			2.45	76	49.2	689	0.00	0.0			2.45	75.9	49.8	698	0.32	19.7	7.924	17.677	9785	5.36		<1	NA
W2A	-6.71	10/4/90	1426			2.24	69	47.1	660	0.04	0.6	508	14253	2.65	82.1	50.0	701	1.40	19.6	7.916	17.663	9777	5.02		<1	NA
W2A	-6.71	11/1/90	1438			2.30	71	49.7	696	0.03	0.4	505	14183	2.55	79.0	51.2	716	0.44	19.5	7.916	17.530	9703	5.32		<1	NA
W2A	-6.71	12/10/90	1446			2.33	72	57.3	803	0.15	2.1	501	14071	2.65	82.1	59.5	833	0.35	19.6	7.927	16.072	8896	5.64		<1	NA
W2A	-6.71	1/9/91	1025			2.36	73	56.7	794	0.05	0.7	512	14380	2.38	73.7	58.7	823	0.38	19.3	7.916	16.241	8990	5.66		14	NA
W2A	-6.71	2/6/91	1016			2.11	65	49.7	696	0.11	1.5	475	13341	2.28	70.6	51.1	716	0.64	19.4	7.922	15.837	8766	5.76		<1	NA
W2A	-6.71	3/6/91	1036			2.27	70	53.9	755	0.22	3.1	510	14324	2.39	74.0	54.1	758	0.61	19.2	7.925	15.907	8805	5.75		<1	NA
W2A	-6.71	4/3/91	1021			2.16	67	59.4	832	0.00	0.0	507	14239	2.30	71.2	66.5	931	0.49	19.3	7.928	15.958	8833	5.75		<1	NA
W2A	-6.71	5/22/91	1049			2.03	63	31.9	447	0.00	0.0	567	15924	2.28	70.6	26.2	367	0.51	19.3	7.919	16.735	9263	5.45		<1	NA
W2A	-6.71	6/26/91	1117			2.30	71	53.6	751	0.00	0.0	534	14998	2.35	72.8	55.7	780	0.38	19.3	7.926	16.574	9174	5.63		<1	<1
W2A	-6.71	7/24/91	1113			2.01	62	49.6	695	0.08	1.1	512	14380	2.16	66.9	50.4	706	0.40	17.6	7.924	16.810	9305	5.54		<1	<1
W2A	-6.71	8/23/91	1057			2.19	68	53.7	752	0.15	2.1	540	15166	2.27	70.3	56.7	794	0.52	19.2	7.908	16.337	9043	5.63		<1	<1
W2A	-6.71	9/24/91	1014			2.34	72	54.8	768	0.00	0.0	546	15335	2.40	74.3	58.0	812	0.44	19.5	7.896	15.377	8512	6.06		<1	<1
W2A	-6.71	10/23/91	1029			2.61	81	57.1	800	0.00	0.0	746	20952	2.63	81.5	59.5	833	0.52	19.5	7.920	15.033	8321	6.03		<1	<1
W2A	-6.71	11/20/91	1011			2.85	88	53.5	749	0.00	0.0	616	17301	2.96	91.7	56.8	796	0.44	19.3	7.896	15.408	8529	6.00		<1	<1
W2A	-6.71	12/11/91	1043			2.35	73	54.2	759	0.00	0.0	533	14970	2.48	76.8	56.8	796	0.44	19.3	7.918	16.006	8860	5.79		<1	<1
W2A	-6.71	1/29/92	1039			2.25	70	53.4	748	0.00	0.0	529	14857	2.28	70.6	54.9	769	1.10	19.5	7.914	16.094	8908	5.78		<1	<1
W2A	-6.71	2/19/92	1059			2.40	74	43.6	611	0.00	0.0	507	14239	2.52	78.1	59.4	832	0.42	19.5	7.940	15.048	8329	6.09		<1	2
W2A	-6.71	3/17/92	1014			2.36	73	58.8	824	0.00	0.0	552	15503	2.43	75.3	62.1	870	0.62	19.5	7.937	14.577	8069	6.20		<1	<1
W2A	-6.71	4/8/92	1009			2.34	72	54.3	761	0.09	1.3	520	14604	2.42	75.0	57.1	800	0.46	19.4	7.904	15.405	8527	5.99		<1	<1
W2A	-6.71	5/6/92	1045			2.31	72	55.3	775	0.00	0.0	568	15953	2.40	74.3	59.1	828	0.74	19.5	7.904	15.949	8828	6.07		<1	<1
W2A	-6.71	6/23/92	1023			2.16	67	50.5	707	0.17	2.4	548	15391	2.16	66.9	52.1	730	0.64	19.4	7.896	17.027	9425	5.66		<1	<1
W2A	-6.71	7/29/92	1018			2.27	70	54.7	766	ND	0.0	557	15644	2.34	72.5	56.3	789	0.51	19.2	7.893	15.408	8529	6.02		<1	<1
W2A	-6.71	8/25/92	1003			2.37	73	48.7	682	0.00	0.0	553	15531	2.37	73.4	54.1	757	0.59	19.5	7.881	17.292	9572	5.50		<1	<1
W2A	-6.71	9/22/92	1044			2.16	67	47.9	670	0.00	0.0	553	15531	2.25	69.7	49.1	688	0.46	19.4	7.896	17.537	9707	5.37		<1	<1
W2A	-6.71	10/27/92	1031			2.55	79	58.7	823	0.00	0.0	580	16290	2.64	81.8	61.7	864	0.53	19.6	7.919	15.357	8500	6.10		4	6
W2A	-6.71	11/17/92	1053			2.16	67	52.7	737	0.20	2.8	531	14913	2.50	77.4	56.0	784	0.56	19.4	7.913	17.460	9665	5.50		0	0
W2A	-6.71	12/8/92	955			2.54	79	58.4	818	0.12	1.7	578	16233	2.56	79.3	61.1	856	0.45	19.4	7.928	15.492	8575	6.02		28	1

NELHA Water Quality Laboratory

Well 2A Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	1/26/93	1013			2.33	72	57.0	798	0.10	1.4	562	15781	2.48	76.8	61.5	861	0.50	19.4	7.933	16.134	8931	5.87		<1	1
W2A	-6.71	2/23/93	1000			2.39	74	60.1	842	0.07	1.0	595	16719	2.42	75.0	69.2	970	0.42	19.4	7.932	14.885	8239	6.07		<1	<1
W2A	-6.71	3/16/93	952			2.28	71	54.3	760	0.08	1.1	572	16071	2.31	71.5	57.8	809	0.49	19.2	7.923	16.522	9145	5.70		<1	<1
W2A	-6.71	4/27/93	950			2.30	71	56.1	785	0.43	6.0	595	16711	2.40	74.3	58.3	816	0.42	19.4	7.910	16.373	9063	5.76		<1	<1
W2A	-6.71	5/25/93	942			2.32	72	55.9	783	0.14	2.0	581	16318	2.32	71.9	60.3	845	0.34	19.4	7.903	16.269	9005	5.84		<1	<1
W2A	-6.71	6/28/93	1010			2.07	64	51.1	716	0.08	1.1	548	15391	2.23	69.1	54.4	762	0.42	19.4	7.899	17.611	9748	5.43		<1	<1
W2A	-6.71	8/31/93	912			2.50	77	58.6	821	0.00	0.0	594	16694	2.50	77.4	70.0	981	0.82	19.5	7.915	15.246	8439	6.06		<1	<1
W2A	-6.71	10/26/93	859			2.48	77	55.8	781	0.56	7.8	549	15419	2.50	77.4	56.8	796	0.52	19.4	7.915	15.958	8833	5.79		152	135
W2A	-6.71	3/1/94	840			2.53	78	57.2	801	0.15	2.1	510	14324	2.54	78.7	73.5	1029	0.52	19.4	7.899	16.134	8931	5.65		<1	<1
W2A	-6.71	6/21/94	936			2.51	78	56.4	790	0.16	2.2	608	17073	2.56	79.3	67.4	944	0.44	19.3	7.907	16.192	8963	5.85		<1	<1
W2A	-6.71	8/23/94	1006			2.49	77	63.0	883	0.32	4.5	589	16537	2.55	79.0	70.2	984	0.58	20.2	8.151	15.342	8492	7.00		3	4
W2A	-6.71	10/25/94	1025			2.43	75	53.7	753	0.23	3.2	499	14003	2.45	75.9	56.3	788	0.44	19.4	7.947	16.410	9083	5.76		<1	<1
W2A	-6.71	1/24/95	1022			2.64	82	59.0	827	0.02	0.3	508	14256	2.70	83.6	62.0	868	0.39	19.4	7.943	15.339	8491	5.30		<1	<1
W2A	-6.71	2/14/95	959			2.71	84	64.1	898	0.53	7.4	539	15144	2.75	85.2	65.6	918	0.38	19.6	7.921	14.278	7903	5.94		<1	<1
W2A	-6.71	3/14/95	1048			2.39	74	54.5	764	0.07	1.0	480	13475	2.42	75.0	55.5	778	0.41	19.5	7.897	16.569	9171	6.32		<1	<1
W2A	-6.71	4/26/95	1038			2.44	76	56.3	789	0.12	1.7	495	13888	2.57	79.6	60.0	840	0.48	19.9	8.067	16.307	9026	6.69		<1	<1
W2A	-6.71	5/8/95	1041			2.23	69	51.6	723	0.23	3.2	451	12675	2.28	70.6	55.9	783	0.41	20.2	7.951	17.912	9915	7.17		<1	<1
W2A	-6.71	6/27/95	1018			1.99	62	48.8	683	0.39	5.5	468	13155	2.15	66.6	50.4	706	0.50	20.2	7.810	17.332	9594	4.89		<1	<1
W2A	-6.71	7/25/95	1030			2.39	74	58.2	816	0.07	1.0	515	14453	2.49	77.1	60.3	845	0.47	20.1	7.852	15.220	8425	5.57		<1	<1
W2A	-6.71	8/22/95	1121			2.43	75	53.1	744	0.32	4.5	473	13279	2.50	77.4	56.1	786	0.42	20.4	8.078	17.349	9603	6.49		3	<1
W2A	-6.71	9/11/95	1108			2.31	72	55.5	777	0.21	2.9	486	13644	2.31	71.5	58.2	815	0.52	18.8	7.914	16.618	9198	6.70		1	<1
W2A	-6.71	10/16/95	1126			2.18	68	51.6	723	0.33	4.6	644	18084	2.21	68.5	52.8	739	0.56	20.0	8.089	17.750	9825	6.43		<1	1
W2A	-6.71	11/6/95	1114			2.73	85	54.4	762	0.22	3.1	485	13619	2.30	71.2	57.2	801	0.53	20.1	7.992	16.875	9341	6.31		1	<1
W2A	-6.71	12/4/95	1059			2.30	71	53.4	748	0.13	1.8	468	13130	2.42	75.0	55.2	773	0.58	20.1	7.935	17.661	9776	6.30		1	2
W2A	-6.71	1/29/96	1151			2.33	72	56.9	796	0.01	0.1	487	13680	2.39	74.0	59.7	836	0.63	20.6	7.961	16.505	9136	6.81		<1	<1
W2A	-6.71	2/26/96	1209			2.28	71	55.0	770	0.17	2.4	494	13874	2.35	72.8	56.9	797	0.56	20.4	8.045	16.760	9277	6.82		<1	<1
W2A	-6.71	3/5/96	1106			2.38	74	60.0	840	0.18	2.5	502	14098	2.47	76.5	63.0	882	0.63	20.2	8.028	15.275	8455	6.84		1	1
W2A	-6.71	4/1/96	1139			2.35	73	56.4	790	0.41	5.7	503	14123	2.45	75.9	59.1	827	0.56	20.7	7.914	16.211	8973	6.71		<1	<1
W2A	-6.71	5/8/96	1150			2.39	74	54.9	769	0.16	2.2	483	13578	2.48	76.8	58.0	812	0.45	20.5	7.929	16.680	9233	6.75		<1	<1
W2A	-6.71	6/17/96	1106			2.24	69	53.7	753	0.14	2.0	501	14070	2.35	72.8	56.3	788	0.49	21.4	8.100	17.038	9431	6.84		1	<1
W2A	-6.71	7/16/96	1114			2.17	67	52.9	741	0.21	2.9	479	13451	2.35	72.8	55.2	773	0.49	21.0	7.960	17.164	9501	6.55		1	<1
W2A	-6.71	8/5/96	1155			2.34	72	54.4	762	0.30	4.2	462	12968	2.35	72.8	59.9	839	0.40	21.0	7.971	17.310	9582	6.99		<1	<1
W2A	-6.71	9/3/96	1118			2.37	73	57.2	801	0.31	4.3	510	14337	2.47	76.5	59.6	835	0.33	20.9	7.979	16.406	9081	6.64		1	<1
W2A	-6.71	10/8/96	1126			2.46	76	55.6	779	0.13	1.8	520	14604	2.63	81.5	60.8	852	0.35	20.2	7.896	15.763	8725	5.67		<1	<1
W2A	-6.71	11/4/96	1142			2.32	72	53.2	745	0.19	2.7	509	14308	2.35	72.8	63.9	895	0.41	20.2	7.874	16.648	9215	5.58		<1	<1
W2A	-6.71	12/16/96	1117			2.35	73	50.6	709	0.30	4.2	493	13843	2.38	73.7	52.1	730	0.42	19.9	7.905	17.773	9838	5.36		<1	1
W2A	-6.71	1/13/97	1158			2.49	77	58	815	0.12	1.7	508	14253	2.61	80.8	60.4	846	0.70	20.7	7.974	13.921	7706	6.58		<1	<1
W2A	-6.71	2/11/97	1206			2.23	69	56	784	0.19	2.7	520	14602	2.28	70.6	58.2	815	0.49	20.4	7.924	15.082	8348	6.07		14	<1
W2A	-6.71	3/11/97	1136			2.55	79	63	886	0.12	1.7	551	15461	2.70	83.6	65.5	918	0.49	20.2	7.959	13.155	7282	6.49		<1	<1
W2A	-6.71	4/22/97	1147			2.38	74	52	721	0.26	3.6	463	13001	2.42	75.0	60.3	845	0.55	20.2	7.938	15.024	8316	5.84		<1	<1
W2A	-6.71	5/27/97	1052			2.27	70	56	790	0.10	1.4	456	12799	2.37	73.4	60.1	842	0.44	19.0	7.946	15.736	8710	5.78		<1	<1
W2A	-6.71	6/16/97	1105			2.23	69	51	712	0.26	3.6	435	12203	2.26	70.0	54.9	769	0.47	19.2	7.955	16.781	9289	5.43		<1	<1

NELHA Water Quality Laboratory

Well 2A Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	7/16/97	1017			2.32	72	53	737	0.08	1.1	485	13624	2.46	76.2	56.9	797	0.46	19.7	7.953	16.436	9098	5.53		<1	<1
W2A	-6.71	8/25/97	1113			2.49	77	51	710	0.28	3.9	510	14332	3.10	96.0	51.9	726	0.40	20.0	8.029	16.886	9347	5.27		<1	<1
W2A	-6.71	9/22/97	1039			2.29	71	51	717	0.10	1.4	491	13798	2.40	74.3	52.5	735	0.44	20.0	8.068	16.669	9227	5.53		<1	2
W2A	-6.71	10/15/97	1029			2.55	79	60	835	0.12	1.7	518	14545	2.72	84.2	66.7	934	0.46	20.0	8.068	14.684	8128	5.90		<1	<1
W2A	-6.71	11/3/97	1017			2.58	80	58.9	825	0.24	3.4	515	14461	2.83	87.7	65.8	922	0.47	19.8	8.040	15.214	8421	5.90		<1	<1
W2A	-6.71	12/15/97	1034			2.52	78	56.1	786	0.04	0.6	521	14635	2.69	83.3	59.2	829	0.51	19.7	8.075	15.080	8347	6.17		<1	<1
W2A	-6.71	1/6/98	952			2.35	73	51.3	719	0.01	0.1	490	13762	2.56	79.3	54.3	761	0.48	19.5	8.067	17.110	9471	5.51		<1	<1
W2A	-6.71	2/2/98	1048			2.38	74	52.5	735	0.13	1.8	512	14369	2.55	79.0	55.3	775	0.47	19.6	8.064	16.237	8988	5.69		<1	<1
W2A	-6.71	3/9/98	1047			2.59	80	56.4	789	0.23	3.2	524	14703	2.71	83.9	58.8	824	0.49	19.7	7.897	15.467	8561	5.91		<1	<1
W2A	-6.71	4/13/98	1017			2.67	83	58	817	0.09	1.3	562	15790	2.73	84.6	61.8	866	0.48	19.8	7.921	14.915	8256	6.12		<1	<1
W2A	-6.71	5/11/98	1114			2.50	77	51	716	0.25	3.5	481	13518	2.72	84.2	53.7	752	0.46	19.6	7.918	15.526	8594	5.99		<1	58
W2A	-6.71	6/1/98	1102			2.58	80	55.5	778	0.17	2.4	526	14767	2.68	83.0	61.2	857	0.41	19.6	7.903	17.339	9598	5.59		<1	<1
W2A	-6.71	7/13/98	1102			2.59	80	56	778	0.23	3.2	517	14526	2.74	84.9	59	824	0.40	19.8	7.901	15.799	8745	5.86		1	<1
W2A	-6.71	8/10/98	1117			2.74	85	59.6	834	0.11	1.5	535	15026	2.88	89.2	64.6	905	0.40	19.6	7.896	14.871	8231	5.59		1	<1
W2A	-6.71	9/14/98	1120			2.28	71	46.0	644	0.16	2.2	475	13343	2.37	73.4	48	666	0.35	19.8	7.871	18.572	10280	5.22		<1	<1
W2A	-6.71	10/12/98	1011			2.20	68	46.9	657	0.16	2.2	472	13265	2.49	77.1	49	684	0.40	19.9	7.874	18.434	10204	5.66		<1	1
W2A	-6.71	11/2/98	1037			2.52	78	57.1	800	0.04	0.6	523	14686	2.68	83.0	59.6	835	0.83	19.9	7.905	15.721	8702	5.84		<1	<1
W2A	-6.71	12/15/98	1021			2.56	79	54.3	761	0.04	0.6	527	14787	2.69	83.3	61.0	854	0.56	19.9	7.900	16.190	8962	5.72		<1	<1
W2A	-6.71	1/11/99	1046			2.43	75	52	721	0.22	3.1	508	14262	2.54	78.7	55	775	0.51	19.6	7.893	16.638	9210	5.74		<1	<1
W2A	-6.71	2/2/99	1050			2.60	81	61	861	0.16	2.2	536	15057	2.70	83.6	66	926	0.70	19.8	7.912	14.962	8282	6.32		<1	<1
W2A	-6.71	3/1/99	1102			2.68	83	60.8	852	0.01	0.1	546	15337	2.78	86.1	63.3	887	0.52	19.6	7.915	14.376	7957	7.10		<1	<1
W2A	-6.71	4/5/99	1047			2.49	77	56.6	793	0.21	2.9	525	14753	2.63	81.5	59.2	829	0.44	19.6	7.901	15.676	8677	5.99		<1	<1
W2A	-6.71	5/3/99	1112			2.60	81	61.0	854	0.19	2.7	537	15073	2.74	84.9	66.1	926	0.48	19.7	7.894	15.092	8354	7.33		<1	<1
W2A	-6.71	6/1/99	1041			2.60	81	58.4	818	0.29	4.1	527	14790	2.70	83.6	61.6	863	0.50	19.7	7.903	15.104	8360	6.17		<1	<1
W2A	-6.71	7/14/99	1100			2.62	81	60.4	846	0.06	0.8	538	15096	2.78	86.1	62.8	880	0.48	19.9	7.906	14.738	8158	6.26		<1	<1
W2A	-6.71	8/23/99	1109			2.30	71	47.9	671	0.15	2.1	504	14141	2.46	76.2	49.8	698	0.41	19.9	7.929	17.348	9603	5.44		<1	<1
W2A	-6.71	9/7/99	1110			2.42	75	53.7	752	0.09	1.3	494	13869	2.63	81.5	61.3	859	0.39	19.9	7.938	17.010	9415	5.59		<1	<1
W2A	-6.71	10/5/99	1047			2.35	73	52.9	741	0.04	0.6	506	14200	2.45	75.9	55.0	770	0.39	19.8	7.933	16.866	9336	5.54		<1	3
W2A	-6.71	11/1/99	1119			2.16	67	47.7	668	0.10	1.4	472	13262	2.41	74.6	51.2	717	0.34	19.6	7.933	18.554	10270	5.17		<1	<1
W2A	-6.71	12/14/99	1112			2.41	75	54.3	761	0.08	1.1	503	14124	2.52	78.1	57.3	803	0.40	19.7	7.868	16.633	9207	5.44		<1	19
W2A	-6.71	1/10/00	1130			2.48	77	57.0	798	0.16	2.2	522	14672	2.64	81.8	61.6	863	0.41	19.7	7.915	15.794	8742	5.91		<1	<1
W2A	-6.71	2/7/00	1129			2.67	83	62.2	871	0.14	2.0	536	15062	2.80	86.7	66.6	933	0.48	19.7	7.960	14.663	8116	6.25		<1	46
W2A	-6.71	3/21/00	1129			2.64	82	63.8	894	0.16	2.2	558	15683	2.56	79.3	68.7	962	0.57	19.8	7.962	13.574	7514	6.52		<1	26
W2A	-6.71	4/10/00	1210			2.21	68	58.5	819	0.02	0.3	539	15132	2.39	74.0	62.3	873	0.48	19.7	7.954	15.574	8621	5.96		<1	2
W2A	-6.71	5/15/00	1111			2.36	73	53.9	755	0.33	4.6	499	14026	2.37	73.4	57.1	800	0.44	19.9	7.941	16.560	9166	5.66		<1	1
W2A	-6.71	6/5/00	1114			2.54	79	59.2	829	0.09	1.3	535	15017	2.52	78.1	64.8	908	0.49	19.8	7.955	14.905	8250	6.29		<1	1
W2A	-6.71	7/26/00	1140			2.13	66	47.4	664	0.80	11.2	471	13231	2.26	70.0	50.4	706	0.39	19.6	7.920	18.929	10478	5.10		<1	7
W2A	-6.71	8/29/00	1050			2.47	77	56.8	796	0.05	0.7	517	14531	2.54	78.7	58.8	824	0.52	20.3	7.899	15.721	8702	5.90		<1	1
W2A	-6.71	9/5/00	1104			2.30	71	52.4	734	0.09	1.3	489	13720	2.34	72.5	55.9	783	0.42	19.7	7.890	17.683	9788	5.35		<1	<1
W2A	-6.71	10/24/00	1117			2.36	73	53.3	747	0.11	1.5	524	14714	2.49	77.1	55.8	782	0.44	20.1	7.927	16.776	9286	5.43		<1	<1
W2A	-6.71	11/13/00	1057			2.41	75	85.0	1191	0.14	2.0	557	15630	2.52	78.1	88.9	1246	0.56	19.9	7.897	14.512	8033	5.82		<1	<1
W2A	-6.71	12/18/00	1049			2.38	74	52.3	733	0.16	2.2	513	14416	2.48	76.8	57.4	804	0.62	19.9	7.906	17.607	9746	5.24		<1	6

NELHA Water Quality Laboratory

Well 2A Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	1/22/01	1113				3.20	99	83.6	1171	0.18	2.5	532	14927	3.66	113.4	89.5	1254	0.59	19.8	7.886	15.284	8460	6.09		1148	TNTC
W2A	-6.71	2/5/01	1118				2.88	89	85.1	1192	0.11	1.5	515	14467	2.98	92.3	87.2	1221	0.53	19.7	7.894	16.556	9164	5.68		4	TNTC
W2A	-6.71	3/5/01	1110				3.40	105	82.5	1156	0.07	1.0	506	14206	3.52	109.0	96.4	1350	0.56	19.7	7.860	16.869	9337	5.66		<1	83
W2A	-6.71	4/17/01	1110				4.02	125	95.8	1342	0.02	0.3	486	13647	4.04	125.1	102	1433	0.55	19.8	7.834	17.673	9782	6.12		<1	<1
W2A	-6.71	5/15/01	1040				3.94	122	91.1	1277	0.09	1.3	447	12563	3.82	118.3	95.2	1333	0.54	19.5	7.826	18.087	10012	5.82		<1	<1
W2A	-6.71	6/12/01	1119				4.65	144	99.5	1393	0.05	0.7	466	13085	4.72	146.2	104	1454	0.53	19.4	7.831	18.425	10199	5.84		<1	35
W2A	-6.71	7/25/01	920				4.55	141	79.6	1115	0.06	0.8	474	13304	4.56	141.2	82.4	1154	0.61	19.4	7.807	18.699	10350	5.03		<1	<1
W2A	-6.71	8/20/01	901				3.80	118	83.4	1168	0.26	3.6	505	14183	3.96	122.7	84.5	1184	0.76	19.4	7.839	17.378	9619	6.27		<1	22
W2A	-6.71	9/19/01	1023				3.49	108	77.6	1087	0.09	1.3	503	14121	3.50	108.4	81.3	1138	0.55	19.5	7.842	16.692	9239	6.27		<1	1
W2A	-6.71	10/24/01	1015				3.34	103	70.1	982	0.06	0.8	452	12692	3.42	105.9	76.0	1064	0.55	19.3	7.820	19.615	10857	5.58		<1	<1
W2A	-6.71	11/7/01	1050				3.46	107	73.4	1028	0.22	3.1	444	12467	3.48	107.8	91.2	1277	0.56	19.3	7.805	19.850	10987	5.59		<1	2
W2A	-6.71	12/19/01	1041				3.14	97	78.4	1098	0.12	1.7	485	13619	3.24	100.4	99.2	1389	0.54	19.5	7.813	18.539	10262	5.91		<1	1268
W2A	-6.71	1/9/02	1021				3.20	99	65.4	916	0.20	2.8	483	13551	3.07	95.1	66.5	931	0.51	19.3	7.837	18.799	10406	5.48		<1	17
W2A	-6.71	2/25/02	1100				2.84	88	75.1	1052	0.09	1.3	489	13725	2.94	91.1	79.6	1115	0.43	19.3	7.962	17.394	9628	7.12		<1	<1
W2A	-6.71	3/20/02	1039				2.62	81	67.7	948	0.13	1.8	476	13355	3.14	97.3	71.9	1007	0.45	19.4	7.987	17.858	9885	6.91		<1	<1
W2A	-6.71	4/10/02	1112				2.86	89	71.9	1007	0.01	0.1	475	13343	2.94	91.1	77.5	1085	0.48	19.3	7.931	17.729	9813	6.37		<1	<1
W2A	-6.71	5/22/02	928				3.14	97	93.8	1314	0.15	2.1	491	13787	3.15	97.6	96.1	1346	0.52	19.4	7.812	17.373	9616	7.40		<1	1
W2A	-6.71	6/19/02	948				2.92	90	70.8	991	0.26	3.6	465	13065	3.06	94.8	74.7	1047	0.42	19.3	7.857	18.892	10457	6.24		<1	<1
W2A	-6.71	7/22/02	937				2.90	90	68.5	959	0.09	1.3	484	13579	3.10	96.0	67.7	949	0.43	19.5	7.867	17.922	9920	5.83		<1	<1
W2A	-6.71	8/21/02	1006				2.95	91	69.3	971	0.18	2.5	488	13703	3.12	96.6	71.6	1002	0.41	19.3	7.852	17.414	9639	6.03		<1	<1
W2A	-6.71	9/25/02	1159				2.94	91	72.0	1008	0.23	3.2	516	14484	2.98	92.3	62.9	881	0.61	19.6	7.886	16.726	9258	7.25		<1	<1
W2A	-6.71	10/15/02	919				2.75	85	54.0	756	0.16	2.2	470	13186	2.83	87.7	55.8	781	0.48	19.6	7.877	18.782	10396	5.71		<1	<1
W2A	-6.71	11/17/02	1113				3.29	102	69.2	969	0.03	0.4	490	13762	3.46	107.2	64.5	903	0.43	19.6	7.862	17.710	9803	6.23		<1	<1
W2A	-6.71	12/18/02	1141				2.91	90	65.4	916	0.18	2.5	485	13624	2.95	91.4	57.6	806	0.43	19.7	7.862	17.642	9765	6.04		<1	<1
W2A	-6.71	1/29/03	1105				2.56	79	65.8	922	<0.1	0.0	474	13315	2.65	82.1	70.7	990	0.46	19.2	7.892	18.197	10073	6.04		<1	<1
W2A	-6.71	2/10/03	1104				2.59	80	65.1	912	0.04	0.6	497	13961	2.74	84.9	71.7	1004	0.44	19.2	7.893	17.877	9895	6.22		<1	<1
W2A	-6.71	3/20/03	1015				2.82	87	75.4	1056	0.17	2.4	521	14644	3.04	94.2	82.5	1156	0.44	19.7	7.898	15.784	8737	6.74		<1	<1
W2A	-6.71	4/30/03	1111				2.90	90	65.7	920	0.12	1.7	501	14082	3.02	93.5	76.5	1072	0.40	19.6	7.921	17.299	9575	5.98		<1	1
W2A	-6.71	5/14/03	1022				2.96	92	68.9	964	0.29	4.1	496	13928	3.02	93.5	77.7	1088	0.36	19.6	7.918	17.198	9520	6.27		<1	<1
W2A	-6.71	6/4/03	1110				2.85	88	68.2	956	0.23	3.2	473	13273	3.01	93.2	75.9	1062	0.36	19.7	7.847	17.993	9960	6.62		<1	<1
W2A	-6.71	7/30/03	1044				3.12	97	82.7	1158	0.44	6.2	513	14411	3.20	99.1	86.7	1214		19.3	7.905	16.286	9015	6.43		<1	2
W2A	-6.71	8/28/03	1017				3.04	94	77.8	1089	0.42	5.9	489	13739	3.14	97.3	101	1413		20.1	7.858	17.471	9671	6.08		<1	<1
W2A	-6.71	9/16/03	1056				3.14	97	66.9	937	0.46	6.4	477	13405	2.92	90.4	72.4	1014		19.9	7.865	18.328	10145	5.71		<1	<1
W2A	-6.71	10/8/03	1056				2.72	84	63.4	888	0.95	13.3	475	13332	2.80	86.7	76.4	1070		19.6	7.877	17.891	9903	NA		<1	<1
W2A	-6.71	11/5/03	1057				2.68	83	62.0	868	0.50	7.0	471	13234	2.80	86.7	68.3	957		19.4	7.883	18.450	10213			<1	<1
W2A	-6.71	11/14/03	1447																	19.7				5.84			
W2A	-6.71	12/22/03	947				3.09	96	72.9	1021	1.00	14.0	497	13970	3.20	99.1	76.0	1064		19.8	7.926	17.309	9581	6.15		<1	188
W2A	-6.71	1/26/04	1038				2.74	85	73.9	1035	0.40	5.6	480	13475	2.90	89.8	82.3	1153		19.3	7.875	18.097	10017	5.61		<1	260
W2A	-6.71	2/11/04	1025				2.78	86	64.9	909	0.67	9.4	470	13211	2.96	91.7	69.6	975	0.69	19.5	7.861	18.218	10084	5.84		<1	22
W2A	-6.71	3/16/04	1241				2.92	90	65.2	913	0.20	2.8	474	13318	3.42	105.9	72.6	1017		20.0	7.883	17.951	9936	5.61		<1	1
W2A	-6.71	4/20/04	1059				2.44	76	51.4	721	0.04	0.6	479	13442	2.56	79.3	54.7	766		19.5	7.887	17.628	9758	5.97		<1	<1
W2A	-6.71	5/11/04	1005				2.82	87	54.8	768	0.20	2.8	459	12891	3.08	95.4	60.8	852		19.5	7.955	18.38	10174	5.97		<1	<1
W2A	-6.71	6/2/04	1059				2.86	89	59.9	839	0.17	2.4	462	12973	2.94	91.1	61.9	867		19.5	7.870	17.85	9880	5.96		<1	<1

NELHA Water Quality Laboratory

Well 2A Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	7/14/04	1108				3.02	94	65.3	915	0.17	2.4	468	13136	3.18	98.5	69.5	974		19.5	7.866	18.29	10124	5.89		<1	1
W2A	-6.71	8/23/04	1052				3.06	95	59.2	829	0.25	3.5	450	12624	3.22	99.7	66.9	937		19.5	7.865	18.85	10434	5.75		<1	<1
W2A	-6.71	9/27/04	933				3.28	102	70.1	982	0.16	2.2	504	14166	3.40	105.3	94.0	1317		19.6	7.862	17.09	9460	6.28		<1	<1
W2A	-6.71	10/5/04	935				3.20	99	63.5	890	0.23	3.2	449	12613	3.36	104.1	69.8	977		19.6	7.878	19.17	10611	5.80		<1	<1
W2A	-6.71	11/9/04	1022				3.24	100	63.0	883	0.18	2.5	473	13276	3.40	105.3	65.5	917		19.8	7.865	17.99	9958	5.82		3	208
W2A	-6.71	12/6/04	1100				3.10	96	64.0	897	0.22	3.1	460	12917	3.22	99.7	64.2	899		19.7	7.889	18.43	10201	5.84		<1	85
W2A	-6.71	1/10/05	1027				3.28	102	82.8	1159	0.08	1.1	506	14214	3.30	102.2	89.5	1253		19.6	7.940	17.484	9678	6.38		1	<1
W2A	-6.71	2/9/05	1024				3.30	102	95.9	1343	0.18	2.5	479	13442	3.43	106.2	120	1679		19.9	7.951	16.570	9172	6.46		<1	6
W2A	-6.71	3/15/05	1050				3.04	94	71.5	1001	0.14	2.0	477	13400	3.22	99.7	79.1	1108	0.41	19.5	7.949	17.714	9805	6.25		<1	<1
W2A	-6.71	4/19/05	1002				2.98	92	65.6	918	0.16	2.2	469	13183	3.10	96.0	70.5	987		19.7	7.934	18.105	10022	6.23		6	14
W2A	-6.71	5/23/05	1048				2.98	92	70.0	980	0.21	2.9	477	13388	3.14	97.3	70.7	990		19.9	7.887	18.317	10139	6.24		<1	<1
W2A	-6.71	6/13/05	910				3.08	95	68.5	959	0.22	3.1	457	12821	3.16	97.9	72.3	1013		19.8	7.901	18.982	10507	6.16		<1	<1
W2A	-6.71	7/18/05	1020				3.20	99	70.2	983	0.16	2.2	461	12950	3.38	104.7	70.8	992	0.55	19.8	7.878	18.841	10429	6.07		<1	<1
W2A	-6.71	8/9/05	1030				3.24	100	72.6	1016	0.20	2.8	462	12961	3.36	104.1	75.7	1060	0.49	19.7	7.913	18.546	10266	6.49		<1	<1
W2A	-6.71	9/20/05	1018				3.40	105	80.5	1128	0.21	2.9	493	13838	3.56	110.3	82.7	1158	0.63	19.5	7.918	16.883	9345	7.07		<1	<1
W2A	-6.71	10/17/05	1018				3.60	112	82.4	1154	0.12	1.7	494	13885	3.68	114.0	85.8	1202		19.5	7.893	16.624	9202	7.13		<1	<1
W2A	-6.71	11/7/05	947				3.28	102	69.4	973	0.07	1.0	420	11782	3.46	107.2	71.3	998		19.2	7.897	20.552	11376	6.29		<1	<1
W2A	-6.71	12/21/05	916				3.14	97	64.4	902	0.21	2.9	415	11661	3.28	101.6	65.3	914	0.53	18.9	7.903	20.935	11588	6.21		<1	<1
W2A	-6.71	1/23/06	1018				3.10	96	69.9	979	0.20	2.8	456	12807	3.20	99.1	75.9	1063		19.1	7.904	18.739	10373	6.44		<1	<1
W2A	-6.71	2/14/06	1033				3.24	100	72.8	1020	0.19	2.7	489	13745	3.42	105.9	73.3	1026	0.46	18.7	7.921	16.961	9388	6.87		<1	<1
W2A	-6.71	3/20/06	936				3.09	96	70.7	990	0.20	2.8	472	13256	3.17	98.2	72.3	1013	0.43	18.6	7.930	18.053	9993	6.56		<1	<1
W2A	-6.71	4/25/06	1005				2.90	90	69.7	976	0.08	1.1	458	12863	3.06	94.8	62.4	874	0.47	18.9	7.908	17.978	9951	6.19		<1	<1
W2A	-6.71	5/22/06	1035				2.72	84	64.1	898	0.18	2.5	428	12021	3.06	94.8	56.5	791	0.42	19.0	7.884	19.657	10881	6.64		<1	<1
W2A	-6.71	6/26/06	1048				2.94	91	76.8	1076	0.12	1.7	477	13397	3.16	97.9	72.6	1016	0.49	19.9	7.929	17.143	9489	6.97		<1	<1
W2A	-6.71	7/20/06	1053				2.50	77	58.0	812	0.21	2.9	419	11768	2.77	85.8	53.7	752	0.39	19.3	7.892	20.219	11192	6.75		<1	<1
W2A	-6.71	8/7/06	1110				2.65	82	68.0	952	0.20	2.8	440	12358	2.98	92.3	59.7	836	0.40	18.8	7.912	19.313	10690	8.13		<1	<1
W2A	-6.71	9/18/06	1033				2.62	81	66.1	926	0.21	2.9	437	12273	3.03	93.9	61.0	854	0.48	19.0	7.898	19.209	10633	6.45		<1	<1
W2A	-6.71	10/23/06	1010				3.01	93	83.1	1164	0.26	3.6	469	13172	3.15	97.6	77.8	1090	0.55	19.0	7.914	17.582	9732	7.6		1	<1
W2A	-6.71	11/27/06	1021				2.69	83	66.4	930	0.20	2.8	423	11880	2.83	87.7	57.3	802	0.49	19.0	7.915	20.250	11209	6.43		<1	<1
W2A	-6.71	12/11/06	1049				2.79	86	67.7	948	0.14	2.0	429	12049	3.05	94.5	60.4	846	0.47	19.0	7.910	19.686	10897	6.58		<1	<1
W2A	-6.71	1/8/07	1141				2.91	90	74.3	1041	0.28	3.9	442	12414	3.20	99.1	68.9	965	0.41	18.9	7.934	17.927	9923	6.95		<1	<1
W2A	-6.71	2/20/07	1110				3.21	99	87.2	1221	0.37	5.2	475	13341	3.36	104.1	93.1	1305	0.54	19.1	7.932	16.319	9033	7.14		<1	<1
W2A	-6.71	3/5/07	1108				3.16	98	87.5	1226	0.28	3.9	486	13650	3.46	107.2	91.6	1283	0.53	19.0	7.919	16.811	9305	7.07		<1	<1
W2A	-6.71	4/18/07	1107				2.97	92	76.4	1070	0.28	3.9	481	13509	3.06	94.8	67.6	946	0.44	19.5	7.955	17.178	9508	6.7		<1	<1
W2A	-6.71	5/1/07	1056				2.85	88	68.3	957	0.31	4.3	449	12610	2.99	92.6	65.4	915	0.49	19.0	7.935	18.803	10408	6.45		<1	<1
W2A	-6.71	6/18/07	1050				3.07	79	71.9	1006	0.26	23.4	471	11465	3.48		71.9		0.38	19.5	7.983	17.617	9751	7.16		<1	<1
W2A	-6.71	7/26/07	1321	-1.88	0.64	Flood	2.95	91	77.7	1088	0.11	1.6	475	13328	3.11	96.2	75.6	1059		18.5	7.87	20.22	11192	6.44			
W2A	-6.71	8/28/07	1130	-2.23	0.08	Flood	3.15	98	78.6	1101	0.04	0.6	541	15189	3.16	97.8	78.8	1103		18.7	7.85	18.54	10262	6.45			
W2A	-6.71	9/13/07	1134	-2.23	0.15	Low	2.96	92	71.4	1000	1.37	19.2	481	13511	3.08	95.3	76.9	1077		19.6	7.96	18.51	10246	6.36			
W2A	-6.71	10/24/07	1416	-2.06	0.46	Flood	2.56	79	71.8	1006	1.67	23.4	408	11465	2.63	81.5	70.2	984		19.0	7.97	20.17	11165	6.13			
W2A	-6.71	11/26/07	1127	-2.31	0.15	Ebb	2.90	90	84.1	1178	0.05	0.7	508	14279	2.75	85.3	89.3	1251		19.1	7.94	16.92	9366	6.46			
W2A	-6.71	12/20/07	1223	-2.03	0.23	High	2.64	82	77.1	1080	0.61	8.5	372	10453						18.6	8.02	18.86	10439	6.05			

NELHA Water Quality Laboratory

Well 2A Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	1/28/08	1249	-2.23	0.09	Ebb	1.71	53	47.1	660	0.38	5.3	236	6635						19.0	7.79	17.33	9593	6.05			
W2A	-6.71	2/27/08	1046	-2.08	0.12	Ebb	2.83	88	79.4	1111	0.29	4.1	448	12579						18.8	7.79	17.69	9792	6.73			
W2A	-6.71	3/20/08	1118	-2.29	0.00	Low	2.65	82	75.6	1059	0.82	11.5	368	10348						18.8	7.87	18.82	10417	6.31			
W2A	-6.71	4/28/08	1113	-2.19	0.18	High	2.39	74	70.2	983	0.19	2.6	425	11926						18.8	7.86	18.90	10462	5.96			
W2A	-6.71	5/30/08	1210	-1.88	0.49	Flood	2.21	68	61.2	858	0.21	2.9	412	11570						18.9	7.83	20.31	11242	5.74			
W2A	-6.71	6/26/08	951	-1.98	0.37	High	2.39	74	64.7	907	0.29	4	532	14950						19.1	7.87	19.96	11048	6.05	1.31		
W2A	-6.71	7/25/08	1151	-1.85	0.55	High	2.37	73	62.1	870	0.20	2.8	309	8686						18.6	7.65	19.17	10611	6.40			
W2A	-6.71	8/30/08	944		0.03	Low	2.34	73	72.8	1020	0.17	2.4	516	14479						18.8	7.83	17.43	9648	6.80			
W2A	-6.71	9/19/08	942	-1.49	0.52	Ebb	2.32	72	68.5	959	0.79	11.1	299	8410						21.5	7.74	16.90	9355	6.65	4.74		
W2A	-6.71	10/27/08	1239	-2.08	0.27	Flood	2.75	85	84.6	1185	0.29	4.1	481	13505						21.4	7.61	16.19	8962	7.03	2.87		
W2A	-6.71	11/10/08	1021	-2.11	0.24	Flood	4.31	134	83.9	1176	0.09	1.3	448	12590						20.9	7.87	15.45	8552	7.00	2.36		
W2A	-6.71	12/15/08	948	-1.90	0.43	Ebb	2.73	85	88.7	1242	0.01	0.2	449	12597						20.9	8.03	16.31	9028	7.44			
W2A	-6.71	1/23/09	1326	-2.23	0.15	High	2.97	92	96.8	1356	1.13	15.8	456	12803						21.2	7.97	15.30	8469	7.25	0.83		
W2A	-6.71	2/23/09	1450	-2.13	0.24	Flood	2.70	84	90.8	1272	0.32	4.5	472	13261						20.1	7.90	15.13	8375	7.61	0.79		
W2A	-6.71	3/13/09	1440	-2.24	0.24	Flood	2.27	70	56.9	797	0.51	7.1	345	9676						20.0	7.87	15.82	8757	7.38	0.42		
W2A	-6.71	4/20/09	1218	-2.17	0.30	Flood	3.85	119	96.7	1354	3.23	45.2	400	11243						20.8	7.78	14.67	8120	7.75	13.40		
W2A	-6.71	5/21/09	1426	-1.89	0.61	High	2.81	87	76.8	1076	1.90	26.6	464	13032						19.2	7.93	17.78	9842	6.90	0.52		
W2A	-6.71	6/16/09	1100	-2.02	0.40	Flood	3.16	98	27.7	389	0.94	13.2	320	8996						19.2	7.64	17.69	9792	6.76	13.40		
W2A	-6.71	7/13/09	1504	-2.18	0.21	Flood	2.67	83	70.1	982	0.23	3.2	220	6183						19.0	7.94	17.29	9570	7.15	0.28		
W2A	-6.71	8/18/09	1403	-1.68	0.70	Flood	2.75	85	73.9	1036	0.74	10.4	558	15664						19.2	7.81	19.85	10987	6.84	0.21		
W2A	-6.71	9/21/09	1357	-2.25	0.18	Flood	2.67	83	76.6	1073	0.49	6.8	186	5211						19.5	8.36	17.44	9653	7.35	0.28		
W2A	-6.71	10/19/09	1111	-2.34	0.12	Low	1.94	60	63.8	893	0.41	5.7	156	4385						19.7	8.18	16.70	9244	7.10	0.10		
W2A	-6.71	11/16/09	1340	-2.28	0.18	Flood	2.76	85	77.6	1087	0.79	11.1	345	9691						19.6	7.92	17.37	9615	6.98	0.16		
W2A	-6.71	12/7/09	1325	-2.22	0.18	Ebb	3.03	94	96.2	1347	0.61	8.6	464	13028						19.6	7.89	16.43	9094	6.85	0.08		
W2A	-6.71	1/5/10	1049	-2.02	0.30	Ebb	3.13	97	87.5	1225	1.14	16	430	12080						19.9	7.89	16.18	8956	6.86	0.14		
W2A	-6.71	2/1/10	1123	-2.18	0.00	Ebb	3.07	95	97.3	1363	0.79	11	363	10206						19.8	7.97	15.69	8685	6.97	4.83		
W2A	-6.71	3/9/10	1109	-2.26	0.12	Flood	3.58	111	86.5	1211	0.29	4	495	13913						19.2	7.94	15.34	8491	6.96	1.02		
W2A	-6.71	4/6/10	1015	-2.35	0.15	Flood	3.49	108	93.8	1314	0.57	8	500	14031						19.0	7.94	15.59	8629	7.58	0.15		
W2A	-6.71	5/11/10	1036	-2.31	0.09	Flood	2.97	92	79.7	1116	1.21	17	428	12015						19.0	8.00	15.60	8635	7.50	0.16		
W2A	-6.71	6/15/10	1118	-2.42	0.06	Low	3.26	101	92.2	1291	0.57	8	537	15087						19.3	7.96	15.57	8618	7.61	0.16		
W2A	-6.71	7/13/10	1035	-2.32	0.00	Low	2.81	87	86.8	1216	0.43	6	517	14514						19.5	7.94	15.88	8790	7.09	0.38		
W2A	-6.71	8/3/10	1017	-1.87	0.52	Flood	3.07	95	80.7	1130	0.29	4	481	13514						19.1	7.94	17.78	9842	6.94	0.33		
W2A	-6.71	9/14/10	1027	-1.79	0.58	Ebb	2.84	88	81.5	1142	0.61	8.6	489	13745						19.2	7.91	18.27	10113	7.03	0.12		
W2A	-6.71	10/12/10	1045	-1.93	0.55	Ebb	2.81	87	79.2	1109	0.22	3.1	491	13777						19.5	7.94	18.55	10268	7.05	0.12		
W2A	-6.71	11/16/10	1001	-2.00	0.27	Flood	3.03	94	84.8	1188	0.27	3.8	501	14084						19.2	7.89	17.33	9593	7.07	2.50		
W2A	-6.71	12/14/10	1042	-1.97	0.37	High	3.07	95	89.2	1249	0.37	5.2	503	14116						19.2	7.92	16.90	9355	7.26	0.12		
W2A	-6.71	1/4/11	1028	-2.19	0.06	Ebb	3.16	98	87.2	1222	0.66	9.3	490	13771						19.2	7.89	16.75	9272	7.20	0.21		
W2A	-6.71	4/5/11	1100	-2.33	-0.06	Low	3.26	101	91.7	1284	0.17	2.4	485	13608						19.2	7.88	15.70	8690	6.26	0.26		
W2A	-6.71	7/12/11	1025	-2.32	0.18	Flood	3.26	101	86.5	1212	0.16	2.3	503	14121						19.3	7.90	16.38	9067	6.99	0.09		
W2A	-6.71	10/11/11	1044	-2.21	0.12	Low	3.13	97	84.1	1178	0.25	3.5	494	13869						19.6	7.91	16.71	9249	7.39	0.24		
W2A	-6.71	1/10/12	1040	-2.25	0.06	Ebb	2.94	91	77.5	1086	0.37	5.2	472	13248						19.3	7.88	17.56	9720	7.26	0.52		
W2A	-6.71	5/1/12	1054	-2.07	0.34	Flood	3.45	107	84.9	1189	0.19	2.7	496	13940						18.8	7.97	17.83	9869	6.92	0.41		
W2A	-6.71	7/18/12	959	-2.37	0.00	Flood	3.45	107	91.0	1275	0.49	6.9	500	14037						19.4	7.89	16.44	9100	7.50	1.28		
W2A	-6.71	10/16/12	1039	-2.18	0.09	Ebb	3.33	103	90.1	1262	0.31	4.4	538	15102						19.2	7.90	17.10	9465	7.16	0.45		
W2A	-6.71	1/8/13	1105	-2.16	0.15	Flood	3.78	117	87.7	1229	0.54	7.5	532	14954						19.0	7.83	17.09	9460	7.29	1.55		
W2A	-6.71	4/9/13	1045	-2.36	-0.03	Flood	3.68	114	90.8	1272	0.41	5.7	508	14264						19.1	7.96	16.20	8967	7.59	0.51		

NELHA Water Quality Laboratory

Well 2A Data Table

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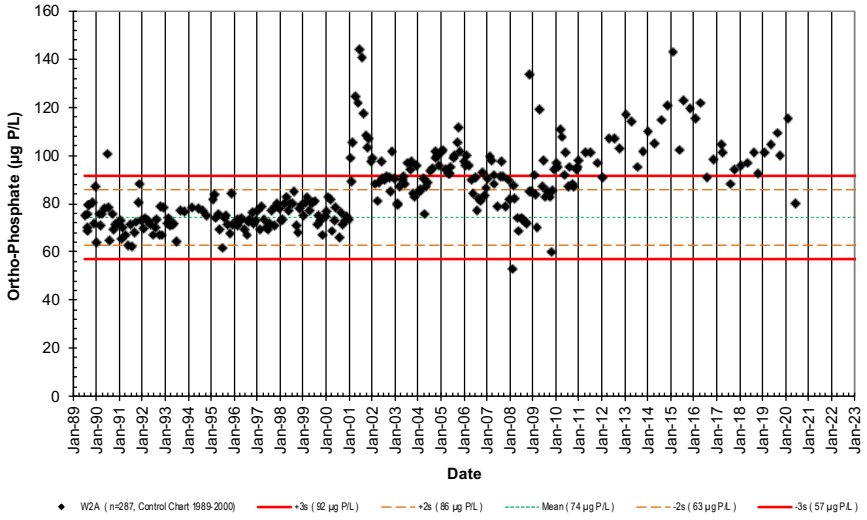
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2A	-6.71	7/17/13	1131	-1.94	0.58	Flood	3.07	95	80.0	1121	0.42	5.9	433	12159						19.2	7.90	18.97	10500	6.66	0.05		
W2A	-6.71	10/15/13	1026	-2.07	0.30	Flood	3.29	102	85.2	1193	0.37	5.2	447	12556						19.3	7.89	18.86	10439	7.29	0.08		
W2A	-6.71	1/15/14	1007	-2.23	0.06	Ebb	3.55	110	87.5	1225	0.47	6.6	458	12873						19.4	7.93	17.05	9438	7.00	0.34		
W2A	-6.71	4/29/14	1124	-2.41	0.00	Flood	3.39	105	93.5	1309	0.70	9.8	462	12974						19.4	7.86	16.43	9094	7.69	2.42		
W2A	-6.71	7/29/14	1054	-2.26	0.12	Low	3.71	115	106.7	1495	0.79	11	481	13513						19.7	7.84	16.86	9332	7.10	0.97		
W2A	-6.71	11/5/14	1101	-2.11	0.15	Flood	3.91	121	90.2	1263	0.64	9	449	12617						19.7	7.82	17.75	9825	7.44	1.01		
W2A	-6.71	2/10/15	1052	-2.06	0.80	High	4.62	143.2	130.5	1828	0.80	11.2	598	16804						20.0	7.94	17.18	9510	7.18	2.64		
W2A	-6.71	5/19/15	1523	-1.96	1.60	Flood	3.30	102.3	80.5	1127	0.31	4.3	389	10938						19.4	7.88	19.81	10965	7.00	0.24		
W2A	-6.71	7/21/15	1155	-2.16	0.50	Low	3.97	123	101.8	1425	0.21	3	455	12790						20.2	7.90	17.08	9454	7.15	0.28		
W2A	-6.71	11/9/15	1001	-2.07	0.20	Flood	3.87	119.8	86.9	1217	0.01	0.1	492	13827						19.9	7.85	16.48	9122	7.78	0.07		
W2A	-6.71	1/26/16	1447	-2.25	0.25	Flood	3.73	115.4	98.1	1375	0.01	0.1	452	12691						19.3	7.85	17.02	9421	7.09	0.25		
W2A	-6.71	4/22/16	1054	-2.25	-0.05	Low	3.94	122.1	84.4	1183	0.37	5.2	451	12666						19.7	7.76	15.87	8784	7.54	0.03		
W2A	-6.71	7/20/16	1541	-1.90	0.45	Flood	2.93	90.7	66.7	935	0.32	4.5	332	9311						19.5	7.81	20.66	11436	6.55	0.11		
W2A	-6.71	11/7/16	1146	-1.81	0.45	Ebb	3.17	98.3	69.4	972	0.00	0	361	10143						19.8	7.90	18.97	10500	7.75	0.04		
W2A	-6.71	3/21/17	1430	-2.04	0.13	Ebb	3.38	104.6	78.3	1097	0.27	3.8	461	12959						19.3	7.79	17.11	9471	7.22	0.06		
W2A	-6.71	4/13/17	1039	-2.24	0.07	Low	3.26	101	82.7	1158	0.24	3.3	497	13954						19.4	7.86	16.67	9227	6.01	0.06		
W2A	-6.71	8/4/17	1027	-2.03	0.25	Flood	2.85	88.3	64.3	901	0.12	1.7	440	12346						19.3	7.83	18.15	10046	7.50	0.08		
W2A	-6.71	10/18/17	1626	-1.75	0.50	Ebb	3.03	93.9	70.9	994	0.28	3.9	401	11251						19.4	7.87	19.23	10644	6.96	0.04		
W2A	-6.71	1/17/18	1123	-2.19	0.11	Low	3.09	95.6	80.3	1125	0.17	2.4	462	12964						19.4	7.85	16.73	9260	6.29	0.04		
W2A	-6.71	5/9/18	1020	-2.15	0.25	Flood	3.13	96.9	82.6	1157	0.09	1.2	444	12463						19.2	7.84	17.41	9637	7.45	0.03		
W2A	-6.71	8/20/18	952	-2.01	0.37	Flood	3.27	101.3	79.3	1111	0.01	0.1	453	12722						20.6	7.82	18.19	10069	6.97	0.21		
W2A	-6.71	10/24/18	940	-2.10	0.10	Low	2.99	92.6	78.0	1092	0.04	0.6	445	12498						20.2	7.83	17.49	9681	6.13	0.06		
W2A	-6.71	2/7/19	934	-2.06	0.30	Ebb	3.26	101.1	101.8	1426	0.01	0.1	431	12106						19.5	7.67	17.38	9620	7.47	0.12		
W2A	-6.71	5/15/19	1139	-2.16	0.40	Flood	3.37	104.5	79.3	1111	0.01	0.2	423	11892						19.3	7.67	17.15	9493	7.40	0.07		
W2A	-6.71	8/28/19	929	-2.22	0.05	Flood	3.54	109.6	76.0	1064	0.23	3.2	446	12534						19.5	7.92	17.04	9432	7.43	0.09		
W2A	-6.71	10/10/19	1517	-1.71	0.55	High	3.24	100.4	53.8	753	0.42	5.9	404	11340						19.5	7.89	19.17	10611	7.59	0.13		
W2A	-6.71	1/31/20	1432	-2.22	0.07	Low	3.72	115.1	93.2	1306	-0.69	-9.7	474	13318						19.4	7.93	17.80	9853	7.33	0.06		
W2A	-6.71	6/2/20	1417	-1.65	0.59	High	2.58	79.8	65.9	923	0.03	0.4	403	11328						19.7	7.88	19.93	11032	6.57	0.06		
W2A	-6.71	7/1/20																									
W2A	-6.71	10/1/20																									
W2A	-6.71	1/1/21																									
W2A	-6.71	4/1/21																									
W2A	-6.71	7/1/21																									
W2A	-6.71	10/1/21																									
W2A	-6.71	1/1/22																									
W2A	-6.71	4/1/22																									
W2A	-6.71	7/1/22																									
W2A	-6.71	10/1/22																									
W2A	-6.71	1/1/23																									
W2A	-6.71	4/1/23																									
Mean				-2.11	0.27		2.78	86	67	934	0.26	3.7	486	13646	2.80	86.5	65.2	913	0.51	19.6	7.90	17.05	9436	6.33	1.01		
Std. Dev.				0.19	0.25		0.50	15	15	210	0.38	5.4	63	1785	0.44	13.5	13.2	185	0.16	0.5	0.08	1.41	782	0.68	2.43		
Maximum				-1.49	1.60		4.65	144	131	1828	3.60	50.4	746	20952	4.72	146.2	119.9	1679	1.85	21.5	8.36	20.94	11588	8.13	13.40		
Minimum				-2.42	-0.06		1.71	53	28	389	-0.69	-9.7	156	4385	2.15	66.6	26.2	367	0.32	17.6	7.61	13.16	7282	4.89	0.03		
n				79	80		287	287	287	287	285	287	280	280	206	205	206	205	176	287	286	286	286	285	66		

NELHA Water Quality Laboratory

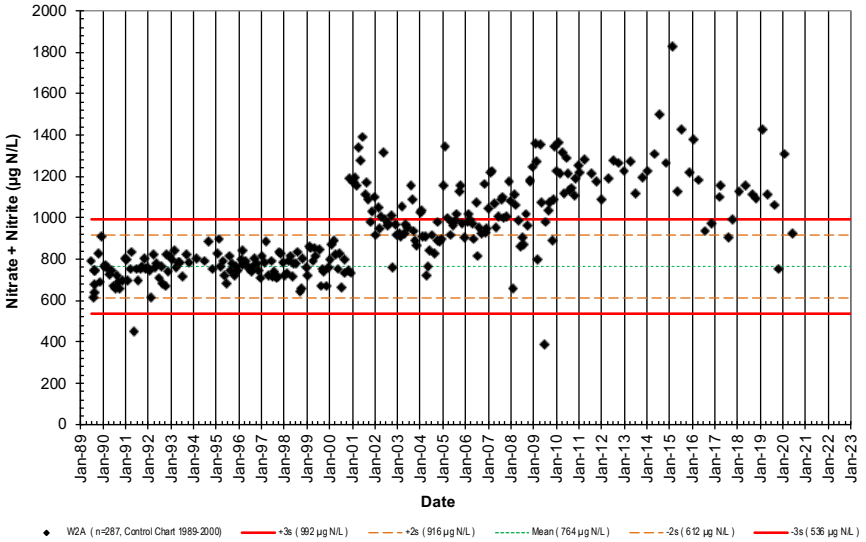
Well 2A Charts

6/28/1989 - 7/16/20

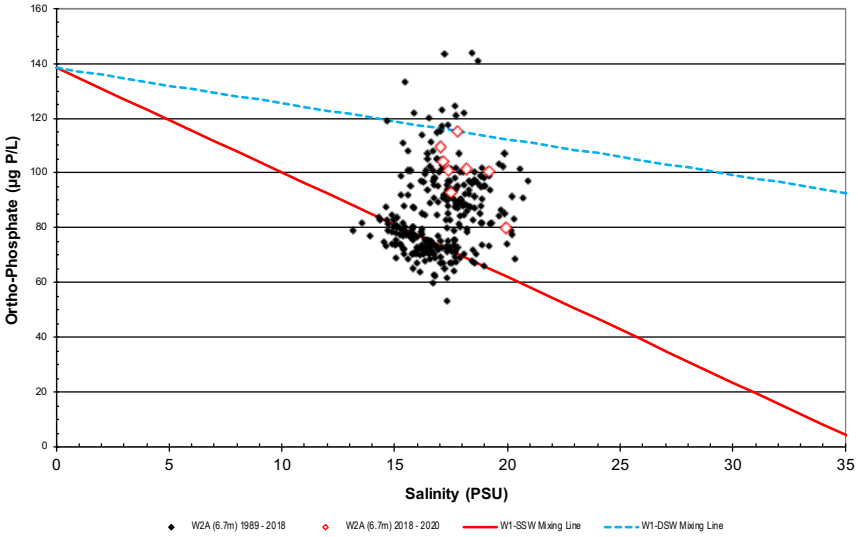
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Ortho-Phosphate (µg P/L)



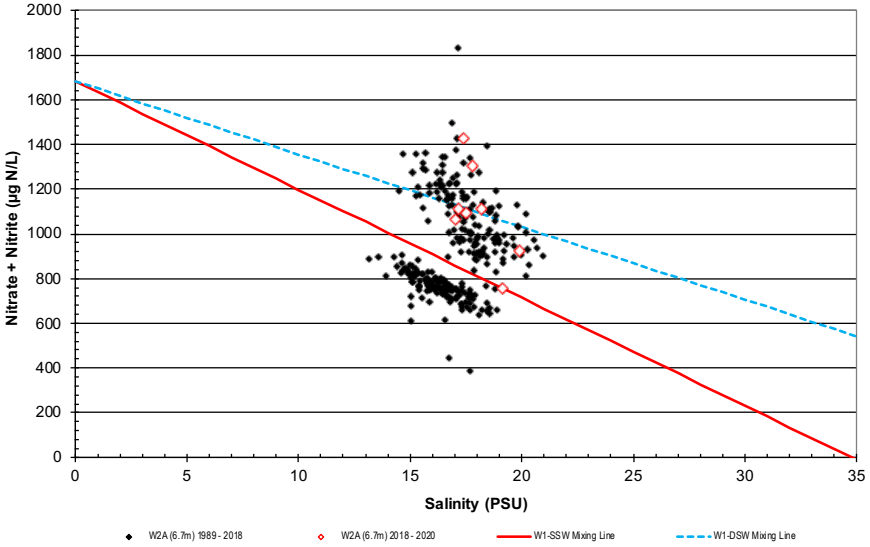
Well #2A
Nitrate + Nitrite (µg N/L)



Well #2A Conservative Mixing Model
Ortho-Phosphate (µg P/L)



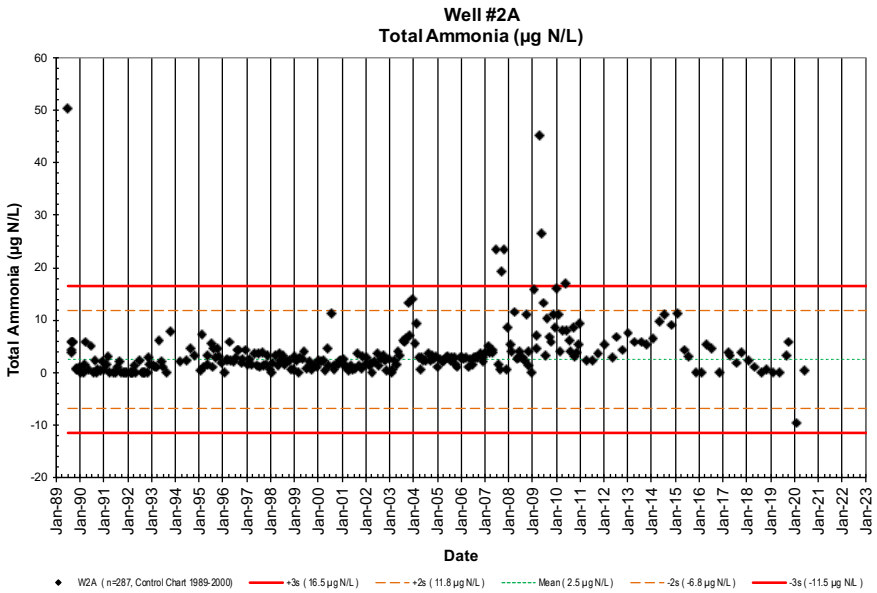
Well #2A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)

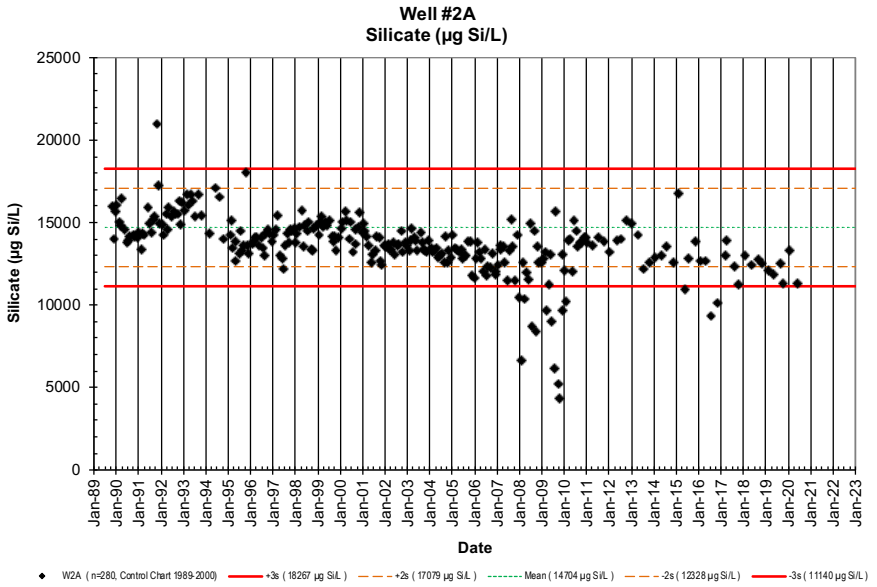


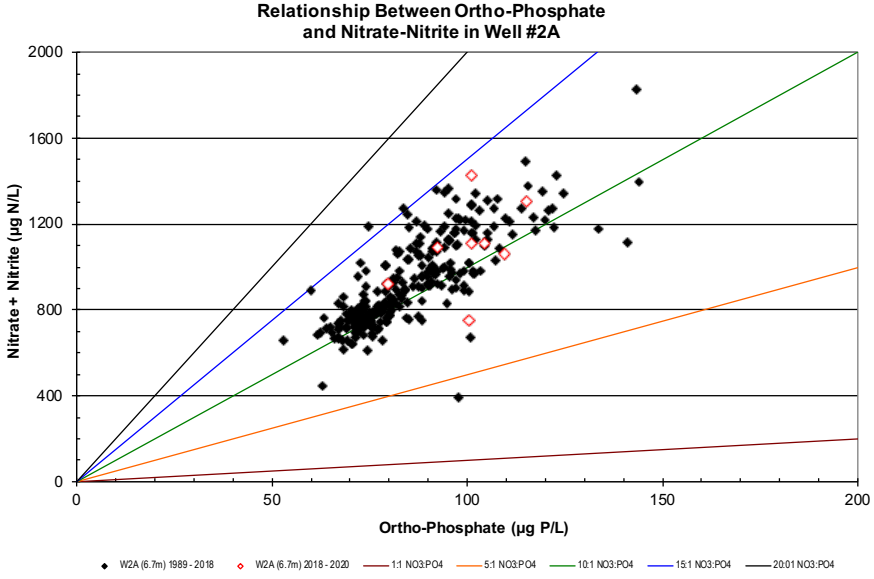
NELHA Water Quality Laboratory

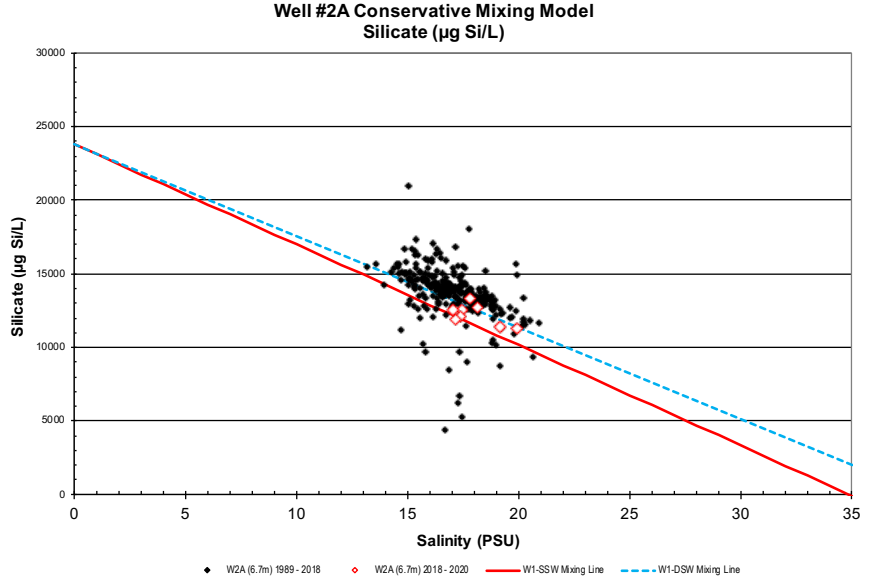
Well 2A Charts

6/28/1989 - 7/16/20







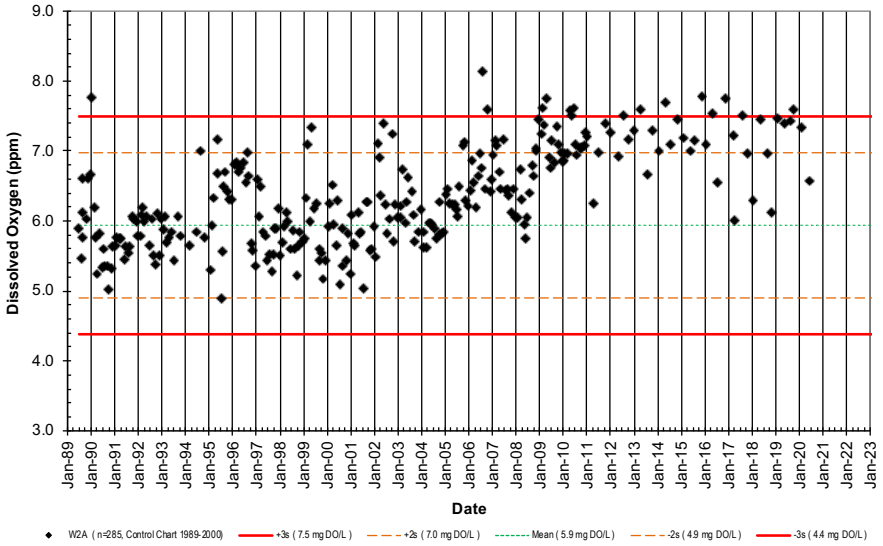


NELHA Water Quality Laboratory

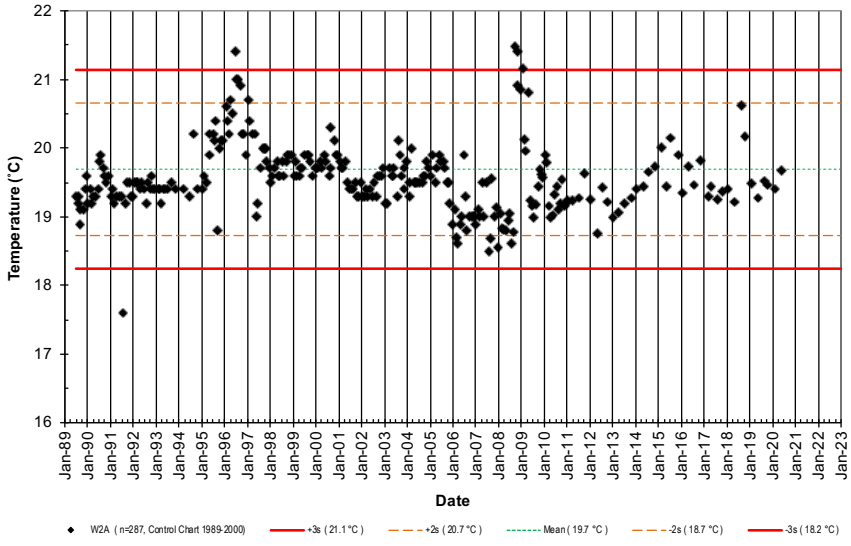
Well 2A Charts

6/28/1989 - 7/16/20

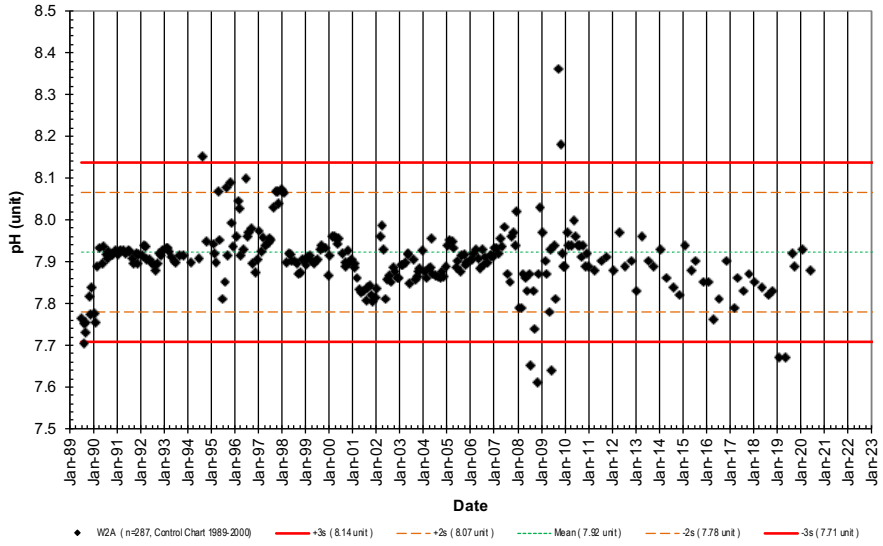
Well #2A
Dissolved Oxygen (mg DO/L)



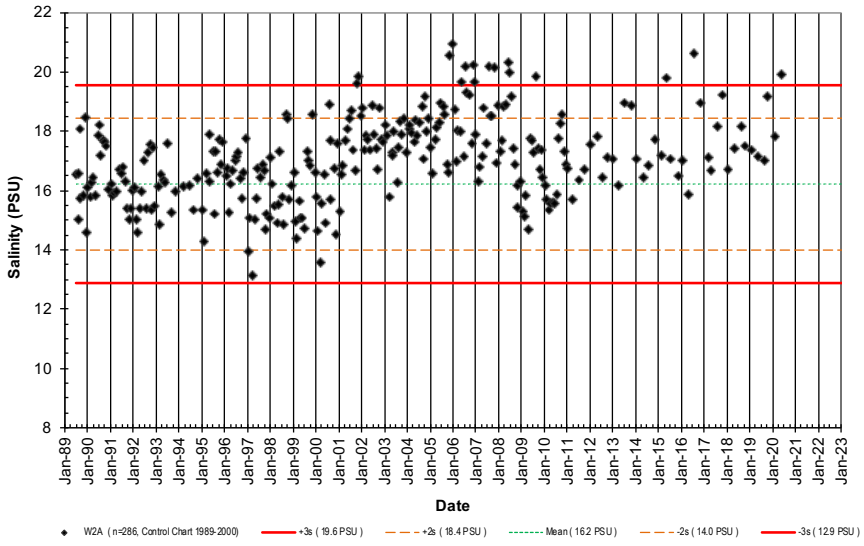
Well #2A
Temperature (˚C)



Well #2A
pH (unit)



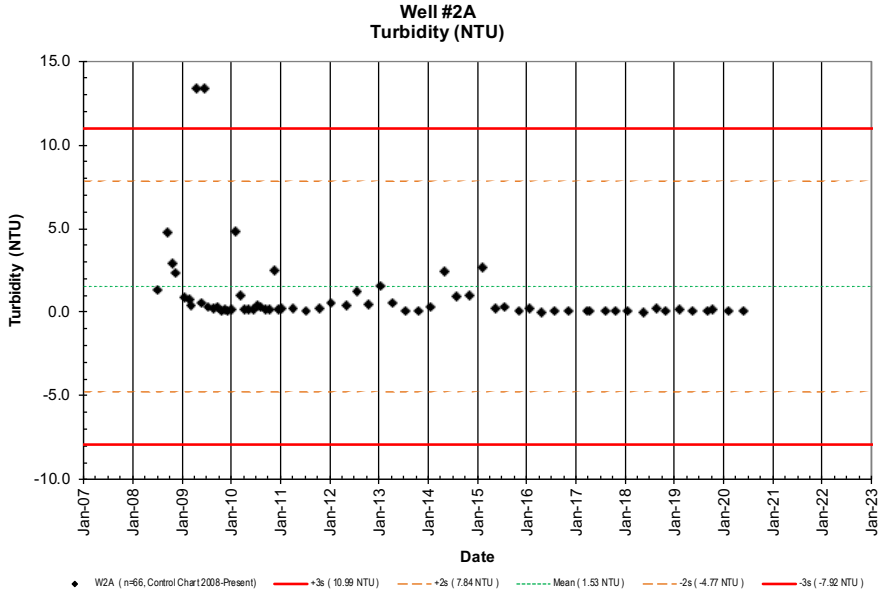
Well #2A
Salinity (PSU)

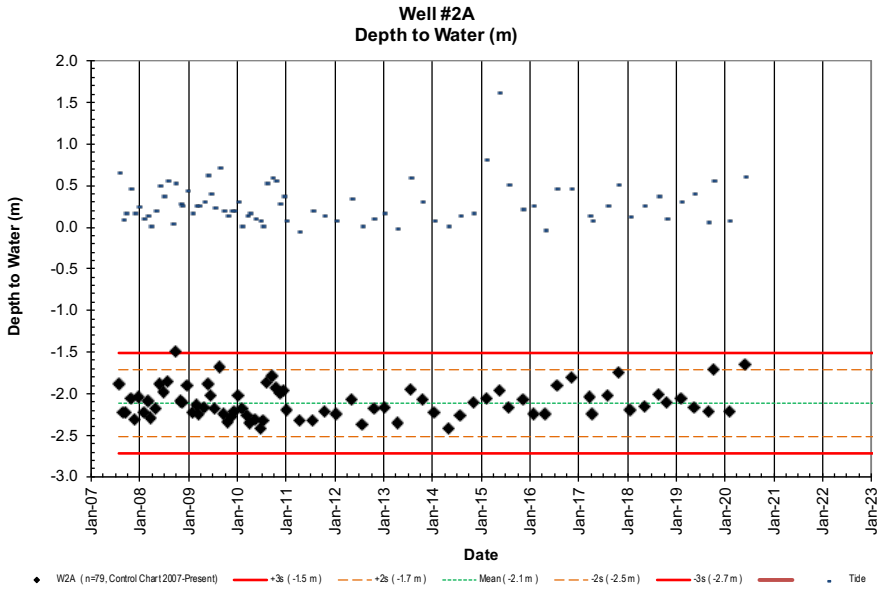


NELHA Water Quality Laboratory

Well 2A Charts

6/28/1989 - 7/16/20





NELHA Water Quality Laboratory

Well 2B Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	6/28/89				3.65	113	86.4	1210	0.06	0.8								20.3	7.928	7.182	3975	8.36		NA	NA
W2B	-3.96	8/11/89	1114			2.62	81	50.6	709	0.10	1.4								20.4	7.872	7.346	4066	8.27		<1	NA
W2B	-3.96	8/16/89	1020			3.55	110	67.5	945	0.10	1.4								20.4	7.779	7.326	4055	8.62		<1	NA
W2B	-3.96	8/23/89	1015			3.23	100	55.2	773	0.10	1.4								19.7	7.840	7.724	4275	8.25		2	NA
W2B	-3.96	8/30/89	1055			3.31	103	58.5	819	0.10	1.4								20.3	7.890	7.355	4071	8.19		<1	NA
W2B	-3.96	8/30/89	1055			3.31	103	65.7	920	0.15	2.1														NA	NA
W2B	-3.96	10/31/89	1010			3.60	112	81.8	1146	0.03	0.4	711	19969	3.78	117	92.6	1297	0.54	20.0	7.909	7.667	4244	8.05		<1	NA
W2B	-3.96	11/16/89	838			3.55	110	84.5	1184	0.06	0.8	674	18930	3.86	120	89.1	1248	1.01	20.4	7.419	8.821	4883	8.39		57	NA
W2B	-3.96	12/13/89	1105			3.58	111	83.7	1172	0.00	0.0	684	19210	3.81	118	86.7	1214	1.10	20.1	7.921	8.485	4697	8.87		223	NA
W2B	-3.96	1/11/90	859			3.06	95	70.7	990	0.00	0.0	730	20502	3.28	102	74.8	1048	1.26	20.1	7.973	7.282	4031	8.06		<1	NA
W2B	-3.96	2/14/90	1035			3.44	107	71.4	1000	0.00	0.0	734	20615	2.89	90	74.4	1042	1.02	20.5	7.861	7.282	4031	8.49		5	NA
W2B	-3.96	3/6/90	1408			3.02	94	76.7	1074	0.03	0.4	653		3.27	101	78.3	1097	1.13	20.2	7.985	6.354	3517	8.19		1	NA
W2B	-3.96	4/4/90	1155			3.35	104	81.3	1139	0.36	5.0	698	19604	3.39	105	83.1	1164	1.21	20.3	8.054	6.889	3813	7.69		<1	NA
W2B	-3.96	5/17/90	1449			3.31	103	81.7	1144	0.00	0.0	651	18284	3.40	105	87.5	1226	0.89	20.6	7.985	7.417	4106	8.00		<1	NA
W2B	-3.96	6/16/90	1356			2.46	76	78.9	1105	0.62	8.7	652	18312	2.56	79	50.9	713	0.85	20.5	8.028	7.754	4292	7.95		<1	NA
W2B	-3.96	7/17/90	1433			3.77	117	78.0	1093	0.03	0.4	658	18480	3.97	123	83.1	1164	0.81	20.5	8.020	7.978	4416	7.99		22	NA
W2B	-3.96	8/8/90	1418			3.22	100	81.3	1139	0.15	2.1	663	18621	3.62	112	82.5	1156	0.93	20.7	8.014	7.616	4216	7.98		7	NA
W2B	-3.96	9/5/90	1454			3.41	106	80.6	1129	0.00	0.0			3.41	106	81.4	1141	0.39	20.7	8.024	7.828	4333	7.98		59	NA
W2B	-3.96	10/4/90	1400			3.42	106	78.0	1092	0.00	0.0	664	18649	3.95	122	78.1	1094	1.42	20.7	7.999	7.613	4214	8.70		<1	NA
W2B	-3.96	11/1/90	1414			3.36	104	80.1	1121	0.08	1.1	791	22204	3.52	109	82.4	1154	0.57	20.7	7.990	7.682	4252	7.93		<1	NA
W2B	-3.96	12/10/90	1443			3.30	102	81.8	1146	0.14	2.0	652	18312	3.71	115	86.5	1212	0.46	20.5	7.978	7.422	4108	7.89		<1	NA
W2B	-3.96	1/9/91	1035			3.41	106	81.9	1147	0.12	1.7	647	18171	3.41	106	86.7	1214	0.69	20.5	8.026	7.047	3901	8.13		<1	NA
W2B	-3.96	2/6/91	1031			3.15	98	65.5	918	0.07	1.0	586	16458	3.24	100	67.6	947	0.79	20.6	8.006	6.493	3594	8.23		<1	NA
W2B	-3.96	3/6/91	1049			3.20	99	80.8	1132	0.18	2.5	650	18256	3.35	104	82.3	1153	0.68	20.3	8.014	6.952	3848	8.24		<1	NA
W2B	-3.96	4/3/91	1035			3.05	94	65.9	923	0.00	0.0	645	18115	3.20	99	100	1401	0.69	20.2	7.998	7.372	4081	8.15		<1	NA
W2B	-3.96	5/22/91	1100			3.01	93	39.7	556	0.00	0.0	748	21008	3.25	101	41.0	574	0.65	20.6	8.015	7.253	4015	8.08		<1	NA
W2B	-3.96	6/26/91	1128			3.08	95	84.3	1181	0.00	0.0	665	18677	3.18	98	87.9	1231	0.52	20.5	8.009	7.553	4181	8.26		<1	<1
W2B	-3.96	7/24/91	1124			2.59	80	61.1	856	0.00	0.0	651	18284	2.95	91	62.7	878	0.50		8.020	7.427	4111	8.29		<1	<1
W2B	-3.96	8/23/91	1027			3.19	99	88.3	1237	0.00	0.0	681	19126	3.22	100	91.7	1284	0.61	20.6	7.983	7.250	4013	8.40		<1	<1
W2B	-3.96	9/24/91	1026			3.17	98	77.3	1083	0.00	0.0	655	18396	3.17	98	82.8	1160	0.66	20.6	7.950	8.078	4471	8.21		<1	<1
W2B	-3.96	10/23/91	1038			2.98	92	79.6	1115	0.00	0.0	922	25895	3.00	93	82.0	1149	0.61	20.6	7.989	7.730	4279	8.21		2	<1
W2B	-3.96	11/20/91	1023			3.73	116	76.7	1074	0.00	0.0	768	21570	3.87	120	80.2	1123	0.49	20.4	7.970	7.517	4161	8.07		<1	<1
W2B	-3.96	12/11/91	1031			3.23	100	81.3	1139	0.00	0.0	659	18508	3.30	102	86.3	1209	0.66	20.4	7.981	7.639	4228	7.98		<1	<1
W2B	-3.96	1/29/92	1025			3.56	110	80.6	1129	0.00	0.0	656	18424	3.63	112	82.8	1160	1.10	20.3	7.994	7.526	4166	8.39		<1	<1
W2B	-3.96	2/19/92	1046			3.15	98	75.7	1060	0.00	0.0	611	17160	3.23	100	83.4	1168	0.66	20.4	7.990	8.198	4538	8.12		1	5
W2B	-3.96	3/17/92	1000			3.12	97	80.2	1123	0.00	0.0	662	18593	3.20	99	84.3	1181	0.86	20.4	8.006	7.543	4175	8.36		<1	<1
W2B	-3.96	4/8/92	954			3.24	100	79.7	1116	0.00	0.0	645	18115	3.31	103	82.9	1161	0.58	20.4	7.988	7.755	4293	8.42		<1	<1
W2B	-3.96	5/6/92	1035			3.25	101	79.3	1111	0.00	0.0	701	19688	3.30	102	85.1	1192	0.94	20.6	7.977	7.745	4287	8.50		<1	<1
W2B	-3.96	6/23/92	1009			3.25	101	80.5	1128	0.07	1.0	711	19969	3.52	109	82.0	1149	0.72	20.5	7.987	7.639	4228	8.47		3	<1
W2B	-3.96	7/29/92	945			3.10	96	77.1	1079	ND	0.0	692	19435	3.15	98	80.0	1120	0.86	20.6	7.938	7.819	4328	8.38		<1	<1
W2B	-3.96	8/25/92	950			3.45	107	75.9	1063	0.00	0.0	706	19828	3.45	107	85.0	1190	0.56	20.6	7.969	7.974	4414	8.17		<1	<1
W2B	-3.96	9/22/92	1031			3.29	102	85.8	1202	0.00	0.0	711	19969	3.35	104	93.5	1310	0.60	20.6	7.992	7.827	4332	8.19		1	<1
W2B	-3.96	10/27/92	1017			3.39	105	81.4	1140	0.00	0.0	697	19576	3.43	106	84.7	1186	0.71	20.7	7.933	8.395	4647	8.22		10	7
W2B	-3.96	11/17/92	1018			3.29	102	86.6	1213	0.72	10.1	695	19519	3.73	116	91.4	1280	0.81	20.4	8.007	7.757	4294	8.32		0	0
W2B	-3.96	12/8/92	942			2.74	85	83.6	1171	0.15	2.1	700	19660	3.35	104	86.6	1213	1.08	19.8	7.982	8.006	4432	8.25		76	4

NELHA Water Quality Laboratory

Well 2B Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	1/26/93	1000			3.21	99	84.7	1187	0.12	1.7	688	19309	3.33	103	89.9	1259	0.65	20.3	7.969	8.197	4537	8.23		<1	<1
W2B	-3.96	2/23/93	948			3.18	98	84.7	1186	0.00	0.0	708	19885	3.20	99	99.6	1396	0.55	20.3	7.999	7.932	4391	8.30		<1	<1
W2B	-3.96	3/16/93	939			3.29	102	84.5	1183	0.11	1.5	707	19862	3.44	107	89.0	1247	0.66	20.0	8.008	7.960	4406	8.34		<1	<1
W2B	-3.96	4/27/93	938			3.30	102	88.1	1235	0.05	0.7	719	20185	3.40	105	91.9	1287	0.59	20.3	8.000	7.744	4287	8.34		1	<1
W2B	-3.96	5/25/93	930			3.26	101	86.3	1209	0.00	0.0	710	19935	3.26	101	94.3	1321	0.47	20.4	7.985	8.030	4445	8.32		<1	<1
W2B	-3.96	6/28/93	958			3.24	100	86.4	1210	0.00	0.0	707	19856	3.29	102	91.0	1275	0.64	20.5	8.000	7.865	4353	8.30		<1	1
W2B	-3.96	8/31/93	900			3.36	104	86.6	1213	0.00	0.0	713	20025	3.36	104	105	1467	0.63	20.5	7.988	7.859	4350	8.39		<1	<1
W2B	-3.96	10/26/93	845			3.41	106	88.7	1242	0.27	3.8	671	18845	3.41	106	90.5	1268	1.01	20.5	8.012	7.614	4215	8.23		12	6
W2B	-3.96	3/1/94	827			3.50	108	88.0	1233	0.13	1.8	642	18031	3.50	108	113	1579	0.64	20.2	7.958	8.291	4589	7.84		<1	2
W2B	-3.96	6/21/94	923			3.38	105	86.1	1207	0.03	0.4	654	18372	3.38	105	104	1458	0.54	20.4	7.989	8.092	4479	8.35		5	1
W2B	-3.96	8/23/94	953			3.38	105	87.8	1229	0.19	2.7	772	21690	3.38	105	96.5	1351	0.89	20.6	8.051	8.496	4703	8.22		5	1
W2B	-3.96	10/25/94	1011			3.41	106	83.0	1163	0.26	3.6	645	18101	3.41	106	86.8	1216	0.36	20.4	8.030	8.162	4518	8.18		1	12
W2B	-3.96	1/24/95	1009			3.46	107	84.8	1188	0.14	2.0	636	17862	3.47	107	89.2	1249	0.52	20.1	8.052	8.351	4622	8.02		1	1
W2B	-3.96	2/14/95	946			3.41	106	87.0	1218	0.38	5.3	642	18039	3.41	106	88.4	1237	0.56	20.2	8.035	8.305	4597	8.16		<1	<1
W2B	-3.96	3/14/95	1036			3.46	107	86.0	1205	0.04	0.6	640	17975	3.47	107	87.4	1224	0.51	20.4	8.013	8.003	4430	8.30		<1	<1
W2B	-3.96	4/26/95	1025			3.41	106	87.4	1224	0.08	1.1	638	17919	3.47	107	96.6	1354	0.79	20.5	8.000	7.879	4361	8.16		<1	3
W2B	-3.96	5/8/95	1029			3.42	106	85.8	1201	0.14	2.0	629	17671	3.42	106	91.6	1283	0.49	20.5	7.972	8.179	4527	8.10		<1	<1
W2B	-3.96	6/27/95	1004			3.44	107	86.3	1209	0.27	3.8	647	18180	3.54	110	88.6	1242	0.53	20.6	8.015	7.994	4425	8.27		<1	<1
W2B	-3.96	7/25/95	1018			3.34	103	86.6	1213	0.09	1.3	641	18000	3.39	105	89.3	1251	0.60	20.5	7.981	8.422	4662	7.80		<1	1
W2B	-3.96	8/22/95	1107			3.41	106	84.6	1185	0.27	3.8	649	18213	3.51	109	88.0	1233	0.46	21.8	7.971	8.024	4441	7.86		<1	1
W2B	-3.96	9/11/95	1030			3.29	102	83.8	1173	0.12	1.7	641	18000	3.29	102	87.3	1223	0.44	20.2	8.000	8.475	4691	7.98		109	1
W2B	-3.96	10/16/95	1055			3.30	102	82.7	1158	0.31	4.3	625	17548	3.33	103	83.1	1164	0.70	20.9	8.067	9.400	5203	7.66		2	1
W2B	-3.96	11/6/95	1059			3.28	102	83.5	1170	0.16	2.2	661	18576	3.37	104	87.7	1229	0.61	20.6	8.034	8.619	4771	7.86		5	2
W2B	-3.96	12/4/95	1046			3.28	102	82.3	1153	0.05	0.7	627	17618	3.30	102	84.7	1186	0.66	20.5	7.996	9.273	5133	9.42		1	3
W2B	-3.96	1/29/96	1158			3.34	103	84.1	1178	0.02	0.3	644	18081	3.41	106	92.4	1295	0.58	21.2	8.019	8.153	4513	8.04		1	1
W2B	-3.96	2/26/96	1156			3.34	103	83.7	1172	0.14	2.0	633	17791	3.37	104	103	1448	0.68	20.8	7.997	8.154	4513	8.12		2	1
W2B	-3.96	3/5/96	1053			3.20	99	88.3	1237	0.14	2.0	624	17516	3.25	101	92.7	1298	0.93	20.8	8.047	7.990	4423	8.17		6	3
W2B	-3.96	4/1/96	1126			3.30	102	84.3	1181	0.29	4.1	629	17659	3.34	103	87.9	1231	0.69	21.1	7.977	8.203	4541	8.07		<1	<1
W2B	-3.96	5/8/96	1138			3.42	106	82.7	1159	0.05	0.7	637	17896	3.45	107	86.4	1210	0.48	21.0	7.966	8.416	4658	8.04		<1	<1
W2B	-3.96	6/17/96	1054			3.38	105	84.7	1187	0.17	2.4	676	18981	3.45	107	87.9	1231	0.66	20.7	8.016	8.183	4530	8.14		<1	1
W2B	-3.96	7/16/96	1101			3.29	102	83.7	1173	0.18	2.5	659	18516	3.47	107	87.0	1218	0.60	21.4	8.001	8.355	4625	7.97		13	2
W2B	-3.96	8/5/96	1143			3.31	103	82.7	1158	0.23	3.2	616	17292	3.32	103	85.9	1203	0.45	21.4	7.989	9.404	5205	7.75		<1	1
W2B	-3.96	9/3/96	1105			3.29	102	83.0	1162	0.20	2.8	648	18197	3.36	104	86.2	1208	0.62	21.3	7.991	8.926	4941	7.87		5	4
W2B	-3.96	10/8/96	1113			3.41	106	85.9	1203	0.10	1.4	632	17751	3.60	112	93.3	1307	0.61	21.2	7.983	7.894	4370	8.13		<1	<1
W2B	-3.96	11/4/96	1130			3.38	105	87.3	1223	0.20	2.8	662	18579	3.40	105	91.1	1276	0.73	21.2	7.974	7.915	4381	8.14		<1	1
W2B	-3.96	12/16/96	1105			3.26	101	86.8	1216	0.29	4.1	638	17911	3.31	103	89.6	1254	0.80	21.0	7.985	8.487	4698	8.03		3	2
W2B	-3.96	1/13/97	1146			3.15	98	77	1084	0.02	0.3	609	17101	3.20	99	82.0	1149	0.74	21.2	7.972	7.433	4114	8.19		1	1
W2B	-3.96	2/11/97	1153			3.05	94	81	1130	0.12	1.7	623	17497	3.10	96	83.4	1168	0.72	21.3	7.979	7.141	3953	8.23		<1	<1
W2B	-3.96	3/11/97	1123			3.17	98	84	1172	0.04	0.6	629	17669	3.24	100	85.6	1199	0.61	21.0	8.011	7.375	4082	8.27		<1	<1
W2B	-3.96	4/22/97	1134			3.14	97	87	1217	0.13	1.8	535	15037	3.31	103	88.4	1238	0.65	21.3	8.014	7.588	4200	7.86		<1	<1
W2B	-3.96	5/27/97	1039			3.33	103	88	1230	0.02	0.3	528	14821	3.55	110	94.8	1328	0.52	20.4	8.014	7.371	4080	9.84		<1	1
W2B	-3.96	6/16/97	1100			3.31	103	83	1169	0.24	3.4	516	14495	3.36	104	91.5	1282	0.65	20.3	8.036	7.500	4151	8.15		<1	2

NELHA Water Quality Laboratory

Well 2B Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	7/16/97	1012			3.36	104	85	1185	0.12	1.7	636	17874	3.48	108	93.4	1308	0.48	20.7	8.016	7.465	4132	8.09		<1	<1
W2B	-3.96	8/25/97	1108			3.43	106	81	1141	0.21	2.9	674	18924	3.45	107	82.8	1160	0.50	21.3	8.095	7.731	4279	9.28		<1	6
W2B	-3.96	9/22/97	1025			3.21	99	79	1108	0.08	1.1	643	18051	3.23	100	80.9	1133	0.52	21.2	8.121	8.153	4513	7.94		<1	1
W2B	-3.96	10/15/97	1024			3.32	103	89	1247	0.07	1.0	634	17815	3.69	114	100	1402	0.58	21.0	8.105	7.492	4147	8.00		1	<1
W2B	-3.96	11/3/97	1012			3.44	107	85.7	1200	0.07	1.0	624	17531	3.60	112	98.2	1375	0.51	20.9	8.083	8.097	4482	8.01		<1	1
W2B	-3.96	12/15/97	1029			3.27	101	75.5	1058	0.06	0.8	266	7457	3.41	106	79.7	1116	0.60	20.2	8.116	8.521	4717	8.06		15	1
W2B	-3.96	1/6/98	947			3.43	106	85.8	1202	0.14	2.0	635	17829	3.71	115	89.5	1254	0.65	20.3	8.128	7.858	4350	7.94		1	12
W2B	-3.96	2/2/98	1043			3.34	103	81.2	1137	0.05	0.7	640	17983	3.48	108	85.3	1195	0.61	20.7	8.113	8.032	4446	8.15		<1	1
W2B	-3.96	3/9/98	1042			3.49	108	83.0	1163	0.12	1.7	637	17885	3.59	111	84.7	1186	0.59	20.6	7.985	8.109	4489	8.18		<1	<1
W2B	-3.96	4/13/98	1012			3.55	110	84	1173	0.04	0.6	645	18107	3.60	112	87.3	1223	0.60	20.6	8.006	7.946	4398	8.33		<1	<1
W2B	-3.96	5/11/98	1109			3.62	112	82	1154	0.11	1.5	600	16851	3.79	117	85.9	1203	0.57	20.6	7.993	8.446	4675	8.26		<1	<1
W2B	-3.96	6/1/98	1057			3.45	107	83.0	1163	0.12	1.7	640	17972	3.51	109	87.8	1229	0.49	20.5	7.995	8.787	4864	8.12		<1	<1
W2B	-3.96	7/13/98	1057			3.55	110	83	1163	0.01	0.1	646	18146	3.73	116	87	1214	0.49	20.8	7.995	8.219	4549	8.11		2	1
W2B	-3.96	8/10/98	1112			3.69	114	85.4	1196	0.09	1.3	643	18059	3.78	117	90.4	1266	0.59	20.7	7.973	8.296	4592	8.25		<1	2
W2B	-3.96	9/14/98	1115			3.54	110	80.3	1124	0.16	2.2	647	18183	3.66	113	83	1162	0.61	20.7	7.979	8.450	4677	8.07		4	3
W2B	-3.96	10/12/98	1006			3.48	108	84.7	1186	0.08	1.1	648	18208	3.68	114	87	1212	0.55	21.3	7.981	8.183	4530	8.76		<1	<1
W2B	-3.96	11/2/98	1032			3.50	108	86.5	1212	0.04	0.6	652	18323	3.63	112	90.1	1262	0.72	21.2	7.992	8.109	4489	8.13		1	<1
W2B	-3.96	12/15/98	1016			3.52	109	83.5	1170	0.05	0.7	638	17919	3.66	113	85.6	1199	0.65	20.6	7.988	8.621	4772	8.08		<1	<1
W2B	-3.96	1/11/99	1041			3.37	104	87	1214	0.16	2.2	645	18124	3.49	108	90	1256	0.67	20.5	7.989	8.389	4644	8.21		1	<1
W2B	-3.96	2/2/99	1045			3.29	102	84	1177	0.12	1.7	634	17803	3.38	105	91	1275	0.65	20.6	7.971	9.116	5046	8.20		<1	<1
W2B	-3.96	3/1/99	1057			3.30	102	78.7	1102	0.01	0.1	626	17593	3.40	105	80.1	1122	0.50	21.7	7.969	9.202	5094	8.90		<1	<1
W2B	-3.96	4/5/99	1042			3.40	105	85.3	1195	0.15	2.1	650	18242	3.53	109	89.1	1248	0.55	20.6	7.991	8.153	4513	8.21		<1	<1
W2B	-3.96	5/3/99	1107			3.38	105	85.9	1203	0.17	2.4	641	18000	3.50	108	92.4	1294	0.55	21.6	7.964	8.772	4856	8.22		<1	<1
W2B	-3.96	6/1/99	1036			3.44	107	86.3	1209	0.24	3.4	651	18272	3.50	108	91.0	1275	0.55	21.0	7.991	8.108	4488	8.30		<1	1
W2B	-3.96	7/14/99	1055			3.40	105	82.2	1151	0.08	1.1	640	17986	3.42	106	84.4	1182	0.53	20.8	7.973	8.760	4849	8.20		<1	3
W2B	-3.96	8/23/99	1104			3.33	103	80.0	1121	0.12	1.7	648	18194	3.57	111	83.3	1167	0.58	20.9	8.032	8.429	4666	8.15		<1	<1
W2B	-3.96	9/7/99	1105			3.51	109	91.4	1280	0.14	2.0	643	18048	3.67	114	104	1458	0.59	21.0	8.036	8.352	4623	8.21		<1	1
W2B	-3.96	10/5/99	1042			3.44	107	86.6	1213	0.12	1.7	651	18278	3.48	108	88.6	1241	0.52	20.9	8.030	8.312	4601	8.07		<1	<1
W2B	-3.96	11/1/99	1114			3.37	104	84.0	1177	0.14	2.0	640	17983	3.44	107	88.0	1233	0.56	20.9	8.024	8.893	4923	7.91		<1	<1
W2B	-3.96	12/14/99	1107			3.44	107	89.1	1248	0.13	1.8	648	18188	3.54	110	92.4	1294	0.57	20.8	7.959	8.303	4596	6.94		<1	<1
W2B	-3.96	1/10/00	1125			3.31	103	80.8	1132	0.12	1.7	634	17815	3.42	106	88.1	1234	0.58	20.9	7.977	9.070	5020	7.96		<1	22
W2B	-3.96	2/7/00	1124			3.35	104	84.3	1181	0.19	2.7	624	17514	3.44	107	88.8	1244	0.56	20.8	8.012	9.188	5086	7.98		<1	<1
W2B	-3.96	3/21/00	1124			3.21	99	82.3	1153	0.14	2.0	542	15211	3.02	94	88.3	1237	0.61	20.6	8.014	8.632	4778	8.11		<1	<1
W2B	-3.96	4/10/00	1205			3.34	103	83.1	1164	0.11	1.5	640	17983	3.04	94	90.1	1262	0.62	20.8	8.024	8.918	4936	8.00		<1	<1
W2B	-3.96	5/15/00	1106			3.32	103	87.1	1220	0.33	4.6	626	17593	3.26	101	91.9	1287	0.64	20.9	8.038	8.304	4596	8.15		<1	<1
W2B	-3.96	6/5/00	1109			3.31	103	84.5	1184	0.13	1.8	643	18053	3.39	105	91.9	1287	0.61	20.9	8.023	8.609	4765	8.17		<1	744
W2B	-3.96	7/26/00	1135			3.28	102	83.5	1170	1.40	19.6	637	17876	3.32	103	84.6	1185	0.65	21.0	7.968	9.292	5143	7.66		5	34
W2B	-3.96	8/29/00	1045			3.41	106	88.4	1238	0.10	1.4	638	17919	3.39	105	90.2	1263	0.67	21.6	7.958	8.566	4742	7.95		<1	2
W2B	-3.96	9/5/00	1059			3.30	102	90.1	1263	0.11	1.5	642	18034	3.34	103	92.7	1298	0.73	21.2	7.955	8.687	4808	7.94		<1	1
W2B	-3.96	10/24/00	1112			3.48	108	87.2	1221	0.11	1.5	671	18848	3.69	114	88.1	1234	0.72	21.1	8.000	8.490	4699	7.78		<1	<1
W2B	-3.96	11/13/00	1052			3.00	93	146	2039	0.14	2.0	647	18174	3.12	97	154	2151	0.80	21.3	7.907	8.442	4673	7.41		<1	1
W2B	-3.96	12/18/00	1044			3.35	104	95.1	1332	0.14	2.0	657	18449	3.49	108	97.6	1367	0.65	21.1	7.973	9.016	4991	7.60		<1	1

NELHA Water Quality Laboratory

Well 2B Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	1/22/01	1108			3.78	117	98.9	1385	0.11	1.5	624	17537	3.86	120	102	1434	0.73	21.1	7.929	9.530	5275	7.57		<1	<1
W2B	-3.96	2/5/01	1113			3.60	112	97.3	1363	0.10	1.4	631	17733	3.70	115	100	1402	0.64	20.9	7.956	9.574	5299	7.48		<1	1
W2B	-3.96	3/5/01	1105			3.63	112	102	1422	0.08	1.1	628	17626	3.69	114	106	1486	0.64	20.9	7.928	9.500	5258	7.52		<1	<1
W2B	-3.96	4/17/01	1115			3.64	113	97.1	1360	0.04	0.6	632	17756	3.69	114	99.0	1386	0.57	20.9	7.918	9.931	5497	8.00		<1	2
W2B	-3.96	5/15/01	1040			3.70	115	98.0	1372	0.08	1.1	622	17478	3.58	111	100	1403	0.58	21.2	7.917	10.035	5555	8.07		<1	<1
W2B	-3.96	6/12/01	1119			3.93	122	94.9	1329	0.02	0.3	621	17435	3.92	121	96.6	1352	0.55	20.7	7.929	10.118	5601	8.04		<1	<1
W2B	-3.96	7/25/01	906			3.81	118	93.0	1302	0.10	1.4	606	17009	3.66	113	97.1	1361	0.74	20.8	7.899	10.753	5952	7.81		<1	<1
W2B	-3.96	8/20/01	856			3.60	112	89.6	1254	0.09	1.3	609	17107	3.58	111	93.9	1315	0.69	21.3	7.902	11.099	6144	7.77		1	<1
W2B	-3.96	9/19/01	1018			3.22	100	90.5	1267	0.09	1.3	636	17865	3.49	108	93.1	1304	0.69	21.2	7.909	10.491	5807	7.78		<1	1
W2B	-3.96	10/24/01	1010			3.34	103	91.2	1277	0.04	0.6	620	17402	3.51	109	103	1443	0.61	21.1	7.922	10.443	5780	7.77		<1	<1
W2B	-3.96	11/7/01	1045			3.44	107	90.3	1265	0.22	3.1	596	16750	3.48	108	111	1548	0.60	20.8	7.894	11.489	6359	7.46		1	<1
W2B	-3.96	12/19/01	1026			3.28	102	97.9	1371	0.18	2.5	593	16643	3.32	103	128	1793	0.59	21.0	7.867	11.693	6472	7.27		<1	1
W2B	-3.96	1/9/02	1016			3.33	103	97.0	1359	0.11	1.5	625	17565	3.52	109	98.2	1375	0.64	21.5	7.916	10.387	5749	7.42		<1	<1
W2B	-3.96	2/25/02	1055			3.30	102	110	1546	0.10	1.4	617	17326	3.38	105	115	1614	0.50	20.7	7.956	10.053	5565	7.76		<1	8
W2B	-3.96	3/20/02	1034			3.26	101	116	1623	0.14	2.0	612	17191	3.32	103	120	1681	0.57	20.8	7.793	9.368	5185	7.64		<1	<1
W2B	-3.96	4/10/02	1107			3.34	103	99.0	1387	0.11	1.5	626	17579	3.46	107	103	1440	0.52	21.1	7.929	9.381	5193	7.53		<1	<1
W2B	-3.96	5/22/02	923			3.32	103	102	1427	0.11	1.5	626	17573	3.47	107	106	1483	0.49	20.7	7.921	10.176	5633	7.85		<1	<1
W2B	-3.96	6/19/02	943			3.58	111	115	1607	0.18	2.5	613	17214	3.76	116	123	1728	0.53	21.1	7.954	10.156	5622	7.74		1	1
W2B	-3.96	7/22/02	932			3.44	107	99.6	1395	0.18	2.5	614	17253	3.58	111	103	1446	0.50	21.3	7.920	10.290	5696	7.92		<1	<1
W2B	-3.96	8/21/02	1013			3.45	107	96.1	1346	0.17	2.4	620	17421	3.60	112	99.9	1399	0.49	21.2	7.912	9.941	5503	7.83		<1	<1
W2B	-3.96	9/25/02	1208			3.32	103	102	1422	0.16	2.2	633	17770	3.54	110	89.0	1247	0.60	21.2	7.934	9.933	5498	8.04		24	<1
W2B	-3.96	10/15/02	914			3.35	104	94.0	1317	0.09	1.3	611	17160	3.49	108	92.3	1293	0.64	21.2	7.936	9.917	5489	7.99		1	1
W2B	-3.96	11/17/02	1108			3.64	113	97.8	1370	0.09	1.3	597	16753	3.88	120	86.9	1217	0.50	21.4	7.899	11.410	6316	7.79		<1	<1
W2B	-3.96	12/18/02	1136			3.48	108	96.0	1345	0.27	3.8	614	17242	3.63	112	107	1505	0.55	21.5	7.934	10.223	5659	8.02		<1	1
W2B	-3.96	1/29/03	1100			3.19	99	104	1457	<0.1	0.0	608	17068	3.37	104	114	1597	0.61	20.5	7.954	10.411	5763	7.99		<1	<1
W2B	-3.96	2/10/03	1048			3.33	103	94.5	1324	0.04	0.6	626	17567	3.47	107	111	1555	0.56	20.5	7.962	9.906	5483	7.99		<1	<1
W2B	-3.96	3/20/03	1010			3.46	107	95.7	1340	0.20	2.8	597	16770	3.42	106	108	1507	0.50	21.1	7.927	11.016	6098	8.01		<1	<1
W2B	-3.96	4/30/03	1106			3.55	110	98.8	1384	0.29	4.1	631	17725	3.66	113	116	1625	0.51	20.9	7.961	9.875	5466	7.98		<1	<1
W2B	-3.96	5/14/03	1017			3.81	118	99.8	1397	0.40	5.6	628	17646	3.82	118	103	1445	0.58	21.3	7.971	9.799	5424	8.07		<1	<1
W2B	-3.96	6/4/03	1105			3.75	116	107	1502	0.98	13.7	606	17014	3.99	124	127	1772	0.49	21.7	8.004	10.198	5645	8.07		<1	<1
W2B	-3.96	7/30/03	1030			3.70	115	113	1576	0.94	13.2	622	17469	3.93	122	120	1678		21.0	7.936	10.134	5609	8.27		<1	1
W2B	-3.96	8/28/03	1011			3.80	118	122	1702	0.70	9.8	613	17205	3.98	123	172	2413		21.5	7.904	10.177	5633	8.10		<1	1
W2B	-3.96	9/16/03	1051			3.82	118	99.8	1398	0.08	1.1	610	17132	3.92	121	110	1535		21.3	7.924	13.352	7391	7.75		<1	1
W2B	-3.96	10/8/03	1051			3.50	108	100	1402	0.40	5.6	610	17132	3.80	118	120	1675		21.2	7.936	10.008	5540	NA		<1	<1
W2B	-3.96	11/5/03	1052			3.52	109	108	1513	0.50	7.0	611	17163	3.80	118	113	1583		21.1	7.970	10.131	5608			3	1
W2B	-3.96	11/14/03	1442																21.1				8.01			
W2B	-3.96	12/22/03	927			3.48	108	97.6	1366	0.25	3.5	594	16680	3.74	116	101	1412		20.9	8.003	11.673	6461	7.62		2	1
W2B	-3.96	1/26/04				3.40	105	111	1553	0.30	4.2	596	16731	3.51	109	117	1640		20.8	7.914	11.169	6182	7.35		1	1
W2B	-3.96	2/11/04	1020			3.56	110	102	1434	0.80	11.2	593	16641	3.62	112	112	1566	0.72	20.6	7.900	11.060	6122	7.65		<1	1
W2B	-3.96	3/16/04	1230			3.71	115	108	1507	0.17	2.4	604	16964	3.90	121	120	1674		21.4	7.950	8.841	4894	7.31		<1	<1
W2B	-3.96	4/20/04	1054			3.72	115	98.8	1384	0.08	1.1	619	17393	3.72	115	100	1402		21.7	7.941	9.465	5239	7.74		<1	<1
W2B	-3.96	5/11/04	1000			3.52	109	88.7	1242	0.21	2.9	602	16902	3.72	115	91.5	1282		21.2	7.732	10.36	5735	7.79		<1	<1
W2B	-3.96	6/2/04	1054			3.46	107	90.5	1268	0.18	2.5	606	17014	3.52	109	93.4	1308		21.7	7.933	9.65	5342	7.78		1	<1

NELHA Water Quality Laboratory

Well 2B Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	7/14/04	1103				3.50	108	95.9	1343	0.17	2.4	604	16975	3.54	110	109	1521		21.5	7.914	10.64	5890	7.68		<1	<1
W2B	-3.96	8/23/04	1047				3.48	108	94.6	1325	0.21	2.9	590	16562	3.66	113	98.5	1380		21.2	7.930	10.68	5912	7.68		<1	<1
W2B	-3.96	9/27/04	928				3.60	112	99.4	1392	0.14	2.0	625	17548	3.70	115	134	1873		21.2	7.918	10.49	5806	7.71		<1	<1
W2B	-3.96	10/5/04	930				3.62	112	92.7	1299	0.15	2.1	584	16410	3.76	116	104	1455		20.7	7.942	11.25	6227	7.59		<1	2
W2B	-3.96	11/9/04	1017				3.66	113	92.9	1302	0.16	2.2	603	16936	3.84	119	97.0	1359		21.2	7.929	10.84	6000	7.75		<1	<1
W2B	-3.96	12/6/04	1055				3.60	112	99.9	1400	0.20	2.8	593	16652	3.88	120	98.2	1376		21.1	7.963	11.18	6188	7.81		<1	<1
W2B	-3.96	1/10/05	1022				3.58	111	128	1793	0.11	1.5	567	15919	3.60	112	130	1817		20.7	7.980	11.917	6596	7.64		4	<1
W2B	-3.96	2/9/05	1019				3.67	114	143	2009	0.20	2.8	566	15891	3.70	115	192	2682		21.3	7.983	10.608	5872	7.78		<1	<1
W2B	-3.96	3/15/05	1045				3.56	110	105	1472	0.15	2.1	589	16542	3.76	116	114	1597	0.51	21.1	7.985	10.518	5822	7.84		<1	<1
W2B	-3.96	4/19/05	957				3.56	110	102	1426	0.16	2.2	587	16472	3.60	112	104	1459		21.4	7.979	10.563	5847	7.92		110	133
W2B	-3.96	5/23/05	1043				3.46	107	99.7	1396	0.21	2.9	590	16568	3.58	111	105	1467		21.7	7.915	11.784	6523	7.42		<1	<1
W2B	-3.96	6/13/05	905				3.52	109	98.2	1376	0.22	3.1	578	16219	3.46	107	102	1434		21.3	7.941	11.756	6507	7.82		<1	<1
W2B	-3.96	7/18/05	1015				3.60	112	98.4	1378	0.10	1.4	588	16511	3.76	116	101	1413	0.56	21.5	7.928	11.335	6274	7.56		<1	<1
W2B	-3.96	8/9/05	1025				3.42	106	91.6	1283	0.23	3.2	570	16000	3.58	111	95.4	1336	0.53	21.5	7.946	12.229	6769	7.83		<1	1
W2B	-3.96	9/20/05	1013				3.54	110	93.4	1309	0.24	3.4	566	15896	3.68	114	95.7	1340	0.55	21.7	7.944	12.981	7185	7.88		<1	<1
W2B	-3.96	10/17/05	1013				3.64	113	95.1	1332	0.14	2.0	578	16242	3.72	115	99.1	1388		21.7	7.931	12.377	6851	7.90		<1	<1
W2B	-3.96	11/7/05	942				3.44	107	89.8	1258	0.04	0.6	536	15040	3.60	112	94.6	1325		21.1	7.944	13.735	7603	7.77		<1	<1
W2B	-3.96	12/21/05	911				3.48	108	94.8	1328	0.22	3.1	540	15158	3.62	112	96.2	1348	0.57	20.4	7.959	13.551	7501	7.68		<1	1
W2B	-3.96	1/23/06	1013				3.46	107	92.8	1300	0.25	3.5	577	16205	3.58	111	100	1405		20.9	7.967	12.44	6886	8.01		<1	1
W2B	-3.96	2/14/06	1028				3.44	107	87.4	1224	0.18	2.5	556	15604	3.62	112	87.3	1222	0.49	20.7	7.961	12.858	7117	7.96		<1	<1
W2B	-3.96	3/20/06	931				3.48	108	92.9	1301	0.18	2.5	578	16233	3.62	112	95.7	1340	0.49	20.6	7.964	12.626	6989	7.86		<1	<1
W2B	-3.96	4/25/06	1000				3.34	103	95.2	1333	0.11	1.5	553	15531	3.56	110	79.7	1117	0.50	20.6	7.96	12.615	6983	7.88		<1	<1
W2B	-3.96	5/22/06	1030				3.29	102	92.2	1291	0.23	3.2	438	12301	3.79	117	79.5	1114	0.54	20.6	7.932	13.386	7409	7.73		<1	<1
W2B	-3.96	6/26/06	1043				3.25	101	94.6	1325	0.16	2.2	544	15279	3.36	104	93.5	1310	0.53	20.1	7.966	12.883	7131	7.81		<1	<1
W2B	-3.96	7/20/06	1048				3.23	100	89.6	1255	0.15	2.1	552	15503	3.64	113	76.0	1065	0.66	20.3	7.939	13.285	7354	8.30		1	<1
W2B	-3.96	8/7/06	1105				3.30	102	100	1401	0.17	2.4	557	15644	3.37	104	82.0	1149	0.49	20.2	7.962	12.353	6838	8.47		<1	<1
W2B	-3.96	9/18/06	1028				3.25	101	91.2	1277	0.19	2.7	555	15587	3.57	111	84.7	1187	0.55	20.5	7.953	12.294	6805	8.10		<1	<1
W2B	-3.96	10/23/06	1005				3.51	109	109	1527	0.22	3.1	537	15082	3.56	110	108	1513	0.68	20.5	7.951	11.743	6500	7.96		>5000	1364
W2B	-3.96	11/27/06	1016				3.44	107	101	1415	0.18	2.5	543	15250	3.62	112	86.6	1214	0.53	20.1	7.954	13.155	7282	7.97		<1	1
W2B	-3.96	12/11/06	1046				3.72	115	94.1	1318	0.21	2.9	546	15335	3.94	122	84.4	1182	0.54	19.8	7.945	13.319	7372	8.01		<1	<1
W2B	-3.96	1/8/07	1136				3.31	103	94.7	1326	0.21	2.9	514	14436	3.51	109	86.8	1216	0.47	19.2	7.96	13.243	7330	8.04		<1	<1
W2B	-3.96	2/20/07	1105				3.48	108	101	1415	0.35	4.9	537	15082	3.64	113	111	1560	0.58	19.6	7.944	13.099	7251	8.05		<1	<1
W2B	-3.96	3/5/07	1103				3.44	107	111	1555	0.36	5.0	553	15531	3.58	111	109	1530	0.59	20.1	7.943	12.715	7038	8.04		<1	<1
W2B	-3.96	4/18/07	1102				3.47	107	100	1401	0.23	3.2	555	15587	3.58	111	87.3	1223	0.47	20.6	7.973	13.221	7318	7.79		<1	1
W2B	-3.96	5/1/07	1051				3.36	104	93.4	1308	0.27	3.8	551	15475	3.51	109	87.2	1222	0.49	20.2	7.978	12.945	7165	7.61		<1	<1
W2B	-3.96	6/18/07	1045				3.63	101	107.4	1505	0.2	1.4	548	14959	3.9	119	91.6	1283	0.44	20.4	8.001	13.445	7442	8.21		<1	<1
W2B	-3.96	7/26/07	1312	-1.98	0.64	Flood	2.74	85	76.4	1070	0.0	0.1	580	16297	0.0		75.8	1062		19.9	7.91	12.98	7185	7.62			
W2B	-3.96	8/28/07	1115	-2.44	0.08	Flood	3.29	102	99.1	1388	3.6	50.7	629	17678	3.0	94	101.7	1424		20.5	7.86	12.80	7085	7.42			
W2B	-3.96	9/13/07	1128	-2.23	0.15	Low	3.47	108	98.8	1383	1.0	13.8	631	17726	3.3	103	97.8	1371		20.6	7.97	13.11	7257	7.41			
W2B	-3.96	10/24/07	1358	-1.96	0.46	Flood	3.25	101	107.4	1505	0.1	1.4	533	14959	3.6	111	101.8	1426		20.1	8.03	12.75	7057	7.31			
W2B	-3.96	11/26/07	1115	-2.31	0.15	Ebb	3.26	101	97.0	1359	0.3	3.8	562	15793	3.3	101	103.2	1446		19.8	7.93	14.03	7766	7.17			
W2B	-3.96	12/20/07	1210	-2.08	0.23	High	3.09	96	114.5	1604	0.3	4.1	493	13840						19.8	8.03	10.85	6006	7.43			

NELHA Water Quality Laboratory

Well 2B Data Table

6/28/1989 - 7/16/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	1/28/08	1220	-2.29	0.09	Ebb	1.89	59	36.1	506	0.2	3.1	310	8721						19.9	7.83	12.69	7024	6.66			
W2B	-3.96	2/27/08	1025	-2.13	0.12	Ebb	3.30	102	103.2	1446	0.2	2.6	538	15110						19.6	7.82	12.49	6914	7.77			
W2B	-3.96	3/20/08	1057	-2.41	0.00	Low	3.09	96	97.6	1367	0.2	2.5	429	12059						19.8	7.88	12.84	7107	7.36			
W2B	-3.96	4/28/08	1054	-2.06	0.18	High	2.93	91	99.5	1394	0.2	2.6	541	15201						20.0	7.91	12.34	6831	7.40			
W2B	-3.96	5/15/08	1154	-2.03	0.49	Flood	2.85	88	94.5	1324	0.2	2.9	538	15117						19.8	7.88	13.00	7196	7.14			
W2B	-3.96	6/26/08	929	-1.98	0.37	High	2.91	90	101.5	1421	0.3	4	702	19717						20.3	7.86	12.64	6997	7.81	0.10		
W2B	-3.96	7/25/08	1137	-1.88	0.55	High	2.88	89	95.2	1334	0.2	2.8	385	10816						20.3	7.50	12.08	6687	7.67			
W2B	-3.96	8/30/08	933		0.03	Low	2.68	83	96.8	1356	0.3	4	529	14866						20.4	7.87	12.47	6902	7.16			
W2B	-3.96	9/19/08	953	-1.88	0.52	Ebb	2.05	64	54.6	765	1.0	14.1	379	10635						21.5	7.78	12.70	7030	7.59	1.42		
W2B	-3.96	10/27/08	1255	-2.07	0.27	Flood	3.07	95	101.9	1427	0.3	4.7	548	15386						21.9	7.75	12.01	6648	N/A	0.30		
W2B	-3.96	11/10/08	1010	-2.12	0.24	Flood	4.49	139	99.1	1389	0.3	4.7	496	13940						21.8	7.86	12.05	6670	7.61	0.41		
W2B	-3.96	12/15/08	930	-1.90	0.43	Ebb	3.13	97	103.6	1452	0.0	0.0	486	13639						21.2	8.03	13.38	7406	7.97			
W2B	-3.96	1/23/09	1316	-2.26	0.15	High	3.12	97	111.6	1563	1.3	18.1	507	14238						21.3	8.01	12.27	6792	7.71	0.14		
W2B	-3.96	2/23/09	1417	-2.15	0.24	Flood	2.74	85	105.3	1475	0.9	13.0	537	15071						20.8	7.89	13.04	7218	8.06	0.13		
W2B	-3.96	3/13/09	1426	-2.27	0.24	Flood	3.27	101	95.7	1340	0.1	1.9	466	13090						20.5	7.89	13.26	7340	7.67	0.12		
W2B	-3.96	4/20/09	1236	-2.18	0.30	Flood	3.95	122	108.0	1513	1.7	24.3	410	11513						21.2	7.79	12.20	6753	8.21	6.03		
W2B	-3.96	5/21/09	1414	-1.86	0.61	High	3.56	110	101.1	1416	0.5	7.5	558	15669						20.2	7.97	12.65	7002	8.13	0.10		
W2B	-3.96	6/16/09	1050	-2.01	0.40	Flood	3.57	111	97.4	1364	0.5	6.6	348	9766						20.1	7.81	11.86	6565	8.02	0.07		
W2B	-3.96	7/13/09	1453	-2.18	0.21	Flood	2.51	78	68.4	958	0.2	2.6	278	7805						19.9	7.99	12.61	6980	8.02	0.18		
W2B	-3.96	8/18/09	1350	-1.71	0.70	Flood	2.77	86	77.6	1087	0.1	1.4	442	12415						20.5	7.90	13.58	7517	7.74	0.09		
W2B	-3.96	9/21/09	1344	-2.24	0.18	Flood	1.75	54	44.6	624	0.2	2.2	249	6988						20.6	8.38	13.24	7329	8.59	0.04		
W2B	-3.96	10/19/09	1055	-2.28	0.12	Low	3.26	101	102.5	1436	0.7	9.5	272	7635						20.5	7.47	13.16	7284	7.93	0.05		
W2B	-3.96	11/16/09	1326	-2.29	0.18	Flood	3.31	103	105.5	1478	0.8	11	449	12603						20.2	7.96	13.75	7611	7.96	0.04		
W2B	-3.96	12/7/09	1300	-2.23	0.18	Ebb	3.42	106	112.7	1579	0.5	7.2	512	14379						20.2	7.93	13.23	7323	6.85	0.09		
W2B	-3.96	1/5/10	1042	-2.06	0.30	Ebb	3.10	96	103.0	1443	0.5	7.0	517	14524						20.7	7.92	12.91	7146	6.63	0.10		
W2B	-3.96	2/1/10	1100	-2.20	0.00	Ebb	3.23	100	108.2	1515	0.6	9.0	459	12884						20.4	7.98	13.10	7251	7.33	0.18		
W2B	-3.96	3/9/10	1116	-2.28	0.12	Flood	3.55	110	99.4	1392	0.2	3.0	532	14948						20.0	7.98	12.16	6731	7.85	0.20		
W2B	-3.96	4/6/10	1005	-2.31	0.15	Flood	3.65	113	107.1	1500	0.1	2.0	532	14931						19.7	7.96	12.63	6991	8.19	0.04		
W2B	-3.96	5/11/10	1029	-2.39	0.09	Flood	3.33	103	96.0	1344	1.8	25	576	16173						19.9	8.05	11.97	6626	8.23	0.11		
W2B	-3.96	6/15/10	1108	-2.39	0.06	Low	3.03	94	92.7	1298	0.3	4.0	509	14283						20.1	7.98	12.67	7013	7.46	0.15		
W2B	-3.96	7/13/10	1026	-2.39	0.00	Low	3.10	96	100.6	1409	0.4	6.0	562	15791						20.2	7.97	13.42	7428	7.90	0.17		
W2B	-3.96	8/3/10	1020	-1.89	0.52	Flood	3.49	108	103.9	1455	0.3	4.0	567	15921						20.0	7.99	12.88	7129	7.88	0.08		
W2B	-3.96	9/14/10	1020	-1.81	0.58	Ebb	3.29	102	98.6	1381	0.5	6.9	581	16305						20.1	7.97	13.77	7622	8.26	0.80		
W2B	-3.96	10/12/10	1051	-1.83	0.55	Ebb	3.16	98	99.2	1390	0.3	4.7	567	15933						20.2	7.97	14.81	8198	7.67	0.06		
W2B	-3.96	11/16/10	1008	-2.03	0.27	Flood	3.39	105	105.9	1484	0.2	3.4	575	16154						20.0	7.89	13.04	7218	7.88	0.04		
W2B	-3.96	12/14/10	1049	-1.99	0.37	High	3.33	103	108.7	1522	0.5	6.6	566	15899						20.0	7.96	13.29	7356	7.93	0.04		
W2B	-3.96	1/4/11	1037	-2.23	0.06	Ebb	3.42	106	104.2	1459	0.5	6.9	552	15509						19.8	7.90	14.05	7777	7.65	0.08		
W2B	-3.96	4/5/11	1053	-2.34	-0.06	Low	3.36	104	103.5	1450	0.2	3.2	574	16121						20.1	7.91	13.19	7301	6.80	0.16		
W2B	-3.96	7/12/11	1017	-2.13	0.18	Flood	3.36	104	97.7	1369	0.6	8.2	546	15336						20.1	7.92	13.93	7711	7.67	0.02		
W2B	-3.96	10/11/11	1038	-2.22	0.12	Low	3.26	101	92.9	1301	0.3	3.9	547	15373						20.5	7.93	14.05	7777	7.82	0.05		
W2B	-3.96	1/10/12	1032	-2.24	0.06	Ebb	3.07	95	86.6	1213	0.3	3.6	523	14676						19.8	7.92	15.45	8552	7.89	0.04		
W2B	-3.96	5/1/12	1100	-2.07	0.30	Flood	3.71	115	98.2	1376	0.2	2.3	579	16248						19.9	7.92	13.84	7661	7.77	0.05		
W2B	-3.96	7/18/12	951	-2.39	0.03	Flood	3.49	108	100.0	1400	0.6	7.8	544	15287						20.1	8.01	14.23	7877	7.98	0.07		
W2B	-3.96	10/16/12	1034	-2.24	0.09	Ebb	3.29	102	97.3	1363	0.3	4.4	538	15102						20.1	7.90	14.49	8021	7.53	0.04		
W2B	-3.96	1/8/13	1058	-2.20	0.15	Flood	3.75	116	99.1	1388	0.6	7.9	585	16426						19.7	7.93	14.22	7871	7.85	0.04		
W2B	-3.96	4/9/13	1035	-2.38	-0.03	Flood	3.62	112	96.8	1356	0.5	6.7	555	15584						19.9	7.96	13.72	7594	8.31	0.09		

NELHA Water Quality Laboratory

Well 2B Data Table

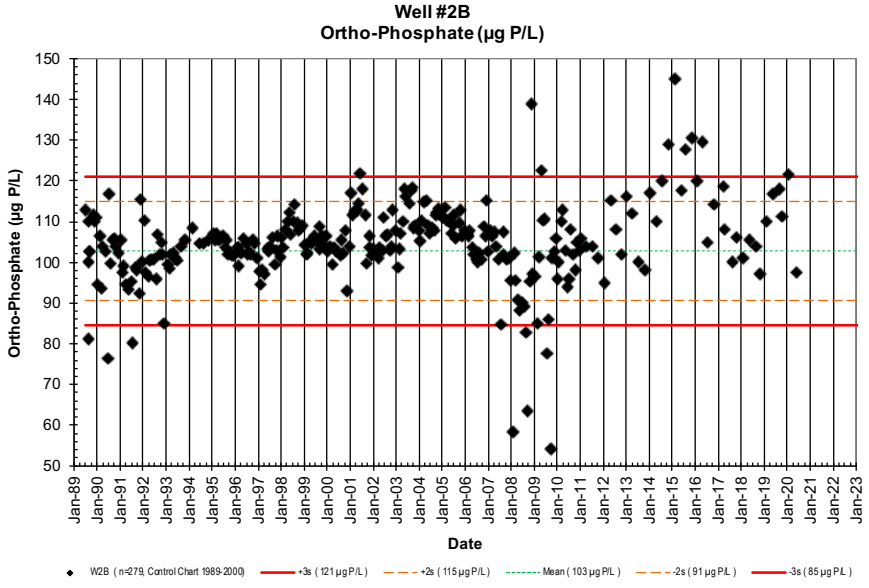
6/28/1989 - 7/16/20

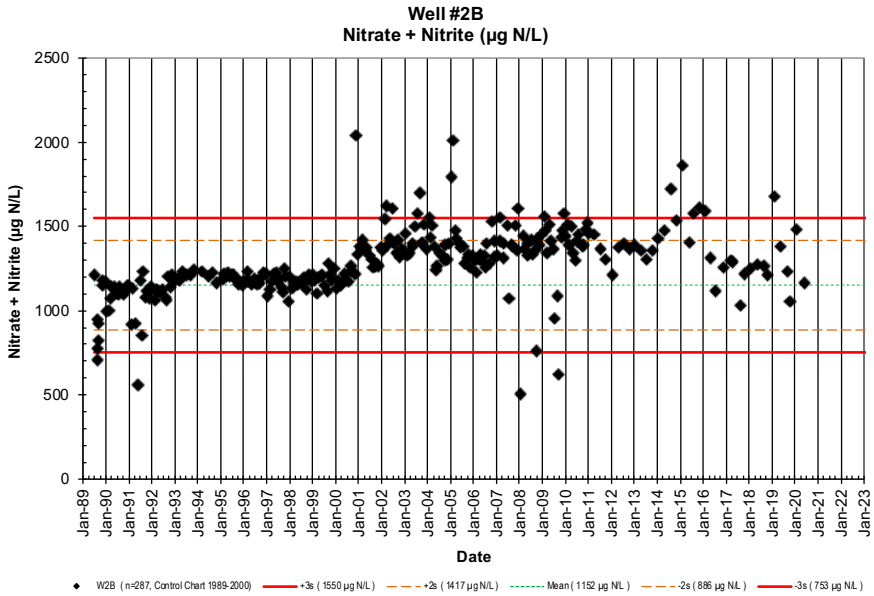
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W2B	-3.96	7/17/13	1120	-1.95	0.58	Flood	3.23	100	93.0	1302	0.4	5.4	517	14517						20.3	7.93	14.42	7982	7.64	0.06		
W2B	-3.96	10/15/13	1020	-2.09	0.30	Flood	3.16	98	97.1	1360	0.6	8.9	511	14343						20.3	7.90	14.54	8048	7.74	0.05		
W2B	-3.96	1/15/14	1000	-2.24	0.06	Ebb	3.78	117	102.2	1431	0.3	4.8	505	14185						20.0	7.97	14.27	7899	7.91	0.02		
W2B	-3.96	4/29/14	1114	-2.42	0.00	Flood	3.55	110	105.3	1475	0.6	8.2	508	14260						20.15	7.94	14.10	7805	6.02	0.08		
W2B	-3.96	7/29/14	1049	-2.26	0.12	Low	3.87	120	122.9	1722	0.5	7.0	523	14679						20.43	7.89	14.42	7982	7.73	0.19		
W2B	-3.96	11/5/14	1052	-2.13	0.15	Flood	4.16	129	109.7	1536	0.4	5.9	499	14004						20.75	7.94	14.60	8081	8.02	0.06		
W2B	-3.96	2/10/15	1040	-1.98	0.80	High	4.68	145	133.1	1865	0.9	13.3	476	13361						20.80	7.91	13.80	7639	6.37	0.05		
W2B	-3.96	5/19/15	1507	-1.98	1.60	Flood	3.80	118	100.5	1408	0.3	4.4	456	12814						19.92	7.94	15.31	8474	7.78	0.04		
W2B	-3.96	7/21/15	1141	-2.19	0.50	Low	4.13	128	112.6	1577	0.0	0.0	489	13742						20.6	7.90	14.90	8248	7.38	0.02		
W2B	-3.96	11/9/15	954	-2.08	0.20	Flood	4.22	131	115.5	1618	0.1	1.5	595	16720						20.9	7.93	12.84	7107	8.50	0.05		
W2B	-3.96	1/26/16	1438	-2.25	0.25	Flood	3.87	120	113.4	1588	0.1	1.8	497	13953						20.0	7.96	14.42	7982	7.62	0.06		
W2B	-3.96	4/21/16	1031	-2.28	-0.05	Low	4.18	130	93.7	1313	0.4	5.9	476	13373						20.40	7.86	13.56	7506	7.90	0.03		
W2B	-3.96	7/20/16	1550	-1.91	0.45	Flood	3.39	105	79.6	1116	0.2	2.2	363	10181						20.33	7.87	16.81	9305	7.28	0.04		
W2B	-3.96	11/7/16	1137	-1.83	0.45	Ebb	3.69	114	89.9	1259	0.1	1.9	399	11217						20.33	7.87	14.64	8104	8.49	0.02		
W2B	-3.96	3/21/17	1422	-2.06	0.13	Ebb	3.83	119	92.7	1298	0.2	3.2	519	14571						19.94	7.88	13.70	7583	7.78	0.04		
W2B	-3.96	4/13/17	1028	-2.27	0.07	Low	3.49	108	91.9	1288	0.3	3.8	535	15034						20.13	7.89	14.37	7954	6.29	0.04		
W2B	-3.96	8/4/17	1015	-2.05	0.25	Flood	3.23	100	73.5	1030	0.1	1.1	517	14509						20.31	7.90	13.92	7705	8.31	0.03		
W2B	-3.96	10/18/17	1614	-1.75	0.50	Ebb	3.43	106	87.0	1219	0.3	4.1	489	13730						20.34	7.90	14.61	8087	7.63	0.07		
W2B	-3.96	1/17/18	1110	-2.19	0.11	Low	3.26	101	89.2	1250	0.2	3.3	485	13619						19.92	7.89	14.00	7749	6.67	0.02		
W2B	-3.96	5/9/18	1008	-2.17	0.25	Flood	3.40	105	90.8	1272	0.1	1.2	497	13950						20.14	7.87	14.60	8081	8.04	0.03		
W2B	-3.96	8/20/18	940	-2.03	0.37	Flood	3.36	104	90.6	1269	0.2	2.5	494	13886						21.25	7.85	14.79	8187	7.74	0.06		
W2B	-3.96	10/24/18	927	-2.12	0.10	Low	3.14	97	86.4	1211	0.0	0.2	472	13259						20.93	7.86	14.85	8220	7.02	0.07		
W2B	-3.96	2/7/19	924	-2.07	0.30	Ebb	3.55	110	119.6	1675	0.0	0.4	495	13903						19.97	7.69	15.17	8397	7.64	0.10		
W2B	-3.96	5/15/19	1129	-2.18	0.40	Flood	3.77	117	98.9	1385	0.0	0.3	500	14052						20.12	7.73	13.35	7390	7.85	0.03		
W2B	-3.96	8/28/19	922	-2.24	0.05	Flood	3.81	118	88.3	1236	0.2	3.0	478	13430						20.51	7.90	14.24	7882	7.90	0.05		
W2B	-3.96	10/10/19	1506	-1.72	0.55	High	3.59	111	75.3	1055	0.3	4.6	459	12890						20.54	7.92	14.96	8281	7.94	0.07		
W2B	-3.96	1/31/20	1421	-2.25	0.07	Low	3.93	122	105.7	1481	-0.7	-9.4	503	14125						20.00	7.93	15.79	8740	8.01	0.02		
W2B	-3.96	6/2/20	1407	-1.67	0.59	High	3.15	98	83.1	1163	0.1	1.8	478	13414						20.66	7.92	14.77	8176	7.44	0.03		
W2B	-3.96	7/1/20																									
W2B	-3.96	10/1/20																									
W2B	-3.96	1/1/21																									
W2B	-3.96	4/1/21																									
W2B	-3.96	7/1/21																									
W2B	-3.96	10/1/21																									
W2B	-3.96	1/1/22																									
W2B	-3.96	4/1/22																									
W2B	-3.96	7/1/22																									
W2B	-3.96	10/1/22																									
W2B	-3.96	1/1/23																									
W2B	-3.96	4/1/23																									
Mean				-2.12	0.27		3.38	105	91	1275	0.23	3.1	592	16632	3.48	108.4	94.2	1319	0.63	20.6	7.95	10.45	5784	7.93	0.20		
Std. Dev.				0.18	0.25		0.31	10	14	193	0.33	4.5	87	2451	0.33	6.9	15.7	220	0.16	0.5	0.08	2.53	1402	0.43	0.75		
Maximum				-1.67	1.60		4.68	145	146	2039	3.62	50.7	922	25895	3.99	123.6	191.5	2682	1.42	21.9	8.38	16.81	9305	9.84	6.03		
Minimum				-2.44	-0.06		1.75	54	36	506	-0.67	-9.4	249	6988	0.00	79.3	41.0	574	0.36	19.2	7.42	6.35	3517	6.02	0.02		
n				79	80		287	287	287	287	285	287	280	279	206	205	206	206	176	286	286	286	286	284	66		

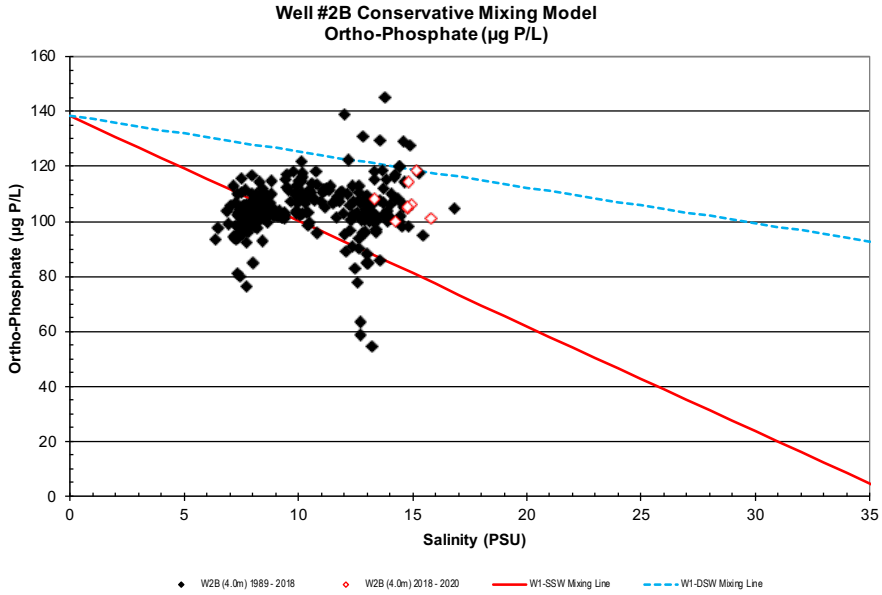
NELHA Water Quality Laboratory

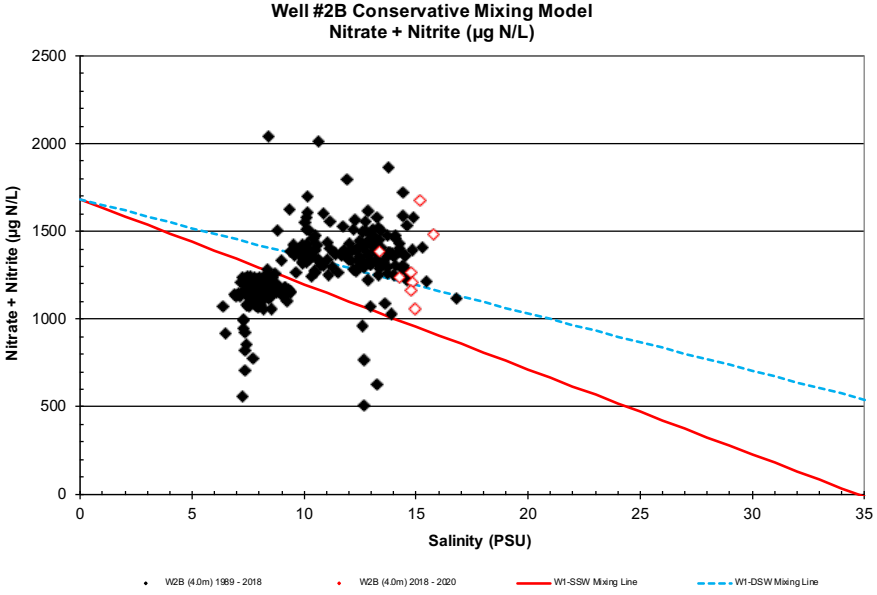
Well 2B Charts

6/28/1989 - 7/16/20







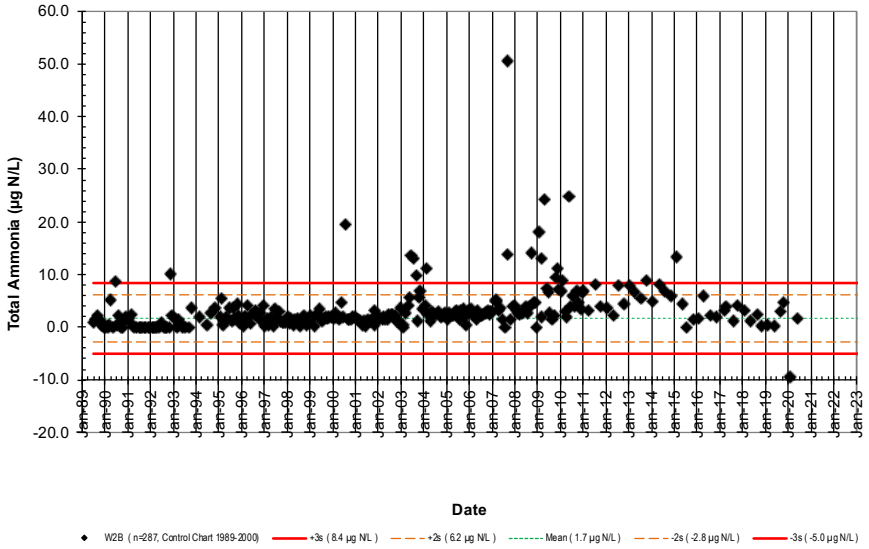


NELHA Water Quality Laboratory

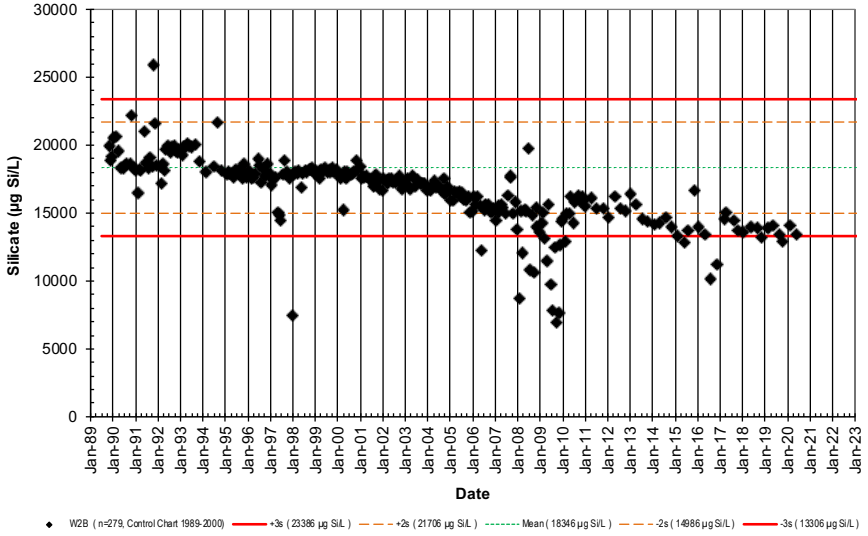
Well 2B Charts

6/28/1989 - 7/16/20

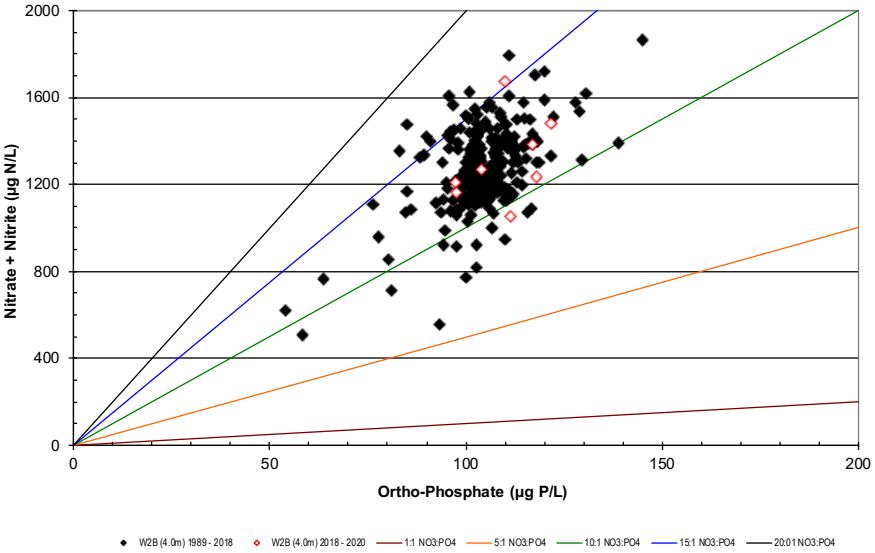
Well #2B
Total Ammonia (µg N/L)



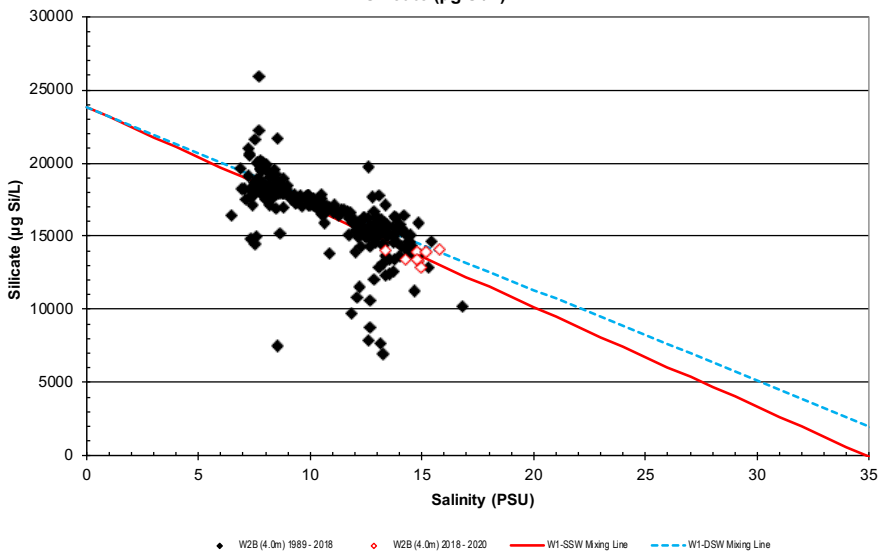
Well #2B
Silicate (µg Si/L)



Relationship Between Ortho-Phosphate and Nitrate + Nitrite in Well #2B



Well #2B Conservative Mixing Model
Silicate (µg Si/L)

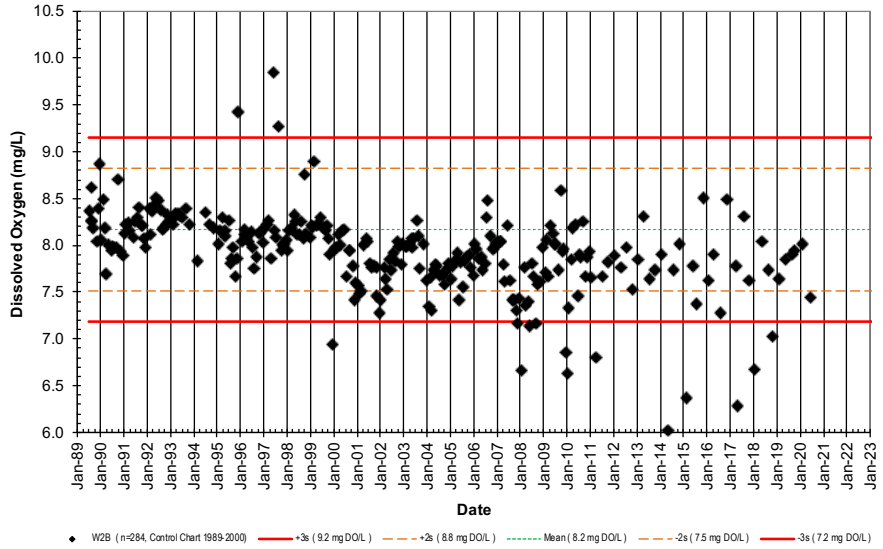


NELHA Water Quality Laboratory

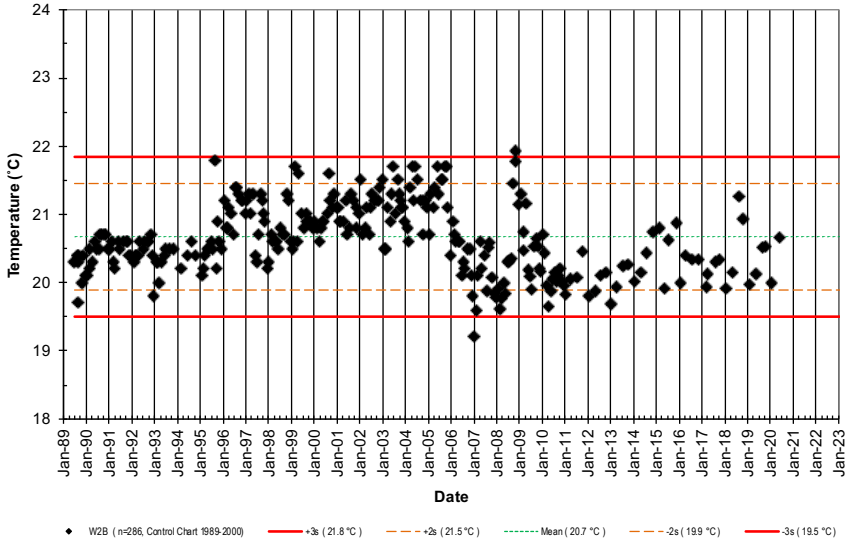
Well 2B Charts

6/28/1989 - 7/16/20

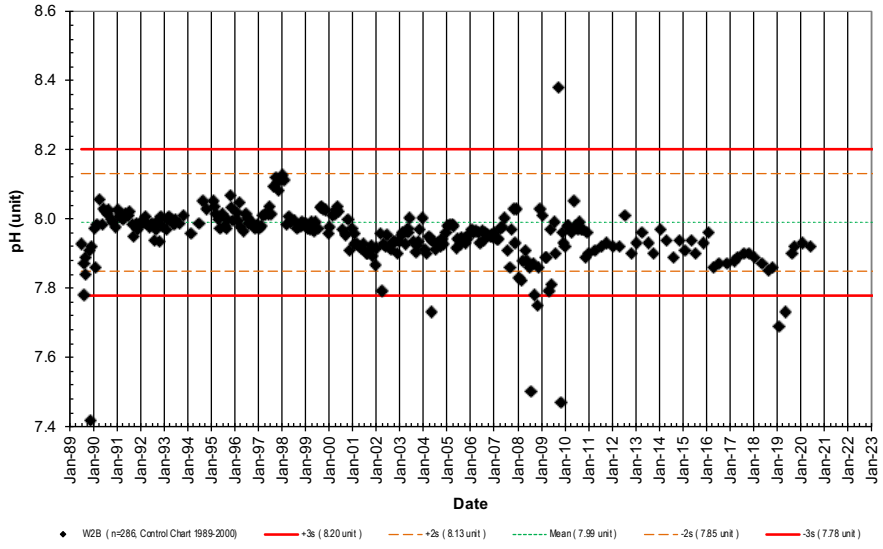
Well #2B
Dissolved Oxygen (mg/L)



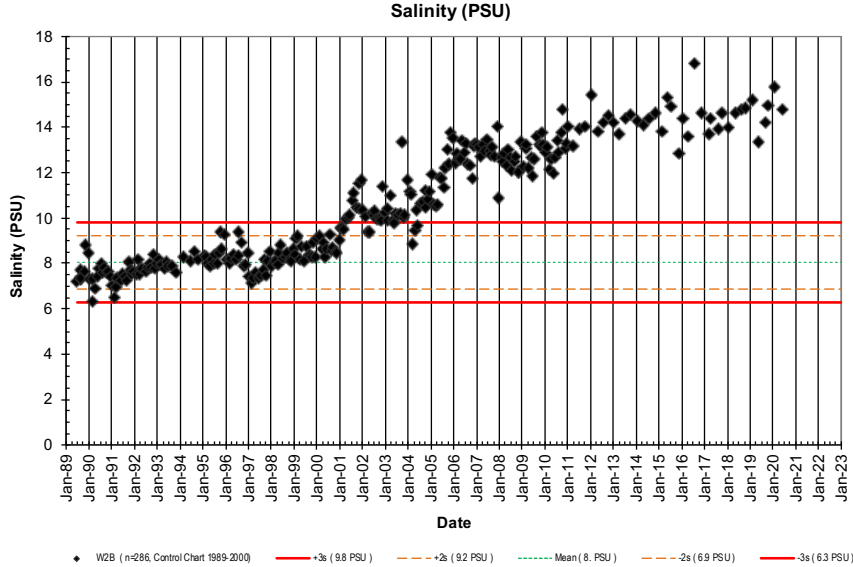
Well #2B
Temperature (˚C)



Well #2B
pH (unit)



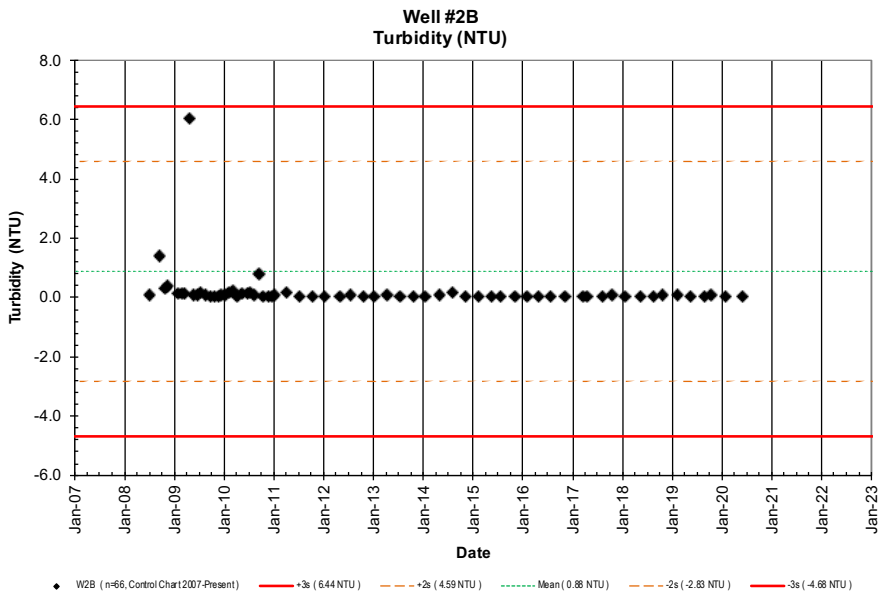
Well #2B
Salinity (PSU)

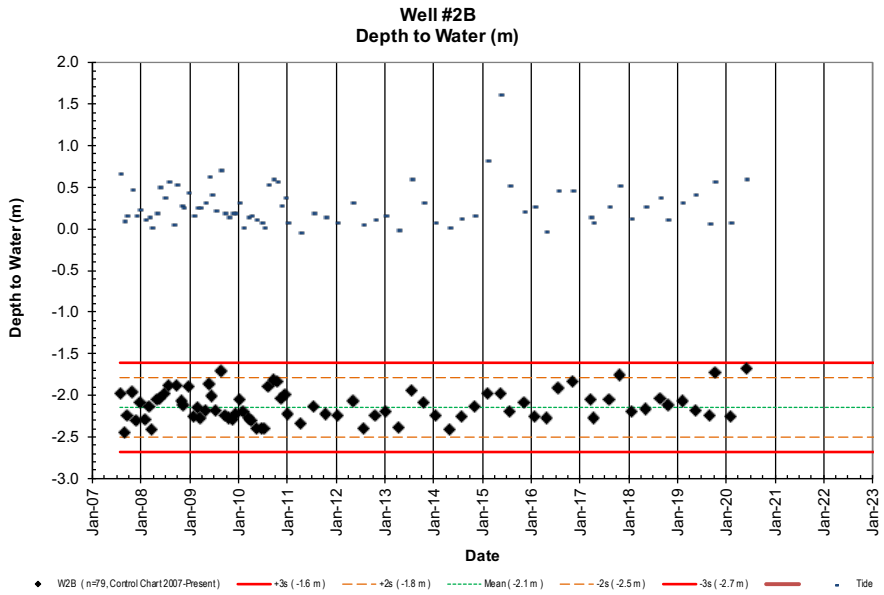


NELHA Water Quality Laboratory

Well 2B Charts

6/28/1989 - 7/16/20





NELHA Water Quality Laboratory

Well 3 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	6/27/89					1.54	48	24.8	347	0.51	7.1								21.0	7.773	25.220	13960	4.27		NA	NA
W3	-17.37	8/10/89	1305				1.51	47	27.6	387	0.58	8.1								20.5	7.618	25.104	13896	5.42		<1	NA
W3	-17.37	8/16/89	1400				1.57	49	27.6	387	0.67	9.4								20.5	7.631	25.107	13897	5.42		<1	NA
W3	-17.37	8/24/89	1045				1.55	48	27.6	387	0.58	8.1								20.0	7.756	25.159	13926	4.47		<1	NA
W3	-17.37	8/29/89	1005				1.58	49	28.1	394	0.58	8.1								20.6	7.704	24.889	13777	4.70		<1	NA
W3	-17.37	8/29/89	1005				1.57	49	28.1	394	0.70	9.8														NA	NA
W3	-17.37	10/30/89	1016				1.51	47	29.1	408	0.01	0.1	380	10672	1.63	50.49	30.6	429	0.35	20.8	7.728	24.981	13828	4.17		<1	NA
W3	-17.37	11/16/89	941				1.61	50	29.9	419	0.06	0.8	370	10392	2.13	65.97	59.0	826	0.41	20.5	7.726	24.941	13805	3.94		1	NA
W3	-17.37	12/12/89	950				1.44	45	31.1	436	0.46	6.4	404	11347	1.73	53.58	32.1	450	0.67	20.1	7.767	24.775	13714	4.94		<1	NA
W3	-17.37	1/11/90	1036				3.06	95	70.7	990	0.00	0.0	730	20502	3.28	101.59	74.8	1048	0.32	21.7	7.726	24.763	13707	4.43		<1	NA
W3	-17.37	2/14/90	1340				1.55	48	28.1	394	0.27	3.8	375	10532	1.82	56.37	28.9	405	0.41	20.5	7.682	25.031	13855	5.92		<1	NA
W3	-17.37	3/7/90	1320				1.44	45	29.5	413	0.10	1.4	382		1.70	52.66	29.5	413	0.35	20.4	7.847	24.954	13813	3.97		<1	NA
W3	-17.37	4/2/90	1356				1.45	45	28.1	394	0.07	1.0	426	11964	1.73	53.58	28.6	401	0.36	20.9	7.904	25.177	13936	4.04		<1	NA
W3	-17.37	5/17/90	933				1.48	46	27.1	380	0.00	0.0	367	10307	1.59	49.25	28.2	395	0.36	20.6	7.841	25.331	14021	4.73		<1	NA
W3	-17.37	6/16/90	900				1.58	49	26.8	375	0.00	0.0	366	10279	1.80	55.75	29.1	408	0.41	20.9	7.904	25.513	14122	3.81		<1	NA
W3	-17.37	7/17/90	930				1.60	50	25.6	359	0.16	2.2	369	10364	1.90	58.85	27.1	380	0.38	20.8	7.899	25.882	14326	3.73		<1	NA
W3	-17.37	8/8/90	1020				1.29	40	26.7	374	0.21	2.9	363	10195	1.77	54.82	27.2	381	0.37	21.9	7.878	26.026	14406	3.96		<1	NA
W3	-17.37	9/5/90	939				1.63	50	25.7	360	0.14	2.0			1.63	50.49	26.9	377	0.27	20.7	7.878	26.018	14402	3.96		<1	NA
W3	-17.37	10/4/90	940				1.38	43	24.4	342	0.07	1.0	363	10195	1.99	61.64	24.5	344	0.82	20.8	7.877	26.048	14418	3.58		<1	NA
W3	-17.37	11/1/90	959				1.39	43	26.4	369	0.07	1.0	361	10125	1.43	44.29	25.6	359	0.34	20.8	7.867	26.273	14543	3.76		<1	NA
W3	-17.37	12/10/90	943				1.36	42	29.3	410	0.03	0.4	352	9886	1.75	54.20	30.3	425	0.26	20.8	7.880	25.721	14237	3.74		<1	NA
W3	-17.37	1/10/90	800				1.35	42	27.2	381	0.00	0.0	356	9998	1.49	46.15	28.5	399	0.30	20.7	7.874	26.065	14428	3.84		<1	NA
W3	-17.37	2/6/91	815				1.12	35	26.6	373	0.00	0.0	307	8622	1.45	44.91	26.8	375	0.54	20.8	7.870	25.446	14085	3.65		<1	NA
W3	-17.37	3/7/91	846				1.26	39	27.3	382	0.00	0.0	358	10055	1.32	40.89	27.8	389	0.57	20.5	7.881	25.492	14110	3.77		<1	NA
W3	-17.37	4/4/91	814				1.02	32	22.7	318	0.00	0.0	364	10223	1.38	42.74	27.2	381	0.57	20.5	7.883	25.600	14170	3.79		<1	NA
W3	-17.37	5/22/91	858				1.17	36	12.9	181	0.14	2.0	417	11712	1.21	37.48	13.5	189	0.32	21.6	7.883	25.680	14215	3.67		<1	NA
W3	-17.37	6/26/91	903				1.52	47	27.9	391	0.17	2.4	380	10672	1.63	50.49	28.6	401	0.33	20.6	7.880	25.421	14071	3.78		<1	<1
W3	-17.37	7/24/91	936				1.25	39	24.4	342	0.28	3.9	369	10364	1.47	45.53	26.4	370	0.51	18.0	7.879	25.715	14234	3.71		<1	<1
W3	-17.37	8/23/91	930				1.19	37	22.2	311	0.32	4.5	387	10869	1.25	38.72	26.1	366	0.38	20.5	7.823	25.758	14258	3.64		<1	<1
W3	-17.37	9/24/91	824				1.32	41	26.6	373	0.18	2.5	380	10672	1.44	44.60	28.6	401	0.35	20.5	7.840	25.423	14072	3.77		<1	<1
W3	-17.37	10/23/91	833				1.86	58	27.0	378	0.00	0.0	501	14071	1.97	61.02	28.6	401	0.36	20.5	7.864	25.664	14206	3.73		<1	<1
W3	-17.37	11/20/91	902				1.62	50	25.9	363	0.15	2.1	424	11908	1.68	52.04	27.0	378	0.28	20.5	7.862	25.441	14082	3.76		<1	<1
W3	-17.37	12/11/91	945				1.25	39	27.0	378	0.00	0.0	383	10757	1.28	39.65	28.0	392	0.39	20.5	7.873	25.369	14042	3.74		<1	<1
W3	-17.37	1/29/92	938				1.35	42	25.6	359	0.00	0.0	377	10588	1.42	43.98	29.1	408	0.92	20.6	7.882	25.174	13934	3.83		<1	<1
W3	-17.37	2/19/92	1008				1.41	44	28.8	403	0.02	0.3	357	10027	1.46	45.22	40.5	567	0.47	20.7	7.887	24.856	13758	3.89		<1	<1
W3	-17.37	3/17/92	919				1.34	42	29.0	406	0.00	0.0	380	10672	1.45	44.91	31.4	440	0.56	20.6	7.880	24.860	13761	3.93		<1	<1
W3	-17.37	4/8/92	909				1.37	42	28.9	405	0.31	4.3	378	10616	1.48	45.84	31.4	440	0.29	20.7	7.874	24.870	13766	3.94		<1	<1
W3	-17.37	5/6/92	922				1.33	41	28.2	395	0.21	2.9	400	11234	1.46	45.22	29.7	416	0.55	20.6	7.865	24.859	13760	3.94		<1	<1
W3	-17.37	6/23/92	921				1.35	42	28.2	395	0.33	4.6	405	11375	1.40	43.36	29.9	419	0.57	20.7	7.863	25.068	13876	3.93		<1	<1
W3	-17.37	7/29/92	906				1.29	40	28.3	396	ND	0.0	398	11178	1.36	42.12	29.4	412	0.57	20.7	7.843	24.839	13749	3.91		<1	<1
W3	-17.37	8/26/92	854				1.47	46	32.9	460	0.16	2.2	418	11740	1.47	45.53	35.1	491	0.42	20.7	7.851	24.681	13662	3.90		<1	<1
W3	-17.37	9/22/92	850				1.34	42	22.1	309	0.08	1.1	420	11796	1.61	49.87	21.6	302	0.35	20.7	7.863	24.918	13793	3.85		<1	<1
W3	-17.37	10/27/92	915				1.51	47	29.0	406	0.12	1.7	416	11684	1.56	48.32	30.9	433	0.45	20.2	7.861	24.931	13800	3.89		<1	<1
W3	-17.37	11/17/92	928				1.30	40	16.9	236	0.23	3.2	407	11431	1.52	47.08	31.5	441	0.74	20.2	7.874	24.961	13817	3.91		<1	<1
W3	-17.37	12/8/92	911				1.76	55	29.0	406	0.29	4.1	413	11599	1.42	43.98	31.8	445	0.54	20.1	7.870	24.748	13699	3.92		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	1/26/93	926				1.34	42	28.6	401	0.34	4.8	408	11462	1.40	43.36	31.1	436	0.37	20.6	7.891	24.617	13626	3.94		<1	<1
W3	-17.37	2/23/93	857				1.30	40	29.9	419	0.20	2.8	418	11740	1.33	41.20	31.3	438	0.40	20.5	7.897	24.769	13710	3.92		<1	<1
W3	-17.37	3/16/93	858				1.33	41	28.8	403	0.08	1.1	418	11751	1.37	42.43	29.9	419	0.41	20.5	7.887	24.848	13754	3.94		<1	<1
W3	-17.37	4/27/93	902				1.36	42	28.4	398	0.26	3.6	431	12113	1.43	44.29	29.7	416	0.34	20.6	7.879	24.953	13812	3.92		<1	<1
W3	-17.37	5/25/93	855				1.35	42	28.1	394	0.26	3.6	429	12046	1.37	42.43	29.7	416	0.24	20.6	7.871	24.943	13807	3.88		<1	<1
W3	-17.37	6/28/93	931				1.28	40	27.9	391	0.13	1.8	419	11768	1.46	45.22	29.7	416	0.40	20.7	7.864	25.089	13887	3.92		<1	<1
W3	-17.37	8/9/93	800				1.38	43	28.4	398	0.05	0.7	378	10602	1.40	43.36	31.0	434	0.56	20.9	7.850	24.854	13757	4.02		<1	<1
W3	-17.37	WELL SET RELOCATED																									
W3	-17.37	6/21/94	853				0.89	28	19.3	271	2.26	31.7	305	8576	0.89	27.57	25.2	353	0.39	20.5	7.980	25.374	14045	1.87		<1	<1
W3	-17.37	8/23/94	919				1.05	33	19.3	270	0.36	5.0	376	10563	1.12	34.69	21.6	303	0.46	20.8	7.960	25.062	13872	2.37		<1	<1
W3	-17.37	10/25/94	940				1.14	35	22.1	309	0.55	7.7	333	9352	1.16	35.93	23.7	333	0.33	20.6	7.912	24.884	13774	3.18		<1	<1
W3	-17.37	11/28/94	1253				1.22	38	21.6	303	0.48	6.7	326	9142	1.31	40.58	24.2	339		20.8		24.966	13819				
W3	-17.37	12/13/94	955				1.24	38	23.2	325	0.64	9.0	359	10086	1.35	41.81	24.9	349		20.7		25.125	13907				
W3	-17.37	1/24/95	935				1.36	42	23.3	327	0.18	2.5	335	9414	1.44	44.60	24.9	349	0.33	20.4	7.891	25.080	13882	3.42		<1	<1
W3	-17.37	2/14/95	919				1.29	40	23.3	327	0.14	2.0	341	9583	1.38	42.74	23.8	333	0.39	20.6	7.894	25.208	13953	3.37		<1	<1
W3	-17.37	3/14/95	1007				1.27	39	23.4	328	0.18	2.5	342	9605	1.35	41.81	24.6	344	0.29	20.6	7.863	25.204	13951	3.58		<1	<1
W3	-17.37	4/25/95	1035				1.39	43	24.2	339	0.28	3.9	334	9389	1.50	46.46	25.7	360	0.28	20.4	7.881	24.898	13782	3.67		<1	<1
W3	-17.37	5/9/95	925				1.37	42	25.1	351	0.27	3.8	363	10206	1.41	43.67	26.7	373	0.27	20.6	7.854	24.902	13784	3.51		<1	<1
W3	-17.37	6/27/95	937				1.25	39	24.5	344	0.49	6.9	348	9777	1.42	43.98	26.3	369	0.26	20.7	7.868	24.993	13834	3.61		<1	<1
W3	-17.37	7/25/95	952				1.23	38	24.8	348	0.09	1.3	351	9852	1.38	42.74	26.0	364	0.28	20.6	7.857	25.077	13881	3.53		<1	<1
W3	-17.37	8/22/95	1043				1.27	39	23.1	324	0.34	4.8	355	9965	1.42	43.98	26.2	368	0.27	20.8	7.848	24.911	13789	3.46		<1	<1
W3	-17.37	9/12/95	812				1.30	40	25.5	357	0.23	3.2	358	10041	1.32	40.89	26.8	376	0.35	22.7	7.894	25.077	13881	3.54		<1	<1
W3	-17.37	10/17/95	956				1.35	42	25.3	355	0.24	3.4	364	10223	1.40	43.36	27.1	380	0.63	20.6	7.880	24.888	13776	3.59		<1	<1
W3	-17.37	11/7/95	917				1.40	43	24.5	343	0.43	6.0	347	9757	1.43	44.29	25.9	362	0.38	20.3	7.901	25.095	13891	3.40		<1	<1
W3	-17.37	12/6/95	927				1.35	42	25.4	356	0.36	5.0	354	9954	1.38	42.74	26.5	371	0.49	20.5	7.936	24.933	13801	3.61		<1	<1
W3	-17.37	1/30/96	1002				1.32	41	27.2	381	0.12	1.7	356	10010	1.36	42.12	27.7	387	0.35	20.4	7.934	24.953	13812	3.67		<1	<1
W3	-17.37	2/27/96	1014				1.38	43	25.6	359	0.17	2.4	354	9954	1.47	45.53	26.7	374	0.49	20.7	7.882	24.986	13830	3.71		<1	<1
W3	-17.37	3/13/96	1044				1.39	43	25.6	359	0.38	5.3	358	10052	1.45	44.91	27.4	384	0.40	20.8	7.853	24.860	13761	3.76		<1	<1
W3	-17.37	4/2/96	857				1.31	41	24.3	340	0.15	2.1	375	10540	1.41	43.67	27.5	385	0.35	20.8	7.864	25.056	13869	3.72		<1	<1
W3	-17.37	5/15/96	1011				1.38	43	25.2	353	0.12	1.7	371	10406	1.44	44.60	26.7	374	0.38	21.3	7.838	25.120	13905	3.69		<1	<1
W3	-17.37	6/18/96	923				1.40	43	25.1	351	0.10	1.4	362	10172	1.46	45.22	26.8	376	0.49	21.0	7.865	25.009	13843	3.65		<1	<1
W3	-17.37	7/17/96	956				1.38	43	25.5	357	0.12	1.7	357	10035	1.40	43.36	27.2	381	0.34	21.0	7.862	24.808	13732	3.61		<1	<1
W3	-17.37	8/6/96	1006				1.29	40	27.1	379	0.31	4.3	366	10291	1.38	42.74	28.5	399	0.31	21.2	7.852	24.585	13608	3.82		<1	<1
W3	-17.37	9/4/96	952				1.35	42	28.3	396	0.38	5.3	361	10132	1.42	43.98	30.2	423	0.43	21.0	7.864	24.540	13584	3.83		<1	<1
W3	-17.37	10/9/96	1005				1.31	41	27	376	0.27	3.8	373	10481	1.38	42.74	28.1	394	0.44	21.1	7.864	24.546	13587	4.60		<1	<1
W3	-17.37	11/6/96	952				1.36	42	27	381	0.25	3.5	366	10281	1.51	46.77	30.2	423	0.52	21.0	8.011	24.562	13596	3.87		3	<1
W3	-17.37	12/17/96	949				1.35	42	27	373	0.27	3.8	353	9909	1.42	43.98	29.5	413	0.34	21.0	7.938	24.615	13625	3.85		<1	<1
W3	-17.37	1/14/97	1006				1.30	40	27	372	0.10	1.4	368	10330	1.35	41.81	28.5	399	0.35	21.1	7.879	24.519	13572	3.90		<1	<1
W3	-17.37	2/10/97	1135				1.50	46	27	373	0.25	3.5	369	10369	1.50	46.46	27.9	391	0.29	21.4	7.872	24.660	13650	3.88		<1	<1
W3	-17.37	3/10/97	1130				1.24	38	26	365	0.06	0.8	378	10616	1.34	41.50	26.6	373	0.42	21.3	7.877	24.834	13746	4.27		<1	<1
W3	-17.37	4/23/97	952				1.44	45	26	361	0.27	3.8	356	9990	1.56	48.32	28.2	395	0.33	20.8	7.887	24.920	13794	3.60		<1	<1
W3	-17.37	5/28/97	851				1.31	41	27	373	0.06	0.8	348	9760	1.48	45.84	32.1	450	0.35	20.7	7.900	24.927	13798	3.78		<1	<1
W3	-17.37	6/17/97	950				1.37	42	26	357	0.19	2.7	360	10119	1.47	45.53	26.5	371	0.37	20.4	7.913	24.940	13805	3.84		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	7/15/97	941				1.46	45	27	378	0.10	1.4	349	9802	1.54	47.70	28.1	393	0.33	20.3	7.921	24.775	13714	3.77		<1	<1
W3	-17.37	8/26/97	955				1.36	42	26.2	366	0.28	3.9	355	9976	1.46	45.22	27.1	380	0.35	20.7	7.987	24.784	13719	3.73		<1	<1
W3	-17.37	9/23/97	1159				1.39	43	26.6	373	0.25	3.5	347	9751	1.44	44.60	27.4	384	0.37	21.7	8.024	24.822	13740	3.91		<1	<1
W3	-17.37	10/15/97	918				1.40	43	26.6	373	0.24	3.4	363	10187	1.55	48.01	28.1	394	0.39	21.0	8.040	24.929	13799	3.72		<1	<1
W3	-17.37	11/4/97	1035				1.33	41	26.9	376	0.04	0.6	342	9600	1.48	45.84	30.7	431	0.29	20.7	8.050	24.997	13836	3.89		<1	<1
W3	-17.37	12/16/97	953				1.45	45	24.5	343	0.02	0.3	362	10170	1.60	49.56	27.8	389	0.30	20.3	8.027	25.211	13955	3.77		<1	<1
W3	-17.37	1/5/98	1231				1.40	43	26	360	0.08	1.1	351	9851	1.51	46.77	27.3	382	0.34	20.9	8.028	25.171	13933	3.83		<1	<1
W3	-17.37	2/3/98	1048				1.38	43	26	367	0.05	0.7	366	10279	1.56	48.32	28.1	394	0.32	20.8	8.015	25.128	13909	3.84		<1	<1
W3	-17.37	3/10/98	1106				1.46	45	25.2	353	0.10	1.4	356	9984	1.56	48.32	27.4	384	0.34	20.9	7.842	25.304	14006	3.83		<1	<1
W3	-17.37	4/14/98	932				1.48	46	25	354	0.03	0.4	357	10029	1.55	48.01	29	399	0.35	20.8	7.852	25.378	14047	3.82		<1	<1
W3	-17.37	5/12/98	1055				1.46	45	25.0	350	0.11	1.5	354	9928	1.53	47.39	26.8	376	0.33	21.1	7.862	25.565	14151	3.82		<1	<1
W3	-17.37	6/2/98	1048				1.38	43	25.2	353	0.05	0.7	356	9984	1.51	46.77	27	376	0.30	20.8	7.858	25.520	14126	3.84		<1	<1
W3	-17.37	7/14/98	1058				1.48	46	23.9	335	0.13	1.8	359	10069	1.61	49.87	26	359	0.30	21.1	7.837	25.670	14209	3.71		<1	<1
W3	-17.37	8/11/98	1117				1.42	44	24.7	346	0.13	1.8	354	9951	1.53	47.39	26.7	373	0.30	20.8	7.823	25.667	14207	3.86		<1	<1
W3	-17.37	9/15/98	1151				1.43	44	25.8	361	0.03	0.4	361	10147	1.59	49.25	28.9	405	0.32	20.7	7.821	25.359	14037	3.85		<1	<1
W3	-17.37	10/13/98	1025				1.42	44	25	350	0.05	0.7	393	11035	1.50	46.46	27	374	0.32	21.0	7.838	25.384	14051	4.10		<1	<1
W3	-17.37	11/4/98	1058				1.36	42	26	357	0.05	0.7	369	10369	1.39	43.05	27	384	0.37	21.0	7.852	25.409	14065	3.81		<1	<1
W3	-17.37	12/16/98	1038				1.31	41	24.7	346	0.07	1.0	352	9886	1.44	44.60	29.0	406	0.49	22.0	7.846	25.358	14036	3.86		<1	<1
W3	-17.37	1/12/99	1113				1.33	41	24.5	343	0.16	2.2	353	9917	1.48	45.84	26.3	368	0.36	20.9	7.847	25.516	14124	3.88		<1	<1
W3	-17.37	2/3/99	1101				1.34	42	25.2	353	0.09	1.3	352	9875	1.45	44.91	29.2	409	0.46	20.9	7.855	25.719	14236	3.86		<1	<1
W3	-17.37	3/2/99	1109				1.35	42	24.0	336	0.06	0.8	350	9833	1.46	45.22	26.9	377	0.36	20.7	7.837	25.859	14314	4.28		<1	<1
W3	-17.37	4/6/99	1059				1.34	42	23.8	333	0.06	0.8	362	10161	1.44	44.60	25.6	359	0.43	20.8	7.834	25.770	14264	3.76		<1	<1
W3	-17.37	5/4/99	1104				1.32	41	24.1	338	0.05	0.7	351	9850	1.35	41.81	28.1	394	0.31	20.7	7.831	25.791	14276	3.85		<1	<1
W3	-17.37	6/2/99	1048				1.39	43	23.7	332	0.12	1.7	347	9746	1.45	44.91	26.3	368	0.31	20.9	7.833	25.799	14280	3.81		<1	<1
W3	-17.37	7/7/99	1121				1.37	42	24.1	338	0.04	0.6	356	9984	1.44	44.60	25.7	360	0.29	21.0	7.832	25.705	14228	3.90		<1	<1
W3	-17.37	8/25/99	1054				1.29	40	24.7	346	0.04	0.6	355	9970	1.45	44.91	26.9	377	0.30	20.7	7.879	25.759	14258	3.80		<1	<1
W3	-17.37	9/8/99	1057				1.31	41	25.2	353	0.04	0.6	364	10232	1.43	44.29	28.2	395	0.30	20.7	7.890	25.695	14223	3.72		<1	<1
W3	-17.37	10/6/99	1102				1.45	45	25.3	354	0.06	0.8	344	9647	1.54	47.70	27.2	381	0.33	20.9	7.887	25.650	14198	3.76		<1	<1
W3	-17.37	11/3/99	1116				1.39	43	25.4	356	0.07	1.0	352	9883	1.44	44.60	27.6	387	0.28	20.8	7.900	25.454	14089	3.79		<1	<1
W3	-17.37	12/15/99	1133				1.40	43	24.8	347	0.09	1.3	355	9965	1.50	46.46	30.3	424	0.36	21.1	7.840	25.699	14225	3.59		<1	<1
W3	-17.37	1/11/00	1108				1.31	41	25.9	363	0.18	2.5	349	9810	1.45	44.91	28.9	405	0.35	20.8	7.853	25.616	14179	3.84		<1	<1
W3	-17.37	2/14/00	1125				1.40	43	24.3	340	0.17	2.4	343	9619	1.42	43.98	27.9	391	0.35	20.7	7.878	25.882	14326	3.80		<1	<1
W3	-17.37	3/22/00	1135				1.35	42	24.7	346	0.12	1.7	350	9838	1.38	42.74	28.4	398	0.44	20.8	7.892	26.045	14417	3.67		<1	<1
W3	-17.37	4/12/00	1118				1.37	42	24.6	345	0.11	1.5	354	9937	1.44	44.60	27.6	387	0.39	20.9	7.880	25.933	14355	3.69		<1	<1
W3	-17.37	5/17/00	1055				1.36	42	24.2	339	0.02	0.3	347	9746	1.41	43.67	27.0	378	0.37	20.8	7.880	25.975	14378	3.72		<1	<1
W3	-17.37	6/6/00	1133				1.34	42	23.7	332	0.03	0.4	347	9757	1.41	43.67	26.5	371	0.34	21.8	7.871	25.905	14339	3.66		<1	<1
W3	-17.37	7/31/00	1122				1.38	43	24.0	336	0.06	0.8	344	9673	1.48	45.84	27.3	382	0.57	20.8	7.886	26.017	14401	3.75		<1	<1
W3	-17.37	8/30/00	1127				1.37	42	24.8	347	0.03	0.4	344	9659	1.44	44.60	26.0	364	0.31	20.9	7.847	26.061	14425	3.61		<1	<1
W3	-17.37	9/6/00	1106				1.36	42	23.8	333	0.04	0.6	350	9838	1.47	45.53	26.0	364	0.32	21.1	7.840	26.092	14443	3.67		<1	<1
W3	-17.37	10/25/00	1043				1.37	42	23.0	322	0.16	2.2	358	10046	1.45	44.91	26.7	375	0.33	22.1	7.862	26.056	14423	4.25		<1	<1
W3	-17.37	11/14/00	1057				1.24	38	23.4	328	0.31	4.3	347	9740	1.47	45.53	31.0	434	0.41	22.2	7.860	25.943	14360	3.73		<1	1
W3	-17.37	12/19/00	1048				1.32	41	25.1	352	0.18	2.5	362	10164	1.49	46.15	27.3	382	0.40	21.6	7.873	25.892	14332	3.72		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	1/24/01	1042				1.38	43	24.1	337	0.12	1.7	357	10035	1.34	41.50	33.8	473	0.36	21.4	7.929	26.081	14437	3.52		<1	<1
W3	-17.37	2/7/01	1111				1.30	40	24.5	343	0.05	0.7	353	9903	1.38	42.74	29.3	410	0.38	21.7	7.884	26.160	14480	3.70		<1	1
W3	-17.37	3/12/01	1056				1.29	40	23.1	324	0.03	0.4	356	9996	1.44	44.60	**27.8**	389	0.47	22.8	7.837	26.166	14484	3.95		<1	<1
W3	-17.37	4/18/01	1048				1.38	43	24.7	346	0.04	0.6	360	10111	1.44	44.60	25.0	350	0.33	22.1	7.822	25.975	14378	3.82		<1	<1
W3	-17.37	5/14/01	924				2.20	68	24.2	339	0.17	2.4	359	10086	2.52	78.05	25.9	363	0.31	21.9	7.836	26.003	14393	4.06		<1	<1
W3	-17.37	6/13/01	1117				1.54	48	24.9	349	0.04	0.6	363	10192	1.70	52.66	26.9	377	0.30	22.4	7.845	25.889	14330	4.39		<1	<1
W3	-17.37	7/25/01	1025				1.44	45	24.8	347	0.05	0.7	361	10144	1.50	46.46	27.0	378	0.36	22.1	7.839	25.926	14351	4.14		<1	<1
W3	-17.37	8/20/01	1019				1.28	40	24.1	337	0.07	1.0	355	9956	1.39	43.05	27.3	382	0.47	22.1	7.850	25.860	14314	4.18		<1	<1
W3	-17.37	9/18/01	1057				1.28	40	24.8	348	0.12	1.7	352	9897	1.30	40.27	26.4	369	0.35	22.7	7.832	25.806	14284	4.72		<1	<1
W3	-17.37	10/9/01	1048				1.50	46	26.9	377	0.02	0.3	359	10069	1.60	49.56	30.4	426	0.37	22.6	7.833	25.324	14017	4.39		<1	<1
W3	-17.37	11/6/01	1015				1.36	42	27.9	390	0.06	0.8	360	10097	1.42	43.98	32.2	451	0.33	22.7	7.844	25.392	14055	4.42		<1	<1
W3	-17.37	12/18/01	1010				1.02	32	25.7	359	0.11	1.5	367	10302	1.16	35.93	29.9	419	0.33	21.8	7.842	25.456	14091	4.29		<1	<1
W3	-17.37	1/8/02	1024				1.38	43	25.8	361	0.29	4.1	358	10049	1.57	48.63	30.8	431	0.30	22.0	7.842	25.613	14177	4.60		<1	<1
W3	-17.37	2/27/02	1023				1.42	44	25.0	351	0.04	0.6	350	9824	1.46	45.22	29.2	410	0.31	22.0	7.847	25.995	14389	4.65		<1	<1
W3	-17.37	3/19/02	1030				1.32	41	25.1	352	0.14	2.0	355	9962	1.44	44.60	26.2	367	0.33	22.2	7.859	25.968	14374	4.13		<1	<1
W3	-17.37	4/9/02	1022				1.30	40	25.0	350	0.10	1.4	356	10004	1.54	47.70	27.3	382	0.40	22.3	7.826	25.984	14383	4.04		<1	<1
W3	-17.37	5/21/02	1025				1.24	38	23.8	333	0.04	0.6	350	9830	1.30	40.27	27.0	378	0.31	22.6	7.854	26.018	14402	4.33		<1	<1
W3	-17.37	6/18/02	1038				1.30	40	25.7	360	0.04	0.6	360	10111	1.42	43.98	27.6	387	0.22	22.6	7.844	25.787	14274	4.43		<1	<1
W3	-17.37	7/17/02	1016				1.38	43	26.0	364	0.02	0.3	358	10043	1.44	44.60	25.1	352	0.29	22.8	7.860	25.795	14278	4.65		<1	<1
W3	-17.37	8/22/02	1055				1.38	43	24.1	337	0.13	1.8	354	9942	1.46	45.22	24.3	341	0.38	23.4	7.841	25.972	14376	4.26		<1	<1
W3	-17.37	9/24/02	1036				1.34	42	25.6	358	0.17	2.4	362	10178	1.48	45.84	24.6	345	0.25	22.3	7.871	25.947	14362	4.81		<1	<1
W3	-17.37	10/16/02	1049				1.37	42	27.1	379	0.25	3.5	364	10212	1.55	48.01	30.0	420	0.52	22.7	7.859	25.614	14178	4.26		<1	<1
W3	-17.37	11/6/02	1034				1.41	44	28.5	399	0.19	2.7	359	10088	1.49	46.15	23.4	328	0.42	21.9	7.854	25.758	14258	4.17		<1	<1
W3	-17.37	12/19/02	1122				1.17	36	25.8	361	0.04	0.6	358	10043	1.44	44.60	23.5	329	0.52	22.0	7.861	25.738	14247	4.15		<1	<1
W3	-17.37	1/22/03	1112				1.50	46	23.9	335	0.03	0.4	360	10097	1.62	50.18	27.6	386	0.25	21.7	7.881	25.813	14288	4.03		<1	<1
W3	-17.37	2/20/03	1027				1.36	42	26.2	366	0.02	0.3	262	7358	1.44	44.60	27.4	384	0.26	21.5	7.892	25.771	14265	4.47		<1	<1
W3	-17.37	3/18/03	1013				1.40	43	22.0	308	0.02	0.3	370	10389	1.47	45.53	24.9	349	0.21	22.3	7.861	25.942	14360	4.72		<1	<1
W3	-17.37	4/29/03	1020				1.47	46	24.4	342	0.04	0.6	361	10139	1.57	48.63	27.3	382	0.24	22.8	7.899	25.914	14344	4.99		<1	<1
W3	-17.37	5/13/03	1047				1.51	47	23.6	330	0.05	0.7	364	10234	1.65	51.11	25.1	351	0.29	21.9	7.898	25.926	14351	3.69		<1	<1
W3	-17.37	6/5/03	1015				1.48	46	23.0	322	0.10	1.4	352	9878	1.54	47.70	27.5	385	0.24	22.3	7.884	25.953	14366	3.87		<1	<1
W3	-17.37	7/31/03	1035				1.39	43	24.6	344	0.31	4.3	357	10012	1.53	47.39	27.5	385		22.1	7.861	25.944	14361	4.97		<1	<1
W3	-17.37	8/27/03	1053				1.40	43	24.9	348	0.08	1.1	349	9813	1.52	47.08	31.4	440		22.1	7.854	25.827	14296	4.95		<1	<1
W3	-17.37	9/17/03	1020				1.52	47	25.4	355	0.03	0.4	362	10173	1.76	54.51	27.2	381		22.9	7.845	25.721	14237	3.91		<1	1
W3	-17.37	10/7/03	1021				1.42	44	25.3	355	0.34	4.8	361	10125	1.46	45.22	29.7	416		22.6	7.849	25.761	14259	NA		<1	<1
W3	-17.37	11/4/03	1002				1.42	44	23.0	323	0.34	4.8	360	10105	1.56	48.32	29.1	408		22.7	7.866	25.641	14193			<1	<1
W3	-17.37	11/14/03	1138																	22.8				3.90			
W3	-17.37	12/16/03	959				1.43	44	25.8	361	0.40	5.6	363	10181	1.42	43.98	30.4	426		22.8	7.854	25.541	14138	3.98		<1	<1
W3	-17.37	1/27/04	1020				1.39	43	26.2	367	0.61	8.5	358	10060	1.49	46.15	28.4	398		22.4	7.898	25.681	14215	4.42		<1	<1
W3	-17.37	2/10/04	1017				1.36	42	25.6	359	0.15	2.1	341	9563	1.37	42.43	27.6	387		22.3	7.850	25.789	14275	4.03		<1	<1
W3	-17.37	3/15/04	1021				1.52	47	26.3	368	0.04	0.6	363	10181	1.62	50.18	26.8	376		22.8	7.877	25.650	14198	3.56		<1	<1
W3	-17.37	4/21/04	932				1.37	42	26.9	376	0.15	2.1	362	10153	1.33	41.20	27.7	388		21.6	7.866	25.591	14165	5.27		<1	<1
W3	-17.37	5/12/04	927				1.46	45	26.0	364	0.16	2.2	361	10144	1.54	47.70	28.8	403		22.5	7.879	24.95	13810	5.24		<1	<1
W3	-17.37	6/7/04	1002				1.38	43	26.5	371	0.12	1.7	355	9973	1.50	46.46	28.3	397		22.8	7.851	24.90	13783	4.70		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	7/8/04	1032				1.44	45	25.9	362	0.20	2.8	368	10338	1.58	48.94	29.4	411	0.26	21.8	7.882	24.76	13705	3.96		<1	<1
W3	-17.37	8/24/04	1005				1.40	43	27.1	379	0.19	2.7	358	10063	1.44	44.60	28.2	396		22.2	7.870	24.59	13611	3.94		<1	<1
W3	-17.37	9/28/04	1015				1.32	41	26.2	367	0.16	2.2	361	10128	1.36	42.12	28.7	402		22.1	7.842	24.81	13733	3.85		<1	<1
W3	-17.37	10/5/04	1105				1.38	43	27.8	389	0.21	2.9	359	10094	1.48	45.84	29.9	418		22.3	7.869	24.61	13622	3.94		<1	<1
W3	-17.37	11/8/04	1006				1.40	43	25.6	358	0.23	3.2	357	10018	1.48	45.84	29.3	411		22.2	7.871	24.34	13473	3.96		<1	<1
W3	-17.37	12/7/04	1007				1.42	44	27.6	387	0.16	2.2	360	10097	1.44	44.60	30.6	428		22.2	7.902	24.45	13534	3.94		<1	<1
W3	-17.37	1/11/05	950				1.34	42	25.8	361	0.16	2.2	376	10557	1.40	43.36	27.9	391		22.6	7.943	25.572	14155	4.46		<1	<1
W3	-17.37	2/8/05	955				1.36	42	27.2	380	0.16	2.2	356	10001	1.48	45.84	32.8	460		22.6	7.942	25.714	14233	4.02		<1	<1
W3	-17.37	3/16/05	1043				1.32	41	28.7	401	0.29	4.1	353	9900	1.46	45.22	30.2	423	0.22	21.9	7.920	25.775	14267	4.04		<1	<1
W3	-17.37	4/18/05	1046				1.46	45	26.6	373	0.19	2.7	362	10175	1.62	50.18	30.8	431		22.9	7.904	25.672	14210	3.69		<1	<1
W3	-17.37	5/24/05	1003				1.32	41	26.3	368	0.21	2.9	347	9734	1.42	43.98	32.0	448		22.8	7.855	25.878	14324	4.14		<1	<1
W3	-17.37	6/13/05	1024				1.38	43	26.2	366	0.14	2.0	357	10018	1.50	46.46	28.1	394		22.9	7.875	25.669	14208	3.94		<1	<1
W3	-17.37	7/11/05	1025				1.52	47	25.5	357	0.18	2.5	359	10080	1.88	58.23	30.9	433		22.2	7.869	25.751	14254	5.94		<1	<1
W3	-17.37	8/10/05	940				1.42	44	25.9	363	0.16	2.2	356	10010	1.52	47.08	27.2	381		22.9	7.891	25.674	14211	3.86		<1	<1
W3	-17.37	9/21/05	933				1.38	43	26.3	369	0.06	0.8	350	9838	1.54	47.70	28.8	404	0.30	22.8	7.893	25.615	14179	3.90		<1	<1
W3	-17.37	10/18/05	958				1.42	44	25.7	361	0.13	1.8	351	9869	1.62	50.18	29.8	417		22.7	7.893	25.791	14276	3.96		<1	<1
W3	-17.37	11/3/05	943				1.40	43	26.0	364	0.26	3.6	353	9920	1.56	48.32	26.4	370		22.5	7.904	25.903	14338	3.96		<1	<1
W3	-17.37	12/21/05	1030				1.42	44	20.3	284	0.24	3.4	361	10125	1.52	47.08	23.0	322	0.45	22.6	7.896	25.876	14323	4.63		<1	2
W3	-17.37	1/24/06	937				1.40	43	24.8	348	0.31	4.3	356	10001	1.46	45.22	28.9	404		21.9	7.871	26.053	14421	3.96		<1	<1
W3	-17.37	2/15/06	935				1.39	43	27.4	384	0.21	2.9	352	9892	1.54	47.70	28.8	404	0.19	22.2	7.880	25.972	14376	3.94		<1	<1
W3	-17.37	3/21/06	928				1.34	42	25.7	360	0.17	2.4	354	9942	1.43	44.29	26.5	371	0.21	21.9	7.883	26.208	14507	3.81		<1	<1
W3	-17.37	4/26/06	943				1.35	42	23.4	328	0.05	0.7	345	9689	1.47	45.53	21.4	300	0.28	21.3	7.892	26.284	14549	3.86		<1	<1
W3	-17.37	5/23/06	1013				1.35	42	25	350	0.09	1.3	350	9830	1.36	42.12	23.4	327	0.36	22.3	7.903	26.195	14500	4.27		<1	<1
W3	-17.37	6/27/06	1011				1.52	47	25.8	361	0.14	2.0	355	9970	1.64	50.80	22.7	318	0.22	21.1	7.855	26.296	14556	3.64		<1	<1
W3	-17.37	7/18/06	1009				1.35	42	24.8	347	0.14	2.0	347	9746	1.47	45.53	23.6	331	0.36	21.7	7.871	26.141	14470	3.89		<1	<1
W3	-17.37	8/8/06	949				1.34	42	24.0	336	0.05	0.7	356	9998	1.45	44.91	20.5	287	0.17	22.2	7.887	26.396	14611	3.84		<1	<1
W3	-17.37	9/19/06	1046				1.35	42	24.5	343	0.07	1.0	354	9942	1.47	45.53	23.5	329	0.24	22.0	7.850	26.186	14495	3.88		<1	<1
W3	-17.37	10/24/06	1025				1.32	41	24.7	346	0.38	5.3	353	9914	1.42	43.98	23.3	326	0.24	21.3	7.888	26.154	14477	4.56		<1	<1
W3	-17.37	11/28/06	1004				1.35	42	25.7	360	0.28	3.9	353	9914	1.50	46.46	23.2	325	0.25	21.3	7.875	25.875	14322	3.81		<1	<1
W3	-17.37	12/12/06	956				1.38	43	24.9	349	0.22	3.1	348	9774	1.41	43.67	23.4	328	0.26	21.0	7.867	25.875	14322	3.75		<1	<1
W3	-17.37	1/9/07	1024				1.42	44	25.0	350	0.28	3.9	348	9774	1.47	45.53	26.7	374	0.23	20.8	7.900	25.935	14356	3.89		<1	<1
W3	-17.37	2/22/07	1010				1.38	43	25.8	361	0.32	4.5	356	9998	1.44	44.60	28.4	397	0.26	21.4	7.879	26.033	14410	3.81		<1	<1
W3	-17.37	3/6/07	1035				1.36	42	26.1	366	0.37	5.2	353	9914	1.44	44.60	27.2	381	0.31	22.0	7.894	26.183	14493	3.82		<1	<1
W3	-17.37	4/11/07	1157				1.34	42	26.7	374	0.22	3.1	366	10279	1.38	42.74	24.4	341	0.22	21.7	7.882	25.955	14367	3.71		<1	<1
W3	-17.37	5/3/07	1010				1.37	42	26.0	364	0.24	3.4	357	10027	1.45	44.91	25.1	351	0.27	21.6	7.892	26.015	14400	3.67		<1	<1
W3	-17.37	6/19/07	945				1.42	44	25.6	358	0.28	1.4	368	10335	1.5	46.2	21.6	303	0.16	21.6	7.919	25.953	14366	3.89		<1	<1
W3	-17.37	7/26/07	1115	-5.82	0.37	Flood	1.15	36	27.7	388	0.04	0.5	352	9899	1.5	45.9	30.9	432		20.7	7.77	25.80	14281	3.56			
W3	-17.37	8/28/07	1038	-5.39	0.00	Low	1.49	46	28.7	401	0.04	0.5	409	11479	1.6	50.7	30.8	431		20.8	7.73	25.72	14237	3.54			
W3	-17.37	9/13/07	1248	-5.26	0.15	Low	1.37	42	24.6	344	2.98	41.8	371	10412	1.6	49.7	33.6	470		21.0	7.85	25.86	14314	3.51			
W3	-17.37	10/24/07	1215	-5.26	0.30	Flood	1.10	34	28.5	399	1.40	19.5	347	9745	1.4	43.0	31.6	443		21.2	7.88	25.85	14309	3.38			
W3	-17.37	11/26/07	1504	-4.52	0.09	Flood	1.24	38	27.4	384	0.08	1.1	348	9767	1.1	33.9	31.5	442		21.0	7.82	25.94	14358	3.40			
W3	-17.37	12/20/07	1141	-5.46	0.23	High	1.34	42	28.3	396	0.70	9.8	345	9694						20.7	7.88	25.48	14104	3.50			

NELHA Water Quality Laboratory

Well 3 Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	1/28/08	1517	-6.10	0.06	Low	1.01	31	15.5	217	0.06	0.8	244	6862						21.2	7.73	25.95	14364	3.33			
W3	-17.37	2/27/08	1256	-4.83	0.06	Low	1.37	42	27.1	380	0.21	3.0	335	9406						20.8	7.70	25.86	14314	3.65			
W3	-17.37	3/20/08	1238	-5.51	0.12	Flood	1.08	33	26.3	369	0.06	0.8	309	8686						21.2	7.76	25.95	14364	3.29			
W3	-17.37	4/28/08	1211	-5.59	0.18	High	1.06	33	27.3	382	0.19	2.6	331	9287						21.3	7.75	25.84	14303	3.72			
W3	-17.37	5/29/08	1036		0.30	Flood	1.12	35	27.2	382	0.12	1.7	341	9564						21.5	7.78	25.86	14314	3.58			
W3	-17.37	6/19/08	1115	-5.64	0.21	Ebb	1.09	34	25.7	360	0.61	8.5	331	9286						21.6	7.66	26.04	14414	3.35	1.21		
W3	-17.37	7/24/08	1035	-5.56	0.46	Ebb	1.28	40	29.2	408	0.79	11.1	323	9071						20.6	7.68	25.81	14287	3.89			
W3	-17.37	8/30/08	1105		0.06	Flood	1.11	34	24.7	346	0.26	3.7	331	9290						20.9	7.78	25.99	14386	3.59			
W3	-17.37	9/18/08	958	-5.52	0.34	Ebb	0.96	30	18.6	261	0.42	5.9	203	5700						21.7	7.65	26.06	14425	3.81	0.39		
W3	-17.37	10/28/08	849	-5.74	0.24	Ebb	1.19	37	25.8	362	0.34	4.7	325	9140						22.7	7.47	25.73	14242	3.41	5.01		
W3	-17.37	11/13/08	1003	-5.73	0.15	Ebb	1.04	32	24.9	348	0.31	4.4	313	8794						23.2	7.73	25.67	14209	3.59	5.06		
W3	-17.37	12/15/08	1050	-5.63	0.37	Ebb	1.43	44	29.0	406	0.11	1.5	337	9458						22.1	7.99	25.32	14015	3.94			
W3	-17.37	1/21/09	1000	-5.89	0.12	Low	1.18	36	28.5	399	0.06	0.9	326	9160						22.9	8.01	25.69	14220	3.67	0.62		
W3	-17.37	2/23/09	1539	-5.76	0.37	High	1.10	34	30.1	421	0.90	12.6	354	9946						21.9	7.76	24.92	13794	3.86	0.68		
W3	-17.37	3/16/09	843	-5.85	0.18	High	1.21	38	25.5	357	0.13	1.8	333	9360						22.4	7.82	25.27	13988	3.70	0.28		
W3	-17.37	4/20/09	1423	-5.75	0.40	High	1.69	52	29.1	408	0.73	10.2	296	8310						24.1	7.71	25.90	14336	3.64	2.09		
W3	-17.37	5/27/09	734	-5.83	0.15	High	1.42	44	26.6	373	0.33	4.6	362	10177						20.7	8.10	25.89	14331	3.28	0.15		
W3	-17.37	6/18/09	1043	-5.78	0.40	Flood	1.68	52	27.3	382	0.49	6.9	147	4116						20.9	7.81	25.74	14248	3.66	0.24		
W3	-17.37	7/14/09	850	-5.77	0.37	Flood	1.41	44	24.2	340	0.27	3.8	168	4708						20.6	7.21	25.86	14314	3.54	0.07		
W3	-17.37	8/19/09	910	-5.93	0.03	Low	1.63	51	26.8	376	0.55	7.7	325	9133						20.9	7.19	25.95	14364	3.76	0.56		
W3	-17.37	9/22/09	932	-5.55	0.46	Ebb	1.55	48	23.5	329	0.46	6.5	210	5903						20.9	8.27	25.81	14287	3.63	0.09		
W3	-17.37	10/22/09	1410	-5.88	0.18	Ebb	1.39	43	19.4	271	0.87	12.2	137	3859						20.9	7.89	26.10	14447	3.81	0.13		
W3	-17.37	11/16/09	1503	-5.87	0.21	High	1.62	50	25.7	360	0.87	12.2	299	8406						20.8	7.86	26.20	14502	3.50	0.07		
W3	-17.37	12/7/09	1355	-5.92	0.09	Ebb	1.58	49	22.6	317	0.61	8.6	306	8582						21.6	7.80	25.75	14253	3.70	0.11		
W3	-17.37	1/5/10	1123	-5.65	0.21	Ebb	1.61	50	28.1	393	2.00	28.0	343	9647						21.5	7.83	25.58	14159	4.06	0.70		
W3	-17.37	2/1/10	1151	-5.87	-0.09	Low	1.58	49	31.0	434	0.86	12.0	302	8493						21.4	7.89	25.65	14198	3.72	0.43		
W3	-17.37	3/9/10	1146	-5.90	0.15	High	2.07	64	38.0	532	0.29	4.0	430	12073						21.3	7.88	22.20	12288	3.43	0.16		
W3	-17.37	4/6/10	1100	-5.92	0.15	High	2.03	63	29.0	406	0.29	4.0	353	9928						22.0	7.86	25.70	14226	3.78	0.56		
W3	-17.37	5/11/10	1127	-5.90	0.21	Flood	1.39	43	25.6	359	1.36	19.0	327	9171						22.9	7.93	25.13	13910	3.97	0.07		
W3	-17.37	6/15/10	1216	-6.03	0.06	Low	1.39	43	25.5	357	0.57	8.0	346	9715						20.3	7.90	25.61	14176	4.73	0.09		
W3	-17.37	7/13/10	1128	-5.97	0.00	Low	1.45	45	28.8	403	0.64	9.0	389	10913						20.6	7.88	24.81	13733	3.88	0.13		
W3	-17.37	8/3/10	1110	-5.52	0.55	High	1.52	47	28.1	394	0.21	3.0	379	10635						22.0	7.91	25.36	14037	3.60	0.46		
W3	-17.37	9/14/10	1110	-5.48	0.52	Ebb	1.45	45	29.8	417	0.33	4.6	406	11398						20.4	7.87	24.90	13783	4.00	0.32		
W3	-17.37	10/12/10	1120	-5.52	0.46	Ebb	1.42	44	27.8	389	0.16	2.3	391	10977						20.4	7.88	25.36	14037	3.75	0.13		
W3	-17.37	11/16/10	1035	-5.66	0.34	Flood	1.52	47	29.8	417	0.17	2.4	400	11244						20.5	7.89	24.98	13827	3.75	0.07		
W3	-17.37	12/14/10	1116	-5.63	0.34	Ebb	1.55	48	31.1	435	0.34	4.7	409	11474						20.6	7.87	24.04	13307	3.95	0.03		
W3	-17.37	1/4/11	1105	-5.83	0.03	Low	1.61	50	30.8	431	0.26	3.7	405	11372						20.5	7.82	24.89	13777	3.74	0.10		
W3	-17.37	4/5/11	1132	-5.97	-0.03	Low	1.71	53	28.6	400	0.03	0.4	379	10640						20.5	7.89	24.77	13711	3.40	0.15		
W3	-17.37	7/12/11	1118	-5.90	0.30	Flood	1.49	46	27.4	384	0.09	1.3	374	10500						20.5	7.82	25.57	14154	3.71	0.03		
W3	-17.37	10/11/11	1119	-5.90	0.15	Flood	1.36	42	25.3	355	0.19	2.6	354	9929						20.6	7.82	26.11	14453	3.81	0.12		
W3	-17.37	1/10/12	1118	-5.91	0.03	Ebb	1.39	43	27.3	383	0.19	2.6	375	10540						20.6	7.83	25.64	14192	3.76	0.16		
W3	-17.37	5/1/12	1136	-5.67	0.34	Flood	1.65	51	27.3	383	0.13	1.8	381	10707						20.6	7.84	25.83	14298	3.72	0.07		
W3	-17.37	7/18/12	1030	-5.99	0.03	Flood	1.45	45	27.4	384	0.31	4.4	369	10372						20.7	7.93	26.09	14441	3.75	0.31		
W3	-17.37	10/16/12	1116	-5.88	0.09	Low	1.42	44	27.5	385	0.14	1.9	367	10321						20.8	7.79	26.10	14447	3.60	0.24		
W3	-17.37	1/8/13	1139	-5.81	0.18	Flood	1.65	51	29.5	413	0.31	4.4	415	11661						20.8	7.78	25.83	14298	3.71	0.25		
W3	-17.37	4/9/13	1123	-5.98	0.00	Flood	1.65	51	26.0	364	0.36	5.1	362	10158						21.1	7.85	26.11	14453	3.59	0.64		

NELHA Water Quality Laboratory

Well 3 Data Table

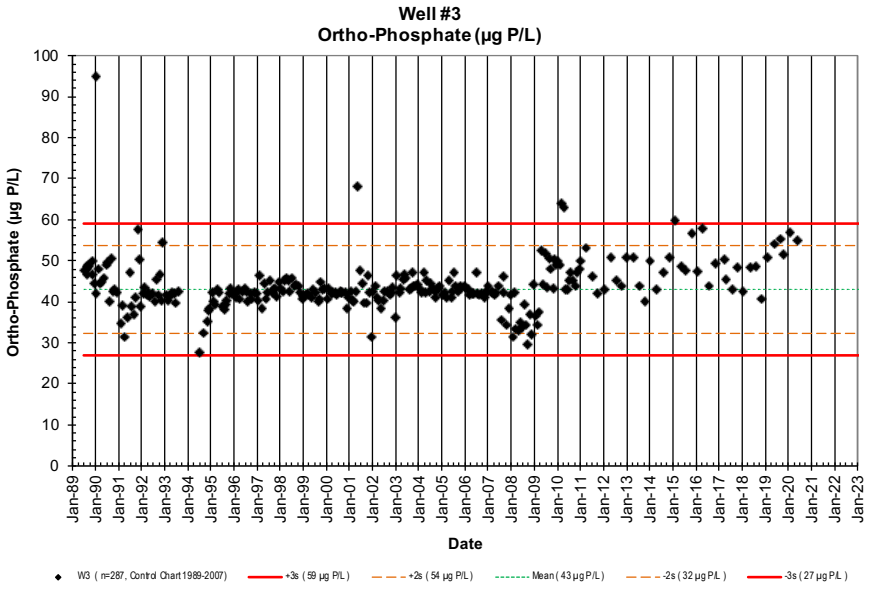
6/27/1989 - 7/21/20

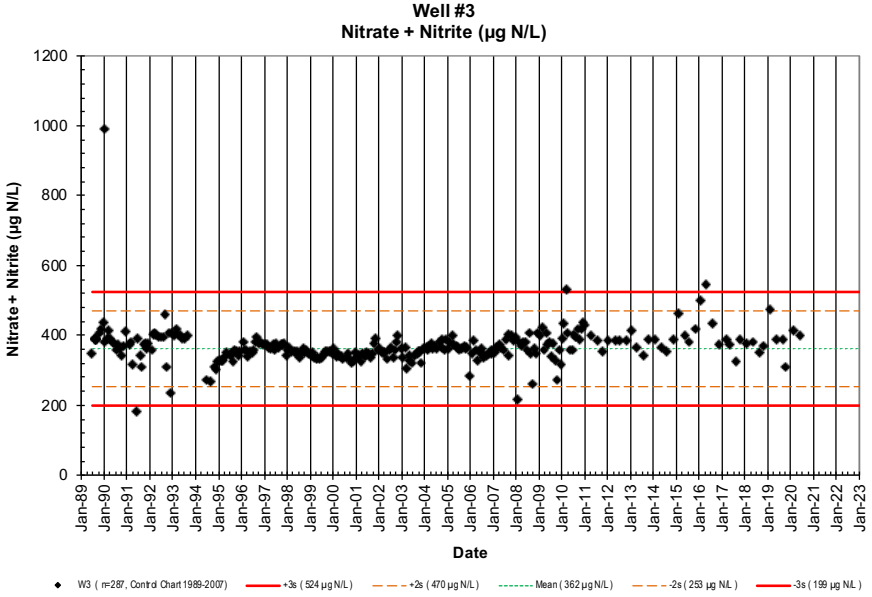
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3	-17.37	7/17/13	1237	-5.61	0.61	High	1.42	44	24.6	345	0.15	2.1	363	10202						21.0	7.75	26.11	14453	3.84	0.10		
W3	-17.37	10/15/13	1100	-5.71	0.37	Flood	1.29	40	27.8	389	0.25	3.5	352	9882						21.0	7.82	26.33	14574	3.78	0.46		
W3	-17.37	1/15/14	1102	-5.87	0.03	Low	1.61	50	27.8	389	0.34	4.8	354	9941						20.9	7.90	26.20	14502	3.80	0.28		
W3	-17.37	4/29/14	1201	-6.01	0.12	Flood	1.39	43	26.1	366	0.31	4.4	341	9571						21.0	7.81	26.21	14508	3.96	0.36		
W3	-17.37	7/29/14	1141	-5.91	0.12	Low	1.52	47	25.4	356	0.14	2.0	355	9973						20.8	7.78	26.28	14547	3.99	0.18		
W3	-17.37	11/5/14	1135	-5.74	0.17	Flood	1.65	51	27.6	387	0.30	4.2	340	9547						21.1	7.85	25.93	14353	3.91	0.24		
W3	-17.37	2/11/15	1101	-5.70	0.18	Ebb	1.93	59.8	33.1	464	0.46	6.5	408	11470						20.6	7.78	25.97	14375	3.69	0.35		
W3	-17.37	5/20/15	1226	-6.00	0.00	Flood	1.58	48.8	28.5	400	0.31	4.3	324	9111						21.0	7.88	25.79	14275	3.76	1.36		
W3	-17.37	7/22/15	1008	-5.73	0.34	Ebb	1.54	47.6	27.1	379	0.19	2.6	339	9518						21.5	7.71	26.79	14829	3.78	0.09		
W3	-17.37	11/9/15	1520	-5.64	0.40	Ebb	1.83	56.6	29.8	417	0.09	1.2	349	9794						20.9	7.76	25.40	14060	4.06	0.04		
W3	-17.37	1/27/16	1321	-5.92	0.08	Low	1.53	47.3	35.9	502	0.16	2.2	325	9133						20.8	7.79	25.63	14187	3.72	0.11		
W3	-17.37	4/22/16	1033	-5.81	-0.05	Low	1.87	57.9	38.9	545	0.30	4.2	335	9395						20.8	7.75	25.97	14375	3.96	0.13		
W3	-17.37	7/27/16	938	-5.66	0.20	Flood	1.42	43.9	30.9	432	0.06	0.9	319	8958						20.7	7.75	25.65	14198	3.69	0.02		
W3	-17.37	11/10/16	1040	-5.71	0.50	Flood	1.59	49.4	26.5	372	0.51	7.2	302	8480						21.2	7.65	25.67	14209	3.73	0.08		
W3	-17.37	3/22/17	1335	-5.67	0.25	High	1.62	50.2	27.6	387	0.19	2.7	369	10368						20.9	7.89	25.81	14287	3.70	0.13		
W3	-17.37	4/19/17	1227	-5.72	0.17	Ebb	1.47	45.6	26.6	372	0.23	3.2	360	10125						21.3	7.79	26.00	14392	2.87	0.12		
W3	-17.37	8/8/17	1047	-5.88	-0.04	Low	1.39	42.9	23.1	324	0.06	0.9	358	10041						21.0	7.80	26.44	14635	3.20	0.08		
W3	-17.37	10/18/17	1301	-5.71	0.50	Flood	1.56	48.2	27.8	389	0.27	3.8	344	9660						21.0	7.78	25.71	14231	3.73	0.08		
W3	-17.37	1/18/18	1020	-5.64	0.15	Ebb	1.38	42.6	27.0	378	0.19	2.6	336	9449						20.8	7.75	25.87	14320	3.52	0.05		
W3	-17.37	5/10/18	1035	-5.85	0.25	Flood	1.56	48.2	27.1	380	0.12	1.7	352	9888						19.7	7.78	30.11	16667	3.92	0.11		
W3	-17.37	8/13/18	1610	-5.68	0.46	Flood	1.58	48.8	25.1	351	0.20	2.8	354	9941						22.2	7.77	25.81	14287	3.67	0.15		
W3	-17.37	10/25/18	1101	-5.74	0.12	Low	1.32	40.8	26.5	371	0.01	0.2	338	9487						21.9	7.78	25.97	14375	3.90	0.09		
W3	-17.37	2/8/19	956	-5.67	0.20	Ebb	1.64	50.8	34.0	476	0.02	0.3	352	9894						21.0	7.64	26.04	14414	4.11	0.08		
W3	-17.37	5/15/19	1442	-5.60	0.52	High	1.75	54.1	27.8	389	0.09	1.3	344	9663						20.8	7.68	26.39	14608	3.73	0.02		
W3	-17.37	8/28/19	1413	-5.43	0.70	High	1.79	55.3	27.7	388	0.21	2.9	341	9590						21.0	7.81	25.80	14281	3.94	0.08		
W3	-17.37	10/11/19	1010	-5.76	0.15	Flood	1.66	51.5	22.1	310	0.50	7.0	300	8412						20.9	7.93	25.98	14381	3.94	0.13		
W3	-17.37	2/4/20	1108	-5.78	0.25	High	1.83	56.8	29.6	414	-0.61	-8.5	335	9414						20.7	7.90	26.21	14508	3.76	0.08		
W3	-17.37	6/3/20	1141	-5.70	0.35	Flood	1.77	54.9	28.5	400	0.24	3.3	356	10009						21.2	7.68	26.52	14680	3.68	0.54		
W3	-17.37	7/1/20																									
W3	-17.37	10/1/20																									
W3	-17.37	1/1/21																									
W3	-17.37	4/1/21																									
W3	-17.37	7/1/21																									
W3	-17.37	10/1/21																									
W3	-17.37	1/1/22																									
W3	-17.37	4/1/22																									
W3	-17.37	7/1/22																									
W3	-17.37	10/1/22																									
W3	-17.37	1/1/23																									
W3	-17.37	4/1/23																									
Mean				-5.72	0.22		1.41	44	26	368	0.23	3.2	357	10030	1.49	46.2	28.1	393	0.36	21.3	7.85	25.54	14137	3.90	0.42		
Std. Dev.				0.24	0.17		0.19	6	4	53	0.31	4.3	43	1201	0.20	6.3	4.8	68	0.11	0.8	0.09	0.60	333	0.43	0.89		
Maximum				-4.52	0.70		3.06	95	71	990	2.98	41.8	730	20502	3.28	101.6	74.8	1048	0.92	24.1	8.27	30.11	16667	5.94	5.06		
Minimum				-6.10	-0.09		0.89	28	13	181	-0.61	-8.5	137	3859	0.89	27.6	13.5	189	0.16	18.0	7.19	22.20	12288	1.87	0.02		
n				78	80		287	287	287	287	286	287	280	279	206	206	206	206	172	287	284	286	286	283	66		

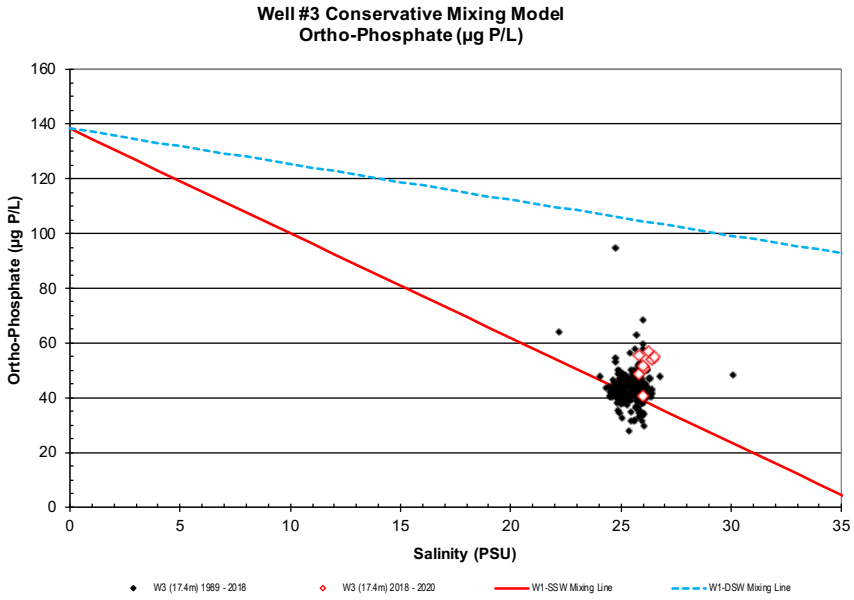
NELHA Water Quality Laboratory

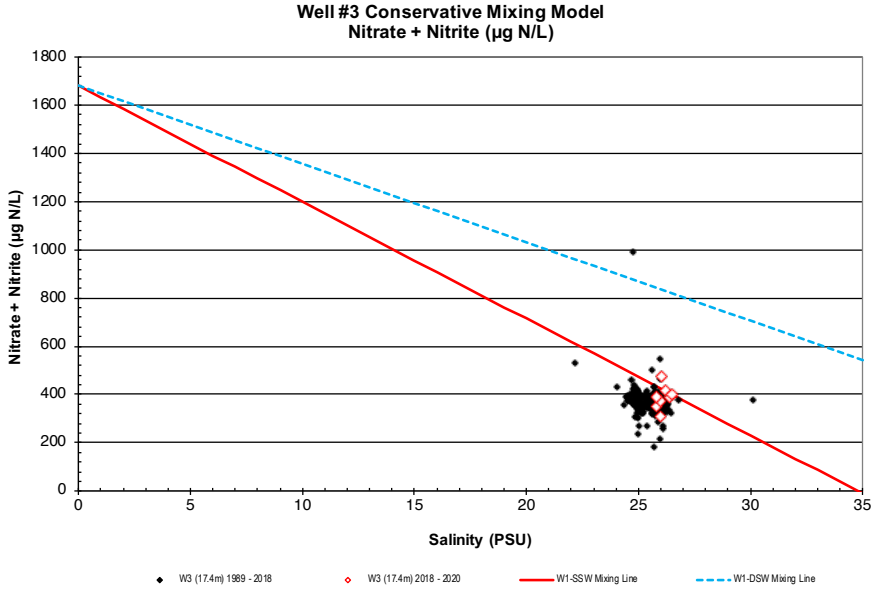
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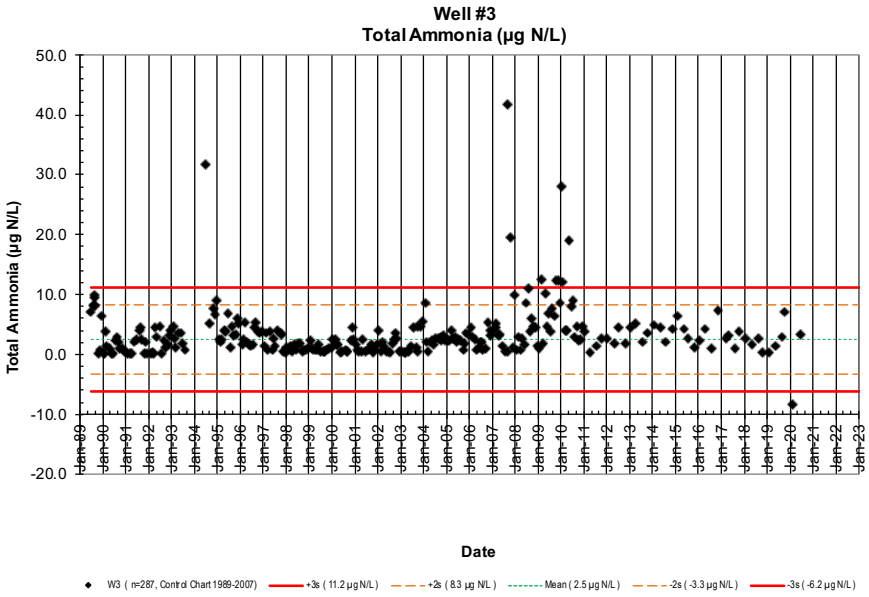


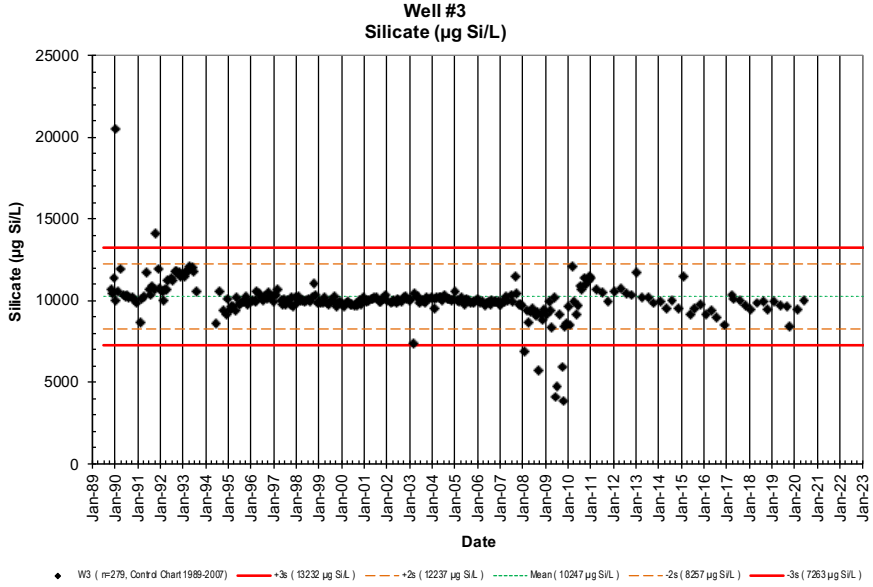


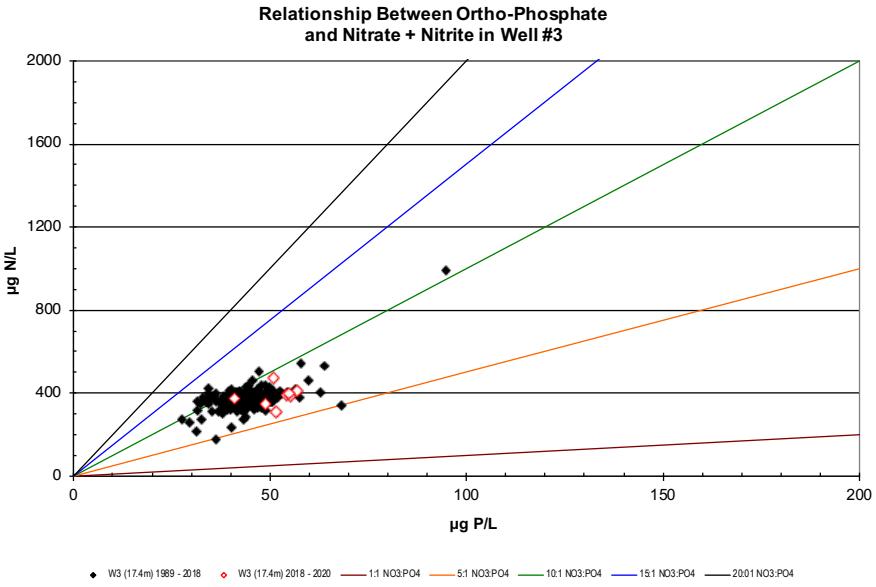
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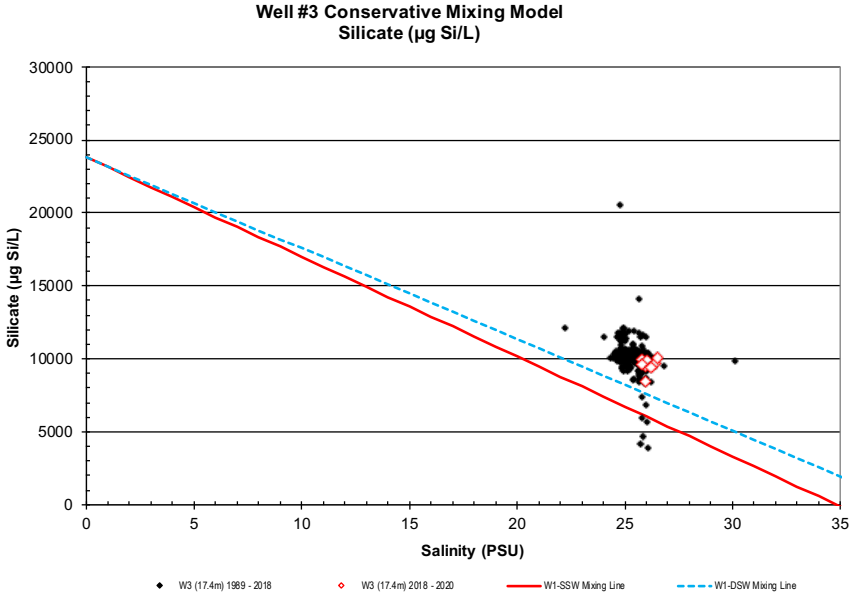
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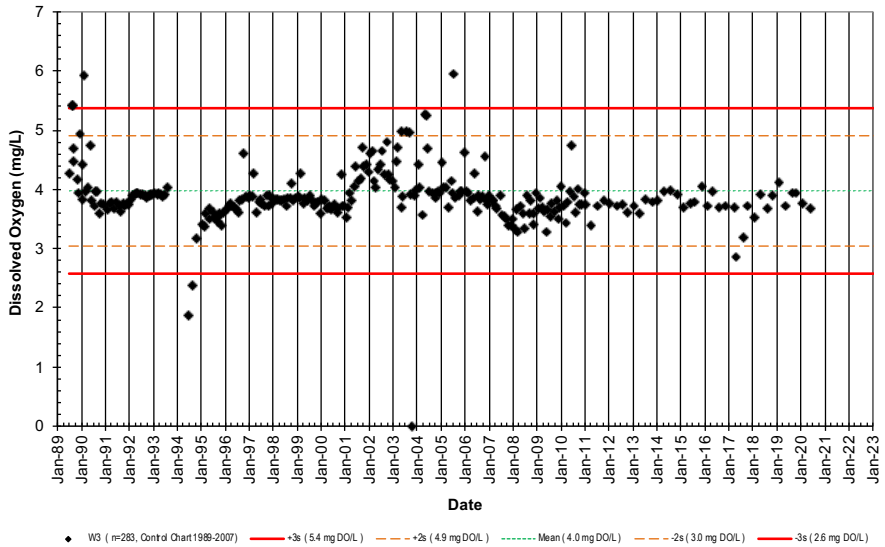


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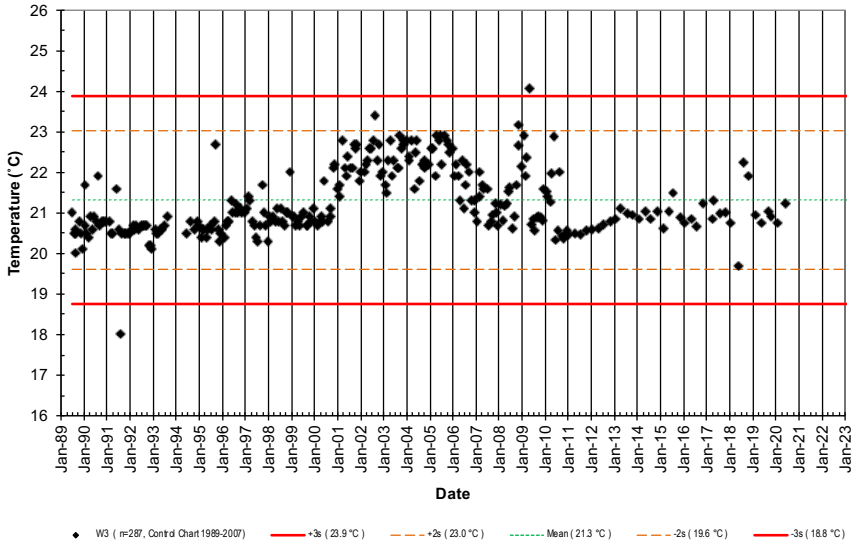
Well 3 Charts

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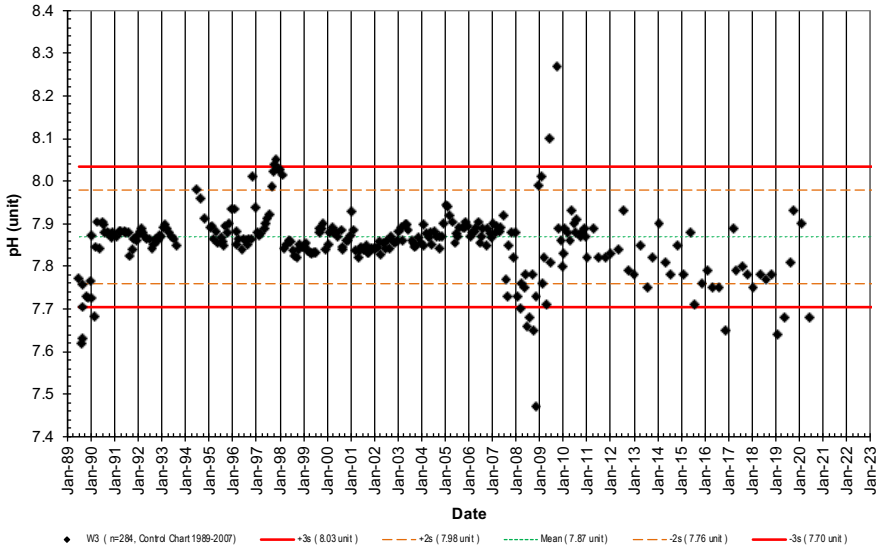
Well #3
Dissolved Oxygen (mg DO/L)



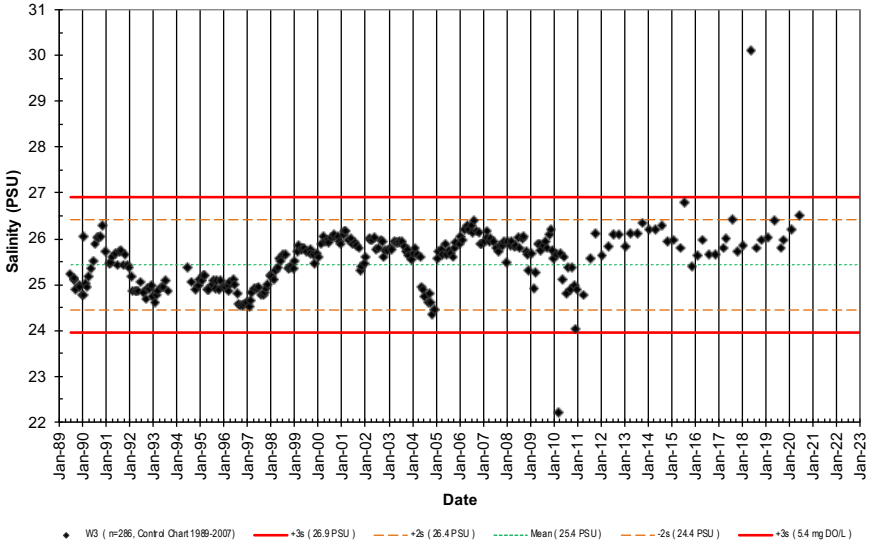
Well #3
Temperature (˚C)



Well #3
pH (unit)



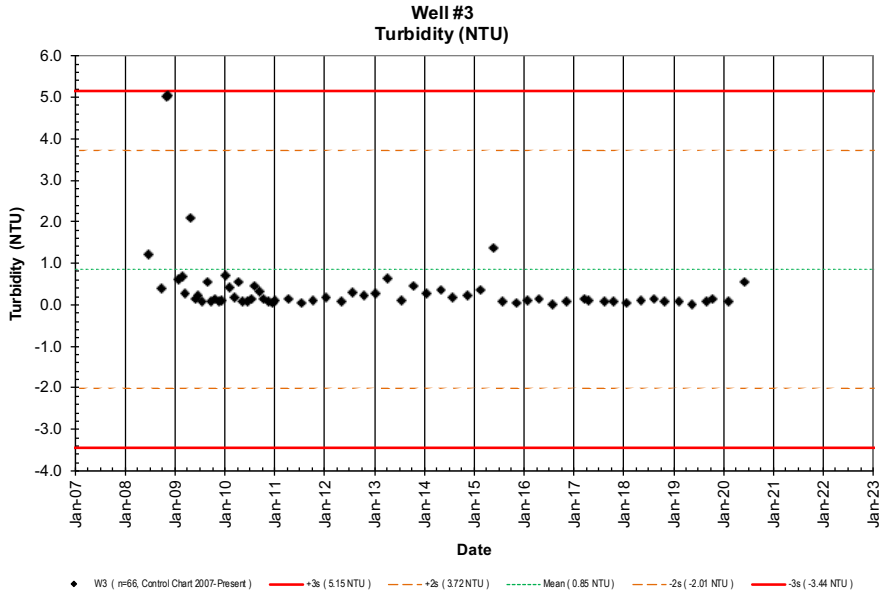
Well #3
Salinity (PSU)

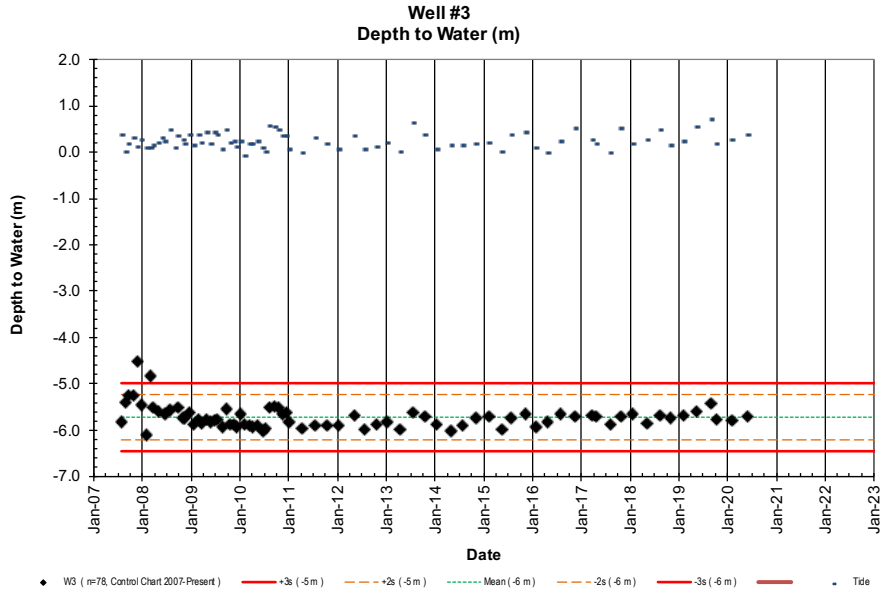


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Well 3 Charts

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Well 3A Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	6/27/89					3.14	97	63.0	882	0.19	2.7								22.1	7.793	11.870	6570	6.93		NA	NA
W3A	-8.53	8/10/89	1337				2.94	91	71.4	1000	0.58	8.1								21.8	7.796	9.202	5094	8.17		<1	NA
W3A	-8.53	8/16/89	1430				2.81	87	63.8	894	0.77	10.8								21.1	7.772	10.838	5999	7.67		14	NA
W3A	-8.53	8/24/89	1118				2.91	90	62.2	871	0.48	6.7								22.1	7.891	10.477	5799	7.73		<1	NA
W3A	-8.53	8/29/89	1032				3.26	101	71.9	1007	0.38	5.3								21.7	7.842	9.896	5478	7.33		<1	NA
W3A	-8.53	8/29/89	1032				3.23	100	71.9	1007	0.38	5.3														NA	NA
W3A	-8.53	10/30/89	1045				3.22	100	73.5	1029	0.01	0.1	645	18115	3.27	101.28	86.2	1207	0.40	22.1	7.782	9.443	5227	6.29		<1	NA
W3A	-8.53	11/16/89	1009				3.35	104	69.0	966	0.06	0.8	669	18789	3.58	110.89	76.0	1065	0.48	22.0	7.908	10.806	5981	8.09		1	NA
W3A	-8.53	12/12/89	1021				3.35	104	77.6	1087	0.15	2.1	702	19716	3.45	106.86	78.6	1101	0.38	21.7	7.877	9.345	5173	7.66		<1	NA
W3A	-8.53	1/11/90	1058				2.60	81	70.1	982	0.01	0.1	719	20193	2.76	85.49	73.4	1028	0.35	22.0	7.835	9.797	5423	7.85		<1	NA
W3A	-8.53	2/14/90	1405				3.06	95	66.9	937	0.03	0.4	666	18705	3.43	106.24	57.0	798	0.35	21.9	7.839	10.504	5814	7.65		<1	NA
W3A	-8.53	3/7/90	1352				2.86	89	72.9	1021	0.00	0.0	661		3.19	98.81	73.8	1034	0.38	21.8	7.972	9.928	5495	7.65		<1	NA
W3A	-8.53	4/2/90	1417				2.94	91	69.7	976	0.52	7.3	649	18227	3.04	94.16	71.8	1006	0.36	21.8	7.994	9.799	5424	7.37		<1	NA
W3A	-8.53	5/17/90	1010				3.01	93	69.2	969	0.00	0.0	629	17666	3.09	95.71	74.6	1045	0.25	22.3	7.940	9.954	5510	7.40		<1	NA
W3A	-8.53	6/16/90	926				3.13	97	61.4	860	0.24	3.4	611	17160	3.19	98.81	64.5	903	0.38	22.9	7.993	12.476	6906	6.59		<1	NA
W3A	-8.53	7/31/90	1002				2.75	85	44.9	629	0.01	0.1	551	15475	3.17	98.19	52.1	730	0.24	21.8	7.940	16.675	9230	5.49		3	NA
W3A	-8.53	8/30/90	935				2.56	79	52.9	741	0.37	5.2	571	16037	2.76	85.49	53.8	754	0.40	22.4	7.921	16.416	9087	5.75		<1	NA
W3A	-8.53	9/6/90	1008				2.99	93	63.7	893	0.00	0.0			2.81	87.04	65.1	912	0.33	21.9	7.969	12.994	7193	5.75		<1	NA
W3A	-8.53	10/25/90	1008				2.80	87	58.3	816	0.00	0.0	661	18565	3.37	104.38	58.9	825	0.90	22.1	7.962	13.063	7231	6.25		<1	NA
W3A	-8.53	11/14/90	1025				2.63	81	57.1	800	0.11	1.5	616	17301	2.94	91.06	58.0	812	0.43	22.2	7.944	14.241	7883	5.82		<1	NA
W3A	-8.53	12/19/90	1009				2.23	69	51.8	726	0.10	1.4	547	15363	2.67	82.70	52.9	741	0.30	21.7	7.928	17.745	9822	5.19		<1	NA
W3A	-8.53	1/24/91	820				2.64	82	60.9	853	0.01	0.1	582	16346	2.92	90.44	62.4	874	0.41	21.7	7.948	13.964	7729	6.30		<1	NA
W3A	-8.53	2/7/91	838				2.84	88	62.3	873	0.25	3.5	597	16767	3.04	94.16	66.3	929	0.54	21.9	8.010	10.985	6080	6.84		<1	NA
W3A	-8.53	3/12/91	902				2.76	85	68.7	962	0.03	0.4	612	17188	2.87	88.89	70.0	981	0.62	21.9	8.017	9.461	5237	7.36		<1	NA
W3A	-8.53	4/4/91	831				2.65	82	62.9	880	0.01	0.1	626	17582	2.70	83.63	63.7	892	0.80	22.0	8.019	10.828	5994	7.31		<1	NA
W3A	-8.53	5/22/91	912				2.57	80	31.4	440	0.00	0.0	632	17750	2.68	83.01	32.4	454	0.47	22.1	7.987	11.872	6571	6.96		<1	NA
W3A	-8.53	6/26/91	918				2.90	90	76.1	1066	0.00	0.0	656	18424	3.10	96.02	75.4	1056	0.43	21.9	8.014	9.692	5365	7.52		<1	<1
W3A	-8.53	7/24/91	950				2.41	75	63.6	891	0.08	1.1	608	17076	2.65	82.08	65.3	915	0.57	19.4	7.977	12.312	6815	6.83		<1	<1
W3A	-8.53	8/23/91	911				2.58	80	66.4	930	0.09	1.3	628	17638	2.64	81.77	68.4	958	0.42	21.7	7.924	12.770	7069	6.54		<1	<1
W3A	-8.53	9/24/91	837				2.76	85	67.7	948	0.00	0.0	629	17666	2.82	87.35	72.2	1011	0.39	21.8	7.951	11.167	6181	6.98		<1	<1
W3A	-8.53	10/23/91	847				2.87	89	66.4	930	0.00	0.0	875	24575	3.00	92.92	68.8	964	0.38	21.9	7.969	12.113	6705	6.82		<1	<1
W3A	-8.53	11/20/91	846				3.24	100	61.7	864	0.00	0.0	704	19772	3.40	105.31	64.1	898	0.39	21.8	7.947	12.446	6889	6.57		<1	<1
W3A	-8.53	12/11/91	928				2.55	79	62.3	873	0.00	0.0	602	16907	2.58	79.91	64.8	908	0.51	21.9	7.942	13.513	7480	6.25		<1	<1
W3A	-8.53	1/29/92	919				2.76	85	67.3	943	0.00	0.0	627	17610	2.83	87.66	68.6	961	0.97	22.0	7.976	11.705	6479	6.88		<1	<1
W3A	-8.53	2/19/92	949				2.81	87	69.4	972	0.00	0.0	592	16627	2.80	86.73	75.2	1053	0.42	22.1	7.993	10.893	6030	7.11		<1	<1
W3A	-8.53	3/17/92	900				2.83	88	70.4	986	0.00	0.0	662	18593	2.92	90.44	73.9	1035	1.00	21.9	7.997	10.493	5808	7.30		<1	<1
W3A	-8.53	4/8/92	849				2.80	87	66.1	926	0.04	0.6	613	17216	2.91	90.13	70.0	980	0.61	22.0	7.965	11.812	6538	7.79		<1	<1
W3A	-8.53	5/6/92	901				2.77	86	66.5	931	0.00	0.0	661	18565	2.88	89.20	69.1	968	0.72	21.9	7.959	11.682	6466	6.97		<1	<1
W3A	-8.53	6/23/92	901				2.66	82	62.0	868	0.12	1.7	646	18143	2.66	82.39	64.4	902	0.99	21.8	7.933	13.270	7345	6.60		<1	<1
W3A	-8.53	7/29/92	847				2.75	85	67.3	943	ND	0.0	674	18930	2.81	87.04	69.2	970	0.77	21.9	7.959	10.665	5903	7.24		<1	<1
W3A	-8.53	8/26/92	835				3.16	98	83.6	1171	0.00	0.0	704	19772	3.18	98.50	86.1	1206	0.70	22.0	7.983	9.796	5422	7.40		<1	<1
W3A	-8.53	9/22/92	832				2.77	86	68.0	952	0.00	0.0	675	18958	2.85	88.28	69.6	974	0.47	21.9	7.961	11.938	6608	6.75		<1	<1
W3A	-8.53	10/27/92	855				2.83	88	62.7	879	0.00	0.0	644	18087	2.91	90.13	64.8	908	0.66	21.9	7.938	13.749	7610	6.33		<1	<1
W3A	-8.53	11/17/92	910				2.61	81	64.4	901	0.08	1.1	633	17778	2.72	84.25	69.4	972	0.61	21.9	7.945	13.698	7582	6.33		<1	<1
W3A	-8.53	12/8/92	853				2.88	89	72.5	1015	0.05	0.7	675	18958	2.88	89.20	74.1	1038	0.67	22.0	7.979	11.114	6152	7.03		<1	<1

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Well 3A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	1/26/93	908				2.69	83	67.4	944	0.16	2.2	662	18604	2.80	86.73	74.7	1046	0.46	22.0	7.987	11.772	6516	6.82		<1	<1
W3A	-8.53	2/23/93	840				2.80	87	70.5	988	0.00	0.0	671	18854	2.84	87.97	77.4	1083	0.88	21.8	7.987	12.087	6690	6.77		<1	<1
W3A	-8.53	3/16/93	840				2.81	87	68.7	962	0.07	1.0	675	18955	2.82	87.35	72.9	1021	0.66	21.8	7.979	12.026	6657	6.78		<1	<1
W3A	-8.53	4/27/93	844				2.74	85	67.6	947	0.13	1.8	670	18826	2.81	87.04	70.8	991	0.44	21.9	7.957	12.768	7067	6.61		<1	<1
W3A	-8.53	5/25/93	836				2.75	85	68.1	954	0.00	0.0	674	18930	2.74	84.87	74.0	1037	0.39	21.9	7.956	12.352	6837	6.67		<1	<1
W3A	-8.53	6/28/93	915				2.65	82	65.3	915	0.02	0.3	653	18340	2.84	87.97	68.8	964	0.46	21.9	7.939	13.252	7335	6.45		<1	<1
W3A	-8.53	8/9/93	825				2.76	85	69.4	973	0.00	0.0	611	17160	2.78	86.11	71.8	1005	0.61	21.9	7.977	12.030	6659	6.80		<1	<1
W3A	-8.53	WELL SET RELOCATED																									
W3A	-8.53	6/21/94	835				3.67	114	84.5	1184	0.27	3.8	675	18957	3.68	113.98	103	1446	0.60	21.9	7.987	8.374	4635	7.79		<1	<1
W3A	-8.53	8/23/94	902				3.56	110	86.5	1212	0.31	4.3	950	26677	3.57	110.58	95.0	1331	0.50	22.1	7.986	8.498	4704	7.76		<1	<1
W3A	-8.53	10/25/94	923				3.57	111	81.9	1147	0.26	3.6	665	18671	3.58	110.89	85.3	1194	0.43	21.8	8.006	8.403	4651	7.69		<1	<1
W3A	-8.53	11/28/94	1310				3.50	108	83.5	1169	0.23	3.2	663	18630	3.52	109.03				22.3		8.777	4858			<1	<1
W3A	-8.53	12/13/94	939				3.46	107	85.4	1196	0.00	0.0	711	19963	3.49	108.10				22.2		8.390	4644				
W3A	-8.53	1/24/95	918				3.49	108	83.4	1167	0.23	3.2	660	18522	3.55	109.96	87.6	1226	0.41	22.0	8.027	8.773	4856	7.57		<1	<1
W3A	-8.53	2/14/95	901				3.38	105	83.1	1165	0.16	2.2	665	18680	3.42	105.93	84.6	1185	0.45	22.1	8.023	8.899	4926	7.56		<1	<1
W3A	-8.53	3/14/95	949				3.44	107	83.0	1163	0.08	1.1	668	18750	3.46	107.17	85.0	1191	0.60	22.0	8.014	8.267	4576	7.87		<1	<1
W3A	-8.53	4/25/95	1018				3.41	106	84.0	1177	0.27	3.8	702	19716	3.46	107.17	86.8	1216	0.41	21.8	8.034	8.115	4492	7.76		<1	<1
W3A	-8.53	5/9/95	907				3.28	102	84.3	1180	0.12	1.7	704	19767	3.37	104.38	88.9	1246	0.46	21.9	8.003	7.917	4382	7.83		<1	<1
W3A	-8.53	6/27/95	920				3.39	105	84.4	1183	0.40	5.6	674	18918	3.54	109.65	86.8	1216	0.47	22.0	8.017	8.126	4498	7.87		1	<1
W3A	-8.53	7/25/95	935				3.25	101	84.4	1182	0.01	0.1	688	19334	3.45	106.86	87.8	1230	0.51	22.1	7.999	8.153	4513	6.85		<1	<1
W3A	-8.53	8/22/95	1024				3.29	102	82.4	1155	0.32	4.5	682	19140	3.45	106.86	85.5	1198	0.51	22.3	7.994	8.310	4600	7.62		<1	1
W3A	-8.53	9/12/95	805				3.46	107	83.6	1172	0.36	5.0	679	19059	3.49	108.10	86.6	1213	0.47	22.2	8.046	8.408	4654	7.60		<1	<1
W3A	-8.53	10/17/95	938				3.45	107	81.3	1138	0.14	2.0	685	19233	3.46	107.17	83.6	1170	0.61	22.3	8.033	8.571	4744	7.49		<1	<1
W3A	-8.53	11/7/95	900				3.40	105	83.6	1171	0.22	3.1	669	18802	3.45	106.86	87.4	1224	0.60	22.2	8.051	8.562	4739	7.56		<1	<1
W3A	-8.53	12/6/95	910				3.36	104	83.1	1164	0.11	1.5	675	18958	3.39	105.00	85.3	1194	0.63	22.4	8.068	8.546	4730	7.53		<1	<1
W3A	-8.53	6/17/96	944				3.31	103	85.3	1195	0.04	0.6	682	19149	3.33	103.14	87.6	1226	0.54	22.2	8.085	8.527	4720	7.57		<1	<1
W3A	-8.53	2/27/96	954				3.30	102	81.9	1148	0.10	1.4	676	18989	3.31	102.52	84.7	1187	0.46	22.4	8.043	8.167	4521	7.69		<1	<1
W3A	-8.53	3/13/96	1025				3.15	98	78.2	1095	0.15	2.1	656	18431	3.26	100.97	81.8	1145	0.54	22.6	8.022	7.649	4234	7.81		<1	<1
W3A	-8.53	4/2/96	838				3.26	101	80.3	1125	0.09	1.3	659	18519	3.35	103.76	86.3	1209	0.52	22.4	8.028	8.037	4449	7.70		<1	<1
W3A	-8.53	5/15/96	952				3.35	104	82.7	1159	0.13	1.8	663	18626	3.39	105.00	86.6	1213	0.57	22.9	7.986	8.319	4605	7.59		<1	<1
W3A	-8.53	6/18/96	936				3.34	103	83.7	1172	0.07	1.0	703	19744	3.40	105.31	87.6	1226	0.53	22.4	8.018	8.439	4671	7.57		<1	<1
W3A	-8.53	7/17/96	1008				3.36	104	86.0	1205	0.17	2.4	709	19916	3.38	104.69	89.2	1249	0.61	22.6	8.031	8.156	4515	7.70		<1	<1
W3A	-8.53	8/6/96	1019				3.31	103	86.6	1214	0.17	2.4	674	18920	3.34	103.45	91.1	1276	0.60	22.6	8.013	8.308	4599	7.70		2	<1
W3A	-8.53	9/4/96	1013				3.37	104	88.0	1232	0.22	3.1	702	19722	3.41	105.62	91.0	1275	0.56	22.9	8.017	8.248	4565	7.71		<1	1
W3A	-8.53	10/9/96	1017				3.35	104	90.4	1266	0.21	2.9	671	18852	3.42	105.93	93.4	1308	0.56	22.9	8.031	7.602	4208	8.04		<1	<1
W3A	-8.53	11/6/96	1005				3.35	104	90.0	1261	0.20	2.8	694	19489	3.52	109.03	96.9	1357	0.71	23.0	7.994	7.808	4322	7.84		<1	<1
W3A	-8.53	12/17/96	1002				3.23	100	85	1186	0.22	3.1	657	18451	3.30	102.21	89.9	1260	0.43	22.8	8.008	8.359	4627	7.64		<1	1
W3A	-8.53	1/14/97	1018				2.84	88	75	1052	0.06	0.8	630	17691	2.96	91.68	78.7	1102	0.59	23.0	8.042	6.982	3865	7.76		<1	<1
W3A	-8.53	2/10/97	1117				3.10	96	79	1105	0.20	2.8	645	18121	3.17	98.19	80.4	1126	0.55	23.2	8.020	7.124	3943	7.81		<1	<1
W3A	-8.53	3/10/97	1143				3.06	95	83	1162	0.11	1.5	675	18958	3.18	98.50	84.1	1178	0.54	23.1	8.032	7.357	4072	7.79		<1	<1
W3A	-8.53	4/23/97	1006				3.31	103	81	1138	0.22	3.1	558	15663	3.35	103.76	95.3	1335	0.62	22.5	8.037	7.461	4130	7.44		<1	<1
W3A	-8.53	5/28/97	846				3.33	103	90	1263	0.05	0.7	587	16486	3.48	107.79	100	1402	0.62	22.1	8.049	7.514	4159	7.62		<1	<1
W3A	-8.53	6/17/97	945				3.25	101	84	1175	0.19	2.7	619	17393	3.32	102.83	87.5	1226	0.62	21.8	8.047	7.480	4140	7.65		<1	<1

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Well 3A Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	7/15/97	936				3.39	105	94	1311	0.08	1.1	665	18680	3.45	106.86	99.7	1396	0.54	22.0	8.038	7.279	4029	7.70		<1	<1
W3A	-8.53	8/26/97	950				3.24	100	91	1270	0.29	4.1	680	19095	3.26	100.97	93.6	1311	0.53	22.1	8.098	7.511	4158	7.61		<1	<1
W3A	-8.53	9/23/97	1212				3.29	102	89	1240	0.23	3.2	662	18587	3.33	103.14	90.2	1263	0.52	23.7	8.123	7.937	4393	7.49		<1	<1
W3A	-8.53	10/15/97	913				3.26	101	91.2	1277	0.02	0.3	660	18536	3.38	104.69	100	1406	0.55	22.6	8.140	7.254	4015	7.63		<1	<1
W3A	-8.53	11/4/97	1030				3.24	100	92.8	1300	0.07	1.0	662	18595	3.39	105.00	111	1548	0.50	22.6	8.147	7.873	4358	7.50		<1	<1
W3A	-8.53	12/16/97	946				3.30	102	84.8	1188	0.05	0.7	658	18489	3.46	107.17	94.3	1321	0.48	22.5	8.132	8.296	4592	7.54		<1	<1
W3A	-8.53	1/5/98	1225				3.34	103	86.4	1211	0.18	2.5	661	18554	3.37	104.38	89.9	1259	0.50	22.6	8.152	8.106	4487	7.63		<1	<1
W3A	-8.53	2/3/98	1043				3.25	101	83.5	1170	0.04	0.6	673	18902	3.42	105.93	88.7	1242	0.52	22.5	8.132	8.198	4538	7.59		<1	<1
W3A	-8.53	3/10/98	1059				3.45	107	85	1188	0.06	0.8	663	18618	3.54	109.65	89.2	1249	0.56	22.5	7.996	8.252	4568	7.66		<1	<1
W3A	-8.53	4/14/98	925				3.43	106	84	1170	0.02	0.3	672	18859	3.52	109.03	86.3	1209	0.54	22.2	8.011	8.177	4526	7.70		<1	<1
W3A	-8.53	5/12/98	1050				3.47	107	85.3	1195	0.25	3.5	668	18764	3.53	109.34	89.1	1248	0.55	22.3	8.010	8.458	4682	7.64		<1	<1
W3A	-8.53	6/2/98	1043				3.39	105	83	1167	0.04	0.6	660	18549	3.56	110.27	86	1203	0.66	22.1	8.007	8.847	4897	7.64		<1	<1
W3A	-8.53	7/14/98	1053				3.42	106	80.7	1130	0.16	2.2	666	18694	3.55	109.96	82.2	1151	0.56	22.2	7.993	8.717	4825	7.48		<1	1
W3A	-8.53	8/11/98	1112				3.48	108	85.1	1192	0.07	1.0	674	18916	3.66	113.36	89	1248	0.52	22.1	7.986	8.477	4692	7.84		<1	<1
W3A	-8.53	9/15/98	1146				3.42	106	82.3	1152	0.15	2.1	666	18713	3.60	111.51	84	1181	0.52	22.1	7.974	8.897	4925	7.70		<1	<1
W3A	-8.53	10/13/98	1020				3.38	105	84.7	1186	0.02	0.3	726	20390	3.49	108.10	92.3	1293	0.44	22.5	7.989	8.521	4717	8.28		<1	<1
W3A	-8.53	11/4/98	1053				3.35	104	84.1	1178	0.06	0.8	715	20076	3.46	107.17	89.7	1256	0.48	22.4	8.002	8.299	4594	7.68		<1	<1
W3A	-8.53	12/16/98	1033				3.38	105	82	1151	0.15	2.1	672	18865	3.47	107.48	87	1217	0.45	22.4	7.993	8.779	4859	7.56		<1	<1
W3A	-8.53	1/12/99	1108				3.34	103	81	1137	0.13	1.8	668	18770	3.49	108.10	86	1202	0.46	22.5	7.992	8.790	4865	7.69		<1	<1
W3A	-8.53	2/3/99	1056				3.26	101	82.3	1152	0.17	2.4	669	18792	3.37	104.38	88.2	1235	0.45	22.3	7.985	9.102	5038	7.65		<1	<1
W3A	-8.53	3/2/99	1104				3.33	103	77.6	1087	0.16	2.2	661	18559	3.41	105.62	80.6	1129	0.43	22.2	7.982	9.188	5086	8.34		<1	<1
W3A	-8.53	4/6/99	1054				3.26	101	82.5	1156	0.08	1.1	677	19000	3.37	104.38	86.7	1214	0.59	22.2	7.999	8.570	4744	7.88		<1	<1
W3A	-8.53	5/4/99	1059				3.15	98	76.2	1067	0.28	3.9	662	18598	3.40	105.31	78.3	1097	0.55	22.1	7.985	8.956	4957	7.65		<1	<1
W3A	-8.53	6/2/99	1043				3.30	102	83.0	1163	0.70	9.8	728	20446	3.48	107.79	90.7	1270	0.51	22.1	7.995	8.570	4744	7.83		<1	<1
W3A	-8.53	7/7/99	1116				3.33	103	77.5	1086	0.09	1.3	677	19014	3.44	106.55	81.6	1143	0.47	22.4	7.980	8.918	4936	7.67		<1	<1
W3A	-8.53	8/25/99	1049				3.27	101	84.6	1185	0.09	1.3	682	19157	3.38	104.69	91.3	1279	0.50	22.5	8.039	8.401	4650	7.86		<1	<1
W3A	-8.53	9/8/99	1052				3.24	100	85.2	1193	0.07	1.0	687	19292	3.41	105.62	96.2	1347	0.49	22.2	8.063	8.486	4697	7.78		<1	<1
W3A	-8.53	10/6/99	1057				3.41	106	83.5	1169	0.23	3.2	650	18247	3.51	108.72	87.3	1223	0.49	22.4	8.044	8.313	4601	7.73		<1	<1
W3A	-8.53	11/3/99	1111				3.27	101	80.1	1122	1.39	19.5	676	18975	3.32	102.83	86.2	1207	0.54	22.5	8.046	8.832	4889	7.51		<1	<1
W3A	-8.53	12/15/99	1128				3.32	103	80.1	1122	1.03	14.4	680	19084	3.43	106.24	85.3	1195	0.53	22.5	8.001	8.513	4712	7.46		<1	<1
W3A	-8.53	1/11/00	1103				3.25	101	82.6	1157	0.65	9.1	669	18795	3.27	101.28	91.3	1279	0.56	22.4	7.998	9.086	5029	7.43		<1	<1
W3A	-8.53	2/14/00	1120				3.30	102	81.7	1144	0.84	11.8	650	18242	3.32	102.83	91.3	1279	0.55	22.3	8.024	8.972	4966	7.52		<1	<1
W3A	-8.53	3/22/00	1130				3.16	98	81.7	1144	0.83	11.6	675	18961	3.05	94.47	87.7	1228	0.57	22.1	8.035	8.844	4895	7.56		<1	<1
W3A	-8.53	4/12/00	1113				3.36	104	82.7	1158	0.28	3.9	672	18873	3.27	101.28	89.1	1248	0.62	22.2	8.030	9.017	4991	7.49		<1	<1
W3A	-8.53	5/17/00	1050				3.31	103	83.4	1168	0.89	12.5	675	18961	3.35	103.76	87.1	1220	0.59	22.2	8.035	8.630	4777	7.75		1	<1
W3A	-8.53	6/6/00	1128				3.26	101	82.3	1153	0.26	3.6	673	18887	3.34	103.45	91.4	1280	0.61	22.1	8.028	8.879	4915	7.68		<1	<1
W3A	-8.53	7/31/00	1117				3.26	101	77.0	1079	0.44	6.2	665	18688	3.26	100.97	82.5	1156	0.53	22.2	8.033	9.159	5070	7.63		<1	<1
W3A	-8.53	8/30/00	1122				3.24	100	81.3	1139	0.57	8.0	670	18814	3.40	105.31	85.2	1193	0.87	22.4	8.006	8.776	4858	7.77		<1	1
W3A	-8.53	9/6/00	1101				3.23	100	78.0	1093	1.05	14.7	661	18559	3.32	102.83	84.5	1184	0.66	22.5	7.988	9.513	5266	7.81		<1	<1
W3A	-8.53	10/25/00	1038				3.33	103	82.1	1150	0.81	11.3	702	19716	3.39	105.00	85.3	1195	0.52	22.7	7.998	8.501	4706	7.34		<1	36
W3A	-8.53	11/14/00	1052				3.04	94	76.4	1070	1.26	17.6	655	18390	3.19	98.81	83.2	1165	0.52	22.7	8.020	7.952	4402	7.35		<1	5
W3A	-8.53	12/19/00	1043				3.18	98	78.5	1100	**1.72**	24.1	670	18820	3.32	102.83	85.4	1196	0.64	22.6	8.007	8.697	4814	7.17		<1	1

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Well 3A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	1/24/01	1037				3.14	97	82.1	1150	0.27	3.8	672	18882	3.52	109.03	84.3	1181	0.61	22.6	7.999	8.639	4782	7.81		<1	<1
W3A	-8.53	2/7/01	1106				3.28	102	80.6	1129	0.07	1.0	676	18980	3.46	107.17	**82.6**	1157	0.73	22.5	8.013	8.775	4857	7.15		<1	1
W3A	-8.53	3/12/01	1051				3.23	100	77.8	1090	0.62	8.7	664	18660	3.44	106.55	**83.4**	1169	0.48	22.6	7.971	8.920	4937	7.11		<1	1
W3A	-8.53	4/18/01	1043				3.31	103	82.4	1154	0.49	6.9	679	19070	3.39	105.00	86.4	1210	0.53	22.5	7.970	8.726	4830	7.67		<1	<1
W3A	-8.53	5/14/01	928				4.82	149	82.3	1152	0.75	10.5	685	19250	4.94	153.01	84.5	1183	0.52	22.4	7.984	8.803	4873	7.72		<1	<1
W3A	-8.53	6/13/01	1100				3.58	111	82.9	1161	2.94	41.2	680	19090	3.56	110.27	85.7	1200	0.47	22.2	7.986	8.907	4930	7.71		<1	<1
W3A	-8.53	7/25/01	1031				3.36	104	85.8	1202	0.03	0.4	677	19014	3.26	100.97	88.2	1236	0.53	22.2	7.982	8.795	4868	7.69		<1	1
W3A	-8.53	8/20/01	1014				3.22	100	84.0	1176	0.42	5.9	687	19295	3.25	100.66	87.8	1230	0.61	22.5	7.997	8.670	4799	7.62		<1	<1
W3A	-8.53	9/18/01	1052				3.34	103	87.8	1230	0.29	4.1	674	18930	3.30	102.21	90.0	1261	0.55	22.7	7.988	8.404	4652	7.78		<1	<1
W3A	-8.53	10/9/01	1052				3.54	110	86.0	1205	0.38	5.3	737	20685	3.58	110.89	92.9	1301	0.55	22.7	7.974	9.159	5070	7.51		<1	<1
W3A	-8.53	11/6/01	1010				3.24	100	90.4	1267	0.08	1.1	669	18795	3.37	104.38	103	1443	0.53	22.7	7.969	9.317	5157	7.43		<1	<1
W3A	-8.53	12/18/01	1005				2.75	85	82.5	1156	0.06	0.8	668	18767	2.83	87.66	98.1	1374	0.49	22.8	7.976	8.754	4846	7.52		<1	<1
W3A	-8.53	1/8/02	1019				3.20	99	84.3	1180	0.45	6.3	659	18517	3.31	102.52	86.7	1214	0.51	22.6	7.991	8.529	4721	7.32		<1	<1
W3A	-8.53	2/27/02	1018				3.30	102	89.2	1250	0.08	1.1	684	19208	3.38	104.69	96.6	1353	0.47	22.5	7.997	8.676	4802	7.24		<1	<1
W3A	-8.53	3/19/02	1025				3.20	99	82.3	1153	0.07	1.0	669	18786	3.28	101.59	83.7	1172	0.46	22.3	8.000	8.615	4769	7.26		<1	<1
W3A	-8.53	4/9/02	1017				3.26	101	82.4	1155	0.05	0.7	665	18680	3.44	106.55	95.1	1332	0.52	22.4	7.980	7.994	4425	7.35		<1	<1
W3A	-8.53	5/21/02	1020				3.20	99	82.6	1157	0.02	0.3	665	18677	3.30	102.21	85.1	1192	0.53	22.4	7.996	8.314	4602	7.71		<1	<1
W3A	-8.53	6/18/02	1033				3.25	101	86.8	1215	0.13	1.8	665	18674	3.37	104.38	89.5	1254	0.50	22.6	7.989	8.830	4888	7.57		<1	<1
W3A	-8.53	7/17/02	1011				3.30	102	89.3	1251	0.08	1.1	663	18623	3.36	104.07	80.9	1134	0.68	22.7	8.002	8.877	4914	7.55		<1	1
W3A	-8.53	8/22/02	1035				3.34	103	84.5	1183	0.13	1.8	682	19154	3.52	109.03	84.3	1181	0.58	22.4	7.997	8.659	4793	7.65		<1	5
W3A	-8.53	9/24/02	1049				3.22	100	97.4	1365	0.20	2.8	682	19143	3.42	105.93	81.4	1141	0.54	22.9	8.033	8.476	4692	7.76		<1	2
W3A	-8.53	10/16/02	1044				3.19	99	94.9	1329	0.12	1.7	669	18789	3.15	97.57	77.6	1087	0.48	23.0	8.014	8.091	4479	7.74		<1	<1
W3A	-8.53	11/6/02	1029				3.18	98	94.0	1317	1.02	14.3	664	18646	3.31	102.52	78.4	1099	0.65	22.7	7.988	8.360	4627	7.71		<1	<1
W3A	-8.53	12/19/02	1117				3.25	101	89.8	1258	0.08	1.1	669	18795	3.31	102.52	80.2	1124	0.57	22.9	8.005	8.556	4736	7.66		<1	1
W3A	-8.53	1/22/03	1107				3.18	98	80.5	1128	0.33	4.6	657	18438	3.30	102.21	87.2	1221	0.61	22.6	7.987	9.507	5262	8.77		<1	<1
W3A	-8.53	2/20/03	1034				3.06	95	85.8	1202	0.04	0.6	665	18671	3.24	100.35	88.0	1233	0.49	22.6	8.008	8.902	4927	7.68		<1	<1
W3A	-8.53	3/18/03	1020				3.26	101	87.5	1226	0.06	0.8	663	18623	3.33	103.14	98.7	1382	1.06	22.7	8.020	8.773	4856	7.77		<1	<1
W3A	-8.53	4/29/03	1015				3.34	103	90.8	1271	0.54	7.6	681	19115	3.44	106.55	95.4	1336	0.42	22.6	8.048	8.325	4608	7.84		<1	<1
W3A	-8.53	5/13/03	1042				3.33	103	85.9	1203	0.44	6.2	674	18935	3.49	108.10	88.3	1237	0.44	22.4	8.061	8.242	4562	7.89		<1	<1
W3A	-8.53	6/5/03	1010				3.39	105	87.9	1231	0.36	5.0	666	18697	3.46	107.17	99.6	1394	0.45	22.7	8.065	8.482	4695	7.80		<1	<1
W3A	-8.53	7/31/03	1030				3.24	100	99.2	1389	0.45	6.3	672	18873	3.35	103.76	101	1419		22.4	8.020	8.650	4788	8.01		<1	<1
W3A	-8.53	8/27/03	1059				3.30	102	94.3	1321	0.14	2.0	671	18857	3.50	108.41	112	1565		22.6	8.027	8.520	4716	7.95		<1	<1
W3A	-8.53	9/17/03	1025				3.26	101	89.2	1249	0.49	6.9	652	18298	3.66	113.36	96.1	1346		NA	7.982	9.524	5272	7.66		<1	<1
W3A	-8.53	10/7/03	1016				3.34	103	102	1423	0.99	13.9	673	18913	3.46	107.17	110	1539		23.1	8.009	8.252	4568	NA		<1	<1
W3A	-8.53	11/4/03	957				3.30	102	99.5	1394	0.10	1.4	686	19278	3.40	105.31	102	1426		22.9	8.037	8.395	4647			<1	<1
W3A	-8.53	11/14/03	1132																	23.0				7.57			
W3A	-8.53	12/16/03	954				3.19	99	89.6	1255	0.50	7.0	664	18646	3.28	101.59	92.2	1291		22.8	7.987	9.476	5245	7.43		<1	<1
W3A	-8.53	1/27/04	1015				3.14	97	90.6	1270	**1.22**	17.1	654	18368	3.27	101.28	89.3	1251		22.9	8.038	8.421	4661	7.50		<1	<1
W3A	-8.53	2/10/04	1012				3.08	95	86.8	1216	0.45	6.3	624	17514	3.08	95.40	90.1	1262		22.9	7.988	8.656	4791	7.61		<1	<1
W3A	-8.53	3/15/04	1026				2.89	90	79.4	1112	0.09	1.3	632	17753	3.09	95.71	81.4	1140		22.7	8.063	6.741	3731	7.31		<1	1
W3A	-8.53	4/21/04	927				3.06	95	89.8	1258	0.72	10.1	658	18475	3.07	95.09	92.3	1293		22.5	8.025	7.785	4309	7.79		<1	<1
W3A	-8.53	5/12/04	922				3.00	93	91.8	1286	0.07	1.0	655	18382	3.14	97.26	94.9	1330		22.7	8.042	7.78	4306	8.03		<1	<1
W3A	-8.53	6/7/04	957				3.18	98	87.2	1221	0.29	4.1	644	18098	3.34	103.45	103	1448		22.6	8.038	7.75	4290	7.86		<1	<1

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Well 3A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	7/8/04	1027				3.06	95	91.0	1275	0.20	2.8	663	18629	3.26	100.97	99.8	1397	0.41	22.8	8.096	8.13	4500	7.67		<1	<1
W3A	-8.53	8/24/04	1010				3.06	95	93.2	1306	0.08	1.1	646	18146	3.08	95.40	96.9	1358		22.3	8.022	8.23	4556	7.53		<1	<1
W3A	-8.53	9/28/04	1020				3.12	97	**104**	1461	0.20	2.8	668	18764	3.21	99.43	**112**	1563		22.8	8.016	7.84	4340	7.69		<1	<1
W3A	-8.53	10/5/04	1109				3.10	96	99.8	1398	0.15	2.1	653	18351	3.18	98.50	**106**	1483		22.8	8.018	8.50	4705	7.50		<1	<1
W3A	-8.53	11/8/04	951				3.16	98	91.9	1287	0.22	3.1	664	18635	3.36	104.07	99.4	1392		23.0	8.041	8.03	4445	7.69		<1	<1
W3A	-8.53	12/7/04	1002				3.12	97	99.2	1389	0.24	3.4	662	18604	3.18	98.50	**114**	1602		22.9	8.065	7.97	4412	7.58		<1	1
W3A	-8.53	1/11/05	950				3.02	94	87.3	1223	0.07	1.0	675	18963	3.08	95.40	90.0	1261		23.1	8.099	8.068	4466	7.56		<1	<1
W3A	-8.53	2/8/05	1000				2.92	90	91.3	1278	0.09	1.3	642	18034	3.02	93.54	99.4	1392		22.9	8.101	7.239	4007	7.73		<1	<1
W3A	-8.53	3/16/05	1040				3.02	94	99.5	1394	0.16	2.2	636	17860	3.22	99.74	**108**	1513	0.44	22.8	8.075	7.490	4146	7.75		<1	<1
W3A	-8.53	4/18/05	1049				3.20	99	95.7	1340	0.16	2.2	671	18840	3.46	107.17	**102**	1434		23.0	8.075	7.696	4260	7.22		<1	<1
W3A	-8.53	5/24/05	958				3.18	98	**105**	1471	0.21	2.9	665	18680	3.28	101.59	**109**	1523		23.0	8.011	8.105	4486	7.66		<1	<1
W3A	-8.53	6/13/05	1019				3.20	99	92.5	1295	0.35	4.9	663	18621	3.46	107.17	97.8	1370		23.0	8.033	8.219	4549	7.74		<1	<1
W3A	-8.53	7/11/05	1020				3.38	105	88.1	1234	0.17	2.4	665	18666	3.50	108.41	90.0	1260		22.6	8.038	7.833	4336	7.74		<1	<1
W3A	-8.53	8/10/05	935				3.26	101	86.1	1206	0.18	2.5	662	18590	3.28	101.59	89.7	1257		23.1	8.045	8.094	4480	7.60		<1	<1
W3A	-8.53	9/21/05	938				3.26	101	95.3	1335	0.07	1.0	662	18590	3.40	105.31	**107**	1504	0.43	23.0	8.039	8.392	4645	7.61		<1	<1
W3A	-8.53	10/18/05	956				3.42	106	96.9	1357	0.18	2.5	659	18514	3.54	109.65	**113**	1582		23.1	8.027	8.219	4549	7.58		<1	<1
W3A	-8.53	11/3/05	945				3.32	103	95.6	1340	0.16	2.2	674	18921	3.52	109.03	97.5	1366		22.9	8.035	8.622	4773	7.48		<1	<1
W3A	-8.53	12/21/05	1035				3.14	97	81.5	1142	0.11	1.5	657	18444	3.26	100.97	89.6	1255	0.52	22.7	8.036	9.422	5215	8.15		<1	<1
W3A	-8.53	1/24/06	932				3.28	102	94.4	1323	0.15	2.1	676	18994	3.44	106.55	95.7	1341		22.7	8.028	8.528	4720	7.66		<1	<1
W3A	-8.53	2/15/06	941				3.25	101	91.5	1282	0.13	1.8	658	18483	3.36	104.07	94.1	1319	0.47	22.7	8.024	9.242	5116	7.47		<1	<1
W3A	-8.53	3/21/06	923				3.25	101	93.4	1308	0.11	1.5	671	18845	3.46	107.17	95.9	1343	0.38	22.5	8.036	8.657	4792	7.67		<1	<1
W3A	-8.53	4/26/06	938				3.45	107	90.9	1273	<0.05	0.0	660	18536	3.84	118.94	79.6	1116	0.45	22.2	8.03	8.441	4672	7.65		<1	<1
W3A	-8.53	5/23/06	1016				3.04	94	89.6	1255	<0.05	0.0	668	18761	3.06	94.78	75.2	1054	0.55	22.4	8.025	8.753	4845	7.66		<1	<1
W3A	-8.53	6/27/06	1020				3.39	105	92.6	1297	0.19	2.7	675	18958	3.78	117.08	89.4	1252	0.72	22.4	8.013	8.857	4903	7.71		<1	<1
W3A	-8.53	7/18/06	1015				3.17	98	85.5	1198	0.16	2.2	655	18396	3.30	102.21	72.2	1011	0.57	22.8	7.998	9.158	5069	7.99		<1	<1
W3A	-8.53	8/8/06	944				3.26	101	92.5	1296	0.15	2.1	662	18593	3.52	109.03	75.0	1051	0.40	22.5	7.995	8.596	4758	7.99		<1	<1
W3A	-8.53	9/19/06	1041				3.27	101	89.5	1254	0.26	3.6	669	18789	3.42	105.93	83.1	1164	0.46	22.8	7.983	8.551	4733	7.84		<1	<1
W3A	-8.53	10/24/06	1020				3.07	95	85.9	1203	0.33	4.6	662	18593	3.17	98.19	84.1	1179	0.56	22.7	8.029	8.877	4914	7.94		<1	<1
W3A	-8.53	11/28/06	959				3.20	99	86.6	1213	0.20	2.8	649	18227	3.34	103.45	76.1	1066	0.43	22.7	8.000	8.093	4480	7.67		<1	<1
W3A	-8.53	12/12/06	951				3.12	97	85.9	1203	0.15	2.1	649	18227	3.32	102.83	77.1	1080	0.46	22.8	7.989	9.120	5048	7.69		<1	<1
W3A	-8.53	1/9/07	1019				3.23	100	86.4	1210	0.37	5.2	655	18396	3.34	103.45	91.8	1286	0.47	22.6	8.013	9.111	5043	7.73		<1	<1
W3A	-8.53	2/22/07	1005				3.13	97	92.7	1298	0.33	4.6	669	18789	3.23	100.05	93.7	1313	0.45	22.8	7.994	8.994	4978	7.77		<1	<1
W3A	-8.53	3/6/07	1030				3.12	97	93.3	1307	0.19	2.7	661	18565	3.24	100.35	92.9	1301	0.46	22.9	8.029	8.682	4806	7.84		<1	<1
W3A	-8.53	4/11/07	1152				3.30	102	87.9	1231	0.13	1.8	664	18649	3.38	104.69	80.7	1131	0.40	23.0	8.032	8.629	4776	7.57		<1	<1
W3A	-8.53	5/3/07	1005				3.28	102	92.4	1294	0.23	3.2	678	19042	3.44	106.55	85.6	1199	0.46	22.7	8.048	8.567	4742	7.60		<1	<1
W3A	-8.53	6/19/07	940				3.22	100	91.6	1283	0.16	2.2	663	18621	3.41	105.62	72.9	1021	0.33	22.8	8.053	8.846	4896	8.06		<1	<1
W3A	-8.53	7/26/07	1050	-5.89	0.37	Flood	3.02	94	98.7	1382	0.04	0.5	653	18340	3.31	102.4	94.6	1325		22.5	7.95	8.51	4711	7.34			
W3A	-8.53	8/28/07	1031	-5.97	0.00	Low	3.85	119	107.3	1503	0.71	9.9	935	26257	3.71	114.8	103.8	1454		22.6	7.90	8.16	4517	7.45			
W3A	-8.53	9/13/07	1228	-6.10	0.15	Low	3.86	119	100.5	1408	1.54	21.6	738	20736	4.17	129.3	95.9	1344		22.9	8.00	8.39	4644	7.23			
W3A	-8.53	10/24/07	1152	-3.79	0.30	Flood	3.52	109	107.0	1499	0.56	7.9	655	18399	3.73	115.5	105.1	1472		23.1	7.98	8.26	4572	7.04			
W3A	-8.53	11/26/07	1458	-3.91	0.09	Flood	3.52	109	100.0	1401	1.29	18.1	705	19808	3.58	111.0	105.6	1479		22.8	7.98	8.63	4777	7.00			
W3A	-8.53	12/20/07	1129	-5.94	0.23	High	2.64	82	82.2	1152	0.56	7.8	463	13012						22.5	8.08	6.75	3736	7.36			

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Well 3A Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	1/28/08	1455	-5.41	0.06	Low	2.06	64	46.7	654	1.46	20.4	330	9264						23.0	7.89	8.15	4511	6.55			
W3A	-8.53	2/27/08	1221	-5.33	0.06	Low	3.40	105	97.8	1369	0.84	11.7	633	17778						22.8	7.89	8.32	4605	7.45			
W3A	-8.53	3/20/08	1231	-6.02	0.12	Flood	3.16	98	100.6	1410	0.84	11.8	480	13482						22.8	7.96	8.26	4572	6.93			
W3A	-8.53	4/28/08	1203	-5.92	0.18	High	3.14	97	101.6	1424	0.19	2.6	644	18096						22.7	7.95	8.22	4550	6.74			
W3A	-8.53	5/29/08	1023		0.30	Flood	2.91	90	102.0	1429	0.16	2.3	640	17981						23.1	7.96	8.19	4533	7.18			
W3A	-8.53	6/19/08	1101	-5.31	0.21	Ebb	2.85	88	98.9	1386	0.68	9.5	656	18413						23.0	7.85	8.35	4622	6.96	5.19		
W3A	-8.53	7/24/08	1022	-5.61	0.46	Ebb	2.96	92	124.2	1740	0.56	7.8	654	18356						22.8	7.88	8.14	4506	7.45			
W3A	-8.53	8/30/08	1059		0.06	Flood	2.78	86	98.3	1377	0.42	5.9	620	17425						22.7	7.97	8.45	4677	7.36			
W3A	-8.53	9/18/08	949	-5.53	0.34	Ebb	1.41	44	39.9	560	1.11	15.6	444	12459						23.4	7.89	8.23	4556	6.76	3.34		
W3A	-8.53	10/18/08	910	-5.79	0.24	Ebb	3.39	105	104.2	1459	0.99	13.8	632	17744						24.1	7.72	8.06	4461	7.25	11.7		
W3A	-8.53	11/13/08	952	-5.76	0.15	Ebb	2.91	90	97.7	1368	0.20	2.8	536	15063						24.8	7.97	8.13	4500	7.57	8.41		
W3A	-8.53	12/15/08	1037	-5.66	0.37	Ebb	3.60	112	105.5	1478	0.11	1.5	628	17644						24.4	8.13	8.03	4445	7.63			
W3A	-8.53	1/21/09	946	-5.93	0.12	Low	2.77	86	99.3	1390	0.30	4.2	591	16588						23.8	8.15	7.79	4312	7.43	8.27		
W3A	-8.53	2/23/09	1528	-5.80	0.37	High	3.04	94	96.4	1351	1.25	17.5	613	17209						24.6	7.94	8.40	4650	7.44	0.88		
W3A	-8.53	3/16/09	823	-5.88	0.18	High	3.34	104	86.6	1213	0.19	2.6	515	14478						23.6	7.97	8.75	4843	7.44	3.14		
W3A	-8.53	4/20/09	1459	-5.75	0.40	Ebb	4.04	125	93.6	1311	0.89	12.5	513	14412						24.3	7.87	8.54	4727	7.84	20.20		
W3A	-8.53	5/27/09	744	-5.86	0.15	High	3.63	112	92.8	1301	0.41	5.8	674	18919						22.4	8.05	8.69	4810	6.84	0.49		
W3A	-8.53	6/18/09	1029	-5.79	0.37	Flood	3.69	114	95.3	1335	0.64	8.9	471	13221						22.6	8.05	8.10	4484	8.23	0.21		
W3A	-8.53	7/14/09	836	-5.79	0.37	Flood	2.66	83	70.0	981	0.21	2.9	361	10147						22.5	8.11	8.65	4788	7.29	0.10		
W3A	-8.53	8/19/09	857	-5.96	0.03	Low	3.42	106	101.3	1420	0.27	3.8	535	15040						22.9	7.94	7.97	4412	7.53	0.34		
W3A	-8.53	9/22/09	912	-5.60	0.46	Ebb	3.24	100	98.5	1379	0.30	4.2	262	7366						23.3	8.27	8.59	4755	7.75	0.12		
W3A	-8.53	10/22/09	1338	-5.94	0.18	Ebb	1.80	56	45.6	639	0.16	2.3	288	8096						23.3	8.09	8.64	4782	7.74	0.24		
W3A	-8.53	11/16/09	1443	-5.93	0.21	High	3.49	108	99.3	1391	0.80	11.2	621	17441						23.3	8.05	8.81	4877	7.19	0.08		
W3A	-8.53	12/7/09	1415	-5.97	0.09	Ebb	3.23	100	100.5	1407	0.30	4.2	614	17238						23.7	7.99	8.90	4926	7.24	0.21		
W3A	-8.53	1/5/10	1132	-5.71	0.21	Ebb	3.42	106	92.6	1297	0.93	13.0	539	15146						23.4	8.05	9.00	4982	7.82	0.50		
W3A	-8.53	2/1/10	1207	-5.89	-0.09	Low	3.26	101	102.4	1434	0.57	8.0	482	13541						23.4	8.08	8.63	4777	7.41	0.92		
W3A	-8.53	3/9/10	1152	-5.94	0.15	High	3.55	110	95.3	1335	0.21	3.0	596	16740						22.7	8.04	8.75	4843	7.49	0.60		
W3A	-8.53	4/6/10	1057	-5.95	0.15	High	3.42	106	94.2	1319	0.07	1.0	615	17270						22.4	8.04	8.95	4954	8.03	0.32		
W3A	-8.53	5/11/10	1117	-5.93	0.21	Flood	3.49	108	83.2	1165	2.50	35.0	518	14562						22.9	8.06	8.15	4511	8.06	0.35		
W3A	-8.53	6/15/10	1206	-6.08	0.06	Low	3.55	110	91.0	1275	0.43	6.0	630	17692						22.6	8.10	8.46	4683	7.83	0.10		
W3A	-8.53	7/13/10	1118	-6.01	0.00	Low	3.36	104	93.5	1309	0.93	13.0	680	19110						22.6	8.04	8.66	4794	7.59	0.32		
W3A	-8.53	8/3/10	1128	-5.54	0.55	High	3.81	118	98.7	1383	0.50	7.0	683	19188						22.7	8.10	8.10	4484	7.64	0.25		
W3A	-8.53	9/14/10	1120	-5.52	0.52	Ebb	3.71	115	97.5	1366	0.44	6.2	718	20169						22.6	8.05	8.32	4605	7.81	0.29		
W3A	-8.53	10/12/10	1132	-5.55	0.46	Ebb	3.49	108	95.5	1337	0.23	3.2	722	20287						22.8	8.06	8.46	4683	8.06	17.70		
W3A	-8.53	11/16/10	1044	-5.69	0.34	Flood	3.65	113	103.3	1447	1.14	15.9	723	20300						22.8	8.03	8.03	4445	7.97	0.11		
W3A	-8.53	12/14/10	1124	-5.67	0.34	Ebb	3.55	110	100.6	1409	0.36	5.0	686	19275						22.8	8.05	8.15	4511	7.58	0.98		
W3A	-8.53	1/4/11	1113	-5.87	0.03	Low	3.52	109	97.0	1359	0.32	4.5	681	19134						22.8	8.00	8.12	4495	7.60	0.16		
W3A	-8.53	4/5/11	1138	-6.01	-0.03	Low	3.49	108	92.0	1289	0.30	4.2	675	18961						22.8	8.04	7.98	4417	6.71	0.82		
W3A	-8.53	7/12/11	1110	-5.93	0.30	Flood	3.65	113	95.0	1330	0.29	4.1	679	19074						22.7	8.02	8.59	4755	7.36	0.13		
W3A	-8.53	10/11/11	1129	-5.88	0.15	Flood	3.49	108	93.7	1313	0.29	4.0	661	18572						23.0	7.97	8.19	4533	7.84	0.20		
W3A	-8.53	1/10/12	1127	-5.95	0.03	Ebb	3.23	100	91.2	1278	0.51	7.2	641	18012						23.0	8.02	8.80	4871	6.86	0.19		
W3A	-8.53	5/1/12	1142	-5.74	0.34	Flood	3.84	119	99.0	1387	0.24	3.4	721	20247						22.5	7.98	8.19	4533	7.80	0.35		
W3A	-8.53	7/18/12	1038	-6.02	0.03	Flood	3.68	114	101.6	1423	0.62	8.7	657	18459						22.7	8.05	8.46	4683	7.93	0.10		
W3A	-8.53	10/16/12	1122	-5.90	0.09	Low	3.65	113	98.9	1385	0.54	7.6	666	18706						22.8	7.95	8.53	4722	7.54	4.41		
W3A	-8.53	1/8/13	1146	-6.03	0.18	Flood	3.84	119	101.5	1422	0.46	6.4	707	19861						23.0	7.93	8.50	4705	7.41	0.19		
W3A	-8.53	4/9/13	1141	-6.03	0.00	Flood	3.78	117	92.2	1292	0.83	11.6	693	19469						22.5	8.02	8.91	4932	6.46	8.80		

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Well 3A Data Table

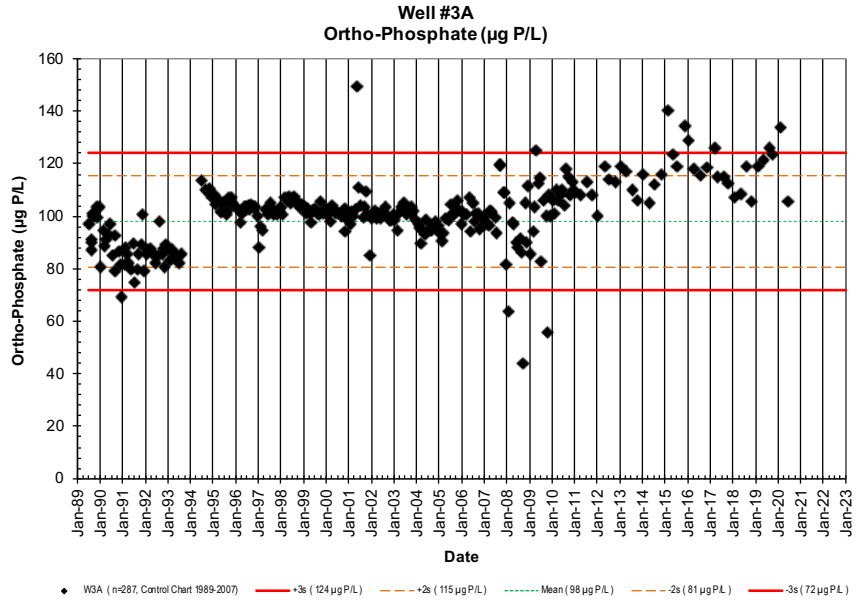
6/27/1989 - 7/21/20

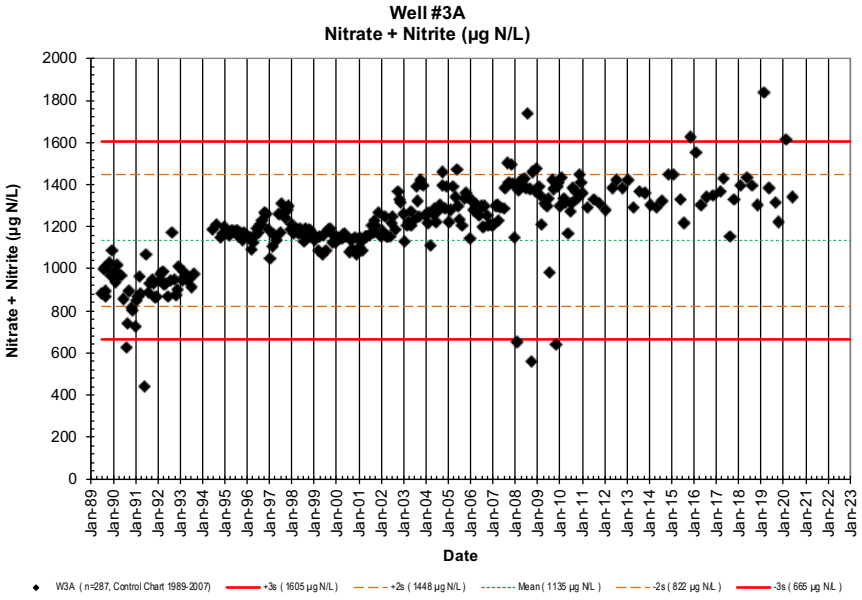
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3A	-8.53	7/17/13	1231	-5.68	0.61	High	3.55	110	97.5	1366	0.49	6.9	640	17983						22.9	7.92	8.52	4716	6.65	0.06		
W3A	-8.53	10/15/13	1118	-5.80	0.37	Flood	3.42	106	96.9	1357	0.71	9.9	628	17645						23.5	7.95	8.57	4744	7.65	2.45		
W3A	-8.53	1/15/14	1110	-5.92	0.03	Low	3.75	116	93.3	1307	0.49	6.9	628	17650						23.4	8.02	8.43	4666	8.07	0.13		
W3A	-8.53	4/29/14	1210	-6.07	0.12	Flood	3.39	105	92.4	1294	0.56	7.8	646	18135						23.4	7.93	8.38	4639	7.76	0.64		
W3A	-8.53	7/29/14	1150	-5.95	0.12	Low	3.62	112	94.5	1323	0.43	6.0	663	18610						23.2	7.90	8.52	4716	7.76	9.48		
W3A	-8.53	11/5/14	1143	-5.77	0.17	Flood	3.75	116	103.5	1449	0.49	6.9	655	18398						23.6	8.03	7.73	4279	8.20	0.15		
W3A	-8.53	2/11/15	1052	-5.74	0.18	Ebb	4.54	141	103.5	1449	1.33	18.6	739	20760						23.3	8.02	8.15	4511	7.78	0.09		
W3A	-8.53	5/20/15	1218	-6.01	0.00	Flood	3.99	124	95.0	1330	0.41	5.7	594	16681						23.3	8.08	8.44	4672	7.70	0.20		
W3A	-8.53	7/22/15	959	-5.77	0.34	Ebb	3.84	119	86.8	1216	0.16	2.2	614	17250						23.6	7.96	8.77	4854	7.70	0.15		
W3A	-8.53	11/9/15	1509	-5.58	0.40	Ebb	4.34	135	116.2	1628	0.07	1.0	993	27893						23.7	8.03	7.47	4135	8.32	0.40		
W3A	-8.53	1/27/16	1311	-5.98	0.08	Low	4.16	129	111.0	1555	0.21	3.0	630	17704						23.6	8.03	8.54	4727	7.45	0.31		
W3A	-8.53	4/22/16	1022	-5.93	-0.05	Low	3.81	118	93.0	1302	0.44	6.2	603	16947						23.3	7.98	7.96	4406	7.69	0.31		
W3A	-8.53	7/27/16	953	-5.73	0.20	Flood	3.72	115	95.9	1344	0.13	1.8	518	14559						23.3	8.08	8.46	4683	7.33	0.02		
W3A	-8.53	11/10/16	1026	-5.73	0.50	Flood	3.82	118	96.4	1350	0.04	0.5	542	15220						23.8	8.04	7.95	4401	7.37	0.23		
W3A	-8.53	3/22/17	1323	-5.69	0.25	High	4.07	126	97.3	1364	0.22	3.1	645	18127						23.8	8.09	7.75	4290	7.50	0.07		
W3A	-8.53	4/19/17	1212	-5.77	0.17	Ebb	3.71	115	102.1	1430	0.29	4.0	683	19178						23.9	8.01	7.93	4389	6.09	0.34		
W3A	-8.53	8/8/17	1022	-5.86	-0.04	Low	3.71	115	82.6	1157	0.06	0.9	671	18852						23.5	7.99	8.09	4478	6.58	0.12		
W3A	-8.53	10/18/17	1246	-5.75	0.50	Flood	3.63	112	94.9	1330	0.28	3.9	593	16668						24.0	8.03	7.54	4174	6.96	0.04		
W3A	-8.53	1/18/18	1008	-5.68	0.15	Ebb	3.46	107	99.9	1400	0.18	2.5	637	17890						23.5	7.97	8.15	4511	7.32	0.04		
W3A	-8.53	5/10/18	1018	-5.89	0.25	Flood	3.50	109	102.5	1435	0.11	1.5	663	18633						22.4	8.01	8.93	4943	7.67	0.13		
W3A	-8.53	8/13/18	1550	-5.68	0.46	Flood	3.84	119	99.5	1394	0.16	2.2	812	22810						24.2	7.96	8.41	4655	7.20	0.06		
W3A	-8.53	10/25/18	1047	-5.76	0.12	Low	3.42	106	92.9	1301	0.01	0.1	568	15962						24.1	8.04	7.34	4063	8.14	0.12		
W3A	-8.53	2/8/19	945	-5.72	0.20	Ebb	3.85	119	131.3	1839	0.06	0.9	646	18155						23.5	7.87	8.57	4744	7.52	0.07		
W3A	-8.53	5/15/19	1430	-5.64	0.52	High	3.92	121	98.7	1383	0.01	0.1	599	16827						23.1	7.94	7.79	4312	7.97	0.04		
W3A	-8.53	8/28/19	1401	-5.47	0.70	High	4.06	126	94.1	1318	0.14	2.0	592	16639						23.7	7.97	8.09	4478	7.78	0.16		
W3A	-8.53	10/11/19	957	-5.80	0.15	Flood	3.98	123	87.5	1225	0.16	2.3	586	16444						23.9	8.04	8.16	4517	8.22	0.07		
W3A	-8.53	2/4/20	1056	5.82	0.25	High	4.32	134	115.3	1614	0.04	0.6	648	18190						23.5	7.99	8.40	4650	7.36	0.10		
W3A	-8.53	6/3/20	1128	-5.72	0.35	Flood	3.41	106	95.8	1342	0.22	3.1	609	17112						23.9	7.94	7.90	4373	8.06	0.60		
W3A	-8.53	7/1/20																									
W3A	-8.53	10/1/20																									
W3A	-8.53	1/1/21																									
W3A	-8.53	4/1/21																									
W3A	-8.53	7/1/21																									
W3A	-8.53	10/1/21																									
W3A	-8.53	1/1/22																									
W3A	-8.53	4/1/22																									
W3A	-8.53	7/1/22																									
W3A	-8.53	10/1/22																									
W3A	-8.53	1/1/23																									
W3A	-8.53	4/1/23																									
Mean				-5.61	0.22		3.25	100.77	85.4	1196	0.31	4.3	652	18300	3.29	101.95	85.40	1196.1	0.53	22.6	8.00	9.00	4977	7.47	1.78		
Std. Dev.				1.36	0.17		0.38	11.87	13.5	188	0.38	5.3	71	1994	0.29	8.87	12.67	177.5	0.13	0.6	0.06	1.60	881	0.49	3.99		
Maximum				5.82	0.70		4.82	149	131	1839	2.94	41.2	993	27893	4.94	153.0	114.4	1602	1.06	24.8	8.27	17.75	9822	8.77	20.20		
Minimum				-6.10	-0.09		1.41	44	31	440	0.00	0.0	262	7366	2.58	79.9	32.4	454	0.24	19.4	7.72	6.74	3731	5.19	0.02		
n				78	80		287	287	287	287	284	287	280	279	206	206	204	204	172	286	284	286	286	283	66		

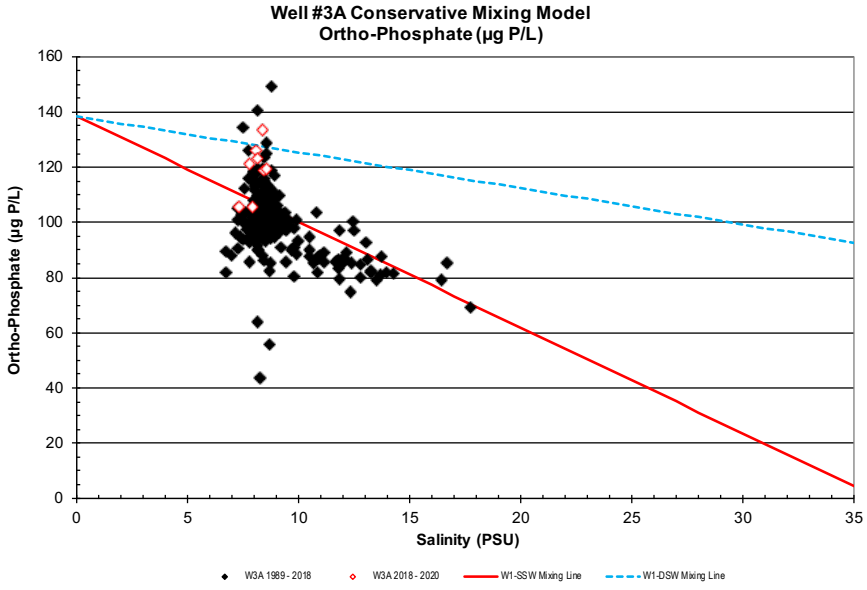
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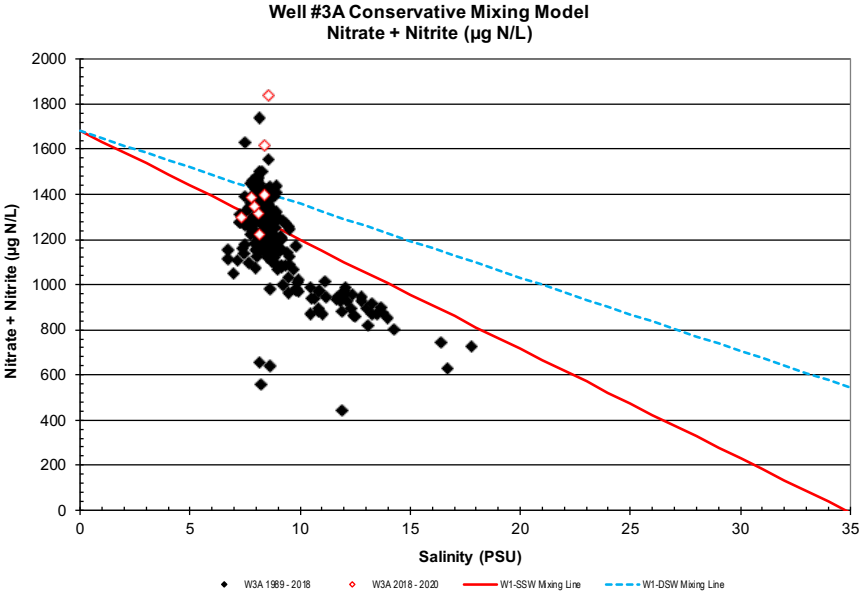
Well 3A Charts

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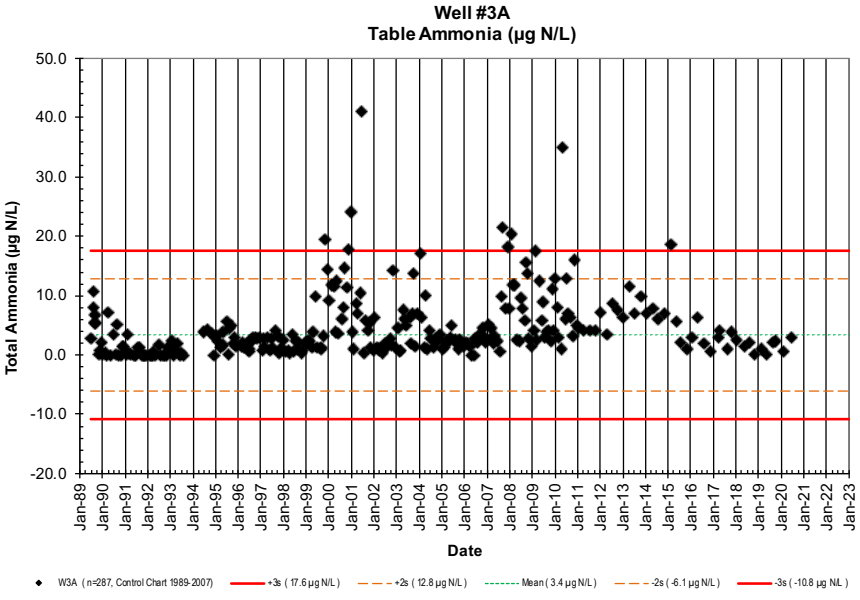


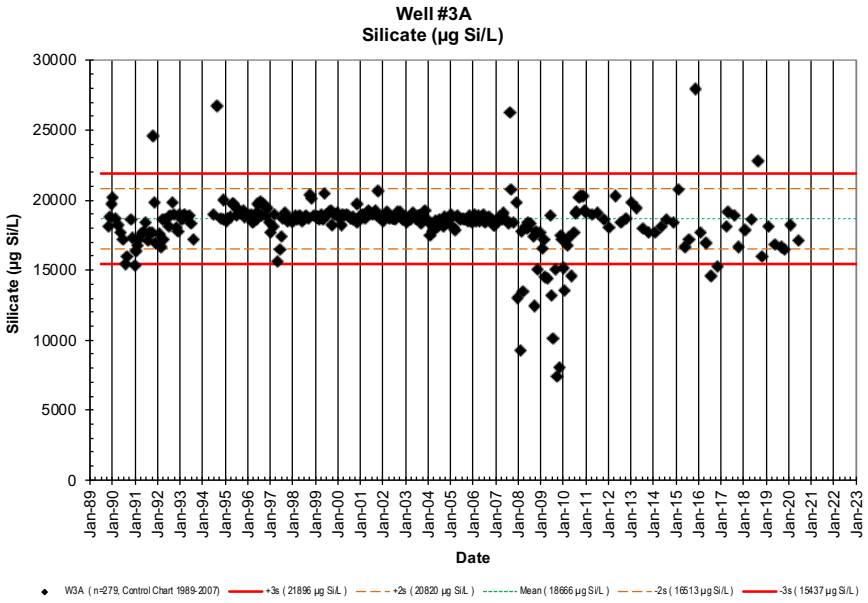


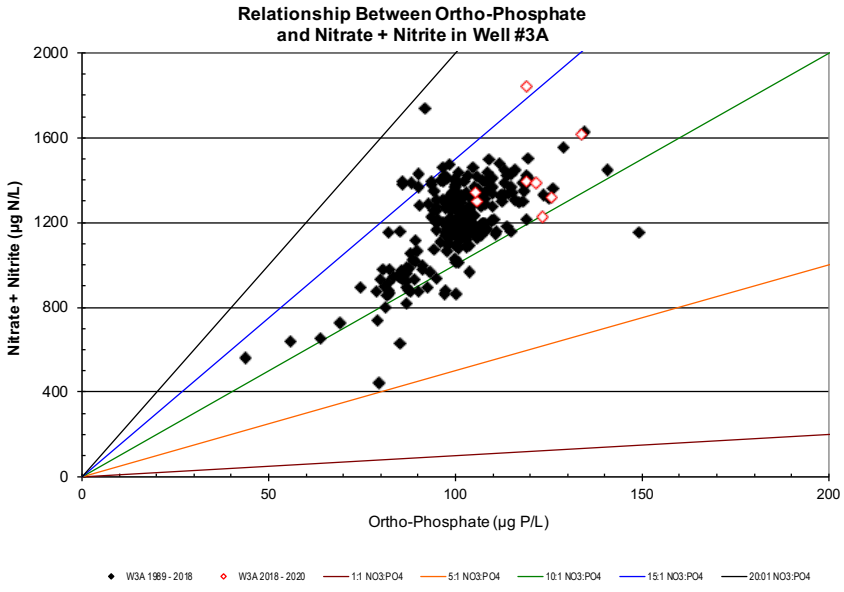
NELHA Water Quality Laboratory

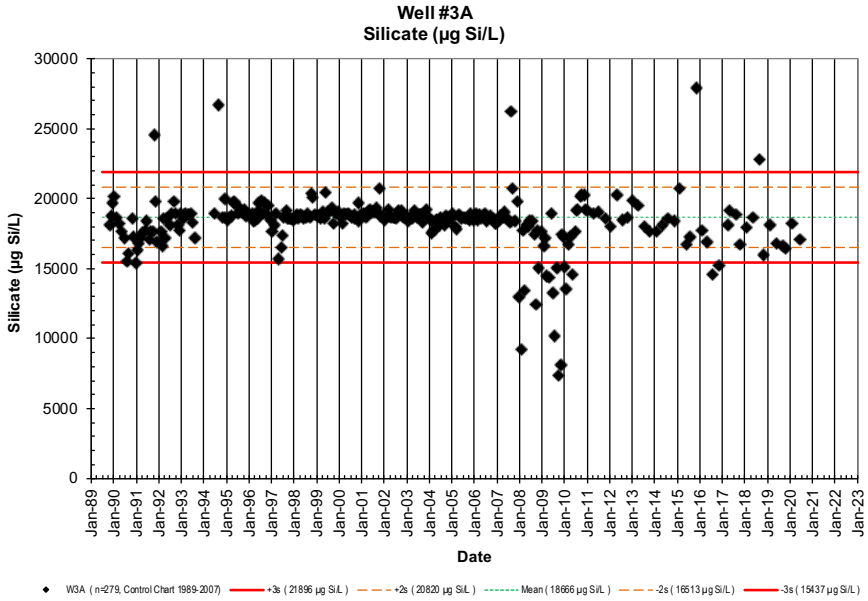
Well 3A Charts

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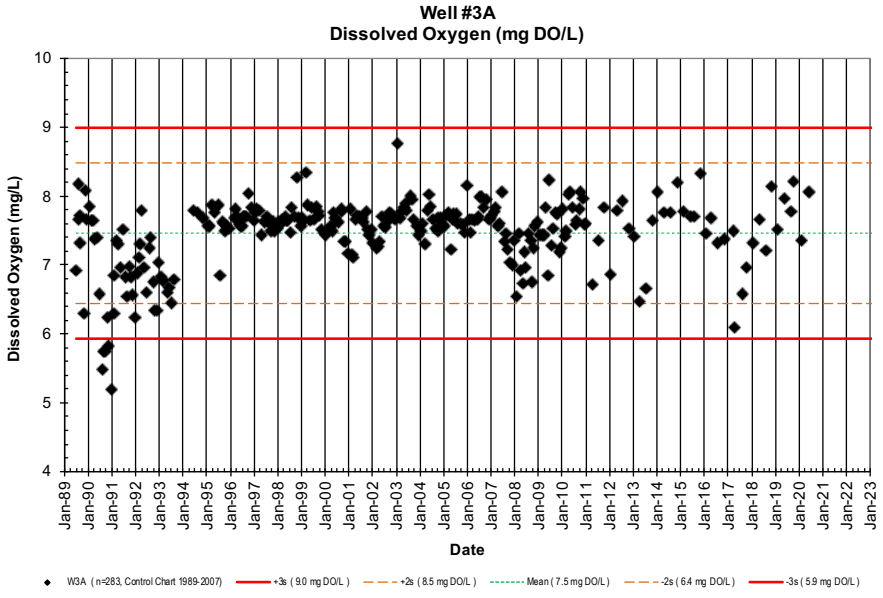


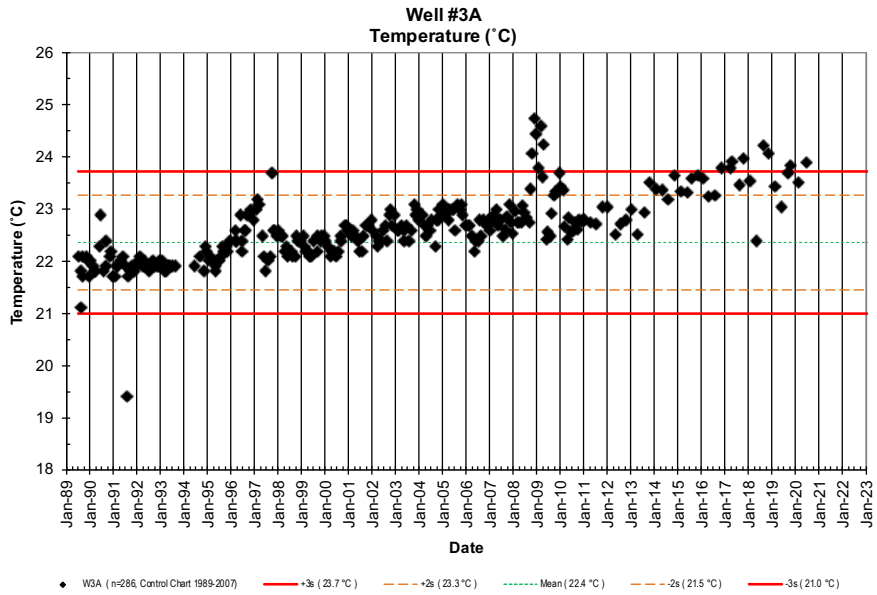


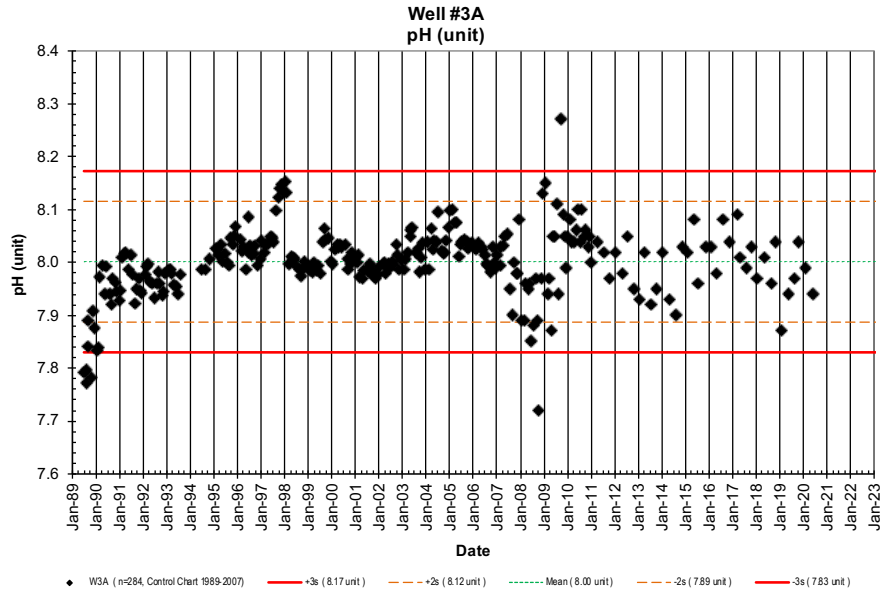
NELHA Water Quality Laboratory

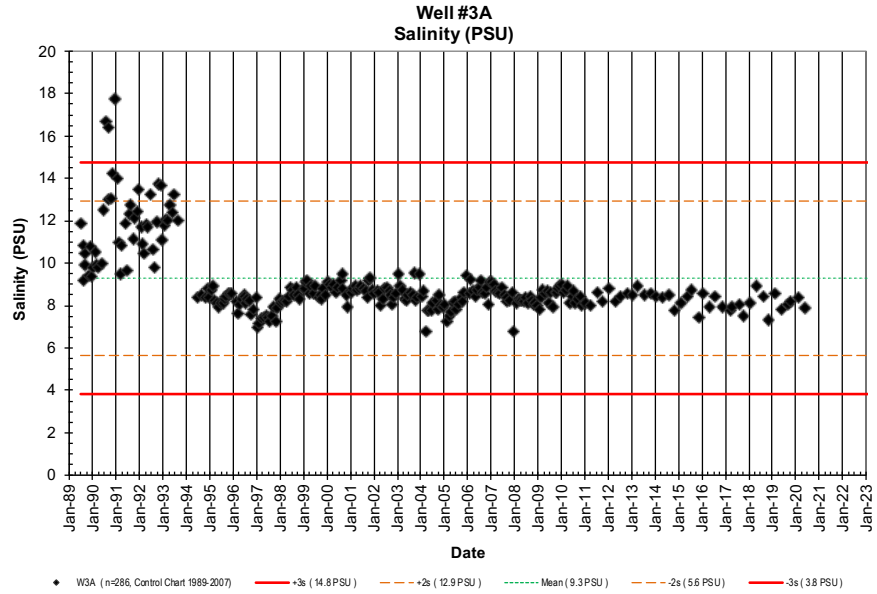
Well 3A Charts

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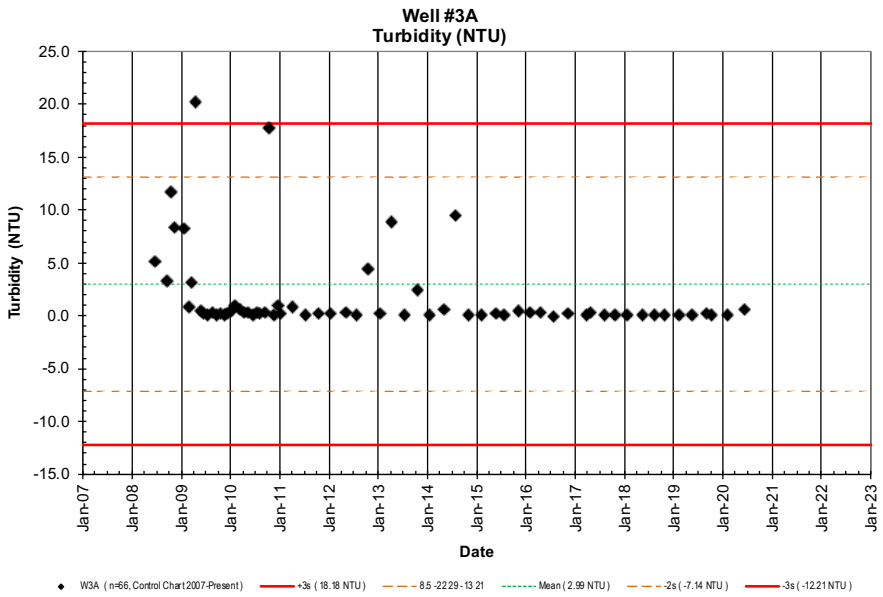


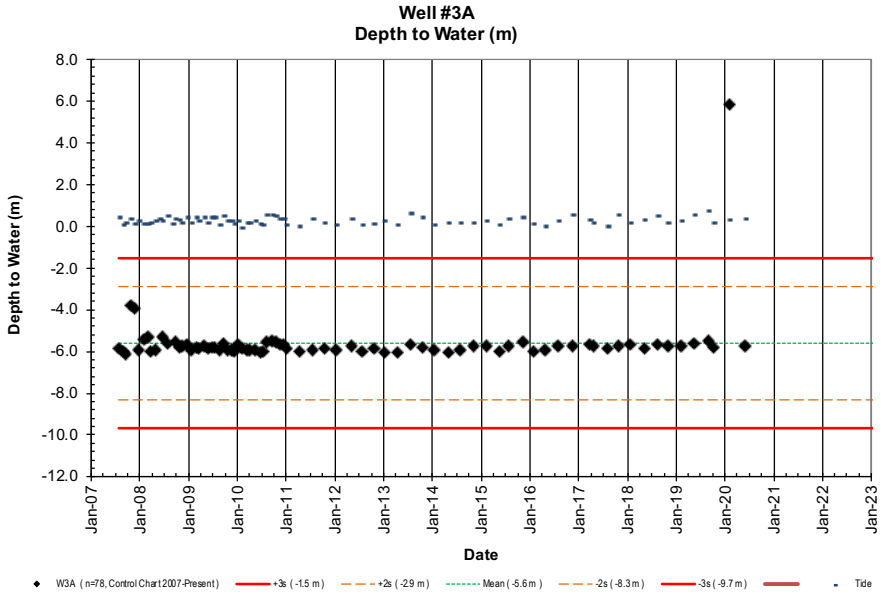


NELHA Water Quality Laboratory

Well 3A Charts

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NELHA Water Quality Laboratory

Well 3B Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	6/27/89					3.35	104	70.9	993	0.13	2								22.9	7.845	8.049	4455	7.95		NA	NA
W3B	-7.32	8/10/89	1405				3.40	105	77.8	1090	0.38	5								22.4	7.821	8.016	4437	7.33		<1	NA
W3B	-7.32	8/16/89	1455				2.97	92	64.0	896	0.58	8								22.8	7.827	7.849	4345	7.47		48	NA
W3B	-7.32	8/24/89	1140				3.33	103	72.2	1011	0.38	5								22.7	7.957	7.691	4257	7.47		1	NA
W3B	-7.32	8/29/89	1055				3.44	107	88.3	1237	0.38	5									7.912			7.73		<1	NA
W3B	-7.32	8/29/89	1055				3.49	108	89.8	1258	0.38	5															NA
W3B	-7.32	10/30/89	1110				3.33	103	78.6	1101	0.01	0	674	18930	3.44	106.55	90.3	1265	0.37	22.6	7.820	7.998	4427	7.37		<1	NA
W3B	-7.32	11/16/89	1025				3.46	107	78.2	1095	0.06	1	718	20165	3.81	118.01	85.1	1192	0.30	22.4	7.981	7.980	4417	8.93		<1	NA
W3B	-7.32	12/12/89	1053				3.44	107	85.2	1193	0.01	0.1	737	20699	3.58	110.89	86.7	1214	1.18	22.4	7.943	8.522	4717	7.95		<1	NA
W3B	-7.32	1/11/90	1119				2.67	83	71.7	1004	0.00	0.0	744	20896	2.83	87.66	74.5	1043	6.05	22.6	7.963	8.670	4799	7.87		<1	NA
W3B	-7.32	2/14/90	1420				3.19	99	72.0	1008	0.00	0.0	701	19688	3.43	106.24	69.2	969	1.19	22.6	7.890	8.072	4468	8.02		<1	NA
W3B	-7.32	3/7/90	1420				2.83	88	76.5	1072	0.03	0.4	645		3.04	94.16	77.5	1086	1.17	22.4	8.027	6.987	3867	7.65		<1	NA
W3B	-7.32	4/2/90	1440				2.92	90	70.9	993	0.59	8.3	687	19295	3.00	92.92	73.4	1028	1.29	22.8	8.043	7.711	4268	7.53		<1	NA
W3B	-7.32	5/17/90	1045				3.20	99	69.6	975	0.10	1.4	662	18593	3.17	98.19	79.0	1107	1.00	22.6	7.980	8.261	4573	7.53		<1	NA
W3B	-7.32	6/16/90	953				3.47	107	72.8	1020	0.00	0.0	670	18817	3.47	107.48	76.4	1070	1.10	23.0	8.067	8.384	4641	7.68		<1	NA
W3B	-7.32	7/31/90	1026				3.63	112	73.7	1032	0.01	0.1	684	19210	3.83	118.63	78.8	1104	1.22	23.8	8.075	8.277	4582	7.77		<1	NA
W3B	-7.32	8/30/90	902				3.24	100	74.7	1046	0.19	2.7	681	19126	3.48	107.79	75.6	1059	0.98	22.9	8.050	8.556	4736	7.49		<1	NA
W3B	-7.32	9/6/90	1031				3.35	104	75.5	1057	0.04	0.5			3.35	103.76	77.1	1079	0.34	23.2	8.053	8.570	4744	7.49		<1	NA
W3B	-7.32	10/25/90	1027				3.40	105	73.6	1031	0.03	0.4	705	19800	3.89	120.49	73.7	1032	0.89	23.2	8.043	8.345	4619	7.56		<1	NA
W3B	-7.32	11/14/90	1044				3.23	100	76.2	1067	0.08	1.1	765	21485	3.69	114.29	78.0	1093	0.14	23.1	8.047	8.306	4597	7.61		<1	NA
W3B	-7.32	12/19/90	1030				3.13	97	76.3	1069	0.13	1.8	635	17834	3.54	109.65	77.1	1080	0.34	23.1	8.065	8.275	4581	7.61		<1	NA
W3B	-7.32	1/24/91	835				3.10	96	75.8	1061	0.10	1.4	656	18424	3.16	97.88	76.9	1076	0.94	22.2	8.051	7.821	4329	7.66		<1	NA
W3B	-7.32	2/7/91	855				2.92	90	62.0	868	0.57	8.0	574	16121	3.11	96.33	71.4	1000	0.61	22.8	8.157	6.661	3687	7.61		<1	NA
W3B	-7.32	3/12/91	917				2.93	91	72.1	1010	0.06	0.8	631	17722	3.08	95.40	73.0	1022	0.75	22.2	8.047	8.152	4512	7.73		<1	NA
W3B	-7.32	4/4/91	848				2.88	89	68.6	961	0.13	1.8	647	18171	2.92	90.44	69.9	979	0.72	22.1	8.061	8.390	4644	7.58		<1	NA
W3B	-7.32	5/22/91	923				2.91	90	36.0	504	0.00	0.0	770	21626	3.06	94.78	37.6	527	0.51	22.3	8.053	8.322	4606	7.57		<1	NA
W3B	-7.32	6/26/91	932				3.06	95	79.6	1115	0.00	0.0	683	19182	3.20	99.12	82.1	1150	0.50	22.4	8.036	8.679	4804	7.68		<1	<1
W3B	-7.32	7/24/91	1002				2.59	80	56.1	786	0.00	0.0	670	18817	2.88	89.20	59.4	832	0.41	19.7	8.052	8.381	4639	7.81		<1	<1
W3B	-7.32	8/23/91	857				3.02	94	83.3	1167	0.00	0.0	703	19744	3.04	94.16	88.3	1237	0.53	22.6	8.012	8.362	4629	7.84		<1	<1
W3B	-7.32	9/24/91	851				3.07	95	77.3	1083	0.00	0.0	671	18845	3.13	96.95	80.5	1128	0.43	22.5	8.003	8.618	4770	7.72		<1	<1
W3B	-7.32	10/23/91	857				3.04	94	77.4	1084	0.00	0.0	949	26653	3.13	96.95	80.0	1121	0.40	22.7	8.047	8.434	4668	7.75		1	<1
W3B	-7.32	11/20/91	833				3.67	114	73.3	1027	0.00	0.0	792	22244	3.84	118.94	76.8	1076	0.42	22.8	8.042	8.311	4600	7.89		<1	<1
W3B	-7.32	12/11/91	915				3.09	96	78.3	1097	0.00	0.0	684	19210	3.13	96.95	82.1	1150	0.59	22.8	8.048	8.317	4604	7.85		<1	<1
W3B	-7.32	1/29/92	905				3.11	96	77.0	1079	0.00	0.0	671	18845	3.24	100.35	78.8	1104	0.90	22.7	8.049	8.544	4729	7.85		<1	<1
W3B	-7.32	2/19/92	934				3.10	96	76.5	1072	0.00	0.0	630	17694	3.11	96.33	80.3	1125	0.40	22.7	8.059	8.482	4695	7.93		<1	<1
W3B	-7.32	3/17/92	846				3.03	94	76.9	1077	0.00	0.0	686	19267	3.14	97.26	83.8	1174	0.52	22.4	8.060	8.380	4639	8.06		<1	<1
W3B	-7.32	4/8/92	834				3.15	98	76.4	1070	0.00	0.0	669	18789	3.20	99.12	79.0	1107	0.46	22.5	8.049	8.327	4609	8.04		<1	<1
W3B	-7.32	5/6/92	847				3.11	96	75.8	1062	0.00	0.0	724	20334	3.17	98.19	78.4	1098	0.63	22.4	8.037	8.448	4676	7.97		<1	<1
W3B	-7.32	6/23/92	846				3.13	97	76.0	1065	0.07	1.0	731	20531	3.13	96.95	77.5	1086	0.85	22.5	8.034	8.538	4726	8.09		<1	<1
W3B	-7.32	7/29/92	833				2.96	92	73.7	1033	ND	0.0	710	19941	3.03	93.85	73.6	1030	0.68	22.2	8.015	8.562	4739	7.96		<1	<1
W3B	-7.32	8/26/92	821				3.31	103	87.8	1230	0.00	0.0	725	20362	3.31	102.52	90.9	1274	0.63	22.5	8.019	8.661	4794	7.77		<1	<1
W3B	-7.32	9/22/92	818				3.17	98	79.5	1114	0.00	0.0	731	20531	3.19	98.81	84.3	1181	0.55	22.6	8.040	8.538	4726	7.83		<1	<1
W3B	-7.32	10/27/92	841				3.40	105	80.2	1123	0.00	0.0	730	20502	3.43	106.24	83.9	1175	0.70	22.8	8.054	8.203	4541	7.97		<1	<1
W3B	-7.32	11/17/92	858				3.16	98	81.9	1147	0.04	0.6	727	20418	3.29	101.90	87.9	1231	0.68	22.8	8.062	8.169	4522	7.94		<1	<1
W3B	-7.32	12/8/92	840				3.17	98	81.1	1136	0.02	0.3	729	20474	3.45	106.86	84.1	1178	0.61	22.7	8.047	8.392	4645	7.87		<1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	1/26/93	855				3.06	95	76.1	1066	0.11	1.5	710	19927	3.07	95.09	83.6	1171	0.49	22.6	8.059	8.546	4730	7.76		<1	<1
W3B	-7.32	2/23/93	827				3.01	93	80.9	1133	0.04	0.6	728	20455	3.03	93.85	88.1	1234	0.69	22.4	8.062	8.701	4816	7.78		<1	<1
W3B	-7.32	3/16/93	827				3.13	97	78.8	1104	0.00	0.0	726	20390	3.13	96.95	81.4	1141	0.53	22.3	8.056	8.745	4841	7.83		<1	<1
W3B	-7.32	4/27/93	832				3.14	97	82.6	1157	0.07	1.0	736	20671	3.23	100.05	86.4	1209	0.63	22.1	8.051	8.369	4632	7.99		<1	<1
W3B	-7.32	5/25/93	823				3.16	98	81.7	1144	0.32	4.5	737	20699	3.14	97.26	88.8	1244	0.39	22.4	8.042	8.468	4687	7.89		<1	<1
W3B	-7.32	6/28/93	902				3.11	96	81.6	1143	0.00	0.0	729	20474	3.29	101.90	86.7	1214	0.51	22.5	8.044	8.435	4669	7.92		<1	<1
W3B	-7.32	8/9/93	845				3.20	99	80.8	1132	0.00	0.0	668	18770	3.20	99.12	83.5	1169	0.66	22.5	8.020	8.717	4825	7.84		<1	<1
W3B	-7.32	WELL SET RELOCATED																									
W3B	-7.32	6/21/94	817				3.45	107	84.8	1187	0.17	2.4	688	19323	3.50	108.41	103	1437	0.52	22.3	8.026	8.137	4504	7.97		<1	<1
W3B	-7.32	8/23/94	849				3.46	107	89.5	1253	0.28	3.9	953	26764	3.49	108.10	98.2	1376	0.65	22.6	8.028	7.873	4358	8.01		<1	<1
W3B	-7.32	10/25/94	908				3.41	106	83.2	1165	0.30	4.2	683	19185	3.53	109.34		0	0.46	22.1	8.038	8.032	4446	7.94		<1	<1
W3B	-7.32	11/28/94	1236				3.48	108	86.2	1208	0.23	3.2	680	19087	3.50	108.41	87.1	1219		22.9		8.048	4455				
W3B	-7.32	12/13/94	928				3.38	105	86.7	1215	0.00	0.0	726	20379	3.41	105.62	88.5	1240		22.7		8.106	4487				
W3B	-7.32	1/24/95	905				3.43	106	84.1	1178	0.22	3.1	670	18820	3.43	106.24	88.5	1240	0.52	22.5	8.056	8.429	4666	7.86		<1	<1
W3B	-7.32	2/14/95	848				3.38	105	84.3	1181	0.20	2.8	677	19008	3.38	104.69	85.6	1199	0.51	22.6	8.057	8.526	4719	7.82		<1	<1
W3B	-7.32	3/14/95	937				3.38	105	84.1	1177	0.10	1.4	674	18927	3.38	104.69	86.2	1207	0.53	22.6	8.040	7.977	4415	7.99		<1	<1
W3B	-7.32	4/25/95	1004				3.42	106	84.9	1188	0.17	2.4	713	20022	3.51	108.72	85.5	1198	0.44	22.1	8.055	7.916	4382	8.02		<1	<1
W3B	-7.32	5/9/95	850				3.40	105	84.6	1185	0.08	1.1	714	20039	3.40	105.31	87.8	1229	0.45	22.4	8.020	7.663	4242	7.95		<1	<1
W3B	-7.32	6/27/95	907				3.33	103	85.0	1190	0.28	3.9	681	19121	3.50	108.41	88.6	1241	0.47	22.6	8.036	7.905	4376	8.10		<1	<1
W3B	-7.32	7/25/95	922				3.28	102	85.1	1192	0.22	3.1	691	19413	3.48	107.79	88.2	1235	0.44	22.7	8.015	7.960	4406	7.82		<1	<1
W3B	-7.32	8/22/95	1010				3.26	101	84.2	1179	0.27	3.8	694	19477	3.43	106.24	87.6	1227	0.55	22.8	8.020	7.997	4427	7.78		<1	<1
W3B	-7.32	9/12/95	752				3.38	105	85.4	1196	0.09	1.3	691	19399	3.38	104.69	88.8	1244	0.44	20.5	8.072	7.990	4423	7.81		<1	<1
W3B	-7.32	10/17/95	926				3.41	106	83.0	1163	0.19	2.7	695	19522	3.46	107.17	84.9	1189	0.53	22.9	8.051	8.191	4534	7.78		<1	<1
W3B	-7.32	11/7/95	846				3.53	109	86.0	1205	0.17	2.4	688	19331	3.58	110.89	90.0	1260	0.49	22.8	8.081	7.990	4423	7.83		<1	<1
W3B	-7.32	12/6/95	855				3.32	103	84.4	1182	0.16	2.2	689	19337	3.39	105.00	85.3	1194	0.51	23.0	8.085	8.249	4566	7.75		<1	<1
W3B	-7.32	6/17/96	931				3.23	100	85.0	1191	0.02	0.3	690	19385	3.32	102.83	87.2	1221	0.54	22.7	8.104	8.152	4512	7.79		<1	<1
W3B	-7.32	2/27/96	941				3.25	101	82.0	1148	0.07	1.0	686	19255	3.31	102.52	85.4	1196	0.50	23.1	8.054	7.975	4414	7.81		<1	<1
W3B	-7.32	3/13/96	1011				3.13	97	79.0	1107	0.15	2.1	661	18569	3.23	100.05	81.7	1145	0.51	23.2	8.030	7.358	4073	7.92		<1	<1
W3B	-7.32	4/2/96	826				3.25	101	80.3	1125	0.06	0.8	665	18679	3.34	103.45	87.5	1225	0.53	22.7	8.003	7.811	4324	7.89		<1	<1
W3B	-7.32	5/15/96	939				3.37	104	83.4	1167	0.20	2.8	672	18875	3.41	105.62	88.0	1232	0.51	23.8	8.002	8.154	4513	7.73		<1	<1
W3B	-7.32	6/18/96	905				3.34	103	84.7	1187	0.11	1.5	717	20150	3.45	106.86	89.8	1258	0.51	23.0	8.034	8.202	4540	7.81		<1	<1
W3B	-7.32	7/17/96	938				3.33	103	87.3	1223	0.14	2.0	729	20486	3.40	105.31	90.3	1264	0.64	23.2	8.046	7.916	4382	7.90		<1	<1
W3B	-7.32	8/6/96	947				3.29	102	87.8	1230	0.15	2.1	684	19218	3.41	105.62	92.3	1292	0.58	23.4	8.034	8.023	4441	7.82		<1	<1
W3B	-7.32	9/4/96	1000				3.39	105	89.8	1258	0.17	2.4	711	19976	3.43	106.24	93.2	1305	0.51	23.5	8.039	7.837	4338	7.84		<1	<1
W3B	-7.32	10/9/96	948				3.37	104	91.5	1281	0.17	2.4	681	19113	3.42	105.93	95.4	1336	0.61	23.4	8.045	7.375	4082	8.43		<1	1
W3B	-7.32	11/6/96	934				3.34	103	92.0	1289	0.14	2.0	699	19627	3.46	107.17	97.5	1365	0.61	23.4	7.827	7.489	4145	8.01		<1	<1
W3B	-7.32	12/17/96	1002				3.24	100	86	1200	0.20	2.8	666	18702	3.35	103.76	92.8	1299	0.48	22.8	8.008	7.864	4353	7.94		<1	<1
W3B	-7.32	1/14/97	1025				2.82	87	75	1057	0.03	0.4	629	17671	2.93	90.75	78.7	1103	0.45	23.7	8.039	6.519	3608	7.94		<1	<1
W3B	-7.32	2/10/97	1105				3.00	93	79	1112	0.13	1.8	651	18278	3.00	92.92	80.2	1123	0.46	24.1	8.020	6.812	3771	7.91		<1	<1
W3B	-7.32	3/10/97	1112				3.04	94	84	1178	0.03	0.4	682	19154	3.09	95.71	86.7	1214	0.51	23.5	8.035	7.200	3985	7.97		<1	<1
W3B	-7.32	4/23/97	933				3.20	99	85	1196	0.13	1.8	570	16009	3.25	100.66	98.7	1382	0.55	23.0	8.041	7.284	4032	7.59		<1	<1
W3B	-7.32	5/28/97	841				3.27	101	91	1270	0.04	0.6	599	16822	3.48	107.79	102	1422	0.45	23.1	8.055	7.390	4091	7.88		<1	<1
W3B	-7.32	6/17/97	940				3.23	100	84	1178	0.15	2.1	624	17520	3.30	102.21	91.3	1279	0.48	22.4	8.053	7.245	4010	7.83		<1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	7/15/97	931				3.38	105	94	1314	0.05	0.7	692	19435	3.43	106.24	99.5	1394	0.44	23.1	8.045	7.097	3928	7.89		<1	<1
W3B	-7.32	8/26/97	945				3.25	101	93	1307	0.19	2.7	687	19284	3.28	101.59	102	1426	0.49	23.3	8.112	7.209	3990	7.85		<1	<1
W3B	-7.32	9/23/97	1140				3.26	101	90	1259	0.26	3.6	673	18910	3.28	101.59	92.2	1291	0.48	23.8	8.138	7.710	4268	7.61		<1	<1
W3B	-7.32	10/15/97	908				3.21	99	98.8	1384	0.03	0.4	670	18817	3.29	101.90	100	1402	0.55	23.3	8.147	6.770	3747	7.86		<1	<1
W3B	-7.32	11/4/97	1025				3.30	102	94.0	1317	0.04	0.6	669	18792	3.36	104.07	113	1580	0.52	23.3	8.158	7.590	4201	7.57		<1	<1
W3B	-7.32	12/16/97	942				3.31	103	86.9	1217	0.01	0.1	675	18949	3.50	108.41	91.8	1286	0.48	23.1	8.154	7.676	4249	7.87		<1	<1
W3B	-7.32	1/5/98	1221				3.31	103	88.5	1240	0.06	0.8	671	18844	3.41	105.62	91.1	1276	0.53	23.1	8.167	7.734	4281	7.86		<1	<1
W3B	-7.32	2/3/98	1038				3.26	101	84.9	1189	0.05	0.7	684	19208	3.47	107.48	91.6	1283	0.52	22.9	8.145	7.915	4381	7.88		<1	<1
W3B	-7.32	3/10/98	1054				3.43	106	86	1201	0.05	0.7	676	18985	3.51	108.72	90.0	1261	0.53	22.8	8.017	8.102	4485	7.90		<1	<1
W3B	-7.32	4/14/98	920				3.46	107	87	1214	0.03	0.4	681	19129	3.57	110.58	88.5	1240	0.53	22.6	8.035	8.024	4441	7.93		<1	<1
W3B	-7.32	5/12/98	1045				3.44	107	85.6	1199	0.09	1.3	672	18885	3.53	109.34	90.1	1262	0.52	22.9	8.029	8.416	4658	7.84		<1	<1
W3B	-7.32	6/2/98	1038				3.41	106	85	1184	0.05	0.7	668	18770	3.54	109.65	88	1232	0.47	22.6	8.024	8.743	4839	7.81		<1	<1
W3B	-7.32	7/14/98	1048				3.41	106	81.6	1142	0.09	1.3	677	19022	3.58	110.89	84.1	1178	0.79	22.8	8.021	8.423	4662	7.77		<1	<1
W3B	-7.32	8/11/98	1107				3.48	108	85.7	1200	0.07	1.0	682	19143	3.66	113.36	89	1249	0.40	22.7	8.007	8.335	4614	7.69		<1	<1
W3B	-7.32	9/15/98	1141				3.48	108	87.1	1220	0.07	1.0	684	19208	3.68	113.98	88	1234	0.49	22.9	8.008	8.047	4454	8.05		<1	<1
W3B	-7.32	10/13/98	1015				3.46	107	88.8	1244	0.04	0.6	695	19517	3.54	109.65	92.0	1289	0.43	23.0	8.025	7.793	4314	8.62		1	<1
W3B	-7.32	11/4/98	1048				3.40	105	86.9	1217	0.11	1.5	722	20269	3.43	106.24	91.9	1287	0.48	23.1	8.022	8.078	4471	7.88		<1	<1
W3B	-7.32	12/16/98	1028				3.41	106	84	1171	0.08	1.1	679	19056	3.45	106.86	89	1251	0.44	23.1	8.013	8.628	4776	7.79		<1	<1
W3B	-7.32	1/12/99	1103				3.29	102	82	1154	0.04	0.6	680	19107	3.44	106.55	86	1209	0.44	23.2	8.015	8.610	4766	7.89		1	<1
W3B	-7.32	2/3/99	1051				2.80	87	82.7	1158	0.12	1.7	669	18784	2.90	89.82	89.9	1259	0.45	23.0	8.002	9.005	4985	7.81		<1	<1
W3B	-7.32	3/2/99	1059				3.34	103	78.8	1104	0.14	2.0	664	18654	3.43	106.24	81.3	1139	0.41	22.7	8.004	9.055	5012	8.54		<1	<1
W3B	-7.32	4/6/99	1049				3.26	101	83.5	1170	0.06	0.8	686	19269	3.35	103.89	86.9	1217	0.52	22.8	8.026	8.279	4583	8.03		<1	<1
W3B	-7.32	5/4/99	1054				3.27	101	77.5	1086	0.11	1.5	664	18635	3.33	103.14	79.6	1115	0.50	22.6	8.001	8.883	4917	7.81		<1	<1
W3B	-7.32	6/2/99	1038				3.37	104	83.5	1170	0.06	0.8	731	20531	3.48	107.79	90.8	1272	0.54	23.0	8.021	8.325	4608	7.89		<1	<1
W3B	-7.32	7/7/99	1111				3.37	104	79.2	1109	0.04	0.6	685	19244	3.40	105.31	82.0	1149	0.52	23.1	8.005	8.723	4828	7.84		<1	<1
W3B	-7.32	8/25/99	1044				3.37	104	84.9	1189	0.09	1.3	688	19328	3.40	105.31	91.9	1287	0.49	23.0	8.063	8.269	4577	8.01		<1	<1
W3B	-7.32	9/8/99	1047				3.40	105	88.4	1238	0.07	1.0	699	19618	3.55	109.96	96.8	1356	0.49	23.0	8.088	8.207	4543	7.97		<1	<1
W3B	-7.32	10/6/99	1052				3.47	107	84.3	1180	0.06	0.8	656	18413	3.52	109.03	87.6	1227	0.47	23.0	8.062	8.182	4529	7.94		<1	<1
W3B	-7.32	11/3/99	1106				3.31	103	81.2	1137	0.02	0.3	677	19011	3.31	102.52	85.6	1199	0.47	23.3	8.071	8.394	4646	7.89		<1	<1
W3B	-7.32	12/15/99	1123				3.37	104	83.8	1174	0.09	1.3	692	19432	3.45	106.86	86.4	1210	0.52	23.0	8.039	7.988	4422	7.61		<1	<1
W3B	-7.32	1/11/00	1058				3.30	102	85.4	1196	0.07	1.0	679	19078	3.37	104.38	94.0	1317	0.48	23.0	8.016	8.885	4918	7.62		<1	<1
W3B	-7.32	2/14/00	1115				3.35	104	81.8	1146	0.09	1.3	641	17992	3.33	103.14	88.6	1241	0.50	22.7	8.053	8.799	4870	7.70		<1	<1
W3B	-7.32	3/22/00	1125				3.11	96	82.0	1149	0.16	2.2	686	19267	3.05	94.47	89.9	1259	0.63	22.5	8.062	8.742	4839	7.78		<1	<1
W3B	-7.32	4/12/00	1108				3.39	105	81.9	1147	0.07	1.0	678	19048	3.27	101.28	89.7	1256	0.71	22.8	8.052	8.907	4930	7.74		<1	1
W3B	-7.32	5/17/00	1045				3.30	102	82.5	1156	0.16	2.2	680	19101	3.32	102.83	90.1	1262	0.55	22.6	8.061	8.576	4747	7.85		1	<1
W3B	-7.32	6/6/00	1123				3.28	102	85.4	1196	0.15	2.1	680	19101	3.31	102.52	92.8	1300	0.58	22.8	8.051	8.540	4727	7.85		1	<1
W3B	-7.32	7/31/00	1112				3.28	102	79.8	1118	0.10	1.4	652	18312	3.32	102.83	83.1	1164	0.42	22.9	8.049	9.098	5036	7.63		<1	<1
W3B	-7.32	8/30/00	1117				3.32	103	83.3	1167	0.26	3.6	685	19241	3.35	103.76	86.0	1205	0.45	22.8	8.029	8.482	4695	7.77		<1	<1
W3B	-7.32	9/6/00	1056				3.30	102	83.0	1163	0.12	1.7	689	19357	3.46	107.17	87.8	1230	0.47	23.2	8.034	8.275	4580	7.81		<1	<1
W3B	-7.32	10/25/00	1033				3.34	103	81.6	1143	0.35	4.9	706	19831	3.56	110.27	86.6	1214	0.45	23.3	8.029	8.334	4613	7.49		<1	<1
W3B	-7.32	11/14/00	1047				2.90	90	74.7	1046	0.15	2.1	640	17978	3.16	97.88	84.7	1186	0.43	23.5	8.033	7.347	4067	7.54		<1	1
W3B	-7.32	12/19/00	1038				3.18	98	80.7	1130	0.23	3.2	677	19000	3.29	101.90	83.3	1167	0.49	23.1	8.028	8.360	4627	7.46		<1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	1/24/01	1032				3.38	105	83.5	1170	0.06	0.8	688	19334	3.42	105.93	88.1	1234	0.56	23.2	8.025	8.298	4593	7.41		<1	<1
W3B	-7.32	2/7/01	1101				3.18	98	81.5	1142	0.07	1.0	683	19168	3.20	99.12	82.2	1151	0.52	23.0	8.035	8.631	4777	7.26		<1	<1
W3B	-7.32	3/12/01	1046				3.28	102	74.5	1043	0.06	0.8	666	18716	3.39	105.00	83.6	1171	0.52	23.1	7.995	8.654	4790	7.26		<1	<1
W3B	-7.32	4/18/01	1038				3.30	102	82.8	1160	0.01	0.1	682	19143	3.36	104.07	83.2	1165	0.48	23.0	7.991	8.594	4757	7.92		<1	<1
W3B	-7.32	5/14/01	914				4.91	152	84.7	1186	0.07	1.0	693	19472	5.24	162.30	89.4	1252	0.50	22.9	8.003	8.713	4823	7.86		<1	<1
W3B	-7.32	6/13/01	1055				3.54	110	84.7	1187	0.06	0.8	692	19441	3.56	110.27	86.0	1204	0.51	22.8	8.020	8.413	4657	8.00		<1	<1
W3B	-7.32	7/25/01	1015				3.57	111	87.3	1222	0.08	1.1	677	19014	3.56	110.27	92.7	1298	0.55	22.9	8.004	8.543	4729	7.89		1	<1
W3B	-7.32	8/20/01	1009				3.30	102	86.6	1213	0.10	1.4	684	19219	3.31	102.52	88.4	1238	0.51	23.5	8.017	8.462	4684	7.79		<1	<1
W3B	-7.32	9/18/01	1047				3.36	104	88.2	1235	0.11	1.5	683	19174	3.44	106.55	91.5	1282	0.60	23.4	8.014	8.098	4482	7.83		<1	<1
W3B	-7.32	10/9/01	1038				3.55	110	89.5	1254	0.05	0.7	685	19244	3.52	109.03	98.1	1374	0.55	23.4	8.009	8.076	4470	7.92		<1	<1
W3B	-7.32	11/6/01	1005				3.32	103	92.7	1298	0.17	2.4	693	19469	3.45	106.86	106	1486	0.53	23.2	8.020	8.142	4507	7.92		<1	1
W3B	-7.32	12/18/01	1000				2.81	87	86.5	1212	0.09	1.3	674	18938	2.83	87.66	98.1	1374	0.57	23.5	7.999	8.234	4558	7.78		<1	<1
W3B	-7.32	1/8/02	1014				3.24	100	86.2	1207	0.11	1.5	673	18913	3.35	103.76	89.1	1248	0.46	23.2	8.010	8.231	4556	7.50		<1	<1
W3B	-7.32	2/27/02	1013				3.34	103	89.0	1246	0.10	1.4	694	19497	3.40	105.31	97.9	1371	0.46	23.0	8.597	8.402	4651	7.43		<1	<1
W3B	-7.32	3/19/02	1020				2.90	90	78.4	1099	0.09	1.3	629	17671	2.94	91.06	81.1	1136	0.40	22.7	8.040	7.287	4034	7.49		2	2
W3B	-7.32	4/9/02	1012				3.34	103	85.5	1198	0.07	1.0	664	18638	3.50	108.41	86.3	1209	0.45	22.9	7.987	7.825	4331	7.43		<1	<1
W3B	-7.32	5/21/02	1015				3.20	99	85.0	1190	0.08	1.1	670	18826	3.30	102.21	86.5	1211	0.54	23.1	8.011	8.202	4540	7.94		<1	<1
W3B	-7.32	6/18/02	1028				3.33	103	89.7	1257	0.26	3.6	681	19135	3.35	103.76	90.0	1260	0.49	22.8	8.010	8.475	4691	8.84		<1	<1
W3B	-7.32	7/17/02	1006				3.18	98	89.2	1249	0.09	1.3	668	18764	3.38	104.69	79.1	1108	0.66	23.0	8.015	8.770	4854	7.70		<1	<1
W3B	-7.32	8/22/02	1024				3.38	105	87.4	1224	0.13	1.8	682	19154	3.48	107.79	89.1	1248	0.68	23.0	8.019	8.297	4593	7.85		<1	<1
W3B	-7.32	9/24/02	1059				3.30	102	91.3	1279	0.11	1.5	691	19404	3.44	106.55	81.7	1145	0.49	23.4	8.047	8.324	4608	7.92		<1	<1
W3B	-7.32	10/16/02	1039				3.13	97	92.7	1299	0.13	1.8	666	18705	3.23	100.05	77.4	1085	0.41	23.4	8.024	7.664	4242	7.93		<1	7
W3B	-7.32	11/6/02	1024				3.26	101	93.5	1309	0.12	1.7	664	18657	3.29	101.90	81.2	1138	0.56	23.6	8.007	7.792	4313	7.88		<1	<1
W3B	-7.32	12/19/02	1112				3.28	102	89.1	1248	0.08	1.1	674	18927	3.33	103.14	80.4	1127	0.54	23.5	8.017	8.370	4633	7.81		<1	<1
W3B	-7.32	1/22/03	1102				3.32	103	85.1	1192	0.28	3.9	668	18758	3.33	103.14	87.8	1230	0.72	23.1	8.023	8.559	4738	7.91		<1	<1
W3B	-7.32	2/20/03	1015				3.10	96	87.0	1218	0.16	2.2	665	18680	3.18	98.50	89.1	1247	0.46	23.5	8.019	8.627	4775	7.81		<1	<1
W3B	-7.32	3/18/03	954				3.30	102	85.8	1202	0.06	0.8	674	18930	3.33	103.14	101	1410	0.45	23.1	8.029	8.573	4745	7.82		<1	<1
W3B	-7.32	4/29/03	1010				3.47	107	90.7	1271	0.42	5.9	675	18961	3.52	109.03	97.7	1368	0.28	23.2	8.051	8.183	4530	7.94		<1	<1
W3B	-7.32	5/13/03	1037				3.48	108	87.7	1228	0.62	8.7	680	19084	3.50	108.41	90.0	1261	0.50	23.0	8.064	7.972	4413	8.02		<1	<1
W3B	-7.32	6/5/03	1005				3.39	105	85.2	1193	0.38	5.3	670	18814	3.46	107.17	100	1404	0.45	23.0	8.060	8.337	4615	7.97		<1	1
W3B	-7.32	7/31/03	1025				3.27	101	94.4	1322	0.27	3.8	674	18927	3.34	103.45	98.3	1377		23.5	8.026	8.537	4725	7.31		<1	<1
W3B	-7.32	8/27/03	1043				3.38	105	95.6	1339	0.70	9.8	680	19101	3.92	121.42	115	1614		23.3	8.029	8.132	4501	8.14		<1	<1
W3B	-7.32	9/17/03	1010				3.46	107	96.6	1352	0.35	4.9	690	19368	4.12	127.61	102	1433		23.4	8.036	7.900	4373	8.22		<1	<1
W3B	-7.32	10/7/03	1011				3.38	105	96.7	1355	1.11	15.5	687	19286	3.50	108.41	110	1541		23.5	8.027	8.098	4482	NA		<1	<1
W3B	-7.32	11/4/03	952				3.32	103	90.3	1265	0.44	6.2	688	19314	3.32	102.83	104	1450		23.3	8.051	8.179	4527			<1	<1
W3B	-7.32	11/14/03	1127																	23.7				8.02			
W3B	-7.32	12/16/03	949				3.28	102	94.5	1324	0.40	5.6	701	19677	3.39	105.00	99.2	1389		23.5	8.025	8.489	4699	7.90		<1	<1
W3B	-7.32	1/27/04	1010				3.10	96	89.3	1251	0.12	1.7	660	18525	3.19	98.81	91.0	1275		23.2	8.040	8.147	4510	7.53		<1	<1
W3B	-7.32	2/10/04	1007				3.14	97	88.6	1241	0.15	2.1	630	17697	3.08	95.40	89.2	1249		23.7	8.006	8.172	4523	7.83		<1	<1
W3B	-7.32	3/15/04	1011				2.88	89	78.9	1106	0.07	1.0	617	17320	3.05	94.47	80.9	1133		23.4	8.059	6.319	3498	7.60		<1	<1
W3B	-7.32	4/21/04	922				3.14	97	91.6	1283	0.02	0.3	663	18623	3.09	95.71	94.4	1323		22.9	8.034	7.700	4262	7.88		<1	<1
W3B	-7.32	5/12/04	917				3.14	97	94.3	1321	0.09	1.3	663	18626	3.08	95.40	97.0	1359		23.3	8.051	7.58	4196	8.09		<1	<1
W3B	-7.32	6/7/04	952				3.20	99	95.5	1338	0.18	2.5	653	18337	3.30	102.21	97.5	1365		23.0	8.043	7.49	4146	7.99		1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	7/8/04	1022				3.16	98	90.5	1267	0.08	1.1	676	18977	3.22	99.74	99.0	1387	0.39	23.1	8.097	7.90	4373	7.73		<1	<1
W3B	-7.32	8/24/04	950				3.14	97	94.7	1327	0.10	1.4	653	18351	3.08	95.40	101	1420		23.6	8.048	7.32	4052	7.86		<1	<1
W3B	-7.32	9/28/04	1005				3.42	106	106	1483	0.20	2.8	719	20179	3.30	102.21	115	1607		23.5	8.023	7.57	4190	7.86		<1	<1
W3B	-7.32	10/5/04	1055				3.16	98	101	1419	0.13	1.8	676	18972	3.28	101.59	116	1625		23.6	8.046	7.74	4284	7.82		<1	<1
W3B	-7.32	11/8/04	946				3.34	103	94.5	1323	0.19	2.7	679	19064	3.42	105.93	104	1452		23.6	8.054	7.79	4312	7.86		<1	<1
W3B	-7.32	12/7/04	957				3.20	99	101	1420	0.16	2.2	673	18899	3.24	100.35	118	1646		23.7	8.086	7.34	4063	7.89		<1	<1
W3B	-7.32	1/11/05	945				2.94	91	86.4	1210	0.08	1.1	662	18579	3.00	92.92	88.2	1236		23.7	8.115	7.144	3954	7.83		1	<1
W3B	-7.32	2/8/05	945				2.78	86	83.7	1172	0.20	2.8	626	17582	2.86	88.58	93.3	1307		23.5	8.112	6.373	3528	7.89		<1	<1
W3B	-7.32	3/16/05	1028				3.01	93	99.4	1392	0.20	2.8	640	17974	3.17	98.19	110	1537	0.42	23.3	8.079	7.300	4041	7.83		<1	<1
W3B	-7.32	4/18/05	1036				3.26	101	91.3	1279	0.11	1.5	675	18963	3.32	102.83	98.1	1373		23.4	8.083	7.553	4181	7.91		<1	1
W3B	-7.32	5/24/05	953				3.18	98	99.5	1394	0.18	2.5	672	18876	3.22	99.74	110	1534		23.3	8.012	8.068	4466	7.80		<1	<1
W3B	-7.32	6/13/05	1014				3.26	101	95.9	1344	0.18	2.5	677	19020	3.24	100.35	100	1405		23.3	8.045	8.080	4472	7.78		<1	<1
W3B	-7.32	7/11/05	1015				3.47	107	91.4	1280	0.16	2.2	673	18890	3.58	110.89	98.0	1372		23.1	8.049	7.541	4174	10.60		<1	<1
W3B	-7.32	8/10/05	930				3.32	103	89.0	1246	0.16	2.2	670	18809	3.46	107.17	89.6	1255		23.3	8.053	7.869	4356	7.81		<1	<1
W3B	-7.32	9/21/05	923				3.30	102	96.1	1347	0.12	1.7	665	18668	3.44	106.55	111	1549	0.43	23.5	8.054	8.058	4460	7.81		<1	<1
W3B	-7.32	10/18/05	948				3.36	104	94.0	1316	0.14	2.0	668	18770	3.50	108.41	102	1424		23.4	8.038	8.112	4490	7.77		<1	<1
W3B	-7.32	11/3/05	908				3.38	105	97.7	1369	0.18	2.5	685	19241	3.58	110.89	99.8	1398		23.3	8.052	8.239	4561	7.58		<1	2
W3B	-7.32	12/21/05	1020				3.34	103	91.4	1281	0.14	2.0	674	18938	3.44	106.55	99.6	1396	0.50	23.4	8.076	8.277	4582	7.83		<1	<1
W3B	-7.32	1/24/06	927				3.42	106	94.2	1319	0.14	2.0	679	19076	3.58	110.89	97.9	1371		22.9	8.042	8.431	4667	7.79		<1	<1
W3B	-7.32	2/15/06	925				3.37	104	93.0	1302	0.16	2.2	667	18741	3.42	105.93	97.0	1358	0.34	23.0	8.046	8.651	4789	7.76		<1	<1
W3B	-7.32	3/21/06	918				3.26	101	94.0	1317	0.10	1.4	674	18930	3.29	101.90	94.7	1326	0.39	22.7	8.065	8.566	4742	7.77		<1	1
W3B	-7.32	4/26/06	933				3.30	102	91.2	1278	0.05	0.7	663	18621	3.42	105.93	80.0	1121	0.42	22.6	8.046	8.31	4600	7.76		<1	<1
W3B	-7.32	5/23/06	1003				2.99	93	90.0	1261	0.05	0.7	660	18536	3.16	97.88	77.8	1090	0.54	22.8	8.035	8.686	4808	7.61		<1	<1
W3B	-7.32	6/27/06	1000				3.33	103	94.1	1318	0.21	2.9	670	18817	3.53	109.34	64.2	899	0.38	22.9	8.027	8.661	4794	7.73		<1	<1
W3B	-7.32	7/18/06	959				3.25	101	87.1	1220	0.11	1.5	661	18565	3.33	103.14	69.4	971	0.49	23	8.014	9.001	4982	8.16		<1	<1
W3B	-7.32	8/8/06	939				3.16	98	93.0	1303	0.05	0.7	671	18845	3.30	102.21	75.9	1063	0.40	22.9	8.031	8.304	4596	8.11		<1	<1
W3B	-7.32	9/19/06	1036				3.25	101	90.5	1268	0.07	1.0	668	18761	3.42	105.93	83.8	1174	0.41	23.6	8.023	8.347	4620	8.06		<1	<1
W3B	-7.32	10/24/06	1015				3.12	97	84.3	1181	0.23	3.2	639	17947	3.26	100.97	81.1	1136	0.42	23.2	8.057	7.175	3972	8.05		<1	<1
W3B	-7.32	11/28/06	954				3.40	105	87.3	1223	0.27	3.8	651	18284	3.45	106.86	82.8	1160	0.46	23.5	8.027	8.092	4479	7.97		<1	<1
W3B	-7.32	12/12/06	946				3.15	98	86.4	1210	0.16	2.2	648	18199	3.32	102.83	80.6	1129	0.54	23.4	8.021	8.369	4632	7.89		<1	<1
W3B	-7.32	1/9/07	1014				3.22	100	88.1	1234	0.26	3.6	651	18284	3.29	101.90	91.8	1286	0.43	23	8.034	8.730	4832	7.84		<1	<1
W3B	-7.32	2/22/07	1000				3.15	98	91.6	1283	0.19	2.7	657	18452	3.24	100.35	93.4	1308	0.42	23.2	8.009	8.887	4919	7.84		<1	<1
W3B	-7.32	3/6/07	1025				3.18	98	93.4	1308	0.21	2.9	666	18705	3.33	103.14	95.2	1334	0.49	23.1	8.049	8.549	4732	8.01		<1	<1
W3B	-7.32	4/11/07	1147				3.23	100	87.3	1223	0.19	2.7	671	18845	3.37	104.38	82.2	1152	0.41	23.4	8.048	8.520	4716	7.67		<1	<1
W3B	-7.32	5/3/07	1000				3.35	104	93.7	1312	0.24	3.4	686	19267	3.53	109.34	87.7	1229	0.50	23.5	8.067	8.471	4689	7.65		<1	<1
W3B	-7.32	6/19/07	935				3.13	97	90.8	1272	0.17	2.4	649	18227	3.24	100.35	76.6	1073	0.35	23.3	8.066	8.664	4796	8.13		<1	<1
W3B	-7.32	7/26/07	1040	-6.00	0.37	Flood	3.09	96	99.6	1395	0.04	0.5	661	18576	3.30	102.3	95.9	1343.1		23.5	7.97	8.19	4533	7.27			
W3B	-7.32	8/28/07	1023	-6.02	0.00	Low	3.45	107	102.0	1429	0.51	7.2	929	26085	3.45	106.8	101.7	1424.2		24.2	7.90	8.14	4506	7.24			
W3B	-7.32	9/13/07	1215	-5.94	0.15	Low	3.51	109	103.0	1443	0.74	10.4	751	21104	3.51	108.7	97.5	1366.0		24.0	8.02	8.29	4589	6.82			
W3B	-7.32	10/24/07	1126	-5.94	0.30	Flood	3.37	105	108.3	1517	0.01	0.2	658	18466	3.33	103.2	103.2	1445.9		23.5	8.04	8.12	4495	7.16			
W3B	-7.32	11/26/07	1437	-5.26	0.09	Flood	3.58	111	101.0	1414	0.60	8.5	739	20751	3.32	102.7	107.1	1500.7		23.3	8.10	8.52	4716	7.29			
W3B	-7.32	12/20/07	1114	-5.82	0.23	High	2.72	84	81.8	1146	0.55	7.7	525	14748						23.5	8.06	6.26	3465	7.26			

NELHA Water Quality Laboratory

Well 3B Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	1/28/08	1419	-6.02	0.06	Low	2.96	92	79.6	1115	0.31	4.3	398	11178						23.2	7.91	8.23	4556	6.92			
W3B	-7.32	2/27/08	1153	-5.79	0.06	Low	3.32	103	98.1	1374	0.63	8.8	630	17693						23.2	7.90	8.31	4600	7.42			
W3B	-7.32	3/20/08	1211	-6.04	0.12	Flood	3.24	100	108.7	1522	0.07	1	618	17363						23.0	7.98	8.25	4567	7.07			
W3B	-7.32	4/28/08	1155	-6.00	0.18	High	3.08	95	102.2	1432	0.19	2.6	643	18057						23.1	7.96	8.22	4550	6.83			
W3B	-7.32	5/29/08	1007		0.30	Flood	2.96	92	102.7	1438	0.12	1.7	640	17969						23.7	7.98	8.17	4522	7.25			
W3B	-7.32	6/19/08	1049	-6.22	0.21	Ebb	2.87	89	99.0	1387	0.18	2.5	641	18014						25.3	7.86	8.35	4622	6.55	0.21		
W3B	-7.32	7/24/08	1009	-5.74	0.46	Ebb	2.99	93	125.3	1756	0.72	10.1	650	18246						23.1	7.89	8.10	4484	7.21			
W3B	-7.32	8/30/08	1033		0.06	Flood	2.68	83	96.8	1356	0.29	4.0	529	14866						23.2	7.98	8.44	4672	7.27			
W3B	-7.32	9/18/08	920	-5.58	0.34	Ebb	1.12	35	37.0	519	1.29	18.0	345	9698						23.1	7.85	8.16	4517	7.20	0.13		
W3B	-7.32	10/28/08	922	-5.83	0.24	Ebb	3.32	103	102.3	1433	0.47	6.6	623	17510						24.4	7.72	8.01	4434	7.35	0.7		
W3B	-7.32	11/13/08	942	-5.80	0.15	Ebb	2.99	93	98.0	1372	0.06	0.9	537	15082						24.9	7.84	7.93	4389	7.19	0.37		
W3B	-7.32	12/15/08	1025	-5.67	0.37	Ebb	3.28	102	106.9	1497	0.33	4.6	596	16735						24.5	8.16	7.83	4334	7.51			
W3B	-7.32	1/21/09	934	-5.99	0.12	Low	2.56	79	100.0	1400	0.14	1.9	574	16135						24.3	8.16	7.08	3919	7.54	0.12		
W3B	-7.32	2/23/09	1515	-5.83	0.37	High	3.02	93	104.6	1466	1.04	14.6	637	17898						23.8	7.99	8.39	4644	7.56	0.33		
W3B	-7.32	3/16/09	809	-5.94	0.18	High	3.17	98	81.6	1143	0.54	7.6	540	15162						25.9	7.91	8.56	4738	7.13	0.09		
W3B	-7.32	4/20/09	1512	-5.81	0.43	High	3.94	122	92.0	1289	0.46	6.4	418	11753						24.3	7.91	8.55	4733	7.93	1.30		
W3B	-7.32	5/27/09	755	-5.91	0.15	Ebb	3.66	114	92.0	1288	0.21	3.0	669	18798						22.5	7.83	8.64	4782	6.88	0.11		
W3B	-7.32	6/18/09	1016	-5.80	0.34	Flood	2.84	88	65.5	917	0.49	6.8	269	7546						22.7	8.11	8.11	4489	8.12	0.11		
W3B	-7.32	7/14/09	825	-5.82	0.37	Flood	2.31	72	48.3	677	0.23	3.2	366	10281						22.5	8.17	8.63	4777	7.71	0.04		
W3B	-7.32	8/19/09	848	-6.01	0.03	Low	3.55	110	103.4	1449	0.51	7.2	491	13782						23.0	7.98	7.93	4389	7.39	0.05		
W3B	-7.32	9/22/09	859	-5.63	0.46	Ebb	1.89	58	44.4	622	0.12	1.7	254	7144						23.2	8.05	8.57	4744	7.63	0.05		
W3B	-7.32	10/22/09	1324	-5.95	0.18	Ebb	3.13	97	89.9	1259	0.27	3.8	254	7140						23.5	8.07	8.63	4777	7.78	0.04		
W3B	-7.32	11/16/09	1429	-5.98	0.21	High	3.50	108	96.7	1355	0.81	11.3	632	17762						23.4	8.04	8.79	4865	7.03	0.03		
W3B	-7.32	12/7/09	1404	-6.02	0.09	Ebb	3.39	105	100.9	1413	0.29	4.0	543	15240						23.8	8.00	8.88	4915	6.40	0.02		
W3B	-7.32	1/5/10	1138	-5.78	0.21	Ebb	3.00	93	93.0	1302	0.64	9.0	584	16396						23.8	8.05	8.87	4910	7.82	0.39		
W3B	-7.32	2/1/10	1159	-5.92	-0.09	Low	3.49	108	103.5	1450	1.36	19.0	596	16748						22.9	8.08	8.60	4760	7.21	0.06		
W3B	-7.32	3/9/10	1202	-5.98	0.15	High	3.58	111	93.6	1311	0.14	2.0	587	16483						22.8	8.04	8.88	4915	7.46	1.04		
W3B	-7.32	4/6/10	1048	-6.00	0.15	High	3.58	111	93.8	1314	0.36	5.0	642	18025						22.6	8.06	8.92	4937	8.02	0.25		
W3B	-7.32	5/11/10	1110	-5.98	0.21	Flood	3.52	109	83.8	1174	2.21	31.0	564	15834						22.7	8.08	8.12	4495	7.99	0.15		
W3B	-7.32	6/15/10	1158	-6.15	0.06	Low	3.10	96	80.7	1130	0.36	5.0	546	15327						22.6	8.10	8.43	4666	7.79	0.21		
W3B	-7.32	7/13/10	1110	-6.05	0.00	Low	3.45	107	95.2	1333	1.14	16.0	687	19308						22.6	8.06	8.64	4782	7.64	0.09		
W3B	-7.32	8/3/10	1116	-5.58	0.55	High	3.78	117	99.0	1387	0.40	5.6	687	19293						22.8	8.09	8.13	4500	7.79	0.22		
W3B	-7.32	9/14/10	1127	-5.54	0.52	Ebb	3.71	115	97.5	1365	0.49	6.9	712	20001						22.7	8.06	8.33	4611	7.86	0.12		
W3B	-7.32	10/12/10	1139	-5.59	0.46	Ebb	3.55	110	99.0	1386	0.25	3.5	735	20649						22.9	8.06	8.44	4672	7.59	0.09		
W3B	-7.32	11/16/10	1054	-5.73	0.34	Flood	3.65	113	103.0	1443	0.36	5.1	723	20298						22.8	8.05	8.01	4434	7.90	0.08		
W3B	-7.32	12/14/10	1132	-5.69	0.34	Ebb	3.52	109	100.6	1409	0.33	4.6	685	19235						22.8	8.06	8.07	4467	7.75	0.05		
W3B	-7.32	1/4/11	1119	-5.92	0.03	Low	3.52	109	96.5	1352	0.33	4.6	675	18965						22.9	8.00	8.10	4484	7.28	0.06		
W3B	-7.32	4/5/11	1143	-6.05	-0.03	Low	3.26	101	87.6	1227	0.43	6.0	676	18975						22.8	8.03	7.96	4406	6.75	0.16		
W3B	-7.32	7/12/11	1104	-5.98	0.30	Flood	3.65	113	94.6	1325	0.23	3.2	678	19047						22.8	8.01	8.58	4749	7.60	0.02		
W3B	-7.32	10/11/11	1137	-5.92	0.15	Flood	3.49	108	93.2	1305	0.11	1.6	659	18516						23.0	8.02	8.19	4533	7.84	0.20		
W3B	-7.32	1/10/12	1134	-6.00	0.03	Ebb	3.33	103	91.5	1282	0.53	7.4	650	18252						23.1	8.04	8.79	4865	6.90	0.08		
W3B	-7.32	5/1/12	1149	-5.78	0.34	Flood	3.71	115	96.0	1345	0.30	4.2	689	19359						22.8	8.10	8.21	4544	7.91	0.02		
W3B	-7.32	7/18/12	1043	-6.07	0.09	Flood	3.68	114	100.7	1410	0.62	8.7	657	18463						23.1	8.04	8.47	4688	8.10	0.05		
W3B	-7.32	10/16/12	1131	-5.96	0.09	Low	3.68	114	99.9	1399	0.44	6.1	669	18793						23.0	8.00	8.44	4672	7.78	0.15		
W3B	-7.32	1/8/13	1150	-5.98	0.18	Flood	3.94	122	103.7	1452	0.44	6.2	722	20272						23.1	7.98	8.46	4683	7.40	0.02		
W3B	-7.32	4/9/13	1152	-6.07	0.00	Flood	3.81	118	92.5	1296	0.49	6.8	705	19805						22.8	8.03	8.60	4760	6.57	0.15		

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Well 3B Data Table

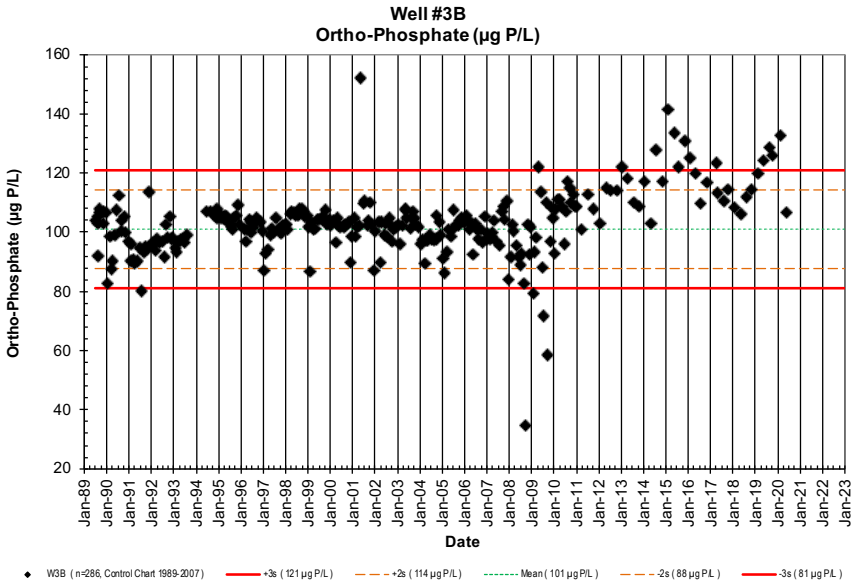
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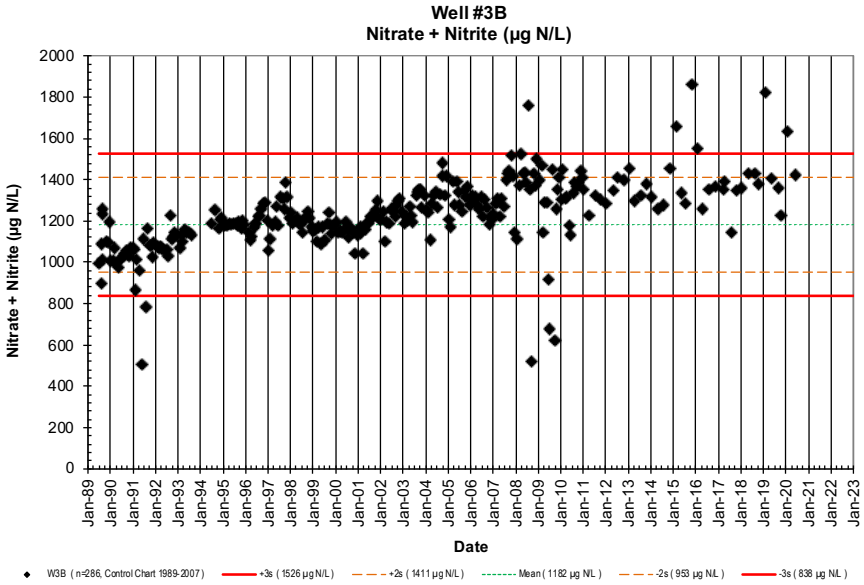
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W3B	-7.32	7/17/13	1246	-5.70	0.61	High	3.55	110	94.5	1324	0.69	9.7	684	19203						23.1	7.90	8.55	4733	7.52	0.05		
W3B	-7.32	10/15/13	1110	-5.76	0.37	Flood	3.52	109	98.3	1377	0.86	12.0	673	18915						23.6	7.97	8.58	4749	7.51	0.07		
W3B	-7.32	1/15/14	1116	-5.96	0.03	Low	3.78	117	93.9	1315	0.56	7.8	642	18026						23.7	8.04	8.42	4661	7.30	0.03		
W3B	-7.32	4/29/14	1217	-6.11	0.12	Flood	3.33	103	89.9	1259	0.57	8.0	616	17297						23.5	7.98	8.36	4627	7.78	0.15		
W3B	-7.32	7/29/14	1156	-5.99	0.12	Low	4.13	128	91.3	1279	1.07	15.0	640	17985						23.4	7.97	8.54	4727	7.32	0.28		
W3B	-7.32	11/5/14	1149	-5.82	0.17	Flood	3.78	117	103.7	1452	0.54	7.5	651	18296						24.0	8.01	7.70	4262	8.22	0.14		
W3B	-7.32	2/11/15	1042	-5.76	0.18	Ebb	4.56	141	118.2	1656	1.03	14.4	595	16700						23.4	7.93	8.12	4495	7.79	0.14		
W3B	-7.32	5/20/15	1210	-6.06	0.00	Flood	4.32	134	95.4	1336	1.17	16.4	598	16789						23.2	8.07	8.46	4683	7.53	0.03		
W3B	-7.32	7/22/15	952	-5.82	0.34	Ebb	3.95	122	91.9	1287	0.11	1.5	614	17248						23.5	7.95	8.78	4860	7.81	0.02		
W3B	-7.32	11/9/15	1500	-5.56	0.40	Ebb	4.23	131	132.8	1860	0.06	0.8	961	26992						23.9	8.01	7.47	4135	8.36	0.05		
W3B	-7.32	1/27/16	1302	-6.03	0.08	Low	4.04	125	110.7	1551	0.21	3.0	624	17537						23.6	7.94	8.56	4738	7.45	0.11		
W3B	-7.32	4/22/16	1012	-5.97	-0.05	Low	3.86	120	89.7	1256	0.40	5.6	604	16955						23.5	8.03	7.93	4389	7.44	0.06		
W3B	-7.32	7/27/16	1010	-5.76	0.20	Flood	3.54	110	96.5	1352	0.21	2.9	545	15311						23.2	8.07	8.48	4694	7.27	0.02		
W3B	-7.32	11/10/16	1013	-5.79	0.50	Flood	3.77	117	97.5	1366	0.13	1.8	548	15390						23.7	7.89	7.95	4401	7.35	0.02		
W3B	-7.32	3/22/17	1312	-5.71	0.25	High	3.99	124	96.7	1354	0.31	4.4	640	17963						23.8	8.09	7.75	4290	7.64	0.04		
W3B	-7.32	4/19/17	1204	-5.79	0.17	Ebb	3.65	113	99.2	1390	0.71	10.0	663	18615						24.1	8.00	7.94	4395	5.84	0.05		
W3B	-7.32	8/8/17	1002	-5.91	-0.04	Low	3.57	111	81.9	1147	0.10	1.4	661	18561						23.8	8.00	8.06	4461	6.33	0.06		
W3B	-7.32	10/18/17	1227	-5.79	0.50	Flood	3.70	115	96.3	1348	0.62	8.7	617	17339						24.0	8.02	7.53	4168	7.26	0.09		
W3B	-7.32	1/18/18	953	-5.72	0.15	Ebb	3.50	108	97.0	1358	0.21	3.0	638	17905						23.5	7.98	8.14	4506	7.34	0.51		
W3B	-7.32	5/10/18	1002	-5.93	0.25	Flood	3.43	106	102.2	1431	0.14	1.9	643	18054						21.8	7.99	8.91	4932	8.08	2.03		
W3B	-7.32	8/13/18	1535	-5.68	0.43	Flood	3.62	112	101.9	1428	0.45	6.3	685	19242						24.5	7.97	8.43	4666	7.36	0.05		
W3B	-7.32	10/25/18	1036	-5.81	0.12	Low	3.69	114	98.3	1377	0.24	3.4	633	17765						24.5	8.01	7.29	4035	8.13	0.08		
W3B	-7.32	2/8/19	934	-5.76	0.20	Ebb	3.87	120	130.1	1822	0.03	0.4	647	18167						23.4	7.87	8.66	4794	7.70	0.05		
W3B	-7.32	5/15/19	1419	-5.67	0.52	High	4.01	124	100.2	1403	0.04	0.6	619	17399						23.0	7.95	7.78	4306	8.18	0.04		
W3B	-7.32	8/28/19	1351	-5.5	0.70	High	4.16	129	97.2	1362	0.07	1.0	626	17581						23.8	7.99	8.09	4478	7.94	0.08		
W3B	-7.32	10/11/19	945	-5.84	0.15	Flood	4.07	126	87.6	1227	0.01	0.2	613	17209						23.9	8.03	8.16	4517	8.31	0.06		
W3B	-7.32	2/4/20	1047	-5.86	0.25	High	4.28	133	116.3	1630	0.24	3.3	647	18158						23.6	8.00	8.43	4666	7.64	0.05		
W3B	-7.32	6/3/20	1119	-5.76	0.35	Flood	3.44	106	101.8	1426	0.14	2.0	621	17454						24.0	7.91	7.89	4367	8.15	0.12		
W3B	-7.32	7/1/20																									
W3B	-7.32	10/1/20																									
W3B	-7.32	1/1/21																									
W3B	-7.32	4/1/21																									
W3B	-7.32	7/1/21																									
W3B	-7.32	10/1/21																									
W3B	-7.32	1/1/22																									
W3B	-7.32	4/1/22																									
W3B	-7.32	7/1/22																									
W3B	-7.32	10/1/22																									
W3B	-7.32	1/1/23																									
W3B	-7.32	4/1/23																									
Mean				-5.86	0.22		3.32	103	87.82	1230	0.22	3.1	663	18631	3.35	104	89	1235	0.57	23.1	8.03	8.17	4524	7.74	0.18		
Std. Dev.				0.17	0.17		0.34	11	11.51	161	0.27	3.7	76	2148	0.24	7	10	168	0.45	0.6	0.07	0.49	271	0.39	0.32		
Maximum				-5.26	0.70		4.91	152	133	1860	2.21	31.0	961	26992	5.24	162.3	117.5	1646	6.05	25.9	8.60	9.10	5036	10.60	2.03		
Minimum				-6.22	-0.09		1.12	35	36	504	0.00	0.0	254	7140	2.83	87.7	37.6	0	0.14	19.7	7.72	6.26	3465	5.84	0.02		
n				78	80		286	286	286	286	285	286	280	279	206	206	205	206	172	285	283	284	284	282	66		

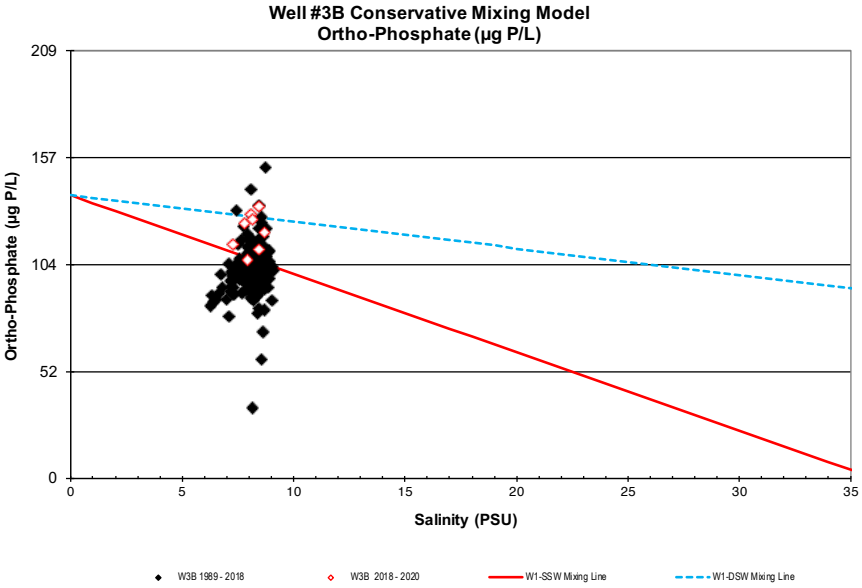
NELHA Water Quality Laboratory

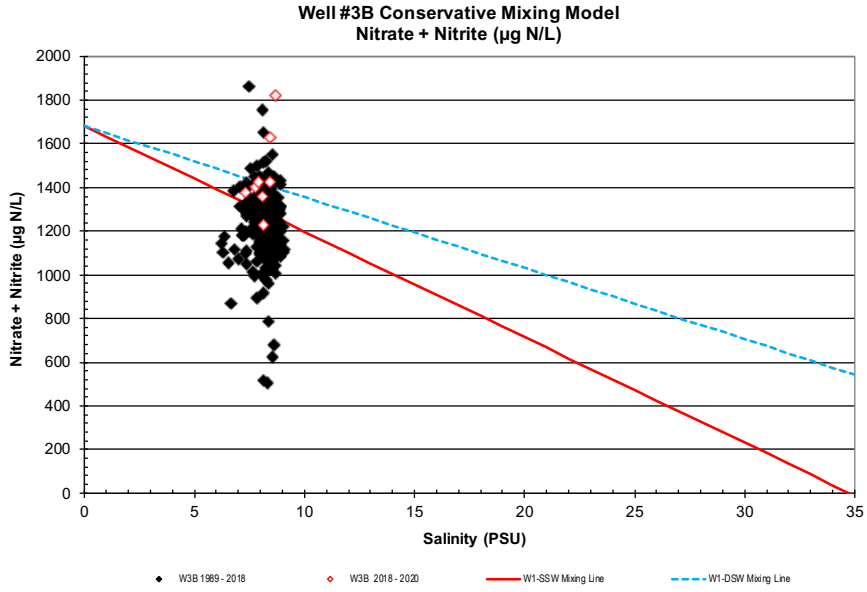
Well 3B Charts

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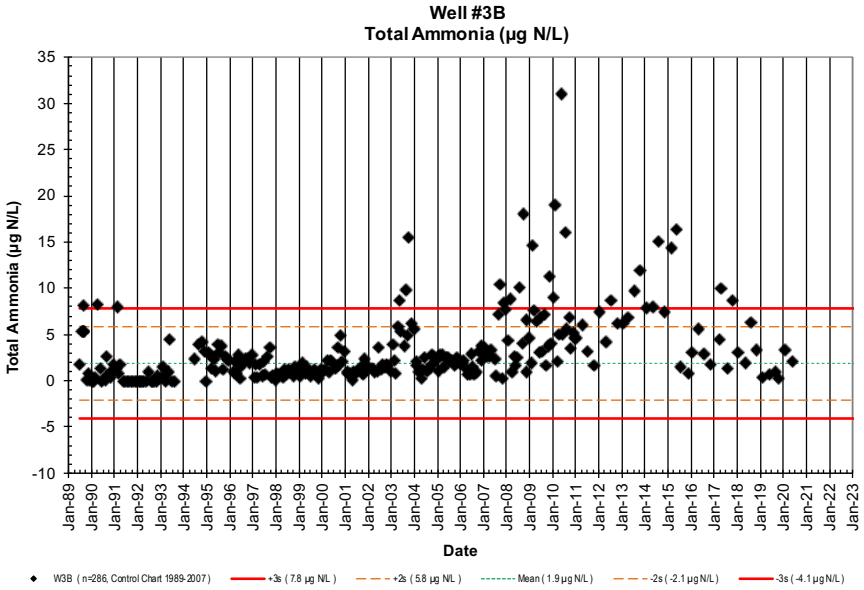


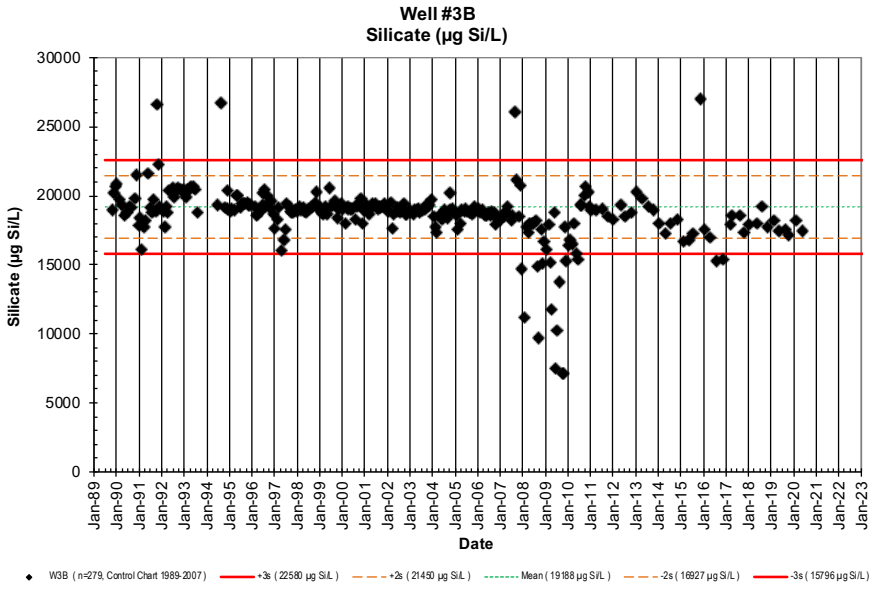


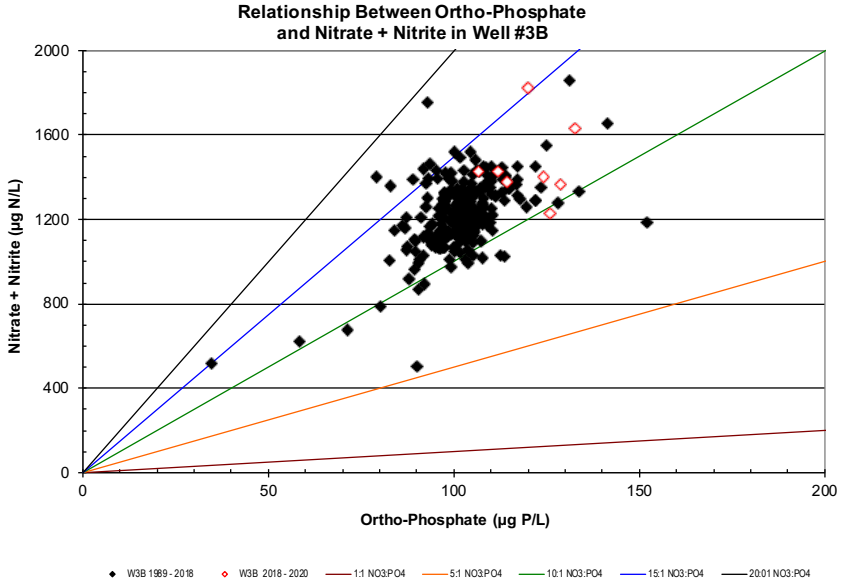
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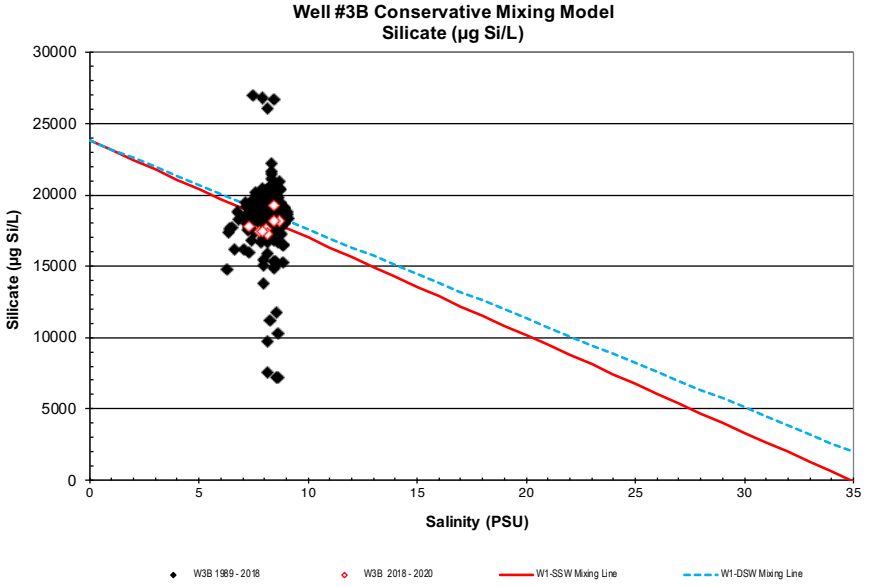
Well 3B Charts

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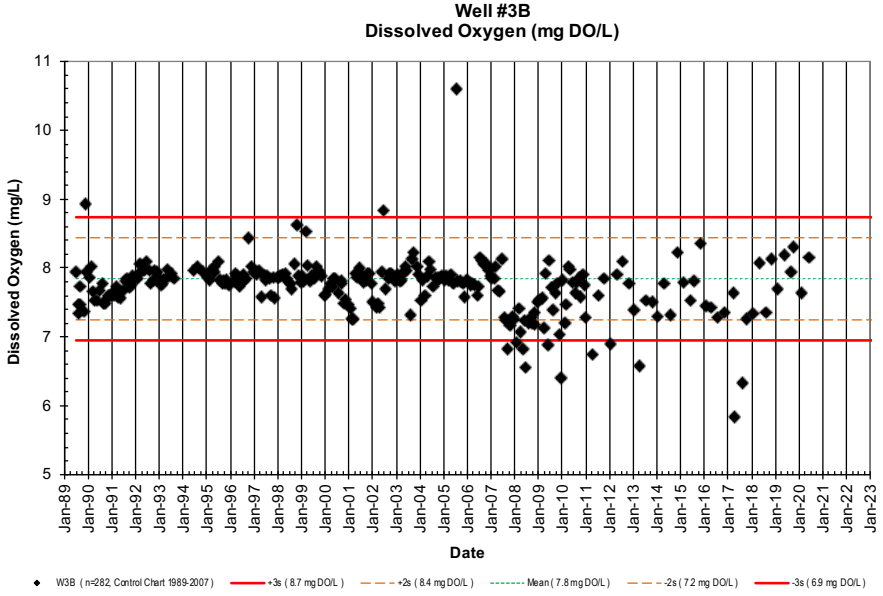


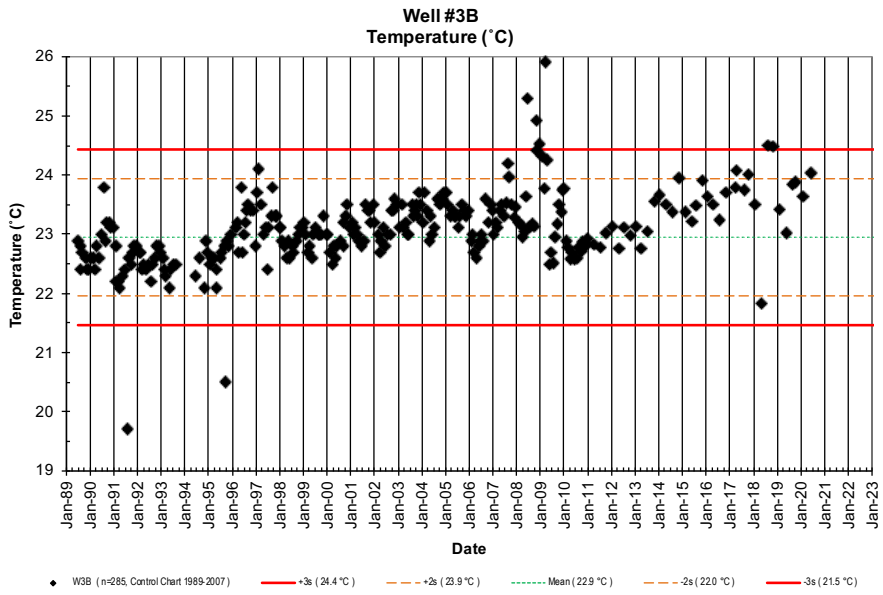


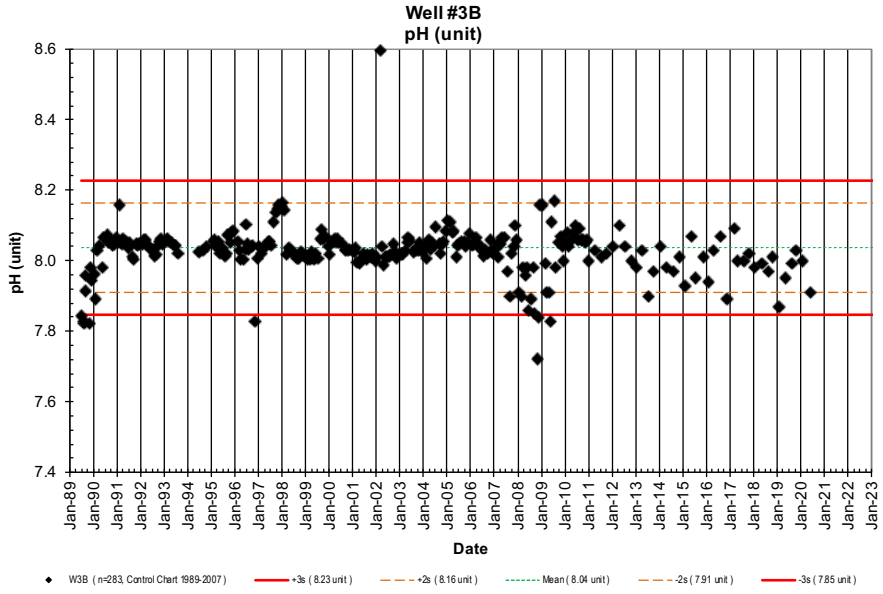
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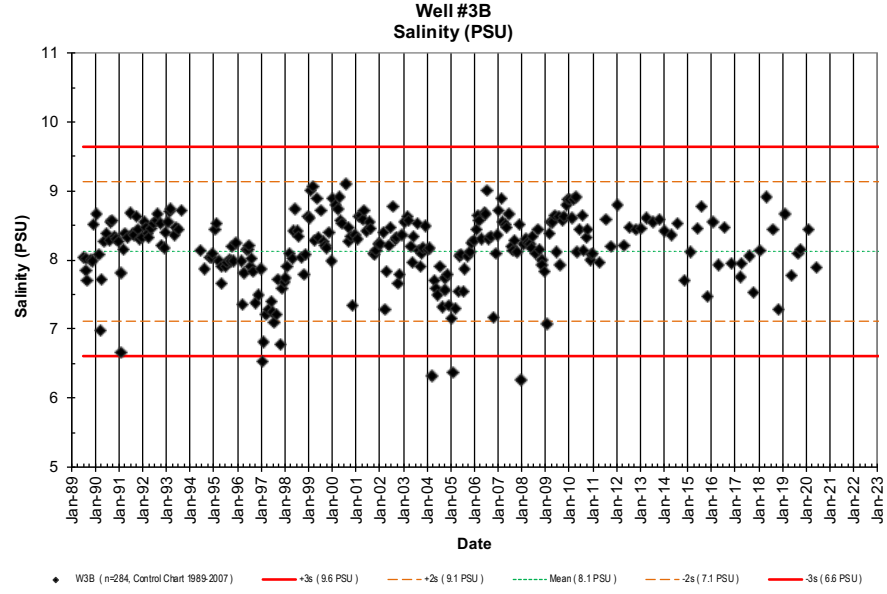
Well 3B Charts

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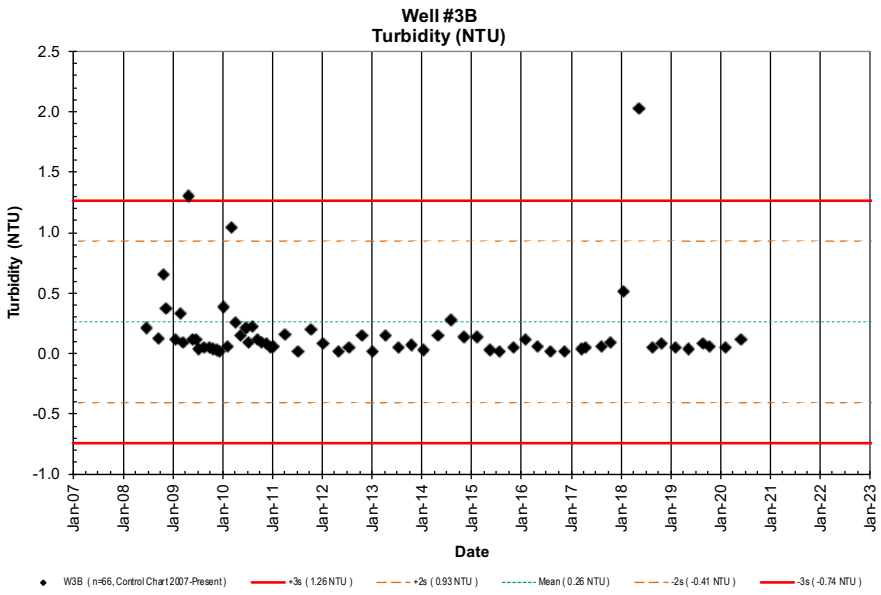


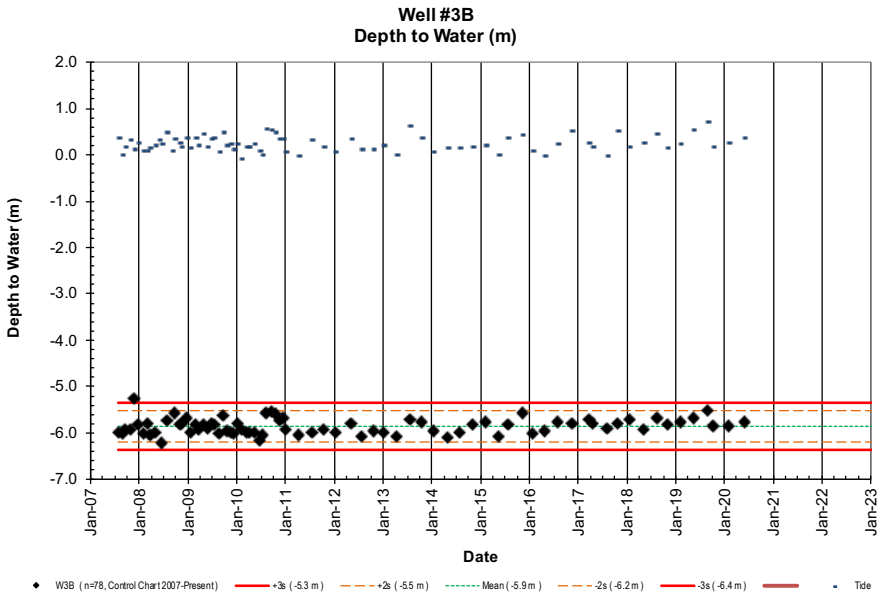


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Well 3B Charts

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Well 4 Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	6/27/89				2.47	77	57.6	807	0.51	7.1								22.4	7.796	18.972	10501	4.87		NA	NA
W4	-15.24	8/10/89	947			2.32	72	88.0	1233	0.48	6.7								21.2	7.648	18.626	10310	5.40		<1	NA
W4	-15.24	8/15/89	1430			2.09	65	75.0	1051	0.67	9.4								21.1	7.696	19.164	10608	5.19		<1	NA
W4	-15.24	8/22/89	1410			2.35	73	87.5	1226	0.54	7.6								20.8	7.771	18.827	10421	6.24		<1	NA
W4	-15.24	8/30/89	1410			2.34	72	87.0	1219	0.58	8.1								21.4	7.719	18.791	10401	5.47		<1	NA
W4	-15.24	8/30/89	1410			2.34	72	88.0	1233	0.54	7.6														NA	NA
W4	-15.24	10/31/89	1110			2.40	74	46.8	656	0.10	1.4	539	15138	2.65	82	48.1	674	0.28	20.9	7.750	18.537	10261	5.24		<1	NA
W4	-15.24	11/16/89	1108			2.15	67	40.9	573	0.06	0.8	526	14773	2.65	82	44.4	622	7.02	22.4	7.755	18.917	10471	5.84		<1	NA
W4	-15.24	12/12/89	1115			6.50	201	71.9	1007	0.93	13.0	456	12807	7.15	221	74.0	1036	125	20.8	8.385	18.554	10270	5.20		<1	NA
W4	-15.24	1/11/90	912			2.96	92	48.1	674	1.17	16.4	512	14380	3.19	99	49.5	693	0.56	21.2	8.095	18.857	10438	4.84		<1	NA
W4	-15.24	2/14/90	1130			2.93	91	51.4	720	0.27	3.8	459	12891	3.23	100	53.7	752	1.87	21.6	8.038	18.373	10170	5.12		<1	NA
W4	-15.24	3/7/90	1110			2.46	76	50.1	702	0.44	6.2	514		2.86	89	50.9	713	0.54	21.1	7.965	18.298	10128	4.94		<1	NA
W4	-15.24	4/4/90	1310			2.64	82	45.8	642	1.12	15.7	500	14043	2.83	88	46.9	657	0.50	21.4	7.916	19.193	10624	4.43		<1	NA
W4	-15.24	5/17/90	1136			2.34	72	44.6	624	0.07	1.0	490	13762	2.42	75	46.4	649	0.43	21.3	7.865	18.944	10486	4.59		<1	NA
W4	-15.24	6/16/90	1043			2.53	78	43.9	615	0.00	0.0	496	13930	2.62	81	46.4	649	0.73	21.3	7.935	19.144	10597	4.84		<1	NA
W4	-15.24	7/17/90	1122			2.57	80	41.5	581	0.00	0.0	493	13846	2.97	92	44.5	623	0.44	21.4	7.923	19.677	10892	4.70		<1	NA
W4	-15.24	8/8/90	1115			1.99	62	51.8	726	0.29	4.1	496	13930	2.64	82	44.0	616	0.34	21.4	7.901	19.841	10983	4.74		<1	NA
W4	-15.24	9/5/90	1119			2.39	74	42.8	600	0.00	0.0			2.39	74	43.3	606	0.29	21.4	7.898	17.356	9607	4.74		<1	NA
W4	-15.24	10/4/90	1128			2.24	69	40.5	567	0.00	0.0	496	13930	2.87	89	40.7	570	0.84	21.2	7.893	19.640	10871	4.80		<1	NA
W4	-15.24	11/1/90	1143			2.16	67	42.6	597	0.04	0.6	494	13874	2.61	81	43.8	613	0.28	21.3	7.886	19.799	10959	4.47		<1	NA
W4	-15.24	12/10/90	1120			2.26	70	44.2	619	0.13	1.8	537	15082	2.70	84	45.3	635	0.35	21.3	7.898	19.239	10649	4.82		<1	NA
W4	-15.24	1/10/91	900			2.23	69	45.7	640	0.03	0.4	484	13593	2.30	71	46.8	656	0.39	21.4	7.896	19.390	10733	4.67		<1	NA
W4	-15.24	2/5/91	1117			2.27	70	40.6	569	0.33	4.6	442	12414	2.27	70	42.0	588	0.68	21.3	7.897	19.163	10607	4.79		<1	NA
W4	-15.24	3/7/91	745			2.04	63	43.5	609	0.06	0.8	477	13397	2.11	65	45.3	634	3.00	21.0	7.901	19.098	10571	4.92		<1	NA
W4	-15.24	4/3/91	828			1.90	59	52.2	731	0.00	0.0	473	13284	2.00	62	53.3	747	0.54	21.0	7.912	19.304	10685	4.77		<1	NA
W4	-15.24	5/22/91	804			1.96	61	21.3	298	0.00	0.0	555	15587	2.17	67	22.2	311	0.35	21.2	7.890	19.625	10863	4.68		<1	NA
W4	-15.24	6/26/91	810			2.28	71	45.7	640	0.03	0.4	511	14352	2.43	75	47.1	660	0.43	21.2	7.906	19.209	10633	4.74		<1	<1
W4	-15.24	7/24/91	845			2.07	64	41.7	584	0.15	2.1	498	13987	2.36	73	43.6	611	0.39	18.7	7.887	19.580	10838	4.71		<1	<1
W4	-15.24	8/23/91	829			2.24	69	43.7	612	0.21	2.9	516	14492	2.34	72	46.2	647	0.42	21.1	7.847	19.429	10754	4.68		<1	<1
W4	-15.24	9/24/91	751			2.11	65	43.2	605	0.30	4.2	504	14155	2.24	69	45.6	639	0.35	21.2	7.855	19.182	10618	4.84		<1	<1
W4	-15.24	10/23/91	720			2.58	80	46.1	646	0.00	0.0	739	20755	2.68	83	48.5	679	0.44	21.1	7.943	19.450	10766	4.62		<1	<1
W4	-15.24	11/20/91	813			2.87	89	42.7	598	0.00	0.0	561	15756	2.96	92	45.3	635	0.31	21.1	7.898	19.452	10767	4.65		<1	<1
W4	-15.24	12/11/91	840			2.97	92	44.5	623	0.00	0.0	488	13706	3.07	95	47.1	660	0.52	21.5	7.947	19.590	10844	4.43		<1	<1
W4	-15.24	1/29/92	836			2.63	81	45.4	636	0.00	0.0	490	13762	2.79	86	46.8	656	0.95	21.1	7.952	19.091	10567	4.78		<1	<1
W4	-15.24	2/19/92	911			2.73	85	44.9	629	0.00	0.0	464	13032	2.76	85	51.8	726	0.35	21.7	7.923	19.331	10700	4.72		<1	<1
W4	-15.24	3/17/92	824			2.24	69	44.8	628	0.00	0.0	496	13930	2.34	72	50.8	712	0.44	21.2	7.896	19.066	10554	4.89		<1	<1
W4	-15.24	4/8/92	811			2.31	72	45.6	639	0.14	2.0	496	13930	2.40	74	47.3	663	0.56	21.2	7.886	18.840	10428	4.96		<1	<1
W4	-15.24	5/6/92	821			2.16	67	43.3	606	0.05	0.7	530	14885	2.29	71	47.1	660	0.80	21.2	7.869	19.222	10640	4.94		<1	<1
W4	-15.24	6/23/92	822			2.31	72	44.2	619	0.28	3.9	537	15082	2.57	80	46.0	644	0.44	21.3	7.878	19.191	10623	5.01		<1	<1
W4	-15.24	7/29/92	811			2.06	64	43.3	606	ND	0.0	514	14436	2.14	66	45.4	635	0.53	21.8	7.857	19.274	10669	4.92		<1	<1
W4	-15.24	8/26/92	755			2.29	71	51.4	720	0.14	2.0	543	15250	2.33	72	27.7	388	0.49	21.2	7.861	19.058	10549	4.90		<1	<1
W4	-15.24	9/22/92	757			2.22	69	41.9	587	0.00	0.0	553	15531	2.31	72	41.9	587	0.39	21.2	7.890	19.012	10524	4.92		<1	<1
W4	-15.24	10/27/92	813			2.95	91	44.3	621	0.14	2.0	527	14801	3.00	93	48.4	678	0.40	21.2	7.901	19.924	11028	4.60		<1	<1
W4	-15.24	11/17/92	835			2.34	72	45.6	639	0.19	2.7	522	14661	2.48	77	48.8	684	0.36	21.1	7.903	19.469	10777	4.81		<1	<1
W4	-15.24	12/8/92	820			2.19	68	46.4	650	0.21	2.9	539	15138	2.39	74	48.6	681	0.32	21.2	7.888	19.004	10519	4.94		<1	<1

NELHA Water Quality Laboratory

Well 4 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	1/26/93	832			2.11	65	48.5	679	0.19	2.7	587	16486	2.27	70	50.3	705	0.41	21.2	7.905	18.679	10339	5.03		<1	<1
W4	-15.24	2/23/93	803			2.15	67	46.9	657	0.05	0.7	554	15565	2.25	70	49.8	698	0.43	21.1	7.906	18.944	10486	4.99		<1	<1
W4	-15.24	3/16/93	804			2.11	65	46.1	646	0.10	1.4	556	15616	2.16	67	47.8	670	0.48	21.1	7.894	18.999	10516	5.01		<1	<1
W4	-15.24	4/27/93	808			2.07	64	45.0	630	0.21	2.9	552	15509	2.14	66	47.1	660	0.36	21.2	7.878	19.387	10731	4.93		<1	<1
W4	-15.24	5/25/93	800			2.07	64	44.3	621	0.21	2.9	557	15635	2.10	65	49.6	695	0.29	21.3	7.867	19.382	10728	4.90		<1	<1
W4	-15.24	6/28/93	839			2.00	62	44.6	625	0.16	2.2	532	14941	2.25	70	47.0	658	0.35	21.3	7.871	19.402	10740	4.92		<1	<1
W4	-15.24	8/31/93	836			2.15	67	45.0	630	0.00	0.0	552	15503	2.15	67	52.9	741	0.47	21.3	7.864	19.087	10565	5.05		<1	<1
W4	-15.24	10/26/93	808			2.16	67	46.2	648	0.32	4.5	526	14773	2.10	65	47.6	666	0.39	21.2	7.877	18.883	10452	5.08		<1	<1
W4	-15.24	3/1/94	754			2.25	70	46.0	644	0.19	2.7	480	13481	2.27	70	58.9	825	0.58	21.1	7.860	19.322	10695	4.78		<1	<1
W4	-15.24	6/21/94	744			2.34	72	49.8	697	0.21	2.9	727	20408	2.46	76	60.1	841	0.47	21.2	8.917	19.546	10819	4.87		<1	<1
W4	-15.24	8/23/94	824			3.95	122	60.2	843	0.18	2.5	528	14840	4.04	125	68.0	953	0.56	21.3	8.019	19.850	10987	5.47		<1	<1
W4	-15.24	10/25/94	840			2.45	76	45.4	636	0.40	5.6	464	13040	2.48	77	48.1	674	0.35	21.2	7.906	19.670	10888	4.82		<1	<1
W4	-15.24	11/28/94	1215			2.42	75	44.3	620	0.43	6.0	468	13148	2.52	78	48.6	681		21.3		19.276	10670	4.87			
W4	-15.24	12/13/94	905			2.36	73	45.2	633	0.00	0.0	184	5162	2.42	75		0		21.2		19.443	10762				
W4	-15.24	1/24/95	838			2.31	72	45.1	631	0.14	2.0	473	13277	2.39	74	46.8	656	0.41	21.1	7.891	19.320	10694	4.92		<1	<1
W4	-15.24	2/14/95	819			2.25	70	45.2	634	0.27	3.8	479	13442	2.36	73	45.9	642	0.45	21.2	7.904	19.380	10727	4.92		<1	<1
W4	-15.24	3/14/95	913			2.25	70	45.4	636	0.07	1.0	471	13237	2.26	70	46.2	648	0.38	21.3	7.859	19.288	10676	5.01		<1	<1
W4	-15.24	4/25/95	938			2.22	69	43.4	608	0.25	3.5	476	13369	2.26	70	45.0	631	0.32	21.1	7.871	19.668	10887	4.86		<1	<1
W4	-15.24	5/9/95	828			2.19	68	46.0	644	0.25	3.5	510	14332	2.27	70	47.1	660	0.28	21.4	7.852	19.134	10591	4.97		<1	<1
W4	-15.24	6/27/95	846			2.17	67	44.0	617	0.45	6.3	480	13470	2.31	72	46.0	645	0.29	21.4	7.859	19.312	10690	5.01		<1	<1
W4	-15.24	7/25/95	900			2.06	64	44.5	623	0.15	2.1	482	13546	2.24	69	46.6	653	0.29	21.3	7.849	19.272	10668	4.91		1	<1
W4	-15.24	8/22/95	947			2.01	62	43.1	603	0.31	4.3	481	13506	2.25	70	45.4	636	0.39	21.4	7.852	19.353	10712	4.79		<1	<1
W4	-15.24	9/12/95	657			2.18	68	42.7	598	0.14	2.0	477	13386	2.19	68	45.0	631	0.44	21.3	7.899	19.685	10896	6.36		<1	<1
W4	-15.24	10/17/95	856			2.14	66	43.7	613	0.16	2.2	488	13700	2.16	67	45.6	638	0.37	21.5	7.880	19.250	10655	4.86		<1	<1
W4	-15.24	11/7/95	809			2.14	66	43.1	604	0.43	6.0	473	13296	2.20	68	45.5	637	0.43	21.3	7.910	19.628	10865	4.78		<1	<1
W4	-15.24	12/6/95	823			2.10	65	44.4	621	0.29	4.1	483	13551	2.18	68	46.0	645	0.51	21.4	7.923	19.239	10649	4.92		<1	<1
W4	-15.24	1/30/96	858			2.09	65	44.3	621	0.14	2.0	482	13532	2.18	68	45.2	633	0.43	21.0	7.939	19.651	10877	4.82		<1	<1
W4	-15.24	2/27/96	905			2.10	65	43.9	615	0.15	2.1	489	13720	2.20	68	45.2	634	0.45	21.5	7.889	19.333	10701	5.02		<1	<1
W4	-15.24	3/13/96	939			2.14	66	43.9	615	0.31	4.3	481	13509	2.21	68	46.6	653	0.62	21.5	7.868	19.166	10609	4.96		<1	<1
W4	-15.24	4/2/96	924			2.14	66	40.4	565	0.18	2.5	494	13875	2.29	71	47.1	659	0.39	21.9	7.851	19.365	10719	4.84		<1	<1
W4	-15.24	5/15/96	910			2.21	68	46.7	655	0.24	3.4	496	13925	2.24	69	50.0	700	0.47	21.7	7.840	19.008	10521	4.98		<1	<1
W4	-15.24	6/18/96	831			2.17	67	43.1	603	0.15	2.1	493	13837	2.26	70	45.7	640	0.40	21.7	7.867	19.782	10950	6.44		<1	<1
W4	-15.24	7/17/96	906			2.21	68	45.2	633	0.21	2.9	487	13678	2.24	69	46.8	656	0.41	21.7	7.895	19.496	10792	0.99		<1	<1
W4	-15.24	8/6/96	915			2.09	65	47.2	661	0.38	5.3	477	13409	2.20	68	49.5	693	0.33	22.2	7.881	19.423	10751	4.89		<1	<1
W4	-15.24	9/4/96	915			2.26	70	65.3	914	0.36	5.0	482	13542	2.30	71	70.0	980	0.41	21.7	7.886	19.041	10540	4.97		<1	<1
W4	-15.24	10/9/96	918			2.54	79	62.8	880	0.35	4.9	495	13893	2.60	81	67.4	944	0.32	21.7	7.943	18.427	10200	5.81		<1	<1
W4	-15.24	11/6/96	906			2.26	70	51	712	0.27	3.8	489	13737	2.40	74	55.5	777	0.47	21.7	7.869	18.471	10224	5.11		<1	<1
W4	-15.24	12/17/96	905			2.31	72	50	702	0.21	2.9	458	12871	2.43	75	54.9	769	0.34	21.8	7.896	19.257	10659	5.12		<1	<1
W4	-15.24	1/14/97	930			2.36	73	88	1233	0.18	2.5	451	12658	3.13	97	88.8	1244	0.56	21.8	7.940	19.517	10803	5.51		<1	<1
W4	-15.24	2/10/97	1038			2.40	74	70	980	0.34	4.8	451	12669	2.50	77	71.8	1006	0.46	21.7	7.903	20.106	11129	5.38		<1	1
W4	-15.24	3/10/97	1041			3.02	94	72	1013	0.06	0.8	462	12976	3.20	99	75.1	1051	0.46	21.9	7.908	20.165	11162	5.38		<1	3
W4	-15.24	4/23/97	903			2.27	70	64	891	0.46	6.4	463	12992	2.39	74	70.6	989	0.49	21.7	7.931	20.317	11246	4.98		<1	<1
W4	-15.24	5/28/97	922			2.58	80	45	627	0.06	0.8	418	11726	2.59	80	48.8	684	0.34	21.1	7.924	20.833	11532	4.52		<1	<1
W4	-15.24	6/17/97	920			2.11	65	52	727	0.39	5.5	440	12366	2.16	67	54.0	756	0.38	21.1	7.947	19.934	11034	4.64		<1	<1

NELHA Water Quality Laboratory

Well 4 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	7/15/97	912				2.45	76	67	944	0.05	0.7	435	12228	2.56	79	71.8	1006	0.49	21.2	7.994	19.865	10996	4.47		<1	1
W4	-15.24	8/26/97	915				2.15	67	43	601	0.30	4.2	440	12346	2.22	69	44.3	620	0.39	21.0	8.079	20.537	11368	4.48		<1	<1
W4	-15.24	9/23/97	1109				2.06	64	44.4	622	0.23	3.2	431	12116	2.11	65	45.6	639	0.37	21.7	8.092	20.512	11354	4.48		<1	<1
W4	-15.24	10/15/97	851				2.16	67	43.6	611	0.06	0.8	466	13085	2.29	71	46.5	651	0.32	21.5	8.104	20.147	11152	4.58		<1	<1
W4	-15.24	11/4/97	1007				2.16	67	44.9	629	0.18	2.5	455	12765	2.34	72	51.2	717	0.36	21.5	8.107	20.044	11095	4.67		<1	<1
W4	-15.24	12/16/97	910				2.04	63	39.0	546	0.05	0.7	451	12678	2.22	69	42.0	588	0.37	21.5	8.060	20.977	11611	4.60		<1	<1
W4	-15.24	1/5/98	1204				2.13	66	41.9	586	0.20	2.8	455	12775	2.27	70	43.9	615	0.43	21.5	8.074	20.199	11181	4.69		<1	<1
W4	-15.24	2/3/98	1021				2.09	65	42	590	0.01	0.1	474	13310	2.24	69	45.2	633	0.36	21.5	8.050	19.990	11065	4.76		<1	<1
W4	-15.24	3/10/98	1034				2.15	67	43	606	0.11	1.5	473	13290	2.25	70	45.4	636	0.39	21.4	7.879	20.029	11087	4.79		<1	<1
W4	-15.24	4/14/98	858				5.71	177	676	9467	0.02	0.3	355	9979	6.19	192	731	10240	3.44	21.5	8.757	19.912	11022	4.28		<1	<1
W4	-15.24	5/12/98	1028				2.71	84	75	1053	0.14	2.0	453	12711	2.81	87	81	1135	0.54	21.5	8.090	19.721	10916	4.64		<1	<1
W4	-15.24	6/2/98	1023				2.44	76	50.7	710	0.14	2.0	455	12789	2.53	78	53.1	744	0.30	21.5	7.975	19.993	11067	4.77		<1	<1
W4	-15.24	7/14/98	1033				18.01	558	288	4040	7.36	103.1	279	7830	19.3	599	340	4762	2.59	21.7	8.654	20.649	11430	5.43		<1	<1
W4	-15.24	8/11/98	1048				7.68	238	74.3	1041	0.23	3.2	376	10546	8.07	250	80	1115	0.62	21.6	8.360	20.797	11512	4.01		<1	<1
W4	-15.24	9/15/98	1122				3.39	105	51.3	719	0.09	1.3	412	11568	3.78	117	62.5	876	0.41	21.5	8.063	21.673	11997	4.20		<1	<1
W4	-15.24	10/13/98	959				3.07	95	41.0	574	0.02	0.3	425	11928	3.26	101	43.3	606	0.34	21.8	8.007	21.676	11998	4.61		<1	<1
W4	-15.24	11/4/98	1032				3.04	94	49	682	0.06	0.8	463	13006	3.12	97	51	720	0.47	21.9	8.029	20.424	11305	4.50		<1	<1
W4	-15.24	12/16/98	1013				2.70	84	58	809	0.09	1.3	459	12891	2.82	87	63	875	0.53	21.7	7.975	19.612	10856	4.69		<1	<1
W4	-15.24	1/12/99	1048				2.48	77	47.9	670	0.05	0.7	458	12855	2.65	82	50.5	707	0.41	21.7	7.946	19.884	11006	4.74		<1	<1
W4	-15.24	2/3/99	1037				3.28	102	74.7	1046	0.09	1.3	434	12183	3.36	104	81.5	1142	0.61	21.5	7.987	20.493	11343	4.29		<1	<1
W4	-15.24	3/2/99	1039				2.48	77	55.2	773	0.02	0.3	436	12240	2.61	81	58.4	818	0.41	21.6	7.981	20.695	11455	4.82		<1	<1
W4	-15.24	4/6/99	1032				2.38	74	48.4	678	0.11	1.5	432	12139	2.49	77	50.9	713	0.45	21.6	7.969	21.382	11835	4.39		<1	1
W4	-15.24	5/4/99	1037				2.53	78	47.9	671	0.10	1.4	440	12369	2.67	83	50.1	702	0.50	21.5	7.959	20.424	11305	4.55		<1	<1
W4	-15.24	6/2/99	1020				2.44	76	40.1	562	0.19	2.7	425	11936	2.56	79	42.1	590	0.36	21.6	7.928	21.129	11695	4.50		<1	<1
W4	-15.24	7/7/99	1055				2.66	82	40.3	564	0.01	0.1	446	12518	2.74	85	42.2	591	0.36	21.9	7.926	20.751	11486	4.59		1	<1
W4	-15.24	8/25/99	1021				2.48	77	42.1	590	0.07	1.0	452	12689	2.59	80	44.1	618	0.33	22.1	7.970	20.644	11427	5.03		<1	<1
W4	-15.24	9/8/99	1031				2.36	73	39.1	548	0.06	0.8	444	12464	2.48	77	41.8	585	0.34	21.5	7.957	21.654	11986	4.49		<1	<1
W4	-15.24	10/6/99	1038				2.40	74	40.2	562	0.07	1.0	427	11993	2.53	78	41.9	587	0.33	21.6	7.956	20.874	11554	4.67		<1	<1
W4	-15.24	11/3/99	1052				3.41	106	194	2714	0.13	1.8	377	10585	3.60	112	195	2731	1.08	21.7	8.362	20.529	11363	4.92		<1	<1
W4	-15.24	12/15/99	1108				2.66	82	58.8	824	0.10	1.4	427	12001	2.76	85	59.8	838	0.42	21.7	8.026	21.058	11656	4.05		<1	<1
W4	-15.24	1/11/00	1044				2.31	72	48.2	675	0.14	2.0	448	12582	2.40	74	52.7	738	0.38	21.5	7.952	20.298	11235	4.61		<1	<1
W4	-15.24	2/14/00	1101				2.31	72	45.3	635	0.05	0.7	445	12504	2.36	73	47.6	667	0.39	21.8	7.970	20.339	11258	4.78		<1	<1
W4	-15.24	3/22/00	1110				2.20	68	42.2	591	0.06	0.8	449	12610	2.20	68	51.4	720	0.43	21.5	7.954	21.111	11685	4.44		<1	<1
W4	-15.24	4/12/00	1053				2.25	70	40.2	563	0.03	0.4	465	13051	2.25	70	43.1	604	0.45	21.6	7.941	21.119	11690	4.45		<1	<1
W4	-15.24	5/17/00	1030				2.05	63	38.0	532	0.11	1.5	433	12155	2.07	64	39.2	549	0.46	21.6	7.924	21.777	12054	7.65		<1	<1
W4	-15.24	6/6/00	1106				1.94	60	35.2	493	0.03	0.4	427	11987	2.06	64	37.8	529	0.35	21.6	7.917	22.335	12363	7.52		<1	<1
W4	-15.24	7/31/00	1055				2.08	64	38.2	535	0.09	1.3	436	12231	2.19	68	40.1	562	0.61	21.4	7.931	21.244	11759	4.52		<1	<1
W4	-15.24	8/30/00	1101				2.01	62	35.7	500	0.05	0.7	429	12051	2.11	65	36.7	514	0.65	21.6	7.881	22.266	12325	4.32		<1	<1
W4	-15.24	9/6/00	1042				2.00	62	35.0	490	0.01	0.1	435	12217	2.19	68	36.3	508	1.55	21.9	7.878	22.183	12279	4.27		<1	<1
W4	-15.24	10/25/00	1008				2.01	62	38.3	536	0.24	3.4	452	12683	2.22	69	40.1	562	0.61	21.6	7.886	21.825	12081	4.25		<1	<1
W4	-15.24	11/14/00	1122				2.10	65	43.5	609	0.17	2.4	437	12265	2.18	68	44.0	616	0.57	21.6	7.918	21.515	11909	4.20		<1	<1
W4	-15.24	12/19/00	1024				1.88	58	40.0	560	0.13	1.8	454	12759	2.10	65	41.0	575	0.46	21.5	7.905	21.299	11790	4.31		<1	<1
W4	-15.24	1/24/01	1016				2.08	64	38.3	537	0.17	2.4	529	14852	2.20	68	41.9	587	0.49	21.5	7.894	21.525	11915	4.24		<1	<1
W4	-15.24	2/7/01	1045				2.13	66	39.9	559	0.14	2.0	462	12984	2.20	68	42.2	591	0.50	21.6	7.925	20.931	11586	4.37		<1	2
W4	-15.24	3/12/01	1030				2.03	63	37.2	521	0.03	0.4	441	12386	2.40	74	38.3	536	0.40	21.8	7.871	21.373	11831	4.50		<1	<1

NELHA Water Quality Laboratory

Well 4 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	4/18/01	1020			2.14	66	40.7	570	0.04	0.6	368	10341	2.16	67	42.6	597	0.36	21.6	7.862	20.888	11562	4.76		<1	<1
W4	-15.24	5/14/01	857			3.12	97	39.0	547	0.16	2.2	454	12751	3.44	107	43.1	604	0.37	21.5	7.871	21.287	11783	4.65		<1	<1
W4	-15.24	6/13/01	1038			2.20	68	43.7	612	0.04	0.6	427	11986	2.50	77	46.2	648	0.53	21.6	8.002	21.522	11913	4.71		<1	<1
W4	-15.24	7/25/01	957			2.22	69	41.7	584	0.09	1.3	445	12501	2.26	70	42.9	600	0.41	21.9	7.934	21.015	11632	4.70		<1	<1
W4	-15.24	8/20/01	939			12.3	381	74.9	1049	0.15	2.1	213	5985	12.3	382	81.8	1146	0.67	21.7	7.907	21.177	11722	4.83		<1	<1
W4	-15.24	9/18/01	930			2.14	66	42.5	595	0.19	2.7	457	12824	2.18	68	44.7	626	0.39	22.1	7.899	20.880	11558	4.88		<1	1
W4	-15.24	10/9/01	1022			2.04	63	39.0	547	0.07	1.0	443	12442	2.16	67	41.6	583	0.40	21.8	7.878	21.316	11799	4.79		<1	<1
W4	-15.24	11/6/01	930			1.94	60	39.8	558	0.05	0.7	455	12776	2.13	66	45.2	633	0.38	22.1	7.879	21.318	11800	4.80		<1	<1
W4	-15.24	12/18/01	938			1.65	51	38.5	539	0.18	2.5	368	10335	1.82	56	40.8	571	0.42	21.6	7.870	21.195	11732	4.69		<1	1
W4	-15.24	1/8/02	954			2.00	62	37.7	528	0.19	2.7	450	12647	2.11	65	39.1	548	0.43	21.5	7.865	21.662	11990	4.27		<1	<1
W4	-15.24	2/27/02	952			2.08	64	40.8	572	0.06	0.8	461	12939	2.16	67	46.3	648	0.37	21.4	7.878	21.514	11909	4.51		<1	<1
W4	-15.24	3/19/02	1004			1.96	61	37.3	522	0.11	1.5	443	12431	2.20	68	38.8	544	0.43	21.5	7.904	21.651	11984	4.34		<1	<1
W4	-15.24	4/9/02	953			2.00	62	37.5	526	0.03	0.4	441	12386	2.14	66	39.4	552	0.44	21.3	7.863	21.613	11963	4.35		<1	<1
W4	-15.24	5/21/02	950			1.80	56	37.1	520	0.03	0.4	441	12372	2.06	64	37.6	527	0.30	21.7	7.879	21.416	11854	4.72		<1	<1
W4	-15.24	6/18/02	1010			2.01	62	38.1	533	0.13	1.8	445	12484	2.07	64	39.9	559	0.27	21.5	7.868	21.690	12006	4.59		<1	<1
W4	-15.24	7/17/02	949			2.04	63	40.2	563	0.11	1.5	457	12841	2.10	65	38.0	532	0.46	21.9	7.887	21.184	11726	4.81		<1	<1
W4	-15.24	8/22/02	955			2.00	62	35.4	495	0.13	1.8	434	12181	2.04	63	34.9	488	0.43	21.5	7.914	22.370	12382	4.25		<1	<1
W4	-15.24	9/24/02	950			2.06	64	42.9	601	0.27	3.8	457	12829	2.19	68	36.7	514	0.41	21.8	7.917	21.441	11868	4.69		<1	<1
W4	-15.24	10/16/02	1014			2.00	62	36.4	509	0.23	3.2	445	12504	2.02	63	36.3	508	0.33	21.6	7.890	21.825	12081	4.43		<1	<1
W4	-15.24	11/6/02	1005			2.02	63	39.4	552	0.18	2.5	359	10077	2.25	70	37.1	520	0.54	21.9	7.879	21.380	11834	4.70		<1	<1
W4	-15.24	12/19/02	1037			1.99	62	37.6	526	0.10	1.4	445	12484	2.02	63	35.7	501	0.52	21.5	7.876	21.567	11938	4.52		<1	<1
W4	-15.24	1/22/03	1024			1.88	58	29.6	415	0.06	0.8	427	12001	2.20	68	39.4	552	0.41	21.4	7.881	23.002	12732	4.25		<1	<1
W4	-15.24	2/20/03	951			1.92	59	39.2	550	0.26	3.6	447	12540	2.06	64	45.0	631	0.46	21.8	7.885	21.642	11979	4.54		<1	<1
W4	-15.24	3/18/03	930			1.96	61	39.8	557	0.11	1.5	463	13006	2.16	67	44.9	629	0.32	22.3	7.884	21.092	11675	4.67		<1	<1
W4	-15.24	4/29/03	941			2.23	69	43.1	603	0.21	2.9	479	13461	2.35	73	50.9	713	0.28	21.8	7.906	20.117	11135	4.92		<1	<1
W4	-15.24	5/13/03	1017			2.12	66	39.6	555	0.27	3.8	461	12933	2.21	68	41.2	577	0.25	21.9	7.906	20.883	11559	5.43		<1	1
W4	-15.24	6/5/03	940			2.14	66	44.3	620	0.20	2.8	457	12846	2.21	68	49.0	687	0.33	22.0	7.912	20.769	11496	4.74		<1	2
W4	-15.24	7/31/03	1003			2.09	65	41.1	576	0.08	1.1	461	12954	2.17	67	44.7	626		21.5	7.883	20.883	11559	4.71		<1	TNTC
W4	-15.24	8/27/03	1008			2.16	67	40.0	560	0.40	5.6	457	12827	3.4	107	49.6	695		21.7	7.905	21.100	11679	4.71		<1	226
W4	-15.24	9/17/03	947			2.58	80	37.6	526	18.9	264.7	441	12394	2.98	92	61.8	866		22.3	7.830	21.970	12161	4.26		5	TNTC
W4	-15.24	10/7/03	942			2.26	70	46.7	654	0.67	9.4	470	13200	2.42	75	52.0	728		22.3	7.873	20.557	11379	NA		<1	8
W4	-15.24	11/4/03	935			2.18	68	43.0	603	0.48	6.7	462	12984	2.32	72	49.9	699		22.1	7.883	20.547	11373			<1	<1
W4	-15.24	11/14/03	1119																22.4				4.61			
W4	-15.24	12/16/03	930			2.11	65	39.7	557	1.00	14.0	453	12714	2.17	67	44.3	620		22.0	7.885	21.325	11804	4.59		<1	<1
W4	-15.24	1/27/04	949			2.04	63	43.4	607	0.31	4.3	461	12933	2.18	68	49.8	698		21.8	7.880	20.828	11529	4.81		<1	<1
W4	-15.24	2/10/04	940			2.26	70	41.1	576	0.21	2.9	435	12203	2.40	74	42.3	592		21.9	7.870	21.002	11625	4.56		103	<1
W4	-15.24	3/15/04	949			2.44	76	46.6	652	0.11	1.5	465	13049	2.57	80	49.9	698		22.2	7.896	20.671	11442	4.59		<1	37
W4	-15.24	4/21/04	900			2.18	68	41.6	583	0.04	0.6	464	13026	2.15	67	42.7	598		21.2	7.879	21.324	11803	4.52		<1	1
W4	-15.24	5/12/04	855			2.06	64	37.3	522	0.24	3.4	448	12585	2.10	65	39.5	553		21.9	7.892	21.37	11829	4.67		<1	1
W4	-15.24	6/7/04	849			2.06	64	33.9	475	5.21	73.0	427	11993	2.24	69	42.9	600		22.0	7.834	22.27	12327	4.64		688	752
W4	-15.24	7/8/04	956			2.10	65	37.4	523	0.07	1.0	441	12394	2.26	70	42.3	593	0.30	22.2	7.903	21.85	12095	4.42		2200	2216
W4	-15.24	8/24/04	925			2.28	71	36.3	508	4.7	65.4	427	11978	2.36	73	43.5	609		22.2	7.847	21.66	11989	4.39		<1	2672
W4	-15.24	9/28/04	947			2.30	71	39.9	559	5.0	69.3	439	12327	2.38	74	47.6	667		22.3	7.829	21.77	12050	4.49		<1	307
W4	-15.24	10/5/04	1034			1.84	57	35.9	503	0.30	4.2	420	11802	2.00	62	38.2	536		22.2	7.876	22.45	12427	4.36		<1	4192
W4	-15.24	11/8/04	925			2.06	64	40.3	565	0.27	3.8	461	12933	2.22	69	45.9	642		22.0	7.868	20.11	11131	4.95		<1	4608
W4	-15.24	12/7/04	938			1.94	60	36.7	514	0.19	2.7	429	12046	1.96	61	41.1	575		22.0	7.883	21.86	12100	4.39		<1	1204

NELHA Water Quality Laboratory

Well 4 Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	1/11/05	928				2.06	64	44.5	623	0.10	1.4	489	13734	2.20	68	46.4	650		22.2	7.941	20.796	11511	4.85		<1	69
W4	-15.24	2/8/05	932				2.10	65	48.5	679	0.19	2.7	469	13178	2.18	68	51.0	714		22.3	7.944	20.212	11188	4.94		<1	5
W4	-15.24	3/16/05	1004				2.33	72	42.7	598	5.1	70.9	462	12984	2.57	80	45.1	632	0.27	22.2	7.883	20.667	11440	5.10		<1	324
W4	-15.24	4/18/05	1019				2.08	64	45.4	636	0.9	12.6	462	12973	2.20	68	48.6	681		22.6	7.934	20.609	11408	5.48		<1	3
W4	-15.24	5/24/05	929				2.26	70	47.2	661	0.20	2.8	466	13074	2.50	77	49.0	687		22.6	7.879	20.120	11137	4.58		<1	<1
W4	-15.24	6/13/05	950				2.15	67	43.9	615	5.6	78.3	463	12995	2.28	71	54.0	756		22.8	7.860	20.718	11468	4.45		<1	4960
W4	-15.24	7/11/05	945				2.34	72	39.3	551	3.2	44.1	454	12756	2.44	76	42.0	589		22.6	7.844	21.385	11837	4.52		1	688
W4	-15.24	8/10/05	910				2.48	77	41.8	586	0.11	1.5	459	12883	2.58	80	41.8	585		22.6	7.898	20.776	11500	6.07		13	91
W4	-15.24	9/21/05	905				3.90	121	43.3	607	1.32	18.5	458	12858	4.10	127	52.4	734	0.36	22.3	7.886	20.745	11483	4.41		3	>5,000
W4	-15.24	10/18/05	931				2.51	78	44.6	624	0.19	2.7	448	12588	2.60	81	45.6	638		22.3	8.383	20.689	11452	4.57		3	105
W4	-15.24	11/3/05	850				2.20	68	47.2	661	0.43	6.0	450	12647	2.58	80	51.2	717		22.1	7.926	21.177	11722	4.47		1	38
W4	-15.24	12/21/05	1001				3.72	115	40.5	568	26.8	375.4	439	12338	4.16	129	73.9	1035	0.67	23.6	7.840	21.978	12165	3.13		633	>5,000
W4	-15.24	1/24/06	910				3.12	97	44.6	625	17.5	245.1	470	13197	3.26	101	62.0	868		22.4	7.867	20.581	11392	4.35		1	824
W4	-15.24	2/15/06	903				2.43	75	44.4	622	6.15	86.1	451	12675	2.52	78	54.6	765	0.27	22.0	7.879	21.126	11694	4.44		<1	100
W4	-15.24	3/21/06	850				2.38	74	41.8	585	7.70	107.9	464	13032	2.45	76	47.7	668	0.25	22.2	7.892	20.973	11609	7.86		1	78
W4	-15.24	4/19/06	957				2.52	78	42.2	591	8.0	112.1	458	12863			45.2	633	0.33	22.1	7.869	21.156	11710	6.89		<1	136
W4	-15.24	4/26/06	905				2.54	79	41.8	585	8.9	124.7	451	12667	2.72	84	46.9	656	0.30	21.5	7.874	21.271	11774	5.94		<1	6
W4	-15.24	5/3/06					2.55	79	43.9	615	10	140.1	447	12554			47.6	666	0.32	21.6	7.872	21.406	11849	4.63		<1	6
W4	-15.24	5/10/06					2.38	74	42.3	592	6.3	88.2	466	13088			36.4	510	0.25	21.9	7.877	21.074	11665	4.59		<1	3
W4	-15.24	5/16/06					2.25	70	42.1	590	4.1	57.4	457	12835			38.6	540	0.29	22.0	7.898	21.198	11734	6.07		<1	1
W4	-15.24	5/23/06	937				2.34	72	43.7	612	9.8	137.3	447	12554	2.60	81	49.2	689	0.37	21.8	7.856	21.077	11667	4.64		<1	1
W4	-15.24	6/27/06	942				2.76	85	46.3	649	8.1	113.5	440	12358	2.88	89	39.6	555	0.25	21.8	7.825	21.842	12090	4.43		<1	7
W4	-15.24	7/18/06	937				2.31	72	41.4	580	4.3	60.2	443	12442	2.40	74	42.6	597	0.39	22.3	7.874	21.300	11790	4.71		<1	26
W4	-15.24	8/8/06	915				2.47	77	43.5	609	5.8	81.2	454	12751	2.60	81	42.3	592	0.26	21.7	7.852	21.378	11833	4.63		<1	2
W4	-15.24	9/19/06	1015				2.04	63	39.9	559	0.58	8.1	448	12582	2.19	68	38.9	545	0.27	22.0	7.856	21.296	11788	4.58		<1	<1
W4	-15.24	10/24/06	953				2.02	63	40.3	564	0.37	5.2	454	12751	2.13	66	37.5	525	0.28	22.5	7.888	21.174	11720	4.63		1	<1
W4	-15.24	11/28/06	934				2.02	63	38.8	543	0.52	7.3	445	12498	2.06	64	34.8	487	0.25	22.0	7.875	21.173	11720	4.67		93	99
W4	-15.24	12/12/06	929				1.88	58	37.4	524	0.21	2.9	438	12301	1.97	61	35.9	502	0.42	22.0	7.88	21.422	11858	4.55		1	1
W4	-15.24	1/9/07	955				2.02	63	42.4	594	0.28	3.9	441	12386	2.13	66	42.2	591	0.51	22.0	7.891	21.074	11665	4.64		<1	<1
W4	-15.24	2/22/07	936				1.92	59	40.7	570	0.31	4.3	454	12751	1.99	62	44.1	617	0.28	21.9	7.871	21.020	11635	4.80		<1	1
W4	-15.24	3/6/07	953				2.02	63	42.1	590	0.35	4.9	465	13060	2.16	67	44.7	626	0.33	22.3	7.894	20.725	11472	4.90		<1	1
W4	-15.24	4/11/07	1106				2.02	63	40.9	573	0.19	2.7	471	13228	2.15	67	37.7	528	0.28	22.3	7.925	20.516	11356	4.76		<1	<1
W4	-15.24	5/3/07	939				2.14	66	38.8	543	0.23	3.2	472	13256	2.26	70	40.4	566	0.34	21.9	7.911	20.637	11423	4.52		<1	<1
W4	-15.24	6/19/07	906				2.00	62	41.3	579	0.22	3.1	450	12638	2.16	67	33.1	463	0.22	22.2	7.909	21.267	11772	4.74		<1	<1
W4	-15.24	7/25/07	1445	-5	0.64	High	1.81	56	41.3	578	5.70	80	468	13143	2.04	63	40.7	570.7		21.6	7.81	21.69	12006	4.32			
W4	-15.24	8/28/07	950	-7	0.00	Low	2.41	75	47.5	665	0.04	0.5	594	16676	2.38	74	48.3	675.9		21.6	7.78	21.03	11641	4.33			
W4	-15.24	9/13/07	1240	-7	0.15	Flood	1.97	61	41.3	578	1.33	19	491	13789	2.08	65	49.2	688.7		22.5	7.84	21.28	11779	4.29			
W4	-15.24	10/24/07	1006	-7	0.09	Low	1.96	61	44.7	627	0.17	2.4	437	12276	2.11	65	42.5	594.6		21.9	7.82	21.08	11668	4.07			
W4	-15.24	11/26/07	1329	-8	0.06	Low	1.87	58	44.2	619	0.44	6.1	482	13537	1.73	53	49.9	698.8		21.9	7.85	21.18	11724	4.06			
W4	-15.24	12/20/07	1019	-7	0.23	Low	1.40	43	17.3	243	0.74	10	443	12439						21.5	7.87	20.47	11331	4.28			
W4	-15.24	1/29/08	954	-7	0.24	Ebb	1.97	61	45.3	635	0.04	0.5	341	9580						21.6	7.74	20.38	11281	4.42			
W4	-15.24	2/27/08	1420	-7	0.06	Low	2.11	65	46.0	644	0.49	6.8	453	12719						22.0	7.76	20.15	11154	4.55			
W4	-15.24	3/20/08	1432	-7	0.30	Flood	1.39	43	66.7	934	0.26	3.6	197	5534						21.8	7.79	21.19	11729	4.15			
W4	-15.24	4/29/08	1048	-7	0.18	Flood	1.84	57	42.6	597	0.09	1.2	428	12031						22.2	7.80	20.91	11574	4.73			
W4	-15.24	5/29/08	1137		0.37	Flood	1.77	55	45.4	636	0.12	1.7	458	12871						22.5	7.83	20.56	11380	4.58			
W4	-15.24	6/10/08	1038	-7	0.30	Flood	2.75	85	41.6	583	2.31	32	506	14211						22.3	7.78	21.02	11635	5.20			
W4	-15.24	6/19/08	1241	-7	0.12	Flood	1.69	52	42.6	597	0.72	10	444	12459						22.3	7.70	21.07	11663	4.65	0.31		

NELHA Water Quality Laboratory

Well 4 Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	7/24/08	1129	-7	0.43	Ebb	1.75	54	45.4	635	0.20	2.8	407	11424						21.6	7.75	21.68	12000	4.57			
W4	-15.24	8/29/08	1702		0.67	Ebb	1.47	46	36.5	511	0.24	3.3	388	10902						21.6	7.72	21.94	12144	2.90			
W4	-15.24	9/19/08	1102	-7	0.43	Ebb	1.59	49	37.4	523	0.41	5.8	295	8281						24.7	7.67	21.28	11779	4.28	0.17		
W4	-15.24	10/28/08	958	-7.14	0.15	Ebb	2.01	62	43.6	611	0.31	4.4	421	11827						23.4	7.55	21.08	11668	4.22	0.14		
W4	-15.24	11/13/08	1045	-7.2	0.09	Ebb	1.76	54	43.6	611	0.22	3.1	398	11166						24.9	7.94	21.04	11646	4.14	0.10		
W4	-15.24	12/15/08	1129	-6.94	0.18	Ebb	2.06	64	47.9	671	0.15	2.1	403	11330						23.3	7.98	20.71	11464	4.46			
W4	-15.24	1/22/09	943	-7.22	0.09	Low	2.01	62	51.1	715	1.44	20	426	11952						23.3	7.92	19.92	11026	4.59	0.22		
W4	-15.24	2/24/09	857	-7.16	0.09	Ebb	1.80	56	47.7	668	0.69	9.7	455	12781						22.2	7.65	20.24	11203	4.62	8.10		
W4	-15.24	3/16/09	941	-7.19	0.12	Ebb	1.43	44	36.7	515	0.13	1.8	292	8188						23.1	7.64	20.24	11203	4.47	0.45		
W4	-15.24	4/20/09	1628	-7.07	0.24	Ebb	2.35	73	43.1	604	0.43	6.0	349	9801						23.4	7.72	20.70	11458	4.65	1.98		
W4	-15.24	5/21/09	1534	-6.79	0.58	Ebb	1.83	57	36.6	513	0.21	3.0	444	12468						21.5	7.86	22.49	12449	4.26	0.08		
W4	-15.24	6/18/09	1306	-6.83	0.61	High	1.83	57	33.0	463	0.34	4.8	242	6790						21.6	7.86	23.50	13008	4.19	0.04		
W4	-15.24	7/14/09	757	-7.18	0.37	Flood	1.70	53	32.7	458	0.16	2.2	174	4895						21.4	7.97	21.44	11868	4.39	0.05		
W4	-15.24	8/19/09	1021	-7.24	0.09	Flood	2.17	67	41.7	584	0.86	12.1	411	11536						21.7	7.81	21.74	12034	3.98	0.06		
W4	-15.24	9/24/09	844	-6.9	0.61	High	2.37	73	40.9	573	0.50	7.0	217	6104						21.6	8.23	21.47	11884	4.28	0.04		
W4	-15.24	10/22/09	1452	-7.21	0.37	Ebb	1.50	47	23.8	334	0.49	6.8	104	2928						21.9	7.86	21.29	11785	4.04	0.05		
W4	-15.24	11/16/09	1535	-7.16	0.21	High	2.51	78	41.8	586	0.89	12.4	428	12017						21.8	7.88	21.48	11890	4.06	0.03		
W4	-15.24	12/7/09	1545	-7.36	0.06	Low	2.62	81	56.0	784	0.74	10.4	443	12445						23.0	7.87	20.96	11602	4.28	0.02		
W4	-15.24	1/5/10	1345	-7.29	0.00	Ebb	1.78	55	33.1	463	1.50	21.0	338	9488						22.0	7.86	24.74	13694	3.98	0.20		
W4	-15.24	2/1/10	1330	-7.23	0.00	Ebb	1.87	58	36.4	510	0.86	12.0	318	8922						22.0	7.97	24.66	13650	3.80	0.23		
W4	-15.24	3/9/10	1433	-7.22	0.15	High	1.68	52	31.1	435	0.29	4.0	381	10713						22.8	7.86	24.53	13578	3.72	0.14		
W4	-15.24	4/6/10	1304	-7.25	0.15	High	2.13	66	31.7	444	0.50	7.0	365	10244						22.9	7.89	24.80	13727	3.76	0.30		
W4	-15.24	5/11/10	1335	-6.94	0.46	Flood	1.42	44	27.1	379	1.50	21.0	360	10102						22.9	7.93	25.13	13910	3.97	0.07		
W4	-15.24	6/15/10	1419	-6.86	0.15	Flood	1.52	47	27.3	383	0.57	8.0	358	10051						21.0	7.96	25.38	14048	3.75	0.13		
W4	-15.24	7/13/10	1319	-7.22	0.15	Flood	1.39	43	28.9	405	0.57	8.0	386	10836						21.0	7.89	25.33	14021	3.71	0.04		
W4	-15.24	8/3/10	1311	-6.85	0.49	Ebb	1.65	51	29.9	419	0.29	4.0	386	10852						21.2	7.93	24.75	13700	3.70	0.08		
W4	-15.24	9/14/10	1326	-7.07	0.40	Ebb	1.55	48	31.7	444	0.46	6.4	412	11567						21.0	7.87	24.75	13700	4.03	0.07		
W4	-15.24	10/12/10	1406	-7.03	0.30	Ebb	1.42	44	28.7	402	0.06	0.9	397	11140						21.0	7.91	25.20	13949	3.92	0.07		
W4	-15.24	11/16/10	1253	-6.91	0.40	High	1.65	51	31.8	446	0.13	1.8	405	11368						21.0	7.89	24.42	13517	3.92	0.10		
W4	-15.24	12/14/10	1324	-6.99	0.24	Ebb	1.71	53	35.5	497	0.24	3.3	430	12078						21.1	7.93	23.34	12919	4.04	0.05		
W4	-15.24	1/4/11	1309	-7.28	0.06	Flood	1.81	56	35.1	492	0.29	4.0	412	11560						21.1	7.87	23.57	13047	3.89	0.12		
W4	-15.24	2/1/11	1020	-7.17	0.03	Low	1.84	57	35.1	491	0.14	2.0	417	11703						21.2	7.84	23.68	13107	4.02	0.16		
W4	-15.24	4/5/11	1331	-7.19	0.12	Flood	1.65	51	30.3	425	0.18	2.5	370	10387						21.3	7.82	23.99	13279	3.42	0.08		
W4	-15.24	7/12/11	1324	-6.92	0.61	Flood	1.49	46	28.3	396	0.10	1.4	375	10541						21.0	7.84	25.49	14109	3.50	0.02		
W4	-15.24	10/10/11	1503	-6.87	0.46	High	1.39	43	26.3	369	0.09	1.3	355	9976						20.9	7.86	26.07	14430	3.65	0.05		
W4	-15.24	1/10/12	1358	-7.33	0.03	Flood	1.36	42	28.3	397	0.22	3.1	369	10366						21.2	7.86	25.02	13849	3.84	0.21		
W4	-15.24	5/1/12	1403	-6.85	0.40	Ebb	1.68	52	28.2	395	0.12	1.7	392	11013						21.6	7.79	25.63	14187	3.51	0.04		
W4	-15.24	7/18/12	1330	-6.89	0.52	Flood	1.49	46	28.0	392	0.26	3.7	376	10553						21.3	7.90	25.91	14342	3.70	0.68		
W4	-15.24	10/16/12	1318	-7.15	0.15	Flood	1.42	44	28.8	403	0.34	4.7	373	10483						21.0	7.83	25.87	14320	3.65	0.07		
W4	-15.24	1/8/13	1409	-7.04	0.21	High	1.29	40	31.5	441	0.42	5.9	427	11991						21.0	7.78	24.99	13833	3.74	0.05		
W4	-15.24	4/9/13	1345	-7.04	0.30	Flood	1.65	51	27.6	386	0.30	4.2	361	10152						20.8	7.84	25.86	14314	3.16	0.02		
W4	-15.24	7/17/13	1502	-6.88	0.52	Ebb	1.49	46	26.4	370	0.37	5.2	380	10676						21.8	7.74	25.66	14203	3.61	0.02		
W4	-15.24	10/15/13	1346	-6.81	0.55	High	1.29	40	28.0	392	0.31	4.3	356	9989						21.2	7.80	26.18	14491	3.73	0.17		
W4	-15.24	1/15/14	1332	-7.21	0.12	Flood	1.74	54	29.6	415	0.34	4.7	370	10378						21.4	7.87	25.54	14137	4.20	0.02		
W4	-15.24	4/29/14	1502	-6.97	0.49	Flood	1.49	46	28.7	402	0.40	5.6	364	10218						21.2	7.82	25.39	14054	4.03	0.06		

NELHA Water Quality Laboratory

Well 4 Data Table

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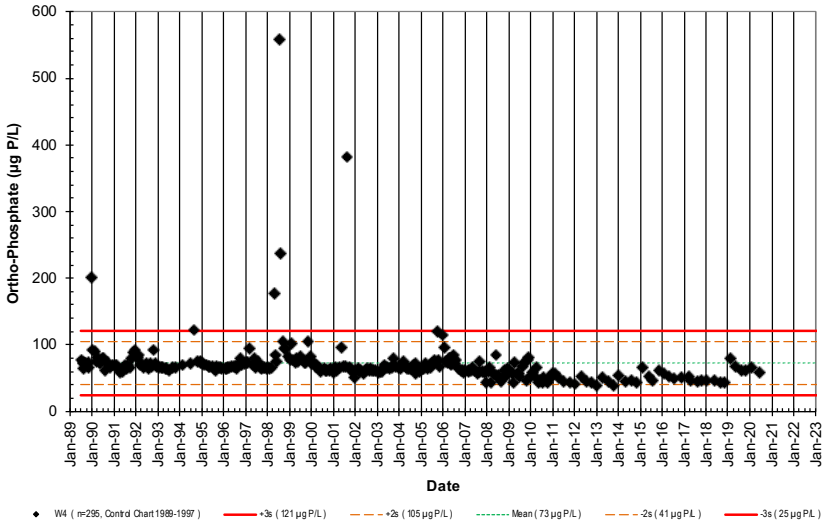
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4	-15.24	7/29/14	1430	-7.09	0.30	Flood	1.55	48	27.3	382	0.43	6.0	363	10207						21.7	7.85	26.06	14425	3.97	0.08		
W4	-15.24	11/5/14	1417	-6.91	0.38	Flood	1.42	44	34.6	485	0.41	5.8	345	9700						21.7	7.81	25.59	14165	3.98	0.14		
W4	-15.24	2/11/15	1023	-7.01	0.24	Ebb	2.16	67	37.6	526	0.89	12.4	529	14868						21.6	7.76	25.00	13838	3.82	0.14		
W4	-15.24	5/20/15	1150	-7.22	0.00	Flood	1.73	54	31.5	442	0.59	8.3	347	9751						21.7	7.82	24.55	13589	3.79	0.02		
W4	-15.24	7/22/15	924	-7.29	0.30	Ebb	1.55	48	34.5	484	0.05	0.7	356	10008						21.9	7.74	25.77	14264	3.94	0.02		
W4	-15.24	11/9/15	1445	-6.86	0.48	High	2.01	62	31.7	444	0.21	3.0	366	10268						21.5	7.85	24.74	13694	4.25	0.07		
W4	-15.24	1/27/16	1239	-7.20	0.08	Low	1.85	57	40.6	569	0.16	2.2	370	10382						21.7	7.75	24.61	13622	3.45	0.09		
W4	-15.24	4/22/16	946	-7.2	-0.05	Low	1.73	54	39.6	554	0.46	6.4	350	9830						21.5	7.81	25.15	13921	4.09	0.05		
W4	-15.24	7/27/16	859	-7.02	0.10	Flood	1.58	49	28.6	400	0.12	1.7	331	9287						21.4	7.75	24.97	13822	3.89	0.06		
W4	-15.24	11/10/16	952	-7.02	0.40	Flood	1.63	51	29.0	406	0.18	2.5	333	9364						21.3	7.68	24.90	13783	3.92	0.02		
W4	-15.24	3/22/17	1251	-6.95	0.25	High	1.70	53	29.0	406	0.21	3.0	379	10647						21.6	7.81	25.10	13894	3.68	0.07		
W4	-15.24	4/19/17	1134	-7.02	0.20	Ebb	1.49	46	28.5	399	0.38	5.3	379	10632						21.7	7.80	25.17	13932	2.98	0.02		
W4	-15.24	8/9/17	1355	-7.06	0.30	Flood	1.49	46	23.4	328	0.04	0.6	377	10594						21.7	7.79	25.55	14143	3.57	0.06		
W4	-15.24	10/18/17	1203	-7.07	0.30	Flood	1.54	48	29.1	408	0.39	5.5	354	9949						21.8	7.77	25.06	13871	3.95	0.07		
W4	-15.24	1/18/18	930	-6.89	0.20	Ebb	1.55	48	29.3	410	0.49	6.8	353	9920						21.4	7.77	24.87	13766	3.71	0.05		
W4	-15.24	5/10/18	941	-7.18	0.18	Flood	1.50	47	27.2	381	0.11	1.5	365	10243						20.2	7.75	26.77	14818	4.00	0.10		
W4	-15.24	8/30/18	1544	-7.01	0.34	Flood	1.39	43	24.7	346	0.43	6.0	331	9290						23.5	7.73	25.76	14259	3.29	0.12		
W4	-15.24	10/25/18	912	-6.89	0.11	Low	1.41	44	28.5	399	0.26	3.6	355	9968						21.9	7.77	25.00	13838	3.97	0.05		
W4	-15.24	2/8/19	915	-6.93	0.35	Ebb	2.56	79	77.0	1079	0.06	0.9	322	9052						20.4	7.59	24.44	13528	7.00	0.09		
W4	-15.24	5/15/19	1358	-6.94	0.40	Ebb	2.21	68	39.0	546	0.22	3.1	304	8538						20.3	7.62	25.76	14259	5.19	0.04		
W4	-15.24	8/28/19	1333	-6.76	0.65	High	2.02	63	30.1	421	0.20	2.8	336	9431						21.2	7.77	25.36	14037	4.17	0.05		
W4	-15.24	10/11/19	924	-7.09	0.15	Flood	2.03	63	29.1	407	0.02	0.3	345	9698						21.3	7.78	24.88	13772	4.17	0.10		
W4	-15.24	2/4/20	1027	-7.11	0.22	Flood	2.13	66	33.3	466	0.29	4.1	360	10104						21.4	7.81	25.18	13938	3.71	0.54		
W4	-15.24	6/3/20	1059	-7.05	0.35	Flood	1.90	59	29.7	416	0.36	5.1	357	10034						22.1	7.70	25.75	14253	3.89	0.14		
W4	-15.24	7/1/20																									
W4	-15.24	10/1/20																									
W4	-15.24	1/1/21																									
W4	-15.24	4/1/21																									
W4	-15.24	7/1/21																									
W4	-15.24	10/1/21																									
W4	-15.24	1/1/22																									
W4	-15.24	4/1/22																									
W4	-15.24	7/1/22																									
W4	-15.24	10/1/22																									
W4	-15.24	1/1/23																									
W4	-15.24	4/1/23																									
Mean				-7.05	0.27		2.28	70	46.36	649	0.87	12.2	440	12357	2.62	81.1	52.9	737	1.22	21.7	7.89	21.24	11758	4.59	0.26		
Std. Dev.				0.25	0.18		1.25	39	41.89	587	2.64	36.9	72	2025	1.52	47.0	52.9	741	9.36	0.6	0.14	2.05	1133	0.68	1.01		
Maximum				-5.49	0.67		18.01	558	676	9467	26.80	375.4	739	20755	19.34	599.0	731.1	10240	125.13	24.9	8.92	26.77	14818	7.86	8.10		
Minimum				-7.52	-0.05		1.29	40	17	243	0.00	0.0	104	2928	1.73	53.5	22.2	0	0.22	18.7	7.55	17.36	9607	0.99	0.02		
n				80	82		295	295	295	295	294	295	288	287	208	208	211	212	178	295	292	294	294	292	67		

NELHA Water Quality Laboratory

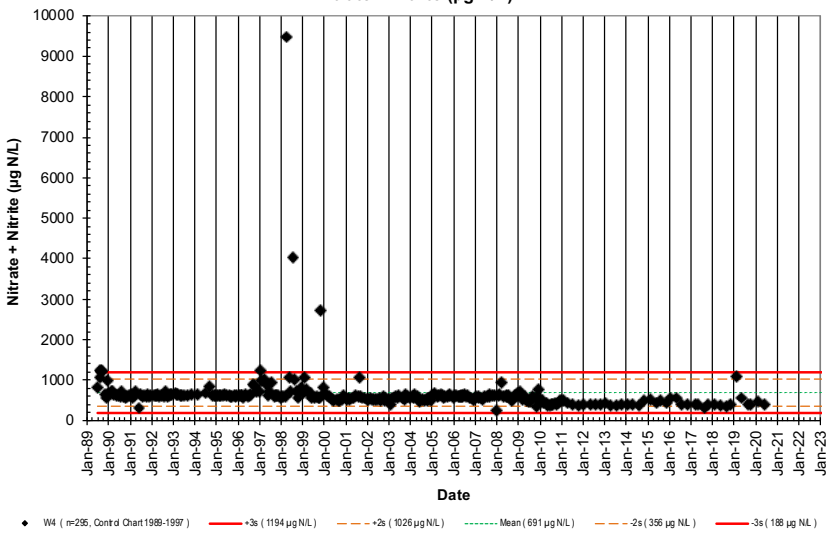
Well 4 Charts

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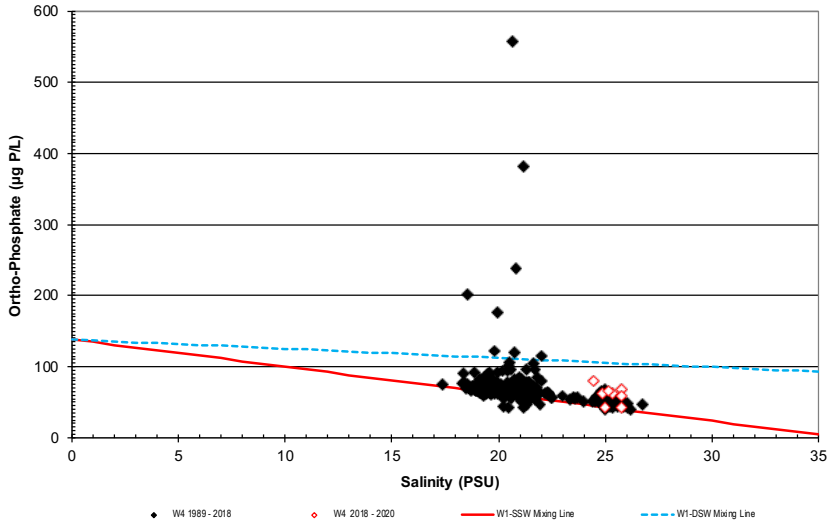
Well #4
Ortho-Phosphate (µg P/L)



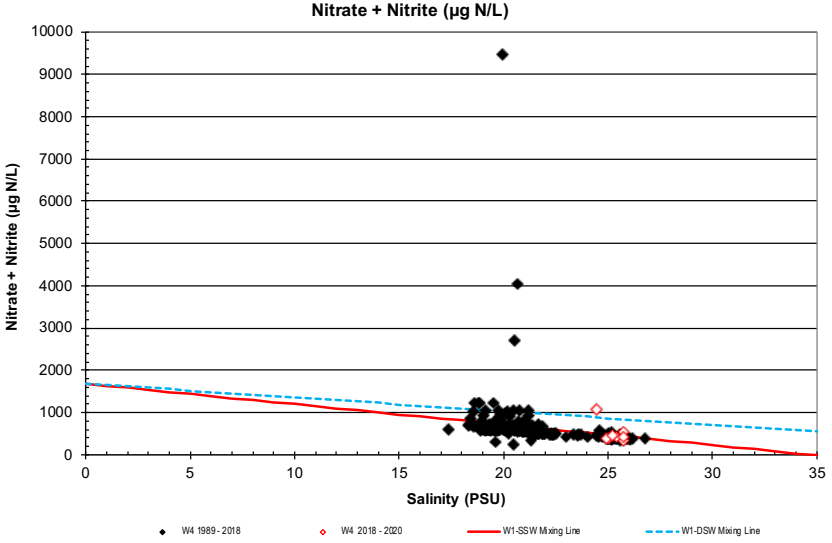
Well #4
Nitrate + Nitrite (µg N/L)



Well #4 Conservative Mixing Model
Ortho-Phosphate (µg P/L)



Well #4 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)

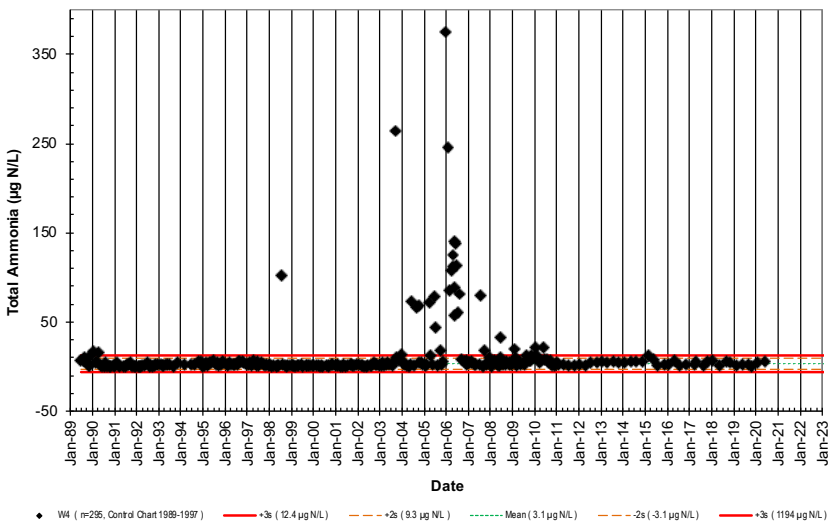


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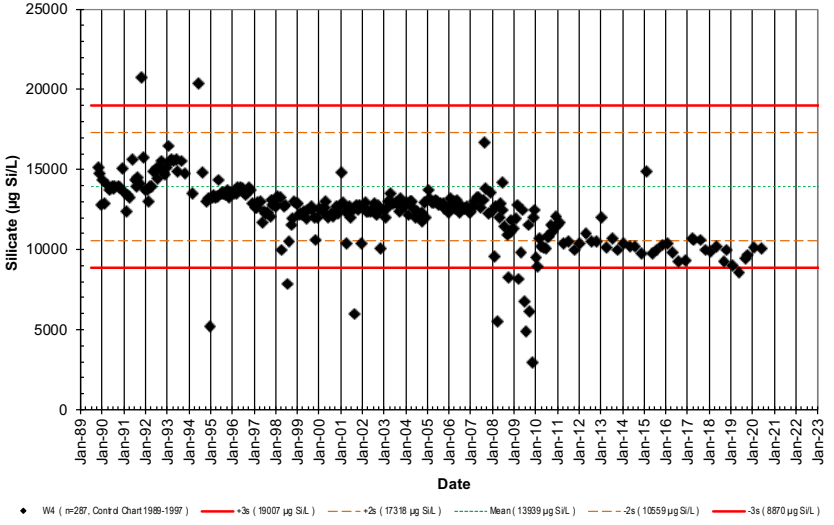
Well 4 Charts

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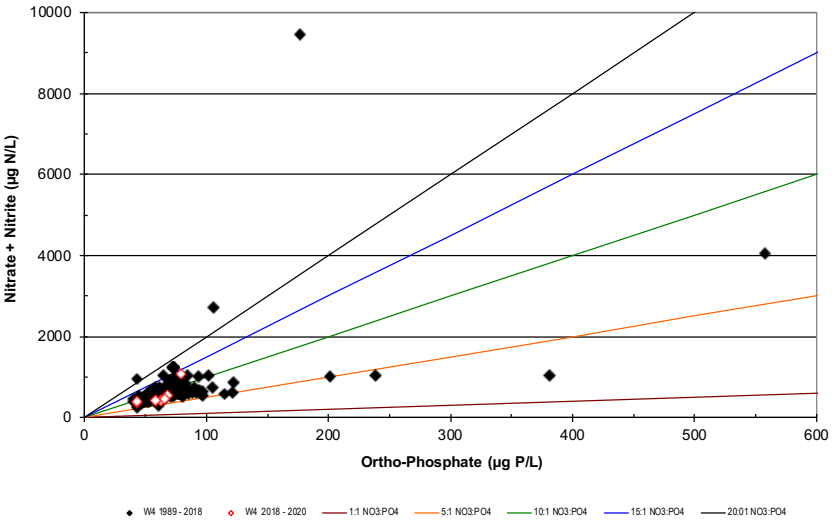
Well #4
Total Ammonia (µg N/L)



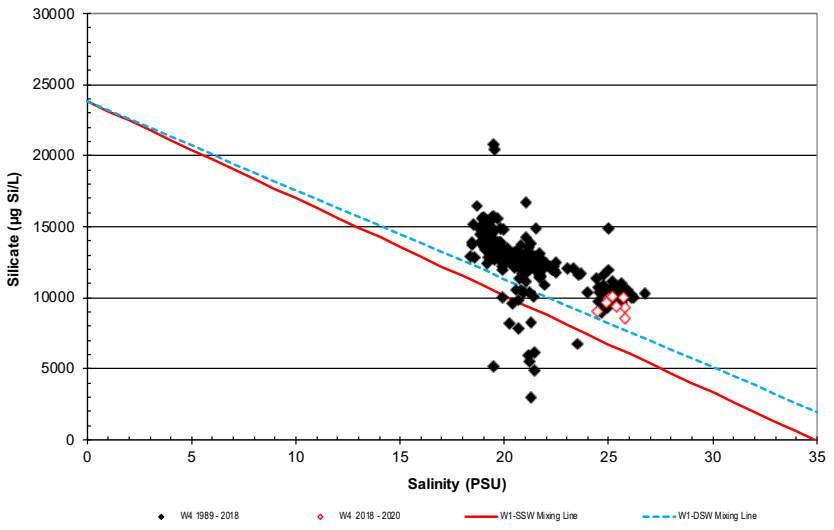
Well #4
Silicate (µg Si/L)



Relationship Between Ortho-Phosphate and Nitrate + Nitrite in Well #4



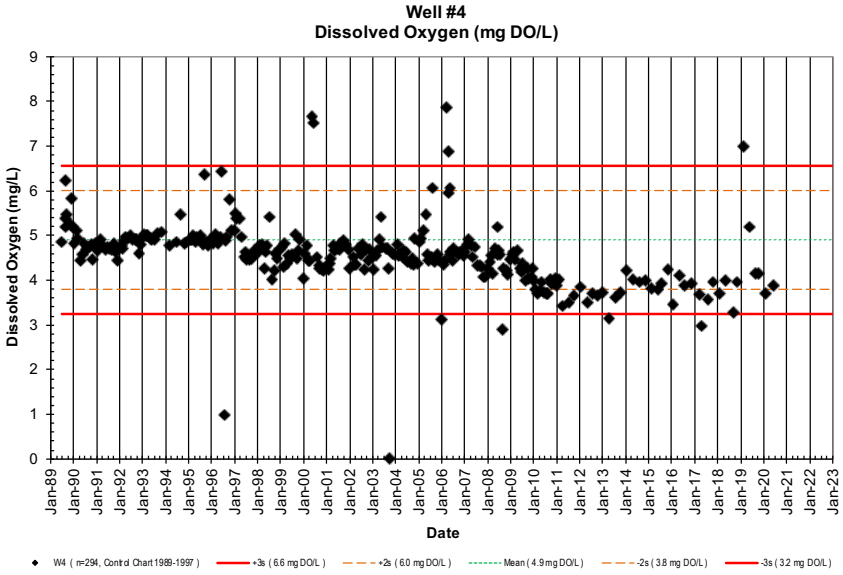
Well #4 Conservative Mixing Model
Silicate (µg Si/L)

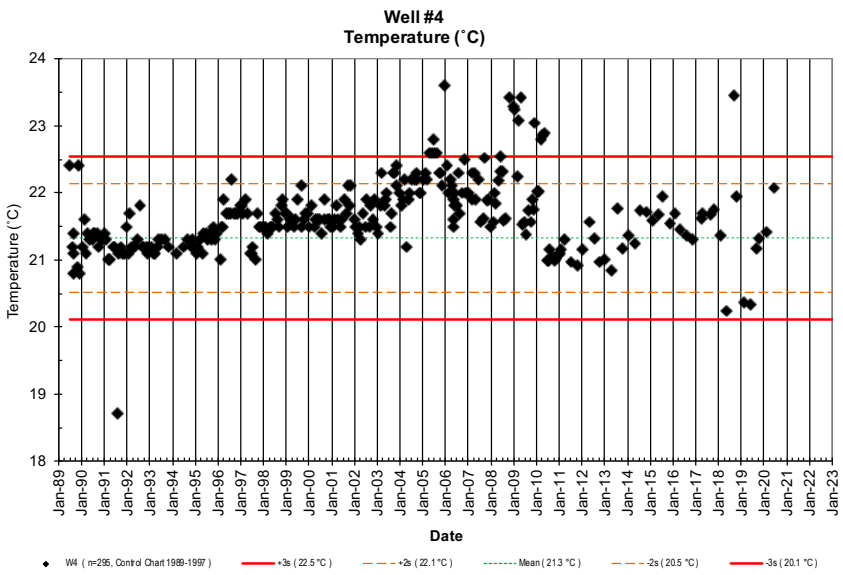


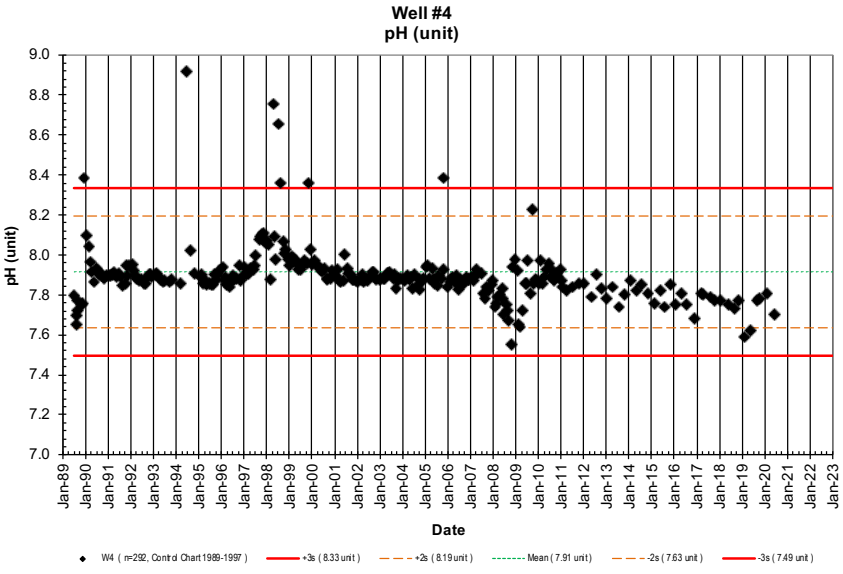
NELHA Water Quality Laboratory

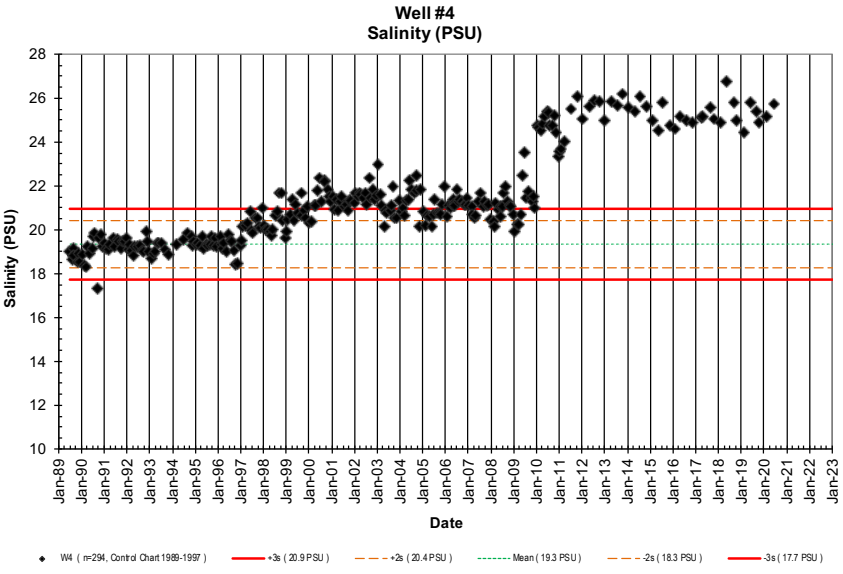
Well 4 Charts

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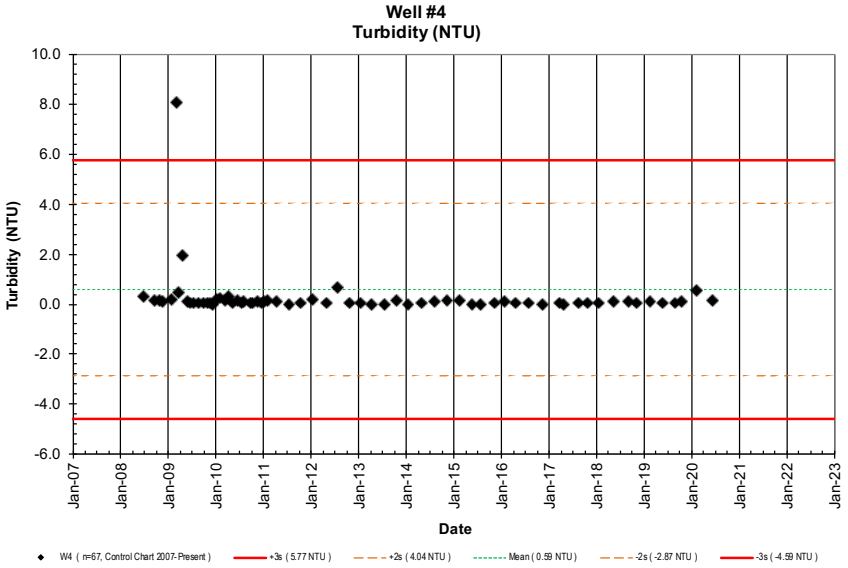


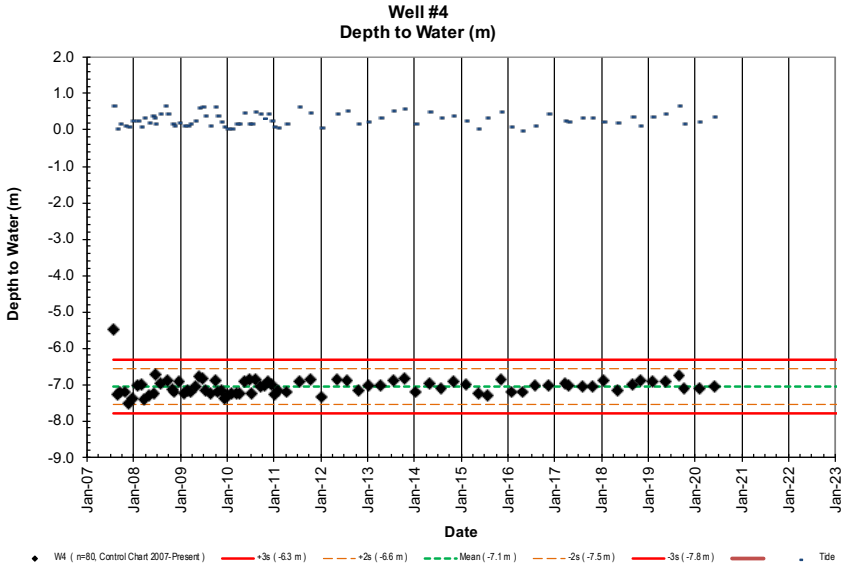


NELHA Water Quality Laboratory

Well 4 Charts

6/27/1989 - 7/21/20





NELHA Water Quality Laboratory

Well 4A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	6/27/89				8.96	278			99.3	1390.9								22.3	8.060	15.233	8432	4.03		NA	NA
W4A	-10.67	8/10/89	1011			7.21	223			36.6	512.6								21.6	8.028	14.210	7866	1.04		<1	NA
W4A	-10.67	8/15/89	1508			6.05	187			27.9	390.8								21.5	8.027	15.722	8703	1.71		<1	NA
W4A	-10.67	8/22/89	1435			6.93	215			37.5	525.3								21.3	8.050	15.511	8586	1.59		<1	NA
W4A	-10.67	8/30/89	1435			8.34	258			24.4	341.8								21.6	8.095	14.095	7802	1.34		<1	NA
W4A	-10.67	8/30/89	1435			8.35	259			24.2	339.0														NA	NA
W4A	-10.67	10/31/89	1134			7.92	245	12	162	26.9	376.8	567	15924	8.50	263	44.4	622	1.09	21.5	7.879	14.719	8147	0.10		<1	NA
W4A	-10.67	11/16/89	1130			7.85	243	5	64	72.5	1015.5	555	15587	9.12	282	45.3	635	1.98	21.6	7.864	14.560	8059	0.44		<1	NA
W4A	-10.67	12/12/89	1135			23.2	719	857	12004	60.9	853.0	181	5083	25.4	787	1000	14007	0.78	21.5	8.861	11.875	6573	NA		<1	NA
W4A	-10.67	1/11/90	950			14.8	458	652	9132	51.8	725.5	197	5533	16.3	505	761	10659	119	21.7	8.632	14.328	7931	NA		<1	NA
W4A	-10.67	2/14/90	1155			1.31	41	116	1625	4.72	66.1	121	3398	10.2	315	146	2045	32.4	21.7	8.320	14.360	7949	4.76		<1	NA
W4A	-10.67	3/7/90	1137			10.1	313	80	1118	6.67	93.4	291		10.7	331	100	1401	5.28	21.5	8.594	10.881	6023	2.69		<1	NA
W4A	-10.67	4/4/90	1342			13.6	421	11	158	1.37	19.2	257	7218	14.2	440	67.5	945	24.2	21.9	8.420	14.011	7755	NA		<1	NA
W4A	-10.67	5/17/90	1202			8.80	273	18	251	4.44	62.2	250	7021	9.50	294	44.8	628	32.1	21.8	8.281	15.696	8688	1.21		<1	NA
W4A	-10.67	6/16/90	1105			7.60	235	22	314	8.78	123.0	319	8959	7.90	245	38.6	541	1.70	21.8	8.327	17.240	9543	1.69		<1	NA
W4A	-10.67	7/17/90	1146			7.09	220	26	366	4.93	69.1	342	9605	7.33	227	35.6	499	7.70	21.8	8.294	17.853	9882	2.58		<1	NA
W4A	-10.67	8/8/90	1137			6.99	217	19	269	4.76	66.7	334	9381	6.41	199	30.8	431	1.81	21.8	8.278	18.042	9987	1.93		<1	NA
W4A	-10.67	9/5/90	1143			7.47	231	20	280	2.40	33.6	ND	ND	7.47	231	28.7	402	0.43	21.8	8.272	17.356	9607	1.93		<1	NA
W4A	-10.67	10/4/90	1151			9.40	291	22	313	3.87	54.2	374	10504	10.9	338	29.3	410	0.86	21.8	8.226	17.570	9725	1.91		<1	NA
W4A	-10.67	11/1/90	1205			5.85	181	26	359	2.84	39.8	405	11375	6.49	201	30.9	433	8.62	21.7	8.180	17.960	9941	2.02		<1	NA
W4A	-10.67	12/10/90	1142			8.32	258	23	321	6.99	97.9	435	12217	8.91	276	26.9	377	0.66	21.8	8.230	16.632	9206	2.07		<1	NA
W4A	-10.67	1/10/91	1000			7.46	231	8	112	4.52	63.3	324	9100	2.30	71	16.4	229	0.70	22.1	8.211	15.925	8815	0.41		<1	NA
W4A	-10.67	2/5/91	1137			8.62	267	54	759	2.44	34.2	274	7695	9.49	294	59.9	839	3.11	21.8	8.555	12.097	6696	1.07		<1	NA
W4A	-10.67	3/7/91	803			8.67	269	40	562	0.37	5.2	289	8117	9.31	288	44.6	625	20.7	21.5	8.369	14.018	7759	0.81		<1	NA
W4A	-10.67	4/3/91	844			8.20	254	15	207	2.46	34.5	273	7667	8.67	269	63.6	891	62.1	21.4	8.798	15.974	8842	0.69		<1	NA
W4A	-10.67	5/22/91	819			4.30	133	8	113	2.57	36.0	371	10420	6.75	209	11.6	162	5.73	21.6	8.294	16.709	9249	0.46		<1	NA
W4A	-10.67	6/26/91	824			4.83	150	25	345	1.50	21.0	357	10027	4.95	153	30.4	426	0.51	21.6	8.290	13.749	7610	0.72		<1	<1
W4A	-10.67	7/24/91	858			2.85	88	9	122	0.75	10.5	340	9549	3.28	102	15.6	219	1.03	19.1	8.228	15.924	8814	0.41		<1	<1
W4A	-10.67	8/23/91	810			4.41	137	20	282	0.15	2.1	365	10251	4.73	147	27.6	387	0.83	21.5	8.191	15.994	8853	0.54		<1	<1
W4A	-10.67	9/24/91	733			5.53	171	31	427	0.30	4.2	416	11684	5.93	184	35.9	503	0.53	21.5	8.128	14.603	8083	1.67		<1	<1
W4A	-10.67	10/23/91	733			7.12	221	62	873	0.32	4.5	508	14267	8.81	273	70.9	993	6.56	21.5	8.230	15.647	8661	0.38		<1	<1
W4A	-10.67	11/20/91	756			8.20	254	18	255	1.15	16.1	424	11908	8.74	271	24.0	336	1.05	21.5	8.160	15.552	8608	0.29		<1	<1
W4A	-10.67	12/11/91	857			11.7	362	74	1032	4.19	58.7	347	9746	60.7	1880	112	1567	46.7	21.0	8.803	14.071	7789	0.58		<1	6
W4A	-10.67	1/29/92	817			7.68	238	19	266	0.54	7.6	416	11684	8.00	248	25.1	352	18.4	21.6	8.144	14.235	7879	0.55		<1	<1
W4A	-10.67	2/19/92	853			7.63	236	28	389	0.11	1.5	402	11290	7.91	245	40.5	567	0.49	21.6	8.136	14.048	7776	0.81		<1	8
W4A	-10.67	3/17/92	805			5.47	169	17	231	0.69	9.7	371	10420	7.00	217	25.2	353	0.73	21.7	8.101	14.311	7922	0.70		<1	<1
W4A	-10.67	4/8/92	751			5.70	177	17	235	0.53	7.4	421	11824	5.90	183	22.0	308	0.54	21.7	8.074	14.708	8141	0.73		<1	<1
W4A	-10.67	5/6/92	802			5.94	184	12	164	0.91	12.7	440	12358	6.77	210	18.4	258	1.02	21.6	8.056	15.035	8322	0.41		<1	<1
W4A	-10.67	6/23/92	803			6.75	209	11	150	1.32	18.5	447	12554	6.41	199	18.9	264	0.73	21.7	8.036	15.686	8683	0.50		<1	<1
W4A	-10.67	7/29/92	752			5.43	168	18	256	ND	0.0	453	12723	5.74	178	22.2	311	0.90	21.7	8.023	14.764	8172	0.59		<1	<1
W4A	-10.67	8/26/92	736			6.72	208	30	419	0.21	2.9	487	13678	6.82	211	33.3	467	0.68	21.6	8.039	13.892	7690	0.92		<1	<1
W4A	-10.67	9/22/92	740			5.98	185	7	93	0.68	9.5	539	15138	6.16	191	7.67	107	0.52	21.6	8.029	15.481	8569	0.44		<1	<1
W4A	-10.67	10/27/92	755			6.34	196	22	313	0.50	7.0	488	13706	6.38	198	26.8	375	0.51	21.6	7.999	16.486	9125	1.15		<1	<1
W4A	-10.67	11/17/92	817			6.02	186	21	295	0.54	7.6	470	13200	6.55	203	24.6	345	0.59	21.5	8.025	15.369	8507	0.72		<1	<1

NELHA Water Quality Laboratory

Well 4A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	12/8/92	802			6.17	191	32	444	0.64	9.0	499	14015	6.29	195	35.2	493	0.54	21.6	8.027	14.277	7903	1.30		<1	<1
W4A	-10.67	1/26/93	814			5.92	183	24	340	0.33	4.6	515	14458	6.03	187	28.1	393	0.61	21.6	8.064	14.303	7917	1.05		<1	<1
W4A	-10.67	2/23/93	745			6.00	186	20	276	0.25	3.5	516	14498	6.00	186	22.8	319	0.48	21.5	8.040	14.952	8276	0.76		<1	<1
W4A	-10.67	3/16/93	745			6.36	197	14	199	0.42	5.9	513	14402	6.44	199	17.4	244	0.58	21.6	8.008	15.652	8664	0.48		<1	<1
W4A	-10.67	4/27/93	749			5.18	160	26	370	0.39	5.5	551	15475	5.30	164	28.4	398	0.55	21.7	7.989	15.744	8715	0.99		<1	<1
W4A	-10.67	5/25/93	743			4.86	151	29	400	0.43	6.0	544	15279	4.96	154	32.4	454	0.47	21.7	7.981	15.064	8338	1.11		<1	<1
W4A	-10.67	6/28/93	822			4.93	153	25	353	0.19	2.7	527	14801	5.10	158	27.8	389	0.44	21.7	7.952	16.114	8920	1.09		<1	<1
W4A	-10.67	8/31/93	819			5.08	157	26	367	0.08	1.1	552	15503	5.08	157	45.4	636	0.69	21.7	7.925	14.735	8156	0.63		<1	<1
W4A	-10.67	10/26/93	751			5.09	158	42	587	0.42	5.9	529	14857	5.09	158	44.6	625	0.56	21.6	7.944	14.270	7899	1.32		<1	<1
W4A	-10.67	3/1/94	737			25.2	781	1780	24932	53.2	745.3	184	5168	26.6	823	1840	25772	113	21.6	8.941	13.342	7385	NA		<1	<1
W4A	-10.67	6/21/94	726			10.5	326	601	8420	25.7	359.7	51.6	1449	14.8	458	797	11165	62.4	21.7	8.002	15.474	8565	6.08		<1	<1
W4A	-10.67	8/23/94	807			21.8	676	1660	23251	34.9	489.0	76.3	2143	30.2	937	1900	26613	140	21.7	9.100	16.098	8911	5.75		<1	8
W4A	-10.67	10/25/94	823			34.0	1053	695	9733	33.1	464.2	86.6	2432	34.4	1065	750	10502	4.43	21.7	8.770	15.321	8481	NA		<1	<1
W4A	-10.67	11/28/94	1200			28.0	869	540	7557	19.4	272.2	109	3075	28.7	889				21.8		15.321	8481				
W4A	-10.67	12/13/94	849			23.1	716	272	3806	9.39	131.5	184	5162	24.1	745				21.7		15.321	8481				
W4A	-10.67	1/24/95	821			24.5	758	341	4780	8.70	121.9	150	4209	24.5	758			1.39	21.6	8.582	15.321	8481	1.83		<1	<1
W4A	-10.67	2/14/95	802			19.9	616	202	2831	1.61	22.6	184	5168	20.2	625	204	2853	1.18	21.7	8.514	15.321	8481	0.79		<1	<1
W4A	-10.67	3/14/95	856			19.2	595	718	10058	71.0	993.8	88.9	2496	21.9	678			12.1	21.7	8.917	15.321	8481	4.59		<1	3
W4A	-10.67	4/25/95	921			16.8	520	242	3384	5.38	75.4	147	4131	17.5	543	454	6355	1.33	21.6	8.556	15.321	8481	1.45		<1	<1
W4A	-10.67	5/9/95	811			14.9	462	131	1835	2.02	28.3	181	5089	15.6	483	141	1978	0.75	21.8	8.537	15.321	8481	2.51		<1	<1
W4A	-10.67	6/27/95	829			14.4	446	183	2567	0.40	5.6	205	5746	15.8	489	194	2719	1.00	21.7	8.422	15.321	8481	0.80		<1	<1
W4A	-10.67	7/25/95	843			13.3	412	119	1669	0.15	2.1	217	6106	14.3	444	129	1801	0.73	21.8	8.430	14.709	8142	1.10		<1	<1
W4A	-10.67	8/22/95	928			14.1	438	110	1538	0.47	6.6	220	6173	14.4	446			0.96	21.8	8.392	15.922	8813	0.78		<1	<1
W4A	-10.67	9/12/95	710			13.8	428	87	1225	0.08	1.1	226	6359	13.8	428	91.3	1278	0.89	21.7	8.449	16.579	9177	1.72		<1	<1
W4A	-10.67	10/17/95	911			13.2	408	76	1059	0.14	2.0	251	7055	13.6	421			0.71	21.9	8.506	14.373	7956	2.53		<1	<1
W4A	-10.67	11/7/95	823			12.9	398	76	1066	0.29	4.1	238	6676	13.1	406	83.8	1174	0.64	21.8	8.468	16.340	9045	1.15		<1	<1
W4A	-10.67	12/6/95	837			12.7	394	71	992	0.26	3.6	262	7367	13.1	405			0.58	21.8	8.529	14.653	8111	2.62		<1	<1
W4A	-10.67	1/30/96	912			11.0	340	77	1074	0.12	1.7	261	7328	12.3	380	78.0	1093	0.49	21.6	8.534	14.984	8294	2.52		<1	<1
W4A	-10.67	2/27/96	921			11.0	340	72	1006	0.15	2.1	281	7895	11.4	354	74.9	1049	0.50	21.9	8.448	15.680	8679	2.20		<1	1
W4A	-10.67	3/13/96	953			12.8	397	126	1761	0.29	4.1	241	6755	13.3	411	133	1870	0.65	22.0	8.542	14.340	7938	2.28		<1	<1
W4A	-10.67	4/2/96	925			21.5	667	2220	31095	1.10	15.4	119	3338	26.6	824			13.8	22.2	9.277	11.412	6317	4.67		<1	5
W4A	-10.67	5/15/96	922			25.5	789	2270	31795	191	2675.3	92.5	2597	28.8	893			19.4	23.6	9.422	12.390	6858	1.63		<1	10
W4A	-10.67	6/18/96	845			21.9	679	2550	35717	134	1878.3	86.5	2429	24.4	755	2770	38799	14.4	22.1	9.133	15.226	8428	1.56		<1	<1
W4A	-10.67	7/17/96	920			55.1	1705	5480	76757	46.4	649.2	66.9	1880	56.2	1740	5700	79838	30.7	22.1	9.639	13.011	7202	0.99		<1	12
W4A	-10.67	8/6/96	929			67.1	2078	8690	121718	22.5	315.2	51.4	1444	73.0	2260	8660	121298	41.0	22.5	9.868	11.803	6533	1.73		<1	15
W4A	-10.67	9/4/96	927			59.6	1846	6280	87962	66.7	933.8	83.6	2347	60.4	1869	6760	94685	28.6	22.2	9.620	12.358	6840	3.29		1	3
W4A	-10.67	10/9/96	931			34.1	1057	3390	47483	112	1564.5	44.6	1253	34.3	1061	3380	47343	16.4	22.0	9.410	13.168	7289	3.42		<1	<1
W4A	-10.67	11/6/96	918			34.1	1057	4220	59108	76.0	1064.5	95.2	2674	36.0	1115	4090	57287	15.8	22.1	9.233	13.063	7231	4.75		<1	4
W4A	-10.67	12/17/96	922			34.9	1081	5490	76897	87.9	1231.3	34.2	962	36.9	1143	5850	81939	21.7	22.3	9.512	12.796	7083	1.89		<1	<1
W4A	-10.67	1/14/97	942			18.5	572	1420	19890	15.5	217.1	40.7	1144	20.8	645	2170	30395	2.15	22.3	9.158	11.882	6577	0.71		<1	1
W4A	-10.67	2/10/97	1050			20.0	618	2070	28994	44.4	621.9	88.9	2497	21.5	665	2090	29274	2.61	22.5	9.150	11.355	6285	2.30		<1	<1
W4A	-10.67	3/10/97	1054			30.2	934	2650	37118	11.3	158.3	47.0	1320	40.0	1239	3900	54625	12.7	22.4	9.352	11.109	6149	3.99		<1	133
W4A	-10.67	4/23/97	916			12.9	400	1420	19890	24.1	337.6	103	2898	13.5	418	1670	23391	7.29	22.2	9.185	12.486	6911	4.23		<1	3
W4A	-10.67	5/28/97	917			15.9	493	904	12663	18.5	259.1	140	3943	16.9	522	1210	16948	2.86	21.4	8.952	11.715	6485	4.96		<1	2
W4A	-10.67	6/17/97	915			10.1	314	270	3778	1.82	25.5	208	5842	12.6	390	318	4447	1.07	21.5	8.782	11.766	6513	3.78		2	1

NELHA Water Quality Laboratory

Well 4A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	7/15/97	907			12.2	377	219	3067	0.78	10.9	207	5811	15.6	482	253	3542	1.07	21.7	8.716	11.466	6347	4.35		<1	7
W4A	-10.67	8/26/97	924			19.1	590	482	6744	10.8	150.9	153	4300	20.1	623	523	7323	1.23	21.5	8.713	12.843	7109	1.76		<1	2
W4A	-10.67	9/23/97	1121			15.1	468	223	3125	0.66	9.2	166	4657	16.4	508	250	3499	0.83	22.4	8.700	11.422	6322	2.77		<1	<1
W4A	-10.67	10/15/97	846			18.6	575	440	6163	3.33	46.6	180	5044	20.6	638	489	6848	3.20	22.1	8.758	12.429	6880	2.31		1	4
W4A	-10.67	11/4/97	1002			16.2	501	343	4803	6.22	87.1	155	4356	17.3	536	496	6940	1.58	22.2	8.736	12.735	7049	1.37		<1	9
W4A	-10.67	12/16/97	905			15.5	480	293	4100	2.48	34.7	186	5230	16.9	523	303	4244	1.17	22.1	8.633	14.763	8172	0.88		<1	3
W4A	-10.67	1/5/98	1159			13.0	403	183	2565	0.39	5.5	185	5198	14.6	451	213	2976	0.78	22.3	8.664	12.989	7190	2.42		<1	<1
W4A	-10.67	2/3/98	1016			13.8	429	168	2354	0.49	6.9	198	5572	16.3	504	189	2642	0.73	22.2	8.644	12.699	7029	2.07		<1	<1
W4A	-10.67	3/10/98	1029			15.0	466	138	1927	0.27	3.8	229	6418	16.4	508	144	2014	0.70	22.0	8.494	12.244	6777	3.72		<1	1
W4A	-10.67	4/14/98	853			57.6	1784	1460	20450	4.10	57.4	80.8	2269	64.4	1995	4440	62190	23.2	22.1	9.591	12.301	6809	6.51		<1	1
W4A	-10.67	5/12/98	1023			16.4	508	295	4137	16.3	228.7	133	3735	19.5	604	323	4524	1.26	22.2	8.830	11.953	6616	2.86		<1	<1
W4A	-10.67	6/2/98	1018			32.8	1017	636	8905	51.3	718.5	123	3452	33.9	1050	708	9918	2.22	22.3	8.731	12.631	6992	2.43		<1	<1
W4A	-10.67	7/14/98	1028			40.8	1263	1220	17088	89.1	1248.0	54.4	1528	42.2	1307	1360	19049	12.6	22.4	9.049	13.985	7741	11.10		<1	1
W4A	-10.67	8/11/98	1043			36.6	1133	863	12086	64.8	907.5	72.7	2041	38.7	1200	943	13213	6.88	22.1	8.865	13.675	7569	4.20		<1	1
W4A	-10.67	9/15/98	1117			39.7	1229	852	11927	42.4	593.9	74.0	2078	40.4	1251	908	12715	6.40	22.1	8.675	16.214	8975	4.02		<1	1
W4A	-10.67	10/13/98	954			32.4	1002	671	9398	24.8	347.5	84.1	2363	34.2	1059	740	10365	4.38	22.5	8.594	16.349	9050	3.31		<1	<1
W4A	-10.67	11/4/98	1027			24.3	754	351	4915	7.40	103.6	111	3126	26.4	819	388	5435	2.11	21.4	8.589	14.069	7788	0.82		<1	<1
W4A	-10.67	12/16/98	1008			22.9	709	171	2390	0.10	1.4	152	4275	24.8	769	189	2647	1.09	22.5	8.562	12.610	6980	2.89		<1	<1
W4A	-10.67	1/12/99	1043			22.2	689	166	2331	1.20	16.8	148	4151	23.7	734	180	2527	1.10	22.3	8.517	13.298	7361	2.23		<1	<1
W4A	-10.67	2/3/99	1032			24.1	748	163	2281	0.76	10.6	147	4137	26.1	809	182	2545	1.13	22.2	8.489	13.742	7607	0.96		<1	<1
W4A	-10.67	3/2/99	1034			21.0	651	147	2053	0.33	4.6	185	5187	22.8	706	160	2247	1.08	22.2	8.485	13.464	7453	2.61		<1	<1
W4A	-10.67	4/6/99	1027			22.6	699	186	2602	1.41	19.7	154	4311	24.9	770	188	2633	1.18	22.1	8.410	16.417	9087	0.43		<1	<1
W4A	-10.67	5/4/99	1032			20.1	623	133	1856	0.24	3.4	186	5230	21.6	668	160	2235	0.76	22.3	8.481	13.090	7246	3.74		<1	116
W4A	-10.67	6/2/99	1015			21.7	672	138	1927	0.17	2.4	169	4746	22.8	706	149	2087	0.90	22.3	8.394	15.953	8830	0.44		<1	<1
W4A	-10.67	7/7/99	1050			23.5	728	102	1430	0.05	0.7	165	4637	24.9	771	113	1579	0.75	22.4	8.424	14.622	8094	1.44		<1	<1
W4A	-10.67	8/25/99	1016			19.8	612	115	1611	0.12	1.7	177	4968	21.3	659	118	1655	0.66	22.6	8.423	15.649	8662	0.96		1	1
W4A	-10.67	9/8/99	1026			22.6	700	110	1538	0.18	2.5	181	5069	23.7	734	121	1695	0.70	22.1	8.419	17.130	9482	0.57		<1	<1
W4A	-10.67	10/6/99	1033			16.8	520	104	1450	0.13	1.8	179	5036	20.4	632	107	1499	0.67	22.0	8.430	15.593	8631	1.28		<1	<1
W4A	-10.67	11/3/99	1047			18.9	587	126	1765	0.05	0.7	182	5106	20.1	622	132	1849	0.84	22.1	8.476	14.857	8224	1.21		<1	<1
W4A	-10.67	12/15/99	1103			16.9	523	161	2255	0.19	2.7	170	4763	19.5	604	177	2479	0.88	22.2	8.414	17.030	9427	0.59		<1	<1
W4A	-10.67	1/11/00	1039			17.3	537	111	1555	0.10	1.4	178	4996	19.7	610	127	1776	0.66	22.1	8.493	13.748	7610	3.49		<1	<1
W4A	-10.67	2/14/00	1055			19.3	596	165	2310	0.30	4.2	185	5193	20.7	640	174	2437	0.93	22.2	8.451	14.869	8230	0.42		<1	<1
W4A	-10.67	3/22/00	1105			17.4	539	148	2077	0.03	0.4	189	5311	18.8	582	164	2303	0.78	22.1	8.419	15.798	8745	0.95		<1	<1
W4A	-10.67	4/12/00	1048			16.6	514	133	1863	0.05	0.7	185	5204	18.1	561	148	2066	0.74	22.3	8.442	15.157	8390	1.53		<1	<1
W4A	-10.67	5/17/00	1025			16.7	517	100	1399	0.05	0.7	193	5426	17.8	551	105	1467	0.64	22.1	8.390	17.298	9575	0.99		<1	1
W4A	-10.67	6/6/00	1101			15.7	485	91	1269	0.13	1.8	198	5567	16.3	504	90.6	1269	0.59	22.0	8.399	18.052	9992	1.18		<1	<1
W4A	-10.67	7/31/00	1050			16.3	505	591	8278	2.00	28.0	175	4907	19.1	591	643	9006	5.67	22.1	8.667	15.429	8540	4.89		<1	<1
W4A	-10.67	8/30/00	1056			14.8	459	82	1154	0.08	1.1	196	5505	16.1	499	84.9	1189	0.88	22.2	8.389	18.343	10153	1.65		<1	<1
W4A	-10.67	9/6/00	1037			15.4	477	74	1035	0.07	1.0	181	5089	16.4	509	77.3	1083	0.70	22.7	8.376	19.021	10529	1.62		<1	<1
W4A	-10.67	10/25/00	1003			14.2	440	68	949	0.13	1.8	221	6196	14.5	449	72.8	1020	0.69	22.3	8.388	18.033	9982	1.52		<1	6
W4A	-10.67	11/14/00	1117			14.2	440	691	9672	0.19	2.7	135	3792	15.5	480	735	10296	6.33	22.5	8.607	15.792	8741	4.94		<1	1
W4A	-10.67	12/19/00	1019			13.4	415	255	3572	0.75	10.5	153	4297	14.0	434	254	3553	2.20	22.0	8.466	16.494	9130	0.48		<1	<1
W4A	-10.67	1/24/01	1011			12.6	392	132	1847	0.17	2.4	181	5092	13.2	408	139	1946	0.94	22.0	8.395	18.163	10054	1.07		<1	3
W4A	-10.67	2/7/01	1040			12.4	385	116	1621	0.21	2.9	177	4980	12.9	400	120	1674	0.83	22.2	8.432	17.336	9596	1.49		<1	<1
W4A	-10.67	3/12/01	1025			12.8	396	100	1398	0.04	0.6	185	5207	13.6	422	108	1519	0.69	22.4	8.377	16.187	8960	1.12		<1	<1
W4A	-10.67	4/18/01	1015			12.8	397	91	1268	0.21	2.9	184	5165	13.0	404	92.5	1296	0.60	22.1	8.381	16.488	9127	1.94		<1	<1
W4A	-10.67	5/14/01	852			12.6	390	87	1223	0.27	3.8	193	5418	13.1	406	89.3	1251	0.65	22.1	8.388	17.479	9675	1.93		<1	1

NELHA Water Quality Laboratory

Well 4A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	6/13/01	1033			13.4	416	85	1188	0.06	0.8	197	5544	14.9	460	87.0	1219	0.84	22.3	8.371	18.040	9986	1.03		<1	1
W4A	-10.67	7/25/01	952			12.2	377	70	986	1.07	15.0	201	5648	12.4	383	73.4	1028	0.56	22.4	8.364	16.826	9314	1.53		<1	tntc
W4A	-10.67	8/20/01	934			12.0	371	75	1053	0.19	2.7	208	5836	12.5	388	79.1	1107	0.62	22.2	8.396	17.335	9595	1.46		<1	1
W4A	-10.67	9/18/01	925			12.3	382	73	1026	0.16	2.2	211	5915	12.5	388	78.2	1095	0.53	22.3	8.365	17.724	9811	1.71		<1	<1
W4A	-10.67	10/9/01	1017			12.2	378	70	978	0.07	1.0	204	5718	12.6	389	74.1	1038		22.3	8.371	18.194	10071	2.25		<1	<1
W4A	-10.67	11/6/01	925			11.2	345	64	891	0.06	0.8	230	6448	12.5	387	73.9	1035		22.4	8.374	18.185	10066	2.82		<1	<1
W4A	-10.67	12/18/01	932			12.0	372	70	979	0.26	3.6	218	6123	12.9	401	81.2	1137	0.55	22.3	8.409	16.414	9086	2.76		<1	<1
W4A	-10.67	1/8/02	949			11.8	365	68	952	0.05	0.7	214	6005	12.5	387	72.6	1017	0.57	22.1	8.382	17.534	9706	1.80		<1	41
W4A	-10.67	2/27/02	947			13.3	412	113	1584	10.1	141.5	130	3648	13.9	430	142	1989	1.89	22.1	8.597	17.124	9479	0.68		<1	<1
W4A	-10.67	3/19/02	959			20.3	629	829	11614	844	11826	129	3615	31.5	976	959	13425	18.4	22.7	8.040	15.008	8307	7.15		<1	168
W4A	-10.67	4/9/02	948			11.4	353	15	216	25.4	355.8	100	2809	12.5	387	71.0	994	5.79	22.1	8.631	16.421	9089	0.17		<1	<1
W4A	-10.67	5/21/02	945			10.7	331	37	521	3.56	49.9	143	4013	11.1	344	52.6	737	1.78	22.2	8.468	17.068	9448	0.58		<1	<1
W4A	-10.67	6/18/02	1005			10.5	326	50	702	0.50	7.0	161	4522	11.3	350	59.2	829	1.07	22.2	8.434	17.050	9438	0.73		<1	1
W4A	-10.67	7/17/02	944			10.8	333	78	1096	0.09	1.3	168	4727	10.8	335	75.3	1055	0.98	23.0	8.015	15.934	8820	1.45		<1	1
W4A	-10.67	8/22/02	1009			10.1	313	70	975	4.98	69.8	111	3103	11.0	339	102	1423	4.08	22.1	8.578	17.929	9924	0.60		<1	<1
W4A	-10.67	9/24/02	1003			9.38	291	56	784	0.98	13.7	141	3960	9.80	304	64.1	898	1.39	22.3	8.517	17.064	9445	0.92		<1	1
W4A	-10.67	10/16/02	1016			9.34	289	69	969	0.28	3.9	143	4022	9.65	299	73.1	1023	1.03	22.6	8.491	16.140	8934	1.00		1	6
W4A	-10.67	11/6/02	1000			9.20	285	106	1479	0.35	4.9	140	3932	9.30	288	106	1484	1.99	22.6	8.465	17.147	9491	0.61		<1	1
W4A	-10.67	12/19/02	1032			7.41	230	67	937	0.06	0.8	217	6092	7.61	236	66.4	930	0.80	22.0	8.448	17.196	9518	1.09		<1	<1
W4A	-10.67	1/22/03	1019			8.36	259	51	718	0.03	0.4	222	6229	8.64	268	54.1	757	0.71	21.9	8.405	19.296	10681	2.52		<1	<1
W4A	-10.67	2/20/03	946			8.60	266	72	1003	0.10	1.4	189	5317	9.40	291	80.0	1121	0.77	22.3	8.459	15.959	8834	2.42		<1	<1
W4A	-10.67	3/18/03	925			9.12	282	71	992	0.18	2.5	211	5923	9.60	297	83.4	1168	0.56	22.5	8.463	15.572	8620	2.44		<1	49
W4A	-10.67	4/29/03	936			9.22	286	78	1090	0.21	2.9	226	6347	10.7	333	97.3	1363	0.50	22.1	8.499	14.688	8130	3.64		<1	38
W4A	-10.67	5/13/03	1012			9.51	295	70	979	0.31	4.3	211	5937	9.69	300	72.4	1014	0.51	22.3	8.463	16.139	8933	2.07		<1	3
W4A	-10.67	6/5/03	935			9.54	295	70	986	0.27	3.8	194	5454	9.76	302	85.0	1190	0.65	22.2	8.442	16.578	9176	1.62		<1	3
W4A	-10.67	7/31/03	958			9.29	288	78	1095	0.35	4.9	223	6252	9.55	296	82.4	1154		22.0	8.412	16.552	9162	1.87		<1	<1
W4A	-10.67	8/27/03	1013			8.82	273	64	901	0.75	10.5	254	7134	9.15	283	76.5	1071		22.2	8.359	18.582	10286	2.10		<1	407
W4A	-10.67	9/17/03	942			9.92	307	59	824	0.30	4.2	199	5575	11.3	351	61.4	860		22.7	8.370	19.061	10551	1.92		<1	324
W4A	-10.67	10/7/03	937			9.68	300	73	1026	0.77	10.8	214	6005	10.0	310	84.0	1177		22.7	8.398	16.856	9330	NA		<1	140
W4A	-10.67	11/4/03	930			9.60	297	65	908	0.89	12.5	205	5758	10.1	314	77.5	1086		22.6	8.425	16.525	9147			<1	31
W4A	-10.67	11/14/03	1104																23.9			0	0.35			
W4A	-10.67	12/16/03	925			9.45	293	31	440	4.50	63.0	224	6294	9.91	307	42.4	594		22.5	8.353	17.399	9631	0.51		1	3
W4A	-10.67	1/27/04	944			9.98	309	89	1248	1.84	25.8	230	6460	10.3	320	98.0	1373		22.2	8.404	15.999	8856	0.57		<1	<1
W4A	-10.67	2/10/04	935			9.80	304	74	1035	0.45	6.3	223	6257	10.0	308	77.2	1082		22.3	8.378	16.869	9337	0.79		<1	TNTC
W4A	-10.67	3/15/04	944			9.98	309	74	1038	0.19	2.7	235	6589	10.2	316	78.5	1100		22.6	8.415	16.191	8962	0.96		<1	<1
W4A	-10.67	4/21/04	855			10.11	313	74	1036	0.38	5.3	226	6342	10.8	334	78.0	1093		22.3	8.377	17.280	9565	1.03		<1	<1
W4A	-10.67	5/12/04	850			9.62	298	66	918	0.16	2.2	227	6364	9.78	303	68.9	965		22.9	8.406	17.88	9897	1.72		<1	1
W4A	-10.67	6/7/04	844			9.62	298	58	813	0.15	2.1	233	6533	10.0	309	61.8	866		22.3	8.391	18.35	10157	2.08		<1	<1
W4A	-10.67	7/8/04	951			9.52	295	59	821	0.09	1.3	244	6861	9.87	306	66.9	938	0.46	22.4	8.436	17.51	9692	2.35		<1	2
W4A	-10.67	8/24/04	920			8.44	261	55	764	0.26	3.6	267	7485	8.74	271	58.3	816		22.3	8.391	18.47	10224	2.92		<1	2
W4A	-10.67	9/28/04	942			9.18	284	131	1828	0.32	4.5	252	7083	9.44	292	147	2059		22.6	8.385	17.76	9831	2.20		<1	70
W4A	-10.67	10/5/04	1029			8.60	266	89	1252	0.24	3.4	249	6982	8.96	278	96.8	1356		22.5	8.400	18.80	10406	2.86		<1	37
W4A	-10.67	11/8/04	920			8.72	270	109	1530	0.210	2.9	255	7165	9.04	280	123	1717		22.4	8.419	16.33	9039	2.19		<1	1
W4A	-10.67	12/7/04	933			8.44	261	291	4082	20	280.1	198	5547	8.80	273	327	4584		22.3	8.486	17.54	9709	2.45		3	>5,000

NELHA Water Quality Laboratory

Well 4A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	1/11/05	923				7.86	243	149	2090	4.5	62.5	217	6106	8.18	253	155	2171		22.4	8.485	16.889	9348	0.69		<1	536
W4A	-10.67	2/8/05	927				7.90	245	133	1868	0.21	2.9	235	6600	8.40	260	149	2087		22.4	8.502	15.429	8540	1.18		<1	108
W4A	-10.67	3/16/05	959				7.97	247	108	1513	0.16	2.2	224	6302	8.37	259	121	1696	0.64	22.2	8.446	16.765	9280	0.68		<1	56
W4A	-10.67	4/18/05	1014				9.90	307	121	1700	66	924.4	207	5814	11.1	344	217	3037		22.6	8.418	16.754	9274	1.07		<1	196
W4A	-10.67	5/24/05	924				8.08	250	81	1137	8.3	116.4	238	6676	8.42	261	98.7	1382		22.8	8.364	15.491	8575	0.49		<1	14
W4A	-10.67	6/13/05	945				8.40	260	53	748	0.12	1.7	234	6583	8.74	271	60.1	842		22.7	8.367	16.165	8948	0.30		<1	364
W4A	-10.67	7/11/05	940				8.18	253	61	861	0.25	3.5	246	6906	8.50	263	70.6	989		22.9	8.369	17.679	9786	1.63		<1	>5,000
W4A	-10.67	8/10/05	905				8.04	249	61	861	4.37	61.2	250	7027	8.30	257	68.3	956		22.5	8.412	17.088	9459	0.60		<1	1340
W4A	-10.67	9/21/05	900				8.74	271	205	2867	0.13	1.8	243	6836	8.96	278	214	2997	0.95	22.6	8.393	16.730	9260	0.63		<1	5
W4A	-10.67	10/18/05	926				8.62	267	148	2076	0.17	2.4	248	6965	8.85	274	150	2104		22.4	7.913	16.384	9069	0.70		<1	<1
W4A	-10.67	11/3/05	845				8.14	252	567	7947	8.7	121.9	213	5988	8.74	271	597	8366		22.5	8.468	16.548	9160	4.87		<1	1
W4A	-10.67	12/21/05	956				7.42	230	129	1800	0.22	3.1	225	6314	7.72	239	133	1867	0.90	23.0	8.416	18.320	10141	0.98		<1	<1
W4A	-10.67	1/24/06	905				7.36	228	106	1478	0.27	3.8	231	6477	7.58	235	113	1576		22.3	8.419	16.176	8954	2.45		<1	1
W4A	-10.67	2/15/06	858				7.75	240	100	1405	0.23	3.2	227	6367	7.94	246	123	1723	0.61	22.3	8.405	17.256	9552	0.91		<1	<1
W4A	-10.67	3/21/06	845				7.73	239	88	1237	0.16	2.2	242	6797	7.97	247	90.3	1265	1.95	22.4	8.392	17.275	9562	1.17		<1	<1
W4A	-10.67	4/19/06	952				8.47	262	83	1158	0.30	4.2	239	6712			78.1	1095	0.47	22.4	8.433	17.105	9468	1.39		<1	<1
W4A	-10.67	4/26/06	900				7.80	242	80	1119	0.20	2.8	243	6825	8.12	252	75.9	1064	0.52	22	8.417	17.387	9624	1.8		<1	<1
W4A	-10.67	5/3/06					8.13	252	79	1102	0.86	12.0	240	6741			67.1	939	0.54	22.1	8.419	18.149	10046	2.1		<1	<1
W4A	-10.67	5/10/06					7.89	244	78	1097	0.05	0.7	246	6909			66.5	931	0.48	22.1	8.402	17.256	9552	1.48		<1	<1
W4A	-10.67	5/16/06					8.02	248	79	1101	0.16	2.2	247	6937			70.8	991	0.47	22	8.436	16.938	9376	2.12		<1	<1
W4A	-10.67	5/23/06	932				7.30	226	78	1098	0.09	1.3	240	6741	7.65	237	71.8	1005	0.53	22.5	8.429	16.358	9055	1.97		<1	<1
W4A	-10.67	6/27/06	937				7.94	246	66	922	0.34	4.8	251	7049	8.31	257	49.7	696	0.77	22.4	8.382	18.833	10425	2.05		<1	1
W4A	-10.67	7/18/06	932				7.81	242	65	906	0.84	11.8	250	7021	7.99	247	59.9	838	0.54	22.5	8.414	17.616	9751	2.62		>5,000	>5,000
W4A	-10.67	8/8/06	910				7.88	244	66	930	0.05	0.7	256	7190	8.09	251	56.6	793	0.42	22.2	8.402	18.056	9994	2.15		204	198
W4A	-10.67	9/19/06	1010				7.73	239	64	902	0.24	3.4	251	7049	8.15	252	60.4	845	0.47	22.6	8.377	18.074	10004	2.05		<1	6
W4A	-10.67	10/24/06	948				7.74	240	61	847	0.44	6.2	270	7583	8.16	253	55.5	777	0.47	22.6	8.375	18.890	10456	2.18		1	153
W4A	-10.67	11/28/06	929				7.19	223	56	784	0.26	3.6	281	7892	7.71	239	51.4	720	0.52	22.2	8.372	18.680	10340	2.82		<1	5
W4A	-10.67	12/12/06	924				7.42	230	55	765	0.31	4.3	286	8032	7.88	244	51.3	718	0.46	22.1	8.364	18.872	10446	2.66		<1	1
W4A	-10.67	1/9/07	950				7.77	241	56	790	0.24	3.4	270	7583	8.01	248	59.5	833	0.37	22.1	8.391	18.726	10365	3.07		<1	<1
W4A	-10.67	2/22/07	931				7.61	236	66	922	0.30	4.2	294	8257	7.80	242	72.1	1009	0.47	22.1	8.409	16.421	9089	3.39		1	206
W4A	-10.67	3/6/07	948				7.65	237	63	884	0.25	3.5	290	8145	7.87	244	68.1	954	0.44	22	8.417	16.983	9401	2.46		<1	13
W4A	-10.67	4/11/07	1101				7.86	243	66	930	0.20	2.8	301	8454	8.19	254	63.6	891	0.43	22.5	8.449	15.289	8463	3.26		<1	1
W4A	-10.67	5/3/07	934				7.77	241	64	889	0.20	2.8	276	7752	8.10	251	64.4	901	0.52	22.6	8.438	16.645	9213	2.24		<1	<1
W4A	-10.67	6/19/07	901				7.77	241	64	898	0.25	3.5	296	8313	8.15	252	46.1	645	0.46	22.6	8.418	18.300	10130	2.77		<1	<1
W4A	-10.67	7/25/07	1423	-6.91	0.64	High	7.64	237	59	824	0.44	6.2	342	9614	7.62	236	58.9	824.3		22.9	8.30	19.11	10578	3.43			
W4A	-10.67	8/28/07	930	-7.32	0.00	Low	7.06	219	70	983	0.55	7.7	404	11354	6.82	211	72.7	1018.7		22.9	8.20	16.48	9122	2.48			
W4A	-10.67	9/13/07	1220	-7.01	0.15	Flood	7.88	244	64	894	0.71	9.9	372	10449	8.24	255	66.2	926.6		22.9	8.32	17.41	9637	3.04			
W4A	-10.67	10/24/07	948	-7.01	0.09	Low	6.21	192	78	1088	5.14	72.0	413	11590	6.41	198	82.3	1153.3		22.7	8.16	15.21	8419	4.11			
W4A	-10.67	11/26/07	1319	-6.99	0.06	Low	6.85	212	87	1213	1.45	20.4	470	13190	6.44	200	93.5	1310.1		22.7	8.26	14.33	7932	4.26			
W4A	-10.67	12/20/07	1009	-7.16	0.23	Low	6.31	195	90	1257	0.98	13.7	386	10833						22.4	8.36	12.63	6991	4.94			
W4A	-10.67	1/29/08	936	-7.06	0.24	Ebb	5.47	169	83	1167	0.59	8.2	364	10213						22.5	8.15	11.97	6626	4.62			
W4A	-10.67	2/27/08	1357	-6.71	0.06	Low	5.51	171	87	1216	1.04	14.6	483	13565						22.8	8.14	11.58	6410	4.77			
W4A	-10.67	3/20/08	1423	-7.29	0.30	Flood	5.82	180	67	936	0.28	3.9	349	9795						22.5	8.11	15.43	8541	3.95			
W4A	-10.67	4/29/08	1038	-7.29	0.18	Flood	6.07	188	77	1082	0.09	1.2	412	11575						22.8	8.18	14.00	7749	4.43			
W4A	-10.67	5/29/08	1120		0.37	Flood	6.84	212	523	7319	0.22	3.1	427	11982						23.3	8.26	13.04	7218	3.28			
W4A	-10.67	6/10/08	1023	-7.21	0.30	Flood	6.81	211	283	3969	0.35	4.9	709	19913						23.0	8.14	14.90	8248	2.25			
W4A	-10.67	6/19/08	1023	-6.71	0.12	Flood	5.86	181	245	3432	3.90	55	573	16106						23.1	8.04	14.98	8292	2.13	17.5		

NELHA Water Quality Laboratory

Well 4A Data Table

6/27/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	7/24/08	1121	-6.91	0.43	Ebb	5.41	168	94	1311	0.20	2.8	339	9515						22.5	8.10	17.50	9687	3.84			
W4A	-10.67	8/29/08	1657		0.67	Ebb	5.25	163	74	1030	0.92	13	343	9646						22.4	8.05	17.36	9609	2.30			
W4A	-10.67	9/19/08	1119	-6.87	0.43	Ebb	1.59	49	37	523	0.41	5.8	295	8281						26.0	8.52	9.03	4998		10.1		
W4A	-10.67	10/28/08	1016	-7.08	0.15	Ebb	18.89	585	555	7779	1.49	21	414	11632						25.7	8.49	12.60	6974	3.51	3.8		
W4A	-10.67	11/13/08	1030	-7.03	0.09	Ebb	6.28	195	199	2788	0.57	8.0	472	13245						25.2	8.31	9.85	5452	5.13	2.7		
W4A	-10.67	12/15/08	1115	-6.94	0.18	Ebb	4.96	154	156	2189	0.10	1.4	494	13888						25.0	8.23	10.09	5585	5.71			
W4A	-10.67	1/22/09	931	-7.14	0.09	Low	5.41	168	105	1466	0.96	13.4	355	9982						24.3	8.17	15.64	8657	4.04	4.9		
W4A	-10.67	2/24/09	902	-7.06	0.09	Ebb	5.31	165	50	699	0.49	6.9	384	10798						23.0	8.01	15.34	8491	3.52	0.18		
W4A	-10.67	3/16/09	921	-7.11	0.12	Ebb	4.14	128	53	738	0.13	1.8	304	8550						23.8	7.84	15.83	8762	3.82	7.0		
W4A	-10.67	4/20/09	1649	-6.97	0.24	Ebb	6.29	195	75	1054	0.81	11.4	370	10403						23.9	8.04	17.17	9504	3.87	15.7		
W4A	-10.67	5/21/09	1522	-6.73	0.58	Ebb	5.07	157	56	782	0.26	3.6	400	11227						22.3	8.02	19.07	10556	3.91	3.7		
W4A	-10.67	6/18/09	1244	-6.86	0.61	High	5.58	173	47	657	0.31	4.3	225	6321						22.3	8.07	20.09	11120	4.13	1.84		
W4A	-10.67	7/14/09	744	-7.08	0.37	Flood	1.70	53	33	458	0.16	2.2	174	4895						22.0	8.20	19.78	10949	3.90	4.36		
W4A	-10.67	8/19/09	958	-7.19	0.09	Flood	4.09	127	50	695	3.93	55.0	356	10005						22.2	7.99	20.43	11309	3.57	3.97		
W4A	-10.67	9/24/09	820	-6.84	0.61	High	4.03	125	52	731	0.54	7.5	230	6455						22.0	8.27	19.58	10838	3.94	0.55		
W4A	-10.67	10/22/09	1431	-7.13	0.37	Ebb	2.94	91	31	435	0.43	6.0	146	4106						22.4	8.04	19.19	10622	3.23	0.70		
W4A	-10.67	11/16/09	1558	-7.12	0.21	High	4.18	129	49	681	0.86	12.1	448	12576						22.1	8.05	19.26	10661	2.82	0.36		
W4A	-10.67	12/7/09	1532	-7.23	0.06	Low	6.30	195	377	5280	0.67	9.4	441	12386						22.8	8.07	16.26	9000	3.05	0.82		
W4A	-10.67	1/5/10	1405	-7.21	0.00	Ebb	11.36	352	595	8340	36.41	510	277	7780						22.7	8.43	17.76	9831	1.41	10.90		
W4A	-10.67	2/1/10	1348	-7.17	0.00	Ebb	10.43	323	419	5864	13.21	185	267	7491						22.6	8.42	17.34	9598	0.70	3.21		
W4A	-10.67	3/9/10	1423	-7.20	0.15	High	10.94	339	147	2053	2.37	33	368	10339						22.0	8.33	15.19	8408	1.38	3.70		
W4A	-10.67	4/6/10	1317	-7.14	0.15	High	8.90	276	134	1874	0.71	10	327	9195						21.9	8.30	16.72	9255	1.95	1.61		
W4A	-10.67	5/11/10	1324	-6.88	0.46	Flood	5.88	182	77	1072	1.64	23.0	396	11117						22.1	8.22	19.66	10882	2.95	0.24		
W4A	-10.67	6/15/10	1419	-6.97	0.15	Flood	7.30	226	116	1621	0.36	5.0	242	6807						22.1	8.16	20.13	11142	2.87	1.17		
W4A	-10.67	7/13/10	1331	-7.16	0.15	Flood	4.62	143	63	883	0.79	11.0	390	10951						21.9	8.12	20.05	11098	3.22	0.30		
W4A	-10.67	8/3/10	1328	-6.76	0.49	Ebb	4.75	147	51	717	0.36	5.0	405	11369						22.0	8.11	20.76	11491	3.64	0.26		
W4A	-10.67	9/14/10	1337	-6.86	0.40	Ebb	5.36	166	56	785	0.43	6.0	406	11403						22.0	8.07	20.36	11270	3.51	3.42		
W4A	-10.67	10/12/10	1416	-6.98	0.30	Ebb	4.65	144	51	715	0.49	6.9	419	11757						21.8	8.08	20.44	11314	3.75	1.72		
W4A	-10.67	11/16/10	1305	-6.86	0.40	High	4.58	142	56	778	0.46	6.5	420	11794						21.8	8.08	21.81	12072	3.39	1.48		
W4A	-10.67	12/14/10	1335	-6.95	0.24	Ebb	4.78	148	63	882	0.26	3.7	426	11971						21.7	8.11	18.72	10362	3.76	3.57		
W4A	-10.67	1/4/11	1317	-7.12	0.06	Flood	6.55	203	171	2396	0.22	3.1	360	10118						21.8	8.14	17.08	9454	2.47	2.11		
W4A	-10.67	2/1/11	1038	-7.10	0.03	Low	6.26	194	120	1679	0.30	4.2	439	12320						22.0	8.10	15.47	8563	3.79	2.30		
W4A	-10.67	4/5/11	1344	-7.11	0.12	Flood	5.49	170	88	1226	0.96	13.4	385	10802						21.2	8.16	15.51	8585	3.00	4.23		
W4A	-10.67	7/12/11	1337	-6.84	0.61	Flood	5.13	159	66	920	0.24	3.3	425	11949						22.0	8.17	18.93	10478	3.59	3.63		
W4A	-10.67	10/11/11	1513	-6.82	0.46	High	5.23	162	59	830	0.42	5.9	443	12439						20.1	8.08	18.09	10013	3.68	0.67		
W4A	-10.67	1/10/12	1410	-7.19	0.03	Flood	4.97	154	79	1100	0.39	5.5	470	13210						22.7	8.07	12.54	6941	5.32	6.34		
W4A	-10.67	5/1/12	1415	-6.80	0.40	Ebb	5.62	174	62	870	0.25	3.5	499	14020						22.6	8.05	17.55	9714	4.60	0.49		
W4A	-10.67	7/18/12	1340	-6.88	0.52	Flood	5.10	158	72	1012	0.55	7.7	521	14646						22.4	8.00	16.61	9194	5.26	1.16		
W4A	-10.67	10/16/12	1312	-7.10	0.15	Flood	4.84	150	70	983	0.35	4.9	493	13853						22.3	8.05	16.33	9039	7.93	0.48		
W4A	-10.67	1/8/13	1422	-6.97	0.21	High	4.26	132	86	1206	0.54	7.5	590	16559						22.4	7.88	13.06	7229	5.41	0.64		
W4A	-10.67	4/9/13	1355	-6.98	0.30	Flood	4.81	149	77	1084	0.47	6.6	547	15353						22.5	8.02	13.64	7550	4.72	0.98		
W4A	-10.67	7/17/13	1516	-6.77	0.52	Ebb	4.52	140	61	859	0.51	7.2	471	13220						23.0	7.92	16.46	9111	4.54	0.45		
W4A	-10.67	10/15/13	1356	-6.74	0.55	High	4.65	144	78	1099	0.82	11.5	514	14449						22.5	7.96	14.72	8148	5.47	1.12		
W4A	-10.67	1/15/14	1343	-7.13	0.12	Flood	4.81	149	78	1091	0.69	9.6	485	13635						22.6	8.02	13.25	7334	5.97	1.87		
W4A	-10.67	4/29/14	1453	-6.88	0.49	Flood	3.81	118	55	768	0.71	10.0	447	12543						22.4	7.95	17.23	9537	5.18	0.49		

NELHA Water Quality Laboratory

Well 4A Data Table

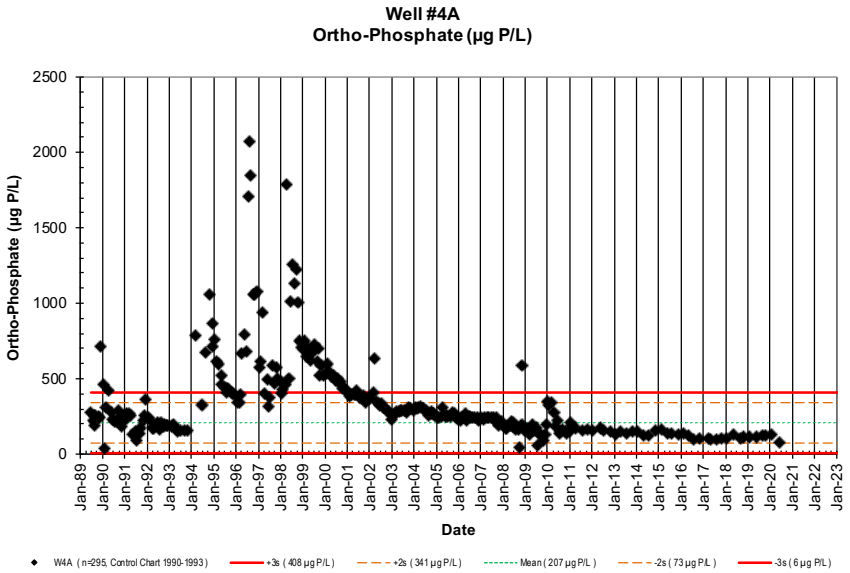
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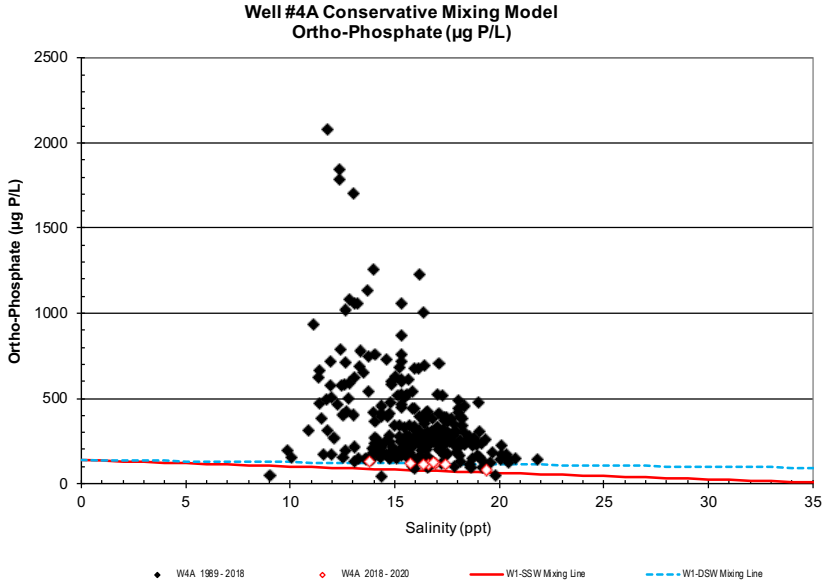
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W4A	-10.67	7/29/14	1421	-7.01	0.30	Flood	3.94	122	63	888	1.50	21.0	507	14245						22.8	7.88	16.76	9277	4.73	0.12		
W4A	-10.67	11/5/14	1409	-6.84	0.38	Flood	4.91	152	67	940	0.46	6.4	460	12907						22.8	7.97	16.49	9128	4.72	0.72		
W4A	-10.67	2/11/15	1015	-6.95	0.24	Ebb	5.41	168	91	1279	0.73	10.2	674	18930						22.6	7.94	14.24	7882	5.22	0.69		
W4A	-10.67	5/20/15	1138	-7.36	0.00	Flood	4.54	141	79	1107	1.46	20.5	474	13309						23.0	8.05	13.87	7677	5.57	1.46		
W4A	-10.67	7/22/15	917	-6.93	0.30	Ebb	4.48	139	58	813	0.05	0.7	448	12581						22.9	7.93	15.72	8701	5.49	0.48		
W4A	-10.67	11/9/15	1434	-6.77	0.48	High	4.23	131	67	937	0.22	3.1	518	14539						22.9	8.02	16.71	9249	4.56	0.99		
W4A	-10.67	1/27/16	1224	-7.15	0.08	Low	4.51	140	93	1305	0.10	1.4	505	14184						23.0	7.92	13.64	7550	5.28	0.93		
W4A	-10.67	4/22/16	931	-7.13	-0.05	Low	4.01	124	66	930	1.24	17.3	471	13222						22.9	7.94	15.95	8829	4.62	0.42		
W4A	-10.67	7/27/16	914	-6.93	0.10	Flood	3.08	96	64	891	0.22	3.1	443	12442						22.6	7.90	16.56	9166	4.96	0.62		
W4A	-10.67	11/10/16	941	-6.97	0.40	Flood	3.36	104	64	894	0.26	3.6	426	11953						22.5	7.80	15.82	8757	4.99	0.87		
W4A	-10.67	3/22/17	1239	-6.88	0.25	High	3.51	109	52	735	0.28	3.9	471	13219						23.0	7.88	18.60	10296	4.40	4.30		
W4A	-10.67	4/19/17	1122	-6.97	0.20	Ebb	3.22	100	57	799	0.31	4.4	504	14155						21.8	7.90	17.83	9869	3.68	1.12		
W4A	-10.67	8/9/17	1342	-6.97	0.30	Flood	3.03	94	37	525	0.05	0.7	466	13096						23.0	7.89	18.63	10312	4.52	0.22		
W4A	-10.67	10/18/17	1150	-6.97	0.30	Flood	3.37	104	66	924	0.39	5.4	500	14055						23.0	7.92	16.63	9205	5.22	0.56		
W4A	-10.67	1/18/18	918	-6.83	0.20	Ebb	3.49	108	66	930	0.27	3.8	508	14261						22.6	7.88	16.57	9172	5.05	0.50		
W4A	-10.67	5/10/18	928	-7.12	0.18	Flood	4.27	132	88	1232	0.10	1.4	482	13533						21.4	7.96	18.16	10052	4.82	0.82		
W4A	-10.67	8/30/18	1530	-6.91	0.34	Flood	3.42	106	70	980	0.12	1.7	526	14781						24.0	7.90	16.62	9200	4.62	1.24		
W4A	-10.67	10/25/18	858	-6.83	0.11	Low	3.56	110	71	991	1.81	25.3	489	13726						23.0	7.88	16.35	9050	5.49	1.10		
W4A	-10.67	2/8/19	903	-6.86	0.35	Ebb	3.69	114	103	1446	0.00	0.0	477	13399						22.2	7.76	16.91	9360	5.92	0.44		
W4A	-10.67	5/15/19	1345	-6.85	0.40	Ebb	3.65	113	72	1004	0.11	1.6	483	13565						22.1	7.79	17.40	9631	5.38	0.31		
W4A	-10.67	8/28/19	1323	-6.68	0.65	High	4.05	125	67	938	0.18	2.5	463	12998						22.5	7.91	16.86	9332	5.49	0.91		
W4A	-10.67	10/11/19	912	-7.01	0.15	Flood	3.85	119	68	947	0.18	2.5	478	13418						22.7	7.94	15.75	8718	5.58	0.35		
W4A	-10.67	2/4/20	1010	-7.03	0.22	Flood	4.31	133	93	1304	-0.04	-0.5	520	14604						22.9	7.97	13.81	7644	5.56	0.44		
W4A	-10.67	6/3/20	1044	-6.98	0.35	Flood	2.56	79	55	769	0.32	4.5	416	11694						23.1	7.89	19.35	10711	4.46	0.54		
W4A	-10.67	7/1/20																									
W4A	-10.67	10/1/20																									
W4A	-10.67	1/1/21																									
W4A	-10.67	4/1/21																									
W4A	-10.67	7/1/21																									
W4A	-10.67	10/1/21																									
W4A	-10.67	1/1/22																									
W4A	-10.67	4/1/22																									
W4A	-10.67	7/1/22																									
W4A	-10.67	10/1/22																									
W4A	-10.67	1/1/23																									
W4A	-10.67	4/1/23																									
Mean				-6.99	0.27		11.22	347	311.24	4359	10.64	148.5	290	8158	14.87	461	420	5884	6.59	22.2	8.35	15.86	8749	2.53	2.34		
Std. Dev.				0.16	0.18		9.08	281	894.06	12523	53.36	746.1	141	3975	11.00	341	1125	15752	18.41	0.7	0.35	2.18	1306	1.72	3.34		
Maximum				-6.68	0.67		67.09	2078	8690	121718	844.30	11825.9	709	19913	72.97	2260	8660	121298	140.00	26.0	9.87	21.81	12072	11.10	17.50		
Minimum				-7.36	-0.05		1.31	41	5	64	-0.04	-0.5	34	962	2.30	71.2	7.7	107	0.37	19.1	7.76	9.03	0	0.10	0.12		
n				80	82		295	295	289	289	294	295	288	287	208	208	203	203	176	295	292	294	295	285	67		

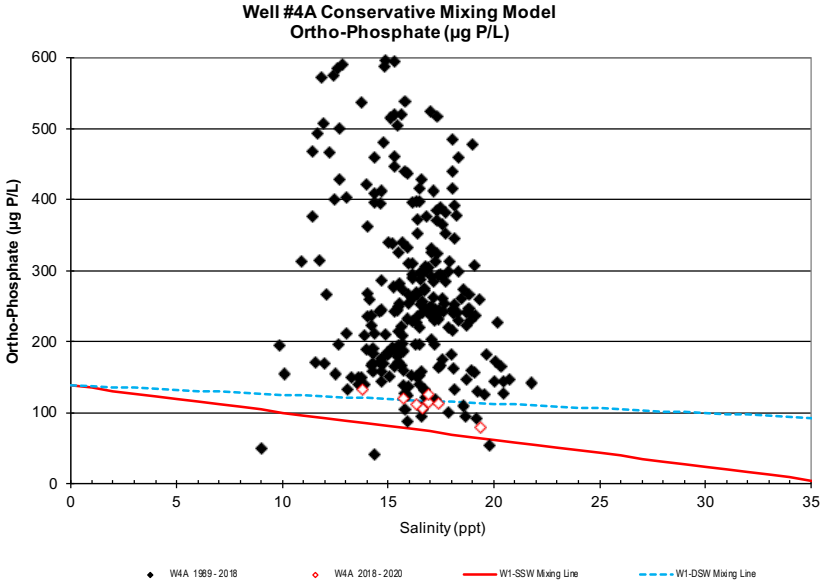
NELHA Water Quality Laboratory

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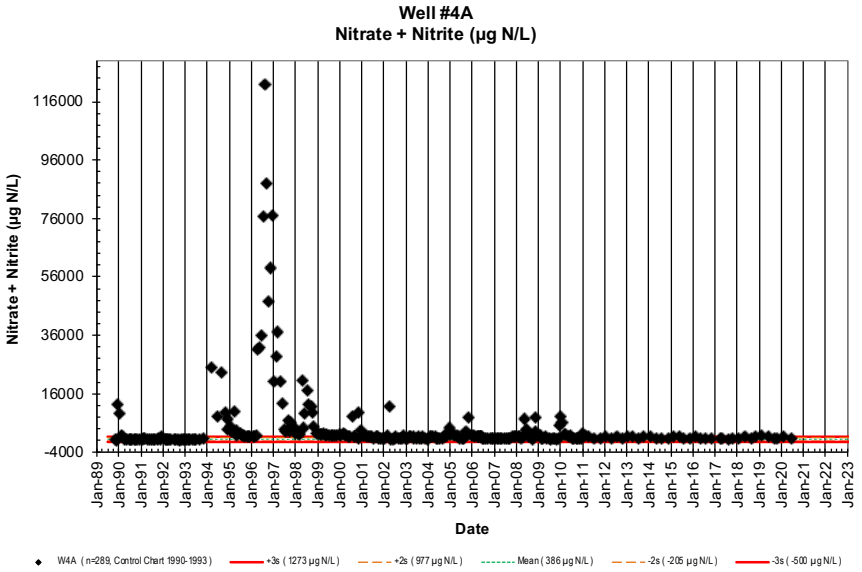


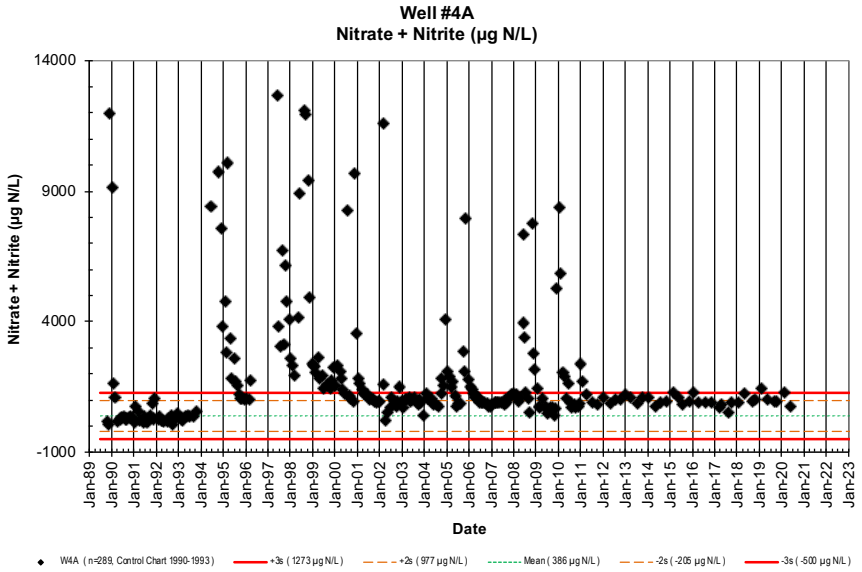


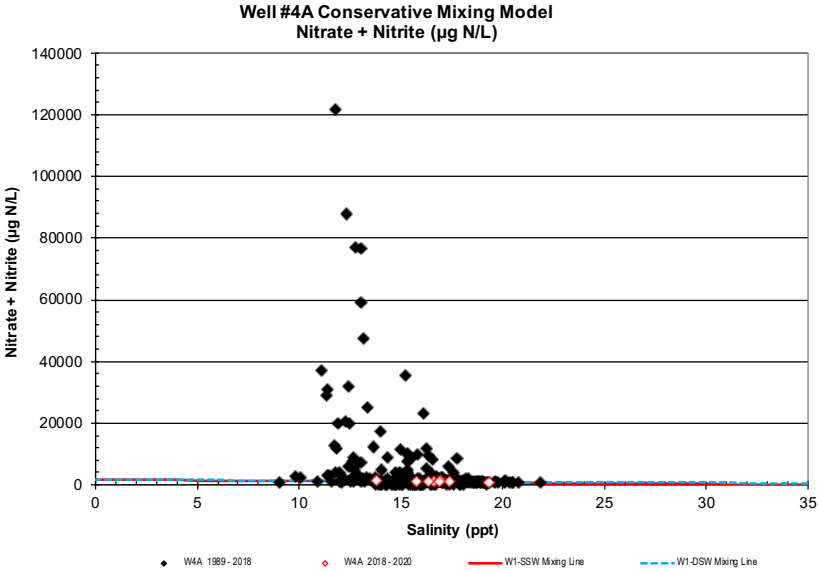
NELHA Water Quality Laboratory

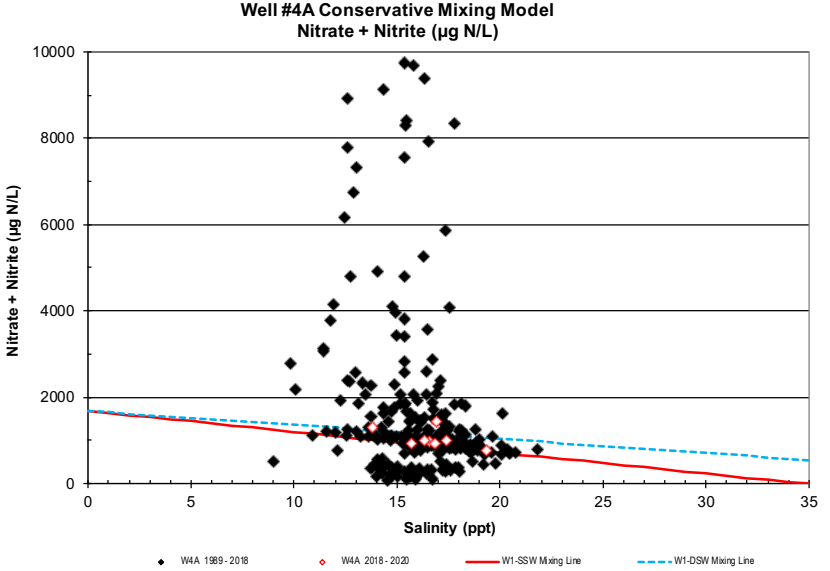
Well 4A

6/27/1989 - 7/21/20







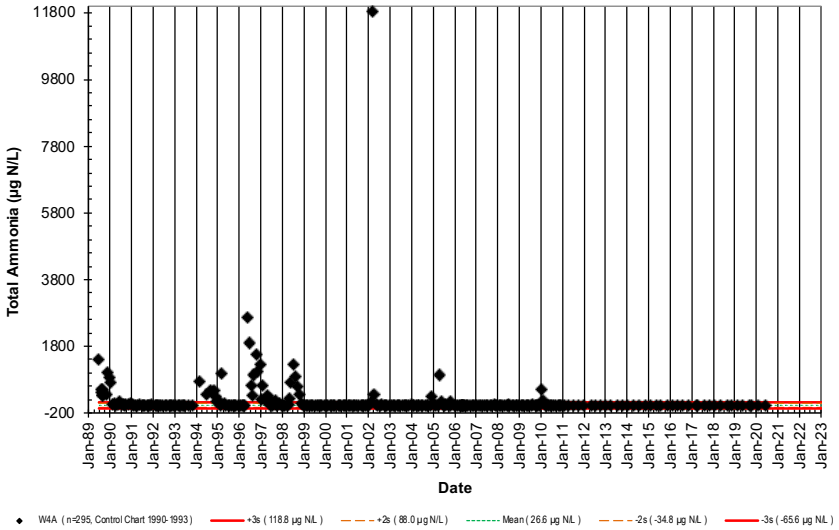


NELHA Water Quality Laboratory

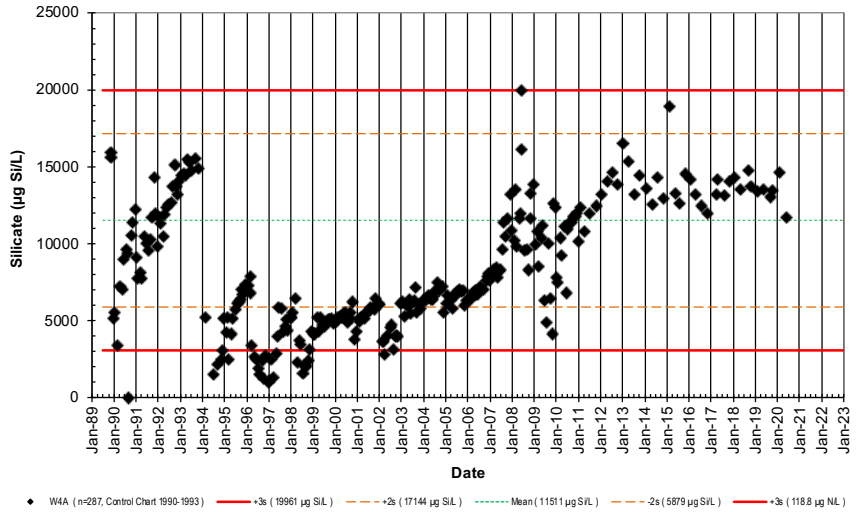
Well 4A

6/27/1989 - 7/21/20

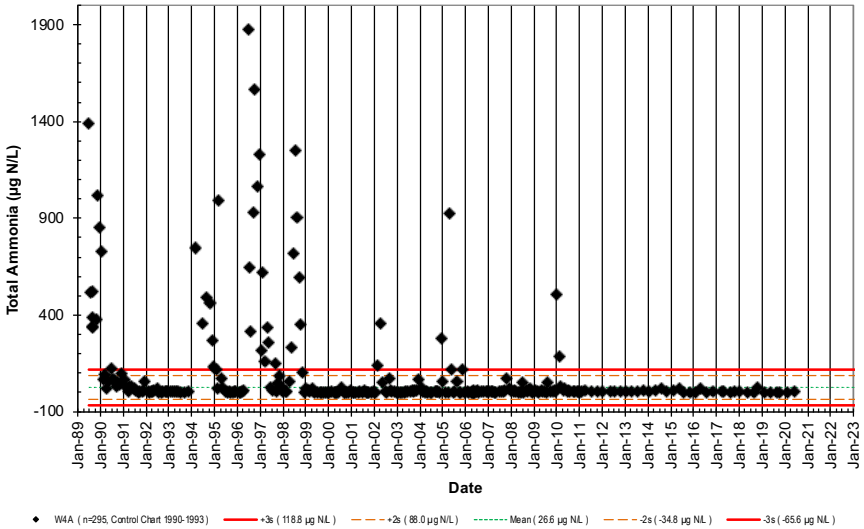
Well #4A
Total Ammonia (µg N/L)



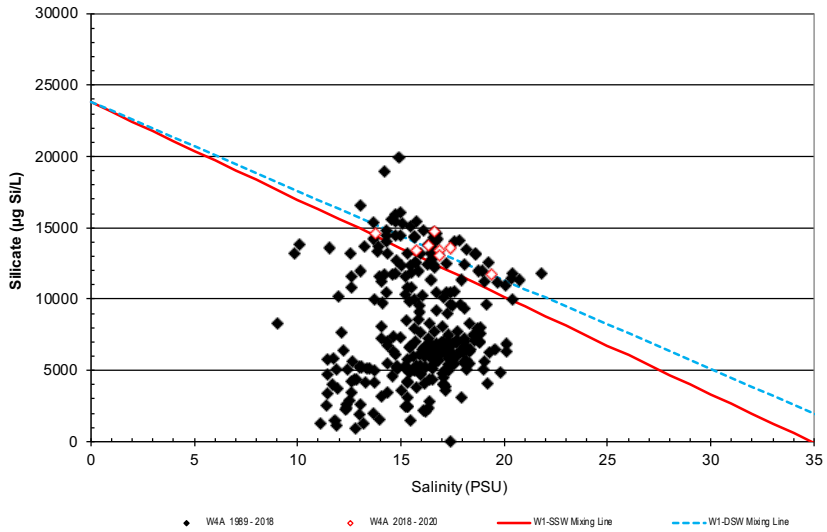
Well #4A
Silicate (µg Si/L)



Well #4A
Total Ammonia (µg N/L)



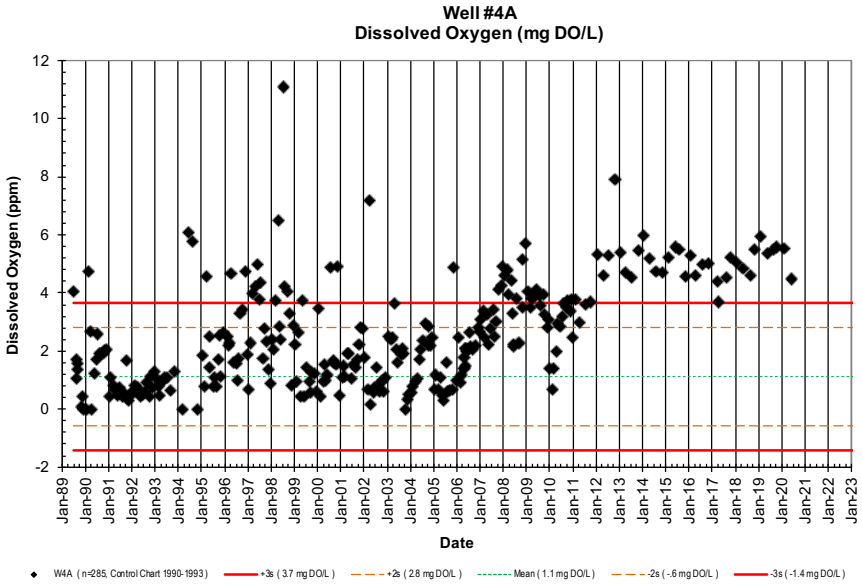
Well #4A Conservative Mixing Model
Silicate (µg Si/L)

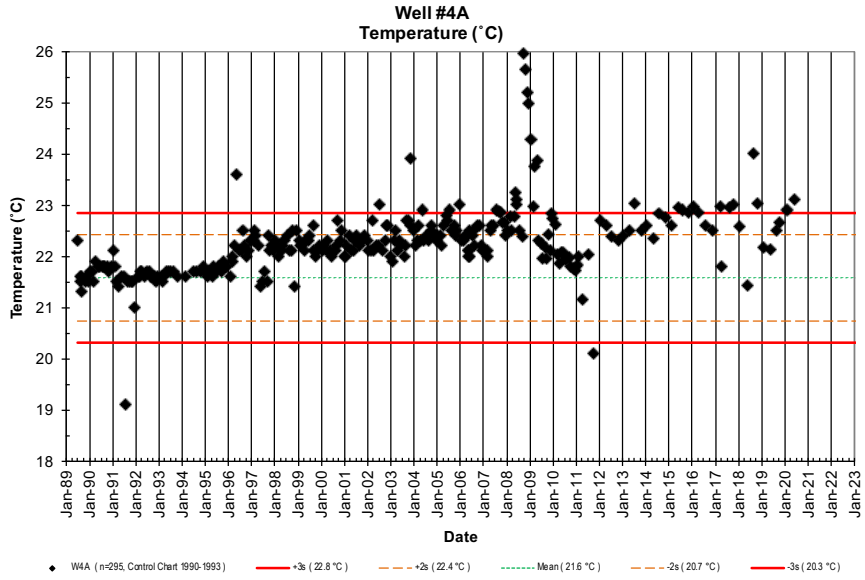


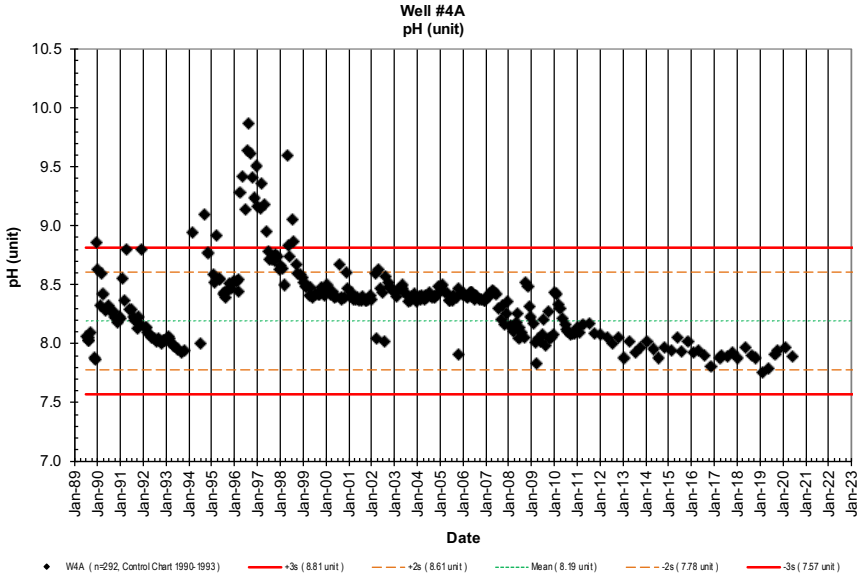
NELHA Water Quality Laboratory

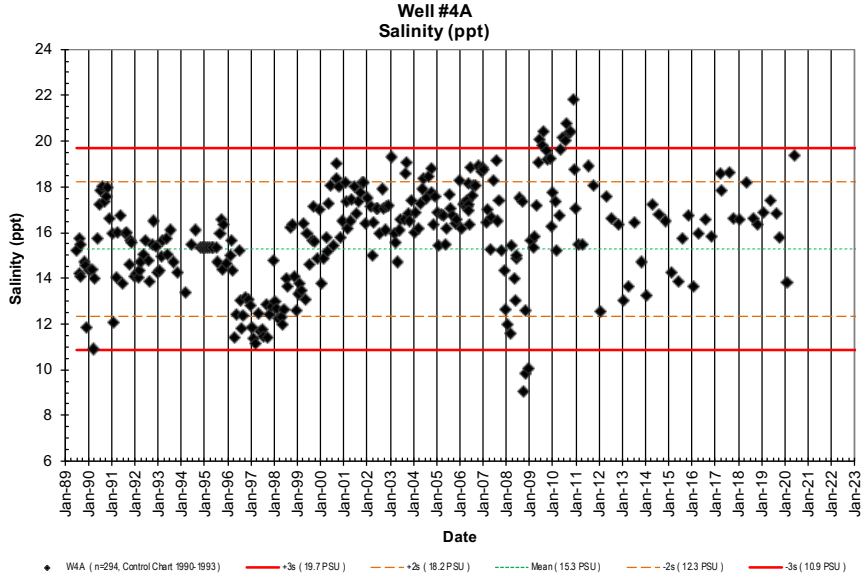
Well 4A

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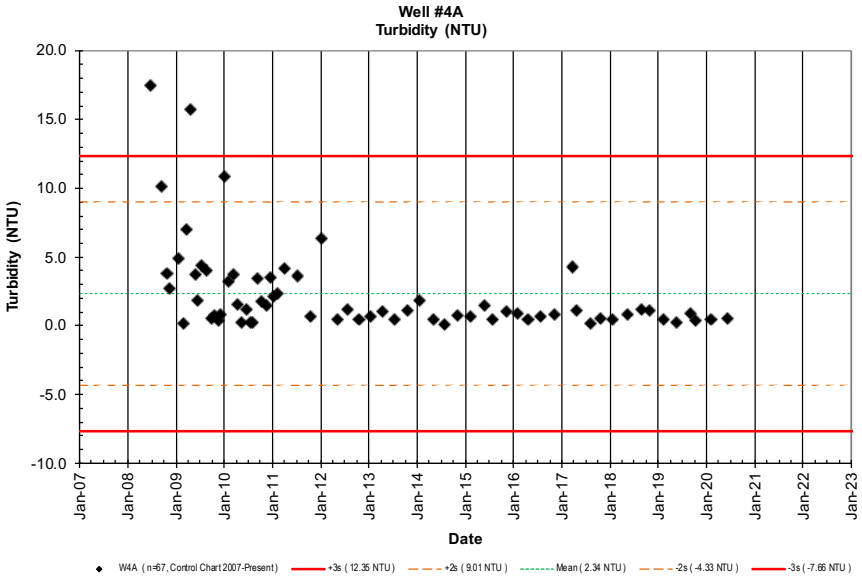


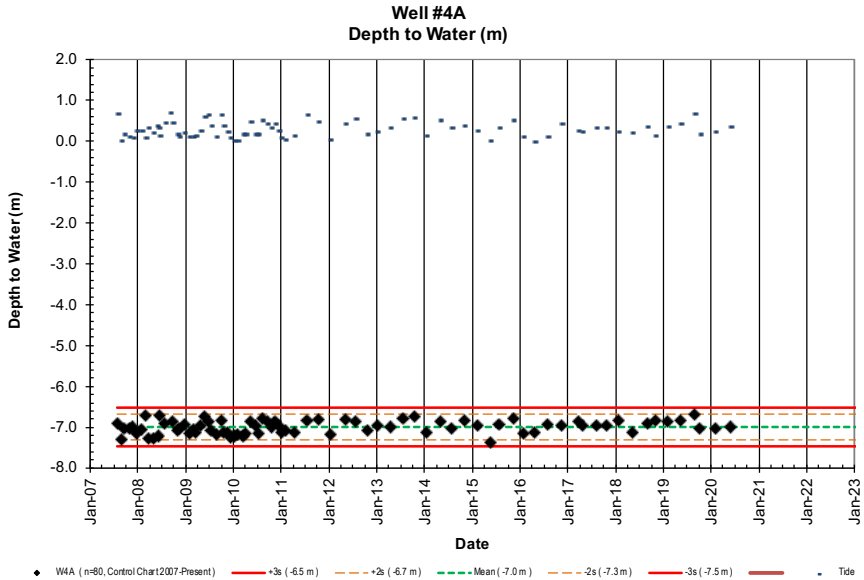


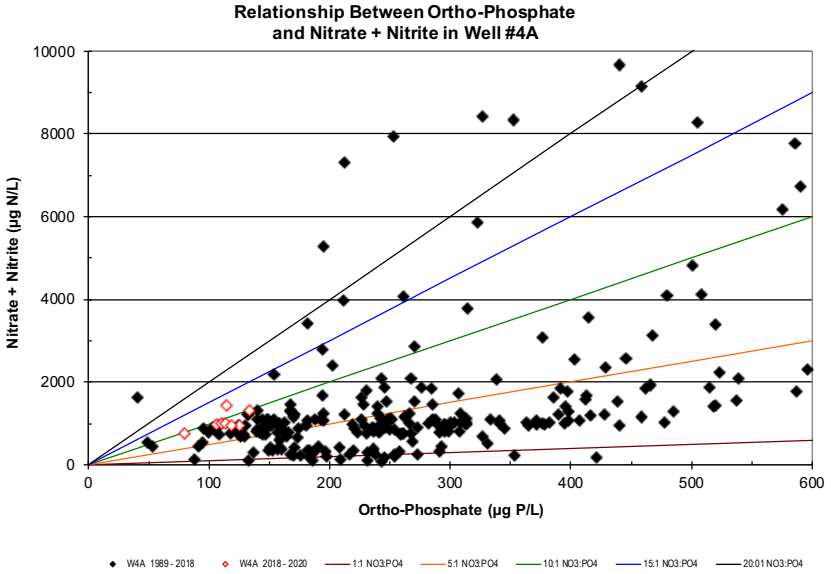
NELHA Water Quality Laboratory

Well 4A

6/27/1989 - 7/21/20







NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	6/23/89				4.64	144	41.6	583	0.64	9.0								20.7	7.607	23.348	12924	6.50		NA	NA
W5	-4.88	8/9/89	1051			4.71	146	41.8	585	0.52	7.3								17.2	7.504	24.491	13556	5.82		<1	NA
W5	-4.88	8/15/89	905			4.77	148	45.0	630	0.60	8.4								19.7	7.520	23.217	12851	5.59		<1	NA
W5	-4.88	8/22/89	855			4.80	149	45.2	633	0.60	8.4								19.5	7.575	24.175	13381	5.03		<1	NA
W5	-4.88	8/28/89	1008			4.87	151	46.0	644	0.43	6.0								19.8	7.537	24.121	13352	5.37		<1	NA
W5	-4.88	8/28/89	1008			4.88	151	45.8	642	0.34	4.8										24.121				NA	NA
W5	-4.88	10/27/89	905			4.64	144	78.5	1100	0.03	0.4	353	9914	4.80	148.67	82.0	1149	0.35	20.1	7.510	24.323	13463	4.33		<1	NA
W5	-4.88	11/15/89	655			4.57	142	82.5	1156	0.10	1.4	336	9437	4.80	148.67	90.4	1266	0.84	20.1	7.431	25.380	14048	5.00		<1	NA
W5	-4.88	12/8/89	1020			4.50	139	79.6	1115	0.10	1.4	320	8987	4.96	153.63	80.0	1121		19.8	7.394	26.086	14439	5.57		<1	NA
W5	-4.88	1/10/90	805			3.62	112	87.8	1230	0.00	0.0	285	8004	3.77	116.77	92.0	1289	0.87	19.8	7.656	25.552	14144	6.56		<1	NA
W5	-4.88	2/13/90	930			4.80	149	100.6	1409	0.28	3.9	325	9128	5.10	157.97	104.0	1457	1.31	19.5	7.572	24.690	13667	7.07		<1	NA
W5	-4.88	3/5/90	1042			4.62	143	117.0	1639	0.17	2.4	346		5.10	157.97	126.0	1765	0.98	19.3	7.662	21.633	11974	5.92		<1	NA
W5	-4.88	4/2/90	946			4.98	154	111.0	1555	0.16	2.2	354	9942	5.06	156.73	114.0	1597	4.46	18.9	7.671	24.539	13583	5.37		<1	NA
W5	-4.88	5/16/90	910			5.14	159	101.0	1415	0.00	0.0	318	8931	5.08	157.35	109.0	1527	0.80	18.7	7.586	24.629	13633	5.89		<1	NA
W5	-4.88	6/17/90	1046			6.09	189	105.0	1471	0.00	0.0	313	8791	6.25	193.59	108.0	1513	2.33	18.7	7.596	25.244	13973	5.00		<1	NA
W5	-4.88	7/12/90	953			6.80	211	120.8	1692	0.00	0.0	324	9100	6.83	211.55	127.1	1780	0.83	18.9	7.568	25.438	14081	5.23		<1	NA
W5	-4.88	8/7/90	932			0.57	18	121.7	1705	0.19	2.7	336	9437	6.29	194.82	119.4	1672	1.27	18.9	7.559	25.056	13869	5.64		<1	NA
W5	-4.88	9/5/90	952			8.99	278	134.2	1880	2.45	34.3			8.99	278.45	137.0	1919	0.68	19.2	7.546	24.904	13785	5.64		<1	NA
W5	-4.88	10/4/90	1010			9.49	294	91.4	1280	0.03	0.4	345	9689	10.90	337.61	97.7	1368	0.93	19.0	7.568	24.702	13673	5.90		<1	NA
W5	-4.88	10/31/90	925			7.21	223	105.2	1474	0.05	0.7	327	9184	7.54	233.54	110.3	1545	0.68	19.3	7.536	25.155	13924	5.84		<1	NA
W5	-4.88	12/7/90	920			7.08	219	104.8	1467	0.16	2.2	356	9998	7.16	221.77	106.6	1493	0.68	19.0	7.538	24.815	13736	6.06		<1	NA
W5	-4.88	1/9/91	700			6.54	203	102.4	1434	0.02	0.3	296	8313	6.55	202.88	103.5	1450	0.88	18.6	7.555	25.996	14389	6.00		<1	NA
W5	-4.88	2/5/91	751			6.32	196	80.3	1125	0.55	7.7	282	7920	6.33	196.06	80.4	1126	1.04	18.5	7.583	24.686	13664	6.39		<1	NA
W5	-4.88	3/6/91	809			5.32	165	90.6	1269	0.03	0.4	268	7527	5.38	166.64	91.4	1280	4.86	16.2	7.480	25.901	14337	6.25		<1	NA
W5	-4.88	4/2/91	813			5.25	163	90.1	1262	0.35	4.9	278	7808	5.30	164.16	92.0	1289	0.96	17.7	7.598	24.745	13697	6.49		1	NA
W5	-4.88	5/21/91	835			5.60	173	52.0	728	0.07	1.0	117	3286	5.62	174.07	54.3	761	0.81	17.5	7.564	25.285	13996	6.77		<1	NA
W5	-4.88	6/25/91	821			4.39	136	76.8	1076	0.16	2.2	334	9381	4.55	140.93	80.0	1121	0.66	17.8	7.620	24.744	13696	7.30		<1	<1
W5	-4.88	7/23/91	915			5.51	171	82.9	1161	0.28	3.9	326	9156	5.99	185.53	83.3	1167	0.66	17.8	7.598	24.611	13623	6.74		<1	<1
W5	-4.88	8/22/91	828			5.21	161	69.5	973	0.15	2.1	350	9830	5.49	170.05	75.6	1059	0.68	18.1	7.574	24.205	13398	6.80		<1	<1
W5	-4.88	9/23/91	835			5.53	171	79.2	1109	0.18	2.5	323	9072	5.58	172.83	83.4	1168	0.70	18.5	7.548	24.486	13554	6.42		<1	<1
W5	-4.88	10/22/91	748			4.88	151	78.0	1093	0.00	0.0	427	11993	5.47	169.43	81.9	1147	0.58	18.7	7.537	24.917	13792	5.14		<1	<1
W5	-4.88	11/19/91	955			5.33	165	86.4	1210	0.28	3.9	360	10111	5.37	166.33	88.6	1241	0.57	18.7	7.546	25.443	14083	5.75		<1	2
W5	-4.88	12/10/91	825			5.24	162	85.0	1191	0.45	6.3	314	8819	5.25	162.61	87.0	1219	0.70	18.4	7.546	26.422	14625	5.89		<1	<1
W5	-4.88	1/28/92	812			5.26	163	71.3	999	0.05	0.7	266	7471	5.37	166.33	86.1	1206	0.96	17.5	7.537	28.175	15596	6.24		<1	15
W5	-4.88	2/18/92	735			4.96	154	74.4	1042	0.00	0.0	267	7499	5.17	160.13	79.9	1119	0.81	17.8	7.509	26.646	14749	6.12		<1	3
W5	-4.88	3/16/92	832			4.96	154	80.0	1121	0.85	11.9	289	8117	5.16	159.82	81.2	1137	0.81	17.6	7.558	26.500	14668	6.22		<1	<1
W5	-4.88	4/7/92	800			4.83	150	74.9	1049	0.65	9.1	326	9156	4.98	154.25	75.3	1055	0.78	17.5	7.586	25.994	14388	6.57		<1	1
W5	-4.88	5/5/92	808			5.17	160	69.4	972	0.21	2.9	307	8622	5.21	161.37	73.0	1022	1.14	17.6	7.573	25.692	14221	6.84		<1	<1
W5	-4.88	6/22/92	755			4.91	152	70.3	985	0.49	6.9	322	9044	5.03	155.80	73.0	1022	0.90	18.0	7.580	25.559	14148	7.10		<1	<1
W5	-4.88	7/28/92	710			5.12	159	73.1	1024	1.32	18.5	289	8117	5.13	158.90	75.5	1057	0.88	18.0	7.571	25.261	13983	7.13		<1	<1
W5	-4.88	8/25/92	734			5.07	157	63.3	887	0.21	2.9	341	9577	5.23	161.99	71.3	999	0.79	18.2	7.595	25.071	13877	7.04		<1	<1
W5	-4.88	9/21/92	752			4.74	147	67.3	943	0.15	2.1	297	8341	4.84	149.91	71.0	995	0.85	18.4	7.626	26.033	14410	6.78		<1	<1
W5	-4.88	10/26/92	759			4.62	143	71.4	1000	0.53	7.4	347	9746	4.68	144.96	75.2	1053	0.76	19.0	7.524	25.603	14172	6.55		<1	<1
W5	-4.88	11/16/92	824			4.60	142	67.3	942	0.49	6.9	313	8791	5.14	159.21	72.8	1020	0.70	18.7	7.632	26.714	14787	6.48		<1	<1
W5	-4.88	12/7/92	822			4.33	134	66.7	934	0.22	3.1	318	8931	4.44	137.52	70.1	982	0.72	18.8	7.630	26.052	14420	6.56		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	1/25/93	808			4.35	135	73.4	1028	0.66	9.2	317	8906	4.42	136.90	79.3	1111	0.80	18.5	7.658	25.739	14247	6.60		<1	<1
W5	-4.88	2/22/93	749			4.45	138	72.5	1016	0.41	5.7	300	8417	4.48	138.76	80.6	1130	0.70	17.6	7.687	26.748	14806	6.48		<1	<1
W5	-4.88	3/15/93	744			4.62	143	71.6	1003	0.21	2.9	307	8622	4.63	143.41	74.0	1037	0.78	17.7	7.710	26.201	14503	6.59		<1	<1
W5	-4.88	4/26/93	754			4.62	143	66.7	934	0.23	3.2	320	8987	4.79	148.36	69.7	976	0.78	17.7	7.707	25.326	14019	6.49		<1	<1
W5	-4.88	5/24/93	810			4.61	143	68.8	963	0.32	4.5	338	9493	4.82	149.29	75.3	1055	0.63	17.8	7.674	24.239	13417	6.50		<1	<1
W5	-4.88	6/21/93	809			4.62	143	62.9	881	0.22	3.1	618	17357	4.94	153.01	77.0	1078	0.56	18.0	7.618	23.863	13209	5.75		<1	<1
W5	-4.88	8/30/93	912			5.12	159	75.3	1055	0.09	1.3	374	10504	5.16	159.82	87.5	1226	0.76	18.5	7.679	22.469	12437	5.97		<1	<1
W5	-4.88	10/25/93	752			5.46	169	72.6	1017	0.22	3.1	353	9914	5.52	170.98	74.8	1047	0.74	18.9	7.691	23.237	12862	4.54		<1	<1
W5	-4.88	2/7/94	952			6.12	190	58.6	821	0.38	5.3	341	9577	6.14	190.18	64.8	908	0.86	19.6	7.654	22.828	12636	4.41		<1	<1
W5	-4.88	6/20/94	742			5.23	162	59.1	828	0.03	0.4	336	9448	5.26	162.92	71.5	1001	0.77	20.2	7.638	23.588	13057	4.26		<1	<1
W5	-4.88	8/22/94	847			6.19	192	54.9	769	0.18	2.5	333	9339	6.27	194.21	65.0	910	0.79	20.8	7.633	24.528	13577	4.23		<1	<1
W5	-4.88	10/24/94	808			4.78	148	65.5	918	0.09	1.3	332	9319	5.28	163.54	70.1	982	0.72	21.5	7.678	23.668	13101	3.81		<1	<1
W5	-4.88	1/23/95	850			5.11	158	61.7	865	0.12	1.7	299	8389	5.20	161.06	64.5	904	0.70	21.2	7.630	24.922	13795	3.89		<1	<1
W5	-4.88	2/13/95	847			5.24	162	71.2	997	0.29	4.1	317	8897	5.25	162.61	79.5	1114	0.73	20.9	7.671	24.311	13457	4.45		<1	<1
W5	-4.88	3/13/95	925			5.25	163	85.8	1202	0.17	2.4	375	10529	5.25	162.61	87.8	1230	0.67	21.0	7.725	24.285	13442	3.76		<1	<1
W5	-4.88	4/24/95	830			5.15	160	86.5	1211	0.18	2.5	309	8690	5.26	162.92	88.7	1242	0.72	21.0	7.704	24.443	13530	4.36		<1	<1
W5	-4.88	5/8/95	828			5.15	160	95.7	1341	0.45	6.3	302	8479	5.17	160.13	98.2	1375	0.64	21.3	7.724	23.328	12913	3.95		<1	<1
W5	-4.88	6/19/95	905			5.08	157	86.1	1206	0.30	4.2	311	8746	5.11	158.28	90.0	1261	0.60	21.1	7.683	23.584	13054	4.04		<1	<1
W5	-4.88	7/24/95	833			5.02	155	83.3	1167	0.29	4.1	335	9417	5.11	158.28	87.9	1231	0.68	21.4	7.695	22.147	12259	4.29		<1	<1
W5	-4.88	8/21/95	924			4.94	153	71.2	997	0.38	5.3	334	9375	5.00	154.87	77.4	1084	0.62	21.6	7.692	23.008	12736	4.29		<1	<1
W5	-4.88	9/11/95	746			4.82	149	69.3	970	0.26	3.6	333	9347	4.87	150.84	72.5	1015	0.56	21.8	7.743	22.784	12612	5.16		<1	<1
W5	-4.88	10/16/95	811			4.83	150	67.6	947	0.36	5.0	326	9161	4.87	150.84	70.8	992	0.87	22.1	7.751	23.322	12909	4.40		<1	45
W5	-4.88	11/6/95	751			4.92	152	71.7	1005	0.22	3.1	325	9125	4.94	153.01	77.0	1078	0.75	21.9	7.764	23.264	12877	4.18		<1	348
W5	-4.88	12/4/95	815			4.94	153	72.1	1010	0.14	2.0	329	9251	5.01	155.18	75.1	1052	0.63	21.9	7.756	23.240	12864	4.36		<1	1
W5	-4.88	1/29/96	918			5.33	165	76.6	1073	0.07	1.0	323	9080	5.35	165.71	89.0	1246	0.74	21.8	7.759	23.558	13040	5.36		1	<1
W5	-4.88	2/26/96	900			5.08	157	92.0	1288	0.30	4.2	332	9337	5.09	157.66	95.7	1340	0.68	22.0	7.752	23.631	13080	4.95		<1	<1
W5	-4.88	3/5/96	825			5.26	163	100.0	1401	0.22	3.1	308	8652	5.29	163.85	105.3	1475	0.82	21.7	7.748	23.735	13138	4.93		<1	<1
W5	-4.88	4/1/96	846			5.31	164	115.8	1623	0.41	5.7	323	9068	5.32	164.78	121.1	1697	0.94	22.2	7.790	22.863	12655	4.44		<1	<1
W5	-4.88	5/8/96	845			5.85	181	144.3	2021	0.13	1.8	321	9001	5.89	182.44		0	0.80	22.3	7.827	22.329	12360	4.14		<1	<1
W5	-4.88	6/17/96	823			5.88	182	126.7	1775	0.34	4.8	329	9226	5.91	183.05		0	0.86	22.8	7.831	23.473	12993	4.53		<1	<1
W5	-4.88	7/16/96	832			6.18	191	253.5	3551	1370	19189	298	8366	6.03	186.77	1400.0	19609	0.83	23.4	8.251	23.525	13022	3.82		<1	<1
W5	-4.88	8/5/96	927			6.34	196	255.1	3573	86	1205	302	8487	6.26	193.90	244.8	3428	0.90	22.9	7.735	23.653	13093	2.10		<1	<1
W5	-4.88	9/3/96	916			5.94	184	143.8	2014	0.57	8.0	342	9607	5.96	184.60	146.5	2052	0.85	23.1	7.728	23.744	13143	2.21		<1	<1
W5	-4.88	10/8/96	907			5.85	181	112.3	1572	0.20	2.8	330	9270	6.21	192.35	120.0	1681	0.91	22.7	7.725	24.750	13700	4.20		<1	<1
W5	-4.88	11/4/96	908			5.94	184	100.4	1406	0.27	3.8	293	8235	6.03	186.77	105.6	1479	0.79	23.2	7.716	25.061	13872	4.46		<1	<1
W5	-4.88	12/16/96	851			5.95	184	102.4	1434	0.32	4.5	305	8565	5.97	184.91	103.0	1442	0.74	22.8	7.831	25.008	13843	4.78		<1	<1
W5	-4.88	1/13/97	922			6.02	186	145	2031	0.05	0.7	280	7853	6.32	195.75	147.0	2059	0.69	23.2	7.768	24.472	13546	4.78		<1	<1
W5	-4.88	2/10/97	829			6.40	198	216	3030	0.20	2.8	266	7462	6.50	201.33	218.0	3053	1.19	22.7	7.838	25.241	13972	3.81		<1	<1
W5	-4.88	3/10/97	847			8.32	258	467	6537	0.03	0.4	285	8004	9.01	279.07	210.1	2943	1.33	23.4	8.016	23.878	13217	2.70		<1	<1
W5	-4.88	4/22/97	927			8.02	248	644	9018	0.23	3.2	273	7679	8.27	256.15	850.1	11907	1.65	23.8	8.128	23.214	12850	1.17		<1	<1
W5	-4.88	5/27/97	853			8.33	258	433	6062	0.14	2.0	270	7580	8.74	270.71	478.7	6705	1.11	22.7	8.060	24.551	13590	2.74		<1	<1
W5	-4.88	6/16/97	900			8.99	278	290	4055	0.29	4.1	296	8310	8.99	278.45	323.4	4530	0.92	22.8	8.067	24.231	13412	3.14		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	7/14/97	912			9.00	279	236	3303	0.34	4.8	266	7471	9.04	280.00	381.0	5337	1.52	23.3	8.021	24.222	13408	3.21		<1	<1
W5	-4.88	8/25/97	857			8.56	265	195	2726	0.24	3.4	267	7504	8.56	265.14	212.9	2982	0.71	23.7	8.033	25.335	14024	2.44		<1	<1
W5	-4.88	9/22/97	822			7.78	241	148	2073	0.12	1.7	276	7745	7.84	242.83	152.1	2130	0.70	23.9	8.010	24.735	13691	1.84		<1	<1
W5	-4.88	10/14/97	859			7.54	234	143	2009	0.30	4.2	303	8507	7.61	235.71	166.8	2336	0.68	24.1	7.984	23.579	13052	2.03		<1	<1
W5	-4.88	11/3/97	831			7.02	217	144.8	2028	0.16	2.2	279	7841	7.25	224.56	172.6	2418	0.78	24.0	7.976	25.150	13921	2.39		<1	<1
W5	-4.88	12/15/97	923			7.70	238	115.6	1619	0.09	1.3	284	7976	7.82	242.21	137.4	1925	0.81	23.8	7.951	25.064	13874	2.37		<1	<1
W5	-4.88	1/5/98	1018			7.25	225	111.1	1557	0.05	0.7	256	7181	7.33	227.04	120.1	1682	0.76	23.7	7.919	26.327	14573	1.57		<1	<1
W5	-4.88	2/2/98	916			7.01	217	100.2	1403	0.06	0.8	244	6856	7.24	224.25	120.8	1692	0.82	22.6	7.902	27.027	14960	2.04		<1	<1
W5	-4.88	3/9/98	926			8.49	263	98.6	1381	0.12	1.7	263	7378	8.59	266.06	100.7	1410	0.70	22.6	7.752	25.366	14041	2.33		<1	<1
W5	-4.88	4/13/98	835			8.33	258	91	1280	0.13	1.8	259	7260	8.57	265.45	97.4	1365	0.74	22.1	7.763	26.507	14672	3.05		<1	<1
W5	-4.88	5/11/98	901			8.02	248	111	1556	0.27	3.8	262	7350	8.17	253.06	119.2	1669	0.73	22.3	7.784	26.054	14422	4.05		<1	<1
W5	-4.88	6/1/98	858			7.86	243	107.6	1506	0.11	1.5	254	7145	8.10	250.89	112.2	1572	0.74	22.2	7.762	25.931	14353	4.50		<1	<1
W5	-4.88	7/13/98	908			7.47	231	96	1342	0.05	0.7	269	7552	7.82	242.21	99	1391	0.75	22.2	7.721	25.874	14322	4.00		<1	<1
W5	-4.88	8/10/98	930			7.26	225	107.0	1499	0.17	2.4	270	7583	7.52	232.92	109.2	1530	0.67	22.5	7.705	26.539	14690	4.27		<1	<1
W5	-4.88	9/14/98	914			7.01	217	97.1	1360	0.12	1.7	250	7024	7.28	225.49	100	1399	0.81	22.2	7.706	27.710	15338	4.23		<1	<1
W5	-4.88	10/12/98	831			7.00	217	115.8	1622	0.03	0.4	249	6996	7.10	219.91	121	1693	0.80	22.4	7.690	27.672	15317	4.43		<1	<1
W5	-4.88	11/2/98	852			6.88	213	100.5	1408	0.04	0.6	259	7285	6.99	216.51	112.0	1569	1.06	22.3	7.719	26.795	14832	3.93		<1	<1
W5	-4.88	12/15/98	850			6.53	202	84.1	1178	0.09	1.3	266	7465	6.70	207.52	86.3	1209	0.92	22.8	7.696	26.545	14693	3.51		<1	<1
W5	-4.88	1/11/99	908			6.08	188	91	1272	0.18	2.5	252	7080	6.27	194.21	94	1319	0.96	22.9	7.646	27.593	15273	2.57		<1	<1
W5	-4.88	2/2/99	901			6.59	204	105	1474	0.25	3.5	261	7342	6.73	208.45	121	1691	0.93	23.1	7.664	26.634	14743	3.54		<1	<1
W5	-4.88	3/1/99	903			6.58	204	102.6	1437	0.05	0.7	265	7451	6.77	209.69	105.8	1482	0.94	23.1	7.665	26.208	14507	3.24		<1	<1
W5	-4.88	4/5/99	905			5.95	184	83.4	1168	0.06	0.8	254	7145	6.09	188.63	86.1	1206	1.15	23.0	7.664	27.353	15141	3.49		<1	<1
W5	-4.88	5/3/99	903			6.04	187	111	1558	0.15	2.1	262	7367	6.20	192.04	124	1742	0.87	23.1	7.670	27.089	14994	4.05		<1	<1
W5	-4.88	6/1/99	857			5.66	175	240	3362	140	1961	251	7049	5.90	182.75	336	4706	0.94	22.9	7.572	27.727	15348	0.49		<1	<1
W5	-4.88	7/14/99	902			5.64	175	156	2185	0.02	0.3	269	7561	5.68	175.93	168	2355	0.90	23.3	7.615	26.400	14613	2.10		<1	<1
W5	-4.88	8/23/99	925			6.02	186	99.3	1391	0.11	1.5	272	7639	6.19	191.73	115	1605	0.90	23.7	7.711	25.906	14340	3.31		<1	<1
W5	-4.88	9/7/99	914			6.01	186	95.7	1340	0.07	1.0	256	7193	6.33	196.06	112	1572	0.85	23.2	7.673	26.489	14662	3.42		<1	<1
W5	-4.88	10/5/99	908			5.16	160	187	2618	21.0	293.9	266	7457	5.09	157.66	221	3095	0.77	23.5	7.577	26.459	14646	0.77		<1	<1
W5	-4.88	11/1/99	928			5.48	170	110	1542	0.08	1.1	254	7131	5.58	172.83	115	1611	0.70	23.2	7.667	26.605	14727	3.64		<1	<1
W5	-4.88	12/14/99	919			5.68	176	94.6	1325	0.08	1.1	245	6873	5.83	180.58	98.2	1375	0.95	23.7	7.575	27.936	15463	1.83		<1	<1
W5	-4.88	1/10/00	948			5.51	171	88.8	1244	0.22	3.1	250	7027	5.55	171.90	94.3	1321	0.89	23.7	7.609	27.338	15132	2.55		<1	<1
W5	-4.88	2/7/00	946			5.59	173	165	2311	147	2059.0	246	6917	5.45	168.81	294	4118	0.86	23.6	7.601	26.125	14461	0.64		<1	<1
W5	-4.88	3/21/00	948			5.61	174	94.0	1317	0.09	1.3	261	7333	5.40	167.26	98.0	1373	0.86	23.1	7.638	25.816	14290	2.51		<1	<1
W5	-4.88	4/10/00	1012			5.70	177	86.6	1213	0.07	1.0	256	7179	5.44	168.50	91.5	1282	0.79	23.0	7.644	25.977	14379	2.00		<1	1
W5	-4.88	5/15/00	925			5.67	176	80.6	1129	0.21	2.9	279	7839	5.69	176.24	85.2	1193	0.79	23.8	7.653	25.289	13998	2.23		<1	<1
W5	-4.88	6/5/00	926			5.36	166	69.6	975	0.04	0.6	278	7802	5.38	166.64	76.9	1077	0.88	23.3	7.621	25.585	14162	2.02		<1	<1
W5	-4.88	7/26/00	955			5.47	169	76.4	1070	0.12	1.7	290	8148	5.68	175.93	81.5	1142	0.77	23.9	7.622	25.187	13942	2.12		<1	<1
W5	-4.88	8/29/00	853			5.43	168	85.2	1193	0.11	1.5	301	8457	5.50	170.36	87.3	1223	0.707	24.3	7.616	24.412	13513	3.06		<1	<1
W5	-4.88	9/5/00	924			5.60	173	86.0	1205	0.08	1.1	282	7923	5.81	179.96	92.3	1293	0.75	24.0	7.621	25.765	14262	1.96		<1	<1
W5	-4.88	10/24/00	928			5.52	171	91.2	1277	0.19	2.7	318	8940	5.74	177.79	95.6	1339	0.71	24.2	7.589	24.808	13732	2.06		<1	<1
W5	-4.88	11/13/00	903			4.87	151	163	2279	0.27	3.8	328	9223	5.13	158.90	171	2398	1.00	24.3	7.595	22.769	12603	2.45		<1	<1
W5	-4.88	12/18/00	912			5.39	167	120	1678	0.16	2.2	285	8007	5.40	167.26	123	1723	0.91	24.2	7.551	25.776	14268	1.16		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	1/22/01	906			4.94	153	93.4	1308	0.04	0.6	254	7134	5.13	158.90	96.5	1352	0.81	24.1	7.544	27.913	15451	1.14		<1	<1
W5	-4.88	2/5/01	931			4.90	152	90.6	1269	0.10	1.4	260	7288	5.02	155.49	95.2	1333	0.78	24.0	7.556	27.332	15129	0.99		TNTC	5
W5	-4.88	3/5/01	923			4.82	149	91.2	1277	0.02	0.3	254	7120	4.96	153.63	94.0	1317	0.75	24.0	7.523	26.889	14884	1.28		1	<1
W5	-4.88	4/17/01	915			5.04	156	103	1440	0.07	1.0	260	7308	5.11	158.28	105	1472	0.76	23.7	7.546	25.642	14194	2.19		<1	<1
W5	-4.88	5/15/01	846			5.18	160	101	1413	0.14	2.0	285	8010	5.10	157.97	105	1474	0.66	24.0	7.601	24.688	13665	2.68		<1	<1
W5	-4.88	6/12/01	859			5.24	162	96.6	1352	0.02	0.3	285	8002	5.09	157.66	99.3	1391	0.74	23.4	7.594	24.878	13771	2.55		<1	<1
W5	-4.88	7/23/01	904			4.97	154	90.0	1261	0.03	0.4	278	7816	4.98	154.25	97.5	1366	0.72	23.5	7.566	25.725	14239	2.54		<1	<1
W5	-4.88	8/8/01	858			5.01	155	86.6	1213	0.03	0.4	303	8496	5.04	156.11	89.8	1258	0.74	23.2	7.600	25.136	13913	2.31		<1	<1
W5	-4.88	9/19/01	911			5.34	165	96.7	1354	0.05	0.7	320	8996	5.60	173.45	103	1438	0.83	23.9	7.583	25.306	14008	2.16		<1	<1
W5	-4.88	10/24/01	844			5.06	157	93.2	1305	0.06	0.8	288	8089	5.44	168.50	101	1415	0.74	24.4	7.608	25.717	14235	2.18		<1	<1
W5	-4.88	11/7/01	901			5.32	165	100	1403	0.03	0.4	270	7580	5.40	167.26	121	1689	0.75	23.9	7.576	26.307	14562	2.46		<1	<1
W5	-4.88	12/19/01	920			5.16	160	112	1574	0.16	2.2	267	7496	5.06	156.73	149	2090	0.75	24.1	7.577	26.103	14449	2.33		<1	<1
W5	-4.88	1/9/02	914			5.21	161	104	1458	0.20	2.8	248	6965	5.34	165.40	107	1499	0.73	22.9	7.600	27.819	15399	1.75		<1	<1
W5	-4.88	2/19/02	1030			5.40	167	102	1427	0.05	0.7	264	7401	5.58	172.83	108	1514	0.67	23.5	7.649	25.159	13926	2.14		<1	<1
W5	-4.88	3/20/02	928			5.32	165	99.7	1397	0.18	2.5	275	7712	5.54	171.59	104	1450	0.81	22.9	7.765	25.654	14200	2.43		<1	<1
W5	-4.88	4/8/02	1018			5.38	167	102	1424	0.07	1.0	252	7066	5.58	172.83	105	1471	0.71	23.1	7.638	26.302	14559	2.65		<1	<1
W5	-4.88	5/29/02	1006			6.34	196	109	1532	0.11	1.5	276	7757	6.50	201.33	114	1600	0.90	23.4	7.774	24.305	13453	2.85		<1	<1
W5	-4.88	6/17/02	939			6.90	214	91.9	1288	0.01	0.1	259	7269	7.16	221.77	96.1	1345	0.74	23.0	7.790	25.298	14003	2.07		<1	<1
W5	-4.88	7/15/02	935			7.06	219	87.2	1222	0.09	1.3	275	7735	7.32	226.73	95.3	1335	0.81	24.1	7.716	24.938	13804	2.67		<1	<1
W5	-4.88	8/20/02	934			6.68	207	70.1	982	0.28	3.9	301	8454	6.94	214.96	67.1	939	0.75	24.3	7.740	24.551	13590	2.83		<1	<1
W5	-4.88	9/23/02	951			6.26	194	68.4	959	0.21	2.9	287	8055	6.46	200.09	63.9	895	0.64	24.5	7.747	25.346	14030	2.37		<1	5
W5	-4.88	10/14/02	914			5.86	182	88.5	1240	0.01	0.1	296	8308	6.16	190.80	84.3	1181	0.77	24.8	7.728	24.265	13431	5.46		1	<1
W5	-4.88	11/4/02	924			5.62	174	99.1	1388	0.03	0.4	282	7920	5.92	183.36	97.1	1360	0.97	25.0	7.733	24.688	13665	2.28		<1	<1
W5	-4.88	12/17/02	945			5.89	182	75.9	1063	0.10	1.4	228	6415	6.24	193.28	80.6	1130	0.79	24.3	7.867	28.210	15615	3.33		<1	<1
W5	-4.88	1/21/03	1015			5.10	158	83.7	1172	0.05	0.7	194	5449	5.38	166.64	88.3	1237	0.99	24.1	7.733	30.049	16633	3.39		<1	<1
W5	-4.88	2/12/03	940			6.02	186	91.5	1282	0.03	0.4	207	5808	6.26	193.90	108	1507	0.87	23.9	7.737	28.922	16009	1.90		<1	<1
W5	-4.88	3/19/03	943			6.99	217	127	1775	0.06	0.8	227	6370	7.24	224.25	148	2066	0.79	23.6	7.731	27.047	14971	2.54		<1	2
W5	-4.88	4/28/03	925			6.71	208	126	1761	0.04	0.6	245	6884	7.24	224.25	151	2121	1.05	23.7	7.786	26.153	14476	3.69		<1	7
W5	-4.88	5/12/03	903			6.71	208	111	1559	0.05	0.7	248	6962	7.11	220.22	118	1647	0.92	23.7	7.808	26.489	14662	3.87		2	1
W5	-4.88	6/3/03	918			6.71	208	105	1471	0.43	6.0	249	6982	6.86	212.48	116	1629	0.98	23.7	7.812	25.955	14367	3.97		<1	<1
W5	-4.88	7/29/03	935			7.46	231	80.4	1126	0.55	7.7	256	7198	7.70	238.50	94.1	1318		24.6	7.768	25.494	14112	3.83		<1	TNTC
W5	-4.88	8/26/03	937			9.00	279	91.2	1277	0.21	2.9	261	7336	9.39	290.84	105	1465		25.2	7.861	24.938	13804	3.26		<1	42
W5	-4.88	9/15/03	921			8.83	273	87.2	1221	0.07	1.0	243	6830	9.54	295.49	97.2	1361		24.4	7.782	26.019	14402	2.70		<1	<1
W5	-4.88	10/6/03	903			8.48	263	81.0	1134	0.46	6.4	252	7083	8.96	277.52	89.3	1250		23.9	7.768	25.964	14372	NA		<1	5
W5	-4.88	10/28/03	947			7.90	245	80.0	1121	0.10	1.4	250	7021	8.56	265.14	89.3	1251		24.2	7.762	26.220	14513			<1	153
W5	-4.88	11/14/03	1301																25.2				3.66			
W5	-4.88	12/15/03	909			7.78	241	94.6	1324	0.46	6.4	231	6482	8.06	249.65	97.3	1363		23.9	7.737	27.229	15072	2.86		<1	6
W5	-4.88	1/26/04	914			7.02	217	116	1628	0.10	1.4	208	5845	7.42	229.83	118	1656		23.0	7.733	27.723	15345	3.00		<1	15
W5	-4.88	2/5/04	913			7.44	230	127	1780	0.22	3.1	229	6418	7.56	234.16	141	1968		23.6	7.764	26.524	14682	3.65		<1	184
W5	-4.88	3/2/04	918			7.18	222	148	2072	0.41	5.7	223	6274	7.10	219.91	159	2224		23.2	7.803	25.035	13858	4.07		<1	1
W5	-4.88	4/20/04	912			8.22	255	146	2046	0.18	2.5	228	6403	8.32	257.70	148	2079		22.7	7.771	25.061	13872	2.85		<1	1
W5	-4.88	5/11/04	828			8.80	273	138	1939	0.32	4.5	240	6741	10.1	314.07	151	2116		23.6	7.767	23.99	13279	2.87		<1	<1
W5	-4.88	6/2/04	847			8.70	269	133	1860	0.23	3.2	253	7092	8.94	276.91	140	1962		24.1	7.735	22.88	12665	2.44		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	7/14/04	919				8.60	266	127	1782	0.23	3.2	268	7513	8.56	265.14	146	2041		23.7	7.720	23.72	13130	2.75		<1	<1
W5	-4.88	8/23/04	911				8.50	263	125	1745	0.27	3.8	259	7280	8.44	261.42	130	1818		24.3	7.666	24.31	13456	1.87		<1	<1
W5	-4.88	9/2/04	922				8.42	261	114	1590	0.15	2.1	267	7490	8.50	263.28	118	1658		24.3	7.715	24.08	13329	2.36		<1	<1
W5	-4.88	10/4/04	850				8.68	269	111	1551	0.17	2.4	264	7415	9.16	283.72	117	1636		25.1	7.660	24.53	13578	2.14		<1	<1
W5	-4.88	11/23/04	845				8.62	267	92.9	1301	0.09	1.3	277	7788	9.06	280.62	120	1681		24.3	7.664	24.05	13312	1.69		<1	<1
W5	-4.88	12/8/04	845				8.56	265	94.6	1325	0.08	1.1	278	7799	8.84	273.81	125	1747		24.2	7.644	24.03	13301	1.38		<1	<1
W5	-4.88	1/18/05	858				7.94	246	84.1	1178	0.09	1.3	237	6656	8.16	252.75	88.3	1236		23.7	7.616	27.212	15063	0.89		<1	<1
W5	-4.88	2/10/05	845				8.18	253	102	1424	0.25	3.5	243	6814	8.50	263.28	138	1932		23.6	7.689	26.065	14428	1.20		<1	1
W5	-4.88	3/22/05	852				10.1	312	124	1730	0.18	2.5	239	6707	10.38	321.51	142	1992	1.59	23.5	7.783	26.164	14482	0.92		<1	260
W5	-4.88	4/20/05	843				9.36	290	94.5	1324	0.15	2.1	230	6454	9.56	296.11	96.2	1347		23.4	7.863	25.702	14227	2.06		<1	<1
W5	-4.88	5/25/05	905				8.44	261	86.8	1216	0.15	2.1	244	6847	8.74	270.71	95.8	1342		21.9	7.866	24.832	13745	3.44		<1	<1
W5	-4.88	6/14/05	903				7.56	234	74.4	1042	1.57	22.0	234	6578	7.84	242.83	84.8	1188		23.6	7.842	25.733	14244	3.73		6	TNTC>5,000
W5	-4.88	7/19/05	858				6.86	212	83.8	1174	0.12	1.7	239	6698	7.18	222.39	88.0	1233	0.67	24.3	7.844	24.148	13367	3.71		<1	2
W5	-4.88	8/3/05	928				6.90	214	85.2	1193	0.10	1.4	240	6732	7.30	226.11	89.2	1249	0.69	24.6	7.870	24.811	13734	3.81		<1	2
W5	-4.88	9/22/05	851				6.28	195	64.1	897	0.12	1.7	216	6052	6.60	204.43	69.8	978	0.62	25.8	7.823	28.080	15543	3.31		<1	<1
W5	-4.88	10/19/05	905				6.40	198	76.9	1077	0.14	2.0	213	5991	6.60	204.43	85.1	1192		26.2	7.738	28.205	15612	2.79		<1	<1
W5	-4.88	11/8/05	850				6.70	208	75.1	1052	0.07	1.0	213	5974	6.94	214.96	84.0	1177		25.9	7.658	28.261	15643	1.78		<1	2512
W5	-4.88	12/22/05	824				5.58	173	72.1	1010	0.33	4.6	168	4704	5.82	180.27	75.4	1056		25.2	7.575	30.395	16824	1.45		53	2184
W5	-4.88	1/31/06	849				5.68	176	70.0	980	0.19	2.7	179	5036	5.92	183.36	74.8	1047		24.6	7.603	29.854	16525	2.10		<1	<1
W5	-4.88	2/16/06	844				5.66	175	67.4	944	0.22	3.1	171	4797	6.26	193.90	70.5	987	0.61	24.7	7.577	30.050	16633	1.93		<1	<1
W5	-4.88	3/22/06	835				5.52	171	72.3	1013	0.27	3.8	185	5196	5.72	177.17	76.6	1073	0.59	23.9	7.615	29.625	16398	3.14		<1	<1
W5	-4.88	4/27/06	915				5.47	169	74.3	1041	0.08	1.1	184	5168	5.66	175.31	72.3	1012	0.57	24.1	7.649	28.803	15943	4.00		<1	<1
W5	-4.88	5/24/06	937				5.11	158	67.8	950	0.06	0.8	181	5083	5.29	163.85	65.1	911	0.75	24.3	7.613	29.200	16163	3.13		<1	<1
W5	-4.88	6/28/06	922				5.27	163	61.9	867	0.18	2.5	189	5308	5.59	173.14	60.1	841	0.55	24.2	7.664	29.044	16077	2.21		<1	<1
W5	-4.88	7/19/06	900				5.17	160	61.4	860	0.25	3.5	188	5280	5.39	166.95	52.2	731	0.60	24.5	7.603	29.373	16259	3.15		<1	2
W5	-4.88	8/9/06	922				5.20	161	56.8	796	0.12	1.7	197	5533	5.39	166.95	52.1	729	0.68	24.6	7.64	28.993	16048	2.33		<1	<1
W5	-4.88	9/20/06	933				5.16	160	59.9	839	0.33	4.6	190	5336	5.42	167.88	56.0	784	0.65	25.4	7.66	29.446	16299	1.21		<1	3
W5	-4.88	10/25/06	928				5.43	168	51.2	717	0.34	4.8	184	5168	5.59	173.14	48.7	682	0.72	25.4	7.593	29.720	16451	1.24		1	38
W5	-4.88	11/29/06	925				5.43	168	53.3	747	0.23	3.2	173	4859	5.74	177.79	48.3	676	0.64	25.5	7.546	30.574	16924	0.64		<1	<1
W5	-4.88	12/13/06	929				5.30	164	56.7	794	0.24	3.4	168	4718	5.49	170.05	53.1	744	0.65	25.5	7.548	30.708	16998	1.00		<1	28
W5	-4.88	1/10/07	915				5.21	161	61.0	854	0.32	4.5	151	4241	5.45	168.81	63.4	888	0.60	25.1	7.653	31.159	17247	1.29		<1	7
W5	-4.88	2/21/07	955				4.87	151	72.1	1010	0.43	6.0	150	4213	5.15	159.51	78.9	1105	0.67	24.3	7.555	30.244	16741	2.58		<1	<1
W5	-4.88	3/7/07	946				4.87	151	75.8	1062	0.34	4.8	156	4381	5.05	156.42	78.9	1106	0.68	24.3	7.628	30.155	16692	2.24		<1	1
W5	-4.88	4/19/07	925				5.12	159	77.0	1079	0.19	2.7	168	4718	5.22	161.68	72.4	1013	0.54	24.3	7.632	29.543	16353	2.63		2	55
W5	-4.88	5/2/07	932				5.19	161	75.4	1056	0.28	3.9	174	4887	5.46	169.12	72.5	1015	0.54	23.4	7.585	29.395	16271	2.79		1	1
W5	-4.88	6/20/07	936				5.20	161	76.9	1077	0.18	2.5	182	5112	5.57	172.52		0		24.2	7.651	28.923	16010	3.28		<1	37
W5	-4.88	7/23/07	1102	-2.74	0.52	Flood	3.52	109	41.8	585	0.04	0.5	148	4156	3.75	116.1	41.7	584.3		22.6	7.52	31.68	17536	2.60			
W5	-4.88	8/27/07	1340	-3.22	0.52	Flood	5.62	174	76.4	1071	0.07	1.0	152	4268	5.22	161.6	76.3	1068.4		24.8	7.55	29.51	16335	3.35			
W5	-4.88	9/18/07	1536	-3.30	0.24	Ebb	5.44	169	75.3	1055	0.50	7.0	176	4951	5.51	170.6	75.2	1053.8		25.0	7.50	29.34	16240	2.33			
W5	-4.88	10/23/07	1352	-3.12	0.52	High	5.82	180	80.1	1121	0.02	0.3	173	4866	5.76	178.4	75.3	1054.2		24.4	7.47	27.85	15416	0.72			
W5	-4.88	11/20/07	1432	-3.35	0.38	Ebb	6.16	191	85.0	1191	0.23	3.2	214	6002	5.60	173.5	90.5	1266.9		23.5	7.58	26.81	14840	0.84			
W5	-4.88	12/19/07	1238	-3.35	0.30	High	4.24	131	70.1	981	0.75	11	206	5775						23.0	7.42	24.22	13406	1.27			

NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	1/25/08	958	-3.12	0.24	Ebb	4.98	154	57.5	806	0.28	3.9	146	4111						22.7	7.15	26.58	14713	1.38			
W5	-4.88	2/26/08	1145	-3.58	0.03	Ebb	7.43	230	104.3	1461	0.74	10.4	210	5894						22.4	7.37	26.60	14724	1.17			
W5	-4.88	3/17/08	1315	-3.35	0.21	Flood	7.53	233	97.3	1363	0.06	0.8	160	4500						22.5	7.45	26.51	14674	1.41			
W5	-4.88	4/29/08	916	-3.53	0.09	Flood	7.17	222	90.2	1263	0.09	1.2	215	6042						21.6	7.31	26.35	14585	1.35			
W5	-4.88	5/28/08	916	-3.40	0.18	Flood	6.55	203	97.6	1367	0.29	4.1	246	6921						22.2	7.40	25.44	14082	2.10			
W5	-4.88	6/17/08	1024	-3.66	0.00	Flood	7.22	224	102.8	1440	0.81	11.4	228	6396						22.1	7.31	24.80	13727	n/a	2.32		
W5	-4.88	7/22/08	918	-3.25	0.30	Ebb	6.17	191	86.5	1212	0.92	12.9	238	6682						22.1	7.35	25.42	14071	1.35			
W5	-4.88	7/31/08	9.11	-3.81	-0.09	Low	6.35	197	81.1	1136	0.81	11.4	232	6507						24.8	7.34	24.89	13777	3.13			
W5	-4.88	9/16/08	1012	-3.49	0.12	Ebb	7.01	217	98.9	1385	0.67	9.4	244	6854						23.0	7.26	25.16	13927	1.85			
W5	-4.88	10/31/08	951	-3.37	0.30	Ebb	6.66	206	90.2	1264	0.39	5.4	244	6864						25.1	7.30	26.32	14569	1.26			
W5	-4.88	11/14/08	1114	-3.54	0.12	Ebb	6.89	213	101.7	1425	0.16	2.3	219	6158						24.1	7.68	26.60	14724	1.37	1.02		
W5	-4.88	12/16/08	937	-3.56	0.61	Ebb	6.58	204	117.3	1643	0.01	0.2	230	6458						23.8	7.51	27.11	15006	1.49			
W5	-4.88	1/23/09	1411	-3.49	0.15	High	7.52	233	135.7	1901	0.94	13.1	186	5213						23.9	7.51	28.70	15886	1.60	1.89		
W5	-4.88	2/24/09	1526	-3.32	0.30	Flood	7.26	225	90.0	1261	0.54	7.5	219	6144						23.7	7.42	27.84	15410	2.60	4.80		
W5	-4.88	3/16/09	1520	-3.58	0.03	Low	6.36	197	167.3	2344	0.17	2.4	181	5078						23.7	7.43	27.65	15305	3.03	2.30		
W5	-4.88	4/30/09	1450	-3.64	0.06	Flood	9.75	302	139.4	1952	0.68	9.5	130	3647						24.1	7.93	26.83	14851	3.44			
W5	-4.88	5/29/09	924	-3.43	0.21	High	9.00	279	127.1	1780	0.10	1.4	229	6425						22.1	8.26	27.26	15089	3.69	0.47		
W5	-4.88	6/18/09	1342	-3.05	0.61	High	8.41	261	120.5	1688	0.57	8.0	188	5279						22.3	7.53	27.64	15299	4.23	0.78		
W5	-4.88	7/31/09	1048	-3.12	0.52	Flood	9.30	288	121.1	1696	0.23	3.2	142	3984						22.2	7.17	28.10	15554	3.59	0.95		
W5	-4.88	8/19/09	1040	-3.47	0.09	Flood	5.42	168	84.2	1180	0.71	9.9	123	3460						22.6	7.56	27.94	15466	3.56	0.26		
W5	-4.88	9/24/09	907	-3.15	0.61	High	6.77	210	107.1	1500	0.57	8	148	4168						22.4	8.40	27.34	15133	2.79	0.26		
W5	-4.88	10/23/09	1330	-3.54	0.21	Ebb	6.35	197	94.2	1319	0.64	9	104	2921						22.8	7.51	26.92	14901	2.84	0.29		
W5	-4.88	11/17/09	1002	-3.63	0.21	Ebb	6.42	199	88.8	1244	0.85	12	203	5699						22.7	7.45	27.19	15050	2.56	0.14		
W5	-4.88	12/8/09	1004	-3.19	0.52	Ebb	6.07	188	91.4	1280	1.00	14	230	6462						22.6	7.48	27.94	15466	1.49	0.15		
W5	-4.88	1/6/10	948	-3.27	0.40	Ebb	5.97	185	92.1	1290	1.93	27	197	5539						22.9	7.57	28.35	15692	1.92	14.20		
W5	-4.88	2/2/10	915	-3.22	0.24	Ebb	6.23	193	116.7	1634	0.79	11	179	5033						22.4	7.59	28.83	15958	2.09	0.53		
W5	-4.88	3/10/10	853	-3.69	0.09	Low	7.17	222	116.7	1634	0.29	4	217	6086						22.1	7.53	28.00	15499	2.81	0.24		
W5	-4.88	4/6/10	1457	-3.55	0.09	Ebb	6.94	215	107.4	1504	0.64	9	220	6169						21.7	7.56	27.42	15178	3.08	3.55		
W5	-4.88	5/12/10	834	-3.71	-0.06	Low	6.65	206	99.3	1391	1.07	15	196	5501						21.6	7.82	26.97	14929	3.25	0.48		
W5	-4.88	6/16/10	1052	-3.58	0.09	Ebb	7.30	226	115.7	1621	0.36	5	242	6807						21.8	7.58	26.83	14851	3.97	0.39		
W5	-4.88	7/14/10	857	-3.40	0.18	Ebb	5.81	180	115.5	1618	0.29	4	235	6607						21.6	7.55	27.05	14973	4.18	0.08		
W5	-4.88	8/3/10	1714	-3.30	0.12	Ebb	6.36	197	109.1	1528	0.29	4	231	6492						21.7	7.65	27.24	15078	3.28	0.86		
W5	-4.88	9/13/10	1447	-3.39	0.24	Ebb	6.78	210	108.6	1521	0.19	2.6	251	7051						22.0	7.52	26.99	14940	3.83	0.24		
W5	-4.88	10/11/10	1010	-3.06	0.46	Ebb	6.62	205	106.9	1497	0.03	0.4	245	6878						22.0	7.63	27.34	15133	3.93	0.41		
W5	-4.88	11/15/10	1122	-3.14	0.43	High	6.91	214	101.0	1415	0.11	1.5	239	6711						22.2	7.53	28.13	15571	2.67	0.18		
W5	-4.88	12/13/10	917	-3.02	0.40	High	6.94	215	103.7	1453	0.09	1.3	240	6736						21.9	7.51	28.32	15676	2.59	0.39		
W5	-4.88	1/3/11	1520	-3.43	0.21	High	7.04	218	120.1	1682	0.28	3.9	234	6567						22.0	7.56	28.07	15537	2.91	0.12		
W5	-4.88	4/4/11	1413	-3.25	0.30	Flood	6.68	207	133.3	1867	0.09	1.2	194	5446						21.8	7.68	27.72	15344	3.61	0.16		
W5	-4.88	7/11/11	1255	-3.12	0.67	Flood	6.65	206	135.3	1895	0.11	1.5	213	5974						22.8	7.59	27.63	15294	5.12	3.22		
W5	-4.88	10/10/11	1211	-3.36	0.24	Flood	6.68	207	119.2	1670	0.24	3.4	217	6106						22.2	7.63	27.72	15344	4.54	0.47		
W5	-4.88	1/9/12	1234	-3.63	0.03	Low	7.17	222	109.6	1535	0.16	2.3	213	5981						22.0	7.66	27.31	15117	3.11	0.15		
W5	-4.88	4/30/12	1349	-3.26	0.30	High	7.46	231	116.1	1626	0.06	0.8	216	6067						21.5	7.54	27.79	15382	3.58	0.06		
W5	-4.88	7/17/12	1557	-2.91	0.73	High	7.39	229	110.7	1550	0.21	3	213	5980						21.8	7.57	28.31	15670	4.68	0.55		
W5	-4.88	10/15/12	1229	-3.48	0.12	Flood	6.55	203	107.4	1505	0.28	3.9	221	6197						21.4	7.58	28.20	15609	3.90	0.11		
W5	-4.88	1/7/13	1315	-3.34	0.24	Ebb	5.91	183	139.6	1956	0.52	7.3	250	7014						21.1	7.56	28.55	15803	3.88	0.16		
W5	-4.88	4/9/13	1125	-3.56	0.09	Flood	6.49	201	155.4	2177	0.30	4.2	202	5679						20.6	7.66	27.72	15344	4.86	0.41		

NELHA Water Quality Laboratory

Well 5 Data Table

6/23/1989 - 7/21/20

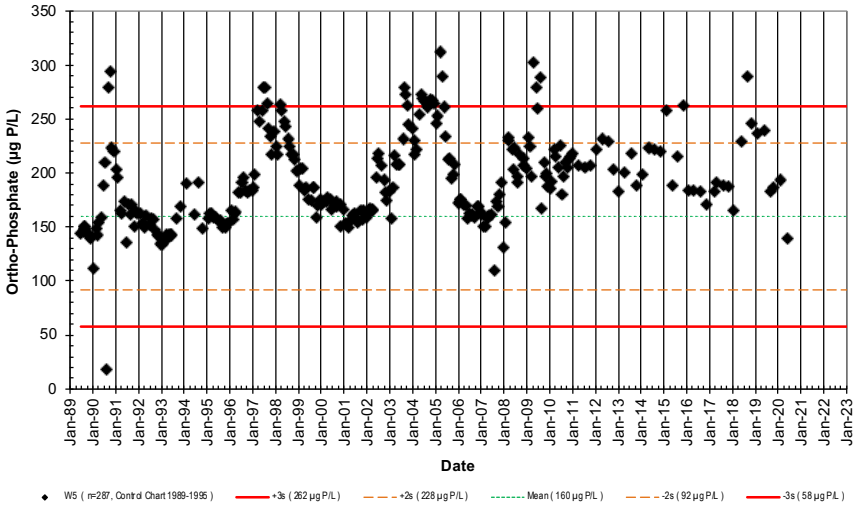
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5	-4.88	7/16/13	1504	-3.31	0.37	Ebb	7.07	219	159.1	2228	0.24	3.4	238	6673						21.3	7.58	26.51	14674	4.67	0.35		
W5	-4.88	10/14/13	1515	-3.21	0.43	Ebb	6.10	189	138.4	1938	0.26	3.6	232	6516						23.0	7.69	26.96	14923	5.53	2.52		
W5	-4.88	1/14/14	1407	-3.40	0.21	Flood	6.39	198	160.4	2247	0.31	4.4	215	6026						22.5	7.77	27.55	15250	3.89	0.08		
W5	-4.88	4/28/14	1625	-3.03	0.55	High	7.20	223	187.9	2632	0.33	4.6	202	5676						22.2	7.82	25.75	14253	3.22	0.28		
W5	-4.88	7/28/14	1415	-3.24	0.38	Flood	7.17	222	179.8	2518	0.93	13	203	5703						22.6	7.77	26.7	14779	4.56	0.26		
W5	-4.88	11/3/14	1050	-3.20	0.38	Flood	7.10	220	140.5	1968	0.15	2.1	200	5613						23.2	7.62	26.49	14663	3.65	0.59		
W5	-4.88	2/9/15	1616	-3.38	0.10	Low	8.31	257	152.7	2139	0.61	8.5	225	6321						22.6	7.68	27.64	15299	3.15	0.38		
W5	-4.88	5/19/15	1608	-2.97	0.61	Flood	6.10	189	139.1	1948	0.36	5.0	185	5185						22.5	7.76	27.08	14989	3.72	0.02		
W5	-4.88	7/22/15	1058	-3.40	0.24	Ebb	6.93	215	131.5	1842	0.01	0.2	201	5639						23.2	7.73	26.92	14901	4.60	0.38		
W5	-4.88	11/13/15	1035	-3.34	0.15	Low	8.47	262	204.7	2867	0.26	3.7	216	6057						24.3	7.74	26.98	14934	3.37	0.26		
W5	-4.88	1/26/16	1615	-3.38	0.33	Flood	5.96	185	132.4	1854	0.06	0.9	174	4884						24.1	7.61	28.94	16019	2.25	0.41		
W5	-4.88	4/21/16	1536	-3.02	0.50	Ebb	5.93	184	95.9	1343	0.36	5.1	170	4768						23.5	7.56	28.13	15571	3.14	0.08		
W5	-4.88	7/26/16	1534	-3.39	0.40	Ebb	5.90	183	121.5	1702	0.12	1.7	186	5216						24.5	7.85	26.56	14702	4.10	0.42		
W5	-4.88	11/15/16	1013	-3.45	0.10	Low	5.54	172	101.3	1419	1.51	21.2	171	4811						24.7	7.62	28.16	15587	4.51	0.10		
W5	-4.88	3/22/17	1359	-3.24	0.20	Ebb	5.90	183	133.5	1870	0.29	4.1	179	5018						24.1	7.85	29.14	16130	2.34	0.13		
W5	-4.88	4/19/17	1336	-3.33	0.12	Ebb	6.19	192	131.1	1837	0.31	4.4	184	5162						24.3	7.75	27.84	15410	2.41	0.05		
W5	-4.88	8/9/17	1542	-2.99	0.50	Flood	6.11	189	94.9	1329	0.02	0.3	194	5449						24.4	7.74	28.14	15576	3.26	0.10		
W5	-4.88	10/19/17	1405	-3.15	0.50	Flood	6.05	188	114.9	1610	0.40	5.6	196	5492						24.9	7.7	27.54	15244	3.48	0.16		
W5	-4.88	1/18/18	1339	-3.51	0.20	Flood	5.32	165	93.9	1315	0.21	2.9	175	4913						24.3	7.54	29.27	16202	2.50	0.12		
W5	-4.88	5/11/18	1014	-3.45	0.15	Flood	7.39	229	109.0	1527	0.09	1.2	176	4948						23.7	7.89	27.4	15167	2.15	0.21		
W5	-4.88	9/4/18	1317	-2.88	0.67	Flood	9.36	290	93.3	1307	0.34	4.7	162	4548						25.2	7.88	26.85	14862	2.48	0.17		
W5	-4.88	10/25/18	1456	-3.19	0.49	High	7.93	246	84.9	1189	0.33	4.6	175	4925						23.7	7.77	27.16	15034	2.23	0.11		
W5	-4.88	2/8/19	1322	-3.68	0.06	Low	7.64	237	107.0	1499	0.02	0.3	179	5020						23.1	7.50	28.5	15775	2.10	0.10		
W5	-4.88	5/16/19	922	-3.64	-0.07	Low	7.74	240	90.5	1268	0.09	1.3	189	5320						23.2	7.66	27.47	15205	4.18	0.09		
W5	-4.88	8/28/19	1128	-3.25	0.35	Flood	5.90	183	89.5	1254	0.27	3.8	179	5034						23.7	7.71	27.73	15349	2.82	0.13		
W5	-4.88	10/11/19	1453	-2.97	0.57	High	6.03	187	86.7	1214	0.36	5	176	4951						24.3	7.72	27.56	15255	3.85	0.13		
W5	-4.88	2/5/20	1502	-3.43	0.20	Ebb	6.27	194	103.5	1450	-0.25	-3.5	189	5303						23.4	7.44	29.26	16196	1.82	0.06		
W5	-4.88	6/3/20	1404	-2.76	0.60	Flood	4.49	139	83.9	1176	0.30	4.2	193	5417						23.5	7.61	27.88	15432	2.92	0.15		
W5	-4.88	7/1/20																									
W5	-4.88	10/1/20																									
W5	-4.88	1/1/21																									
W5	-4.88	4/1/21																									
W5	-4.88	7/1/21																									
W5	-4.88	10/1/21																									
W5	-4.88	1/1/22																									
W5	-4.88	4/1/22																									
W5	-4.88	7/1/22																									
W5	-4.88	10/1/22																									
W5	-4.88	1/1/23																									
W5	-4.88	4/1/23																									
Mean				-3.33	0.29		6.21	192	104.78	1468	6.41	89.7	254	7131	6.25	194	116	1606	0.85	22.4	7.66	26.18	14496	3.51	0.80		
Std. Dev.				0.23	0.20		1.32	41	55.91	783	81.81	1145.9	61	1712	1.39	43	117	1639	0.47	2.1	0.16	1.88	1042	1.62	1.95		
Maximum				-2.74	0.73		10.08	312	644	9018	1370	19189	618	17357	10.90	337.6	1400.0	19609	4.86	26.2	8.40	31.68	17536	7.30	14.20		
Minimum				-3.81	-0.09		0.57	18	42	583	-0.25	-3.5	104	2921	3.75	116.1	41.7	0	0.35	16.2	7.15	21.63	11974	0.49	0.02		
n				80	80		287	287	287	287	287	287	280	279	206	206	203	206	172	287	286	287	286	284	63		

NELHA Water Quality Laboratory

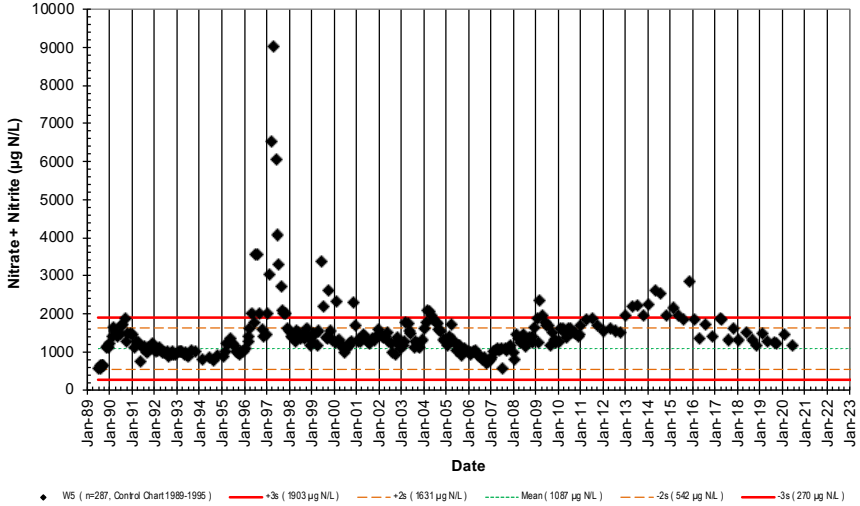
Well 5 Charts

6/23/1989 - 7/21/20

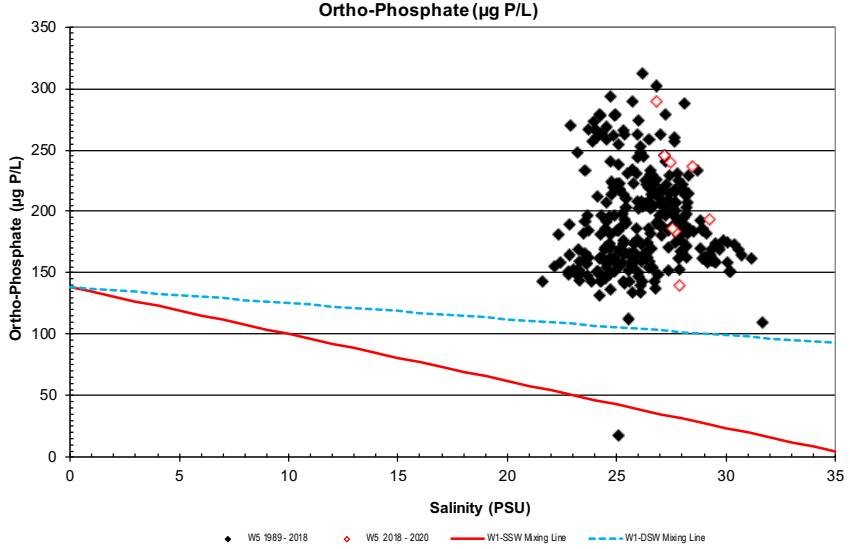
Well #5
Ortho-Phosphate (µg P/L)



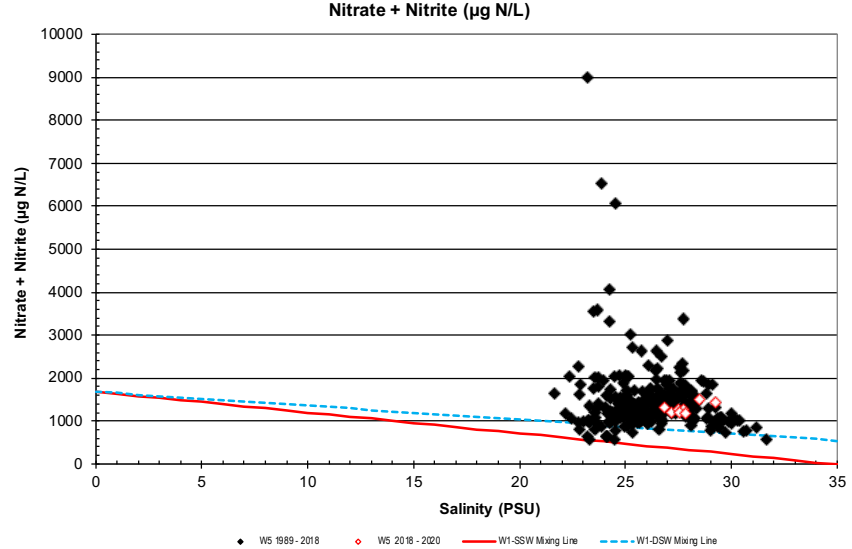
Well #5
Nitrate + Nitrite (µg N/L)



Well #5 Conservative Mixing Model
Ortho-Phosphate (µg P/L)



Well #5 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)

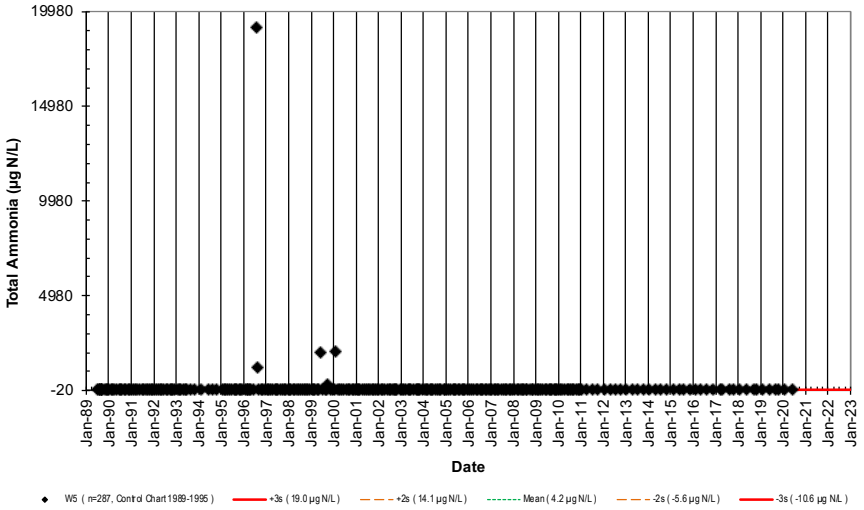


NELHA Water Quality Laboratory

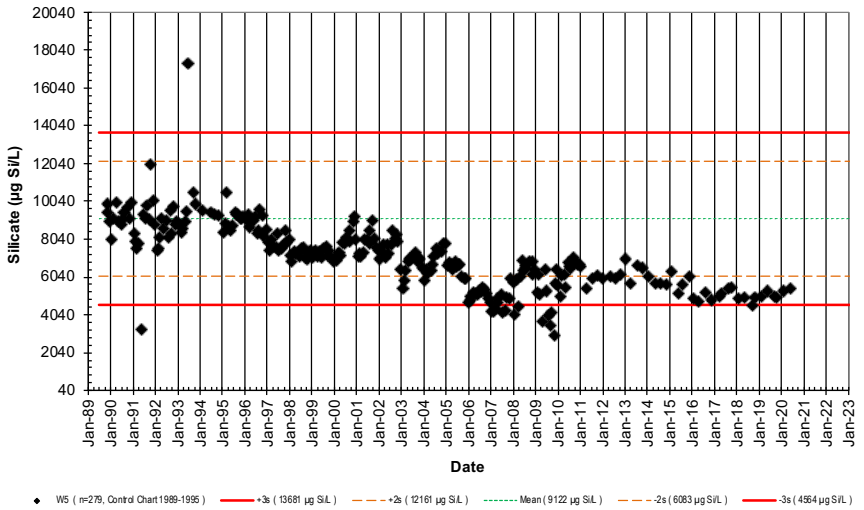
Well 5 Charts

6/23/1989 - 7/21/20

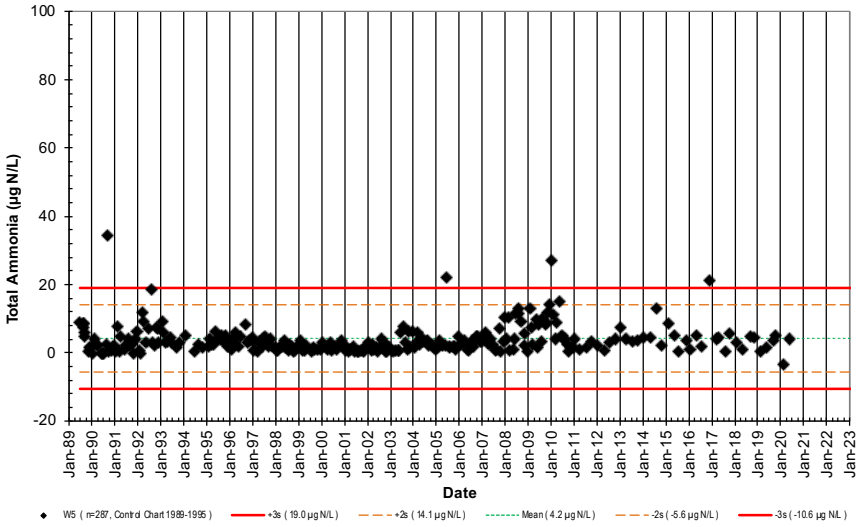
Well #5
Total Ammonia (µg N/L)



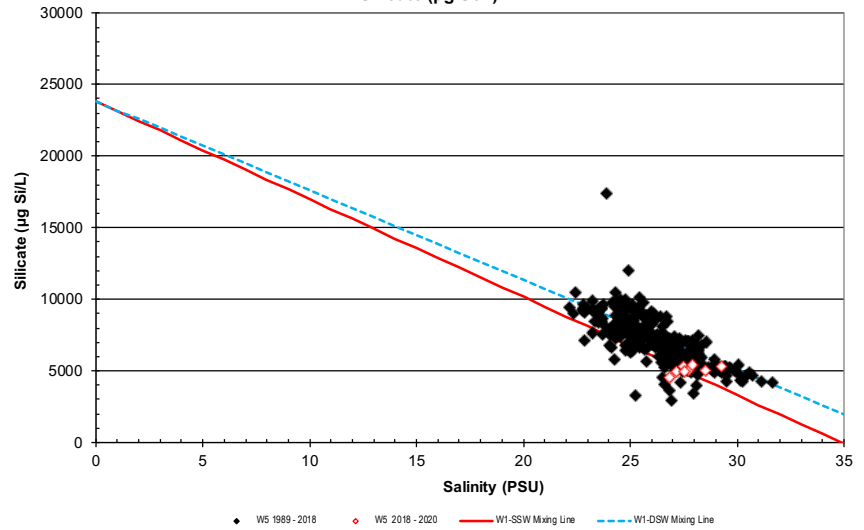
Well #5
Silicate (µg Si/L)



Well #5
Total Ammonia (µg N/L)



Well #5 Conservative Mixing Model
Silicate (µg Si/L)

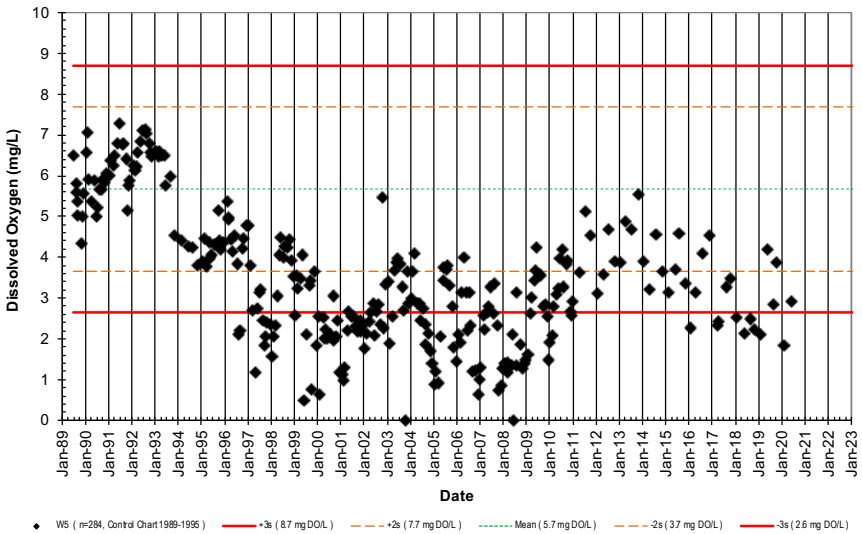


NELHA Water Quality Laboratory

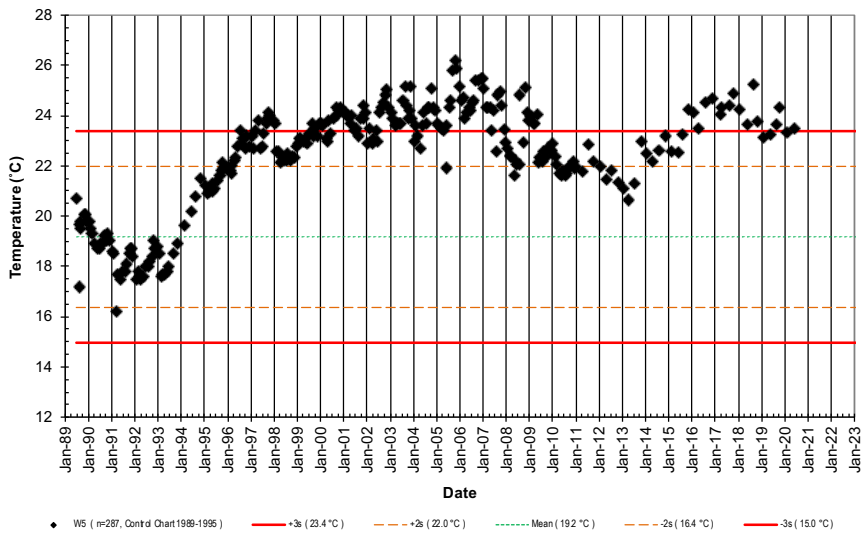
Well 5 Charts

6/23/1989 - 7/21/20

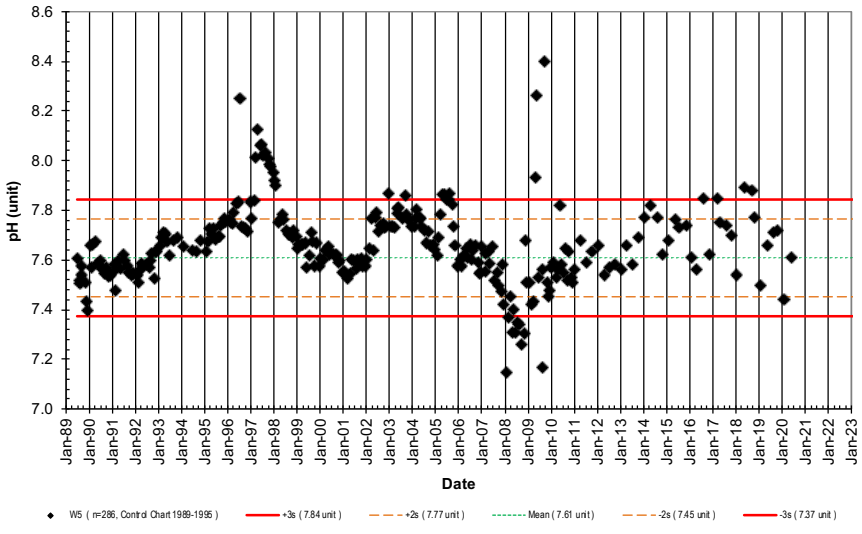
Well #5
Dissolved Oxygen (mg DO/L)



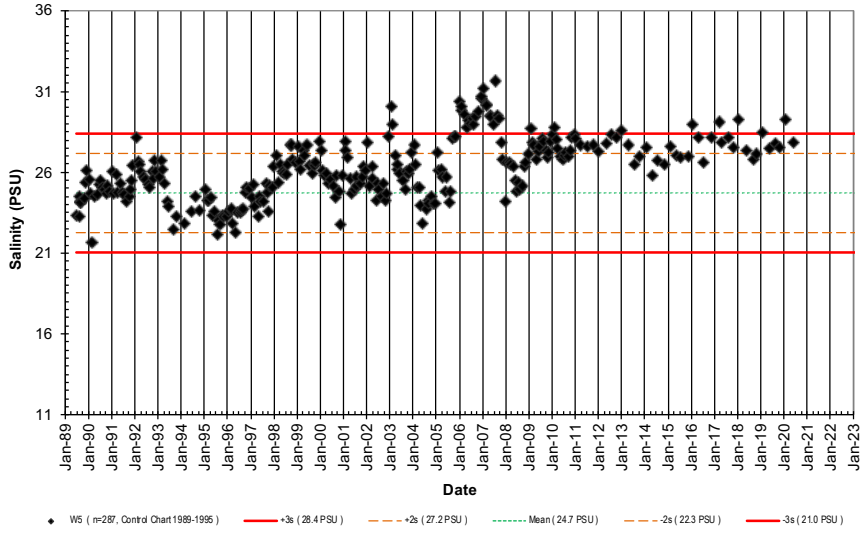
Well #5
Temperature (˚C)



Well #5
pH (unit)



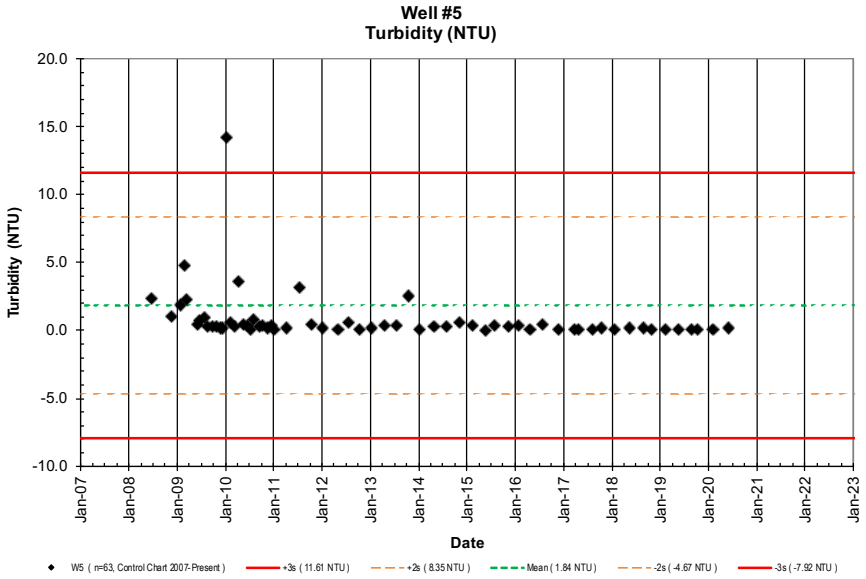
Well #5
Salinity (PSU)

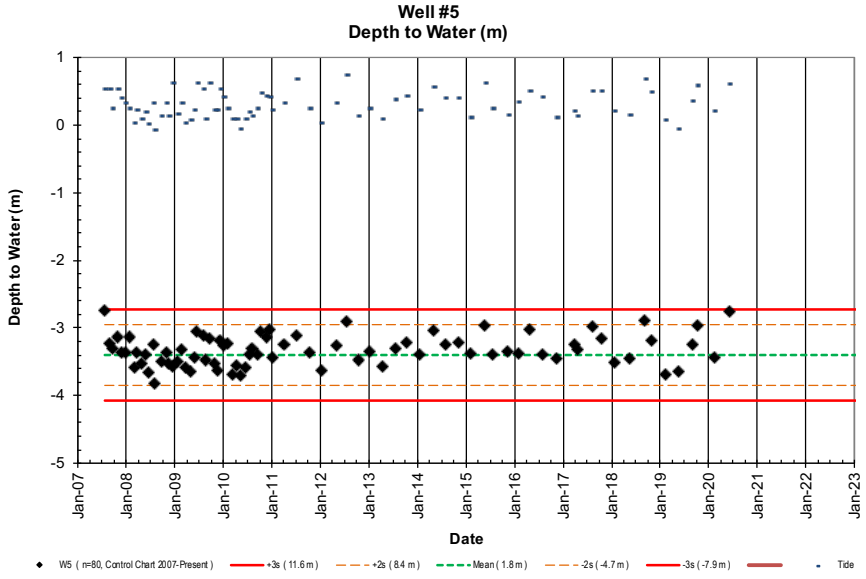


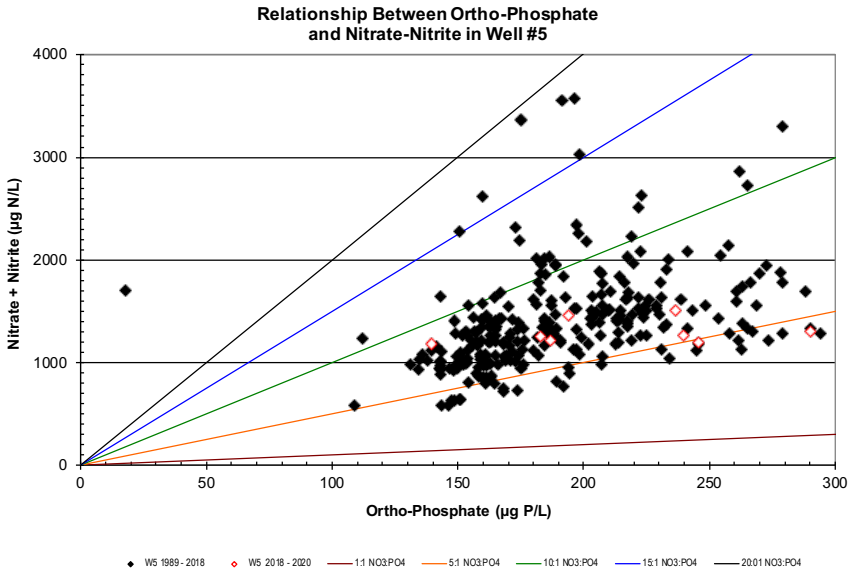
NELHA Water Quality Laboratory

Well 5 Charts

6/23/1989 - 7/21/20







NELHA Water Quality Laboratory

Well 5A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	6/23/89				5.71	177	70.0	980	0.64	9.0								18.0	7.50	28.56	15809	4.67		NA	NA
W5A	-8.23	8/9/89	1020			5.06	157	85.8	1202	0.86	12.0								19.5	7.40	28.85	15968	4.70		<1	NA
W5A	-8.23	8/15/89	940			4.98	154	85.8	1202	0.70	9.8								17.4	7.42	30.48	16871	4.56		<1	NA
W5A	-8.23	8/22/89	930			5.18	160	86.2	1207	0.70	9.8								17.8	7.46	28.88	15984	4.29		<1	NA
W5A	-8.23	8/28/89	1055			5.06	157	86.7	1214	0.70	9.8								17.1	7.45	28.62	15842	4.37		<1	NA
W5A	-8.23	8/28/89	1055			5.04	156	86.9	1217	0.86	12.0														NA	NA
W5A	-8.23	10/27/89	937			5.04	156	77.7	1088	0.03	0.4	240	6741	5.28	163.5	78.1	1094	0.36	17.2	7.40	28.92	16005	3.38		<1	NA
W5A	-8.23	11/15/89	725			5.04	156	76.7	1074	0.06	0.8	231	6488	5.33	165.1	82.5	1156	0.70	17.5	7.41	28.02	15510	4.42		<1	NA
W5A	-8.23	12/8/89	1010			5.01	155	74.5	1043	0.10	1.4	240	6741	5.31	164.5	76.4	1070		17.2	7.11	28.92	16007	4.84		<1	NA
W5A	-8.23	1/10/90	826			4.15	129	76.6	1073	0.00	0.0	203	5701	4.38	135.7	79.3	1111	1.16	17.1	7.65	28.90	15994	5.22		<1	NA
W5A	-8.23	2/13/90	955			5.64	175	84.0	1177	0.08	1.1	196	5505	5.84	180.9	87.4	1224	0.86	16.9	7.46	28.93	16012	5.14		<1	NA
W5A	-8.23	3/5/90	1118			5.26	163	96.2	1347	0.10	1.4	232	6516	5.52	171.0	96.2	1347	0.80	16.6	7.57	28.19	15602	4.82		<1	NA
W5A	-8.23	4/2/90	1015			5.44	168	93.8	1314	0.03	0.4	278	7808	5.47	169.4	97.5	1366	15.07	16.2	7.55	28.70	15887	4.89		<1	NA
W5A	-8.23	5/16/90	1027			5.71	177	94.6	1325	0.00	0.0	221	6207	5.90	182.7	99.1	1388	4.77	16.3	7.48	28.69	15878	5.40		<1	NA
W5A	-8.23	6/17/90	1153			6.16	191	90.7	1270	0.00	0.0	223	6263	6.22	192.7	95.5	1338	1.55	16.4	7.53	28.78	15928	4.64		<1	NA
W5A	-8.23	7/12/90	1059			6.33	196	88.6	1241	0.00	0.0	222	6235	6.50	201.3	91.1	1276	0.67	16.4	7.51	29.40	16275	4.19		<1	NA
W5A	-8.23	8/7/90	1034			4.95	153	92.6	1297	0.04	0.6	219	6151	5.56	172.2	91.8	1285	2.35	16.4	7.47	29.25	16189	4.58		<1	NA
W5A	-8.23	9/5/90	1022			5.79	179	89.8	1258	0.00	0.0			5.79	179.3	91.5	1281	0.52	16.5	7.42	29.30	16218	4.58		<1	NA
W5A	-8.23	10/31/90	951			5.11	158	77.5	1085	0.03	0.4	211	5926	5.23	162.0	80.7	1131	1.98	18.8	7.53	29.76	16475	5.25		<1	NA
W5A	-8.23	12/7/90	947			3.62	112	63.5	889	0.00	0.0	251	7041	4.91	152.1	75.9	1063	0.57	17.0	7.45	29.11	16111	5.06		<1	NA
W5A	-8.23	1/9/91	755			5.67	176	81.9	1147	0.00	0.0	208	5842	5.69	176.2	89.3	1251	0.69	16.5	7.52	29.81	16500	5.18		<1	NA
W5A	-8.23	2/5/91	730			5.66	175	63.6	891	0.50	7.0	186	5224	5.67	175.6	66.3	929	0.86	15.1	7.54	29.35	16245	5.28		<1	NA
W5A	-8.23	3/6/91	754			5.11	158	73.2	1025	0.07	1.0	186	5224	5.14	159.2	75.9	1063	5.85	14.4	7.58	29.37	16257	5.81		<1	NA
W5A	-8.23	4/2/91	759			5.11	158	71.2	997	0.40	5.6	190	5336	5.21	161.4	75.4	1056	0.73	15.4	7.52	28.85	15970	6.01		<1	NA
W5A	-8.23	5/21/91	823			5.25	163	41.5	581	0.07	1.0	186	5224	5.39	166.9	43.4	608	0.71	15.3	7.51	29.20	16163	6.16		<1	NA
W5A	-8.23	6/25/91	802			4.19	130	57.6	807	0.40	5.6	222	6235	5.00	154.9	60.8	852	0.57	15.6	7.53	29.09	16102	6.32		<1	<1
W5A	-8.23	7/23/91	858			5.43	168	69.3	971	0.28	3.9	234	6572	6.05	187.4	73.6	1031	1.61	15.6	7.49	28.53	15791	6.25		<1	<1
W5A	-8.23	8/22/91	817			5.10	158	65.9	923	0.19	2.7	230	6460	5.35	165.7	77.8	1090	0.70	15.3	7.50	28.69	15882	6.36		<1	<1
W5A	-8.23	9/23/91	820			5.24	162	67.3	943	0.18	2.5	231	6488	5.31	164.5	71.2	997	0.73	16.2	7.50	28.17	15594	5.82		1	<1
W5A	-8.23	10/22/91	710			4.59	142	70.9	993	0.03	0.4	292	8201	4.60	142.5	74.7	1046	0.61	16.6	7.49	28.90	15995	4.93		<1	74
W5A	-8.23	11/19/91	943			5.18	160	68.9	965	0.02	0.3	244	6853	5.26	162.9	69.7	976	0.53	16.2	7.51	29.15	16135	5.89		<1	1
W5A	-8.23	12/10/91	840			4.91	152	71.2	997	0.08	1.1	218	6123	4.95	153.3	73.5	1029	0.69	16.1	7.53	29.26	16198	5.70		<1	<1
W5A	-8.23	1/28/92	829			4.93	153	67.7	948	0.05	0.7	202	5673	5.01	155.2	69.2	969	0.89	15.5	7.51	29.70	16441	6.10		<1	4
W5A	-8.23	2/18/92	820			4.77	148	66.0	924	0.00	0.0	196	5505	4.92	152.4	70.2	983	0.73	15.5	7.52	29.19	16157	6.42		<1	<1
W5A	-8.23	3/16/92	848			4.87	151	65.5	917	0.30	4.2	210	5898	5.02	155.5	66.1	926	0.86	15.3	7.53	29.16	16141	6.75		<1	<1
W5A	-8.23	4/7/92	820			4.26	132	62.6	877	0.23	3.2	220	6179	4.48	138.8	62.1	870	0.74	15.3	7.56	28.84	15963	6.92		<1	<1
W5A	-8.23	5/5/92	827			5.14	159	60.7	850	0.21	2.9	222	6235	5.21	161.4	64.3	901	0.89	15.2	7.56	28.84	15964	7.21		<1	<1
W5A	-8.23	6/22/92	816			4.09	127	62.0	868	0.41	5.7	206	5786	4.26	131.9	64.3	901	0.82	15.0	7.59	29.55	16354	6.54		<1	<1
W5A	-8.23	7/28/92	811			4.86	151	60.7	850	ND	0.0	203	5701	5.05	156.4	58.9	825	0.79	15.5	7.57	28.87	15980	7.40		<1	<1
W5A	-8.23	8/25/92	751			4.80	149	56.2	787	0.16	2.2	247	6937	4.96	153.6	61.7	864	0.71	15.7	7.60	28.73	15905	7.14		<1	3
W5A	-8.23	9/21/92	808			4.67	145	60.4	845	0.13	1.8	226	6347	4.75	147.1	62.5	875	0.75	16.0	7.62	28.74	15908	6.77		<1	<1
W5A	-8.23	10/26/92	815			4.64	144	61.3	859	0.42	5.9	252	7078	4.75	147.1	63.7	892	0.71	16.5	7.60	28.65	15860	6.78		1	<1
W5A	-8.23	11/16/92	838			4.65	144	59.7	836	0.36	5.0	248	6965	4.74	146.8	64.7	906	0.64	16.4	7.63	28.68	15874	6.89		<1	<1
W5A	-8.23	12/7/92	835			4.43	137	59.4	832	0.14	2.0	244	6853	4.54	140.6	62.5	875	0.66	16.4	7.64	28.58	15822	6.88		<1	<1

NELHA Water Quality Laboratory

Well 5A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	1/25/93	821			4.24	131	60.7	850	0.29	4.1	244	6864	4.30	133.2	66.2	928	0.73	16.4	7.65	28.60	15833	6.42		<1	<1
W5A	-8.23	2/22/93	802			4.28	133	59.7	837	0.35	4.9	236	6614	4.28	132.6	65.9	923	0.66	15.9	7.68	28.80	15941	6.27		<1	<1
W5A	-8.23	3/15/93	758			4.46	138	60.1	842	0.22	3.1	243	6816	4.53	140.3	62.8	879	0.65	15.6	7.70	28.53	15794	6.32		<1	<1
W5A	-8.23	4/26/93	807			4.41	137	56.5	791	0.02	0.3	238	6684	4.60	142.5	60.4	846	0.73	15.9	7.71	28.48	15764	6.00		<1	<1
W5A	-8.23	5/24/93	824			4.48	139	56.5	792	0.32	4.5	250	7021	4.56	141.2	62.3	873	0.64	15.8	7.68	28.27	15649	5.99		<1	<1
W5A	-8.23	6/21/93	822			4.56	141	55.1	771	0.15	2.1	278	7808	4.74	146.8	59.9	839	0.60	15.9	7.69	28.00	15497	5.64		<1	<1
W5A	-8.23	8/30/93	926			4.79	148	62.1	869	0.09	1.3	270	7577	5.17	160.1	72.6	1016	0.75	16.7	7.67	26.97	14929	4.33		<1	<1
W5A	-8.23	10/25/93	806			4.91	152	57.1	800	0.22	3.1	261	7330	4.97	153.9	61.0	855	0.61	17.3	7.68	27.07	14985	3.15		<1	<1
W5A	-8.23	2/7/94	1007			4.99	155	45.7	640	0.19	2.7	233	6544	5.11	158.3	51.2	717	0.90	18.3	7.66	27.73	15351	3.14		<1	1
W5A	-8.23	6/20/94	756			4.37	135	44.0	616	0.06	0.8	215	6049	4.45	137.8	53.6	751	0.68	18.8	7.66	28.88	15985	3.55		<1	<1
W5A	-8.23	8/22/94	906			4.56	141	43.9	614	0.10	1.4	215	6031	4.65	144.0	52.1	730	0.69	19.0	7.67	29.08	16097	4.11		<1	<1
W5A	-8.23	10/24/94	821			4.60	142	50.9	713	0.01	0.1	237	6651	4.75	147.1	55.2	774	0.56	19.5	7.67	27.33	15128	3.40		<1	<1
W5A	-8.23	1/23/95	904			4.30	133	52.5	735	0.02	0.3	227	6364	4.44	137.5	56.0	784	0.58	19.5	7.65	27.54	15241	3.71		<1	<1
W5A	-8.23	2/13/95	901			4.38	136	56.1	786	0.29	4.1	234	6561	4.42	136.9	61.7	864	0.58	19.4	7.68	27.55	15250	3.73		<1	<1
W5A	-8.23	3/13/95	939			4.45	138	62.6	876	0.14	2.0	285	7993	4.45	137.8	65.0	910	0.53	19.6	7.73	27.40	15164	3.19		4	<1
W5A	-8.23	4/24/95	843			4.50	139	64.4	902	0.17	2.4	226	6353	4.66	144.3	65.8	921	0.71	19.1	7.69	27.85	15416	4.37		<1	<1
W5A	-8.23	5/8/95	842			4.55	141	68.5	960	0.27	3.8	223	6269	4.57	141.6	72.3	1013	0.64	19.2	7.70	27.41	15173	4.03		<1	<1
W5A	-8.23	6/19/95	919			4.47	138	65.4	917	0.31	4.3	227	6375	4.52	140.0	68.1	954	0.63	19.2	7.67	27.31	15118	4.56		<1	<1
W5A	-8.23	7/24/95	847			4.40	136	60.5	847	0.21	2.9	236	6637	4.52	140.0	62.6	877	0.59	19.1	7.67	27.04	14966	4.60		1	<1
W5A	-8.23	8/21/95	937			4.43	137	54.0	756	0.41	5.7	171	4794	4.40	136.3	59.0	827	0.55	19.5	7.68	27.48	15213	4.42		<1	<1
W5A	-8.23	9/11/95	728			4.28	133	53.1	744	0.24	3.4	231	6491	4.31	133.5	55.9	783	0.58	19.3	7.73	27.37	15148	4.35		<1	<1
W5A	-8.23	10/16/95	826			4.16	129	50.0	701	0.34	4.8	228	6409	4.33	134.1	52.9	741	0.69	19.5	7.74	27.59	15274	4.37		<1	<1
W5A	-8.23	11/6/95	806			3.78	117	52.5	735	0.25	3.5	173	4850	3.80	117.7	54.8	768	0.66	19.6	7.79	29.59	16381	5.22		<1	<1
W5A	-8.23	12/4/95	815			4.25	132	52.6	737	0.11	1.5	223	6269	4.33	134.1	55.5	777	0.74	19.6	7.73	27.55	15250	5.40		<1	<1
W5A	-8.23	1/29/96	933			4.62	143	52.2	731	0.02	0.3	224	6286	4.66	144.3	63.4	887	0.65	19.8	7.73	27.91	15447	4.74		<1	<1
W5A	-8.23	2/26/96	941			4.53	140	61.1	856	0.30	4.2	251	7062	4.62	143.1	63.9	896	0.61	20.2	7.73	27.51	15226	4.54		<1	25
W5A	-8.23	3/5/96	840			4.64	144	65.6	919	0.28	3.9	226	6351	4.74	146.8	69.9	979	0.74	19.9	7.72	27.63	15296	4.26		<1	<1
W5A	-8.23	4/1/96	901			4.71	146	87.3	1223	0.55	7.7	236	6634	4.85	150.2	90.2	1263	0.58	20.2	7.69	27.05	14971	4.77		<1	<1
W5A	-8.23	5/8/96	859			5.26	163	105.0	1470	0.20	2.8	228	6394	5.37	166.3	111.8	1566	0.71	20.6	7.73	27.03	14960	3.78		<1	<1
W5A	-8.23	6/17/96	856			5.21	161	93.2	1305	0.13	1.8	231	6474	5.25	162.6	96.3	1348	0.69	21.0	7.75	23.02	12740	3.88		<1	<1
W5A	-8.23	7/16/96	846			5.89	182	121.7	1704	43.27	606.1	225	6307	5.40	167.3	140.6	1969	0.74	20.6	7.77	27.67	15316	3.36		1	<1
W5A	-8.23	8/5/96	959			5.33	165	95.4	1336	0.43	6.0	222	6235	5.39	166.9	101.3	1419	0.68	21.0	7.74	27.74	15352	3.67		<1	<1
W5A	-8.23	9/3/96	1355			5.40	167	87.2	1222	0.50	7.0	250	7007	5.45	168.8	88.8	1244	0.75	20.7	7.75	27.73	15351	4.01		<1	<1
W5A	-8.23	10/8/96	937			5.04	156	72.0	1008	0.26	3.6	238	6693	5.42	167.9	78.6	1101	0.78	20.8	7.74	28.31	15669	4.31		<1	<1
W5A	-8.23	11/4/96	941			5.09	158	69.4	972	0.25	3.5	210	5911	5.25	162.6	74.3	1040	0.87	21.3	7.74	28.27	15648	4.70		1	<1
W5A	-8.23	12/16/96	920			4.84	150	71.2	997	0.30	4.2	231	6475	4.87	150.8	73.4	1029	0.74	20.9	7.79	28.65	15859	4.87		<1	<1
W5A	-8.23	1/13/97	956			5.13	159	92.4	1294	0.08	1.1	212	5957	5.38	166.6	95.7	1341	0.67	21.1	7.78	27.80	15387	4.32		<1	<1
W5A	-8.23	2/10/97	903			5.40	167	146	2042	0.20	2.8	214	6022	5.50	170.4	148.0	2073	0.77	21.0	7.80	27.81	15396	4.11		<1	<1
W5A	-8.23	3/10/97	907			6.37	197	256	3589	0.05	0.7	218	6123	6.53	202.3	308.4	4320	0.91	21.1	7.86	27.90	15446	2.89		<1	<1
W5A	-8.23	4/22/97	948			6.41	199	404	5659	0.31	4.3	210	5906	6.55	202.9	1290.0	18069	1.09	21.3	8.01	28.07	15537	1.86		<1	<1
W5A	-8.23	5/27/97	905			6.03	187	245	3430	0.16	2.2	209	5870	6.30	195.1	281.0	3936	0.80	20.2	7.99	28.53	15792	2.96		<1	<1
W5A	-8.23	6/16/97	918			6.41	199	169	2362	0.34	4.8	220	6168	6.44	199.5	189.0	2647	0.78	20.2	7.99	28.50	15773	3.24		<1	<1

NELHA Water Quality Laboratory

Well 5A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	7/16/97	821			6.75	209	152	2123	0.07	1.0	190	5328	6.76	209.4	164.8	2308	0.70	20.5	7.96	28.50	15773	3.26		<1	<1
W5A	-8.23	8/25/97	912			6.70	208	137	1925	0.36	5.0	199	5583	6.70	207.5	149.9	2100	0.68	21.4	8.02	28.76	15919	3.09		<1	<1
W5A	-8.23	9/22/97	839			6.56	203	127	1780	0.28	3.9	194	5440	6.60	204.4	136.4	1911	0.66	21.6	8.02	28.76	15921	3.02		<1	<1
W5A	-8.23	10/14/97	904			6.93	215	137	1916	0.33	4.6	219	6139	6.95	215.3	140.6	1969	0.70	22.3	7.96	27.77	15370	2.03		<1	<1
W5A	-8.23	11/3/97	836			6.34	196	109	1532	0.21	2.9	197	5524	6.52	201.9	124.3	1741	0.73	21.7	7.96	28.69	15880	2.91		<1	<1
W5A	-8.23	12/15/97	928			6.89	213	97.2	1361	0.13	1.8	199	5581	7.02	217.4	108.0	1513	0.82	21.6	8.00	28.58	15821	3.06		<1	<1
W5A	-8.23	1/5/98	1023			6.42	199	97.6	1367	0.04	0.6	185	5207	6.48	200.7	100.3	1405	0.75	21.5	7.94	29.09	16100	1.95		<1	<1
W5A	-8.23	2/2/98	931			6.18	191	85.9	1203	0.06	0.8	190	5345	6.32	195.8	89.6	1255	0.73	20.7	7.88	29.22	16176	1.95		<1	<1
W5A	-8.23	3/9/98	931			7.21	223	87.3	1223	0.14	2.0	200	5611	7.27	225.2	92.8	1300	0.68	21.1	7.73	28.37	15704	1.76		<1	<1
W5A	-8.23	4/13/98	839			6.96	216	86.0	1205	0.15	2.1	202	5659	7.13	220.8	89.1	1248	0.65	20.8	7.70	28.85	15971	2.85		<1	<1
W5A	-8.23	5/11/98	907			6.89	213	106	1483	0.43	6.0	206	5783	7.01	217.1	109.9	1539	0.68	20.7	7.74	28.45	15745	3.10		<1	<1
W5A	-8.23	6/1/98	903			6.91	214	107	1500	0.05	0.7	199	5592	7.03	217.7	106.2	1487	0.88	21.0	7.74	28.59	15824	3.36		<1	<1
W5A	-8.23	7/13/98	913			6.46	200	91.6	1283	0.07	1.0	199	5597	6.78	210.0	96.1	1346	0.77	21.2	7.73	28.99	16049	3.56		<1	<1
W5A	-8.23	8/10/98	935			6.50	201	112	1573	0.14	2.0	204	5718	6.75	209.1	109	1531	0.76	21.6	7.70	29.38	16264	3.14		<1	<1
W5A	-8.23	9/14/98	919			6.41	199	92.0	1289	0.14	2.0	196	5494	6.60	204.4	94.7	1326	0.73	21.1	7.70	29.81	16498	3.49		<1	<1
W5A	-8.23	10/12/98	936			6.30	195	96.5	1352	0.03	0.4	194	5435	6.43	199.2	101	1410	0.75	21.0	7.70	29.88	16540	3.94		1	<1
W5A	-8.23	11/2/98	857			6.20	192	90.4	1266	0.01	0.1	196	5516	6.34	196.4	100	1401	0.90	21.0	7.72	29.69	16431	3.31		<1	<1
W5A	-8.23	12/15/98	855			6.04	187	79.6	1115	0.05	0.7	204	5729	6.13	189.9	82.0	1149	0.86	21.8	7.68	29.39	16267	2.64		<1	<1
W5A	-8.23	1/11/99	913			5.71	177	94.8	1328	0.22	3.1	202	5685	5.83	180.6	96.7	1354	1.04	21.8	7.65	29.97	16587	1.55		<1	<1
W5A	-8.23	2/2/99	906			6.03	187	110	1546	0.20	2.8	184	5171	6.13	189.9	121	1693	0.96	21.9	7.68	30.10	16661	2.31		<1	<1
W5A	-8.23	3/1/99	908			6.19	192	104	1461	0.04	0.6	188	5286	6.32	195.8	108	1510	0.88	22.2	7.66	29.71	16443	1.93		<1	<1
W5A	-8.23	4/5/99	910			5.74	178	85.2	1193	0.10	1.4	192	5381	5.91	183.1	88.7	1242	0.70	22.0	7.66	30.03	16620	1.90		<1	<1
W5A	-8.23	5/3/99	908			5.57	173	84.2	1179	0.14	2.0	191	5370	5.68	175.9	90.4	1267	0.79	21.8	7.66	30.15	16687	2.24		<1	22
W5A	-8.23	6/1/99	902			5.10	158	135	1891	20.0	280.1	193	5421	5.25	162.6	159	2227	0.82	22.0	7.61	30.13	16676	0.55		<1	3
W5A	-8.23	7/14/99	907			5.13	159	139	1947	10.3	144.3	204	5724	5.16	159.8	159	2226	0.88	22.1	7.50	29.31	16222	0.25		<1	<1
W5A	-8.23	8/23/99	930			5.69	176	87.1	1220	0.11	1.5	201	5645	5.80	179.6	93.6	1311	0.87	22.8	7.67	29.28	16207	2.58		<1	<1
W5A	-8.23	9/7/99	919			5.63	174	82.0	1149	0.04	0.6	199	5583	5.84	180.9	93.7	1312	0.81	22.6	7.68	29.75	16465	2.42		<1	<1
W5A	-8.23	10/5/99	913			5.02	155	114	1601	5.25	73.5	194	5446	5.04	156.1	122	1709	0.71	22.4	7.61	29.64	16405	0.39		<1	<1
W5A	-8.23	11/1/99	933			5.31	164	73.2	1025	0.06	0.8	182	5123	5.37	166.3	77.0	1079	0.68	22.5	7.66	29.93	16564	2.10		<1	<1
W5A	-8.23	12/14/99	924			5.07	157	70.1	982	0.04	0.6	176	4937	5.21	161.4	74.0	1036	0.84	23.9	7.59	30.98	17145	1.30		<1	<1
W5A	-8.23	1/10/00	953			5.03	156	69.5	973	0.04	0.6	187	5252	5.08	157.3	74.4	1042	0.88	23.1	7.61	30.42	16840	1.60		<1	<1
W5A	-8.23	2/7/00	951			5.17	160	76.6	1073	0.21	2.9	185	5182	5.33	165.1	81.1	1136	0.85	23.0	7.61	30.04	16628	1.92		<1	<1
W5A	-8.23	3/21/00	953			5.06	157	75.3	1055	0.06	0.8	181	5072	4.95	153.3	76.3	1069	0.84	23.1	7.63	29.87	16532	1.45		<1	<1
W5A	-8.23	4/10/00	1017			5.08	157	72.2	1012	0.07	1.0	176	4943	4.89	151.5	78.2	1095	0.80	22.4	7.64	29.84	16516	1.44		<1	<1
W5A	-8.23	5/15/00	930			5.22	162	66.4	930	0.22	3.1	193	5432	5.30	164.2	70.3	985	0.79	22.5	7.62	29.68	16430	1.16		<1	<1
W5A	-8.23	6/5/00	931			5.14	159	62.7	878	0.05	0.7	202	5673	5.26	162.9	67.6	947	0.76	22.8	7.58	29.67	16421	1.04		<1	<1
W5A	-8.23	7/26/00	1000			5.19	161	70.3	985	0.05	0.7	192	5404	5.30	164.2	72.8	1020	0.73	23.0	7.62	29.98	16597	1.29		<1	<1
W5A	-8.23	8/29/00	858			5.20	161	78.0	1093	0.03	0.4	199	5589	5.25	162.6	80.1	1122	0.74	22.8	7.57	29.38	16265	1.42		<1	<1
W5A	-8.23	9/5/00	929			4.95	153	78.4	1098	0.13	1.8	188	5266	5.15	159.5	80.3	1125	0.72	22.8	7.57	30.20	16718	1.34		<1	<1
W5A	-8.23	10/24/00	930			4.88	151	80.2	1123	0.14	2.0	177	4968	5.09	157.7	84.2	1179	0.74	23.0	7.56	30.69	16985	1.36		<1	2
W5A	-8.23	11/13/00	908			4.58	142	84.4	1182	0.26	3.6	183	5126	4.82	149.3	89.3	1251	0.75	23.7	7.55	30.42	16837	1.28		<1	<1
W5A	-8.23	12/18/00	917			4.59	142	100	1406	0.20	2.8	168	4716	4.72	146.2	106	1488	0.94	23.3	7.55	30.57	16921	0.59		<1	<1

NELHA Water Quality Laboratory

Well 5A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	1/22/01	911				4.35	135	86.3	1209	0.02	0.3	164	4606	4.48	138.8	88.3	1236	0.84	23.3	7.54	30.89	17099	0.77		<1	1
W5A	-8.23	2/5/01	936				4.23	131	87.5	1226	0.17	2.4	166	4673	4.35	134.7	91.0	1274	0.78	23.2	7.55	30.88	17093	0.55		<1	<1
W5A	-8.23	3/5/01	928				4.25	132	81.4	1140	0.02	0.3	159	4468	4.53	140.3	84.6	1185	0.82	23.1	7.50	30.50	16880	0.70		<1	<1
W5A	-8.23	4/17/01	915				4.48	139	90.0	1261	0.02	0.3	153	4297	4.58	141.9	94.6	1325	0.80	22.7	7.56	30.94	17124	1.20		<1	<1
W5A	-8.23	5/15/01	851				4.50	139	93.6	1311	0.17	2.4	155	4339	4.50	139.4	95.6	1339	0.70	22.4	7.59	30.74	17017	1.41		3	1
W5A	-8.23	6/12/01	904				4.70	146	86.7	1215	0.02	0.3	156	4390	4.55	140.9	90.8	1272	0.68	22.1	7.59	30.61	16942	1.38		<1	<1
W5A	-8.23	7/23/01	909				4.47	138	81.7	1145	0.04	0.6	159	4454	4.48	138.8	88.8	1244	0.81	22.2	7.59	30.88	17095	1.64		<1	<1
W5A	-8.23	8/8/01	912				4.44	138	84.1	1178	0.03	0.4	167	4687	4.44	137.5	87.8	1230	0.81	21.9	7.59	30.78	17036	1.27		<1	<1
W5A	-8.23	9/19/01	916				4.76	147	94.6	1325	0.04	0.6	160	4488	4.92	152.4	97.8	1370	0.78	22.3	7.61	30.73	17010	1.55		<1	<1
W5A	-8.23	10/24/01	849				4.78	148	95.3	1335	0.08	1.1	165	4643	5.06	156.7	103	1436	0.77	22.3	7.57	30.23	16735	1.03		<1	<1
W5A	-8.23	11/7/01	906				4.92	152	104	1451	0.06	0.8	167	4682	4.92	152.4	124	1735	0.75	22.4	7.58	30.29	16767	1.29		<1	1
W5A	-8.23	12/19/01	925				5.06	157	108	1518	0.16	2.2	163	4578	4.98	154.2	140	1967	0.72	22.4	7.59	30.15	16689	2.11		<1	<1
W5A	-8.23	1/9/02	919				5.31	164	104	1454	0.18	2.5	166	4673	5.23	162.0	108	1517	0.78	22.2	7.61	30.32	16782	2.07		1	<1
W5A	-8.23	2/19/02	1035				5.22	162	98.2	1375	0.05	0.7	157	4401	5.24	162.3	98.5	1380	0.71	22.0	7.62	30.56	16917	1.80		<1	<1
W5A	-8.23	3/20/02	933				4.96	154	98.1	1374	0.16	2.2	151	4238	5.12	158.6	101	1410	0.75	21.8	7.64	30.66	16972	1.59		<1	<1
W5A	-8.23	4/8/02	1023				5.00	155	96.7	1354	0.04	0.6	154	4317	5.18	160.4	99.6	1395	0.78	21.8	7.63	30.47	16868	1.26		<1	<1
W5A	-8.23	5/29/02	1011				5.86	182	91.6	1283	0.16	2.2	149	4174	6.18	191.4	93.7	1312	0.73	21.9	7.69	30.19	16709	1.19		<1	<1
W5A	-8.23	6/17/02	944				6.35	197	89.9	1259	0.01	0.1	152	4269	6.44	199.5	96.6	1353	0.68	21.9	7.69	30.08	16651	1.21		<1	<1
W5A	-8.23	7/15/02	940				6.08	188	77.4	1084	0.11	1.5	161	4530	6.28	194.5	84.4	1183	0.74	22.1	7.65	30.65	16966	1.20		<1	<1
W5A	-8.23	8/20/02	939				6.06	188	64.3	901	0.18	2.5	165	4628	6.14	190.2	61.8	866	0.69	22.4	7.64	30.36	16805	1.45		<1	<1
W5A	-8.23	9/23/02	942				5.54	172	68.3	957	0.24	3.4	167	4682	5.64	174.7	66.3	929	0.63	22.8	7.64	34.64	19176	1.65		<1	<1
W5A	-8.23	10/14/02	919				5.28	164	74.3	1041	0.02	0.3	177	4971	5.51	170.7	73.8	1033	0.71	23.0	7.67	29.97	16588	2.30		<1	9
W5A	-8.23	11/4/02	929				5.00	155	80.3	1125	0.02	0.3	153	4294	5.24	162.3	77.9	1091	0.82	23.4	7.69	30.68	16984	2.29		2	8
W5A	-8.23	12/17/02	950				5.43	168	79.8	1118	0.05	0.7	154	4320	5.63	174.4	77.5	1086	0.70	23.3	7.63	30.83	17064	1.29		<1	<1
W5A	-8.23	1/21/03	1010				4.92	152	80.7	1130	0.02	0.3	147	4140	5.18	160.4	86.0	1205	1.23	23.1	7.67	31.68	17538	1.70		<1	22
W5A	-8.23	2/12/03	1001				5.92	183	78.6	1101	0.03	0.4	166	4665	6.06	187.7	90.7	1271	0.82	22.7	7.66	31.03	17177	1.14		<1	<1
W5A	-8.23	3/19/03	948				6.36	197	106	1478	0.04	0.6	150	4221	6.48	200.7	111	1548	0.74	23.1	7.70	30.93	17121	1.40		<1	1
W5A	-8.23	4/28/03	930				5.89	182	87.2	1221	0.46	6.4	146	4095	6.02	186.5	99.5	1394	0.65	23.0	7.74	30.93	17118	2.99		<1	2
W5A	-8.23	5/12/03	908				5.66	175	83.0	1163	0.10	1.4	152	4275	5.85	181.2	89.7	1256	0.68	22.8	7.76	30.81	17056	2.42		<1	12
W5A	-8.23	6/3/03	923				5.59	173	74.8	1048	0.29	4.1	145	4061	5.80	179.6	89.3	1251	0.95	22.9	7.78	30.96	17139	2.50		4	565
W5A	-8.23	7/29/03	940				5.40	167	68.8	963	0.06	0.8	144	4036	5.53	171.3	77.7	1088		22.8	7.77	30.81	17052	2.79		<1	11
W5A	-8.23	8/26/03	945				6.41	199	76.1	1065	0.11	1.5	163	4575	6.49	201.0	84.6	1184		22.7	7.73	29.55	16354	3.28		<1	10
W5A	-8.23	9/15/03	926				6.00	186	73.2	1025	0.04	0.6	150	4199	6.22	192.7	96.6	1353		23.0	7.73	30.47	16866	2.52		<1	1
W5A	-8.23	10/6/03	908				6.10	189	69.1	968	0.10	1.4	158	4435	6.26	193.9	76.5	1071		22.8	7.73	30.25	16746	NA		<1	<1
W5A	-8.23	10/28/03	952				5.94	184	69.0	966	0.10	1.4	152	4266	4.80	148.7	74.0	1036		23.2	7.72	30.40	16829			<1	<1
W5A	-8.23	11/14/03	1318																	23.1				2.46			
W5A	-8.23	12/15/03	914				6.03	187	76.2	1068	0.20	2.8	160	4482	6.19	191.7	82.1	1151		22.7	7.70	30.30	16774	2.21		<1	<1
W5A	-8.23	1/26/04	919				5.97	185	83.6	1171	0.10	1.4	144	4030	6.18	191.4	90.6	1269		21.7	7.67	30.16	16694	1.93		<1	<1
W5A	-8.23	2/5/04	918				6.06	188	88.0	1232	0.21	2.9	146	4103	6.18	191.4	96.5	1352		21.6	7.69	30.11	16668	2.95		<1	<1
W5A	-8.23	3/2/04	923				6.18	191	94.8	1327	0.47	6.6	148	4151	6.18	191.4	104	1461		21.3	7.71	29.94	16574	3.02		<1	<1
W5A	-8.23	4/20/04	917				6.74	209	100	1402	0.01	0.1	159	4452	6.76	209.4	105	1471		21.6	7.69	29.42	16287	2.02		<1	3
W5A	-8.23	5/11/04	833				7.04	218	94.0	1317	0.30	4.2	162	4555	6.96	215.6	98.9	1385		21.2	7.70	28.93	16014	2.10		<1	26
W5A	-8.23	6/2/04	852				6.66	206	83.2	1165	0.14	2.0	152	4266	6.80	210.6	88.0	1233		24.7	7.70	29.29	16213	2.57		<1	<1

NELHA Water Quality Laboratory

Well 5A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	7/14/04	924				5.92	183	89.2	1249	0.26	3.6	144	4039	5.88	182.1	105	1475		22.3	7.74	29.52	16340	3.38		<1	<1
W5A	-8.23	8/23/04	916				6.70	208	97.3	1362	0.29	4.1	161	4530	6.64	205.7	102	1429		22.7	7.68	28.86	15975	1.86		<1	<1
W5A	-8.23	9/2/04	927				6.43	199	94.3	1321	0.09	1.3	161	4519	6.50	201.3	98.8	1384		22.6	7.71	28.81	15947	2.49		<1	<1
W5A	-8.23	10/4/04	855				5.84	181	86.4	1209	0.16	2.2	145	4081	6.10	188.9	92.2	1291		20.6	7.70	29.52	16340	3.12		<1	<1
W5A	-8.23	11/23/04	850				6.04	187	72.0	1008	0.05	0.7	156	4379	6.24	193.3	104	1455		21.3	7.68	29.53	16346	1.88		<1	<1
W5A	-8.23	12/8/04	850				5.72	177	76.1	1066	0.09	1.3	150	4204	5.88	182.1	98.0	1372		22.8	7.71	29.69	16434	2.87		<1	<1
W5A	-8.23	1/18/05	903				5.98	185	68.2	955	0.06	0.8	152	4263	6.16	190.8	74.3	1041		22.8	7.67	30.41	16831	1.36		<1	1
W5A	-8.23	2/10/05	850				6.18	191	74.9	1049	0.25	3.5	155	4339	6.36	197.0	97.7	1369		22.7	7.69	30.24	16740	1.58		<1	<1
W5A	-8.23	3/22/05	857				7.18	222	97.8	1370	0.15	2.1	144	4030	7.40	229.2	104	1454	0.98	22.1	7.75	30.31	16777	1.65		<1	2
W5A	-8.23	4/20/05	848				6.30	195	87.4	1224	0.11	1.5	134	3752	6.40	198.2	89.4	1253		21.9	7.80	30.55	16912	2.68		<1	11
W5A	-8.23	5/25/05	910				6.02	186	75.7	1060	0.24	3.4	137	3853	6.46	200.1	89.0	1247		20.4	7.77	30.23	16733	2.75		<1	6
W5A	-8.23	6/14/05	908				5.76	178	66.5	931	0.63	8.8	138	3879	5.94	184.0	74.1	1038		21.9	7.78	30.32	16783	3.16		2520	1244
W5A	-8.23	7/19/05	903				5.42	168	71.2	997	0.07	1.0	145	4070	5.68	175.9	73.9	1035	0.72	22.8	7.82	29.84	16516	3.36		<1	1
W5A	-8.23	8/3/05	933				5.48	170	70.2	983	0.03	0.4	147	4117	5.66	175.3	71.7	1005	0.62	22.9	7.85	29.82	16504	4.69		<1	1
W5A	-8.23	9/22/05	856				5.10	158	56.9	797	0.07	1.0	145	4061	5.32	164.8	61.3	859	0.57	24.9	7.83	30.63	16953	3.22		<1	920
W5A	-8.23	10/19/05	910				4.80	149	72.0	1009	0.12	1.7	130	3654	4.98	154.2	78.5	1100		25.1	7.72	30.86	17081	3.39		<1	<1
W5A	-8.23	11/8/05	855				4.62	143	68.9	965	0.09	1.3	117	3297	4.84	149.9	75.6	1059		25.2	7.67	31.27	17309	3.49		<1	<1
W5A	-8.23	12/22/05	829				4.66	144	73.7	1032	0.32	4.5	133	3733	4.90	151.8	74.7	1046		24.7	7.56	31.28	17316	1.66		<1	<1
W5A	-8.23	1/31/06	854				4.72	146	67.8	950	0.19	2.7	136	3806	4.92	152.4	71.5	1001		23.8	7.55	31.07	17196	2.03		<1	<1
W5A	-8.23	2/16/06	849				4.82	149	66.4	930	0.22	3.1	136	3825	5.08	157.3	69.8	977	0.58	23.6	7.55	31.00	17160	1.58		<1	<1
W5A	-8.23	3/22/06	840				4.55	141	63.5	889	0.23	3.2	130	3651	4.69	145.3	68.6	961	0.63	23.5	7.54	31.38	17371	2.91		<1	29
W5A	-8.23	4/27/06	920				4.51	140	67.3	943	0.35	4.9	124	3483	4.73	146.5	63.3	886	0.67	23.6	7.61	31.35	17351	3.00		<1	341
W5A	-8.23	5/24/06	942				4.25	132	61.0	854	0.06	0.8	121	3398	4.52	140.0	59.0	826	0.77	24.0	7.54	31.30	17328	2.38		<1	>5,000
W5A	-8.23	6/28/06	927				4.18	129	57.6	807	0.29	4.1	123	3455	4.36	135.0	54.0	756	0.59	23.9	7.49	31.61	17494	1.64		<1	9
W5A	-8.23	7/19/06	905				4.42	137	55.6	779	0.32	4.5	128	3595	4.59	142.2	47.6	666	0.65	24.4	7.47	31.27	17311	2.82		<1	1
W5A	-8.23	8/9/06	927				4.12	128	53.8	754	0.20	2.8	122	3426	4.35	134.7	49.7	696	0.63	24.4	7.45	31.71	17551	1.28		<1	<1
W5A	-8.23	9/20/06	938				4.46	138	47.6	667	0.70	9.8	121	3398	4.78	148.1	46.8	655	0.71	25.1	7.46	31.77	17586	0.86		1	>5000
W5A	-8.23	10/25/06	933				4.74	147	44.3	620	0.31	4.3	130	3651	4.95	153.3	43.1	603	0.74	25.3	7.47	31.48	17424	0.59		<1	499
W5A	-8.23	11/29/06	930				5.00	155	48.9	685	0.26	3.6	130	3651	5.17	160.1	45.4	635	0.66	25.4	7.48	31.62	17500	0.48		<1	5
W5A	-8.23	12/13/06	934				4.84	150	54.3	761	0.24	3.4	122	3426	5.11	158.3	52.0	728	0.62	25.4	7.48	31.80	17602	0.86		<1	1
W5A	-8.23	1/10/07	920				4.67	145	55.5	777	0.29	4.1	121	3398	4.80	148.7	57.6	807	0.58	24.7	7.47	31.83	17617	0.87		<1	14
W5A	-8.23	2/21/07	1000				4.29	133	63.0	882	0.58	8.1	107	3005	4.61	142.8	69.9	979	0.67	23.9	7.51	31.52	17445	1.92		<1	<1
W5A	-8.23	3/7/07	951				4.39	136	70.0	980	0.32	4.5	118	3314	4.51	139.7	70.7	990	0.64	23.7	7.54	31.16	17245	1.63		<1	<1
W5A	-8.23	4/19/07	930				4.61	143	68.7	962	0.45	6.3	119	3342	4.89	151.5	61.4	859	0.55	23.5	7.59	31.04	17180	1.96		<1	1
W5A	-8.23	5/2/07	937				4.60	142	61.8	866	0.33	4.6	123	3455	4.87	150.8	61.0	854	0.57	23.0	7.58	31.16	17247	2.09		<1	<1
W5A	-8.23	6/20/07	941				4.61	143	62.6	876	0.23	3.2	127	3567	4.99	154.6				23.3	7.60	31.23	17287	1.85		<1	1
W5A	-8.23	7/23/07	1105	-3.05	0.52	Flood	3.76	116	34.5	484	0.04	0.5	66	1854	3.96	122.7	35.8	501		22.4	7.53	31.76	17580	2.64			
W5A	-8.23	8/27/07	1404	-3.15	0.52	Flood	5.19	161	71.7	1004	0.06	0.8	102	2868	4.80	148.7	71.9	1007		23.8	7.57	30.85	17076	2.38			
W5A	-8.23	9/18/07	1540	-3.12	0.24	Ebb	5.08	157	71.9	1007	0.15	2.1	124	3487	5.20	161.0	72.5	1016		23.0	7.54	30.92	17115	1.81			
W5A	-8.23	10/23/07	1412	-3.12	0.52	High	5.25	163	78.2	1095	0.35	5.0	122	3437	5.26	162.8	79.2	1110		22.2	7.52	30.44	16849	1.54			
W5A	-8.23	11/20/07	1412	-3.15	0.38	Ebb	5.65	175	79.2	1110	0.08	1.1	142	3982	5.06	156.7	85.0	1191		21.2	7.57	30.35	16800	1.10			
W5A	-8.23	12/19/07	1251	-3.25	0.30	High	5.80	180	94.2	1319	1.15	16	148	4161						21.3	7.38	29.14	16130	0.48			

NELHA Water Quality Laboratory

Well 5A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	1/25/08	1020	-3.05	0.24	Ebb	3.74	116	32.1	450	0.53	7.4	86	2409						21.1	7.12	30.22	16728	0.82			
W5A	-8.23	2/26/08	1202	-3.40	0.03	Ebb	6.49	201	100.8	1412	0.65	9.1	133	3727						20.7	7.34	30.48	16871	1.11			
W5A	-8.23	3/17/08	1334	-3.28	0.21	Flood	6.86	212	87.6	1227	0.06	0.8	125	3521						20.4	7.38	29.95	16578	0.59			
W5A	-8.23	4/29/08	928	-3.43	0.09	Flood	6.37	197	81.7	1144	0.09	1.2	138	3882						20.1	7.34	30.23	16733	1.24			
W5A	-8.23	5/28/08	935	-3.45	0.18	Flood	5.94	184	79.4	1112	0.13	1.8	149	4185						20.4	7.40	30.04	16628	0.84			
W5A	-8.23	6/17/08	1045	-3.38	0.00	Flood	5.99	185	85.1	1192	0.89	12	141	3954						20.4	7.29	30.21	16722	4.33	2.32		
W5A	-8.23	7/22/08	939	-3.43	0.30	Ebb	5.49	170	77.0	1079	0.20	2.8	144	4045						20.6	7.42	30.20	16716	0.74			
W5A	-8.23	7/31/08	935	-3.73	-0.09	Low	5.47	170	78.0	1093	0.67	9.4	136	3818						24.1	7.36	30.11	16667	1.56			
W5A	-8.23	9/16/08	1023	-3.53	0.12	Ebb	5.62	174	78.8	1104	0.65	9.1	138	3881						21.3	7.32	30.42	16838	2.73			
W5A	-8.23	10/31/08	937	-3.35	0.30	Ebb	6.08	188	70.2	984	0.16	2.2	142	3979						23.1	7.34	30.43	16844	0.79			
W5A	-8.23	11/14/08	1129	-3.55	0.12	Ebb	6.40	198	86.4	1210	0.20	2.8	145	4069						22.7	7.58	30.10	16661	0.66	1.02		
W5A	-8.23	12/15/08	1519	-3.48	0.61	Ebb	6.82	211	100.7	1410	1.61	23	152	4281						23.9	7.58	30.25	16744	0.81			
W5A	-8.23	1/23/09	1424	-3.39	0.15	High	7.00	217	111.3	1559	0.78	11	131	3682						22.9	7.51	30.39	16822	1.36	1.89		
W5A	-8.23	2/24/09	1542	-3.33	0.30	Flood	6.28	195	55.2	773	1.10	15.4	137	3843						22.4	7.45	30.82	17060	3.14	0.20		
W5A	-8.23	3/16/09	1529	-3.61	0.03	Low	5.81	180	93.8	1315	0.13	1.8	124	3491						22.9	7.34	30.32	16783	1.59	2.01		
W5A	-8.23	4/30/09	1602	-3.64	0.09	Flood	8.43	261	108.1	1515	1.01	14.1	144	4042						22.4	7.74	29.87	16534	1.32			
W5A	-8.23	5/29/09	938	-3.42	0.21	High	6.72	208	94.4	1322	0.17	2.4	114	3202						20.9	7.78	30.55	16910	1.56	0.38		
W5A	-8.23	6/18/09	1355	-3.05	0.61	High	5.58	173	80.3	1125	0.34	4.7	114	3206						20.8	7.43	30.69	16988	1.78	0.03		
W5A	-8.23	7/31/09	1057	-3.14	0.52	Flood	6.97	216	90.8	1273	0.16	2.2	100	2813						21.0	7.50	30.59	16932	1.94	0.06		
W5A	-8.23	8/19/09	1055	-3.40	0.09	Flood	4.81	149	71.2	998	1.44	20.2	87	2452						21.2	7.46	30.68	16982	1.54	0.11		
W5A	-8.23	9/24/09	920	-3.15	0.61	High	6.07	188	85.3	1195	0.33	4.6	119	3349						21.0	8.17	30.23	16733	1.12	0.04		
W5A	-8.23	10/23/09	1343	-3.53	0.21	Ebb	3.99	124	49.1	688	0.56	7.8	71	1994						21.8	7.45	30.12	16672	1.71	0.07		
W5A	-8.23	11/17/09	1002	-3.56	0.21	Ebb	5.89	182	76.0	1064	0.86	12.1	169	4736						21.6	7.44	29.98	16595	1.26	0.02		
W5A	-8.23	12/8/09	1020	-3.20	0.52	Ebb	5.39	167	82.0	1148	0.99	13.9	177	4976						21.5	7.49	29.89	16545	0.93	0.03		
W5A	-8.23	1/6/10	954	-3.25	0.40	Ebb	5.36	166	84.1	1178	1.50	21.0	169	4749						22.2	7.49	29.68	16429	1.69	0.18		
W5A	-8.23	2/2/10	936	-3.22	0.24	Ebb	5.94	184	107.1	1500	0.79	11.0	152	4279						21.8	7.51	29.84	16517	1.51	0.18		
W5A	-8.23	3/10/10	910	-3.68	0.09	Low	6.75	209	105.6	1479	0.43	6.0	175	4928						21.3	7.56	29.51	16335	1.21	0.44		
W5A	-8.23	4/6/10	1508	-3.59	0.09	Ebb	6.46	200	96.8	1356	0.64	9.0	170	4781						20.8	7.47	29.77	16478	1.33	0.25		
W5A	-8.23	5/12/10	850	-3.73	-0.06	Low	6.07	188	87.5	1226	1.21	17.0	163	4582						20.8	7.60	29.75	16467	1.27	0.06		
W5A	-8.23	6/16/10	1102	-3.58	0.09	Ebb	6.52	202	100.7	1410	0.36	5.0	183	5128						20.7	7.50	29.74	16462	1.78	0.33		
W5A	-8.23	7/14/10	850	-3.40	0.18	Ebb	4.33	134	80.9	1133	0.21	3.0	144	4035						20.5	7.50	29.85	16523	1.97	0.06		
W5A	-8.23	8/3/10	1723	-3.31	0.12	Ebb	5.97	185	90.5	1267	0.20	2.8	171	4796						20.8	7.55	30.09	16656	1.31	0.13		
W5A	-8.23	9/13/10	1459	-3.41	0.24	Ebb	6.30	195	90.6	1269	0.15	2.1	184	5154						20.9	7.45	30.08	16650	1.79	0.12		
W5A	-8.23	10/11/10	1011	-3.01	0.46	Ebb	6.07	188	87.3	1223	0.07	1.0	176	4930						21.0	7.59	30.16	16694	1.62	0.28		
W5A	-8.23	11/15/10	1134	-3.18	0.43	High	6.42	199	84.7	1186	0.08	1.1	178	5002						21.3	7.50	30.41	16833	1.08	0.10		
W5A	-8.23	12/13/10	908	-3.16	0.00	High	6.46	200	86.6	1213	0.07	1.0	177	4983						21.2	7.44	30.23	16733	0.96	0.11		
W5A	-8.23	1/3/11	1529	-3.44	0.21	High	6.42	199	89.5	1254	0.14	2.0	174	4892						21.3	7.47	30.04	16628	1.33	0.09		
W5A	-8.23	4/4/11	1421	-3.28	0.30	Flood	5.62	174	97.2	1362	0.14	1.9	169	4756						20.9	7.71	29.99	16600	2.10	0.07		
W5A	-8.23	7/11/11	1307	-3.14	0.67	Flood	5.84	181	105.7	1481	0.11	1.6	157	4417						21.6	7.51	30.18	16705	3.83	0.28		
W5A	-8.23	10/10/11	1220	-3.42	0.30	Flood	6.04	187	88.7	1243	0.41	5.7	159	4452						21.5	7.44	30.51	16888	2.75	0.10		
W5A	-8.23	1/9/12	1249	-3.58	0.03	Low	6.39	198	85.9	1203	0.33	4.6	158	4445						21.4	7.43	29.54	16351	1.42	0.09		
W5A	-8.23	4/30/12	1412	-3.25	0.27	Ebb	6.62	205	98.9	1385	0.16	2.2	159	4471						20.7	7.45	30.20	16716	1.69	0.03		
W5A	-8.23	7/1/12	1605	-2.92	0.73	High	6.52	202	93.9	1315	0.17	2.4	158	4442						20.2	7.45	30.55	16910	3.15	0.26		
W5A	-8.23	10/15/12	1236	-3.47	0.12	Flood	5.94	184	88.2	1235	0.07	1.0	163	4584						20.3	7.49	30.37	16811	2.45	0.02		
W5A	-8.23	1/7/13	1324	-3.37	0.24	Ebb	5.71	177	113.1	1584	0.10	1.4	199	5602						19.6	7.53	30.46	16860	3.04	0.02		
W5A	-8.23	4/8/13	1132	-3.61	0.09	Flood	6.04	187	117.5	1646	0.24	3.3	155	4351						19.0	7.59	29.98	16595	3.19	0.03		

NELHA Water Quality Laboratory

Well 5A Data Table

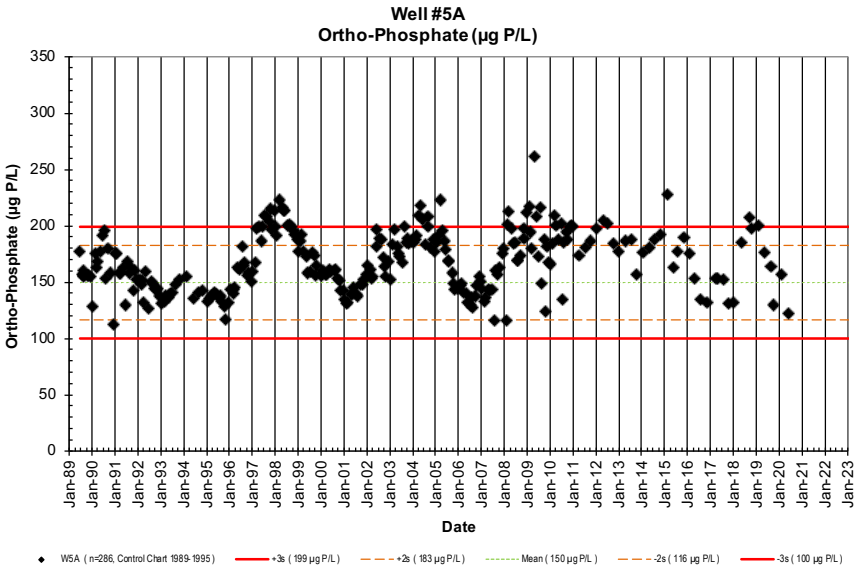
6/23/1989 - 7/21/20

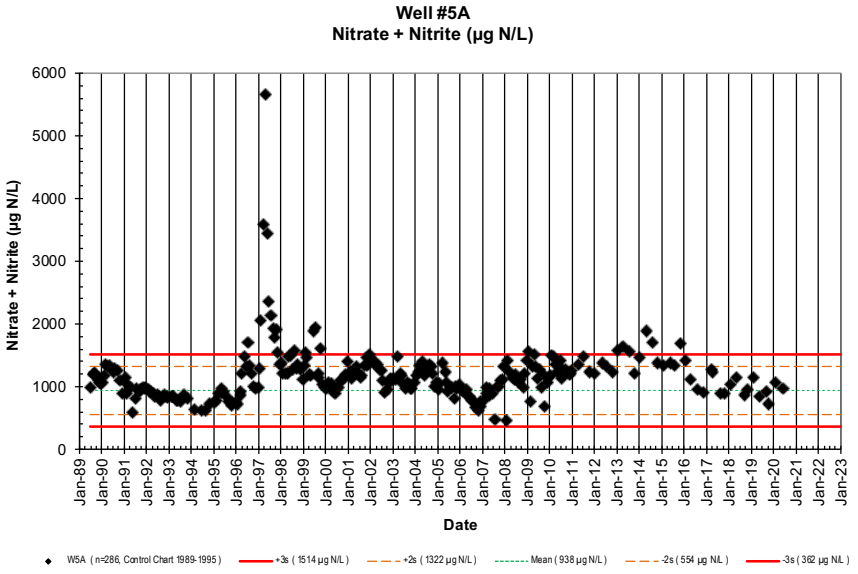
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5A	-8.23	7/16/13	1512	-3.30	0.37	Ebb	6.07	188	111.4	1561	0.14	1.9	164	4616						20.3	7.63	30.13	16678	2.16	0.12		
W5A	-8.23	10/14/13	1525	-3.15	0.43	Ebb	5.07	157	86.5	1212	0.38	5.3	144	4045						22.7	7.53	31.07	17198	3.85	0.18		
W5A	-8.23	1/14/14	1415	-3.39	0.21	Flood	5.68	176	103.6	1451	0.30	4.2	152	4267						20.4	7.55	31.99	17707	3.74	0.13		
W5A	-8.23	4/28/14	1633	-3.04	0.55	High	5.84	181	134	1880	0.57	8.0	145	4080						21.2	7.65	29.74	16462	2.23	0.16		
W5A	-8.23	7/28/14	1422	-3.39	0.38	Flood	6.07	188	121.2	1698	2.07	29.0	148	4166						21.4	7.61	30.26	16750	2.76	0.09		
W5A	-8.23	11/3/14	1059	-3.22	0.38	Flood	6.20	192	98.4	1378	0.07	1.0	146	4109						22.2	7.60	30.10	16661	1.93	0.07		
W5A	-8.23	2/9/15	1625	-3.43	0.10	Low	7.35	228	95.7	1341	0.42	5.9	163	4581						21.7	7.51	30.91	17109	1.69	0.28		
W5A	-8.23	5/19/15	1620	-2.99	0.61	Flood	5.27	163	98.3	1377	0.44	6.1	134	3758						21.4	7.67	30.36	16805	2.50	0.03		
W5A	-8.23	7/22/15	1104	-3.42	0.24	Ebb	5.72	177	94.6	1325	0.02	0.3	140	3922						22.9	7.55	30.86	17082	1.96	0.02		
W5A	-8.23	11/13/15	1026	-3.32	0.15	Low	6.13	190	120.7	1690	0.06	0.9	142	3995						24.0	7.62	30.53	16899	1.92	0.15		
W5A	-8.23	1/26/16	1625	-3.31	0.33	Flood	5.67	176	101.4	1420	0.13	1.8	138	3871						22.8	7.44	30.64	16960	1.24	0.10		
W5A	-8.23	4/21/16	1548	-3.08	0.50	Ebb	4.95	153	78.7	1103	0.35	4.9	126	3553						22.4	7.55	30.92	17115	2.55	0.03		
W5A	-8.23	7/26/16	1523	-3.42	0.40	Ebb	4.33	134	68.0	953	0.35	4.9	116	3246						23.8	7.81	31.12	17226	2.99	0.06		
W5A	-8.23	11/15/16	1021	-3.45	0.10	Low	4.26	132	64.1	897	0.02	0.3	125	3522						24.5	7.60	30.98	17148	3.25	0.02		
W5A	-8.23	3/22/17	1407	-3.28	0.20	Ebb	4.97	154	90.8	1272	0.32	4.5	129	3613						23.2	7.77	31.36	17359	1.70	0.06		
W5A	-8.23	4/19/17	1348	-3.36	0.12	Ebb	4.95	153	88.0	1232	0.28	3.9	128	3594						23.5	7.66	31.22	17281	1.54	0.06		
W5A	-8.23	8/9/17	1552	-2.98	0.50	Flood	4.91	152	63.5	889	0.02	0.3	134	3777						23.5	7.69	31.43	17397	2.08	0.05		
W5A	-8.23	10/19/17	1416	-3.14	0.50	Flood	4.24	131	63.6	891	0.40	5.6	113	3161						24.8	7.75	31.35	17353	3.45	0.04		
W5A	-8.23	1/18/18	1402	-3.50	0.20	Flood	4.25	132	73.8	1033	0.23	3.2	123	3468						23.8	7.54	31.23	17287	3.11	0.05		
W5A	-8.23	5/11/18	1025	-3.49	0.15	Flood	5.97	185	82.4	1154	0.27	3.8	127	3563						22.6	7.69	30.49	16877	1.31	0.02		
W5A	-8.23	9/4/18	1327	-2.96	0.67	Flood	6.68	207	61.2	858	0.41	5.8	126	3549						23.3	7.78	30.50	16883	0.93	0.05		
W5A	-8.23	10/25/18	1504	-3.24	0.49	High	6.41	198	67.5	945	0.19	2.7	96	2689						23.2	7.67	30.31	16777	1.59	0.18		
W5A	-8.23	2/8/19	1331	-3.69	0.06	Low	6.45	200	82.7	1158	0.04	0.5	132	3708						22.6	7.45	30.50	16883	1.40	0.03		
W5A	-8.23	5/16/19	931	-3.72	-0.07	Low	5.71	177	60.3	844	0.08	1.1	124	3494						22.4	7.64	31.51	17442	3.55	0.04		
W5A	-8.23	8/28/19	1136	-3.26	0.35	Flood	5.28	164	66.0	924	0.24	3.4	136	3807						23.7	7.72	31.09	17209	3.09	0.08		
W5A	-8.23	10/11/19	1506	-2.97	0.57	High	4.20	130	51.4	720	0.64	9.0	118	3303						24.6	7.82	31.10	17215	3.99	0.06		
W5A	-8.23	2/5/20	1515	-3.43	0.22	Ebb	5.07	157	75.9	1063	-0.35	-4.9	130	3652						22.7	7.63	31.51	17442	1.86	0.02		
W5A	-8.23	6/3/20	1416	-2.77	0.60	High	3.94	122	69.2	969	0.26	3.7	137	3855						22.1	7.55	30.73	17010	2.79	0.09		
W5A	-8.23	7/1/20																									
W5A	-8.23	10/1/20																									
W5A	-8.23	1/1/21																									
W5A	-8.23	4/1/21																									
W5A	-8.23	7/1/21																									
W5A	-8.23	10/1/21																									
W5A	-8.23	1/1/22																									
W5A	-8.23	4/1/22																									
W5A	-8.23	7/1/22																									
W5A	-8.23	10/1/22																									
W5A	-8.23	1/1/23																									
W5A	-8.23	4/1/23																									
Mean				-3.33	0.28		5.41	167	83.06	1163	0.52	7.2	175	4902	5.40	167	92	1282	0.90	21.0	7.62	29.75	16466	2.88	0.22		
Std. Dev.				0.21	0.20		0.83	26	31.19	437	2.89	40.4	42	1193	0.78	24	90	1261	1.22	2.6	0.14	1.24	687	1.68	0.45		
Maximum				-2.77	0.73		8.43	261	404	5659	43.27	606	292	8201	7.40	229	1290	18069	15.07	25.4	8.17	34.64	19176	7.40	2.32		
Minimum				-3.73	-0.09		3.62	112	32	450	-0.35	-4.9	66	1854	3.80	118	35.8	501	0.36	14.4	7.11	23.02	12740	0.25	0.02		
n				80	80		286	286	286	286	285	286	279	279	205	205	204	204	171	286	285	285	285	284	63		

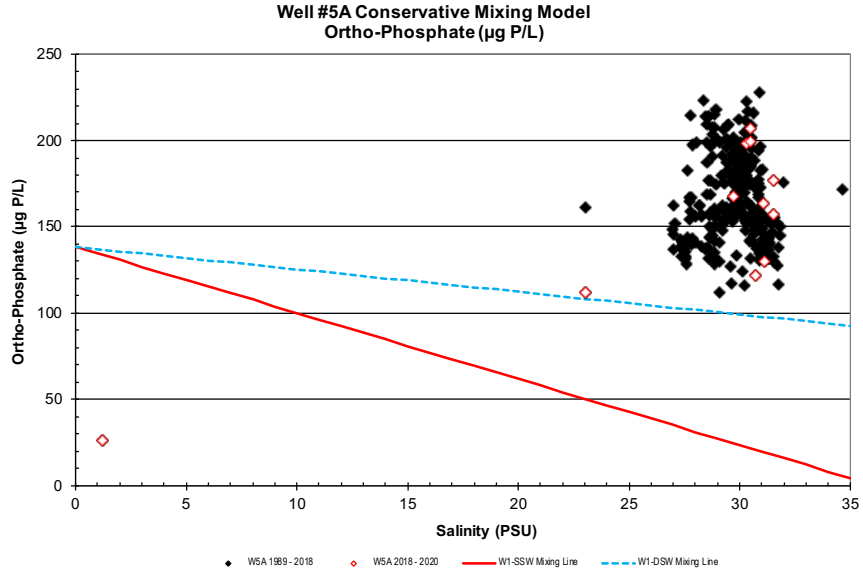
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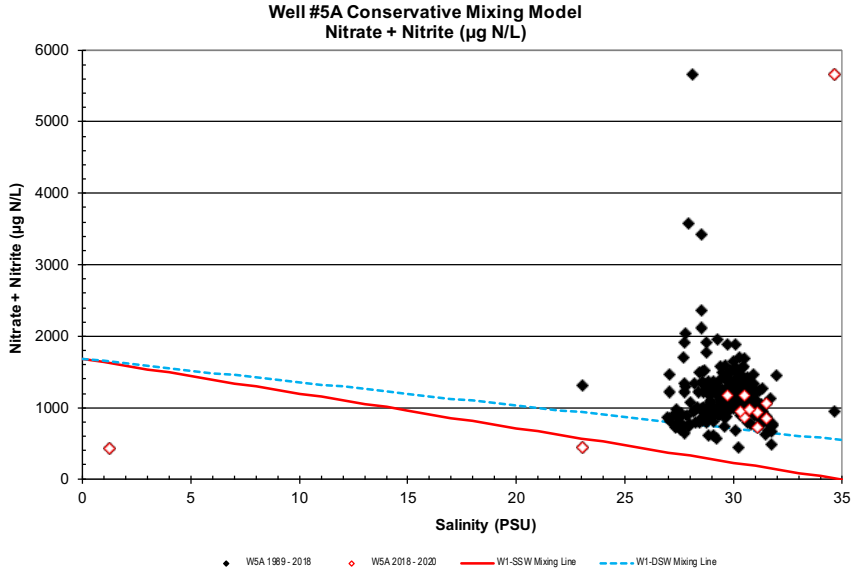
Well 5A Charts

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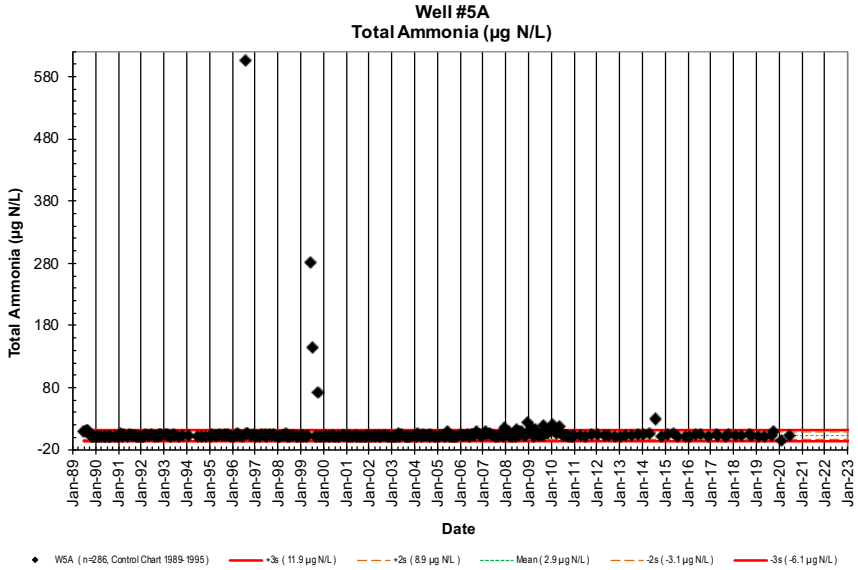


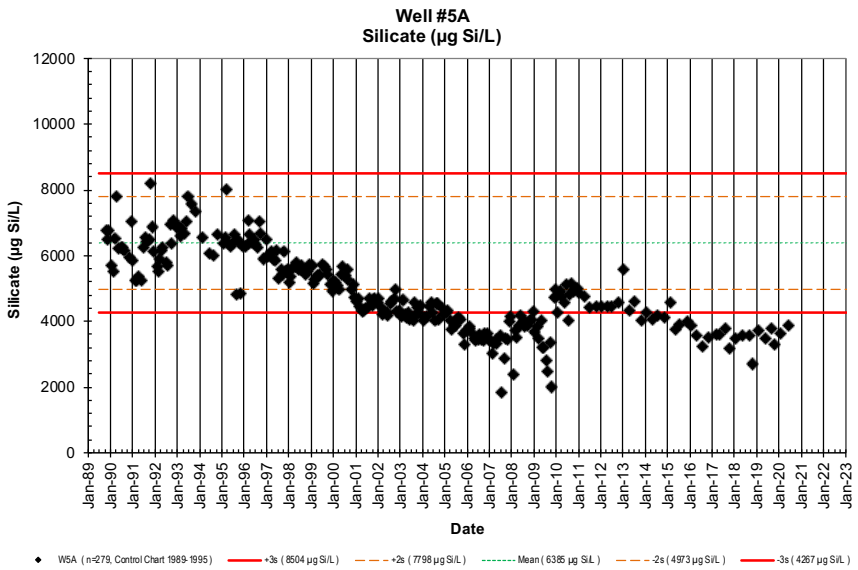


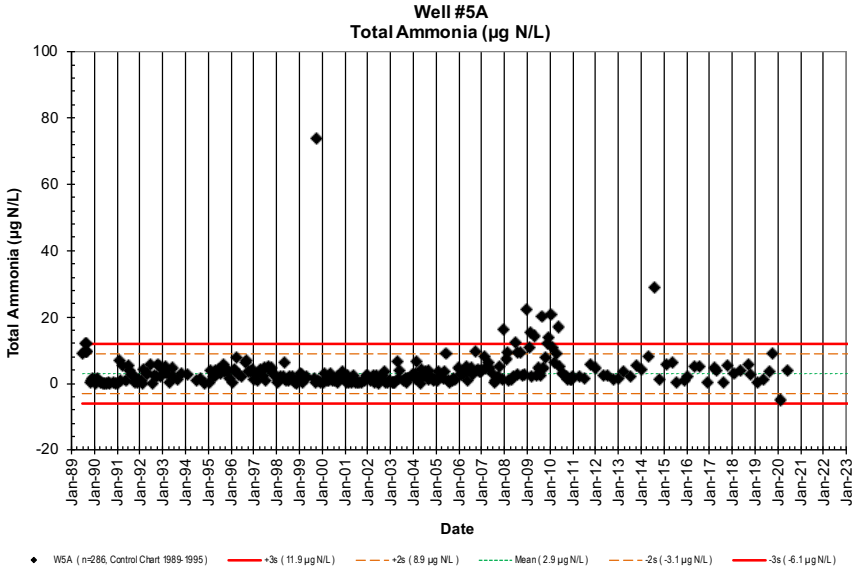
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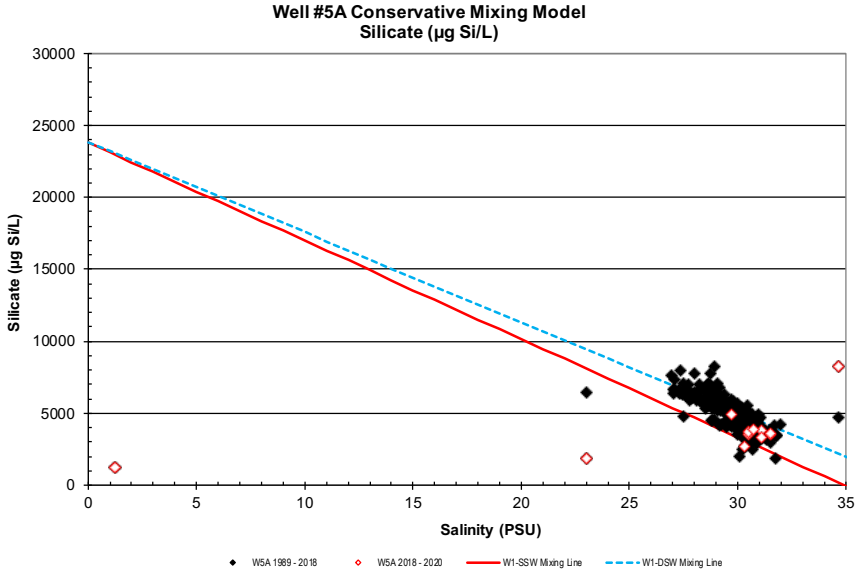
Well 5A Charts

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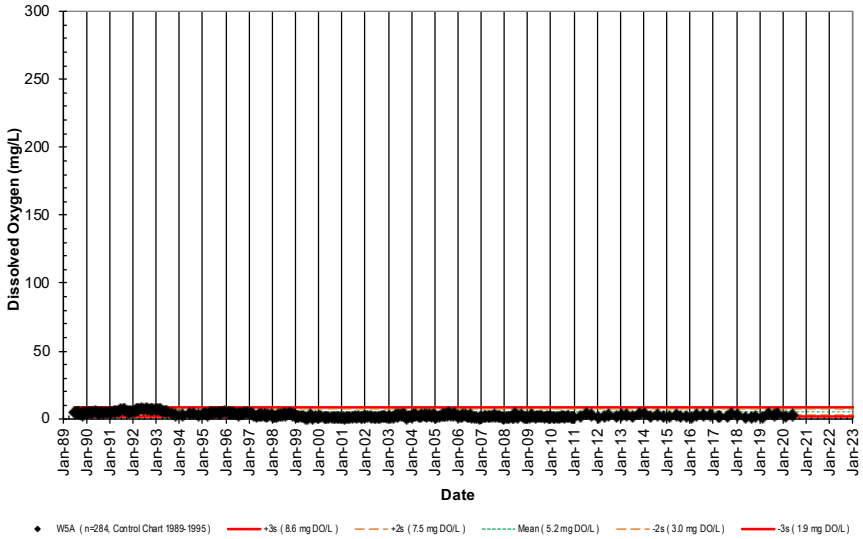


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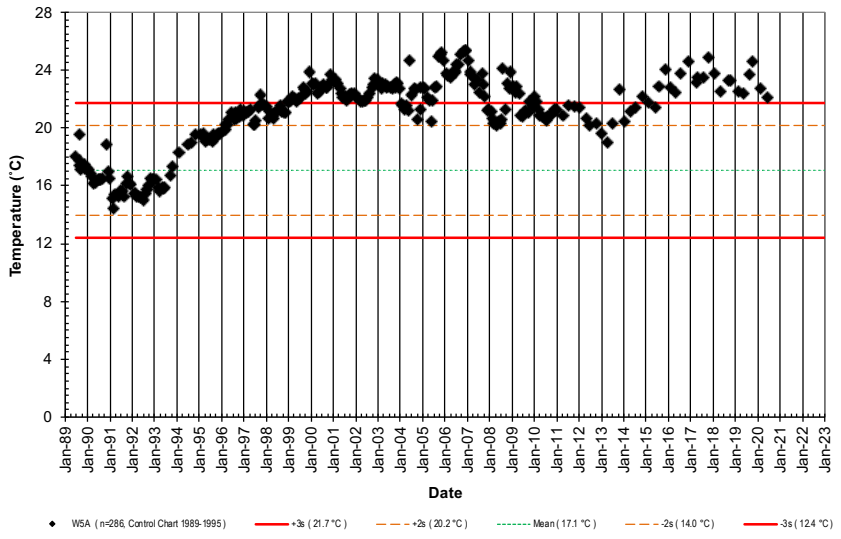
Well 5A Charts

6/23/1989 - 7/21/20

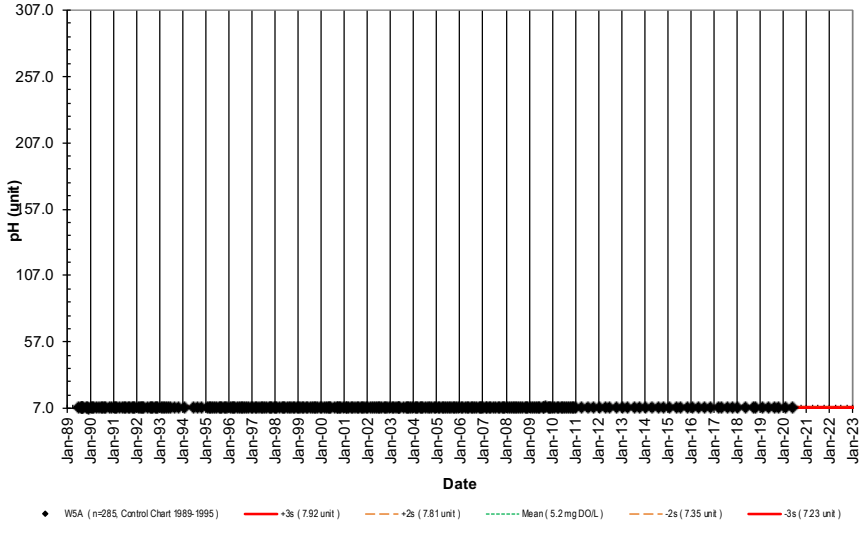
Well #5A
Dissolved Oxygen (mg DO/L)



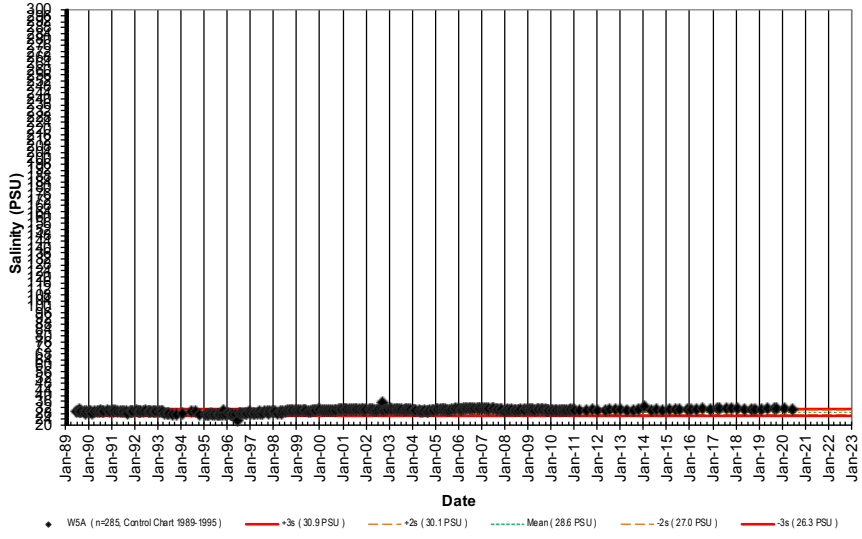
Well #5A
Temperature (˚C)



Well #5A
pH (unit)



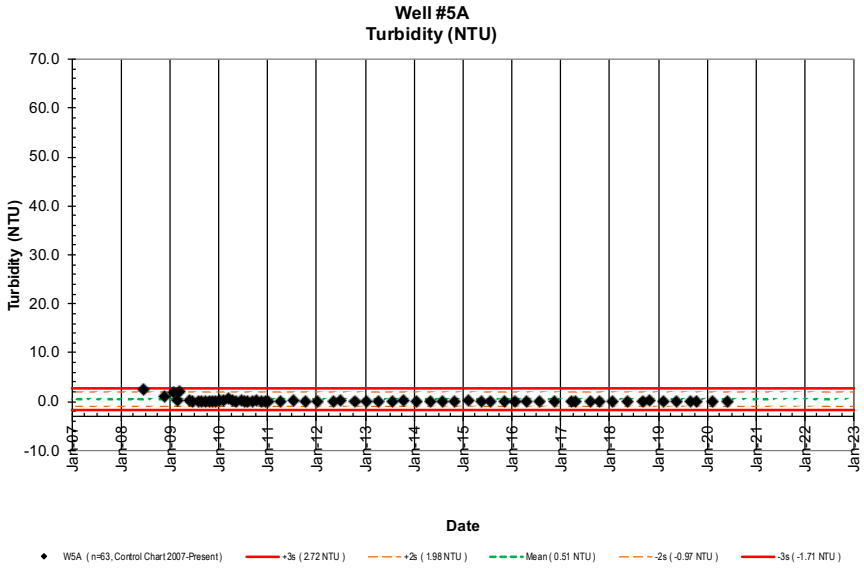
Well #5A
Salinity (PSU)

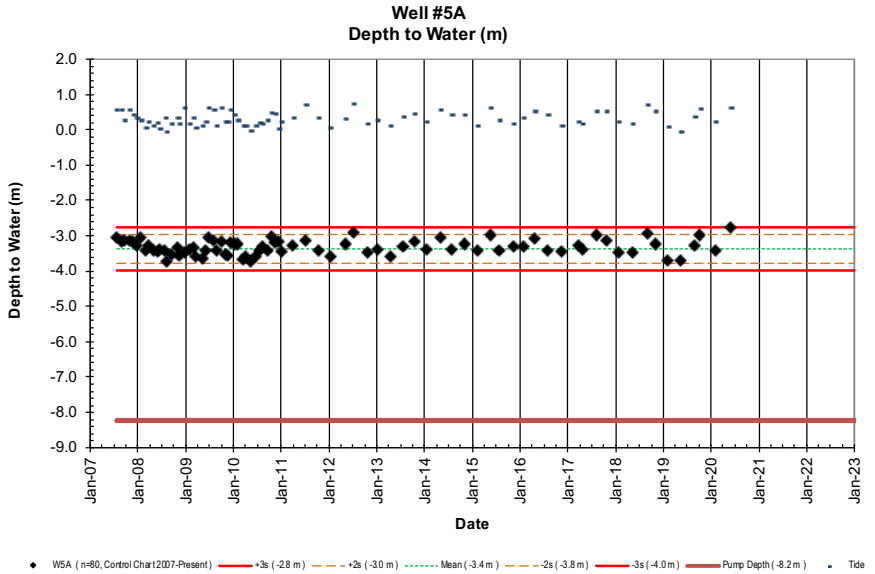


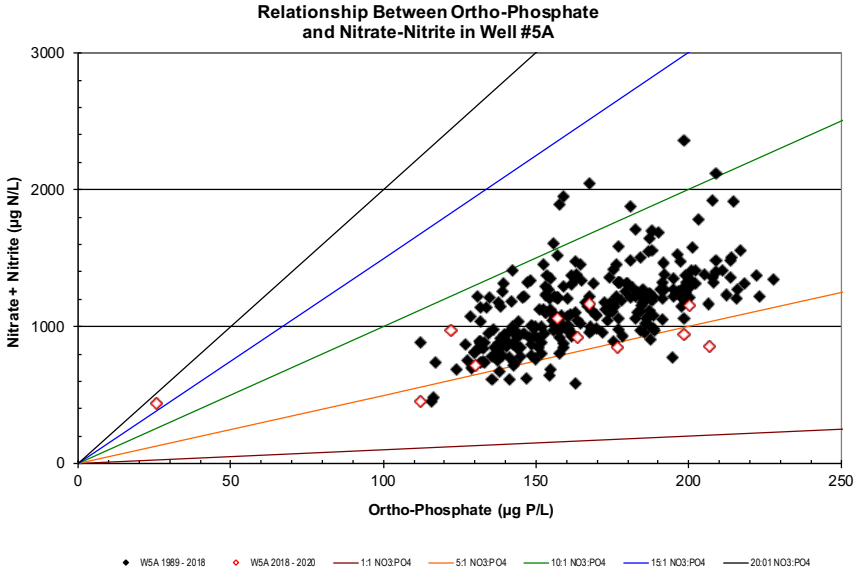
NELHA Water Quality Laboratory

Well 5A Charts

6/23/1989 - 7/21/20







NELHA Water Quality Laboratory

Well 5B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	6/23/89				2.06	64	45.2	633	0.51	7.1								17.3	7.79	30.42	16836	1.40		na	na
W5B	-15.5	8/9/89	957			2.59	80	48.2	675	0.69	9.7								17.0	7.80	30.43	16843	1.37		<1	na
W5B	-15.5	8/15/89	1020			2.94	91	50.7	710	1.30	18.2								17.2	7.85	28.66	15861	1.21		<1	na
W5B	-15.5	8/22/89	1005			2.71	84	48.8	684	0.70	9.8								17.2	7.90	30.59	16933	1.26		<1	na
W5B	-15.5	8/28/89	1125			2.82	87	49.4	692	1.03	14.4								17.3	7.88	30.62	16947	0.97		<1	na
W5B	-15.5	8/28/89	1125			2.64	82	47.1	660	0.78	10.9															na
W5B	-15.5	10/27/89	1016			2.94	91	50.4	706	0.02	0.3	190	5336	3.28	101.6	50.8	712	0.31	17.7	7.87	30.84	17068	1.31		<1	na
W5B	-15.5	11/15/89	759			2.90	90	41.3	578	0.06	0.8	185	5196	3.24	100.4	45.4	636	0.72	17.9	7.88	30.90	17102	1.33		<1	na
W5B	-15.5	12/8/89	930			2.88	89	41.3	578	0.10	1.4	180	5055	3.15	97.6	41.8	585		18.0	7.90	30.84	17070	1.13		<1	na
W5B	-15.5	1/10/90	905			2.32	72	46.0	644	0.00	0.0	171	4803	2.60	80.5	47.9	671	1.05	17.8	8.01	30.96	17136	0.96		<1	na
W5B	-15.5	2/13/90	1030			2.65	82	54.1	758	0.00	0.0	181	5083	2.91	90.1	56.3	789	0.80	17.5	7.94	30.84	17069	1.51		<1	na
W5B	-15.5	3/5/90	1148			2.49	77	59.3	831	0.02	0.3	223		2.76	85.5	59.8	838	0.91	18.5	8.06	31.07	17199	0.86		<1	na
W5B	-15.5	4/2/90	1042			2.55	79	60.0	840	0.20	2.8	184	5168	2.82	87.3	61.0	854	1.14	17.5	8.04	30.71	16997	2.46		<1	na
W5B	-15.5	5/16/90	956			2.66	82	77.9	1091	0.09	1.3	180	5055	2.83	87.7	81.9	1147	0.77	16.2	7.95	30.18	16707	4.09		<1	na
W5B	-15.5	6/17/90	1130			3.35	104	75.2	1053	0.00	0.0	178	4999	3.54	109.6	79.1	1108	2.00	16.2	7.92	30.19	16710	4.03		<1	na
W5B	-15.5	7/12/90	1031			3.97	123	79.2	1109	0.00	0.0	193	5421	4.13	127.9	82.2	1151	0.73	15.9	7.81	30.18	16704	4.16		<1	na
W5B	-15.5	8/7/90	1010			3.70	115	86.7	1214	0.00	0.0	195	5477	4.02	124.5	86.3	1209	1.21	15.9	7.68	30.11	16668	3.70		<1	na
W5B	-15.5	9/5/90	1055			4.15	129	82.1	1150	0.00	0.0			4.15	128.5	83.8	1174	0.57	16.0	7.61	30.14	16681	3.70		<1	na
W5B	-15.5	10/4/90	1112			4.44	138	72.2	1011	0.08	1.1	203	5701	5.48	169.7	73.1	1024	0.97	16.7	7.59	30.57	16922	4.68		<1	na
W5B	-15.5	10/31/90	1024			3.50	108	63.0	883	0.00	0.0	197	5533	4.23	131.0	75.9	1063	1.00	17.1	7.59	30.53	16898	4.33		<1	na
W5B	-15.5	12/7/90	1020			3.56	110	71.2	997	0.00	0.0	205	5758	4.31	133.5	75.9	1063	0.56	15.9	7.50	30.28	16762	4.01		<1	na
W5B	-15.5	1/9/91	740			4.56	141	78.5	1100	0.00	0.0	189	5308	4.60	142.5	84.6	1185	0.63	15.7	7.47	30.42	16839	4.07		<1	na
W5B	-15.5	2/5/91	825			4.79	148	61.2	857	0.39	5.5	160	4494	4.85	150.2	62.1	870	0.82	15.4	7.51	30.40	16828	4.88		<1	na
W5B	-15.5	3/6/91	734			4.21	130	76.7	1074	0.19	2.7	170	4775	4.25	131.6	79.3	1111	1.05	15.2	7.57	30.55	16908	4.39		<1	na
W5B	-15.5	4/2/91	740			4.11	127	72.7	1018	0.00	0.0	63	1778	4.13	127.9	76.1	1066	0.83	15.3	7.57	30.17	16700	4.87		<1	na
W5B	-15.5	5/21/91	808			4.30	133	39.1	548	0.07	1.0	210	5898	4.53	140.3	41.2	577	0.75	15.0	7.57	30.00	16605	5.73		<1	na
W5B	-15.5	6/25/91	745			3.32	103	51.2	717	0.34	4.8	217	6095	3.78	117.1	57.6	807	0.68	15.1	7.56	30.24	16738	5.43		<1	<1
W5B	-15.5	7/23/91	842			4.31	133	72.8	1020	0.35	4.9	192	5392	4.78	148.1	67.2	941	0.62	15.0	7.54	30.21	16721	5.06		<1	<1
W5B	-15.5	8/22/91	803			4.25	132	58.6	821	0.27	3.8	194	5449	4.50	139.4	73.8	1034	0.70	15.1	7.54	30.08	16649	5.27		<1	<1
W5B	-15.5	9/23/91	802			4.65	144	58.1	814	0.24	3.4	185	5196	4.75	147.1	62.6	877	1.75	15.4	7.50	30.01	16610	4.74		<1	<1
W5B	-15.5	10/22/91	733			3.97	123	65.8	922	0.03	0.4	245	6881	3.99	123.6	69.3	971	0.54	13.5	7.55	30.10	16660	4.08		<1	<1
W5B	-15.5	11/19/91	930			4.51	140	65.8	922	0.04	0.6	212	5954	4.62	143.1	67.3	943	0.56	15.6	7.53	30.00	16603	5.41		<1	<1
W5B	-15.5	12/10/91	858			4.32	134	63.8	894	0.08	1.1	195	5477	4.40	136.3	66.4	930	0.70	15.4	7.55	29.96	16582	5.41		<1	<1
W5B	-15.5	1/28/92	846			4.28	133	63.3	887	0.05	0.7	187	5252	4.38	135.7	64.5	903	0.88	14.9	7.61	30.45	16855	5.52		<1	3
W5B	-15.5	2/18/92	803			4.08	126	63.3	887	0.00	0.0	173	4859	4.23	131.0	66.5	931	0.77	14.9	7.59	30.22	16728	5.85		<1	<1
W5B	-15.5	3/16/92	908			4.17	129	63.0	882	0.05	0.7	187	5252	4.36	135.0	65.1	912	0.95	14.8	7.59	30.08	16652	6.09		<1	<1
W5B	-15.5	4/7/92	841			4.98	154	65.2	913	0.20	2.8	248	6965	5.00	154.9	62.6	877	0.95	14.8	7.61	29.89	16545	6.55		<1	<1
W5B	-15.5	5/5/92	848			4.46	138	61.1	856	0.24	3.4	205	5758	4.53	140.3	64.9	909	1.09	14.8	7.58	29.17	16144	6.44		<1	<1
W5B	-15.5	6/22/92	848			4.71	146	60.4	846	0.33	4.6	236	6628	4.84	149.9	63.3	887	0.85	15.3	7.56	28.74	15908	7.38		<1	<1
W5B	-15.5	7/28/92	735			4.50	139	61.7	865	0.07	1.0	180	5055	4.59	142.2	64.5	904	0.92	14.8	7.58	29.48	16317	6.91		<1	<1
W5B	-15.5	8/25/92	810			4.52	140	55.5	777	0.16	2.2	223	6263	4.67	144.6	60.5	847	1.20	15.0	7.60	29.27	16200	6.94		<1	<1
W5B	-15.5	9/21/92	826			4.37	135	57.7	808	0.15	2.1	193	5421	4.50	139.4	61.8	865	0.84	15.1	7.63	29.48	16319	6.57		<1	<1
W5B	-15.5	10/26/92	834			4.43	137	58.0	812	0.37	5.2	219	6151	4.52	140.0	61.8	865	0.79	15.4	7.60	29.44	16295	6.63		<1	<1
W5B	-15.5	11/16/92	856			4.43	137	57.5	805	0.31	4.3	210	5898	4.59	142.2	62.6	877	0.70	15.3	7.64	29.42	16286	6.61		<1	<1
W5B	-15.5	12/7/92	853			4.36	135	57.1	800	0.18	2.5	209	5870	4.51	139.7	60.8	852	0.68	15.3	7.65	29.37	16258	6.64		<1	<1

NELHA Water Quality Laboratory

Well 5B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	1/25/93	839				4.25	132	56.0	784	0.36	5.0	210	5884	4.48	138.8	61.7	864	0.70	15.2	7.67	29.81	16501	6.41		<1	<1
W5B	-15.5	2/22/93	820				4.15	129	56.0	784	0.36	5.0	205	5755	4.18	129.5	60.7	850	0.56	14.9	7.70	29.98	16594	6.37		<1	<1
W5B	-15.5	3/15/93	816				4.13	128	56.7	794	0.19	2.7	211	5912	4.16	128.9	58.9	825	0.94	14.7	7.71	29.92	16560	6.36		<1	<1
W5B	-15.5	4/26/93	827				4.10	127	53.7	753	0.09	1.3	209	5870	4.29	132.9	57.0	799	0.68	15.1	7.70	29.96	16583	6.24		<1	<1
W5B	-15.5	5/24/93	842				4.29	133	42.4	593	0.33	4.6	210	5898	4.21	130.4	57.3	803	0.66	15.1	7.69	29.93	16564	6.11		<1	<1
W5B	-15.5	6/21/93	840				4.13	128	51.1	716	0.30	4.2	220	6179	4.30	133.2	54.4	762	0.59	15.5	7.70	30.00	16606	6.07		<1	<1
W5B	-15.5	8/30/93	944				3.87	120	48.0	672	0.13	1.8	205	5758	3.94	122.0	55.0	771	0.97	17.1	7.76	29.88	16538	5.76		<1	<1
W5B	-15.5	10/25/93	824				3.55	110	52.0	728	0.18	2.5	176	4943	3.63	112.4	54.7	766	0.71	17.8	7.82	29.60	16384	5.18		<1	<1
W5B	-15.5	2/7/94	1028				3.53	109	43.0	602	0.19	2.7	164	4606	3.56	110.3	47.9	671	0.93	17.7	7.80	30.07	16643	5.65		<1	1
W5B	-15.5	6/20/94	814				3.73	116	40.6	568	0.05	0.7	175	4916	3.79	117.4	49.3	690	0.71	17.7	7.75	30.45	16853	3.68		<1	<1
W5B	-15.5	8/22/94	924				3.64	113	44.0	617	0.04	0.6	172	4821	3.72	115.2	49.0	687	0.68	17.7	7.76	30.38	16818	4.19		<1	<1
W5B	-15.5	10/24/94	839				3.63	112	43.7	612	0.00	0.0	182	5118	3.84	118.9	49.0	686	0.60	18.6	7.76	29.36	16249	6.28		<1	<1
W5B	-15.5	1/23/95	927				3.72	115	47.6	667	0.00	0.0	166	4659	3.85	119.2	49.9	699	0.60	18.0	7.75	29.54	16350	4.89		<1	<1
W5B	-15.5	2/13/95	919				3.71	115	43.8	614	0.22	3.1	169	4758	3.80	117.7	46.5	651	0.64	17.8	7.77	29.92	16563	4.82		<1	<1
W5B	-15.5	3/13/95	956				3.72	115	48.2	675	0.18	2.5	210	5887	3.76	116.5	49.9	698	0.62	17.9	7.78	29.94	16571	5.31		<1	<1
W5B	-15.5	4/24/95	900				3.62	112	53.9	755	0.18	2.5	169	4755	3.75	116.2	54.8	768	0.66	17.7	7.76	29.70	16442	5.29		<1	<1
W5B	-15.5	5/8/95	901				3.36	104	53.4	747	0.33	4.6	159	4471	3.67	113.7	56.4	791	0.66	17.8	7.76	29.69	16433	5.22		<1	<1
W5B	-15.5	6/19/95	936				3.63	112	54.0	756	0.33	4.6	168	4721	3.71	114.9	58.5	820	0.58	17.9	7.72	29.59	16378	5.37		<1	<1
W5B	-15.5	7/24/95	904				3.55	110	54.7	766	0.19	2.7	167	4685	3.64	112.7	56.5	791	0.67	17.7	7.73	29.54	16349	5.31		<1	<1
W5B	-15.5	8/21/95	954				3.62	112	50.1	701	0.44	6.2	224	6302	3.72	115.2	64.4	902	0.67	18.0	7.74	29.66	16419	5.10		<1	<1
W5B	-15.5	9/11/95	715				3.64	113	51.7	724	0.18	2.5	170	4777	3.67	113.7	54.3	761	0.54	17.8	7.78	29.57	16368	4.40		<1	<1
W5B	-15.5	10/16/95	841				3.69	114	52.1	729	0.31	4.3	171	4803	3.75	116.2	54.4	763	0.63	18.3	7.79	29.58	16374	5.15		<1	<1
W5B	-15.5	11/6/95	825				4.16	129	49.7	696	0.22	3.1	228	6412	4.18	129.5	52.8	739	0.69	18.1	7.76	27.97	15484	4.09		<1	<1
W5B	-15.5	12/4/95	834				3.71	115	51.3	718	0.12	1.7	172	4822	3.77	116.8	53.4	748	0.62	18.0	7.78	29.47	16310	6.31		<1	<1
W5B	-15.5	1/29/96	905				3.79	117	47.3	662	0.10	1.4	170	4769	3.81	118.0	57.0	798	0.59	17.8	7.78	29.69	16432	5.29		<1	<1
W5B	-15.5	2/26/96	1009				3.64	113	49.0	687	0.30	4.2	188	5271	3.75	116.2	57.6	807	0.58	19.0	7.77	29.70	16438	5.32		<1	<1
W5B	-15.5	3/5/96	858				3.73	116	50.4	706	0.31	4.3	175	4913	3.80	117.7	52.9	741	0.67	18.0	7.76	29.65	16414	3.77		<1	<1
W5B	-15.5	4/1/96	920				3.70	115	50.5	707	0.45	6.3	184	5173	3.88	120.2	52.6	737	0.58	18.5	7.72	29.59	16377	5.34		<1	<1
W5B	-15.5	5/8/96	917				3.88	120	54.9	769	0.13	1.8	175	4927	4.04	125.1	60.4	845	0.51	18.5	7.73	29.51	16332	5.39		<1	<1
W5B	-15.5	6/17/96	843				4.00	124	57.7	808	0.18	2.5	184	5154	4.00	123.9	59.7	836	0.61	18.8	7.74	29.35	16243	5.26		<1	<1
W5B	-15.5	7/16/96	822				4.15	129	66.9	937	0.09	1.3	188	5272	4.37	135.4	68.0	952	0.73	19.1	7.75	29.15	16133	5.04		<1	<1
W5B	-15.5	8/5/96	946				4.39	136	68.5	959	0.34	4.8	180	5053	4.41	136.6	72.1	1009	0.72	19.3	7.76	29.02	16061	6.05		1	<1
W5B	-15.5	9/3/96	906				4.43	137	68.1	953	0.44	6.2	207	5823	4.46	138.1	69.9	979	0.83	19.2	7.76	28.98	16042	4.95		<1	2
W5B	-15.5	10/8/96	925				4.28	133	60.2	843	0.26	3.6	200	5610	4.62	143.1	66.4	929	0.74	18.7	7.73	29.20	16163	5.69		<1	<1
W5B	-15.5	11/4/96	926				4.31	133	59.1	828	0.29	4.1	176	4943	4.40	136.3	92.2	1291	0.65	19.3	7.72	29.25	16191	5.34		<1	<1
W5B	-15.5	12/16/96	908				4.24	131	57.0	798	0.33	4.6	198	5572	4.37	135.4	59.9	839	0.80	18.5	7.75	29.58	16371	5.21		<1	<1
W5B	-15.5	1/13/97	942				4.30	133	59	826	0.08	1.1	181	5095	4.60	142.5	65.0	910	0.45	19.3	7.76	29.58	16371	5.22		<1	<1
W5B	-15.5	2/10/97	850				4.05	125	61	855	0.20	2.8	183	5142	4.10	127.0	63.7	892	0.47	18.9	7.78	29.68	16426	5.29		<1	<1
W5B	-15.5	3/10/97	836				3.96	123	74	1033	0.05	0.7	187	5252	4.18	129.5	76.6	1073	0.73	19.0	7.79	29.77	16477	5.29		<1	<1
W5B	-15.5	4/22/97	917				4.11	127	65	912	0.37	5.2	190	5325	4.18	129.5	116.8	1636	0.81	18.9	7.79	29.60	16386	5.11		<1	<1
W5B	-15.5	5/27/97	910				4.08	126	72	1006	0.05	0.7	182	5117	4.44	137.5	80.0	1121	0.67	18.1	7.81	29.51	16334	5.21		<1	<1
W5B	-15.5	6/16/97	910				4.62	143	94	1315	0.33	4.6	195	5488	4.67	144.6	102.6	1437	0.65	18.2	7.83	29.43	16289	5.06		<1	<1

NELHA Water Quality Laboratory

Well 5B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	7/14/97	826				4.59	142	80	1120	0.07	1.0	175	4923	4.73	146.5	87.5	1226	0.61	18.2	7.83	29.42	16287	5.00		<1	<1
W5B	-15.5	8/25/97	907				4.87	151	86	1206	0.22	3.1	177	4974	4.96	153.6	89.3	1251	0.67	19.5	7.92	29.40	16271	4.90		<1	<1
W5B	-15.5	9/22/97	856				5.03	156	94	1319	0.17	2.4	175	4908	5.06	156.7	96.0	1345	0.65	19.5	7.95	29.40	16271	4.67		<1	<1
W5B	-15.5	10/14/97	909				5.00	155	102	1434	0.21	2.9	175	4904	5.06	156.7	104.1	1458	0.65	19.5	7.94	29.37	16255	4.80		<1	<1
W5B	-15.5	11/3/97	1130				5.05	156	94.7	1326	0.21	2.9	174	4892	5.16	159.8	109.7	1537	0.68	19.2	7.91	29.34	16238	4.89		<1	<1
W5B	-15.5	12/15/97	933				5.16	160	89.3	1251	0.14	2.0	175	4909	5.24	162.3	95.0	1331	0.67	18.7	7.93	29.39	16270	5.22		<1	<1
W5B	-15.5	1/5/98	1035				4.98	154	88.1	1234	0.05	0.7	161	4523	5.09	157.7	94.9	1329	0.65	18.5	7.92	29.46	16307	5.30		<1	<1
W5B	-15.5	2/2/98	925				4.78	148	74.6	1044	0.05	0.7	168	4716	4.86	150.5	76.4	1071	0.64	17.4	7.91	29.77	16477	5.56		<1	<1
W5B	-15.5	3/9/98	937				5.11	158	82.9	1161	0.14	2.0	170	4769	5.22	161.7	85.2	1193	0.61	17.8	7.73	29.63	16402	5.50		<1	<1
W5B	-15.5	4/13/98	845				5.27	163	83	1159	0.15	2.1	171	4801	5.36	166.0	85.3	1195	0.64	17.9	7.74	29.69	16434	5.39		<1	<1
W5B	-15.5	5/11/98	914				5.28	164	86	1201	0.24	3.4	172	4834	5.40	167.3	89.2	1249	0.59	17.9	7.73	29.73	16456	4.62		<1	<1
W5B	-15.5	6/1/98	912				5.31	164	82.8	1159	0.05	0.7	170	4769	5.43	168.2	85.3	1195	0.71	18.2	7.73	29.74	16460	5.18		<1	<1
W5B	-15.5	7/13/98	918				5.33	165	79	1113	0.06	0.8	171	4794	5.56	172.2	83	1161	0.64	18.7	7.72	29.87	16532	4.89		<1	<1
W5B	-15.5	8/10/98	941				5.70	177	89.6	1255	0.17	2.4	176	4943	5.88	182.1	95.5	1338	0.73	19.4	7.69	30.16	16693	3.86		<1	<1
W5B	-15.5	9/14/98	926				5.69	176	78.9	1105	0.14	2.0	178	5008	5.85	181.2	81	1139	0.70	19.2	7.71	30.26	16750	4.32		<1	<1
W5B	-15.5	10/12/98	941				5.67	176	78.1	1094	0.04	0.6	173	4870	5.78	179.0	82	1153	0.71	19.0	7.72	30.35	16797	4.78		<1	<1
W5B	-15.5	11/2/98	902				5.63	174	79.0	1107	0.04	0.6	175	4907	5.79	179.3	83.6	1171	0.96	19.7	7.73	30.53	16896	4.09		<1	<1
W5B	-15.5	12/15/98	900				5.51	171	71.9	1007	0.07	1.0	179	5019	5.55	171.9	73.9	1035	0.83	20.0	7.72	30.72	17003	4.22		<1	<1
W5B	-15.5	1/11/99	918				5.14	159	68	945	0.22	3.1	174	4878	5.29	163.9	71	987	0.85	19.5	7.72	30.59	16935	4.91		<1	<1
W5B	-15.5	2/2/99	911				5.30	164	83	1161	0.23	3.2	172	4836	5.41	167.6	89	1242	0.90	19.8	7.71	30.73	17008	4.01		<1	<1
W5B	-15.5	3/1/99	913				5.21	161	65.1	912	0.03	0.4	167	4690	5.38	166.6	66.9	937	0.82	18.7	7.72	30.61	16942	5.51		<1	<1
W5B	-15.5	4/5/99	915				5.24	162	77.8	1090	0.06	0.8	169	4758	5.38	166.6	81.3	1139	0.76	19.6	7.71	31.25	17299	3.29		<1	<1
W5B	-15.5	5/3/99	913				5.12	159	73.7	1033	0.15	2.1	181	5092	5.23	162.0	79.3	1111	0.77	22.4	7.66	32.41	17938	1.58		<1	<1
W5B	-15.5	6/1/99	907				5.03	156	71.3	999	0.21	2.9	187	5249	5.27	163.2	75.8	1062	0.85	22.9	7.67	32.66	18079	1.70		<1	<1
W5B	-15.5	7/14/99	912				4.57	142	63.7	892	0.02	0.3	178	4996	4.69	145.3	71.6	1003	0.79	22.7	7.66	32.69	18095	1.81		<1	<1
W5B	-15.5	8/23/99	935				4.43	137	63.0	882	0.22	3.1	160	4494	4.53	140.3	66.2	927	0.76	22.2	7.75	31.99	17708	3.66		<1	<1
W5B	-15.5	9/7/99	924				4.44	138	64.1	898	0.09	1.3	152	4269	4.68	145.0	73.3	1027	0.76	21.8	7.76	31.93	17674	3.51		<1	13
W5B	-15.5	10/5/99	918				4.30	133	67.8	949	0.06	0.8	151	4235	4.44	137.5	70.4	986	0.66	21.9	7.73	32.07	17753	3.30		<1	<1
W5B	-15.5	11/1/99	938				4.31	133	62.6	877	0.04	0.6	156	4376	4.34	134.4	66.4	930	0.64	22.5	7.73	32.23	17842	2.93		<1	<1
W5B	-15.5	12/14/99	929				4.20	130	62.5	875	0.03	0.4	157	4409	4.37	135.4	66.1	926	0.86	22.2	7.68	32.26	17856	3.37		<1	<1
W5B	-15.5	1/10/00	958				4.15	129	58.6	821	0.16	2.2	163	4570	4.20	130.1	62.8	880	0.85	22.7	7.67	32.83	18170	2.40		<1	<1
W5B	-15.5	2/7/00	956				4.23	131	56.0	784	0.17	2.4	174	4878	4.32	133.8	60.3	845	0.86	23.4	7.69	33.22	18385	2.02		<1	<1
W5B	-15.5	3/21/00	958				4.05	125	56.1	786	0.06	0.8	168	4716	4.01	124.2	57.7	808	0.79	23.1	7.68	33.12	18333	1.96		<1	<1
W5B	-15.5	4/10/00	1027				3.98	123	53.8	754	0.11	1.5	166	4662	3.90	120.8	58.1	814	0.78	23.2	7.69	33.15	18347	2.30		<1	<1
W5B	-15.5	5/15/00	935				4.21	130	52.7	738	0.08	1.1	186	5230	4.31	133.5	56.6	793	0.77	24.0	7.68	33.51	18546	2.27		<1	<1
W5B	-15.5	6/5/00	936				4.10	127	51.1	716	0.05	0.7	187	5249	4.16	128.9	54.2	759	0.79	24.0	7.66	33.48	18530	2.14		<1	<1
W5B	-15.5	7/26/00	1005				4.31	133	52.8	740	0.02	0.3	192	5381	4.41	136.6	55.2	773	0.72	23.8	7.68	33.25	18404	2.81		<1	<1
W5B	-15.5	8/29/00	903				4.12	128	60.9	853	0.03	0.4	164	4600	4.24	131.3	62.8	880	0.70	21.8	7.67	32.17	17804	3.63		<1	<1
W5B	-15.5	9/5/00	934				4.09	127	67.7	948	0.08	1.1	163	4578	4.23	131.0	70.0	980	0.82	21.6	7.66	31.95	17685	3.62		<1	<1
W5B	-15.5	10/24/00	935				3.95	122	67.0	938	0.21	2.9	150	4210	4.20	130.1	69.5	973	0.75	22.2	7.67	32.18	17811	3.51		<1	<1
W5B	-15.5	11/13/00	913				3.69	114	75.5	1058	0.29	4.1	156	4384	3.90	120.8	79.6	1115	0.77	22.3	7.65	32.11	17772	2.99		<1	<1
W5B	-15.5	12/18/00	922				3.95	122	96.3	1349	0.20	2.8	150	4204	4.02	124.5	98.0	1373	0.85	22.1	7.67	31.99	17707	2.54		<1	<1

NELHA Water Quality Laboratory

Well 5B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	1/22/01	916				3.85	119	85.9	1203	0.01	0.1	143	4019	3.93	121.7	86.9	1218	0.76	21.8	7.63	32.13	17783	2.16		<1	<1
W5B	-15.5	2/5/01	941				3.68	114	84.2	1179	0.10	1.4	144	4047	3.83	118.6	91.8	1286	0.75	22.5	7.64	32.58	18036	1.93		<1	<1
W5B	-15.5	3/5/01	933				3.81	118	78.9	1105	0.04	0.6	143	4022	3.92	121.4	79.9	1119	0.83	22.6	7.62	32.55	18016	2.15		<1	<1
W5B	-15.5	4/17/01	920				3.80	118	74.7	1047	0.01	0.1	139	3898	3.98	123.3	81.2	1138	0.75	22.1	7.65	32.61	18053	2.67		<1	<1
W5B	-15.5	5/15/01	905				3.83	119	77.5	1086	0.13	1.8	141	3957	3.85	119.2	80.1	1122	0.71	21.4	7.67	32.29	17872	3.17		<1	<1
W5B	-15.5	6/12/01	918				3.86	120	73.4	1028	0.02	0.3	144	4039	3.73	115.5	75.9	1063	0.72	21.4	7.68	32.26	17857	3.25		<1	<1
W5B	-15.5	7/23/01	923				3.79	117	74.4	1042	0.04	0.6	137	3851	3.78	117.1	79.1	1108	0.80	20.9	7.67	32.03	17732	3.40		<1	<1
W5B	-15.5	8/8/01	908				3.84	119	74.1	1038	0.02	0.3	140	3938	3.86	119.6	77.2	1082	0.80	20.9	7.67	32.22	17833	3.69		<1	<1
W5B	-15.5	9/19/01	921				4.06	126	83.0	1163	0.06	0.8	134	3755	4.20	130.1	87.8	1230	0.82	20.9	7.69	31.71	17553	3.58		<1	<1
W5B	-15.5	10/24/01	854				4.06	126	82.5	1155	0.03	0.4	130	3643	4.35	134.7	88.5	1240	0.69	20.7	7.68	31.62	17505	3.01		<1	<1
W5B	-15.5	11/7/01	911				4.24	131	91.6	1283	0.01	0.1	133	3727	4.28	132.6	104	1455	0.73	20.6	7.67	31.51	17440	3.48		<1	<1
W5B	-15.5	12/19/01	930				4.26	132	96.5	1352	0.03	0.4	145	4070	4.24	131.3	126	1762	0.77	20.5	7.69	31.32	17337	4.11		<1	<1
W5B	-15.5	1/9/02	924				4.23	131	92.0	1289	0.17	2.4	136	3831	4.40	136.3	96.4	1350	1.14	20.1	7.67	31.31	17331	3.94		<1	<1
W5B	-15.5	2/19/02	1040				4.42	137	81.4	1140	0.05	0.7	144	4036	4.58	141.9	85.0	1191	0.73	20.8	7.69	31.91	17664	3.77		<1	<1
W5B	-15.5	3/20/02	938				4.36	135	80.1	1122	0.22	3.1	138	3873	4.50	139.4	83.7	1172	0.72	21.0	7.72	31.87	17639	3.63		<1	<1
W5B	-15.5	4/8/02	1028				4.38	136	82.6	1157	0.04	0.6	129	3615	4.60	142.5	84.3	1181	0.64	20.7	7.70	31.66	17523	3.45		<1	<1
W5B	-15.5	5/29/02	1016				4.44	138	82.3	1152	0.16	2.2	135	3803	4.58	141.9	84.7	1186	0.76	20.9	7.71	31.47	17417	4.83		<1	<1
W5B	-15.5	6/17/02	949				4.81	149	71.6	1003	0.08	1.1	126	3544	4.95	153.3	74.2	1040	0.64	21.0	7.71	31.68	17533	3.82		<1	<1
W5B	-15.5	7/15/02	945				4.66	144	61.2	857	0.10	1.4	135	3786	4.82	149.3	65.8	922	0.69	21.8	7.72	32.05	17742	4.10		<1	<1
W5B	-15.5	8/20/02	944				4.52	140	60.5	847	0.23	3.2	132	3719	4.66	144.3	59.4	832	0.65	21.7	7.72	31.87	17642	4.16		<1	<1
W5B	-15.5	9/23/02	1008				4.36	135	57.8	810	0.24	3.4	130	3651	4.38	135.7	56.6	793	0.61	22.3	7.73	32.38	17925	3.82		<1	<1
W5B	-15.5	10/14/02	924				4.33	134	70.5	987	0.04	0.6	133	3735	4.45	137.8	70.2	983	0.71	22.7	7.74	32.26	17855	3.11		<1	<1
W5B	-15.5	11/4/02	934				4.29	133	76.6	1072	0.02	0.3	141	3949	4.48	138.8	74.2	1039	0.89	22.5	7.74	31.88	17649	3.27		<1	<1
W5B	-15.5	12/17/02	955				4.33	134	70.6	988	0.03	0.4	129	3612	4.45	137.8	67.3	942	0.71	23.3	7.72	32.33	17895	2.95		<1	<1
W5B	-15.5	1/21/03	1040				4.02	125	74.1	1038	0.02	0.3	135	3786	4.29	132.9	83.5	1170	1.25	22.2	7.74	32.20	17826	3.63		<1	<1
W5B	-15.5	2/12/03	950				4.42	137	65.3	915	0.03	0.4	137	3851	4.64	143.7	76.4	1070	0.64	23.1	7.74	32.85	18183	2.84		<1	<1
W5B	-15.5	3/19/03	953				4.68	145	75.9	1063	0.04	0.6	129	3623	4.76	147.4	100	1401	0.59	23.0	7.77	32.30	17877	3.22		<1	<1
W5B	-15.5	4/28/03	935				4.70	146	72.9	1021	0.32	4.5	122	3421	4.88	151.2	83.0	1163	0.60	22.5	7.81	32.07	17754	3.67		<1	<1
W5B	-15.5	5/12/03	913				4.58	142	71.8	1006	0.10	1.4	126	3536	4.75	147.1	77.6	1087	0.58	22.3	7.82	32.08	17759	3.76		<1	<1
W5B	-15.5	6/3/03	928				4.67	145	72.3	1013	0.02	0.3	120	3362	4.80	148.7	81.1	1135	0.59	22.4	7.75	32.08	17759	3.36		19	483
W5B	-15.5	7/29/03	954				4.11	127	59.9	838	0.06	0.8	142	3977	4.33	134.1	65.7	921		22.7	7.77	32.59	18039	3.75		na	na
W5B	-15.5	8/26/03	949				4.52	140	66.6	933	0.06	0.8	129	3620	4.68	145.0	76.4	1070		21.3	7.74	31.63	17508	3.77		<1	<1
W5B	-15.5	9/15/03	931				4.43	137	63.8	894	0.02	0.3	125	3516	4.54	140.6	75.0	1050		21.7	7.76	31.54	17459	3.69		<1	<1
W5B	-15.5	10/6/03	913				4.66	144	67.1	940	0.07	1.0	126	3533	4.78	148.1	73.5	1030		21.1	7.74	31.67	17530	NA		<1	4
W5B	-15.5	10/28/03	1007				4.70	146	63.1	884	0.10	1.4	126	3530	4.80	148.7	70.8	992		22.3	7.74	31.59	17483	NA		<1	<1
W5B	-15.5	11/14/03	1316																	22.2				3.71			
W5B	-15.5	12/15/03	919				4.86	151	59.5	834	0.06	0.8	124	3469	5.03	155.8	63.2	886		21.8	7.74	31.72	17558	3.41		<1	<1
W5B	-15.5	1/26/04	924				4.80	149	63.1	884	0.10	1.4	130	3640	5.00	154.9	65.5	917		21.5	7.76	31.45	17409	3.52		<1	<1
W5B	-15.5	2/5/04	923				4.84	150	69.1	968	0.20	2.8	132	3716	5.02	155.5	73.2	1026		21.2	7.76	31.49	17432	3.98		<1	<1
W5B	-15.5	3/2/04	928				4.82	149	63.7	892	0.30	4.2	125	3516	5.04	156.1	76.3	1069		21.6	7.78	31.59	17486	3.63		<1	<1
W5B	-15.5	4/20/04	923				4.78	148	82.4	1155	0.05	0.7	120	3376	4.80	148.7	90.5	1268		21.2	7.78	31.29	17317	4.35		<1	1
W5B	-15.5	5/11/04	838				4.70	146	74.9	1049	0.30	4.2	120	3381	4.70	145.6	79.6	1115		22.0	7.81	30.56	16916	n/a		1	3
W5B	-15.5	5/12/04	1005																	21.4				4.36		na	na
W5B	-15.5	6/2/04	857				4.74	147	72.5	1015	0.18	2.5	121	3407	4.82	149.3	74.3	1040		21.5	7.76	30.50	16883	4.29		<1	2

NELHA Water Quality Laboratory

Well 5B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	7/14/04	929				4.38	136	80.5	1127	0.20	2.8	123	3466	4.40	136.3	89.0	1246		21.8	7.79	30.29	16766	4.49		<1	<1
W5B	-15.5	8/23/04	940				4.46	138	81.9	1147	0.39	5.5	123	3460	4.50	139.4	86.0	1205		21.2	7.78	30.15	16689	4.34		<1	1792
W5B	-15.5	9/2/04	946				4.44	138	80.7	1131	0.13	1.8	124	3494	4.46	138.1	84.1	1179		20.8	7.78	30.09	16656	4.44		<1	2640
W5B	-15.5	10/4/04	900				4.42	137	79.4	1112	0.19	2.7	118	3314	4.70	145.6	83.3	1167		22.7	7.76	30.26	16750	4.41		<1	232
W5B	-15.5	11/23/04	908				4.50	139	70.7	990	0.06	0.8	129	3620	4.72	146.2	105	1474		22.7	7.78	30.29	16766	4.06		<1	342
W5B	-15.5	12/8/04	855				4.48	139	71.9	1008	0.10	1.4	127	3553	4.58	141.9	89.0	1246		21.6	7.79	30.36	16805	4.33		<1	47
W5B	-15.5	1/18/05	908				4.42	137	71.0	994	0.08	1.1	136	3820	4.6	142.5	76.1	1066		21.8	7.85	31.52	17445	4.11		<1	127
W5B	-15.5	2/10/05	855				4.44	138	72.4	1014	0.27	3.8	131	3682	4.58	141.9	101	1410		21.5	7.84	31.35	17355	4.14		<1	95
W5B	-15.5	3/22/05	902				4.68	145	84.3	1181	0.14	2.0	131	3665	4.94	153.0	92.4	1294	0.72	21.0	7.84	31.28	17312	4.30		<1	<1
W5B	-15.5	4/20/05	853				4.38	136	75.8	1061	0.11	1.5	128	3589	4.54	140.6	80.8	1132		20.9	7.85	31.32	17334	4.44		<1	13
W5B	-15.5	5/25/05	915				4.22	131	79.6	1115	0.15	2.1	131	3682	4.64	143.7	91.5	1282		19.8	7.83	31.30	17326	4.47		<1	343
W5B	-15.5	6/14/05	913				4.36	135	77.1	1080	0.12	1.7	128	3603	4.42	136.9	82.9	1161		20.9	7.82	31.21	17277	4.52		205	460
W5B	-15.5	7/19/05	908				4.36	135	77.1	1080	0.10	1.4	124	3488	4.52	140.0	78.9	1105	0.55	21.0	7.81	31.17	17251	4.53		<1	3
W5B	-15.5	8/3/05	938				4.48	139	73.1	1024	0.03	0.4	126	3528	4.64	143.7	76.0	1065	0.58	21.0	7.85	31.08	17202	5.08		<1	1428
W5B	-15.5	9/22/05	901				4.34	134	64.4	902	0.13	1.8	124	3469	4.5	139.4	73.1	1023	0.53	21.9	7.84	31.40	17383	4.85		<1	218
W5B	-15.5	10/19/05	915				4.22	131	74.1	1038	0.14	2.0	120	3356	4.42	136.9	79.3	1111		21.6	7.82	31.16	17248	4.69		<1	1
W5B	-15.5	11/8/05	900				4.08	126	75.3	1055	0.08	1.1	108	3030	4.28	132.6	82.7	1158		22.4	7.78	31.42	17393	3.96		<1	2
W5B	-15.5	12/22/05	834				3.80	118	70.3	985	0.29	4.1	123	3457	3.96	122.7	75.3	1055		22.6	7.70	31.71	17550	3.59		<1	<1
W5B	-15.5	1/31/06	859				3.72	115	67.9	951	0.19	2.7	124	3483	3.84	118.9	71.9	1007		22.5	7.66	31.95	17684	2.87		<1	1
W5B	-15.5	2/16/06	854				3.84	119	69.6	975	0.20	2.8	124	3477	4.12	127.6	67.2	941	0.60	21.9	7.71	31.66	17525	3.44		<1	1
W5B	-15.5	3/22/06	845				3.63	112	63.7	892	0.27	3.8	120	3370	3.85	119.2	69.8	978	0.61	22.1	7.63	32.00	17711	1.44		<1	<1
W5B	-15.5	4/27/06	925				3.61	112	69.7	976	0.10	1.4	108	3033	3.71	114.9	66.6	932	0.62	22.2	7.65	32.05	17743	3.46		<1	<1
W5B	-15.5	5/24/06	948				3.27	101	63.2	885	0.05	0.7	112	3146	3.56	110.3	61.9	867	0.64	22.9	7.65	32.11	17772	3.28		<1	<1
W5B	-15.5	6/28/06	932				3.30	102	64.0	896	0.35	4.9	110	3089	3.41	105.6	61.8	865	0.59	22.7	7.61	32.33	17895	2.46		<1	2
W5B	-15.5	7/19/06	910				3.25	101	67.1	940	0.25	3.5	101	2837	3.35	103.8	56.0	784	0.61	23.5	7.54	32.28	17869	2.69		1	17
W5B	-15.5	8/9/06	932				3.15	98	64.2	899	0.14	2.0	109	3061	3.38	104.7	59.6	835	0.62	24.7	7.59	32.26	17855	2.53		<1	1
W5B	-15.5	9/20/06	943				3.23	100	57.5	805	0.24	3.4	107	3005	3.50	108.4	54.2	759	0.63	23.5	7.56	32.40	17934	2.07		<1	>5,000
W5B	-15.5	10/25/06	938				3.36	104	49.3	691	0.34	4.8	108	3033	3.55	110.0	46.4	650	0.74	25.1	7.51	32.78	18142	3.15		<1	688
W5B	-15.5	11/29/06	935				3.58	111	54.4	762	0.29	4.1	104	2921	3.73	115.5	50.1	701	0.70	24.5	7.52	32.60	18047	1.92		<1	3
W5B	-15.5	12/13/06	939				3.52	109	59.2	829	0.24	3.4	103	2893	3.71	114.9	52.7	738	0.60	24.7	7.53	32.61	18053	1.76		<1	1
W5B	-15.5	1/10/07	925				3.87	120	59.6	835	0.26	3.6	106	2977	3.95	122.3	63.1	883	0.63	23.4	7.54	32.41	17939	2.10		<1	<1
W5B	-15.5	2/21/07	1005				3.62	112	61.1	856	0.43	6.0	107	3005	3.82	118.3	65.4	916	0.60	23.3	7.58	32.16	17802	2.69		<1	<1
W5B	-15.5	3/7/07	956				3.64	113	63.2	885	0.25	3.5	110	3089	3.77	116.8	65.6	918	0.64	22.8	7.61	32.00	17711	2.76		<1	<1
W5B	-15.5	4/19/07	935				3.88	120	69.2	969	0.24	3.4	110	3089	4.06	125.8	59.8	837	0.52	23	7.66	31.79	17599	2.72		<1	<1
W5B	-15.5	5/2/07	942				3.89	120	63.3	887	0.27	3.8	110	3089	4.17	129.2	61.2	857	0.54	22.2	7.64	31.84	17626	2.87		<1	1
W5B	-15.5	6/20/07	946				3.90	121	60.5	848	0.19	2.7	107	3005	4.07	126.1	n/a	n/a		22.9	7.66	32.13	17783	2.77		<1	15
W5B	-15.5	7/23/07	1143	-3.22	0.52	Flood	2.80	87	31.9	447	0.04	0.5	59	1663	3.09	95.7	33.6	471.0		24.3	7.49	31.34	17348	2.54			
W5B	-15.5	8/27/07	1417	-2.82	0.52	Flood	5.27	163	80.2	1123	0.15	2.1	113	3164	4.79	148.5	79.6	1114.8		21.7	7.61	31.07	17198	3.13			
W5B	-15.5	9/18/07	1552	-3.07	0.24	Ebb	4.54	141	73.2	1026	1.26	18	118	3313	4.69	145.3	75.2	1052.9		20.1	7.63	31.15	17242	3.71			
W5B	-15.5	10/23/07	1430	-2.87	0.52	High	4.61	143	77.5	1086	0.29	4.1	115	3233	4.58	141.7	71.8	1006.0		19.8	7.67	30.92	17115	4.04			
W5B	-15.5	11/20/07	1430	-3.10	0.38	Ebb	4.73	146	77.3	1082	0.06	0.8	121	3390	4.33	134.1	82.4	1154.2		19.4	7.73	30.93	17121	3.85			
W5B	-15.5	12/19/07	1300	-3.22	0.30	High	4.44	137	87.7	1228	0.90	13	104	2924						19.7	7.58	30.65	16966	2.75			

NELHA Water Quality Laboratory

Well 5B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	1/25/08	1051	-3.05	0.24	Ebb	3.34	103	46.8	656	0.46	6.5	86	2423						20.0	7.28	30.94	17126	2.63			
W5B	-15.5	2/26/08	1215	-3.43	0.03	Ebb	4.98	154	90.3	1265	2.27	32	117	3291						19.6	7.50	31.20	17270	3.02			
W5B	-15.5	3/17/08	1343	-2.95	0.21	Flood	4.77	148	71.9	1007	0.06	0.8	98	2759						19.8	7.61	31.30	17325	3.05			
W5B	-15.5	4/29/08	937	-3.35	0.09	Flood	4.85	150	79.5	1113	0.09	1.2	118	3312						19.4	7.53	31.05	17187	3.67			
W5B	-15.5	5/28/08	1008	-3.10	0.18	Flood	4.48	139	74.0	1037	0.13	1.8	136	3833						19.9	7.66	31.42	17392	3.35			
W5B	-15.5	6/17/08	1057	-3.28	0.00	Flood	4.73	146	76.9	1077	0.39	5.4	117	3273						19.8	7.48	31.11	17220	4.95	0.12		
W5B	-15.5	7/22/08	1126	-3.25	0.30	Ebb	4.06	126	83.9	1175	0.42	5.9	118	3307						19.1	7.59	31.02	17170	4.64			
W5B	-15.5	7/31/08	950	-3.58	-0.09	Low	4.15	129	81.4	1140	0.26	3.6	117	3286						21.4	7.51	30.69	16988	2.45			
W5B	-15.5	9/16/08	1037	-2.94	0.12	Ebb	4.48	139	77.6	1087	1.08	15	120	3363						19.7	7.48	30.95	17132	3.92			
W5B	-15.5	10/31/08	924	-3.22	0.30	Ebb	5.64	175	86.0	1205	0.25	3.5	119	3348						20.2	7.37	31.05	17187	3.19			
W5B	-15.5	11/14/08	1149	-3.47	0.12	Ebb	4.55	141	88.4	1238	0.24	3.4	116	3254						20.7	7.70	31.01	17165	2.94	0.35		
W5B	-15.5	12/16/08	1000	-3.15	0.61	Ebb	5.19	161	95.2	1334	0.11	1.5	127	3558						20.3	7.67	31.14	17237	2.82			
W5B	-15.5	1/23/09	1438	-3.41	0.15	High	4.67	145	99.0	1386	0.82	12	109	3050						20.9	7.75	31.51	17442	2.82	0.10		
W5B	-15.5	2/24/09	1554	-3.25	0.30	Flood	4.49	139	47.6	667	0.30	4.2	114	3197						20.3	7.62	31.51	17442	2.84	0.08		
W5B	-15.5	3/16/09	1542	-3.52	0.03	Low	3.30	102	82.0	1148	0.13	1.8	94	2632						21.3	7.55	31.30	17325	2.84	0.19		
W5B	-15.5	4/30/09	1540	-3.57	0.09	Flood	7.01	217	97.4	1364	0.58	8.1	121	3392						21.4	7.68	31.32	17336	1.19			
W5B	-15.5	5/29/09	955	-3.33	0.21	High	3.96	123	95.8	1341	0.17	2.4	94	2638						18.6	7.76	31.59	17486	2.30	0.04		
W5B	-15.5	6/18/09	1412	-2.99	0.61	High	5.77	179	77.1	1080	0.28	3.9	97	2737						18.6	7.72	31.30	17325	3.18	0.03		
W5B	-15.5	7/31/09	1113	-3.07	0.52	Flood	4.19	130	94	1314	0.14	2.0	93	2601						18.8	7.69	31.44	17403	2.82	0.07		
W5B	-15.5	8/19/09	1111	-3.49	0.09	Flood	3.64	113	80	1118	1.21	17.0	71	1997						18.9	7.61	31.45	17408	2.26	0.08		
W5B	-15.5	9/24/09	941	-3.09	0.61	High	4.48	139	87	1215	0.23	3.2	109	3063						19.5	8.00	31.54	17458	2.93	0.07		
W5B	-15.5	10/23/09	1411	-3.45	0.21	Ebb	4.15	128	63	884	0.88	12.3	93	2615						19.6	7.56	31.40	17381	3.38	0.06		
W5B	-15.5	11/17/09	1026	-3.64	0.21	Ebb	4.81	149	76	1065	0.87	12.2	132	3711						19.4	7.55	31.24	17292	3.06	0.03		
W5B	-15.5	12/8/09	1014	-3.13	0.52	Ebb	4.58	142	84	1173	1.12	15.7	147	4127						19.6	7.61	31.13	17231	2.82	0.04		
W5B	-15.5	1/6/10	942	-3.13	0.40	Ebb	4.16	129	77	1082	1.14	16	138	3869						19.9	7.50	31.10	17215	3.12	0.13		
W5B	-15.5	2/2/10	924	-3.47	0.24	Ebb	4.68	145	99	1382	0.71	10	126	3531						19.6	7.55	31.11	17220	2.58	0.08		
W5B	-15.5	3/10/10	903	-3.60	0.09	Low	5.59	173	93	1303	0.43	6	146	4089						20.2	7.54	30.85	17076	3.06	0.03		
W5B	-15.5	4/6/10	1515	-3.51	0.09	Ebb	5.13	159	86	1198	0.93	13	144	4048						20.6	7.54	31.02	17170	3.07	0.10		
W5B	-15.5	5/12/10	844	-3.64	-0.06	Low	5.00	155	76	1060	1.00	14.0	130	3644						19.3	7.59	31.01	17165	2.88	0.04		
W5B	-15.5	6/16/10	1109	-3.54	0.09	Ebb	5.42	168	88	1237	0.79	11.0	150	4225						20.2	7.53	31.05	17187	2.71	0.49		
W5B	-15.5	7/14/10	842	-3.33	0.18	Ebb	5.10	158	95	1334	0.07	1.0	170	4762						18.6	7.58	31.11	17220	3.10	0.10		
W5B	-15.5	8/3/10	1732	-3.24	0.12	Ebb	5.00	155	81	1131	0.51	7.1	144	4032						18.8	7.62	31.23	17287	2.93	0.27		
W5B	-15.5	9/13/10	1519	-3.33	0.24	Ebb	5.07	157	77	1074	0.25	3.5	147	4129						19.5	7.51	31.41	17386	3.16	0.12		
W5B	-15.5	10/11/10	1023	-3.11	0.46	Ebb	4.84	150	74	1034	0.06	0.9	146	4100						19.9	7.62	31.37	17364	3.30	0.23		
W5B	-15.5	11/15/10	1145	-3.11	0.43	High	5.10	158	73	1021	0.12	1.7	143	4003						20.2	7.59	31.78	17591	3.30	0.12		
W5B	-15.5	12/13/10	859	-3.10	0.40	High	5.10	158	78	1093	0.14	1.9	145	4071						20.2	7.61	31.54	17458	2.79	0.12		
W5B	-15.5	1/3/11	1538	-3.45	0.21	High	5.07	157	80	1121	0.15	2.1	142	3994						20.2	7.53	31.38	17370	2.53	0.09		
W5B	-15.5	4/4/11	1429	-3.20	0.30	Flood	5.00	155	91	1281	0.11	1.6	129	3636						19.2	7.61	31.02	17170	3.25	0.06		
W5B	-15.5	7/11/11	1317	-3.02	0.67	Flood	4.71	146	79	1111	0.19	2.6	129	3616						19.7	7.55	31.53	17453	4.20	0.05		
W5B	-15.5	10/10/11	1228	-3.35	0.30	Flood	4.68	145	60	842	0.05	0.7	125	3502						20.9	7.59	32.19	17818	3.95	0.09		
W5B	-15.5	1/9/12	1303	-3.49	0.03	Low	4.62	143	76	1068	0.04	0.5	123	3453						19.5	7.60	31.38	17370	3.56	0.07		
W5B	-15.5	4/30/12	1421	-3.17	0.27	Ebb	4.58	142	67	937	0.06	0.8	130	3645						19.9	7.56	31.89	17652	3.27	0.02		
W5B	-15.5	7/17/12	1611	-2.87	0.73	High	4.20	130	69	965	0.16	2.3	134	3770						20.0	7.57	31.97	17696	3.41	0.05		
W5B	-15.5	10/15/12	1243	-3.40	0.12	Flood	4.29	133	67	940	0.17	2.4	128	3601						20.3	7.64	32.05	17741	3.41	0.05		
W5B	-15.5	1/1/13	1331	-3.29	0.24	Ebb	4.13	128	79	1106	0.23	3.2	170	4787						19.5	7.63	31.85	17630	3.81	0.02		
W5B	-15.5	4/8/13	1140	-3.53	0.09	Flood	4.42	137	89	1245	0.24	3.4	129	3614						18.4	7.65	31.48	17425	4.04	0.02		

NELHA Water Quality Laboratory

Well 5B Data Table

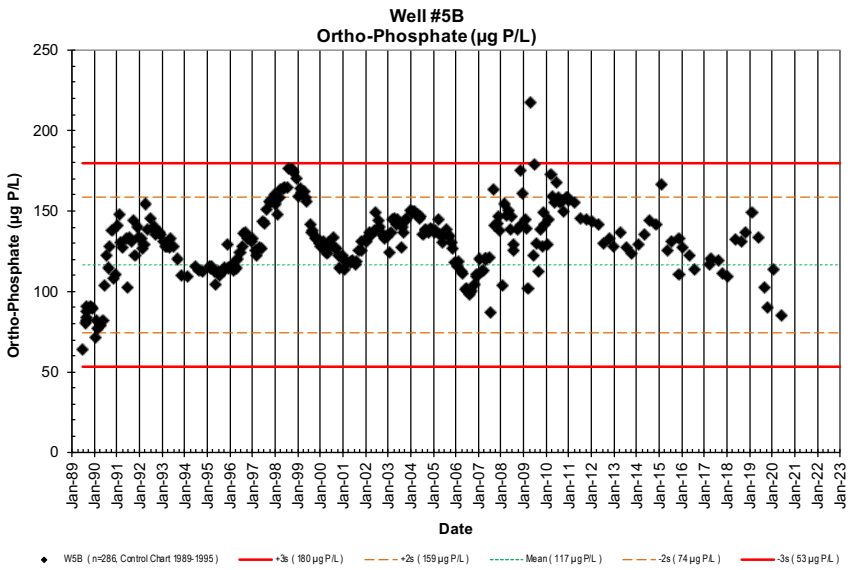
6/23/1989 - 7/21/20

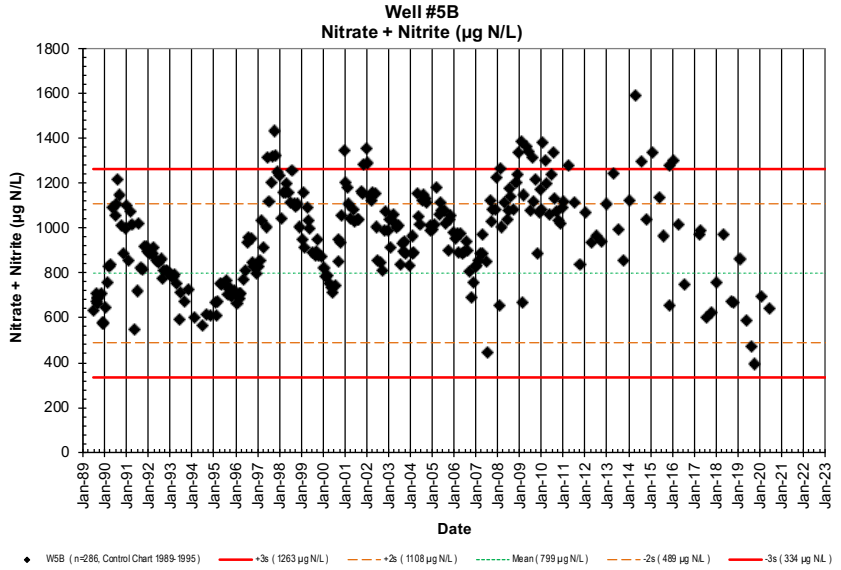
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W5B	-15.5	7/16/13	1525	-3.24	0.37	Ebb	4.10	127	71	993	0.14	1.9	130	3638						21.2	7.64	32.04	17735	3.51	0.12		
W5B	-15.5	10/14/13	1532	-3.21	0.43	Ebb	3.97	123	61	855	0.44	6.2	124	3489						21.9	7.78	32.32	17890	4.33	0.02		
W5B	-15.5	1/14/14	1422	-3.19	0.21	Flood	4.16	129	80.2	1123	0.18	2.5	127	3565						21.3	7.69	30.45	16855	2.32	0.02		
W5B	-15.5	4/28/14	1640	-2.98	0.55	High	4.36	135	114	1594	0.50	7.0	119	3348						19.3	7.73	31.08	17204	3.56	0.03		
W5B	-15.5	7/28/14	1429	-3.32	0.38	Flood	4.65	144	93	1298	0.36	5.0	121	3389						19.8	7.66	31.49	17431	4.09	0.06		
W5B	-15.5	11/3/14	1109	-3.15	0.38	Flood	4.58	142	74	1041	0.07	1.0	116	3261						21.0	7.69	31.60	17491	3.19	0.08		
W5B	-15.5	2/9/15	1631	-3.23	0.10	Low	5.37	166	95	1336	0.44	6.2	140	3921						20.1	7.68	31.59	17486	3.39	0.13		
W5B	-15.5	5/19/15	1633	-2.9	0.61	Flood	4.07	126	81	1134	0.17	2.4	114	3210						19.7	7.72	31.27	17309	3.61	0.03		
W5B	-15.5	7/22/15	1112	-3.32	0.24	Ebb	4.25	132	69	968	0.20	2.8	119	3340						21.6	7.61	32.92	18222	2.82	0.02		
W5B	-15.5	11/13/15	1017	-3.23	0.15	Low	4.28	133	91	1278	0.09	1.3	119	3346						23.3	7.71	31.45	17408	3.15	0.15		
W5B	-15.5	1/26/16	1634	-3.28	0.33	Flood	4.11	127	93	1304	0.03	0.4	120	3380						22.1	7.64	31.53	17453	3.26	0.07		
W5B	-15.5	4/22/16	1601	-2.99	0.50	Ebb	3.95	122	72	1014	0.28	3.9	112	3140						21.0	7.59	31.75	17574	3.63	0.05		
W5B	-15.5	7/26/16	1512	-3.33	0.40	Ebb	3.67	114	53	748	0.08	1.1	107	3016						23.1	7.82	32.31	17884	4.02	0.05		
W5B	-15.5	11/15/15	1031	-3.39	0.10	Low	3.57	111	47	659	0.29	4.1	110	3092						23.5	7.64	32.47	17973	3.67	0.02		
W5B	-15.5	3/22/17	1420	-3.19	0.20	Ebb	3.78	117	69	973	0.29	4.1	119	3344						22.6	7.93	32.23	17840	3.07	0.04		
W5B	-15.5	4/19/17	1400	-3.27	0.12	Ebb	3.89	121	71	989	0.24	3.3	120	3357						23.1	7.71	32.04	17735	1.96	0.08		
W5B	-15.5	8/9/17	1604	-2.93	0.50	Flood	3.86	120	43	600	0.11	1.5	116	3260						23.2	7.76	32.63	18062	3.12	0.04		
W5B	-15.5	10/19/17	1429	-3.08	0.50	Flood	3.60	111	44	623	0.31	4.3	104	2921						24.5	7.78	32.48	17979	3.49	0.03		
W5B	-15.5	1/18/18	1414	-3.45	0.20	Flood	3.53	109	54	758	0.17	2.4	119	3343						23.8	7.72	32.28	17868	3.04	0.05		
W5B	-15.5	5/11/18	1037	-3.42	0.15	Flood	4.26	132	69	972	0.09	1.3	119	3329						22.4	7.74	31.62	17502	2.20	0.02		
W5B	-15.5	9/4/18	1338	-2.86	0.67	Flood	4.23	131	48	672	0.41	5.7	126	3549						23.4	7.80	32.19	17818	2.17	0.07		
W5B	-15.5	10/25/18	1517	-3.15	0.49	High	4.42	137	48	667	0.00	0.0	106	2971						23.8	7.74	32.33	17895	2.76	0.05		
W5B	-15.5	2/8/19	1349	-3.62	0.06	Low	4.80	149	61	860	0.06	0.9	110	3102						22.9	7.67	31.69	17541	3.16	0.04		
W5B	-15.5	5/16/19	940	-3.64	-0.07	Low	4.32	134	42	586	0.14	2.0	106	2976						22.3	7.71	33.15	18349	3.64	0.07		
W5B	-15.5	8/28/19	1146	-3.19	0.35	Flood	3.32	103	34	473	0.32	4.5	99	2782						23.8	7.85	33.42	18499	4.09	0.07		
W5B	-15.5	10/11/19	1525	-2.88	0.57	High	2.90	90	28	392	0.42	5.9	98	2750						24.6	7.87	33.00	18266	4.81	0.04		
W5B	-15.5	2/5/20	1529	-3.36	0.22	Ebb	3.67	114	50	699	-0.49	-6.9	104	2920						23.1	7.78	33.17	18360	3.72	0.02		
W5B	-15.5	6/3/20	1428	-2.7	0.60	High	2.75	85	45	637	0.24	3.4	96	2706						21.3	7.72	32.51	17995	4.72	0.04		
W5B	-15.5	7/1/20																									
W5B	-15.5	10/1/20																									
W5B	-15.5	1/1/21																									
W5B	-15.5	4/1/21																									
W5B	-15.5	7/1/21																									
W5B	-15.5	10/1/21																									
W5B	-15.5	1/1/22																									
W5B	-15.5	4/1/22																									
W5B	-15.5	7/1/22																									
W5B	-15.5	10/1/22																									
W5B	-15.5	1/1/23																									
W5B	-15.5	4/1/23																									
Mean				-3.24	0.29		4.24	131	68.53	960	0.22	3.1	149	4179	4.34	135	71	1001	0.74	19.9	7.70	31.06	17191	3.86	0.08		
Std. Dev.				0.22	0.20		0.67	21	14.78	207	0.27	3.7	36	997	0.60	18	15	211	0.19	2.6	0.11	1.11	613	1.29	0.08		
Maximum				-2.70	0.73		7.01	217	114	1594	2.27	31.8	248	6965	5.88	182	126	1762	2.00	25.1	8.06	33.51	18546	7.38	0.49		
Minimum				-3.64	-0.09		2.32	72	28	392	-0.49	-6.9	59	1663	2.60	81	34	471	0.31	13.5	7.28	27.97	15484	0.86	0.02		
n				80	80		286	286	286	286	286	286	280	279	206	206	205	205	172	287	285	285	285	284	63		

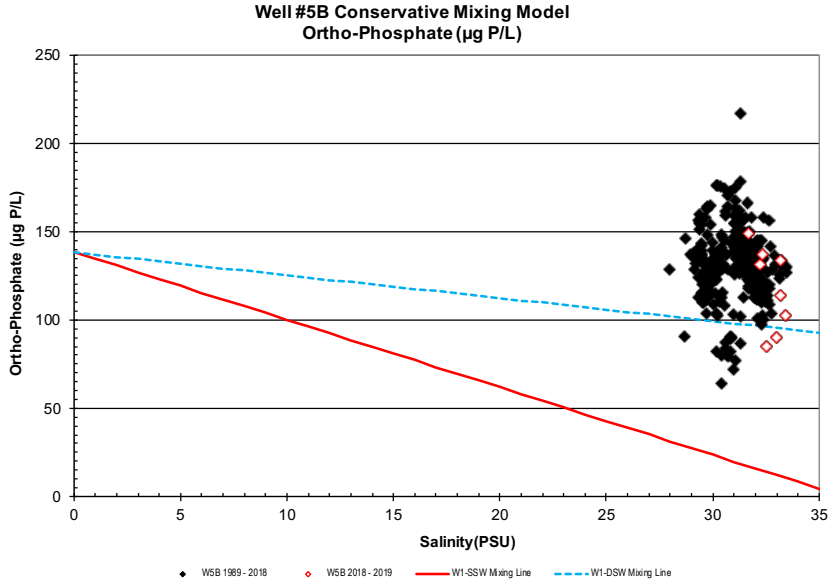
NELHA Water Quality Laboratory

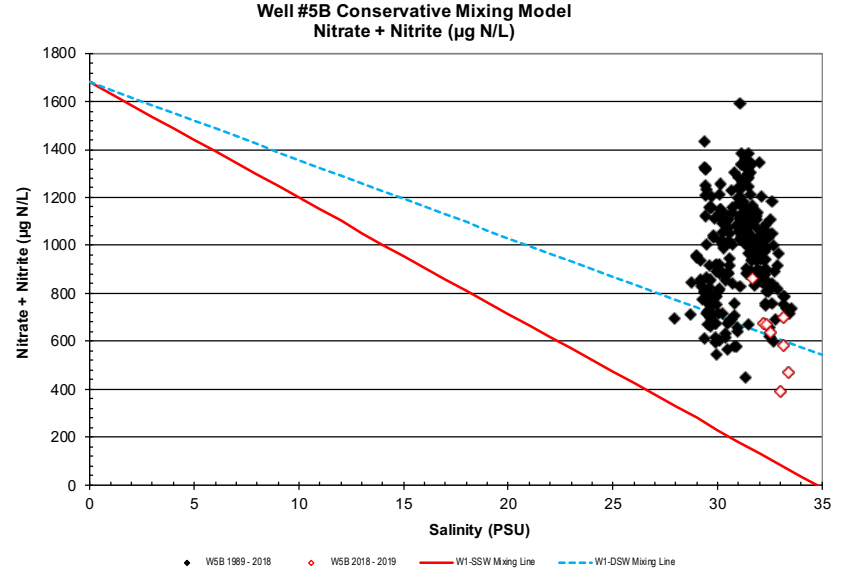
Well 5B Charts

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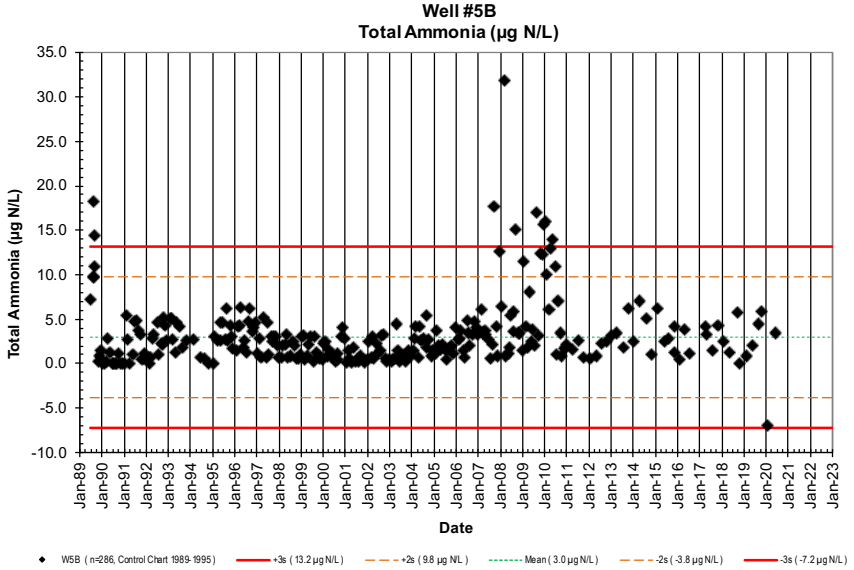


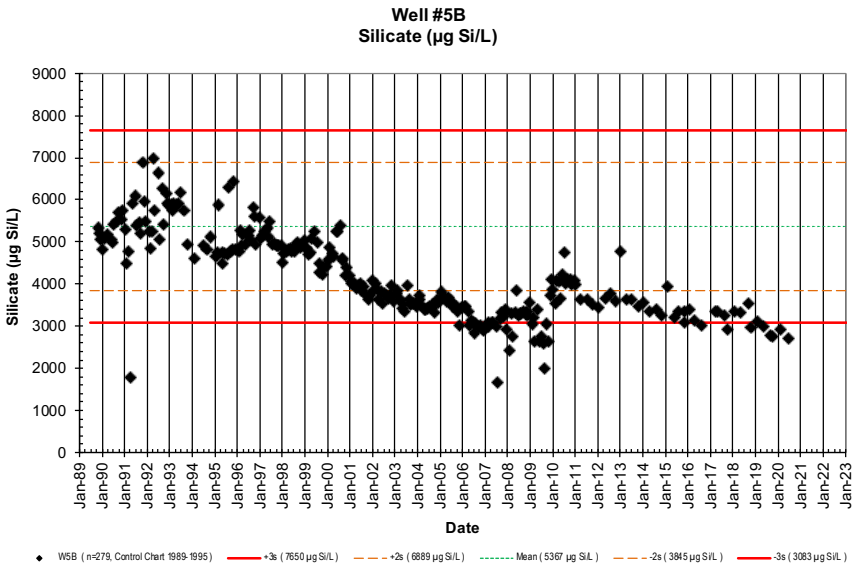


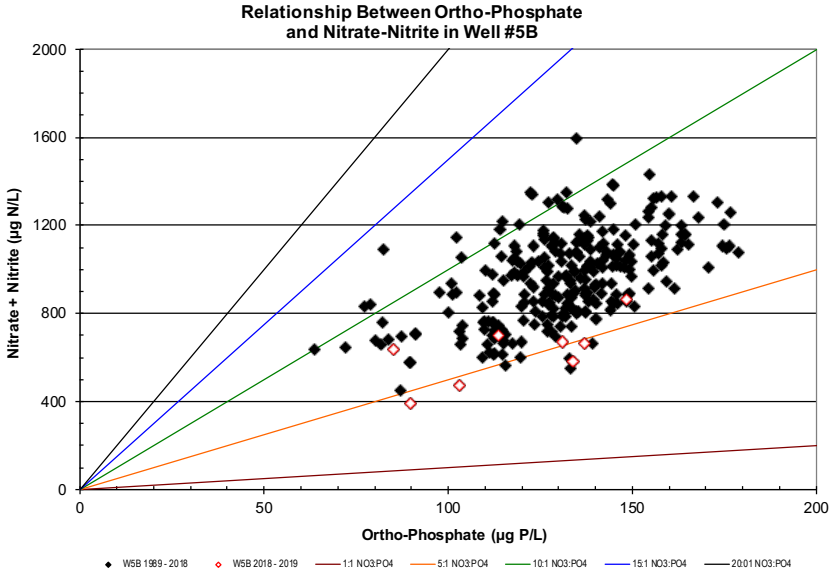
NELHA Water Quality Laboratory

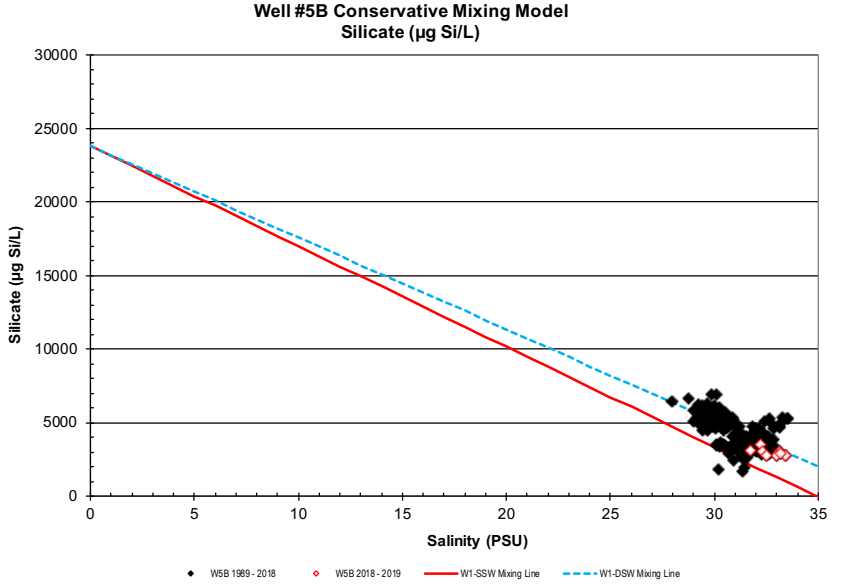
Well 5B Charts

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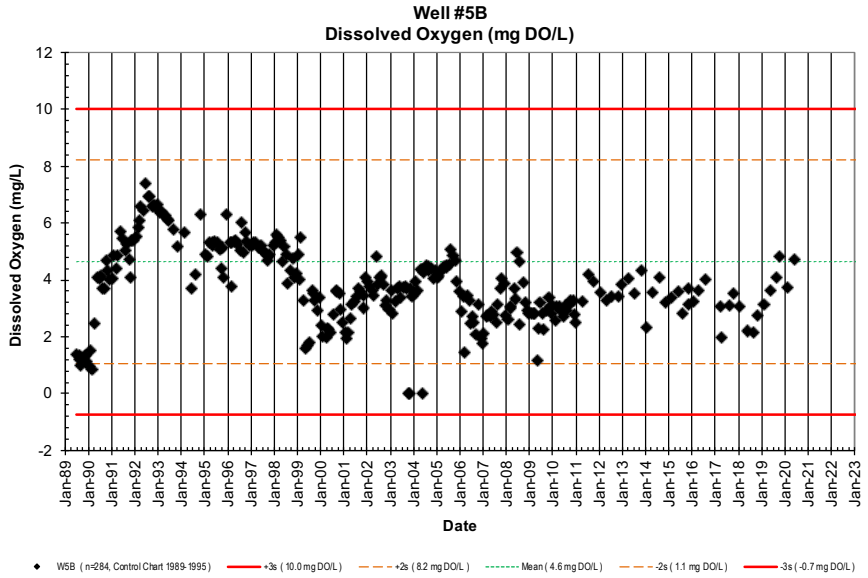


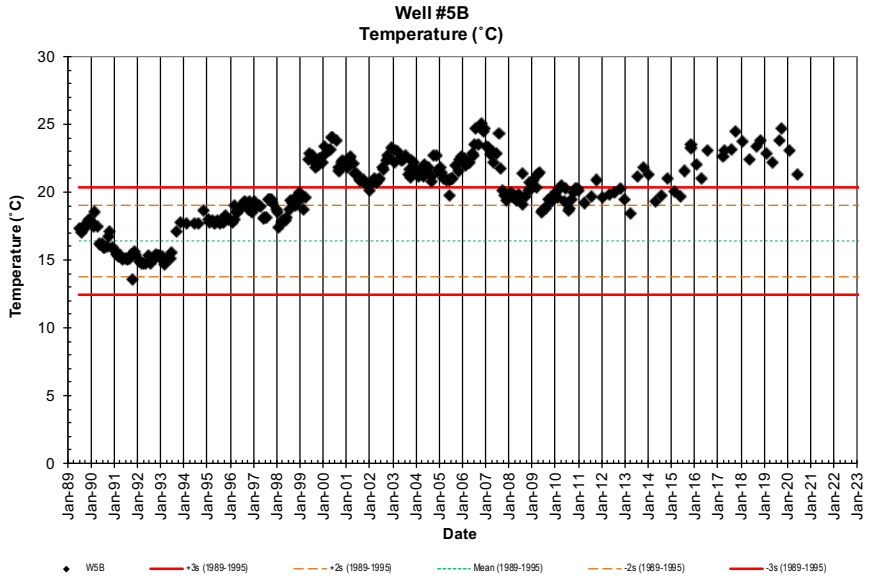


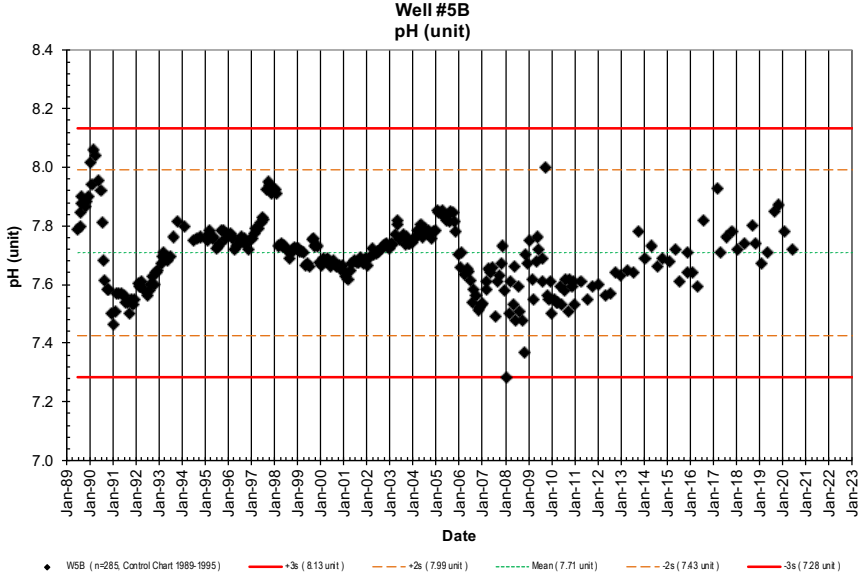
NELHA Water Quality Laboratory

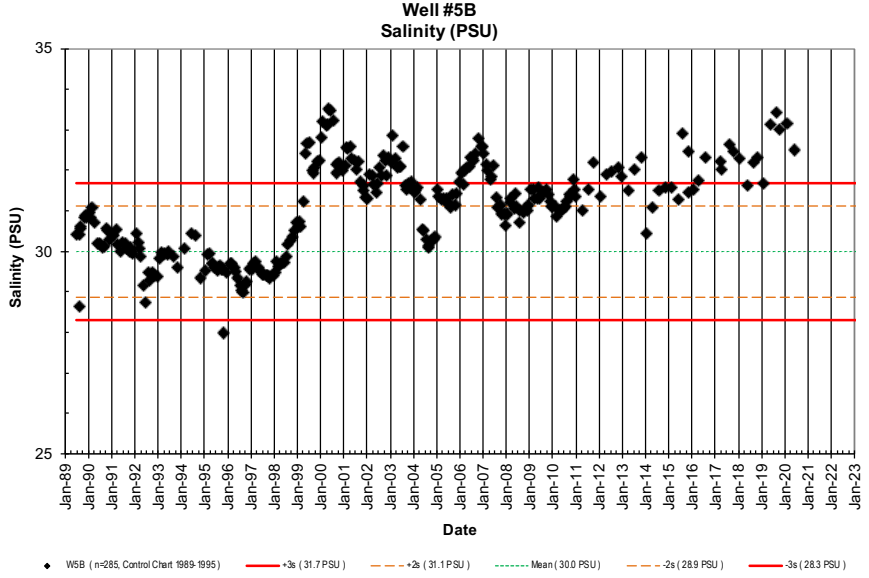
Well 5B Charts

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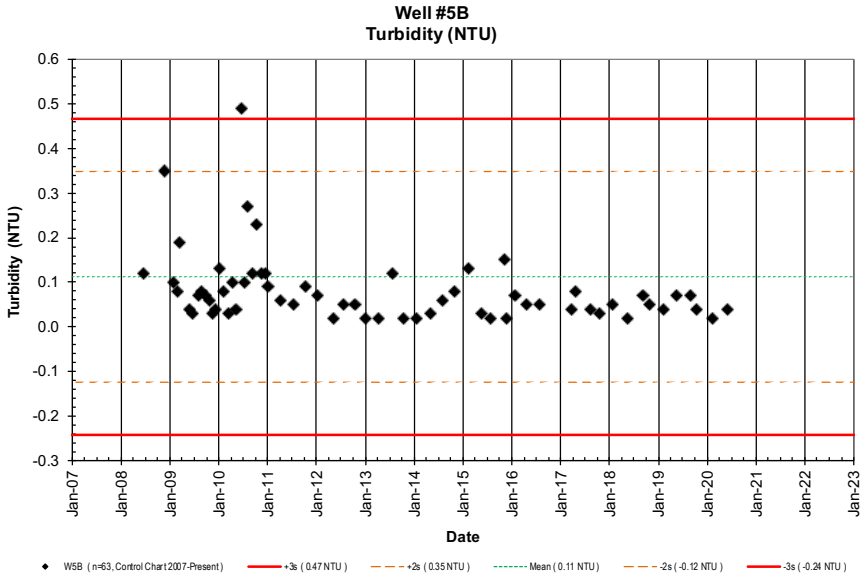


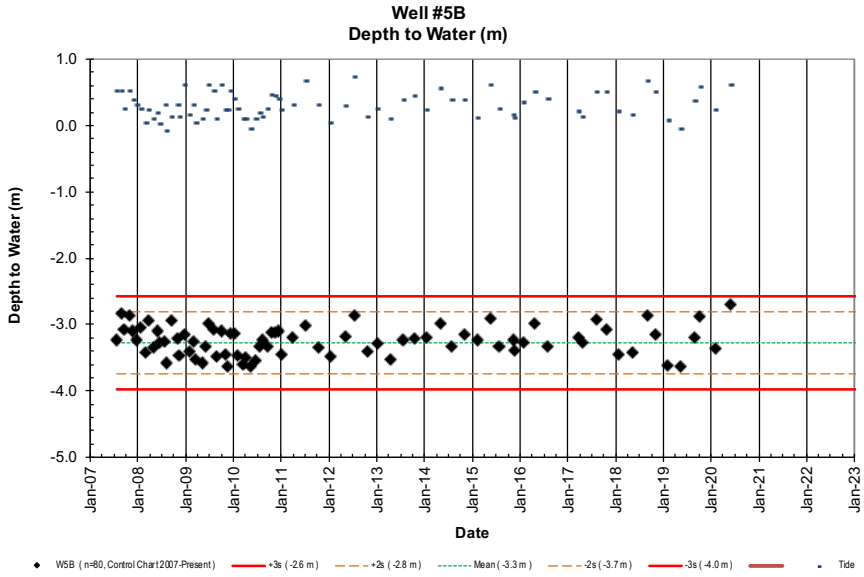


NELHA Water Quality Laboratory

Well 5B Charts

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NELHA Water Quality Laboratory

Well 6 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	6/23/89				2.94	91	58.0	812	0.61	8.5								18.7	7.814	29.918	16560	4.66		NA	NA
W6	-12.5	8/9/89	1502			3.05	94	61.7	865	0.50	7.0								17.6	7.628	29.742	16463	6.59		<1	NA
W6	-12.5	8/15/89	1120			3.78	117	75.1	1052	0.67	9.4								17.3	7.529	29.041	16075	4.97		<1	NA
W6	-12.5	8/22/89	1100			3.42	106	72.3	1013	0.50	7.0								16.7	7.651	29.264	16198	4.74		<1	NA
W6	-12.5	8/28/89	1340			3.23	100	86.9	1216	0.33	4.6								16.5	7.496	28.792	15937	3.99		<1	NA
W6	-12.5	8/28/89	1340			4.15	129	86.9	1216	0.45	6.3														NA	NA
W6	-12.5	10/27/89	1110			3.36	104	70.3	985	0.03	0.4	223	6263	3.61	111.8	70.3	985	0.30	18.2	7.742	30.281	16761	4.83		<1	NA
W6	-12.5	11/15/89	830			3.06	95	67.7	948	0.06	0.8	215	6038	3.31	102.5	73.5	1029	1.58	18.8	7.616	30.581	16927	7.06		<1	NA
W6	-12.5	12/8/89	1115			3.12	97	61.2	857	0.10	1.4	211	5926	3.23	100.0	70.4	986		18.6	7.836	30.535	16902	4.94		<1	NA
W6	-12.5	1/10/90	1012			2.15	67	77.7	1088	0.00	0.0	220	6179	2.34	72.5	78.7	1102	0.88	18.7	7.993	30.453	16857	5.27		<1	NA
W6	-12.5	2/13/90	1100			2.64	82	73.7	1032	0.00	0.0	196	5505	2.90	89.8	75.4	1056	1.32	18.7	7.931	30.339	16793	5.42		<1	NA
W6	-12.5	3/5/90	1328			2.16	67	87.3	1223	0.00	0.0	196		2.50	77.4	87.6	1227	1.09	18.4	8.040	30.157	16693	5.52		<1	NA
W6	-12.5	4/4/90	935			2.06	64	71.3	999	0.00	0.0	171	4803	2.21	68.5	72.5	1015	1.18	17.8	8.109	29.963	16585	6.59		<1	NA
W6	-12.5	5/16/90	1137			2.46	76	60.8	852	0.00	0.0	177	4971	2.60	80.5	63.3	887	0.74	16.3	7.955	29.269	16201	7.47		<1	NA
W6	-12.5	6/17/90	1500			3.85	119	68.3	957	0.00	0.0	199	5589	3.88	120.2	71.8	1006	1.46	16.6	7.791	29.028	16068	6.46		<1	NA
W6	-12.5	7/12/90	1157			5.00	155	80.5	1128	0.00	0.0	204	5729	5.17	160.1	83.1	1163	0.86	16.1	7.592	29.528	16345	5.67		<1	NA
W6	-12.5	8/7/90	1135			4.10	127	83.0	1163	0.56	7.8	204	5729	4.60	142.5	83.6	1171	1.00	15.8	7.585	29.212	16170	5.92		<1	NA
W6	-12.5	9/5/90	1326			4.79	148	84.7	1186	0.00	0.0			4.79	148.4	86.9	1217	0.48	15.7	7.443	28.690	15881	5.92		<1	NA
W6	-12.5	10/4/90	1412			5.04	156	82.7	1158	0.10	1.4	238	6684	5.92	183.4	83.9	1176	0.85	15.5	7.390	28.473	15761	5.73		1	NA
W6	-12.5	10/31/90	1117			4.01	124	72.6	1017	0.00	0.0	236	6628	5.31	164.5	93.1	1304	0.64	15.4	7.347	28.853	15971	5.41		<1	NA
W6	-12.5	12/7/90	1336			4.13	128	86.7	1215	0.00	0.0	211	5926	4.67	144.6	90.0	1260	0.56	15.5	7.450	29.000	16052	5.65		<1	NA
W6	-12.5	1/9/91	830			4.10	127	87.0	1219	0.00	0.0	199	5589	4.17	129.2	98.0	1372	0.67	14.8	7.515	29.261	16197	5.45		<1	NA
W6	-12.5	2/5/91	922			4.31	133	66.7	934	0.39	5.5	180	5055	4.41	136.6	67.6	947	0.78	15.1	7.540	29.117	16117	6.16		<1	NA
W6	-12.5	3/6/91	917			3.94	122	85.4	1196	0.13	1.8	211	5926	3.95	122.3	86.2	1207	0.80	14.4	7.576	29.135	16127	6.14		<1	NA
W6	-12.5	4/2/91	958			3.42	106	78.5	1100	0.50	7.0	196	5505	3.83	118.6	80.9	1133	0.81	14.4	7.556	28.962	16031	5.87		<1	NA
W6	-12.5	5/21/91	915			4.23	131	44.7	626	0.07	1.0	357	10027	4.43	137.2	46.5	651	0.70	14.3	7.546	29.130	16124	5.41		<1	NA
W6	-12.5	6/25/91	908			3.16	98	57.6	807	0.40	5.6	408	11459	3.54	109.6	59.2	829	0.64	14.3	7.587	29.191	16158	6.03		<1	<1
W6	-12.5	7/23/91	1011			4.24	131	66.5	931	0.35	4.9	213	5982	4.69	145.3	68.3	957	0.64	14.3	7.548	29.285	16210	6.41		<1	<1
W6	-12.5	8/22/91	938			4.17	129	71.8	1006	0.19	2.7	216	6066	4.41	136.6	73.8	1034	0.91	14.6	7.553	29.193	16159	6.30		<1	<1
W6	-12.5	9/23/91	942			4.56	141	63.4	888	0.37	5.2	216	6066	4.70	145.6	66.3	929	1.62	14.8	7.522	29.082	16098	5.81		<1	<1
W6	-12.5	10/22/91	1054			4.43	137	62.7	878	0.00	0.0	285	8004	4.48	138.8	65.9	923	0.65	15.0	7.513	28.950	16025	6.85		<1	<1
W6	-12.5	11/19/91	1041			4.76	147	60.6	849	0.06	0.8	244	6853	4.82	149.3	62.3	873	0.59	14.8	7.520	28.829	15958	7.38		<1	<1
W6	-12.5	12/10/91	1028			4.47	138	58.8	824	0.08	1.1	223	6263	4.53	140.3	61.2	857	0.67	14.9	7.550	29.050	16080	6.89		<1	<1
W6	-12.5	1/28/92	1006			4.54	141	60.2	843	0.00	0.0	217	6095	4.61	142.8	61.6	863	0.92	15.0	7.592	29.150	16135	6.90		<1	<1
W6	-12.5	2/18/92	939			4.17	129	58.4	818	0.00	0.0	201	5645	4.39	136.0	60.6	849	0.75	14.6	7.588	29.122	16120	6.95		<1	<1
W6	-12.5	3/16/92	1039			4.14	128	53.7	752	0.00	0.0	208	5842	4.33	134.1	55.1	772	0.97	15.3	7.659	28.965	16033	7.56		<1	<1
W6	-12.5	4/7/92	1010			4.16	129	52.4	734	0.23	3.2	241	6769	4.23	131.0	54.8	768	0.83	15.4	7.668	29.001	16053	8.78		<1	<1
W6	-12.5	5/5/92	1011			4.32	134	54.4	762	0.11	1.5	230	6460	4.43	137.2	57.6	807	0.99	15.8	7.668	28.824	15955	7.25		<1	<1
W6	-12.5	6/22/92	959			4.17	129	53.9	755	0.28	3.9	236	6628	4.30	133.2	59.1	828	1.36	14.8	7.650	28.786	15934	6.93		<1	2
W6	-12.5	7/28/92	938			4.12	128	59.6	834	0.07	1.0	206	5786	4.22	130.7	62.0	868	0.80	15.5	7.648	28.903	15999	7.59		<1	<1
W6	-12.5	8/25/92	913			4.16	129	57.5	806	0.18	2.5	247	6937	4.32	133.8	62.0	868	1.06	15.3	7.644	28.936	16017	7.49		<1	<1
W6	-12.5	9/21/92	936			4.06	126	58.0	812	0.13	1.8	220	6179	4.16	128.9	60.4	846	0.77	15.1	7.654	29.036	16072	7.58		<1	9
W6	-12.5	10/26/92	951			4.07	126	58.2	815	0.37	5.2	252	7078	4.10	127.0	62.7	879	0.66	15.1	7.607	28.897	15995	7.70		<1	<1
W6	-12.5	11/16/92	1009			3.92	121	58.6	820	0.32	4.5	242	6797	4.08	126.4	63.7	892	0.67	15.1	7.614	29.039	16074	7.65		<1	<1
W6	-12.5	12/7/92	959			4.05	125	59.9	839	0.20	2.8	236	6628	4.22	130.7	62.9	881	0.69	15.1	7.616	29.139	16129	7.62		<1	<1

NELHA Water Quality Laboratory

Well 6 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	1/25/93	956			4.03	125	59.0	827	0.32	4.5	396	11111	4.17	129.2	64.4	901	0.69	14.9	7.656	29.019	16063	7.34		<1	<1
W6	-12.5	2/22/93	926			4.13	128	57.3	803	0.31	4.3	236	6614	4.18	129.5	63.8	893	0.80	15.0	7.680	29.050	16080	6.76		<1	<1
W6	-12.5	3/15/93	922			4.13	128	54.8	767	0.18	2.5	243	6816	4.14	128.2	57.6	807	0.70	14.9	7.698	29.090	16102	6.74		<1	<1
W6	-12.5	4/26/93	928			4.03	125	50.9	713	0.13	1.8	238	6684	4.13	127.9	54.6	765	0.68	15.4	7.680	29.262	16197	6.75		<1	<1
W6	-12.5	5/24/93	943			4.08	126	51.4	719	0.32	4.5	237	6656	4.15	128.5	57.0	798	0.61	15.4	7.680	29.145	16133	6.67		<1	<1
W6	-12.5	6/21/93	944			3.93	122	52.0	728	0.20	2.8	156	4381	3.98	123.3	56.5	791	0.57	15.7	7.693	29.105	16110	7.00		<1	<1
W6	-12.5	8/30/93	1040			3.92	121	56.3	789	0.15	2.1	246	6906	3.97	123.0	42.9	601	0.70	16.3	7.676	28.527	15790	6.86		<1	<1
W6	-12.5	10/25/93	930			4.04	125	57.5	805	0.12	1.7	237	6656	4.10	127.0	60.7	850	0.61	16.9	7.671	28.309	15670	6.45		<1	<1
W6	-12.5	2/7/94	1131			4.16	129	51.5	721	0.16	2.2	354	9942	4.18	129.5	57.4	805	0.75	16.7	7.656	28.877	15984	5.96		<1	<1
W6	-12.5	6/20/94	912			4.31	133	52.1	729	0.04	0.6	209	5866	4.39	136.0	62.8	879	0.67	16.7	7.609	29.044	16077	5.74		<1	<1
W6	-12.5	8/22/94	1023			4.49	139	52.0	728	0.05	0.7	218	6131	4.57	141.6	59.7	836	0.63	16.6	7.641	29.030	16069	6.25		<1	<1
W6	-12.5	10/24/94	1004			4.62	143	60.3	844	0.00	0.0	220	6184	4.69	145.3	65.7	920	0.66	17.3	7.650	28.124	15567	6.01		<1	<1
W6	-12.5	1/23/95	1039			4.41	137	53.9	755	0.06	0.8	207	5817	4.52	140.0	56.2	786	0.50	16.4	7.619	28.298	15664	6.22		<1	<1
W6	-12.5	2/13/95	1027			4.32	134	52.1	730	0.27	3.8	217	6103	4.34	134.4	56.4	790	0.57	16.2	7.612	28.358	15697	6.15		<1	<1
W6	-12.5	3/13/95	1104			4.29	133	55.1	772	0.13	1.8	272	7628	4.28	132.6	56.9	796	0.52	16.3	7.619	28.318	15675	6.11		<1	<1
W6	-12.5	4/24/95	957			3.98	123	54.5	763	0.16	2.2	221	6215	4.12	127.6	55.3	775	0.58	16.4	7.592	28.410	15726	5.81		<1	<1
W6	-12.5	5/8/95	952			3.99	124	55.9	783	0.32	4.5	212	5954	4.04	125.1	59.6	835	0.56	16.5	7.605	28.406	15723	5.99		<1	<1
W6	-12.5	6/19/95	1032			4.04	125	58.6	820	0.36	5.0	302	8476	4.09	126.7	63.8	893	0.60	16.9	7.581	28.767	15923	6.05		<1	<1
W6	-12.5	7/24/95	1001			3.90	121	57.5	805	0.22	3.1	218	6131	4.00	123.9	59.9	839	0.65	17.3	7.608	28.338	15686	6.41		<1	<1
W6	-12.5	8/21/95	1051			4.02	125	54.5	764	0.39	5.5	314	8822	4.13	127.9	69.4	972	0.60	17.2	7.599	28.240	15632	6.29		<1	<1
W6	-12.5	9/11/95	859			4.17	129	54.3	760	0.23	3.2	217	6093	4.20	130.1	57.2	801	0.59	16.7	7.653	28.464	15756	6.51		<1	<1
W6	-12.5	10/16/95	9			4.51	140	54.2	759	0.28	3.9	218	6134	4.57	141.6	57.0	799	0.80	16.8	7.697	28.514	15783	6.27		<1	<1
W6	-12.5	11/6/95	918			4.90	152	56.2	787	0.25	3.5	218	6111	4.93	152.7	59.9	839	0.78	16.9	7.726	28.509	15780	6.25		<1	<1
W6	-12.5	12/4/95	937			6.48	201	59.1	828	0.14	2.0	321	9001	6.63	205.4	71.7	1004	0.87	16.9	7.655	28.469	15758	6.47		<1	<1
W6	-12.5	1/29/96	1006			5.31	164	58.0	812	0.02	0.3	213	5974	5.38	166.6	68.1	954	0.59	16.9	7.654	28.628	15846	6.15		<1	<1
W6	-12.5	2/26/96	1009			5.27	163	68.9	965	0.23	3.2	230	6461	5.40	167.3	71.2	998	0.83	17.1	7.668	28.483	15766	6.20		<1	<1
W6	-12.5	3/5/96	949			5.41	168	69.9	979	0.15	2.1	212	5945	5.49	170.0	73.7	1032	0.76	17.0	7.637	28.499	15775	6.45		<1	1
W6	-12.5	4/1/96	1005			5.82	180	96.6	1353	0.50	7.0	215	6050	5.99	185.5	99.6	1395	0.92	16.9	7.663	28.354	15695	6.39		<1	<1
W6	-12.5	5/8/96	1008			6.06	188	112.9	1581	0.17	2.4	204	5721	6.20	192.0	118.3	1657	0.78	17.2	7.698	28.393	15716	6.27		<1	<1
W6	-12.5	6/17/96	924			6.02	186	105.2	1473	0.18	2.5	215	6030	6.00	185.8	107.3	1503	0.70	19.2	7.710	28.530	15792	4.42		<1	<1
W6	-12.5	7/16/96	914			5.99	186	97.7	1369	0.23	3.2	214	6002	6.26	193.9	101.3	1419	0.83	17.9	7.727	28.536	15795	6.29		<1	<1
W6	-12.5	8/5/96	1027			6.01	186	84.4	1183	0.35	4.9	206	5783	6.11	189.2	89.2	1249	0.78	19.0	7.743	28.754	15916	6.15		<1	<1
W6	-12.5	9/3/96	1006			6.11	189	88.9	1245	0.22	3.1	229	6427	6.16	190.8	91.2	1277	0.74	18.7	7.725	28.680	15875	6.20		<1	<1
W6	-12.5	10/8/96	1023			6.05	187	83.9	1176	0.26	3.6	278	7804	6.37	197.3	90.8	1272	0.78	17.6	7.738	28.359	15697	5.82		<1	<1
W6	-12.5	11/4/96	1007			5.99	186	87.3	1223	0.30	4.2	197	5533	6.14	190.2	92.2	1291	0.61	18.2	7.727	28.436	15740	6.33		<1	<1
W6	-12.5	12/16/96	1004			6.13	190	87.0	1219	0.30	4.2	225	6316	6.28	194.5	88.5	1240	0.68	17.8	7.758	28.541	15798	6.30		<1	<1
W6	-12.5	1/13/97	1045			6.06	188	86	1203	0.11	1.5	203	5693	6.20	192.0	90.8	1272	0.78	17.8	7.752	28.525	15789	6.35		<1	<1
W6	-12.5	2/10/97	955			5.97	185	87	1225	0.17	2.4	205	5766	6.01	186.2	91.9	1287	0.55	17.0	7.758	28.537	15796	6.22		<1	<1
W6	-12.5	3/10/97	959			5.90	183	101	1408	0.10	1.4	205	5758	6.00	185.8	104.0	1456	0.67	17.0	7.780	28.310	15670	6.45		<1	<1
W6	-12.5	4/22/97	1035			6.42	199	98	1368	0.30	4.2	211	5926	7.11	220.2	175.4	2457	0.74	17.1	7.801	28.054	15529	6.05		<1	<1
W6	-12.5	5/27/97	935			5.37	166	93	1308	0.09	1.3	202	5685	6.25	193.6	100.3	1405	0.74	16.0	7.804	28.277	15652	7.32		<1	<1
W6	-12.5	6/16/97	950			5.42	168	76	1064	0.30	4.2	223	6260	5.57	172.5	84.8	1188	0.76	16.7	7.829	28.562	15810	6.22		<1	<1

NELHA Water Quality Laboratory

Well 6 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	7/16/97	857			5.36	166	69	966	0.10	1.4	196	5502	5.60	173.5	76.3	1069	1.00	16.9	7.823	28.691	15881	6.13		<1	<1
W6	-12.5	8/25/97	942			5.39	167	69	968	0.29	4.1	197	5538	5.45	168.8	87.4	1224	0.71	18.2	7.914	28.998	16051	6.31		<1	<1
W6	-12.5	9/22/97	944			5.14	159	62	864	0.32	4.5	192	5387	5.24	162.3	64.5	903	0.69	18.9	7.960	29.132	16125	6.27		<1	<1
W6	-12.5	10/14/97	937			5.62	174	73	1020	0.10	1.4	193	5409	5.74	177.8	77.2	1081	0.69	18.1	7.928	28.834	15960	6.40		<1	<1
W6	-12.5	11/3/97	1055			5.78	179	63.7	892	0.16	2.2	191	5364	6.13	189.9	69.6	975	0.69	17.6	7.883	28.709	15891	6.39		<1	<1
W6	-12.5	12/15/97	1000			5.53	171	64.5	903	0.23	3.2	194	5446	5.76	178.4	67.5	945	0.69	17.0	7.895	28.899	15996	6.52		<1	<1
W6	-12.5	1/5/98	1104			5.53	171	63.6	891	0.06	0.8	181	5096	5.73	177.5	68.3	957	0.70	16.7	7.887	29.052	16081	6.49		<1	<1
W6	-12.5	2/2/98	1008			5.41	168	65.4	916	0.07	1.0	187	5255	5.63	174.4	70.2	983	0.65	16.3	7.902	29.091	16103	6.72		<1	<1
W6	-12.5	3/9/98	1005			6.42	199	70.5	987	0.19	2.7	193	5429	6.68	206.9	72.9	1021	0.77	16.7	7.703	29.021	16064	6.05		<1	<1
W6	-12.5	4/13/98	914			6.11	189	69	966	0.15	2.1	193	5412	6.72	208.1	71.3	999	0.78	16.4	7.696	29.196	16161	5.80		<1	2
W6	-12.5	5/11/98	946			6.03	187	70	981	0.19	2.7	193	5406	6.24	193.3	74.0	1036	0.74	16.8	7.727	29.135	16127	5.88		<1	<1
W6	-12.5	6/1/98	944			6.07	188	63.1	884	0.13	1.8	194	5452	6.26	193.9	65.4	916	0.65	16.7	7.723	28.974	16038	5.74		<1	<1
W6	-12.5	7/13/98	950			5.55	172	58	819	0.06	0.8	201	5634	5.80	179.6	60	842	0.72	16.8	7.668	29.148	16134	6.23		<1	6
W6	-12.5	8/10/98	1007			5.39	167	55.8	782	0.17	2.4	197	5538	5.60	173.5	61.1	856	0.71	16.7	7.697	29.423	16286	5.96		<1	3
W6	-12.5	9/14/98	958			4.61	143	62.1	870	0.18	2.5	252	7080	4.87	150.8	65	907	0.73	17.5	7.668	27.061	14979	6.06		<1	1
W6	-12.5	10/12/98	905			4.95	153	58.7	822	0.03	0.4	191	5353	5.25	162.6	63	878	0.71	n/a	7.669	29.677	16427	6.39		<1	<1
W6	-12.5	11/2/98	927			4.86	151	60.3	845	0.08	1.1	189	5300	5.07	157.0	63.7	892	0.81	17.6	7.673	29.611	16390	6.22		<1	<1
W6	-12.5	12/15/98	928			5.78	179	91.1	1276	0.16	2.2	186	5210	5.97	184.9	94.1	1317	1.30	16.8	7.707	29.394	16270	5.95		<1	<1
W6	-12.5	1/11/99	945			6.08	188	102	1423	0.14	2.0	183	5145	6.29	194.8	103	1448	1.26	16.4	7.773	29.598	16383	5.07		<1	<1
W6	-12.5	2/2/99	940			6.24	193	118	1651	0.20	2.8	179	5033	6.44	199.5	132	1853	1.20	16.3	7.790	29.595	16382	5.17		<1	<1
W6	-12.5	3/1/99	945			6.95	215	103.4	1448	0.04	0.6	175	4901	7.18	222.4	107.9	1511	1.08	16.5	7.831	29.671	16424	5.66		<1	1
W6	-12.5	4/5/99	943			6.96	216	83.1	1164	0.09	1.3	176	4929	7.23	223.9	86.3	1209	0.82	15.9	7.780	29.959	16583	5.46		<1	<1
W6	-12.5	5/3/99	943			6.31	195	67.7	948	0.15	2.1	172	4836	6.56	203.2	73.1	1024	0.79	16.5	7.744	30.191	16712	7.08		1	1
W6	-12.5	6/1/99	935			5.88	182	64.9	909	0.30	4.2	171	4803	6.08	188.3	67.8	950	0.75	16.3	7.725	30.057	16637	5.86		<1	<1
W6	-12.5	7/14/99	938			5.17	160	67.8	950	0.03	0.4	180	5044	5.26	162.9	69.1	968	0.71	17.0	7.684	30.167	16698	5.81		<1	<1
W6	-12.5	8/23/99	1004			5.15	160	61.6	863	0.24	3.4	105	2957	5.29	163.9	63.6	891	0.78	17.1	7.720	30.141	16684	6.03		<1	1
W6	-12.5	9/7/99	954			5.21	161	63.7	892	0.05	0.7	171	4805	5.50	170.4	72.3	1013	0.74	16.9	7.718	30.242	16740	5.89		<1	TNTC
W6	-12.5	10/5/99	943			4.83	150	60.7	850	0.07	1.0	176	4943	5.01	155.2	63.6	891	0.63	18.4	7.707	30.776	17035	4.91		<1	1
W6	-12.5	11/1/99	1010			4.86	151	59.8	838	0.08	1.1	163	4572	5.08	157.3	62.5	875	0.74	19.1	7.694	30.496	16880	5.09		<1	<1
W6	-12.5	12/14/99	1001			4.86	151	62.0	869	0.04	0.6	167	4685	5.03	155.8	64.1	898	0.94	18.3	7.640	30.845	17074	4.66		<1	<1
W6	-12.5	1/10/00	1027			5.22	162	65.0	910	0.15	2.1	167	4702	5.39	166.9	69.5	973	0.97	18.8	7.668	30.683	16984	4.53		<1	<1
W6	-12.5	2/7/00	1022			5.56	172	71.3	998	0.15	2.1	163	4567	5.74	177.8	75.5	1058	0.99	17.8	7.710	30.356	16803	4.61		<1	<1
W6	-12.5	3/21/00	1025			5.85	181	62.6	877	0.10	1.4	167	4687	5.87	181.8	65.0	910	0.82	16.9	7.706	30.133	16679	5.22		<1	<1
W6	-12.5	4/10/00	1054			5.82	180	64.0	896	0.09	1.3	164	4617	5.79	179.3	67.5	945	0.83	16.8	7.720	30.183	16707	5.27		<1	<1
W6	-12.5	5/15/00	1005			5.67	176	62.6	877	0.17	2.4	167	4685	5.76	178.4	66.9	937	0.79	17.1	7.714	30.384	16818	5.57		<1	<1
W6	-12.5	6/5/00	1006			5.59	173	60.3	845	0.09	1.3	186	5215	5.80	179.6	65.2	913	0.77	17.1	7.699	30.485	16874	5.25		<1	<1
W6	-12.5	7/26/00	1032			5.65	175	64.3	901	0.02	0.3	163	4581	5.89	182.4	69.4	972	1.10	18.2	7.720	30.437	16848	5.39		<1	<1
W6	-12.5	8/29/00	935			5.71	177	66.1	926	0.03	0.4	166	4651	5.81	180.0	68.1	954	0.90	17.7	7.647	30.529	16899	5.36		<1	<1
W6	-12.5	9/5/00	1001			5.63	174	69.3	971	0.07	1.0	166	4671	5.93	183.7	70.3	985	0.89	17.8	7.651	30.642	16961	5.18		<1	<1
W6	-12.5	10/24/00	1006			5.82	180	66.8	935	0.16	2.2	171	4803	6.06	187.7	69.9	979	n/a	18.8	7.689	30.802	17050	5.12		<1	<1
W6	-12.5	11/13/00	947			5.34	165	64.0	896	0.26	3.6	175	4904	5.62	174.1	70.9	993	0.88	19.0	7.657	30.915	17112	5.01		<1	<1
W6	-12.5	12/18/00	949			5.68	176	84.8	1188	0.18	2.5	167	4690	5.96	184.6	90.2	1263	0.89	18.7	7.656	30.686	16985	4.95		<1	1

NELHA Water Quality Laboratory

Well 6 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	1/22/01	953			5.60	173	81.3	1139	0.02	0.3	169	4755	5.75	178.1	83.8	1174	0.90	17.5	7.642	30.489	16876	4.83		<1	<1
W6	-12.5	2/5/01	1012			5.50	170	89.4	1251	0.20	2.8	169	4758	5.70	176.6	92.8	1300	0.86	17.5	7.661	30.388	16821	4.78		<1	<1
W6	-12.5	3/5/01	1003			5.48	170	73.3	1027	0.03	0.4	165	4620	5.76	178.4	77.2	1081	0.71	17.3	7.637	30.351	16800	4.64		<1	<1
W6	-12.5	4/17/01	947			5.40	167	77.2	1082	0.05	0.7	166	4662	5.55	171.9	85.2	1194	0.71	17.0	7.640	30.265	16752	5.53		<1	<1
W6	-12.5	5/15/01	931			5.25	163	79.3	1111	0.14	2.0	172	4819	5.38	166.6	83.1	1164	0.81	17.2	7.645	30.280	16761	5.71		<1	<1
W6	-12.5	6/12/01	1006			5.12	159	72.7	1019	0.02	0.3	165	4643	5.19	160.8	77.8	1090	0.77	17.6	7.653	30.212	16723	5.83		<1	<1
W6	-12.5	7/23/01	954			5.23	162	68.9	965	0.02	0.3	170	4777	5.40	167.3	76.3	1068	1.12	17.7	7.659	30.282	16762	5.86		<1	<1
W6	-12.5	8/8/01	945			5.20	161	67.5	945	0.05	0.7	168	4713	5.44	168.5	72.8	1019	0.70	16.6	7.666	30.275	16758	5.92		<1	<1
W6	-12.5	9/19/01	954			5.50	170	67.6	947	0.05	0.7	170	4783	5.68	175.9	71.7	1004	0.74	17.3	7.650	30.281	16761	6.08		<1	<1
W6	-12.5	10/24/01	927			5.02	155	61.8	866	0.01	0.1	168	4730	5.48	169.7	63.7	893	0.71	18.3	4.681	30.232	16734	5.74		<1	<1
W6	-12.5	11/7/01	945			5.50	170	65.7	921	0.07	1.0	170	4775	5.78	179.0	74.1	1038	0.71	18.4	7.675	30.290	16766	5.53		<1	<1
W6	-12.5	12/19/01	1004			5.26	163	67.7	949	0.12	1.7	176	4943	5.58	172.8	82.2	1151	0.75	18.4	7.671	30.298	16771	5.85		<1	1
W6	-12.5	1/9/02	954			5.31	164	66.3	929	0.18	2.5	186	5227	5.55	171.9	69.1	968	0.78	18.6	7.673	30.437	16848	5.25		<1	<1
W6	-12.5	2/19/02	1011			5.48	170	70.8	992	0.06	0.8	179	5027	5.66	175.3	74.5	1043	0.69	18.1	7.685	30.296	16770	5.87		<1	<1
W6	-12.5	3/20/02	1013			5.36	166	69.0	967	0.09	1.3	172	4825	5.64	174.7	73.4	1028	0.66	17.7	7.680	30.326	16786	5.90		<1	<1
W6	-12.5	4/8/02	1102			5.39	167	71.2	997	0.02	0.3	173	4867	5.66	175.3	77.7	1088	0.62	17.5	7.671	30.315	16780	5.90		<1	<1
W6	-12.5	5/29/02	1047			4.96	154	69.3	971	0.14	2.0	170	4777	5.12	158.6	74.4	1042	0.71	17.9	7.690	30.129	16677	6.36		<1	<1
W6	-12.5	6/17/02	1020			5.14	159	64.5	903	0.04	0.6	163	4586	5.35	165.7	69.6	975	0.64	18.1	7.680	30.200	16716	6.14		<1	3
W6	-12.5	7/15/02	1025			5.08	157	63.6	891	0.10	1.4	182	5098	5.30	164.2	68.2	955	0.68	17.9	7.678	30.233	16735	6.01		<1	<1
W6	-12.5	8/20/02	1017			4.96	154	67.0	938	0.21	2.9	170	4769	5.22	161.7	62.3	872	0.80	18.3	7.692	30.178	16704	6.11		<1	4
W6	-12.5	9/23/02	1034			4.86	151	70.4	986	0.21	2.9	170	4786	4.94	153.0	63.3	887	0.66	18.2	7.716	30.380	16816	5.89		<1	<1
W6	-12.5	10/14/02	953			4.69	145	62.2	871	0.09	1.3	171	4814	4.89	151.5	58.6	821	0.60	19.4	7.754	30.532	16900	5.54		<1	127
W6	-12.5	11/4/02	1003			5.08	157	86.9	1218	0.02	0.3	174	4881	5.33	165.1	68.1	954	0.87	18.9	7.723	30.236	16736	5.24		<1	<1
W6	-12.5	12/17/02	1031			5.30	164	80.1	1122	0.03	0.4	176	4940	5.59	173.1	83.2	1166	1.02	19.0	7.674	30.389	16821	4.41		<1	<1
W6	-12.5	1/21/03	1115			5.10	158	80.4	1126	0.03	0.4	167	4687	5.39	166.9	89.9	1259	0.76	17.8	7.689	30.741	17016	4.69		<1	<1
W6	-12.5	2/12/03	1041			5.18	160	68.1	954	0.04	0.6	174	4890	5.41	167.6	74.5	1043	0.80	17.8	7.705	30.368	16809	4.86		<1	<1
W6	-12.5	3/19/03	1027			5.81	180	74.6	1044	0.02	0.3	186	5235	5.98	185.2	83.5	1170	0.76	18.1	7.722	30.178	16704	5.29		<1	<1
W6	-12.5	4/28/03	1013			5.95	184	72.5	1015	0.07	1.0	167	4679	6.02	186.5	78.3	1097	0.57	18.0	7.745	30.024	16619	6.19		<1	<1
W6	-12.5	5/12/03	945			5.81	180	69.8	978	0.03	0.4	175	4915	6.08	188.3	87.1	1220	0.53	17.4	7.751	30.044	16630	6.27		<1	<1
W6	-12.5	6/3/03	1000			5.92	183	76.4	1070	0.29	4.1	165	4643	6.14	190.2	83.3	1167	0.55	17.6	7.789	29.998	16605	6.38		<1	<1
W6	-12.5	7/29/03	1030			5.17	160	65.6	919	0.10	1.4	169	4744	5.35	165.7	69.6	975	NA	18.1	7.779	30.281	16761	6.01		<1	1
W6	-12.5	8/26/03	1025			5.04	156	66.6	933	0.02	0.3	167	4685	5.21	161.4	72.3	1012	NA	19.0	7.771	30.373	16812	5.78		<1	188
W6	-12.5	9/15/03	1014			5.03	156	74.1	1038	0.02	0.3	165	4640	5.34	165.4	97.2	1361	NA	19.8	7.755	30.183	16707	5.95		<1	<1
W6	-12.5	10/6/03	1008			4.84	150	75.1	1052	0.05	0.7	167	4693	5.06	156.7	79.3	1110	NA	19.7	7.775	30.356	16803	NA		<1	<1
W6	-12.5	10/28/03	1040			5.22	162	79.6	1115	0.10	1.4	161	4533	5.40	167.3	85.3	1195	NA	18.9	7.733	30.103	16663	NA		<1	<1
W6	-12.5	11/14/03	1345																19.4			0	5.50			
W6	-12.5	12/15/03	952																23.3	7.776		0				
W6	-12.5	12/17/03	857			4.55	141	64.0	897	0.07	1.0	177	4980	4.83	149.6	67.2	941	NA	20.3	7.771	30.440	16849	5.04		<1	<1
W6	-12.5	1/26/04	1001			5.04	156	64.8	908	0.10	1.4	174	4876	5.28	163.5	67.5	945	NA	18.8	7.722	30.094	16658	5.55		<1	1
W6	-12.5	2/5/04	1002			4.74	147	74.2	1040	0.19	2.7	173	4862	5.02	155.5	83.8	1173	NA	19.0	7.734	29.898	16549	5.67		<1	<1
W6	-12.5	3/2/04	1051			4.74	147	82.5	1155	0.26	3.6	176	4951	4.86	150.5	91.2	1277	NA	19.1	7.737	29.895	16548	5.38		<1	11
W6	-12.5	4/20/04	1007			4.80	149	118	1651	0.02	0.3	176	4954	5.06	156.7	121	1689	NA	17.6	7.705	29.672	16424	6.06		<1	<1
W6	-12.5	5/11/04	922			4.68	145	116	1622	0.30	4.2	171	4805	4.65	144.0	116	1623	NA	17.7	7.724	29.05	16080	5.83		<1	<1
W6	-12.5	6/2/04	1009			3.66	113	123	1719	0.13	1.8	172	4817	3.74	115.8	125	1747	NA	20.9	7.701	28.69	15881	3.41		<1	<1

NELHA Water Quality Laboratory

Well 6 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	7/14/04	1008				4.10	127	108	1509	0.24	3.4	174	4884	4.12	127.6	119	1665	NA	19.9	7.699	29.06	16085	4.92		<1	<1
W6	-12.5	8/23/04	1017				3.80	118	98.0	1372	0.36	5.0	178	4991	3.92	121.4	101	1416	NA	20.5	7.697	29.30	16218	4.37		<1	3104
W6	-12.5	9/2/04	1037				4.19	130	103	1445	0.13	1.8	177	4960	4.28	132.6	106	1483	NA	19.6	7.689	29.27	16202	4.61		<1	419
W6	-12.5	10/4/04	947				4.54	141	98.9	1385	0.16	2.2	173	4848	4.43	137.2	108	1517	NA	20.2	7.685	29.47	16312	4.57		<1	>5,000
W6	-12.5	11/9/04	916				4.70	146	93.1	1304	0.11	1.5	178	4991	4.98	154.2	102	1428	NA	20.1	7.661	29.28	16207	4.93		<1	>5,000
W6	-12.5	12/6/04	945				4.58	142	97.1	1360	0.10	1.4	176	4949	4.80	148.7	112	1562	NA	20.1	7.736	29.29	16213	4.72		<1	153
W6	-12.5	1/10/05	911				4.82	149	104.9	1469	0.06	0.8	180	5064	4.92	152.4	109	1525	NA	19.5	7.725	30.231	16734	5.09		<1	1
W6	-12.5	2/9/05	913				4.91	152	100	1401	0.05	0.7	179	5030	5.20	161.1	128	1789	NA	21.1	7.728	30.198	16715	5.35		<1	<1
W6	-12.5	3/15/05	942				4.78	148	105	1471	0.25	3.5	178	4994	5.00	154.9	124	1735	0.63	19.4	7.739	30.305	16775	5.35		<1	<1
W6	-12.5	4/19/05	858				4.84	150	117	1639	0.12	1.7	175	4915	4.96	153.6	122	1712	Na	19.1	7.739	30.240	16739	5.64		<1	<1
W6	-12.5	5/23/05	931				4.24	131	129	1800	0.21	2.9	173	4853	4.34	134.4	131	1836	NA	19.6	7.703	30.344	16796	4.52		<1	<1
W6	-12.5	6/15/05	1002				4.40	136	120	1685	0.15	2.1	168	4721	4.43	137.2	134	1870	NA	19.7	7.713	30.239	16738	4.78		<1	<1
W6	-12.5	7/18/05	859				4.50	139	112	1569	0.12	1.7	177	4963	4.66	144.3	114	1601	0.51	21.3	7.709	30.369	16810	5.08		<1	<1
W6	-12.5	8/9/05	920				4.40	136	104	1461	0.22	3.1	170	4775	4.80	148.7	108	1514	0.66	20.1	7.755	30.397	16826	5.16		<1	>2,000
W6	-12.5	9/20/05	915				4.52	140	91.4	1280	0.23	3.2	169	4732	4.76	147.4	93.1	1304	0.57	19.6	7.750	30.231	16734	5.73		<1	1176
W6	-12.5	10/17/05	911				4.38	136	97.4	1365	0.13	1.8	170	4760	4.64	143.7	100	1405	NA	20.4	7.756	30.377	16814	5.20		<1	159
W6	-12.5	11/7/05	845				4.08	126	114	1602	0.06	0.8	168	4730	4.44	137.5	120	1686	NA	21.1	7.778	30.331	16789	4.67		<1	<1
W6	-12.5	12/19/05	848				4.30	133	98.6	1381	0.52	7.3	166	4654	4.40	136.3	111	1558	0.64	19.2	7.751	29.976	16592	5.78		<1	<1
W6	-12.5	1/23/06	859				4.28	133	103	1448	0.47	6.6	170	4777	4.40	136.3	111	1555	NA	19.0	7.759	30.043	16630	5.56		<1	<1
W6	-12.5	2/14/06	907				4.35	135	108	1506	0.37	5.2	169	4738	4.60	142.5	111	1553	0.59	18.4	7.746	29.887	16543	5.40		<1	<1
W6	-12.5	3/20/06	903				4.20	130	103	1443	0.48	6.7	162	4550	4.40	136.3	107	1499	0.57	18.5	7.789	30.027	16621	5.46		<1	<1
W6	-12.5	4/25/06	935				4.14	128	95.4	1336	0.19	2.7	162	4550	4.36	135.0	91.9	1287	0.55	18.4	7.77	30.044	16630	5.48		<1	<1
W6	-12.5	5/22/06	923				3.96	123	86.6	1213	0.23	3.2	159	4466	4.41	136.6	83.1	1165	0.62	18.2	7.749	30.055	16636	5.58		<1	<1
W6	-12.5	6/26/06	927				3.83	119	84.2	1179	0.08	1.1	165	4634	3.97	123.0	80.4	1126	0.70	18.7	7.765	30.130	16678	5.50		<1	<1
W6	-12.5	7/20/06	945				3.45	107	74.9	1049	0.23	3.2	156	4381	3.78	117.1	68.3	956	0.57	20.4	7.771	30.358	16804	5.56		<1	<1
W6	-12.5	8/7/06	1002				3.65	113	77.4	1084	0.21	2.9	160	4494	4.03	124.8	67.4	944	0.62	19.3	7.777	30.374	16813	5.70		<1	<1
W6	-12.5	9/18/06	927				3.65	113	73.5	1029	0.22	3.1	160	4494	4.03	124.8	67.6	947	0.63	19.4	7.769	30.453	16857	5.36		<1	<1
W6	-12.5	10/23/06	930				3.70	115	72.8	1020	0.33	4.6	163	4578	3.95	122.3	67.7	948	0.57	19.7	7.762	30.55	16910	5.47		<1	<1
W6	-12.5	11/27/06	914				3.66	113	86.3	1209	0.27	3.8	164	4606	3.94	122.0	79.0	1107	0.68	20.2	7.785	30.464	16863	5.30		<1	<1
W6	-12.5	12/11/06	1015				3.76	116	88.2	1235	0.36	5.0	164	4606	3.98	123.3	79.9	1120	0.61	21.7	7.774	30.463	16862	5.41		<1	<1
W6	-12.5	1/8/07	1109				3.90	121	93.1	1304	0.21	2.9	159	4466	4.10	127.0	80.6	1130	0.55	19.4	7.758	30.30	16771	5.87		<1	<1
W6	-12.5	2/20/07	1006				3.79	117	76.1	1066	0.39	5.5	163	4578	4.02	124.5	85.6	1200	0.61	18.9	7.728	30.16	16694	6.01		<1	<1
W6	-12.5	3/5/07	941				3.81	118	84.9	1189	0.32	4.5	169	4746	4.00	123.9	88.5	1240	0.62	19.2	7.724	30.073	16646	6.01		<1	<1
W6	-12.5	4/18/07	1005				3.85	119	74.3	1041	0.18	2.5	170	4775	3.95	122.3	65.5	917	0.53	19.5	7.746	29.90	16553	6.29		<1	<1
W6	-12.5	5/1/07	957				3.90	121	76.4	1070	0.20	2.8	168	4718	4.05	125.4	68.0	952	0.55	19.0	7.738	29.842	16518	6.32		<1	<1
W6	-12.5	6/18/07	937				3.79	117	74.2	1039	0.2	2.8	170	4775	4.12	127.6	63.9	895	0.48	19.1	7.771	29.80	16493	6.53		<1	<1
W6	-12.5	7/23/07	1538	-1.98	0.46	Ebb	3.68	114	77.6	1086	0.11	1.6	165	4621	3.77	116.9	74.0	1037		19.9	7.47	30.33	16788	5.21			
W6	-12.5	8/27/07	1528	-1.80	0.70	Flood	3.58	111	96.4	1350	0.19	2.6	164	4594	3.68	113.9	97.8	1369		21.5	7.78	30.36	16805	4.40			
W6	-12.5	9/18/07	1635	-2.21	0.21	Ebb	3.73	116	84.7	1186	0.08	1.2	164	4615	3.86	119.6	84.4	1183		19.7	7.76	30.50	16883	5.17			
W6	-12.5	10/23/07	1551	-1.83	0.46	Ebb	3.66	113	93.3	1307	0.22	3.0	151	4236	3.66	113.3	86.7	1215		19.8	7.75	30.30	16772	5.17			
W6	-12.5	11/20/07	1335	-1.85	0.43	Ebb	3.92	121	87.9	1231	0.14	1.9	166	4658	3.42	105.9	93.5	1310		19.5	7.73	30.20	16716	5.43			
W6	-12.5	12/19/07	1348	-2.34	0.24	Ebb	3.76	117	90.1	1262	0.81	11	156	4393						19.1	7.71	29.88	16539	5.73			

NELHA Water Quality Laboratory

Well 6 Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	1/28/08	954	-2.16	0.27	Ebb	3.44	107	69.5	974	0.51	7.2	160	4494						18.1	7.53	29.82	16506	5.64			
W6	-12.5	2/26/08	1424	-2.34	0.06	Flood	4.23	131	186.0	2606	0.24	3.4	156	4393						16.8	7.64	29.57	16368	4.91			
W6	-12.5	3/17/08	1448	-2.01	0.24	High	3.44	107	116.8	1636	0.49	6.9	130	3649						19.4	7.59	28.99	16047	3.06			
W6	-12.5	4/29/08	1153	-2.59	0.24	Flood	4.00	124	112.8	1581	0.09	1.2	156	4369						17.3	7.58	29.53	16346	4.99			
W6	-12.5	5/28/08	1132	-2.13	0.34	High	4.44	137	90.5	1268	0.13	1.8	180	5049						17.6	7.63	29.71	16445	5.87			
W6	-12.5	6/17/08	1204	-2.34	0.21	Flood	4.78	148	85.5	1197	0.74	10	156	4381						18.1	7.46	29.59	16379	5.17	0.23		
W6	-12.5	7/22/08	1153	-2.13	0.15	Ebb	4.22	131	76.4	1070	0.91	13	181	5072						16.9	7.63	29.64	16407	5.76			
W6	-12.5	8/30/08	1149		0.15	Flood	4.00	124	70.5	988	0.14	1.9	165	4622						17.9	7.63	29.74	16462	0.35			
W6	-12.5	9/16/08	1139	-2.49	0.09	Low	4.34	134	72.4	1014	0.18	2.5	156	4375						19.3	7.49	29.42	16285	5.82			
W6	-12.5	10/28/08	1041	-2.46	0.15	Low	4.71	146	73.7	1032	0.18	2.5	158	4426						18.8	7.65	29.64	16407	6.35	0.09		
W6	-12.5	11/13/08	1132	-2.48	0.09	Low	4.10	127	66.9	937	0.26	3.6	158	4429						18.0	7.80	29.77	16478	6.84	0.20		
W6	-12.5	12/15/08	1435	-2.55	0.00	Low	4.39	136	83.0	1162	0.11	1.5	158	4425						18.5	7.88	29.46	16307	6.60			
W6	-12.5	1/22/09	1121	-2.53	0.09	Flood	4.67	145	101.0	1415	0.65	9.1	154	4328						18.4	7.68	29.46	16307	5.95	0.10		
W6	-12.5	2/24/09	1053	-2.64	0.06	Low	4.56	141	51.9	727	0.56	7.9	176	4946						17.6	7.59	29.33	16235	6.29	0.08		
W6	-12.5	3/16/09	1132	-2.60	0.06	Ebb	3.94	122	67.5	945	0.13	1.8	126	3542						17.1	7.44	29.33	16235	6.85	0.12		
W6	-12.5	4/30/09	1645	-2.73	0.24	Flood	5.23	162	72.6	1018	0.59	8.3	136	3829						17.9	7.93	29.01	16058	5.64			
W6	-12.5	5/29/09	1019	-2.42	0.21	Ebb	5.06	157	72.6	1016	0.15	2.1	128	3598						14.4	7.74	29.55	16357	7.46	0.20		
W6	-12.5	6/16/09	1439	-2.29	0.40	Flood	4.30	133	64.3	900	0.32	4.5	139	3897						14.6	7.65	29.33	16235	2.53	0.06		
W6	-12.5	7/14/09	1326	-2.36	0.37	Ebb	3.36	104	59.0	826	0.31	4.3	111	3125						18.9	7.80	29.47	16312	4.98	0.05		
W6	-12.5	8/19/09	1426	-1.91	0.67	Flood	4.39	136	70.9	993	1.43	20	134	3777						16.1	7.64	29.98	16595	5.87	0.04		
W6	-12.5	9/21/09	1617	-2.31	0.30	Flood	3.13	97	47.1	660	0.53	7.4	94	2652						16.8	8.40	30.05	16633	6.05	0.09		
W6	-12.5	10/22/09	1644	-2.51	0.18	Flood	3.15	98	42.3	592	0.65	9.1	73	2052						17.7	7.67	30.00	16606	6.02	0.01		
W6	-12.5	11/17/09	919	-2.44	0.30	Ebb	4.65	144	64.6	905	0.83	11.6	183	5130						17.4	7.64	30.05	16633	6.40	0.03		
W6	-12.5	12/8/09	900	-2.18	0.55	High	3.10	96	34.4	482	0.58	8.1	188	5293						18.5	7.70	29.72	16451	5.76	0.02		
W6	-12.5	1/6/10	832	-2.16	0.43	High	3.71	115	67.3	942	1.29	18	186	5213						17.9	7.66	29.38	16263	6.02	0.06		
W6	-12.5	2/2/10	830	-2.06	0.37	Ebb	4.58	142	86.1	1206	0.64	9	163	4588						17.2	7.73	29.58	16373	5.99	0.09		
W6	-12.5	3/10/10	822	-2.62	0.09	Low	4.88	151	77.6	1087	0.43	6	193	5418						17.9	7.70	29.27	16202	5.92	0.02		
W6	-12.5	4/6/10	1426	-2.61	0.12	Ebb	4.94	153	71.6	1003	0.36	5	201	5640						17.7	7.66	29.58	16373	6.57	0.09		
W6	-12.5	5/11/10	1501	-2.11	0.55	High	4.36	135	54.8	768	1.14	16	184	5178						18.4	7.80	29.53	16346	5.95	0.05		
W6	-12.5	6/16/10	950	-2.24	0.15	Ebb	4.84	150	63.5	890	0.21	3	196	5496						15.7	7.49	29.58	16373	6.59	0.24		
W6	-12.5	7/13/10	1442	-2.24	0.40	Flood	3.58	111	58.1	814	0.36	5	187	5254						16.0	7.74	29.69	16434	6.49	0.09		
W6	-12.5	8/3/10	1443	-2.19	0.40	Ebb	4.46	138	62.8	879	0.36	5	196	5503						16.0	7.57	29.75	16467	6.49	0.17		
W6	-12.5	9/14/10	1504	-2.28	0.30	Ebb	4.36	135	64.9	909	0.25	3.5	200	5626						16.4	7.73	29.81	16501	7.05	0.13		
W6	-12.5	10/12/10	1524	-2.40	0.18	Low	4.16	129	62.5	875	0.46	6.4	198	5560						16.6	7.75	29.92	16561	6.60	0.23		
W6	-12.5	11/16/10	1406	-2.18	0.34	Ebb	4.46	138	64.5	903	0.09	1.2	195	5466						16.5	7.70	30.02	16617	6.87	0.19		
W6	-12.5	12/14/10	1436	-2.36	0.15	Ebb	4.46	138	65.5	917	0.19	2.7	194	5446						16.6	7.73	29.90	16550	6.66	0.12		
W6	-12.5	1/4/11	1418	-2.48	0.15	Flood	4.33	134	67.0	938	0.24	3.3	188	5282						16.8	7.67	29.71	16445	6.53	0.08		
W6	-12.5	4/5/11	1441	-2.29	0.34	Flood	4.07	126	75.3	1055	0.09	1.3	175	4913						14.8	7.65	29.18	16152	6.50	0.14		
W6	-12.5	7/11/11	1143	-2.31	0.49	Flood	4.07	126	80.4	1126	0.08	1.1	196	5502						15.8	7.68	28.97	16036	7.04	0.13		
W6	-12.5	10/11/11	1336	-2.32	0.00	Flood	4.13	128	69.8	978	0.30	4.2	185	5205						15.2	7.59	29.77	16478	7.03	0.17		
W6	-12.5	1/9/12	1429	-2.53	0.15	Flood	4.52	140	79.3	1111	0.09	1.2	183	5132						15.4	7.67	29.40	16274	3.71	0.08		
W6	-12.5	4/30/12	1511	-2.28	0.24	Ebb	4.97	154	74.3	1040	0.21	3	186	5231						14.2	7.59	29.59	16379	6.40	0.03		
W6	-12.5	7/17/12	1538	-1.82	0.73	Flood	4.62	143	84.0	1176	0.28	3.9	189	5309						14.9	7.53	29.82	16506	5.64	0.09		
W6	-12.5	10/15/12	1316	-2.39	0.24	Flood	4.68	145	105.5	1478	0.14	2	198	5547						15.2	7.52	29.82	16506	4.29	0.09		
W6	-12.5	1/7/13	1435	-2.39	0.18	Ebb	4.46	138	105.0	1471	0.44	6.1	237	6662						14.8	7.56	29.76	16473	5.11	0.02		
W6	-12.5	4/8/13	1331	-2.29	0.37	Flood	4.88	151	76.1	1066	0.26	3.6	192	5397						14.3	7.58	29.48	16318	6.63	0.51		

NELHA Water Quality Laboratory

Well 6 Data Table

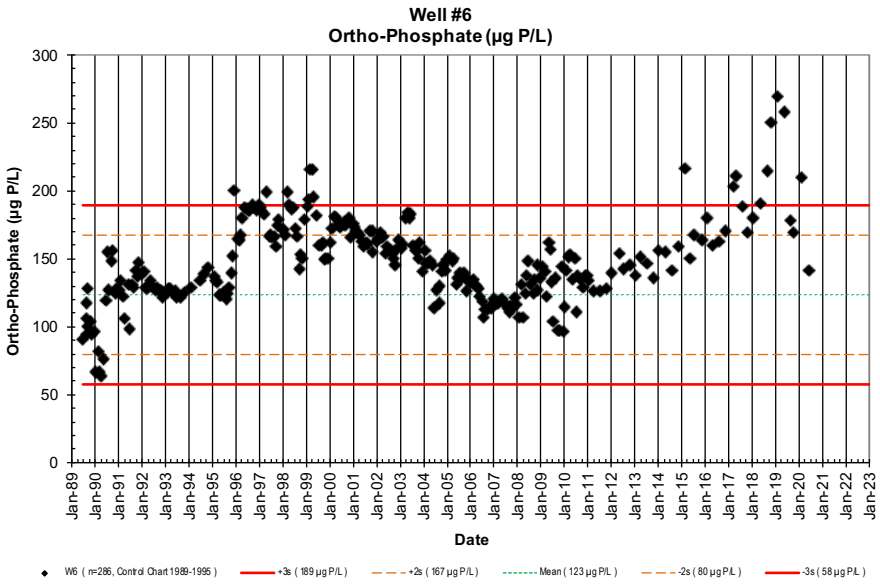
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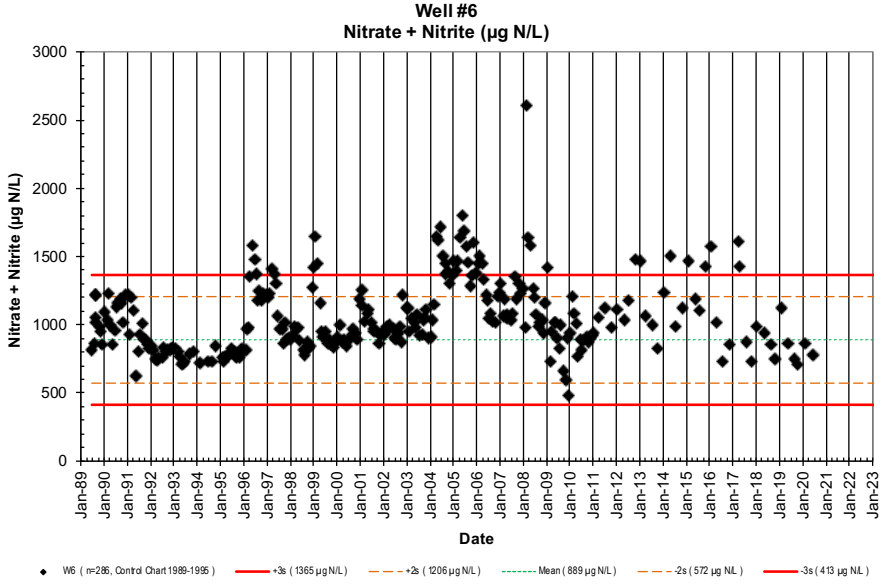
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6	-12.5	7/16/13	1605	-2.35	0.30	Ebb	4.71	146	70.9	993	0.31	4.3	200	5610						15.5	7.50	29.50	16329	5.32	0.02		
W6	-12.5	10/14/13	1648	-2.37	0.18	Ebb	4.39	136	58.5	820	0.24	3.3	203	5707						15.9	7.79	29.70	16440	4.84	0.17		
W6	-12.5	1/14/14	1600	-2.35	0.18	Ebb	5.04	156	88.6	1241	0.38	5.3	199	5598						15.4	7.55	29.66	16418	5.92	0.04		
W6	-12.5	4/28/14	1536	-2.02	0.52	Flood	5.00	155	107.3	1503	0.26	3.7	193	5432						15.5	7.64	29.07	16091	5.56	0.02		
W6	-12.5	7/28/14	1541	-2.07	0.49	Flood	4.58	142	70.8	992	0.14	2	192	5402						16.0	7.51	29.61	16390	4.91	0.06		
W6	-12.5	11/3/14	1307	-2.01	0.46	High	5.13	159	80.1	1122	0.12	1.7	187	5244						17.0	7.60	29.36	16252	4.80	0.10		
W6	-12.5	2/9/15	1648	-2.33	0.18	Low	7.01	217	104.7	1467	0.33	4.6	217	6083						15.3	7.64	29.22	16174	6.91	0.38		
W6	-12.5	5/19/15	1045	-2.71	-0.06	Low	4.86	151	85.1	1192	0.24	3.4	186	5220						15.4	7.62	28.95	16025	5.70	0.02		
W6	-12.5	7/21/15	1335	-2.48	0.18	Low	5.41	168	78.9	1106	0.06	0.8	185	5197						16.6	7.50	30.25	16744	4.12	0.02		
W6	-12.5	11/9/15	1104	-2.27	0.25	Flood	5.29	164	101.9	1427	0.11	1.6	179	5021						18.2	7.46	29.24	16185	3.38	0.14		
W6	-12.5	1/26/16	1100	-2.45	0.07	Low	5.82	180	112.4	1574	0.03	0.4	192	5379						17.5	7.48	29.08	16097	4.86	0.05		
W6	-12.5	4/21/16	1222	-2.43	0.20	Flood	5.18	160	72.4	1013	0.34	4.8	178	5009						16.8	7.13	29.44	16296	5.67	0.05		
W6	-12.5	7/26/16	932	-2.21	0.20	Flood	5.24	162	52.0	728	0.05	0.7	163	4578						17.1	7.36	29.67	16423	4.31	0.06		
W6	-12.5	11/10/16	1151	-2.09	0.55	High	5.50	170	60.9	853	0.16	2.3	167	4704						17.8	7.35	29.66	16418	4.87	0.02		
W6	-12.5	3/21/17	1535	-2.28	0.10	Ebb	6.57	204	115.3	1615	0.26	3.7	181	5084						16.8	7.64	29.79	16490	4.83	0.03		
W6	-12.5	4/13/17	1448	-2.29	0.35	Flood	6.79	210	101.8	1426	0.26	3.6	179	5033						17.7	7.74	29.58	16373	2.91	0.05		
W6	-12.5	8/4/17	1139	-2.15	0.30	Flood	6.10	189	62.1	870	0.09	1.2	172	4831						17.6	7.73	30.36	16805	4.10	0.06		
W6	-12.5	10/19/17	932	-2.41	0.09	Low	5.48	170	51.9	727	0.26	3.6	170	4788						18.3	7.66	29.88	16539	3.66	0.06		
W6	-12.5	1/17/18	1329	-2.47	0.15	Flood	5.82	180	70.8	992	0.01	0.2	181	5090						17.3	7.56	29.63	16401	3.62	0.04		
W6	-12.5	5/10/18	1136	-2.26	0.35	Flood	6.17	191	67.3	943	0.11	1.6	172	4838						15.8	7.79	33.63	18615	4.43	0.03		
W6	-12.5	8/20/18	1119	-2.17	0.52	Flood	6.94	215	61.0	854	0.23	3.2	170	4786						17.3	7.65	29.11	16113	2.00	0.06		
W6	-12.5	10/25/18	1344	-2.31	0.22	Flood	8.08	250	53.3	747	0.04	0.5	172	4838						19.0	7.79	29.57	16368	1.74	0.05		
W6	-12.5	2/7/19	1357	-2.60	0.18	Flood	8.71	270	80.2	1123	0.01	0.2	169	4733						16.8	7.76	29.52	16340	4.70	0.06		
W6	-12.5	5/16/19	1151	-2.45	0.35	Flood	8.32	258	61.4	860	0.12	1.7	172	4836						16.9	7.61	30.28	16761	4.76	0.02		
W6	-12.5	8/29/19	923	-2.53	-0.05	Low	5.75	178	53.2	745	0.24	3.3	163	4590						17.5	7.83	29.80	16495	4.80	0.03		
W6	-12.5	10/10/19	1357	-1.94	0.50	High	5.48	170	50.6	708	0.56	7.9	173	4857						19.5	7.83	30.17	16700	4.38	0.08		
W6	-12.5	2/4/20	1424	-2.39	0.10	Ebb	6.77	210	61.6	863	-0.45	-6.3	180	5044						20.9	7.82	31.40	17381	4.87	0.02		
W6	-12.5	6/2/20	1028	-2.29	0.20	Flood	4.56	141	55.3	775	0.27	3.8	157	4410						18.5	7.73	30.71	16999	4.53	0.03		
W6	-12.5	7/1/20																									
W6	-12.5	10/1/20																									
W6	-12.5	1/1/21																									
W6	-12.5	4/1/21																									
W6	-12.5	7/1/21																									
W6	-12.5	10/1/21																									
W6	-12.5	1/1/22																									
W6	-12.5	4/1/22																									
W6	-12.5	7/1/22																									
W6	-12.5	10/1/22																									
W6	-12.5	1/1/23																									
W6	-12.5	4/1/23																									
Mean				-2.30	0.27		4.77	148	75.09	1052	0.21	2.9	189	5318	4.95	153	79	1108	0.76	17.5	7.68	29.60	16272	5.72	0.09		
Std. Dev.				0.21	0.17		0.97	30	18.67	261	0.20	2.8	38	1083	0.93	29	20	276	0.20	1.6	0.21	0.74	1425	1.00	0.09		
Maximum				-1.80	0.73		8.71	270	186	2606	1.43	20.0	408	11459	7.23	224	175	2457	1.62	23.3	8.40	33.63	18615	8.78	0.51		
Minimum				-2.73	-0.06		2.06	64	34	482	-0.45	-6.3	73	2052	2.21	68	43	601	0.30	14.2	4.68	27.06	0	0.35	0.01		
n				79	80		286	286	286	286	286	286	280	279	206	206	206	206	173	286	286	285	287	284	64		

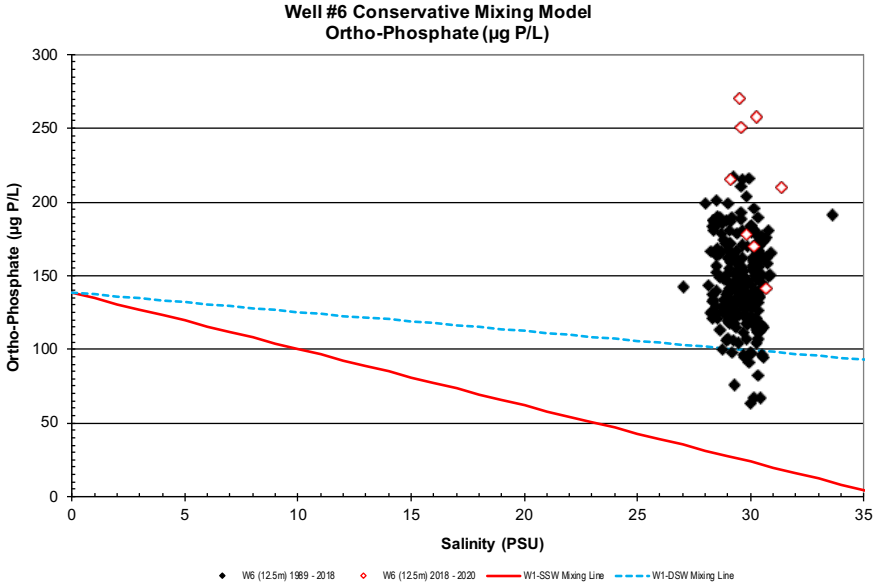
NELHA Water Quality Laboratory

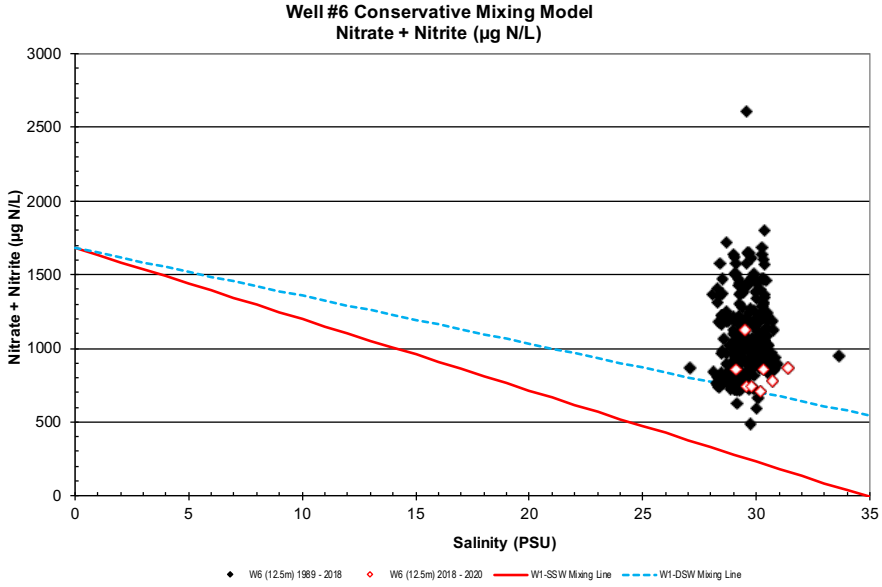
Well 6 Charts

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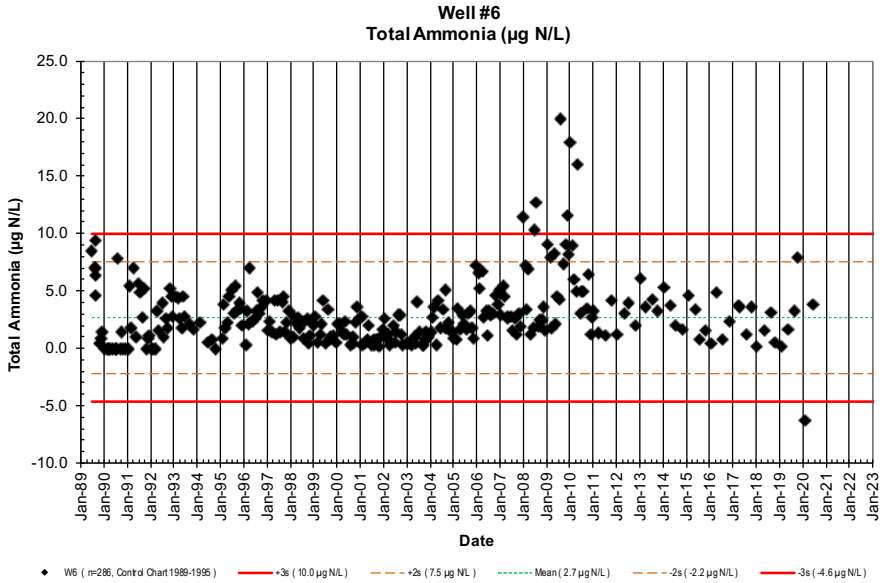


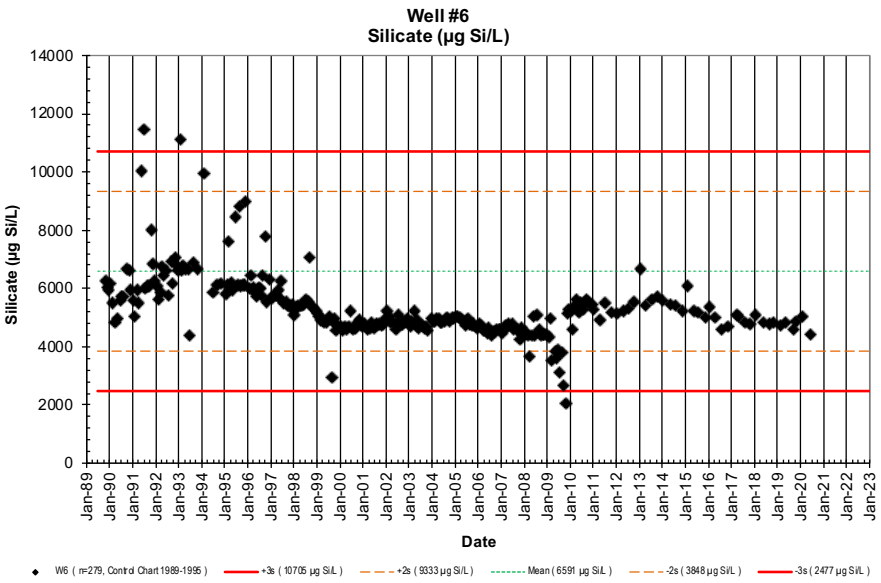


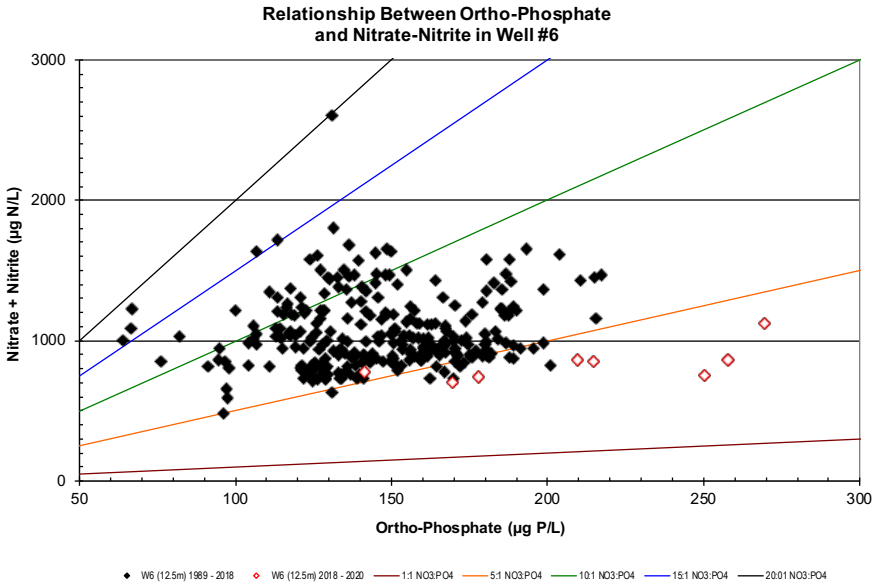
NELHA Water Quality Laboratory

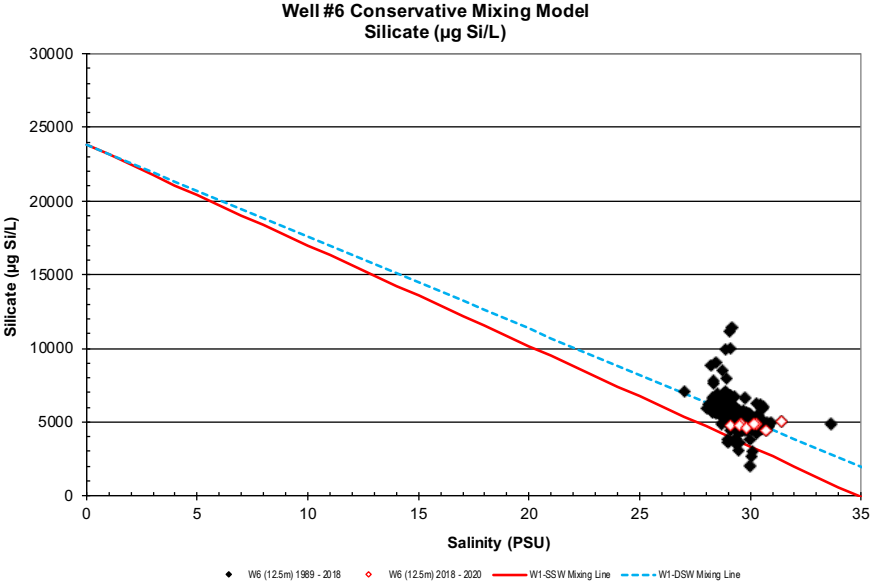
Well 6 Charts

6/23/1989 - 7/21/20







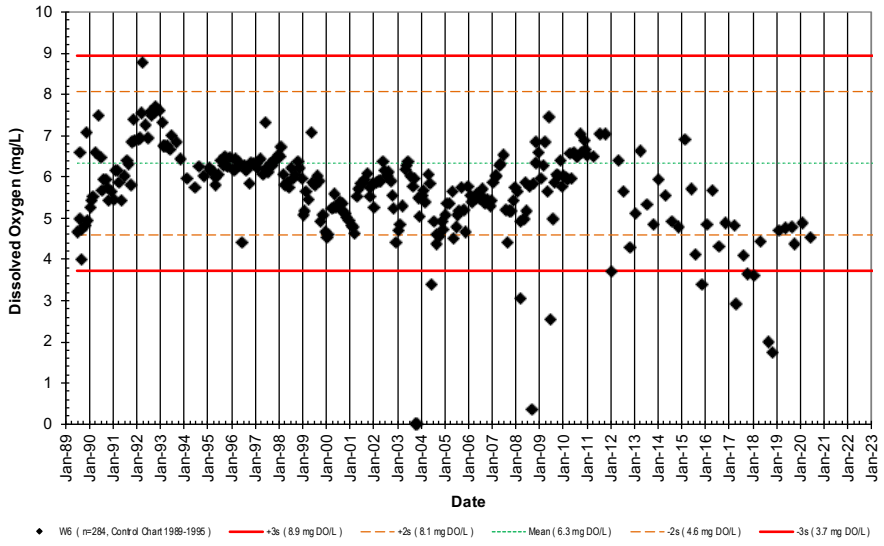


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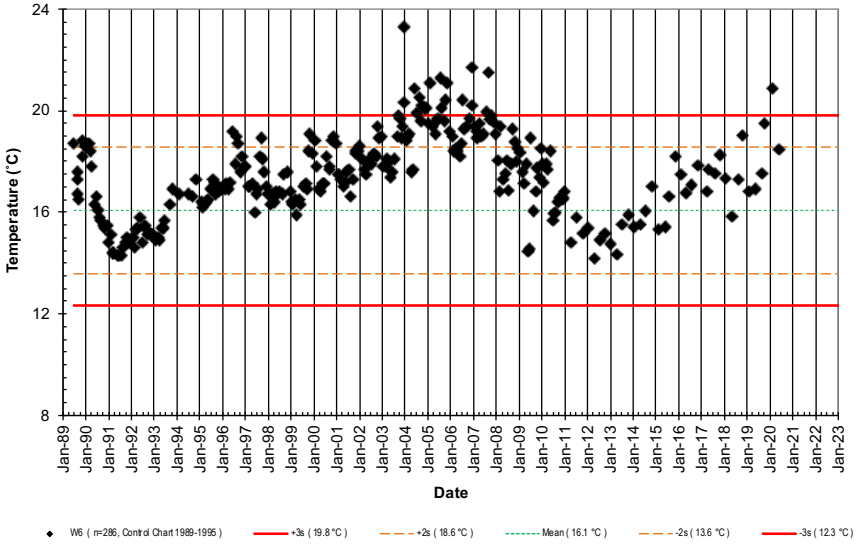
Well 6 Charts

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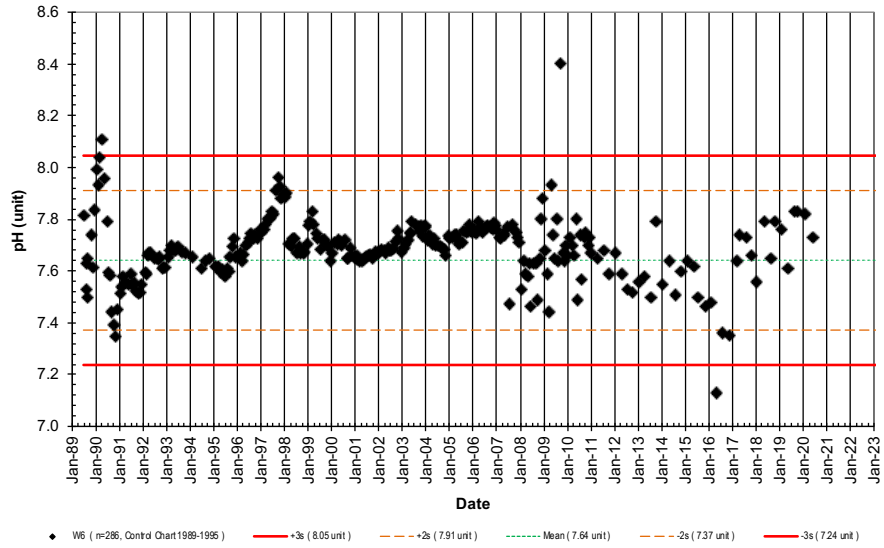
Well #6
Dissolved Oxygen (mg/L)



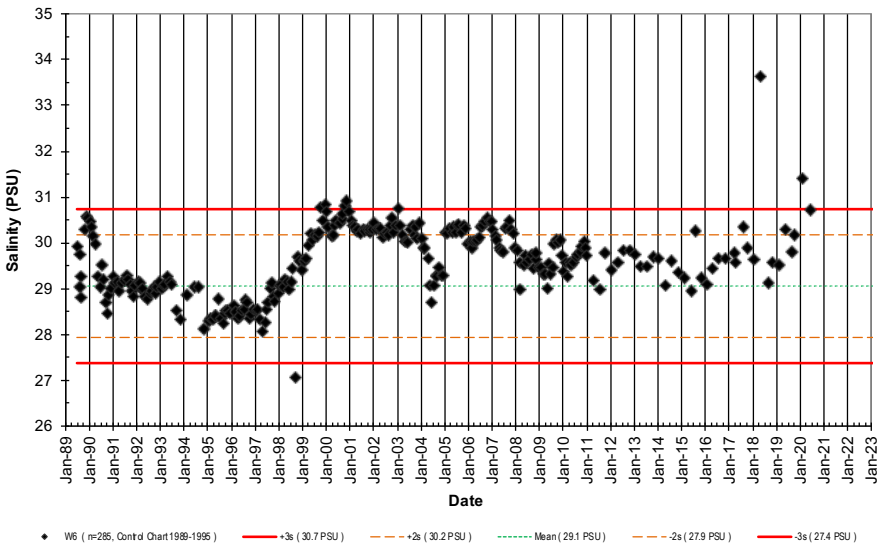
Well #6
Temperature (˚C)



Well #6
pH (unit)



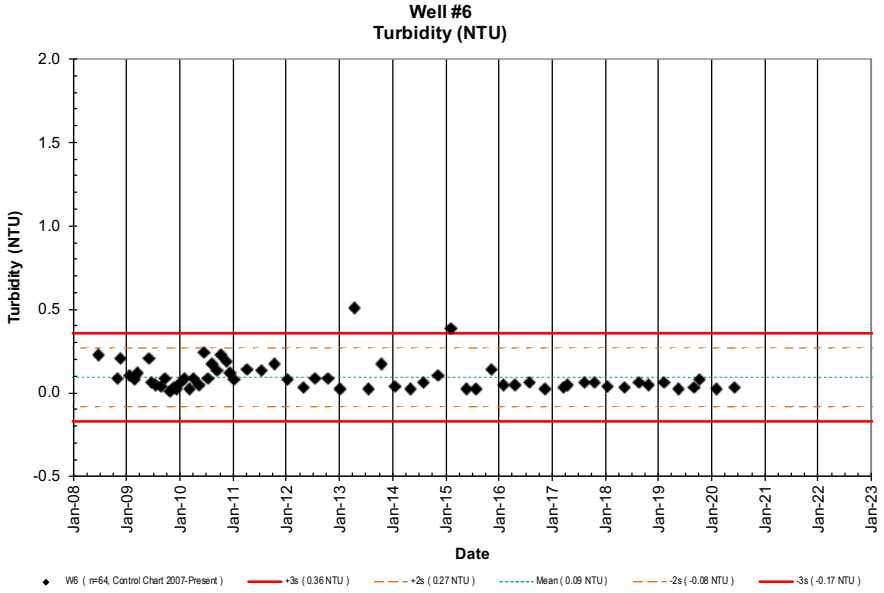
Well #6
Salinity (PSU)

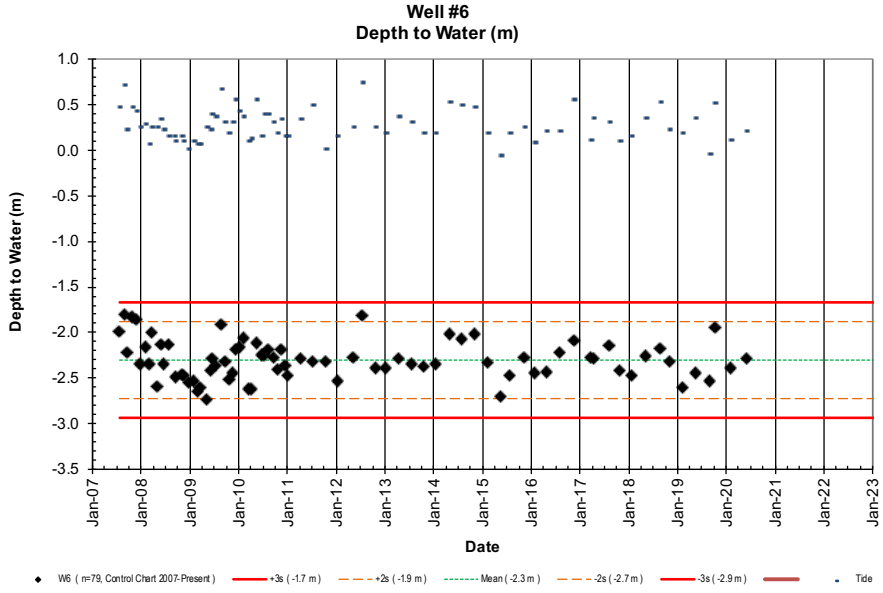


NELHA Water Quality Laboratory

Well 6 Charts

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Well 6A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	6/23/89				2.47	77	66.5	931	0.38	5.3								20.6	7.793	21.032	11642	6.66		NA	NA
W6A	-5.18	8/9/89	1428			3.17	98	70.4	986	0.50	7.0								20.5	7.698	20.623	11415	7.22		<1	NA
W6A	-5.18	8/15/89	1147			2.93	91	63.9	894	0.42	5.9								20.6	7.720	20.108	11130	6.56		<1	NA
W6A	-5.18	8/22/89	1120			3.11	96	74.7	1046	0.50	7.0								20.0	7.771	20.637	11423	6.96		<1	NA
W6A	-5.18	8/28/89	1405			3.17	98	65.7	921	0.50	7.0								20.2	7.743	22.593	12506	6.97		<1	NA
W6A	-5.18	8/28/89	1405			3.17	98	65.7	921	0.50	7.0														NA	NA
W6A	-5.18	10/27/89	1128			3.29	102	66.4	930	0.04	0.6	431	12105	3.48	107.8	67.2	941	0.32	20.9	7.839	19.747	10930	6.27		<1	NA
W6A	-5.18	11/15/89	908			3.17	98	67.6	947	0.00	0.0	398	11178	3.47	107.5	74.3	1041	0.95	20.1	7.617	21.706	12015	7.49		<1	NA
W6A	-5.18	12/8/89	1125			2.92	90	67.9	951	0.10	1.4	408	11459	3.50	108.4	69.2	969		20.9	7.810	20.615	11411	7.26		<1	NA
W6A	-5.18	1/10/90	1031			2.42	75	64.4	902	0.00	0.0	441	12386	2.68	83.0	66.8	936	0.86	21.1	7.998	20.315	11245	6.59		<1	NA
W6A	-5.18	2/13/90	1135			2.92	90	70.3	985	0.02	0.3	374	10504	3.15	97.6	74.3	1041	0.78	21.0	7.922	20.473	11332	6.94		<1	NA
W6A	-5.18	3/5/90	1346			2.65	82	89.9	1259	0.05	0.7	403		3.10	96.0	91.5	1282	0.79	20.7	7.966	18.133	10037	6.44		<1	NA
W6A	-5.18	4/4/90	1010			3.16	98	70.9	993	0.49	6.9	454	12751	3.31	102.5	73.8	1034	0.68	20.2	8.051	20.365	11273	6.43		<1	NA
W6A	-5.18	5/16/90	1215			2.94	91	65.0	910	0.00	0.0	381	10701	2.98	92.3	68.6	961	0.71	21.4	7.978	20.416	11301	6.92		<1	NA
W6A	-5.18	6/17/90	1442			3.32	103	58.9	825	0.25	3.5	339	9521	3.50	108.4	61.8	866	1.38	21.2	8.000	23.706	13122	5.86		<1	NA
W6A	-5.18	7/12/90	1227			3.33	103	62.7	878	0.00	0.0	384	10785	3.47	107.5	65.3	915	1.03	22.5	7.996	21.152	11708	6.39		<1	NA
W6A	-5.18	8/7/90	1202			3.50	108	70.8	992	0.13	1.8	391	10981	3.51	108.7	71.2	998	1.11	22.1	7.985	20.901	11569	6.22		<1	NA
W6A	-5.18	9/5/90	1353			4.27	132	68.0	952	0.00	0.0			4.27	132.3	70.3	985	0.69	22.4	7.920	21.716	12020	6.22		1	NA
W6A	-5.18	10/4/90	1505			4.33	134	69.4	972	0.11	1.5	404	11347	5.16	159.8	69.5	974	0.85	22.2	7.898	21.585	11948	5.72		6	NA
W6A	-5.18	10/31/90	1205			3.73	116	67.1	940	0.09	1.3	483	13565	4.67	144.6	81.6	1143	0.49	22.1	7.873	21.818	12077	5.68		2	NA
W6A	-5.18	12/7/90	1425			2.17	67	59.9	839	0.00	0.0	396	11122	3.74	115.8	68.9	965	0.51	22.3	7.882	20.070	11109	6.47		<1	NA
W6A	-5.18	1/9/91	855			3.79	117	73.4	1028	0.05	0.7	361	10139	3.79	117.4	81.8	1146	0.64	21.4	7.860	21.958	12154	6.18		<1	NA
W6A	-5.18	2/5/91	940			3.91	121	62.1	870	0.36	5.0	317	8903	4.00	123.9	63.8	894	0.80	20.9	7.899	20.546	11373	6.54		<1	NA
W6A	-5.18	3/6/91	937			4.19	130	83.6	1171	0.11	1.5	381	10701	4.22	130.7	87.9	1231	0.72	20.6	7.936	20.770	11497	6.59		<1	NA
W6A	-5.18	4/2/91	1036			3.92	121	72.7	1018	0.25	3.5	354	9942	3.93	121.7	74.5	1043	0.81	20.6	7.910	20.404	11294	6.61		<1	NA
W6A	-5.18	5/21/91	952			3.80	118	35.9	503	0.07	1.0	254	7134	4.00	123.9	37.3	522	0.83	20.7	7.886	22.873	12661	6.62		<1	NA
W6A	-5.18	6/25/91	936			2.65	82	62.4	874	0.22	3.1	279	7836	3.22	99.7	66.6	933	0.54	20.9	7.923	21.009	11629	6.62		<1	<1
W6A	-5.18	7/23/91	1037			3.70	115	63.8	894	0.22	3.1	366	10279	4.37	135.4	66.4	930	0.88	21.0	7.914	22.036	12197	6.55		<1	<1
W6A	-5.18	8/22/91	905			3.74	116	77.7	1088	0.09	1.3	386	10841	3.98	123.3	78.8	1104	0.54	21.4	7.899	21.749	12039	6.56		<1	2
W6A	-5.18	9/23/91	1010			3.97	123	62.0	868	0.12	1.7	381	10701	4.07	126.1	67.5	945	0.57	21.8	7.888	20.602	11404	6.50		<1	<1
W6A	-5.18	10/22/91	1011			5.00	155	69.5	973	0.07	1.0	497	13958	5.44	168.5	73.8	1034	0.66	21.9	7.854	21.661	11990	6.46		<1	<1
W6A	-5.18	11/19/91	1104			4.80	149	69.7	976	0.07	1.0	410	11515	4.87	150.8	71.1	996	0.47	21.7	7.835	22.677	12552	6.35		3	46
W6A	-5.18	12/10/91	957			4.40	136	65.1	912	0.08	1.1	359	10083	4.45	137.8	67.9	951	0.62	21.4	7.819	23.883	13220	6.26		<1	<1
W6A	-5.18	1/28/92	935			4.28	133	66.8	936	0.00	0.0	340	9549	4.41	136.6	67.1	940	0.82	20.7	7.828	24.322	13463	6.58		<1	3
W6A	-5.18	2/18/92	905			4.02	125	67.5	945	0.00	0.0	332	9324	4.23	131.0	71.7	1004	0.62	20.7	7.836	22.691	12560	6.50		1	5
W6A	-5.18	3/16/92	1003			3.98	123	68.9	965	0.00	0.0	584	16402	4.12	127.6	69.7	976	0.80	20.2	7.833	22.247	12314	6.39		3	12
W6A	-5.18	4/7/92	931			4.01	124	66.2	927	0.13	1.8	408	11459	4.12	127.6	67.5	945	1.04	20.8	7.824	22.673	12550	6.40		<1	<1
W6A	-5.18	5/5/92	936			4.29	133	67.7	948	0.21	2.9	387	10869	4.38	135.7	70.7	990	0.97	20.9	7.812	22.422	12411	6.23		1	<1
W6A	-5.18	6/22/92	925			4.26	132	69.0	966	0.22	3.1	389	10925	4.37	135.4	71.1	996	1.37	21.5	7.752	23.151	12815	6.23		<1	2
W6A	-5.18	7/28/92	901			4.29	133	78.5	1100	ND	0.0	352	9886	4.90	151.8	81.4	1140	1.08	21.8	7.735	22.710	12571	6.00		7	2
W6A	-5.18	8/25/92	840			5.06	157	74.5	1044	0.11	1.5	414	11627	5.13	158.9	80.2	1124	0.81	21.9	7.739	22.483	12445	5.56		3	1
W6A	-5.18	9/21/92	903			4.72	146	77.0	1078	0.13	1.8	327	9184	4.81	149.0	85.1	1191	0.86	22.8	7.771	24.600	13617	5.20		1	4
W6A	-5.18	10/26/92	916			4.68	145	71.9	1007	0.23	3.2	383	10757	4.70	145.6	74.9	1049	0.64	22.8	7.711	24.278	13439	5.48		5	11
W6A	-5.18	11/16/92	935			4.63	143	69.6	974	0.26	3.6	360	10111	4.88	151.2	75.5	1058	0.64	22.4	7.719	24.915	13791	5.38		3	0
W6A	-5.18	12/7/92	927			4.72	146	73.7	1032	0.15	2.1	381	10701	4.83	149.6	76.4	1070	0.63	22.3	7.731	23.241	12864	5.63		190	33

NELHA Water Quality Laboratory

Well 6A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	1/25/93	924			4.32	134	71.2	997	0.24	3.4	239	6698	4.48	138.8	57.9	811	0.72	21.7	7.786	23.148	12813	5.89		<1	<1
W6A	-5.18	2/22/93	854			4.14	128	56.6	793	0.33	4.6	272	7645	4.18	129.5	62.8	880	0.69	21.1	7.805	23.964	13265	5.85		4	12
W6A	-5.18	3/15/93	851			4.13	128	63.2	885	0.20	2.8	381	10709	4.18	129.5	66.1	925	0.60	21.0	7.824	23.332	12915	6.32		1	3
W6A	-5.18	4/26/93	856			4.03	125	62.2	872	0.01	0.1	380	10672	4.12	127.6	66.8	936	0.65	21.4	7.785	23.681	13108	5.72		<1	6
W6A	-5.18	5/24/93	911			3.98	123	63.2	885	0.20	2.8	403	11318	4.05	125.4	69.7	977	0.52	21.6	7.796	22.518	12464	5.91		<1	64
W6A	-5.18	6/21/93	913			3.90	121	63.6	890	0.12	1.7	304	8538	3.98	123.3	67.6	947	0.57	21.9	7.804	22.468	12437	5.89		<1	<1
W6A	-5.18	8/30/93	1010			3.81	118	64.7	906	0.06	0.8	420	11787	3.82	118.3	75.0	1051	0.71	22.7	7.776	21.639	11978	5.79		<1	<1
W6A	-5.18	10/25/93	858			3.92	121	62.4	874	0.11	1.5	375	10532	3.92	121.4	65.0	910	0.69	23.1	7.784	22.943	12700	5.38		<1	3
W6A	-5.18	2/7/94	1131			3.85	119	55.6	779	0.14	2.0	213	5982	3.89	120.5	61.4	860	0.67	16.7	7.656	28.877	15984	5.49		<1	<1
W6A	-5.18	6/20/94	840			3.74	116	58.1	813	0.04	0.6	346	9721	3.81	118.0	68.4	958	0.56	22.6	7.807	22.821	12632	5.36		<1	<1
W6A	-5.18	8/22/94	953			3.53	109	56.0	784	0.04	0.6	369	10373	3.60	111.5	64.0	896	0.55	22.8	7.822	23.854	13204	5.63		<1	<1
W6A	-5.18	10/24/94	931			3.75	116	62.0	868	0.03	0.4	322	9043	3.81	118.0	59.3	830	0.52	23.4	7.814	23.918	13239	5.31		1	<1
W6A	-5.18	1/23/95	1006			3.66	113	53.4	748	0.05	0.7	224	6286	3.77	116.8	56.0	784	0.52	22.5	7.810	23.375	12939	5.53		<1	<1
W6A	-5.18	2/13/95	956			3.65	113	53.0	742	0.29	4.1	340	9535	3.67	113.7	58.5	819	0.50	22.1	7.813	23.024	12744	5.55		<1	1
W6A	-5.18	3/13/95	1033			3.56	110	56.1	786	0.05	0.7	410	11507	3.62	112.1	57.4	804	0.48	21.9	7.811	23.678	13106	5.49		<1	<1
W6A	-5.18	4/24/95	926			3.36	104	55.8	782	0.15	2.1	326	9142	3.45	106.9	56.5	791	0.55	21.9	7.817	24.094	13337	5.64		<1	<1
W6A	-5.18	5/8/95	923			3.39	105	62.7	878	0.30	4.2	317	8895	3.39	105.0	67.0	939	0.59	22.2	7.841	23.292	12893	5.63		<1	<1
W6A	-5.18	6/19/95	1001			3.38	105	54.6	765	0.30	4.2	306	8600	3.43	106.2	60.0	841	0.58	22.6	7.779	24.769	13710	5.98		<1	<1
W6A	-5.18	7/24/95	931			3.18	98	59.6	834	0.23	3.2	339	9513	3.24	100.4	62.1	869	0.48	23.0	7.851	22.865	12656	5.93		<1	<1
W6A	-5.18	8/21/95	1019			3.17	98	54.7	766	0.40	5.6	350	9838	3.26	101.0	70.7	990	0.59	23.4	7.820	24.384	13497	5.59		<1	5
W6A	-5.18	9/11/95	825			3.16	98	52.0	729	0.23	3.2	313	8802	3.16	97.9	55.1	772	0.55	23.5	7.882	24.450	13534	5.95		<1	3
W6A	-5.18	10/16/95	900			3.23	100	54.5	764	0.30	4.2	323	9066	3.33	103.1	57.6	807	0.66	23.5	7.893	23.806	13177	5.78		<1	<1
W6A	-5.18	11/6/95	845			5.54	172	68.5	959	0.43	6.0	332	9319	5.55	171.9	74.0	1036	0.67	23.6	7.870	23.631	13080	5.61		<1	43
W6A	-5.18	12/4/95	905			6.48	201	66.6	932	0.14	2.0	321	9001	6.63	205.4	71.7	1004	0.75	23.4	7.842	23.805	13177	5.65		<1	10
W6A	-5.18	1/29/96	1028			5.30	164	84.6	1185	0.04	0.6	320	8996	5.35	165.7	95.7	1340	0.72	22.1	7.843	23.663	13098	5.86		<1	1
W6A	-5.18	2/26/96	1030			5.47	169	91.6	1283	0.23	3.2	330	9273	5.54	171.6	94.8	1327	0.73	22.4	7.826	23.743	13142	6.02		<1	<1
W6A	-5.18	3/5/96	916			6.94	215	101.6	1423	0.37	5.2	308	8642	7.40	229.2	113.0	1583	0.77	22.2	7.817	23.712	13125	6.09		1	6
W6A	-5.18	4/1/96	935			7.31	226	129.3	1811	0.41	5.7	313	8784	7.59	235.1	134.2	1880	0.66	22.2	7.813	23.118	12796	6.01		<1	<1
W6A	-5.18	5/8/96	936			11.71	363	129.7	1817	0.20	2.8	315	8843	12.41	384.4	144.0	2017	0.59	22.6	7.809	23.260	12875	5.53		<1	4
W6A	-5.18	6/17/96	934			8.09	251	125.5	1758	0.24	3.4	322	9029	8.30	257.1	128.0	1793	0.75	22.3	7.801	24.313	13458	5.57		1	<1
W6A	-5.18	7/16/96	922			6.76	209	112.7	1578	0.27	3.8	308	8648	7.00	216.8	116.5	1632	0.86	23.0	7.824	24.465	13542	5.82		<1	<1
W6A	-5.18	8/5/96	1035			5.94	184	91.1	1276	0.35	4.9	277	7782	5.96	184.6	96.2	1348	0.71	23.0	7.837	25.670	14209	5.92		<1	<1
W6A	-5.18	9/3/96	934			5.48	170	98.7	1382	0.19	2.7	311	8721	5.49	170.0	101.0	1415	0.71	23.6	7.837	25.544	14139	5.84		<1	<1
W6A	-5.18	10/8/96	953			5.49	170	113.0	1583	0.26	3.6	314	8812	5.81	180.0	115.5	1618	0.91	23.5	7.844	24.707	13676	4.66		<1	1
W6A	-5.18	11/4/96	1017			5.01	155	112.1	1569	0.29	4.1	267	7511	5.09	157.7	116.9	1637	1.80	23.8	7.846	25.164	13929	4.17		<1	<1
W6A	-5.18	12/16/96	935			5.24	162	97.0	1358	0.30	4.2	286	8026	5.29	163.9	98.1	1373	0.86	23.3	7.880	25.764	14261	5.91		<1	<1
W6A	-5.18	1/13/97	1009			5.54	172	109	1532	0.13	1.8	272	7625	5.68	175.9	114.9	1609	0.78	23.1	7.869	24.419	13517	6.09		<1	1
W6A	-5.18	2/10/97	935			5.50	170	121	1689	0.16	2.2	266	7462	5.60	173.5	124.2	1740	0.72	22.5	7.902	24.988	13832	6.11		<1	<1
W6A	-5.18	3/10/97	924			5.19	161	132	1846	0.22	3.1	296	8313	5.20	161.1	135.4	1897	0.54	22.2	7.912	23.826	13188	5.71		<1	<1
W6A	-5.18	4/22/97	1003			4.82	149	107	1495	0.34	4.8	302	8476	5.32	164.8	203.9	2856	1.10	22.5	7.923	22.722	12577	5.90		<1	<1
W6A	-5.18	5/27/97	925			4.85	150	108	1516	0.07	1.0	263	7398	5.56	172.2	124.4	1742	0.74	21.2	7.880	25.256	13980	5.74		<1	<1
W6A	-5.18	6/16/97	940			4.50	139	87	1219	0.31	4.3	287	8046	4.62	143.1	98.1	1374	0.73	21.7	7.924	24.707	13676	5.77		<1	<1

NELHA Water Quality Laboratory

Well 6A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	7/16/97	847				4.50	139	89	1242	0.10	1.4	282	7912	4.63	143.4	96.3	1349	0.59	22.0	7.921	24.554	13591	5.58		<1	1
W6A	-5.18	8/25/97	932				4.04	125	67	943	0.25	3.5	261	7336	4.05	125.4	71.1	995	0.66	23.7	8.016	26.925	14904	5.65		<1	<1
W6A	-5.18	9/22/97	914				4.67	145	68	947	0.23	3.2	255	7173	4.72	146.2	69.6	975	0.69	24.3	8.064	25.750	14253	5.57		<1	1
W6A	-5.18	10/14/97	927				6.74	209	115	1605	0.34	4.8	272	7645	6.79	210.3	126.0	1765	0.71	24.3	8.019	24.686	13664	5.64		<1	1
W6A	-5.18	11/3/97	1045				6.14	190	79.3	1111	0.29	4.1	262	7358	6.41	198.5	98.7	1382	0.80	24.2	7.984	25.487	14108	5.82		<1	1
W6A	-5.18	12/15/97	950				5.59	173	83.9	1175	0.11	1.5	257	7224	5.78	179.0	88.5	1240	0.75	23.7	7.980	25.981	14381	4.95		<1	4
W6A	-5.18	1/5/98	1053				5.53	171	77.5	1086	0.07	1.0	225	6330	5.75	178.1	82.5	1156	0.71	23.0	7.956	27.282	15101	5.30		<1	<1
W6A	-5.18	2/2/98	957				6.05	187	78.2	1096	0.21	2.9	243	6828	6.43	199.2	81.1	1136	0.69	21.7	7.926	26.834	14853	4.99		<1	1
W6A	-5.18	3/9/98	954				7.64	237	104.0	1457	0.29	4.1	269	7561	7.78	241.0	108.0	1513	0.72	21.5	7.734	25.069	13876	4.92		1	3
W6A	-5.18	4/13/98	904				6.05	187	86	1203	0.15	2.1	273	7656	6.16	190.8	89.5	1253	0.67	21.5	7.777	25.358	14036	5.21		<1	1
W6A	-5.18	5/11/98	934				6.16	191	93	1309	0.22	3.1	273	7676	6.32	195.8	98.9	1385	0.70	21.8	7.738	24.806	13731	4.68		<1	2
W6A	-5.18	6/1/98	932				6.11	189	78.8	1103	0.14	2.0	267	7493	6.23	193.0	81.1	1135	0.67	21.9	7.719	25.472	14099	5.17		<1	1
W6A	-5.18	7/13/98	940				5.42	168	66	929	0.11	1.5	263	7372	5.70	176.6	71	996	0.74	21.5	7.690	26.168	14485	5.22		<1	<1
W6A	-5.18	8/10/98	957				5.45	169	71.5	1001	0.17	2.4	273	7679	5.68	175.9	77.8	1090	0.75	21.9	7.607	25.944	14361	4.85		<1	3
W6A	-5.18	9/14/98	948				5.06	157	56.5	791	0.16	2.2	206	5777	5.30	164.2	60	838	0.84	22.4	7.729	29.696	16438	5.05		<1	9
W6A	-5.18	10/12/98	855				4.55	141	61.4	860	0.04	0.6	235	6603	4.73	146.5	66	922	0.73	22.9	7.715	28.082	15544	5.63		<1	1
W6A	-5.18	11/2/98	917				5.26	163	78.3	1097	0.08	1.1	263	7392	5.43	168.2	83.8	1174	0.81	23.0	7.700	26.178	14490	6.74		<1	11
W6A	-5.18	12/15/98	918				5.09	158	81.6	1143	0.12	1.7	226	6347	5.23	162.0	84.8	1188	0.84	23.0	7.730	25.021	13850	5.25		<1	1
W6A	-5.18	1/11/99	935				4.56	141	79	1108	0.18	2.5	251	7035	4.72	146.2	81	1133	0.76	22.6	7.729	26.028	14407	5.41		<1	<1
W6A	-5.18	2/2/99	930				5.06	157	95	1331	0.21	2.9	262	7344	5.19	160.8	104	1459	0.86	21.9	7.736	25.230	13965	5.30		<1	<1
W6A	-5.18	3/1/99	935				5.33	165	81.3	1139	0.03	0.4	281	7884	5.50	170.4	84.8	1188	0.79	21.5	7.650	24.558	13593	5.29		<1	<1
W6A	-5.18	4/5/99	933				5.02	155	70.1	982	0.14	2.0	261	7328	5.23	162.0	74.4	1042	0.64	21.1	7.667	26.196	14500	5.15		<1	<1
W6A	-5.18	5/3/99	933				5.14	159	70.6	989	0.15	2.1	284	7968	5.29	163.9	77.7	1088	0.64	21.0	7.614	24.767	13709	4.64		<1	<1
W6A	-5.18	6/1/99	925				4.73	147	67.7	948	0.34	4.8	277	7780	4.84	149.9	71.4	1000	0.68	21.3	7.605	25.670	14209	4.92		<1	1
W6A	-5.18	7/14/99	928				4.89	151	81.1	1136	0.05	0.7	287	8049	5.01	155.2	84.5	1184	0.79	21.9	7.589	25.520	14126	4.95		<1	1
W6A	-5.18	8/23/99	954				4.98	154	75.0	1051	0.24	3.4	271	7597	5.09	157.7	79.4	1112	0.75	22.5	7.647	26.337	14578	4..88		<1	1
W6A	-5.18	9/7/99	944				5.10	158	76.2	1067	0.06	0.8	267	7485	5.33	165.1	89.9	1259	0.73	22.4	7.640	27.362	15146	4.90		<1	1
W6A	-5.18	10/5/99	933				5.36	166	83.5	1170	0.02	0.3	265	7434	5.49	170.0	87.8	1230	0.75	22.3	7.581	26.739	14801	4.58		<1	1
W6A	-5.18	11/1/99	1000				5.12	159	81.2	1137	0.07	1.0	265	7437	5.15	159.5	86.2	1207	0.71	22.3	7.610	26.676	14766	4.58		<1	<1
W6A	-5.18	12/14/99	951				6.58	204	93.5	1310	0.09	1.3	231	6496	6.70	207.5	97.8	1370	0.96	21.9	7.624	27.990	15493	3.45		<1	<1
W6A	-5.18	1/10/00	1017				7.71	239	95.0	1331	0.14	2.0	259	7260	7.80	241.6	105	1471	0.88	21.8	7.567	25.842	14304	4.07		<1	<1
W6A	-5.18	2/7/00	1012				7.72	239	96.0	1345	0.21	2.9	265	7448	7.91	245.0	102	1429	0.91	21.5	7.595	25.296	14002	4.00		<1	5
W6A	-5.18	3/21/00	1015				6.85	212	83.0	1163	0.09	1.3	263	7375	6.61	204.7	89.2	1249	0.86	21.2	7.638	25.729	14242	4.30		<1	<1
W6A	-5.18	4/10/00	1044				7.95	246	95.3	1335	0.03	0.4	257	7226	7.62	236.0	103	1443	0.91	21.1	7.627	25.762	14260	4.23		<1	<1
W6A	-5.18	5/15/00	955				8.01	248	94.5	1324	0.17	2.4	253	7114	7.95	246.2	104	1461	0.84	21.2	7.614	26.657	14755	3.90		<1	1
W6A	-5.18	6/5/00	956				7.63	236	89.3	1251	0.03	0.4	252	7080	7.69	238.2	100	1405	0.89	21.1	7.584	26.941	14913	4.50		<1	1
W6A	-5.18	7/26/00	1022				8.44	261	97.0	1359	0.03	0.4	243	6819	8.59	266.1	102	1431	0.74	22.7	7.580	27.217	15065	4.19		<1	109
W6A	-5.18	8/29/00	925				9.07	281	105	1471	0.11	1.5	254	7120	9.11	282.2	108	1513	0.84	22.1	7.494	26.571	14708	3.73		3	<1
W6A	-5.18	9/5/00	951				8.73	270	96.9	1357	0.06	0.8	227	6361	8.99	278.5	104	1457	0.87	22.1	7.528	28.339	15686	3.95		<1	<1
W6A	-5.18	10/24/00	956				9.47	293	96.8	1355	0.16	2.2	264	7403	9.79	303.2	99.6	1396	0.77	22.6	7.518	27.810	15394	3.94		<1	1
W6A	-5.18	11/13/00	937				8.17	253	123	1720	0.28	3.9	245	6892	8.50	263.3	133	1860	0.91	22.7	7.504	26.531	14686	3.85		5	5
W6A	-5.18	12/18/00	939				8.40	260	191	2668	0.20	2.8	226	6356	8.70	269.5	193	2700	0.91	22.4	7.549	27.756	15364	3.89		1	6

NELHA Water Quality Laboratory

Well 6A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	1/22/01	943			8.24	255	115	1615	0.02	0.3	245	6881	8.46	262.0	119	1670	0.99	21.6	7.495	27.274	15097	3.94		<1	<1
W6A	-5.18	2/5/01	1002			7.92	245	129	1810	0.20	2.8	251	7055	8.02	248.4	134	1871	0.86	21.4	7.510	27.218	15066	3.96		<1	1
W6A	-5.18	3/5/01	953			7.18	222	108	1513	0.04	0.6	242	6794	7.31	226.4	110	1546	0.88	21.2	7.503	26.576	14711	3.58		<1	1
W6A	-5.18	4/17/01	937			7.54	234	102	1422	0.05	0.7	245	6889	7.66	237.3	107	1497	0.84	21.0	7.485	26.697	14777	3.90		<1	<1
W6A	-5.18	5/15/01	935			7.46	231	94.0	1317	0.16	2.2	264	7412	7.37	228.3	99.3	1391	0.77	21.0	7.495	26.297	14556	4.69		<1	18
W6A	-5.18	6/12/01	934			6.94	215	96.9	1358	0.07	1.0	249	7002	6.61	204.7	101	1414	0.80	21.3	7.523	26.015	14400	4.79		<1	<1
W6A	-5.18	7/23/01	944			6.81	211	91.1	1276	0.06	0.8	256	7198	6.60	204.4	98.0	1372	0.81	21.7	7.490	27.133	15019	4.67		<1	6
W6A	-5.18	8/8/01	935			6.62	205	95.2	1334	0.08	1.1	255	7156	6.68	206.9	100	1406	0.75	21.6	7.500	26.950	14918	4.49		<1	3
W6A	-5.18	9/19/01	944			6.92	214	81.8	1145	0.08	1.1	281	7886	7.02	217.4	87.8	1230	0.83	22.2	7.453	27.500	15222	3.84		<1	<1
W6A	-5.18	10/24/01	917			6.36	197	75.6	1059	0.02	0.3	246	6909	6.80	210.6	81.5	1142	0.74	22.9	7.486	27.771	15372	4.78		<1	1
W6A	-5.18	11/7/01	935			6.80	211	79.4	1112	0.06	0.8	236	6639	6.92	214.3	93.0	1302	0.67	23.0	7.512	28.320	15676	3.81		<1	<1
W6A	-5.18	12/19/01	954			5.70	177	108	1516	0.21	2.9	235	6597	5.60	173.5	140	1964	0.75	22.8	7.568	27.939	15465	4.61		<1	2
W6A	-5.18	1/9/02	944			5.65	175	96.1	1346	0.20	2.8	241	6769	5.68	175.9	100	1402	0.86	22.5	7.593	27.792	15384	5.61		1	<1
W6A	-5.18	2/19/02	1001			5.54	172	84.4	1182	0.08	1.1	236	6637	5.68	175.9	98.0	1373	0.72	21.8	7.618	27.656	15308	4.58		<1	<1
W6A	-5.18	3/20/02	1003			5.36	166	86.1	1206	0.14	2.0	244	6858	5.58	172.8	89.9	1259	0.69	21.8	7.587	26.862	14869	4.28		<1	<1
W6A	-5.18	4/8/02	1052			5.70	177	81.0	1134	0.01	0.1	231	6488	5.90	182.7	85.2	1193	0.65	21.8	7.609	27.625	15291	4.13		1	1
W6A	-5.18	5/29/02	1037			5.94	184	112	1567	0.16	2.2	257	7207	6.26	193.9	119	1671	0.78	22.1	7.542	28.686	15878	4.64		<1	<1
W6A	-5.18	6/17/02	1010			5.64	175	92.4	1294	0.03	0.4	230	6468	5.82	180.3	101	1410	0.69	22.2	7.570	28.213	15617	QNS		<1	<1
W6A	-5.18	7/15/02	1005			6.14	190	102	1424	0.12	1.7	247	6923	6.42	198.9	111	1549	0.74	22.6	7.564	27.638	15298	4.50		<1	2
W6A	-5.18	8/20/02	1007			5.70	177	86.7	1214	0.20	2.8	254	7128	5.90	182.7	83.2	1166	0.78	23.3	7.578	27.551	15250	4.43		<1	<1
W6A	-5.18	9/23/02	1042			5.62	174	85.7	1201	0.23	3.2	252	7083	5.76	178.4	87.0	1219	0.97	23.2	7.548	27.719	15343	4.24		<1	<1
W6A	-5.18	10/14/02	943			5.41	168	80.4	1126	0.11	1.5	259	7285	5.78	179.0	77.6	1088	0.73	23.2	7.545	25.360	14037	6.59		<1	2
W6A	-5.18	11/4/02	953			5.24	162	79.4	1112	0.03	0.4	259	7263	5.49	170.0	76.4	1071	0.81	22.9	7.588	26.430	14630	4.75		<1	<1
W6A	-5.18	12/17/02	1021			5.78	179	74.4	1042	0.06	0.8	236	6634	6.07	188.0	75.9	1063	0.75	23.0	7.608	27.638	15298	3.95		<1	<1
W6A	-5.18	1/21/03	1105			5.22	162	79.1	1108	0.02	0.3	222	6241	5.53	171.3	84.5	1184	0.73	22.6	7.646	28.180	15598	4.70		<1	<1
W6A	-5.18	2/12/03	1031			4.88	151	73.1	1024	0.08	1.1	240	6735	5.08	157.3	90.1	1262	0.64	22.4	7.627	27.119	15011	4.38		<1	<1
W6A	-5.18	3/19/03	1016			4.82	149	72.0	1008	0.11	1.5	247	6940	4.93	152.7	83.5	1170	0.70	22.3	7.656	27.594	15274	4.86		<1	1
W6A	-5.18	4/28/03	1003			5.00	155	78.7	1102	0.18	2.5	232	6505	5.10	158.0	83.4	1168	0.51	22.5	7.739	27.459	15199	5.07		<1	<1
W6A	-5.18	5/12/03	935			4.72	146	71.4	1000	0.03	0.4	231	6474	4.88	151.2	89.5	1254	0.51	22.3	7.763	28.163	15589	5.18		<1	7
W6A	-5.18	6/3/03	950			4.85	150	81.0	1134	0.23	3.2	235	6609	4.91	152.1	90.7	1271	0.61	22.5	7.743	27.625	15291	5.09		<1	<1
W6A	-5.18	7/29/03	1013			5.36	166	84.6	1184	0.02	0.3	238	6679	5.46	169.1	94.0	1316		22.7	7.637	27.525	15236	4.91		<1	7
W6A	-5.18	8/26/03	1015			4.70	146	79.5	1114	0.17	2.4	238	6682	4.95	153.3	88.0	1232		23.3	7.622	27.743	15356	4.99		1	1
W6A	-5.18	9/15/03	1004			4.56	141	74.0	1037	0.05	0.7	225	6316	4.82	149.3	92.4	1294		24.0	7.677	28.565	15811	4.84		<1	1
W6A	-5.18	10/6/03	958			4.98	154	85.3	1195	0.15	2.1	230	6471	5.16	159.8	96.9	1357		23.7	7.626	28.190	15604	NA		<1	2
W6A	-5.18	10/28/03	1030			5.24	162	77.9	1091	0.10	1.4	220	6190	5.36	166.0	87.0	1219		23.6	7.610	28.749	15913			<1	3
W6A	-5.18	11/14/03	1335																23.6				4.98			
W6A	-5.18	12/15/03	942																20.7	7.610						
W6A	-5.18	12/17/03	847			5.17	160	78.7	1102	0.54	7.6	229	6426	5.37	166.3	81.1	1136		23.1	7.611	28.071	15538	4.35		<1	<1
W6A	-5.18	1/26/04	951			4.56	141	95.9	1344	0.30	4.2	217	6081	4.78	148.1	108	1511		22.8	7.638	27.905	15446	4.42		2	<1
W6A	-5.18	2/5/04	952			4.68	145	118	1647	0.18	2.5	242	6783	4.74	146.8	134	1881		22.3	7.560	26.452	14642	4.44		1	<1
W6A	-5.18	3/2/04	1041			4.52	140	109	1527	0.52	7.3	224	6280	4.44	137.5	116	1626		22.8	7.643	25.172	13933	4.14		<1	<1
W6A	-5.18	4/20/04	957			4.76	147	156	2185	0.01	0.1	236	6620	4.60	142.5	158	2207		22.3	7.542	26.891	14885	3.54		<1	<1
W6A	-5.18	5/11/04	912			4.98	154	135	1895	0.26	3.6	230	6460	4.82	149.3	143	2002		22.7	7.536	26.29	14552	4.25		<1	2
W6A	-5.18	6/2/04	959			4.56	141	153	2144	0.14	2.0	237	6651	4.54	140.6	155	2164		22.5	7.461	26.34	14580	3.55		<1	5

NELHA Water Quality Laboratory

Well 6A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	7/14/04	958				4.62	143	117	1632	0.22	3.1	243	6811	4.54	140.6	141	1979		22.7	7.487	27.04	14967	2.68		<1	2
W6A	-5.18	8/23/04	958				4.54	141	107	1495	0.37	5.2	227	6367	4.60	142.5	111	1551		23.6	7.508	27.58	15266	3.68		<1	<1
W6A	-5.18	9/2/04	1017				5.52	171	111	1551	0.13	1.8	246	6909	5.60	173.5	115	1607		23.8	7.444	26.86	14868	2.66		<1	1
W6A	-5.18	10/4/04	929				6.04	187	108	1509	0.25	3.5	223	6274	6.22	192.7	118	1658		24.1	7.497	27.91	15449	3.44		<1	61
W6A	-5.18	11/9/04	855				6.86	212	125	1747	0.16	2.2	242	6791	7.12	220.5	130	1821		24.1	7.464	26.65	14751	2.58		<1	2032
W6A	-5.18	12/6/04	935				6.20	192	113	1584	0.16	2.2	218	6109	6.48	200.7	133	1864		23.9	7.561	27.65	15305	3.42		<1	<1
W6A	-5.18	1/10/05	901				5.85	181	114	1598	0.20	2.8	243	6825	6.02	186.5	120	1675		23.1	7.470	24.973	13823	3.08		1	<1
W6A	-5.18	2/9/05	903				6.13	190	159	2227	0.36	5.0	241	6777	6.25	193.6	219	3060		22.4	7.502	25.940	14358	2.57		<1	1
W6A	-5.18	3/15/05	932				5.54	172	193	2705	0.27	3.8	223	6274	5.76	178.4	208	2913	0.63	22.1	7.561	27.556	15253	2.04		<1	1
W6A	-5.18	4/19/05	848				5.84	181	173	2418	0.12	1.7	233	6533	5.76	178.4	176	2464		22.0	7.529	27.415	15175	2.60		<1	1
W6A	-5.18	5/23/05	921				5.84	181	149	2081	0.30	4.2	262	7344	5.85	181.2	149	2080		22.2	7.427	26.137	14468	2.76		1	1
W6A	-5.18	6/15/05	952				5.05	156	117	1636	0.13	1.8	218	6120	5.36	166.0	129	1811		22.2	7.542	27.773	15373	3.85		<1	<1
W6A	-5.18	7/18/05	849				5.58	173	112	1565	0.11	1.5	239	6715	5.76	178.4	115	1605	0.62	22.4	7.514	26.216	14511	4.03		2	16
W6A	-5.18	8/9/05	910				5.60	173	108	1510	0.14	2.0	238	6687	5.94	184.0	116	1628	0.54	23.8	7.537	27.018	14955	4.01		<1	1
W6A	-5.18	9/20/05	905				5.54	172	96.9	1358	0.17	2.4	230	6465	5.76	178.4	102	1434	0.69	23.0	7.568	27.924	15457	3.98		<1	1
W6A	-5.18	10/17/05	901				5.34	165	150	2098	0.15	2.1	248	6962	5.42	167.9	150	2101		23.8	7.546	27.365	15147	3.23		1	<1
W6A	-5.18	11/7/05	835				4.80	149	186	2601	0.10	1.4	238	6693	4.92	152.4	198	2768		23.6	7.548	27.651	15306	2.48		<1	5
W6A	-5.18	12/19/05	838				4.20	130	121	1693	0.36	5.0	207	5825	4.24	131.3	139	1953	0.75	23.4	7.650	29.283	16209	3.83		<1	<1
W6A	-5.18	1/23/06	849				4.60	142	107	1497	0.37	5.2	231	6474	4.68	145.0	108	1518		23.0	7.640	28.182	15599	3.90		<1	1
W6A	-5.18	2/14/06	857				4.52	140	92.9	1302	0.29	4.1	221	6215	4.74	146.8	97.5	1366	0.68	22.8	7.671	28.109	15559	3.63		<1	940
W6A	-5.18	3/20/06	853				4.69	145	90.5	1268	0.38	5.3	233	6544	4.87	150.8	91.3	1279	0.64	22.7	7.695	27.25	15084	4.53		4	220
W6A	-5.18	4/25/06	925				4.66	144	107	1499	0.27	3.8	226	6347	4.66	144.3	95.1	1332	0.62	22.5	7.692	27.083	14991	5.58		<1	161
W6A	-5.18	5/22/06	913				4.42	137	91.5	1282	0.26	3.6	222	6235	5.02	155.5	81.6	1143	0.62	22.3	7.657	27.361	15145	6.51		<1	1
W6A	-5.18	6/26/06	917				4.42	137	89.7	1256	0.16	2.2	228	6403	4.53	140.3	85.6	1200	0.79	22.4	7.676	27.617	15287	4.98		<1	1
W6A	-5.18	7/20/06	919				4.53	140	84.7	1186	0.30	4.2	218	6123	4.90	151.8	78.9	1106	0.63	22.5	7.673	28.101	15555	4.63		<1	5
W6A	-5.18	8/7/06	943				4.59	142	81.1	1136	0.18	2.5	219	6151	4.97	153.9	73.3	1026	0.61	22.8	7.684	27.926	15458	4.97		<1	1
W6A	-5.18	9/18/06	917				4.72	146	82.5	1156	0.29	4.1	224	6291	5.15	159.5	73.5	1029	0.74	23.4	7.675	28.221	15621	4.83		<1	2
W6A	-5.18	10/23/06	920				4.47	138	76.5	1072	0.26	3.6	216	6066	4.66	144.3	70.8	991	0.69	23.6	7.685	27.490	15216	4.55		1	1
W6A	-5.18	11/27/06	904				4.05	125	123	1723	0.25	3.5	201	5645	4.18	129.5	112	1568	0.68	23.6	7.711	28.982	16042	4.46		<1	<1
W6A	-5.18	12/11/06	1005				4.39	136	125	1751	0.25	3.5	215	6038	4.44	137.5	113	1589	0.69	23.5	7.686	28.172	15594	4.58		<1	<1
W6A	-5.18	1/8/07	1059				4.39	136	101	1415	0.23	3.2	208	5842	4.58	141.9	92.7	1299	0.59	23.3	7.71	28.269	15648	5.03		<1	<1
W6A	-5.18	2/20/07	956				4.47	138	90.5	1268	0.52	7.3	224	6291	4.72	146.2	100	1407	0.67	23.0	7.694	27.164	15036	5.62		<1	<1
W6A	-5.18	3/5/07	931				4.37	135	121	1695	0.40	5.6	234	6572	4.61	142.8	127	1781	0.65	23.1	7.726	26.901	14890	5.05		<1	<1
W6A	-5.18	4/18/07	955				4.35	135	118	1653	0.22	3.1	261	7330	4.49	139.1	106	1479	0.59	23.6	7.711	25.632	14188	5.92		<1	1
W6A	-5.18	5/1/07	947				4.31	133	117	1639	0.96	13.4	252	7078	4.46	138.1	106	1483	0.58	23.0	7.689	26.016	14401	6.41		<1	2
W6A	-5.18	6/18/07	927				4.01	124	84.6	1185	0.18	2.5	244	6853	5.46	169.1	75.9	1063	1.13	23.0	7.595	26.529	14684	4.64		2	6
W6A	-5.18	7/23/07	1454	-1.78	0.46	Ebb	3.03	94	53.0	742	0.06	0.8	126	3537	3.39	104.9	54.2	759		23.0	7.47	26.20	14502	5.80			
W6A	-5.18	8/27/07	1459	-2.08	0.70	Flood	4.19	130	135.8	1903	0.29	4.0	221	6211	4.02	124.4	130.6	1829		23.5	7.68	28.12	15565	6.32			
W6A	-5.18	9/18/07	1609	-1.96	0.21	Ebb	4.22	131	151.1	2117	0.36	5.0	254	7130	4.14	128.3	130.9	1834		23.5	7.49	27.76	15366	5.69			
W6A	-5.18	10/23/07	1516	-1.78	0.46	Ebb	3.68	114	151.3	2120	0.16	2.2	212	5967	3.40	105.3	140.2	1964		23.7	7.36	28.37	15704	3.52			
W6A	-5.18	11/20/07	1324	-2.18	0.43	Ebb	3.87	120	126.9	1778	0.19	2.6	232	6525	3.29	102.0	132.1	1851		23.8	7.54	27.66	15311	3.72			
W6A	-5.18	12/19/07	1331	-2.29	0.24	Ebb	3.87	120	183.1	2565	29.44	412	220	6166						23.3	7.45	24.62	13628	3.25			

NELHA Water Quality Laboratory

Well 6A Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	1/28/08	855	-2.44	0.27	Ebb	3.15	98	193.2	2706	0.71	10	232	6528						22.3	7.15	25.72	14237	3.41			
W6A	-5.18	2/26/08	1348	-2.44	0.06	Flood	5.36	166	219.1	3069	0.35	4.9	253	7117						22.0	7.31	25.05	13866	4.18			
W6A	-5.18	3/17/08	1443	-1.14	0.24	High	4.84	150	150.9	2114	0.06	0.8	221	6199						21.8	7.41	25.64	14192	5.27			
W6A	-5.18	4/29/08	1123	-1.04	0.24	Flood	4.81	149	149.8	2099	0.09	1.2	231	6498						21.6	7.35	26.20	14502	1.75			
W6A	-5.18	5/28/08	1105	-2.34	0.34	High	4.02	125	168.7	2363	0.27	3.8	238	6697						22.0	7.43	25.12	13905	2.41			
W6A	-5.18	6/17/08	1140	-2.13	0.21	Flood	4.87	151	128.1	1795	1.62	22.7	229	6432						22.3	7.23	26.55	14696	1.19	10.10		
W6A	-5.18	7/22/08	1114	-2.44	0.15	Ebb	4.28	133	125.2	1754	0.24	3.3	243	6816						22.4	7.44	25.84	14303	3.04			
W6A	-5.18	8/30/08	1132		0.15	Flood	4.14	128	113.7	1592	2.15	30	279	7829						22.7	7.45	23.96	13262	NA			
W6A	-5.18	9/16/08	1110	-2.52	0.09	Low	4.57	141	106.2	1487	0.26	3.6	301	8455						23.3	7.34	22.84	12643	1.90			
W6A	-5.18	10/28/08	1107	-2.49	0.15	Low	4.03	125	91.5	1282	0.15	2.1	183	5133						24.6	7.38	27.52	15233	2.92	3.46		
W6A	-5.18	11/13/08	1109	-2.49	0.09	Low	4.06	126	103.2	1446	0.20	2.8	217	6102						24.0	7.67	26.98	14934	3.79	3.02		
W6A	-5.18	12/15/08	1411	-2.55	0.00	Low	5.19	161	118.2	1656	0.11	1.5	216	6079						23.9	7.76	25.60	14170	4.20			
W6A	-5.18	1/22/09	1055	-2.53	0.09	Flood	4.44	137	153.1	2144	0.90	13	238	6690						22.8	7.53	26.24	14525	0.56	0.31		
W6A	-5.18	2/24/09	1025	-2.65	0.09	Ebb	4.34	134	133.1	1865	0.74	10	288	8081						21.8	7.42	25.70	14226	3.01	2.74		
W6A	-5.18	3/16/09	1106	-2.60	0.09	Ebb	3.80	118	137.5	1926	0.13	1.8	210	5912						22.6	7.38	24.83	13744	3.62	0.32		
W6A	-5.18	4/30/09	1633	-2.70	0.24	Flood	5.21	161	121.8	1707	0.64	9	205	5768						22.0	7.97	24.73	13689	4.03			
W6A	-5.18	5/29/09	1028	-2.44	0.21	Ebb	4.38	136	112.8	1581	0.18	2.5	261	7318						20.1	7.69	25.95	14364	4.91	0.39		
W6A	-5.18	6/16/09	1417	-2.27	0.40	Flood	3.38	105	75.6	1058	0.42	5.9	165	4646						20.9	7.82	27.56	15255	4.77	0.13		
W6A	-5.18	7/14/09	1315	-2.36	0.37	Ebb	2.58	80	66.9	937	0.30	4.2	105	2961						21.3	7.70	27.31	15117	4.54	0.10		
W6A	-5.18	8/19/09	1353	-1.92	0.67	Flood	3.69	114	80.6	1130	1.32	18.5	150	4206						21.5	7.63	29.30	16218	4.41	0.31		
W6A	-5.18	9/21/09	1541	-2.36	0.30	Flood	2.69	83	67.8	950	0.40	5.6	136	3833						22.3	8.15	28.25	15637	4.59	0.07		
W6A	-5.18	10/22/09	1614	-2.53	0.18	Flood	3.44	107	77.8	1090	0.54	7.5	93	2614						22.9	7.68	27.86	15421	4.85	0.16		
W6A	-5.18	11/17/09	840	-2.44	0.30	Ebb	5.05	157	82.0	1149	0.94	13.2	235	6589						22.7	7.66	27.87	15427	5.23	0.05		
W6A	-5.18	12/8/09	927	-2.18	0.55	High	3.33	103	83.7	1172	0.94	13.2	217	6093						22.9	7.66	27.88	15432	5.14	0.25		
W6A	-5.18	1/6/10	825	-2.18	0.43	High	3.58	111	81.6	1143	1.29	18	211	5935						22.2	7.67	27.44	15189	4.44	0.18		
W6A	-5.18	2/2/10	823	-2.08	0.37	Ebb	3.87	120	101.8	1426	0.64	9	205	5749						21.8	7.74	26.85	14862	4.85	0.18		
W6A	-5.18	3/10/10	809	-2.62	0.09	Low	4.26	132	107.9	1512	0.36	5	263	7399						21.6	7.70	25.13	13910	5.20	0.07		
W6A	-5.18	4/6/10	1433	-2.55	0.12	Ebb	4.29	133	90.8	1272	0.43	6	284	7979						18.9	7.73	28.41	15726	5.74	0.09		
W6A	-5.18	5/11/10	1438	-1.99	0.55	High	3.55	110	61.9	867	1.21	17	229	6421						21.3	7.80	27.75	15360	5.23	0.04		
W6A	-5.18	6/16/10	1007	-1.84	0.15	Ebb	4.00	124	85.0	1191	0.36	5	255	7169						21.4	7.75	27.40	15167	5.23	0.31		
W6A	-5.18	7/13/10	1452	-2.26	0.40	Flood	3.52	109	77.5	1086	0.57	8	226	6344						21.7	7.76	28.23	15626	5.09	0.24		
W6A	-5.18	8/3/10	1450	-2.19	0.40	Ebb	4.46	138	62.8	879	0.38	5.3	196	5503						22.0	7.75	28.12	15565	4.99	0.13		
W6A	-5.18	9/14/10	1516	-2.25	0.30	Ebb	3.84	119	88.7	1242	0.47	6.6	254	7126						22.2	7.72	27.57	15261	5.39	0.19		
W6A	-5.18	10/12/10	1539	-2.40	0.18	Low	3.81	118	95.3	1335	0.11	1.5	242	6809						22.2	7.73	27.89	15438	5.05	0.22		
W6A	-5.18	11/16/10	1415	-2.19	0.34	Ebb	3.75	116	98.5	1379	0.08	1.1	232	6513						22.3	7.73	28.43	15737	4.83	0.12		
W6A	-5.18	12/14/10	1445	-2.42	0.12	Ebb	4.16	129	134.6	1886	0.29	4	254	7141						22.3	7.76	26.30	14558	4.75	0.11		
W6A	-5.18	1/4/11	1425	-2.44	0.15	Flood	3.91	121	118.3	1657	0.35	4.9	238	6697						22.1	7.68	25.89	14331	5.02	0.12		
W6A	-5.18	4/5/11	1447	-2.29	0.34	Flood	3.94	122	88.7	1243	0.17	2.4	229	6420						21.1	7.60	25.67	14209	4.42	0.18		
W6A	-5.18	7/11/11	1204	-2.20	0.49	Flood	3.68	114	110.2	1544	0.14	2	245	6883						21.8	7.66	27.27	15095	4.91	0.19		
W6A	-5.18	10/11/11	1340	-2.30	0.34	Flood	3.65	113	96.4	1350	0.35	4.9	246	6919						22.1	7.62	27.55	15250	4.83	0.16		
W6A	-5.18	1/9/12	1438	-2.57	0.15	Flood	3.91	121	106.3	1489	0.19	2.7	273	7655						21.5	7.65	25.18	13938	4.63	0.07		
W6A	-5.18	4/30/12	1454	-2.38	0.24	Ebb	4.10	127	93.0	1303	0.16	2.2	251	7056						20.1	7.58	27.25	15084	3.98	0.02		
W6A	-5.18	7/17/12	1530	-1.91	0.73	Flood	3.81	118	100.2	1404	0.26	3.7	226	6349						20.3	7.48	28.68	15875	3.78	0.10		
W6A	-5.18	10/15/12	1324	-2.31	0.24	Flood	3.68	114	77.0	1078	0.14	2	253	7105						20.4	7.40	28.14	15576	1.30	0.09		
W6A	-5.18	1/7/13	1427	-2.38	0.18	Ebb	4.75	147	91.7	1284	0.19	2.6	347	9740						20.0	7.44	25.28	13993	4.24	0.07		
W6A	-5.18	4/8/13	1346	-2.26	0.37	Flood	4.49	139	61.3	859	0.34	4.7	267	7496						19.1	7.51	26.62	14735	3.19	0.13		

NELHA Water Quality Laboratory

Well 6A Data Table

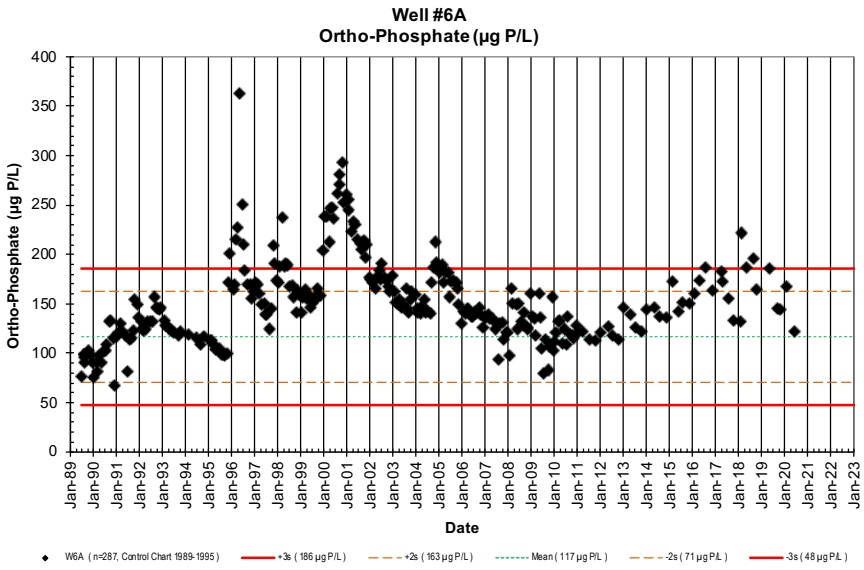
6/23/1989 - 7/21/20

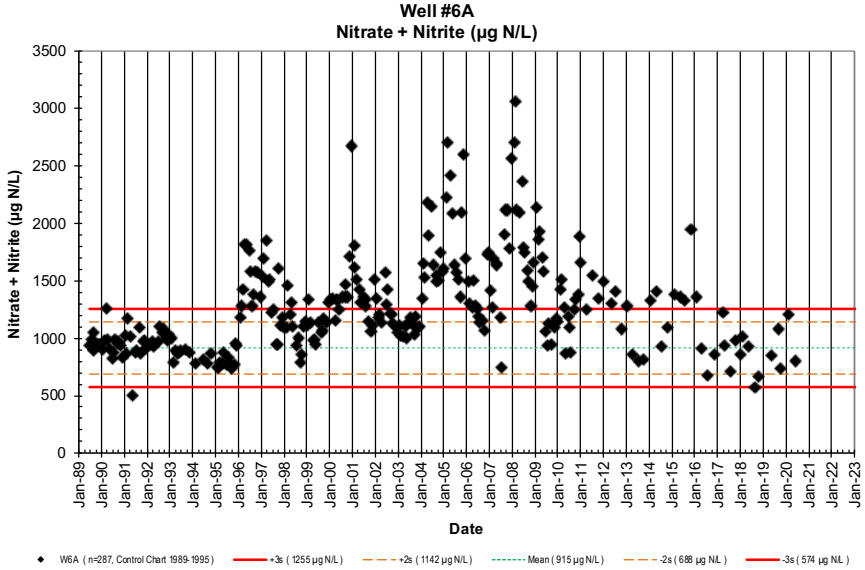
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	Chloride (mg/L)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.18	7/16/13	1615	-2.34	0.30	Ebb	4.07	126	57.5	806	0.27	3.8	287	8063						20.1	7.43	26.75	14807	3.13	0.05		
W6A	-5.18	10/14/13	1654	-2.36	0.18	Ebb	3.94	122	58.1	814	0.38	5.3	279	7848						20.8	7.49	26.76	14812	3.14	0.20		
W6A	-5.18	1/14/14	1547	-2.35	0.18	Ebb	4.65	144	94.3	1321	0.36	5	273	7676						20.6	7.52	25.78	14270	4.22	0.03		
W6A	-5.18	4/28/14	1543	-2.01	0.518	Flood	4.71	146	100.0	1400	0.33	4.6	239	6719						20.4	7.57	27.29	15106	3.32	0.02		
W6A	-5.18	7/28/14	1554	-2.05	0.488	Flood	4.46	138	66.1	926	0.29	4	239	6701						20.7	7.47	28.21	15615	3.56	0.06		
W6A	-5.18	11/3/14	1322	-2.01	0.46	High	4.39	136	77.8	1090	0.11	1.5	243	6821						21.8	7.51	27.15	15028	3.88	0.24		
W6A	-5.18	2/9/15	1700	-2.35	0.18	Low	5.57	172	98.7	1382	0.69	9.6	275	7730						20.4	7.47	26.18	14491	3.76	0.12		
W6A	-5.18	5/19/15	1024	-2.62	-0.06	Low	4.59	142	97.0	1358	1.01	14.2	271	7598						20.1	7.57	25.54	14137	4.23	0.03		
W6A	-5.18	7/21/15	1319	-2.46	0.18	Low	4.88	151	94.8	1327	0.02	0.3	275	7720						21.1	7.41	26.18	14491	4.12	0.06		
W6A	-5.18	11/9/15	1041	-2.30	0.25	Flood	4.88	151	139.1	1948	0.09	1.2	243	6831						22.1	7.44	26.56	14702	3.69	0.06		
W6A	-5.18	1/26/16	1032	-2.48	0.07	Low	5.19	161	97.0	1358	0.11	1.5	272	7643						21.9	7.32	25.92	14347	4.16	0.02		
W6A	-5.18	4/21/16	1148	-2.45	0.20	Flood	5.59	173	65.1	912	0.34	4.7	229	6420						21.8	7.42	27.36	15144	4.05	0.03		
W6A	-5.18	7/26/16	907	-2.21	0.20	Flood	6.04	187	48.4	678	0.18	2.5	223	6263						21.6	7.46	27.62	15288	3.16	0.05		
W6A	-5.18	11/10/16	1128	-2.12	0.55	High	5.29	164	61.2	857	1.09	15.2	213	5990						22.6	7.37	27.53	15239	3.89	0.02		
W6A	-5.18	3/21/17	1515	-2.31	0.10	Ebb	5.92	183	87.8	1230	0.68	9.5	238	6677						21.0	7.69	26.87	14873	3.64	0.03		
W6A	-5.18	4/13/17	1428	-2.26	0.35	Flood	5.58	173	67.1	939	0.27	3.8	244	6846						21.4	7.69	27.29	15106	2.41	0.04		
W6A	-5.18	8/4/17	1111	-2.14	0.30	Flood	5.01	155	51.0	714	0.04	0.5	211	5930						21.3	7.72	29.00	16052	3.66	0.08		
W6A	-5.18	10/19/17	922	-2.41	0.09	Low	4.30	133	69.8	978	0.24	3.4	241	6760						22.1	7.65	26.21	14508	5.08	0.05		
W6A	-5.18	1/17/18	1300	-2.46	0.15	Flood	4.26	132	61.0	855	0.11	1.5	237	6650						22.0	7.56	27.02	14956	3.13	0.03		
W6A	-5.18	5/10/18	1109	-2.27	0.35	Flood	6.02	187	66.2	927	5.95	83.3	208	5849						20.1	7.98	30.91	17109	1.04	0.08		
W6A	-5.18	8/20/18	1103	-2.15	0.52	Flood	6.31	196	40.4	566	0.11	1.5	201	5648						20.2	7.81	28.86	15975	1.77	0.08		
W6A	-5.18	10/25/18	1319	-2.33	0.22	Flood	5.33	165	47.7	668	0.05	0.7	207	5814						23.2	7.84	27.33	15128	2.44	0.07		
W6A	-5.18	2/7/18	1332	-2.62	0.18	Flood	7.17	222	72.4	1014	0.01	0.2	209	5875						21.5	7.80	27.94	15466	3.64	0.06		
W6A	-5.18	5/16/19	1125	-2.45	0.35	Flood	5.97	185	60.3	845	0.08	1.1	204	5732						21.0	7.67	28.38	15709	4.27	0.05		
W6A	-5.18	8/29/19	858	-2.53	-0.05	Low	4.69	145	77.4	1084	0.16	2.3	230	6470						22.3	7.82	25.72	14237	4.88	0.07		
W6A	-5.18	10/10/19	1335	-1.94	0.50	High	4.65	144	52.3	733	0.61	8.6	208	5851						23.5	7.85	28.98	16041	3.69	0.06		
W6A	-5.18	2/4/20	1359	-2.40	0.10	Ebb	5.39	167	86.1	1206	-0.34	-4.7	234	6572						23.4	7.84	26.15	14475	4.43	0.02		
W6A	-5.18	6/2/20	1002	-2.26	0.20	Flood	3.93	122	57.2	801	0.38	5.3	207	5803						22.2	7.79	27.56	15255	4.13	0.04		
W6A	-5.18	7/1/20																									
W6A	-5.18	10/1/20																									
W6A	-5.18	1/1/21																									
W6A	-5.18	4/1/21																									
W6A	-5.18	7/1/21																									
W6A	-5.18	10/1/21																									
W6A	-5.18	1/1/22																									
W6A	-5.18	4/1/22																									
W6A	-5.18	7/1/22																									
W6A	-5.18	10/1/22																									
W6A	-5.18	1/1/23																									
W6A	-5.18	4/1/23																									
Mean				-2.27	0.27		4.88	151	90.35	1265	0.36	5.0	270	7577	5.25	163	95	1324	0.74	22.1	7.68	25.71	14233	4.82	0.41		
Std. Dev.				0.28	0.17		1.35	42	29.56	414	1.78	24.8	65	1825	1.44	45	30	420	0.17	1.1	0.17	2.33	1292	1.23	1.39		
Maximum				-1.04	0.73		11.71	363	219	3069	29.44	412.4	584	16402	12.41	384	219	3060	1.80	24.6	8.15	30.91	17109	7.49	10.10		
Minimum				-2.70	-0.06		2.17	67	36	503	-0.34	-4.7	93	2614	2.68	83	37	522	0.32	16.7	7.15	18.13	10037	0.56	0.02		
n				79	80		287	287	287	287	286	287	280	279	206	206	206	206	174	288	287	286	286	282	64		

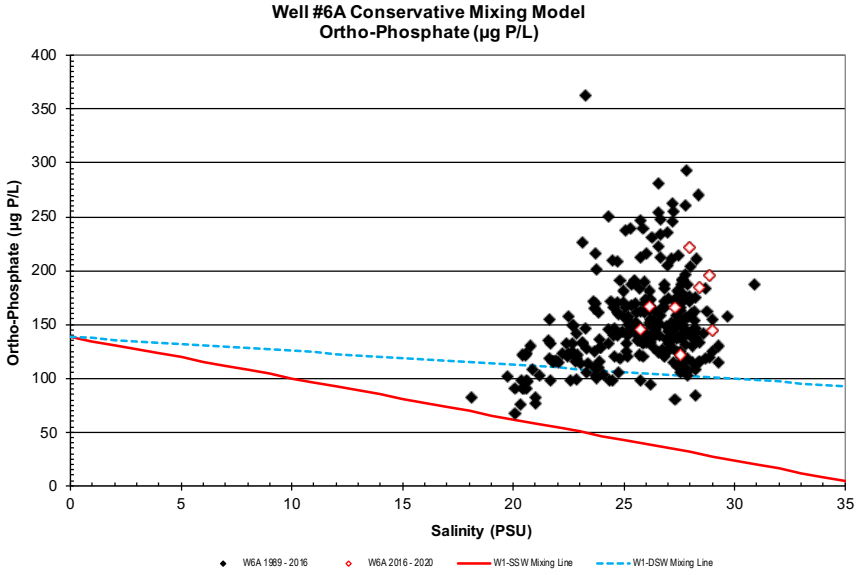
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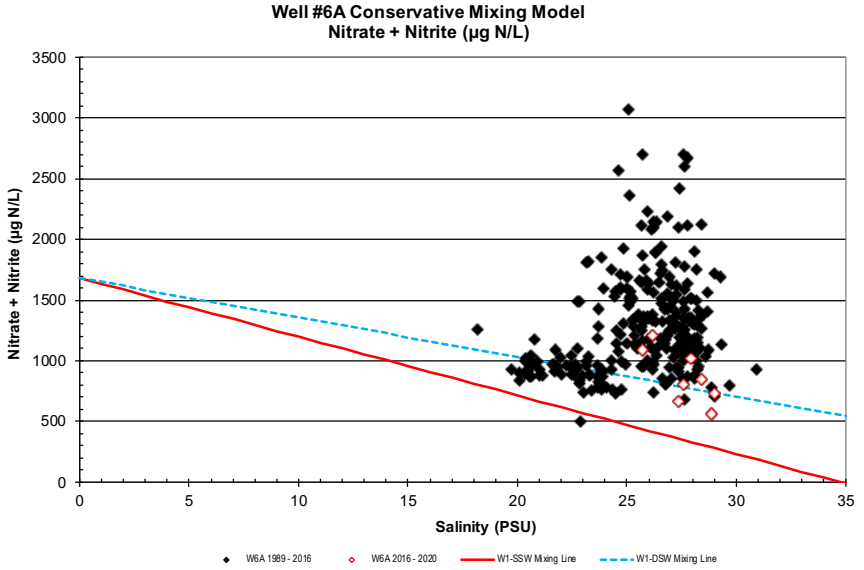
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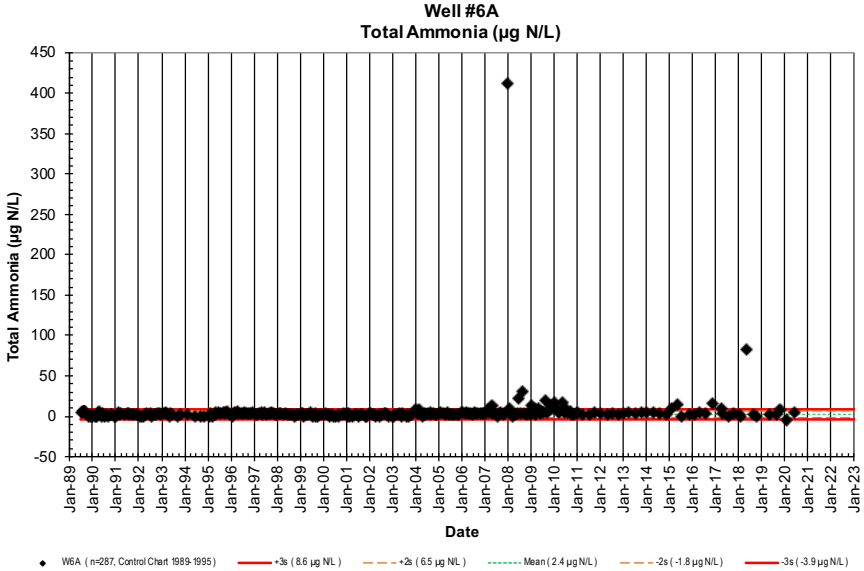


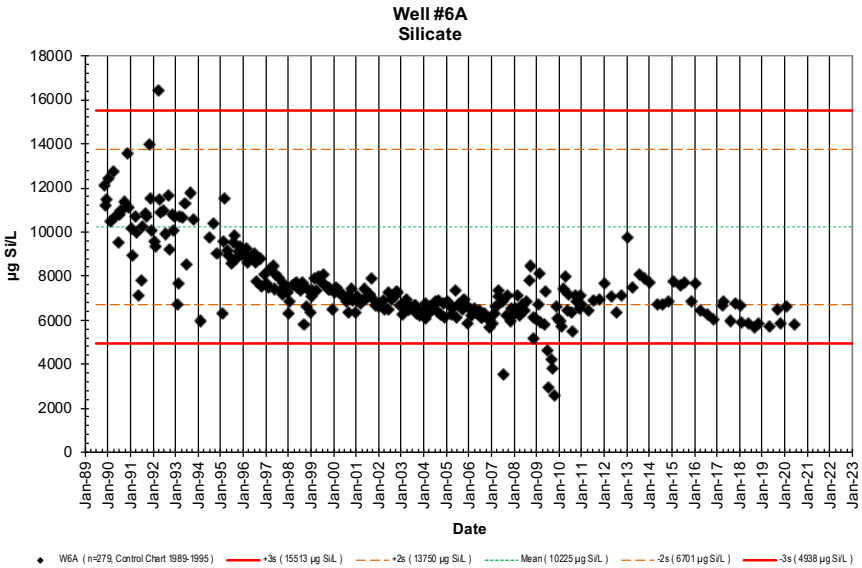


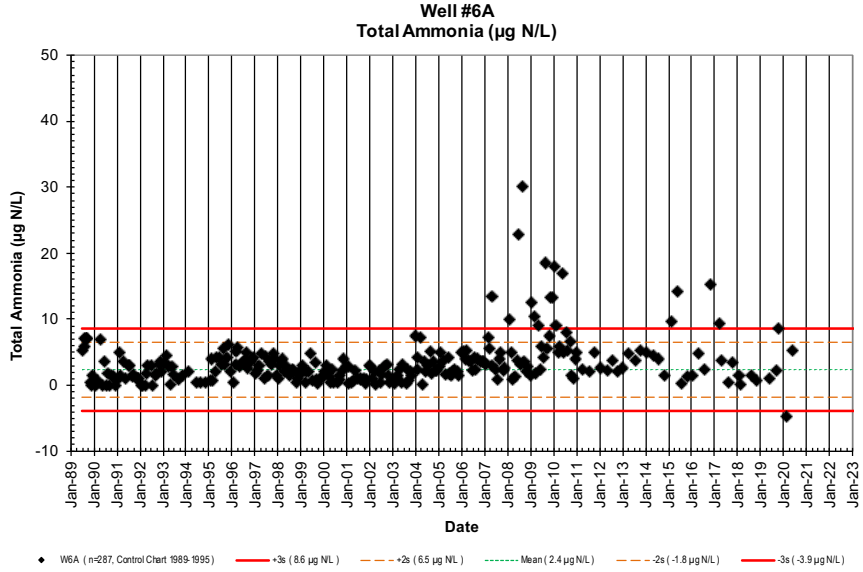
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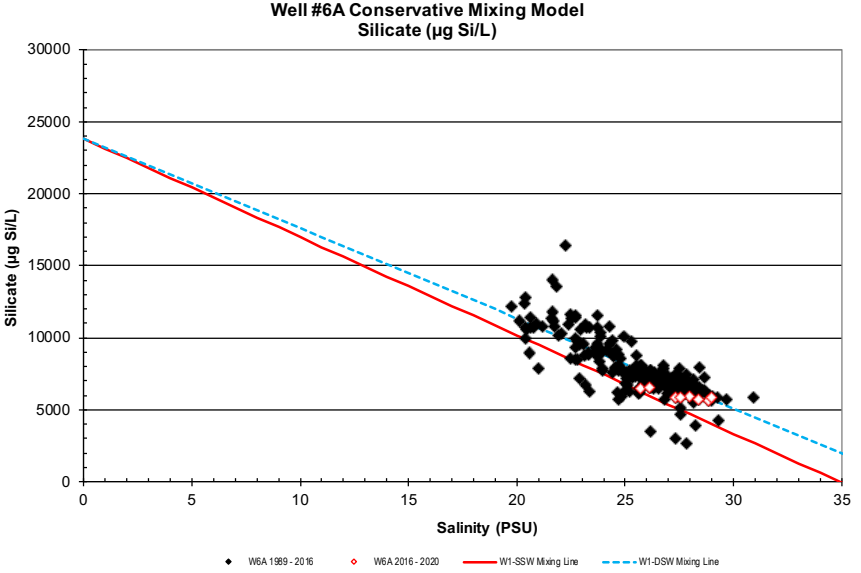
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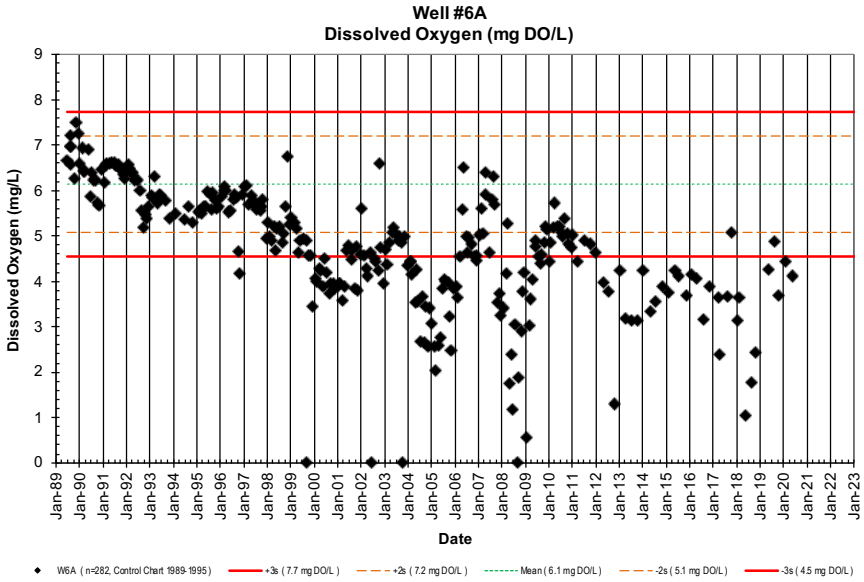


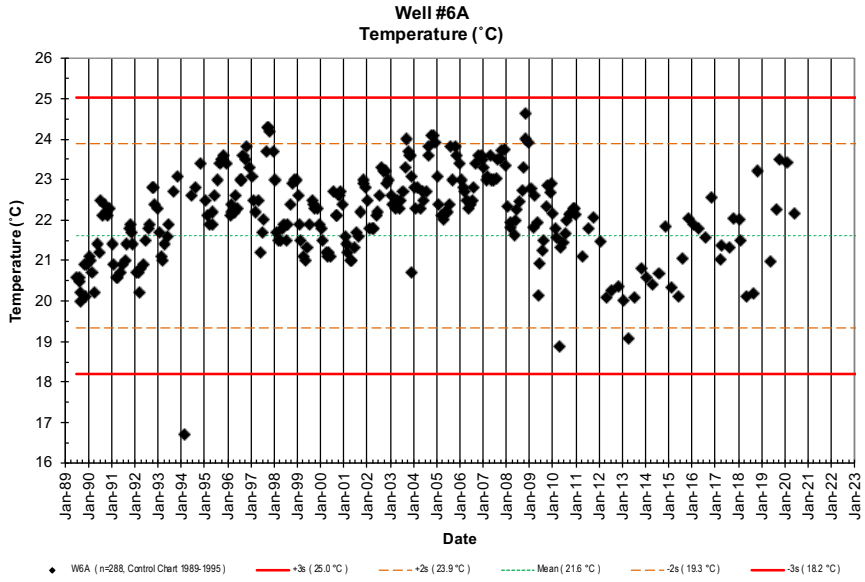


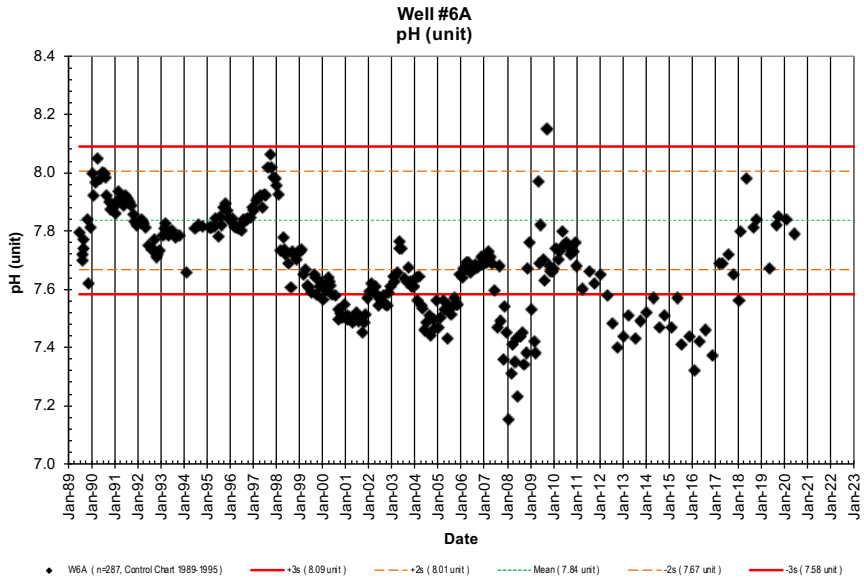
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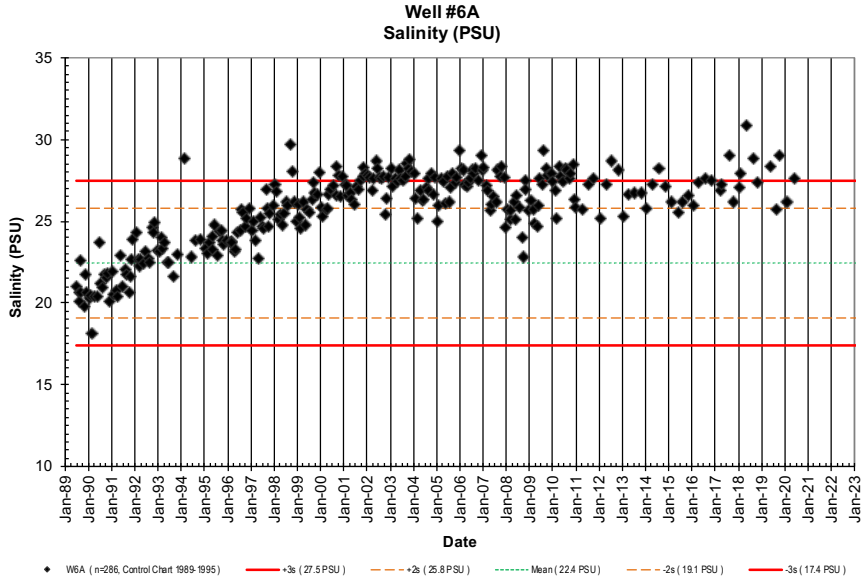
Well 6A Charts

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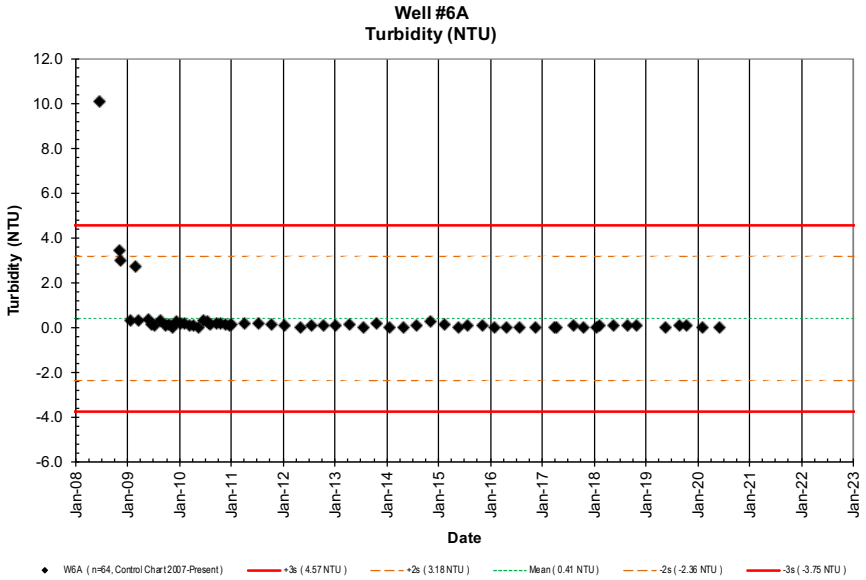


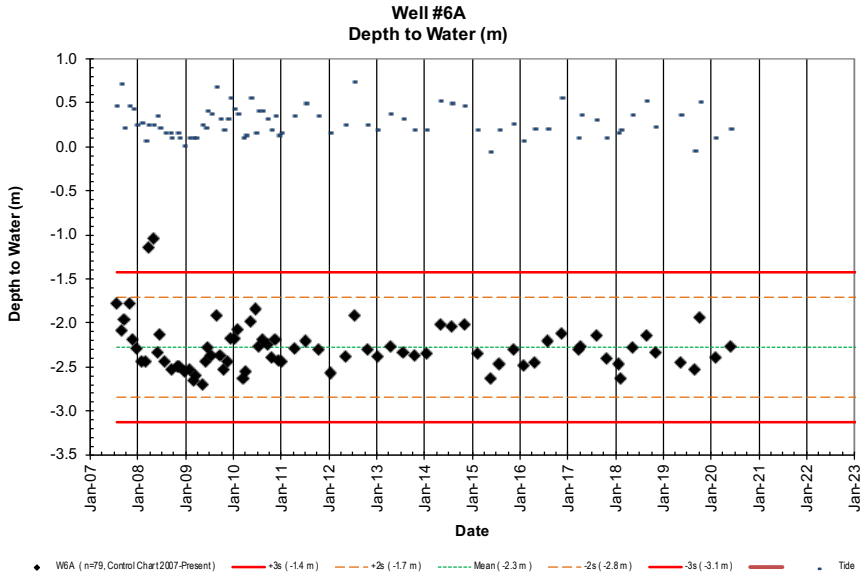


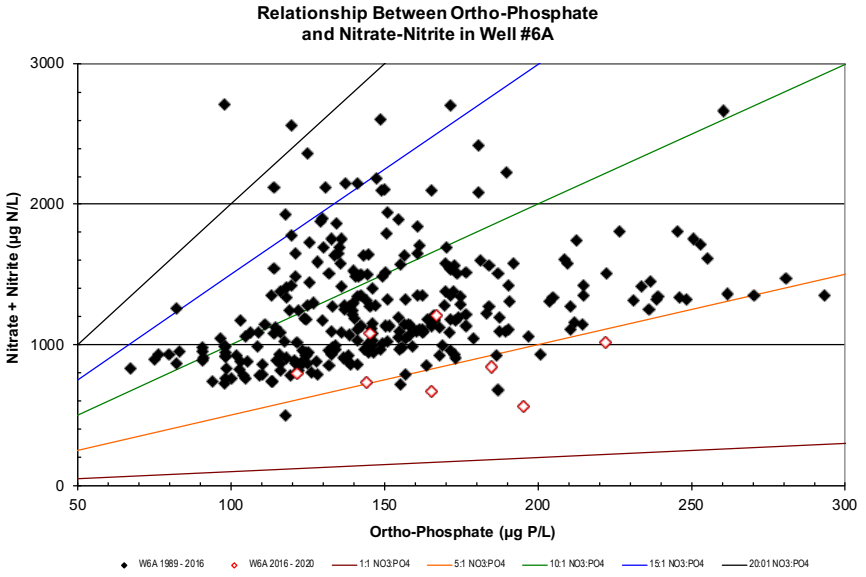
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Well 6B Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	6/23/89				3.11	96	63.0	882	0.44	6.2								17.3	7.646	26.619	14734	6.20		NA	NA
W6B	-8.53	8/9/89	1353			3.66	113	75.1	1052	0.50	7.0								16.8	7.538	26.193	14499	6.57		<1	NA
W6B	-8.53	8/15/89	1213			3.72	115	72.8	1019	0.50	7.0								16.9	7.547	26.072	14432	5.96		<1	NA
W6B	-8.53	8/22/89	1148			3.78	117	75.8	1062	0.50	7.0								16.5	7.625	26.005	14394	5.96		<1	NA
W6B	-8.53	8/28/89	1433			4.09	127	82.7	1158	0.50	7.0								16.6	7.534	26.971	14929	5.34		<1	NA
W6B	-8.53	8/28/89	1433			4.09	127	82.7	1158	0.50	7.0														NA	NA
W6B	-8.53	10/27/89	1141			3.86	120	82.0	1149	0.03	0.4	280	7864	4.08	126.4	32.6	457	0.29	17.3	7.638	26.852	14863	6.80		<1	NA
W6B	-8.53	11/15/89	932			3.76	116	74.7	1046	0.14	1.9	274	7695	4.04	125.1	82.6	1157	1.12	17.6	7.671	27.053	14975	7.32		<1	NA
W6B	-8.53	12/8/89	1151			3.92	121	81.6	1143	0.10	1.4	268	7527	4.27	132.3	82.6	1157		17.4	7.616	27.123	15013	6.94		<1	NA
W6B	-8.53	1/10/90	1058			3.03	94	71.8	1006	0.00	0.0	294	8257	3.30	102.2	72.3	1013	0.97	17.7	7.814	26.551	14697	6.63		<1	NA
W6B	-8.53	2/13/90	1157			3.61	112	76.0	1065	0.08	1.1	250	7021	3.77	116.8	80.6	1129	0.94	18.6	7.726	26.521	14680	6.32		<1	NA
W6B	-8.53	3/5/90	1419			3.64	113	96.7	1354	0.35	4.9	270		3.91	121.1	97.4	1364	0.86	17.8	7.762	26.251	14531	5.80		<1	NA
W6B	-8.53	4/4/90	1035			4.55	141	98.8	1384	0.10	1.4	294	8257	4.67	144.6	101.0	1415	1.04	17.5	7.768	27.229	15072	5.74		<1	NA
W6B	-8.53	5/16/90	1254			3.94	122	70.8	992	0.00	0.0	252	7078	5.65	175.0	98.4	1378	0.83	17.3	7.739	26.948	14916	6.87		<1	NA
W6B	-8.53	6/17/90	1420			4.83	150	75.2	1053	0.00	0.0	237	6656	4.86	150.5	79.1	1108	1.20	17.3	7.678	27.894	15440	6.14		<1	NA
W6B	-8.53	7/12/90	1302			4.10	127	63.6	891	0.17	2.4	267	7499	4.40	136.3	66.5	931	0.84	17.8	7.764	26.947	14916	6.39		<1	NA
W6B	-8.53	8/7/90	1230			3.66	113	68.2	955	0.00	0.0	261	7330	4.21	130.4	69.1	968	1.04	17.6	7.740	26.815	14843	6.19		<1	NA
W6B	-8.53	9/5/90	1422			4.70	146	78.9	1105	0.00	0.0			4.67	144.6	80.8	1131	0.69	17.1	7.562	27.286	15104	6.09		<1	NA
W6B	-8.53	10/4/90	1440			5.07	157	75.3	1055	0.00	0.0	282	7920	6.08	188.3	77.6	1087	1.01	16.9	7.454	26.965	14926	5.80		<1	NA
W6B	-8.53	10/31/90	1144			3.83	119	58.9	826	0.07	1.0	280	7864	5.07	157.0	75.5	1057	1.06	17.2	7.525	26.683	14769	6.13		<1	NA
W6B	-8.53	12/7/90	1403			3.46	107	52.7	738	0.00	0.0	325	9128	4.11	127.3	68.9	965	0.57	18.3	7.674	25.727	14240	6.64		<1	NA
W6B	-8.53	1/9/91	905			3.96	123	58.0	813	0.06	0.8	259	7274	4.00	123.9	70.8	992	0.72	17.2	7.630	26.890	14884	6.30		<1	NA
W6B	-8.53	2/5/91	1000			4.16	129	57.6	807	0.36	5.0	228	6403	4.27	132.3	61.2	857	0.85	17.2	7.674	26.216	14511	7.06		<1	NA
W6B	-8.53	3/6/91	957			4.80	149	83.6	1171	0.14	2.0	324	9100	4.87	150.8	86.2	1207	0.74	16.1	7.671	26.609	14729	6.86		<1	NA
W6B	-8.53	4/2/91	1023			4.28	133	64.0	896	0.35	4.9	247	6937	4.29	132.9	69.2	969	0.71	16.4	7.714	26.057	14423	6.90		<1	NA
W6B	-8.53	5/21/91	935			4.26	132	36.1	506	0.09	1.3	147	4129	4.50	139.4	37.3	522	0.64	16.0	7.669	27.137	15021	7.01		<1	NA
W6B	-8.53	6/25/91	923			2.90	90	53.1	744	0.28	3.9	279	7836	2.94	91.1	56.6	793	0.61	16.4	7.756	26.242	14526	7.06		<1	<1
W6B	-8.53	7/23/91	1025			3.96	123	57.9	811	0.28	3.9	268	7527	4.58	141.9	60.7	850	1.00	16.7	7.740	26.710	14785	7.37		<1	<1
W6B	-8.53	8/22/91	918			3.80	118	63.4	888	0.23	3.2	264	7415	4.03	124.8	65.2	913	0.56	17.0	7.748	26.938	14911	7.33		<1	<1
W6B	-8.53	9/23/91	956			3.65	113	54.1	758	0.18	2.5	276	7752	4.09	126.7	58.9	825	0.52	17.4	7.755	25.982	14382	7.10		<1	<1
W6B	-8.53	10/22/91	1030			4.57	142	59.9	839	0.00	0.0	362	10167	4.70	145.6	63.6	891	0.54	17.3	7.713	26.614	14732	7.29		<1	<1
W6B	-8.53	11/19/91	1055			4.30	133	59.9	839	0.02	0.3	291	8173	4.37	135.4	61.0	854	0.51	16.7	7.709	27.169	15039	7.35		<1	<1
W6B	-8.53	12/10/91	1010			4.12	128	58.6	821	0.08	1.1	266	7471	4.20	130.1	60.7	850	0.78	17.0	7.701	27.588	15271	7.23		<1	<1
W6B	-8.53	1/28/92	948			4.15	129	60.2	843	0.00	0.0	256	7190	4.21	130.4	62.8	880	0.78	16.5	7.692	27.903	15445	7.52		<1	<1
W6B	-8.53	2/18/92	919			3.94	122	59.9	839	0.00	0.0	246	6909	4.20	130.1	63.6	891	0.69	16.9	7.710	27.108	15005	6.96		<1	<1
W6B	-8.53	3/16/92	1020			3.88	120	57.6	807	0.00	0.0	257	7218	4.04	125.1	60.1	842	1.04	16.8	7.739	27.347	15137	6.96		<1	<1
W6B	-8.53	4/7/92	948			3.79	117	56.5	791	0.18	2.5	291	8173	3.91	121.1	60.0	840	0.92	17.0	7.747	27.134	15019	7.10		<1	<1
W6B	-8.53	5/5/92	951			4.12	128	57.1	800	0.21	2.9	284	7976	4.22	130.7	34.7	486	1.03	17.4	7.729	26.927	14905	6.60		<1	<1
W6B	-8.53	6/22/92	939			4.18	129	60.4	846	0.28	3.9	289	8117	4.33	134.1	63.0	882	1.27	17.7	7.685	27.079	14989	7.22		<1	<1
W6B	-8.53	7/28/92	917			4.27	132	64.2	899	ND	0.0	253	7106	4.45	137.8	68.4	959	0.93	17.4	7.677	27.239	15077	6.74		<1	<1
W6B	-8.53	8/25/92	854			4.40	136	60.3	844	0.11	1.5	297	8341	4.57	141.6	64.9	909	1.00	17.5	7.696	27.173	15041	5.93		<1	1
W6B	-8.53	9/21/92	917			4.19	130	62.5	876	0.13	1.8	247	6937	4.29	132.9	67.9	950	0.86	18.3	7.727	27.777	15375	6.77		1	5
W6B	-8.53	10/26/92	932			4.21	130	61.3	859	0.31	4.3	293	8229	4.32	133.8	68.3	956	0.64	17.7	7.652	27.598	15276	6.58		<1	<1
W6B	-8.53	11/16/92	949			4.15	129	60.6	849	0.30	4.2	271	7611	4.64	143.7	65.8	922	0.65	17.1	7.664	28.201	15610	6.85		<1	<1
W6B	-8.53	12/7/92	940			4.18	129	61.5	862	0.23	3.2	283	7948	4.34	134.4	64.6	904	0.66	17.6	7.680	27.661	15311	6.33		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	1/25/93	937			4.25	132	60.2	843	0.33	4.6	288	8089	4.29	132.9	68.7	963	0.75	17.6	7.705	26.995	14942	5.97		<1	<1
W6B	-8.53	2/22/93	907			4.17	129	63.5	889	0.33	4.6	364	10220	4.23	131.0	70.4	986	0.63	17.6	7.733	27.585	15269	5.80		<1	<1
W6B	-8.53	3/15/93	904			4.03	125	54.0	756	0.22	3.1	278	7802	4.11	127.3	57.7	809	0.64	17.7	7.758	27.585	15269	5.87		<1	<1
W6B	-8.53	4/26/93	909			4.03	125	52.2	731	0.08	1.1	277	7780	4.24	131.3	55.2	773	0.61	17.9	7.735	27.738	15354	5.63		<1	<1
W6B	-8.53	5/24/93	925			4.06	126	51.6	723	0.33	4.6	289	8117	4.15	128.5	57.8	810	0.60	18.0	7.741	27.225	15070	5.50		<1	<1
W6B	-8.53	6/21/93	926			3.98	123	57.3	803	0.18	2.5	649	18227	4.09	126.7	55.8	782	0.56	18.6	7.753	27.240	15078	5.47		<1	<1
W6B	-8.53	8/30/93	1023			3.72	115	50.6	709	0.15	2.1	292	8201	3.76	116.5	59.6	834	0.70	20.0	7.744	26.840	14857	5.30		<1	<1
W6B	-8.53	10/25/93	912			3.86	120	53.8	753	0.16	2.2	273	7667	3.88	120.2	56.4	790	0.57	20.5	7.754	26.987	14938	5.06		<1	<1
W6B	-8.53	2/7/94	1114			4.09	127	47.8	669	0.14	2.0	245	6881	4.17	129.2	57.0	798	0.68	20.2	7.707	27.384	15158	4.85		<1	<1
W6B	-8.53	6/20/94	854			4.42	137	48.0	672	0.03	0.4	247	6945	4.48	138.8	58.0	813	0.71	19.2	7.650	27.608	15282	4.37		<1	<1
W6B	-8.53	8/22/94	1006			3.93	122	48.2	675	0.11	1.5	266	7467	4.03	124.8	56.9	797	0.57	19.6	7.714	27.782	15378	5.15		<1	<1
W6B	-8.53	10/24/94	945			3.90	121	55.7	780	0.07	1.0	238	6692	3.99	123.6	59.3	830	0.49	20.5	7.737	27.483	15213	5.16		<1	<1
W6B	-8.53	1/23/95	1019			3.92	121	49.8	697	0.14	2.0	250	7030	4.01	124.2	52.3	733	0.41	19.7	7.713	26.714	14787	5.55		<1	<1
W6B	-8.53	2/13/95	1009			3.88	120	48.1	673	0.35	4.9	254	7120	3.91	121.1	57.9	811	0.53	19.3	7.719	26.689	14773	5.47		<1	<1
W6B	-8.53	3/13/95	1046			3.80	118	53.5	750	0.05	0.7	315	8850	3.91	121.1	54.5	763	0.60	19.0	7.723	26.759	14812	5.90		<1	<1
W6B	-8.53	4/24/95	940			3.52	109	49.8	698	0.18	2.5	242	6794	3.65	113.1	50.9	713	0.62	19.1	7.712	27.740	15355	5.31		<1	<1
W6B	-8.53	5/8/95	936			3.52	109	57.6	806	0.33	4.6	240	6735	3.54	109.6	55.5	777	0.56	19.6	7.734	26.814	14842	5.55		<1	<1
W6B	-8.53	6/19/95	1015			3.49	108	51.1	716	0.36	5.0	239	6707	3.58	110.9	55.4	775	0.54	20.1	7.700	27.611	15283	5.87		<1	<1
W6B	-8.53	7/24/95	944			3.34	103	49.1	688	0.28	3.9	245	6889	3.44	106.5	51.8	725	0.55	20.2	7.751	26.975	14931	5.86		<1	<1
W6B	-8.53	8/21/95	1032			3.48	108	52.2	730	0.48	6.7	234	6580	3.57	110.6	67.3	943	0.69	20.1	7.725	27.113	15008	5.95		<1	4
W6B	-8.53	9/11/95	844			3.53	109	50.4	706	0.26	3.6	246	6898	3.54	109.6	53.8	754	0.64	20.1	7.782	27.293	15107	6.04		<1	1
W6B	-8.53	10/16/95	912			3.67	114	51.7	723	0.31	4.3	249	6999	3.85	119.2	55.2	773	0.82	20.1	7.822	27.103	15002	5.88		<1	1
W6B	-8.53	11/6/95	858			4.23	131	60.0	840	0.24	3.4	259	7260	4.31	133.5	64.7	907	0.69	20.2	7.809	26.801	14835	6.10		<1	1
W6B	-8.53	12/4/95	918			4.32	134	59.2	829	0.11	1.5	246	6906	4.54	140.6	62.2	871	0.68	20.2	7.784		0	7.63		<1	<1
W6B	-8.53	1/29/96	1018			4.38	136	67.3	942	0.02	0.3	241	6766	4.44	137.5	75.1	1052	0.62	19.5	7.790	27.471	15206	5.78		<1	1
W6B	-8.53	2/26/96	1022			5.04	156	78.2	1095	0.25	3.5	249	6999	5.14	159.2	81.2	1137	0.75	19.9	7.765	27.547	15248	6.12		<1	1
W6B	-8.53	3/5/96	930			5.15	160	75.6	1058	0.34	4.8	232	6528	5.17	160.1	79.4	1112	0.59	20.2	7.775	27.430	15183	6.05		<1	<1
W6B	-8.53	4/1/96	947			5.95	184	97.6	1367	0.43	6.0	239	6721	6.04	187.1	100.6	1409	0.61	19.9	7.762	26.975	14931	6.28		<1	<1
W6B	-8.53	5/8/96	949			6.65	206	125.8	1761	0.21	2.9	237	6644	6.79	210.3	135.0	1891	0.76	21.3	7.789	26.703	14781	5.96		<1	<1
W6B	-8.53	6/17/96	949			6.92	214	110.2	1544	0.26	3.6	246	6913	7.20	223.0	114.9	1609	0.63	19.6	7.795	27.220	15067	5.78		<1	<1
W6B	-8.53	7/16/96	937			5.40	167	89.1	1248	0.25	3.5	237	6651	5.67	175.6	92.9	1301	0.82	19.8	7.816	27.528	15237	5.98		<1	<1
W6B	-8.53	8/5/96	1048			5.49	170	71.1	995	0.38	5.3	217	6093	5.53	171.3	75.6	1058	0.67	20.9	7.821	28.445	15745	5.84		<1	<1
W6B	-8.53	9/3/96	949			5.61	174	96.7	1355	0.43	6.0	249	7001	5.63	174.4	99.3	1390	0.73	21.5	7.816	27.951	15472	6.06		<1	<1
W6B	-8.53	10/8/96	1006			5.80	180	98.7	1382	0.22	3.1	251	7035	5.98	185.2	115.4	1616	0.81	20.5	7.814	27.442	15190	5.66		<1	<1
W6B	-8.53	11/4/96	1029			5.36	166	110.2	1544	0.28	3.9	209	5857	5.46	169.1	115.9	1623	0.74	21.0	7.808	27.792	15384	6.17		<1	<1
W6B	-8.53	12/16/96	947			5.21	161	78.9	1105	0.30	4.2	242	6796	5.33	165.1	83.4	1168	0.71	20.2	7.912	28.038	15520	6.00		<1	<1
W6B	-8.53	1/13/97	1021			5.50	170	92	1287	0.12	1.7	216	6058	5.61	173.8	97.5	1365	0.87	19.8	7.833	27.101	15001	6.44		1	<1
W6B	-8.53	2/10/97	927			5.20	161	99	1389	0.23	3.2	218	6111	5.30	164.2	103.9	1455	0.63	19.9	7.847	27.222	15068	6.53		<1	<1
W6B	-8.53	3/10/97	938			5.33	165	126	1759	0.02	0.3	237	6656	5.35	165.7	131.1	1836	0.85	20.1	7.876	26.709	14784	5.92		<1	<1
W6B	-8.53	4/22/97	1017			5.09	158	94	1311	0.31	4.3	240	6735	5.50	170.4	163.9	2296	0.90	19.8	7.870	26.359	14590	6.13		<1	<1
W6B	-8.53	5/27/97	930			5.28	164	90	1258	0.05	0.7	209	5878	5.62	174.1	107.2	1502	0.73	18.4	7.867	27.653	15307	6.08		<1	<1
W6B	-8.53	6/16/97	945			4.56	141	76	1058	0.34	4.8	229	6426	4.76	147.4	85.7	1200	0.75	18.9	7.899	28.055	15529	5.87		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	7/16/97	852			4.22	131	64	901	0.12	1.7	207	5802	4.41	136.6	69.2	969	0.67	19.7	7.909	28.328	15680	5.72		<1	<1
W6B	-8.53	8/25/97	937			3.88	120	60	846	0.27	3.8	205	5746	3.95	122.3	64.1	898	0.63	21.6	8.018	29.073	16093	5.78		<1	<1
W6B	-8.53	9/22/97	927			3.70	115	54	751	0.26	3.6	189	5317	3.79	117.4	54.1	758	0.69	22.7	8.075	29.162	16142	5.66		<1	1
W6B	-8.53	10/14/97	932			5.37	166	81	1129	0.18	2.5	200	5611	5.49	170.0	94.5	1324	0.74	22.3	8.037	28.390	15715	5.92		<1	1
W6B	-8.53	11/3/97	1050			5.17	160	67.6	947	0.16	2.2	197	5536	5.44	168.5	78.4	1098	0.67	22.2	7.995	28.252	15638	6.12		<1	<1
W6B	-8.53	12/15/97	955			4.85	150	62.6	877	0.13	1.8	204	5729	5.04	156.1	66.8	936	0.71	21.3	8.003	28.491	15771	5.66		<1	<1
W6B	-8.53	1/5/98	1058			5.27	163	63.7	892	0.06	0.8	189	5305	5.41	167.6	68.5	959	0.73	19.9	7.968	28.594	15828	5.53		<1	<1
W6B	-8.53	2/2/98	1002			5.43	168	64.8	908	0.10	1.4	205	5760	5.58	172.8	71.5	1001	0.69	19.2	7.936	28.350	15692	5.63		<1	<1
W6B	-8.53	3/9/98	959			6.69	207	79.7	1116	0.15	2.1	217	6089	6.87	212.8	83.4	1168	0.72	19.9	7.761	27.927	15458	5.44		<1	<1
W6B	-8.53	4/13/98	909			5.36	166	68	956	0.13	1.8	211	5915	5.51	170.7	72.3	1013	0.69	19.6	7.802	28.287	15658	5.61		<1	<1
W6B	-8.53	5/11/98	939			5.50	170	74	1036	0.30	4.2	220	6168	5.66	175.3	79.5	1113	0.71	19.7	7.780	27.759	15365	5.59		<1	1
W6B	-8.53	6/1/98	937			5.58	173	66.6	933	0.17	2.4	217	6086	5.73	177.5	69.6	975	0.73	19.3	7.739	27.735	15352	5.67		<1	<1
W6B	-8.53	7/13/98	945			4.77	148	55	776	0.06	0.8	211	5932	5.03	155.8	59	833	0.72	19.0	7.723	28.493	15772	5.79		<1	<1
W6B	-8.53	8/10/98	1002			4.60	142	59.1	828	0.17	2.4	213	5991	4.86	150.5	64.3	901	0.64	19.5	7.691	28.683	15877	5.65		<1	3
W6B	-8.53	9/14/98	953			4.05	125	53.5	749	0.17	2.4	198	5547	4.26	131.9	57	801	0.67	20.3	7.792	29.647	16410	5.96		<1	5
W6B	-8.53	10/12/98	900			3.96	123	55.5	777	0.03	0.4	188	5274	4.18	129.5	60	838	0.72	20.6	7.785	29.740	16462	6.26		<1	<1
W6B	-8.53	11/2/98	922			4.09	127	57.4	804	0.05	0.7	193	5415	4.39	136.0	61.7	864	0.84	21.0	7.812	29.465	16310	5.72		<1	<1
W6B	-8.53	12/15/98	923			4.29	133	77.1	1080	0.08	1.1	192	5390	4.46	138.1	80.4	1126	0.92	20.8	7.828	28.693	15882	5.72		<1	<1
W6B	-8.53	1/11/99	940			4.68	145	88	1231	0.22	3.1	185	5193	4.86	150.5	90	1263	0.98	19.4	7.825	28.973	16037	5.43		<1	1
W6B	-8.53	2/2/99	935			4.35	135	82	1151	0.25	3.5	187	5258	4.56	141.2	91	1268	0.92	19.5	7.843	28.801	15942	5.61		<1	1
W6B	-8.53	3/1/99	940			4.90	152	72.5	1015	0.02	0.3	195	5479	5.10	158.0	76.3	1069	0.88	19.2	7.825	28.531	15793	5.90		<1	<1
W6B	-8.53	4/5/99	938			5.33	165	72.7	1018	0.09	1.3	182	5123	5.50	170.4	76.2	1067	0.71	17.7	7.797	29.404	16276	5.65		<1	<1
W6B	-8.53	5/3/99	938			4.56	141	62.3	873	0.18	2.5	194	5446	4.71	145.9	68.3	957	0.67	18.7	7.772	29.050	16080	4.85		<1	<1
W6B	-8.53	6/1/99	930			4.31	133	58.7	822	0.38	5.3	182	5123	4.54	140.6	63.7	892	0.67	19.0	7.787	29.449	16301	5.75		<1	1
W6B	-8.53	7/14/99	933			3.79	117	64.1	898	0.01	0.1	194	5435	3.84	118.9	66.7	934	0.69	20.5	7.770	29.353	16248	5.64		<1	<1
W6B	-8.53	8/23/99	959			4.14	128	62.3	873	0.15	2.1	183	5137	4.25	131.6	65.5	917	0.71	20.2	7.816	29.650	16412	5.73		<1	<1
W6B	-8.53	9/7/99	949			4.36	135	63.3	887	0.05	0.7	181	5078	4.59	142.2	75.3	1055	0.76	19.6	7.816	29.926	16565	5.73		<1	<1
W6B	-8.53	10/5/99	938			4.25	132	65.6	919	0.01	0.1	185	5204	4.39	136.0	69.3	970	0.72	20.0	7.787	30.007	16610	5.09		<1	<1
W6B	-8.53	11/1/99	1005			4.21	130	64.7	906	0.08	1.1	179	5019	4.31	133.5	69.6	975	0.71	20.3	7.799	29.712	16446	5.26		<1	<1
W6B	-8.53	12/14/99	956			5.61	174	78.0	1093	0.06	0.8	178	5010	5.73	177.5	81.1	1136	0.94	19.8	7.710	29.858	16527	4.66		<1	<1
W6B	-8.53	1/10/00	1022			6.08	188	78.5	1100	0.10	1.4	185	5204	6.14	190.2	85.5	1198	0.88	19.9	7.703	29.289	16212	4.66		<1	<1
W6B	-8.53	2/7/00	1017			6.26	194	77.8	1090	0.20	2.8	194	5460	6.40	198.2	82.1	1150	0.84	19.5	7.744	28.599	15830	5.07		<1	<1
W6B	-8.53	3/21/00	1020			5.80	180	69.9	979	0.07	1.0	189	5311	5.61	173.8	73.1	1024	0.89	18.9	7.738	29.090	16102	5.11		<1	<1
W6B	-8.53	4/10/00	1049			6.14	190	77.2	1081	0.02	0.3	188	5269	5.79	179.3	82.9	1161	0.85	18.8	7.752	28.211	15616	5.03		<1	<1
W6B	-8.53	5/15/00	1008			6.12	190	74.9	1049	0.18	2.5	177	4974	6.13	189.9	81.1	1136	0.82	18.9	7.746	29.714	16447	5.03		<1	<1
W6B	-8.53	6/5/00	1001			6.01	186	73.7	1032	0.03	0.4	192	5378	6.09	188.6	80.7	1130	0.81	19.0	7.731	29.925	16564	4.97		<1	<1
W6B	-8.53	7/26/00	1027			6.05	187	74.0	1036	0.03	0.4	172	4825	6.06	187.7	76.8	1076	0.75	20.3	7.783	30.088	16654	4.95		<1	<1
W6B	-8.53	8/29/00	930			6.79	210	83.9	1175	0.07	1.0	175	4907	6.89	213.4	86.4	1210	0.71	20.2	7.664	29.911	16557	4.72		8	<1
W6B	-8.53	9/5/00	956			6.25	194	78.5	1100	0.04	0.6	170	4775	6.49	201.0	77.5	1086	0.69	20.0	7.709	30.433	16845	4.76		<1	<1
W6B	-8.53	10/24/00	1001			6.58	204	71.2	997	0.16	2.2	179	5027	6.81	210.9	76.2	1067	0.70	21.2	7.745	30.809	17054	4.78		<1	1
W6B	-8.53	11/13/00	942			6.33	196	90.2	1263	0.29	4.1	189	5294	6.52	201.9	95.0	1331	0.72	21.4	7.685	29.752	16469	4.65		<1	<1
W6B	-8.53	12/18/00	944			6.31	195	109	1525	0.21	2.9	177	4974	6.54	202.6	116	1626	0.80	20.1	7.695	29.722	16452	4.70		<1	1

NELHA Water Quality Laboratory

Well 6B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	1/22/01	948			6.50	201	88.8	1244	0.05	0.7	186	5215	6.90	213.7	94.1	1318	1.37	19.6	7.642	29.824	16508	4.59		<1	<1
W6B	-8.53	2/5/01	1007			6.48	201	100	1401	0.12	1.7	185	5204	6.72	208.1	105	1471	0.72	19.7	7.651	29.823	16508	4.75		<1	<1
W6B	-8.53	3/5/01	958			5.75	178	81.5	1142	0.03	0.4	176	4951	5.91	183.1	87.8	1230	0.73	19.8	7.660	29.425	16288	4.56		<1	<1
W6B	-8.53	4/17/01	942			5.73	177	73.4	1028	0.02	0.3	179	5024	5.78	179.0	81.9	1147	0.77	19.6	7.671	29.623	16397	4.93		<1	<1
W6B	-8.53	5/15/01	926			5.53	171	71.2	997	0.13	1.8	181	5081	5.53	171.3	75.2	1053	0.70	19.8	7.691	29.500	16329	5.41		<1	<1
W6B	-8.53	6/12/01	939			5.56	172	70.0	981	0.05	0.7	177	4966	5.49	170.0	74.6	1044	0.69	19.5	7.693	29.663	16419	5.37		<1	<1
W6B	-8.53	7/23/01	1000			5.37	166	70.8	991	0.06	0.8	181	5075	5.40	167.3	75.0	1050	0.70	19.9	7.685	29.969	16589	5.35		2	<1
W6B	-8.53	8/8/01	952			5.26	163	70.1	981	0.07	1.0	180	5044	5.26	162.9	74.2	1039	0.69	20.2	7.718	30.007	16610	5.18		<1	<1
W6B	-8.53	9/19/01	949			5.14	159	66.9	937	0.03	0.4	180	5043	5.14	159.2	72.8	1020	0.75	20.8	7.685	30.112	16668	4.92		<1	<1
W6B	-8.53	10/24/01	922			4.84	150	57.0	799	0.02	0.3	176	4954	5.06	156.7	61.0	855	0.71	21.2	7.735	30.221	16728	5.12		<1	<1
W6B	-8.53	11/7/01	940			5.62	174	58.7	822	0.06	0.8	178	5010	5.70	176.6	68.4	959	0.61	21.1	7.728	30.159	16694	5.53		<1	<1
W6B	-8.53	12/19/01	959			4.54	141	77.1	1080	0.13	1.8	182	5112	4.56	141.2	92.9	1301	0.69	21.2	7.753	29.617	16394	5.31		1	<1
W6B	-8.53	1/9/02	949			4.85	150	75.3	1055	0.18	2.5	188	5280	4.99	154.6	79.5	1114	0.67	20.7	7.731	29.803	16497	5.22		<1	1
W6B	-8.53	2/19/02	1006			4.44	138	62.4	874	0.03	0.4	183	5151	4.62	143.1	74.9	1049	0.61	20.5	7.792	29.944	16575	5.21		1	2
W6B	-8.53	3/20/02	1008			4.46	138	64.5	903	0.14	2.0	179	5019	4.58	141.9	67.5	945	0.59	20.5	7.777	29.716	16449	5.39		<1	<1
W6B	-8.53	4/8/02	1057			4.60	142	65.8	921	0.13	1.8	174	4881	4.78	148.1	70.1	982	0.67	20.0	7.777	29.852	16524	5.32		<1	<1
W6B	-8.53	5/29/02	1042			4.68	145	68.7	963	0.15	2.1	185	5196	4.48	138.8	72.6	1017	0.64	20.3	7.722	29.542	16352	5.41		<1	3
W6B	-8.53	6/17/02	1015			4.67	145	65.6	919	0.09	1.3	173	4864	4.83	149.6	69.2	969	0.63	20.5	7.768	30.083	16652	5.40		<1	<1
W6B	-8.53	7/15/02	1019			4.56	141	63.3	887	0.10	1.4	181	5095	4.76	147.4	69.4	972	0.79	21.7	7.772	30.112	16668	5.08		<1	29
W6B	-8.53	8/20/02	1012			4.72	146	67.1	940	0.21	2.9	178	5010	4.98	154.2	66.0	924	0.63	20.9	7.740	30.035	16625	5.24		<1	3
W6B	-8.53	9/23/02	1055			4.38	136	58.9	824	0.27	3.8	181	5092	4.56	141.2	61.5	861	0.75	21.7	7.771	30.484	16874	4.98		<1	<1
W6B	-8.53	10/14/02	948			4.29	133	58.1	814	0.05	0.7	172	4819	4.39	136.0	55.9	783	0.62	22.3	7.832	30.217	16726	6.72		<1	63
W6B	-8.53	11/4/02	958			4.40	136	63.9	895	0.02	0.3	182	5100	4.55	140.9	61.1	856	0.79	22.3	7.800	29.668	16422	5.02		<1	<1
W6B	-8.53	12/17/02	1026			5.17	160	62.9	881	0.06	0.8	175	4918	5.27	163.2	66.3	929	0.77	21.7	7.786	30.035	16625	4.94		<1	1
W6B	-8.53	1/21/03	1110			5.00	155	75.0	1050	0.05	0.7	172	4817	5.14	159.2	82.7	1159	0.71	20.6	7.759	30.266	16753	4.70		<1	1
W6B	-8.53	2/12/03	1045			4.36	135	61.5	861	0.03	0.4	193	5412	4.48	138.8	72.7	1018	0.58	20.5	7.824	30.002	16607	5.23		<1	<1
W6B	-8.53	3/19/03	1021			4.37	135	58.7	822	0.02	0.3	188	5272	4.51	139.7	69.0	966	0.64	21.1	7.823	29.655	16415	5.27		<1	1
W6B	-8.53	4/28/03	1008			4.43	137	60.5	847	0.14	2.0	182	5100	4.40	136.3	67.7	948	0.56	21.0	7.863	29.759	16472	5.67		<1	<1
W6B	-8.53	5/12/03	940			4.36	135	61.1	856	0.03	0.4	178	5002	4.47	138.5	77.5	1086	0.58	20.6	7.877	29.982	16596	5.88		<1	<1
W6B	-8.53	6/3/03	955			4.53	140	65.7	921	0.29	4.1	180	5050	4.65	144.0	74.4	1042	0.60	22.4	7.683	29.716	16449	5.56		<1	<1
W6B	-8.53	7/29/03	1018			4.81	149	62.7	878	0.03	0.4	180	5047	4.97	153.9	81.1	1136	NA	21.4	7.842	27.947	15469	5.34		<1	<1
W6B	-8.53	8/26/03	1020			4.00	124	59.2	829	0.02	0.3	176	4937	4.15	128.5	67.2	941	NA	22.2	7.848	30.142	16684	5.24		<1	<1
W6B	-8.53	9/15/03	1009			4.08	126	62.8	880	0.33	4.6	178	4988	4.28	132.6	80.8	1132	NA	22.7	7.815	30.119	16672	5.51		<1	<1
W6B	-8.53	10/6/03	1003			4.18	129	67.8	949	0.46	6.4	176	4937	4.30	133.2	72.0	1009	NA	22.1	7.816	30.211	16723			<1	TNTC
W6B	-8.53	10/28/03	1035			4.76	147	66.6	932	0.10	1.4	181	5069	4.92	152.4	71.9	1007	NA	22.6	7.806	30.063	16641			<1	48
W6B	-8.53	11/14/03	1340																22.6				4.79			
W6B	-8.53	12/15/03	947																22.3	7.813						
W6B	-8.53	12/17/03	852			3.92	121	55.6	779	0.36	5.0	167	4676	4.05	125.4	59.2	829	NA	22.3	7.834	30.482	16873	4.68		<1	<1
W6B	-8.53	1/26/04	956			4.24	131	88.7	1242	0.20	2.8	178	4994	4.40	136.3	93.3	1307	NA	21.8	7.743	29.211	16169	5.11		<1	<1
W6B	-8.53	2/5/04	957			4.06	126	97.1	1361	0.17	2.4	183	5145	4.16	128.9	110	1544	NA	21.5	7.731	29.152	16136	4.77		<1	<1
W6B	-8.53	3/2/04	1046			3.86	120	87.6	1227	0.40	5.6	171	4791	3.86	119.6	94.5	1324	NA	21.2	7.772	29.740	16462	3.98		<1	<1
W6B	-8.53	4/20/04	1002			3.96	123	127	1776	0.02	0.3	176	4935	3.80	117.7	129	1808	NA	20.8	7.726	29.347	16244	4.39		<1	<1
W6B	-8.53	5/11/04	917			3.77	117	112	1565	0.24	3.4	171	4805	3.70	114.6	116	1628	NA	20.8	7.765	28.85	15969	5.70		<1	<1
W6B	-8.53	6/2/04	1004			4.62	143	108	1509	0.17	2.4	173	4859	4.64	143.7	109	1525	NA	17.6	7.681	28.90	15997	5.50		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	7/14/04	1003				3.32	103	100	1402	0.22	3.1	173	4870	3.26	101.0	112	1570	NA	21.8	7.747	29.20	16163	4.02		<1	<1
W6B	-8.53	8/23/04	1003				3.46	107	91.8	1286	0.33	4.6	175	4923	3.58	110.9	94.6	1326	NA	22.3	7.712	29.22	16174	4.17		<1	<1
W6B	-8.53	9/2/04	1022				3.86	120	92.5	1296	0.11	1.5	183	5126	3.87	119.9	96.2	1347	NA	22.4	7.697	29.15	16135	4.05		<1	<1
W6B	-8.53	10/4/04	936				3.88	120	86.9	1216	0.36	5.0	169	4741	4.02	124.5	95.4	1336	NA	22.7	7.745	29.72	16451	4.20		18	>5,000
W6B	-8.53	11/9/04	900				5.02	155	102	1422	0.38	5.3	181	5069	5.38	166.6	113	1577	NA	22.5	7.683	29.90	16550	4.04		<1	1
W6B	-8.53	12/6/04	940				4.46	138	93.3	1307	0.18	2.5	167	4693	4.66	144.3	108	1514	NA	22.4	7.797	29.47	16312	4.38		<1	7
W6B	-8.53	1/10/05	906				5.08	157	109	1527	0.06	0.8	185	5207	5.24	162.3	113	1581	NA	22.1	7.699	29.133	16126	3.86		<1	<1
W6B	-8.53	2/9/05	908				5.17	160	125	1744	0.05	0.7	185	5201	5.36	166.0	165	2317	NA	18.9	7.690	28.950	16025	4.25		<1	<1
W6B	-8.53	3/15/05	937				4.68	145	149	2083	0.26	3.6	178	4988	4.84	149.9	162	2262	0.59	20.7	7.743	29.561	16363	3.37		<1	18
W6B	-8.53	4/19/05	853				4.74	147	137	1922	0.13	1.8	179	5013	4.78	148.1	144	2017	NA	20.5	7.735	29.531	16346	4.07		<1	1
W6B	-8.53	5/23/05	926				4.50	139	125	1747	0.29	4.1	188	5291	4.47	138.5	124	1742	NA	20.8	7.669	28.954	16027	4.26		<1	1
W6B	-8.53	6/15/05	957				4.15	129	103	1437	0.14	2.0	172	4834	4.24	131.3	112	1570	NA	20.8	7.713	29.631	16402	4.55		<1	<1
W6B	-8.53	7/18/05	854				4.16	129	96.4	1350	0.09	1.3	179	5030	4.28	132.6	97.3	1363	0.56	19.7	7.715	29.866	16532	4.54		1	2
W6B	-8.53	8/9/05	915				4.10	127	92.1	1290	0.23	3.2	172	4828	4.32	133.8	98.4	1379	0.62	21.7	7.752	29.867	16532	4.46		<1	<1
W6B	-8.53	9/20/05	910				4.20	130	89.7	1257	0.20	2.8	178	4996	4.36	135.0	92.4	1294	0.70	21.9	7.769	29.824	16508	4.81		<1	2
W6B	-8.53	10/17/05	906				4.00	124	125	1756	0.15	2.1	186	5224	4.10	127.0	128	1790	NA	22.7	7.774	29.913	16558	6.77		<1	1
W6B	-8.53	11/7/05	840				3.68	114	137	1925	3.79	53.1	170	4769	3.90	120.8	153	2149	NA	22.6	7.778	30.156	16692	3.58		<1	170
W6B	-8.53	12/19/05	843				3.62	112	109	1531	0.18	2.5	173	4856	3.68	114.0	125	1752	0.68	22.4	7.781	30.1	16661	4.28		<1	<1
W6B	-8.53	1/23/06	854				3.68	114	99.9	1399	0.27	3.8	179	5036	3.78	117.1	106	1483	NA	21.8	7.778	30.049	16633	4.40		<1	1
W6B	-8.53	2/14/06	902				3.65	113	90.7	1271	0.28	3.9	177	4968	3.88	120.2	92.1	1289	0.55	21.6	7.770	29.762	16474	4.53		<1	1
W6B	-8.53	3/20/06	858				3.67	114	80.2	1123	0.26	3.6	170	4775	3.69	114.3	81.3	1139	0.57	21.4	7.815	29.867	16532	4.81		<1	<1
W6B	-8.53	4/25/06	930				3.56	110	92.9	1301	0.22	3.1	166	4662	3.60	111.5	79.1	1108	0.57	21.2	7.826	29.706	16443	4.97		<1	<1
W6B	-8.53	5/22/06	918				3.44	107	86.2	1207	0.21	2.9	164	4606	3.93	121.7	77.6	1087	0.62	20.9	7.792	29.729	16456	4.59		<1	<1
W6B	-8.53	6/26/06	922				3.31	103	78.4	1098	0.20	2.8	168	4718	3.50	108.4	75.3	1055	0.96	21.7	7.797	29.904	16553	5.07		<1	<1
W6B	-8.53	7/20/06	924				3.26	101	73.5	1029	0.28	3.9	159	4466	3.62	112.1	66.2	927	0.65	22.5	7.803	30.056	16637	4.91		<1	<1
W6B	-8.53	8/7/06	948				3.20	99	71.5	1001	0.21	2.9	163	4578	3.44	106.5	63.1	884	0.57	21.9	7.822	30.321	16783	4.88		<1	<1
W6B	-8.53	9/18/06	922				3.40	105	70.3	985	0.32	4.5	160	4494	3.66	113.4	63.9	895	0.65	21.9	7.817	30.621	16950	4.77		<1	<1
W6B	-8.53	10/23/06	925				3.52	109	70.5	987	0.25	3.5	177	4971	3.72	115.2	67.4	943	0.66	22.5	7.787	30.225	16730	4.81		1	<1
W6B	-8.53	11/27/06	909				3.32	103	105	1471	0.28	3.9	163	4578	3.50	108.4	96.4	1350	0.63	22.6	7.839	30.399	16827	4.69		<1	<1
W6B	-8.53	12/11/06	1010				3.33	103	102	1429	0.34	4.8	160	4494	3.51	108.7	92.2	1292	0.61	22.4	7.837	30.594	16935	4.72		<1	<1
W6B	-8.53	1/8/07	1104				3.48	108	92.6	1297	0.29	4.1	159	4466	3.64	112.7	85.0	1191	0.54	22.2	7.822	30.356	16803	5.40		<1	<1
W6B	-8.53	2/20/07	1001				3.44	107	75.5	1058	0.48	6.7	166	4662	3.68	114.0	83.8	1174	0.68	22.1	7.826	29.880	16539	5.93		<1	<1
W6B	-8.53	3/5/07	936				3.46	107	88.9	1245	0.41	5.7	172	4831	3.66	113.4	94.3	1321	0.59	22.2	7.803	29.607	16388	5.10		<1	<1
W6B	-8.53	4/18/07	1000				3.53	109	86.5	1212	0.21	2.9	174	4887	3.69	114.3	73.9	1034	0.52	21.7	7.825	29.104	16110	5.50		<1	<1
W6B	-8.53	5/1/07	952				3.46	107	77.7	1088	0.31	4.3	173	4859	3.63	112.4	73.1	1024	0.57	21.2	7.833	29.393	16270	5.36		<1	<1
W6B	-8.53	6/18/07	932				3.32	103	76.5	1071	0.20	2.8	173	4859	3.49	108.1	71.2	997	0.49	21.6	7.854	29.616	16393	5.74		<1	2
W6B	-8.53	7/23/07	1512	-2.11	0.52	Flood	2.21	69	42.5	595	0.00	0.0	101	2824	2.69	83.3	43.2	605		22.5	7.71	30.58	16927	4.60			
W6B	-8.53	8/27/07	1510	-1.98	0.52	Flood	3.25	101	98.3	1376	0.11	1.6	156	4392	3.27	101.3	99.2	1389		22.7	7.78	30.27	16755	4.90			
W6B	-8.53	9/18/07	1624	-2.26	0.24	Ebb	3.18	98	96.8	1356	0.05	0.7	164	4609	3.31	102.6	94.4	1323		22.6	7.75	30.52	16894	4.45			
W6B	-8.53	10/23/07	1537	-2.06	0.52	High	2.64	82	101.5	1422	0.10	1.4	144	4052	2.69	83.4	96.3	1349		22.6	7.70	30.25	16744	5.37			
W6B	-8.53	11/20/07	1324	-2.21	0.38	Ebb	2.87	89	91.4	1280	0.07	1.0	164	4620	2.54	78.7	96.7	1355		22.4	7.71	29.89	16545	4.70			
W6B	-8.53	12/19/07	1340	-2.39	0.30	High	3.25	101	107.4	1504	1.57	22	161	4511						21.3	7.65	28.63	15847	5.39			

NELHA Water Quality Laboratory

Well 6B Data Table

6/23/1989 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	1/28/08	924	-2.31	0.24	Ebb	2.19	68	120.2	1683	0.14	1.9	133	3745						19.7	7.44	28.92	16008	1.82			
W6B	-8.53	2/26/08	1401	-2.44	0.03	Ebb	2.62	81	130.3	1825	0.59	8.3	147	4121						19.4	7.54	28.76	15919	3.42			
W6B	-8.53	3/17/08	1507	-2.44	0.21	Flood	4.17	129	129.9	1819	0.06	0.8	157	4397						16.6	7.71	29.53	16346	4.21			
W6B	-8.53	4/29/08	1138	-2.24	0.09	Flood	3.69	114	118.4	1658	0.09	1.2	154	4319						19.9	7.54	29.49	16323	4.60			
W6B	-8.53	5/28/08	1120	-2.18	0.18	Flood	3.44	106	96.4	1350	0.21	3.0	177	4958						20.5	7.64	29.37	16257	3.88			
W6B	-8.53	6/17/08	1153	-2.44	0.00	Flood	3.89	120	88.2	1236	0.75	10.5	158	4424						20.9	7.43	29.17	16146	2.61	0.13		
W6B	-8.53	7/22/08	1140	-2.46	0.30	Ebb	3.36	104	80.8	1132	0.35	4.9	161	4532						22.9	7.58	29.43	16290	3.63			
W6B	-8.53	8/30/08	1142		-0.09	Low	3.38	105	78.5	1099	0.14	1.9	170	4763						21.1	7.62	29.33	16235	4.25			
W6B	-8.53	9/16/08	1123	-2.54	0.12	Ebb	3.34	103	80.2	1124	0.22	3.1	168	4725						21.7	7.47	29.06	16085	5.65			
W6B	-8.53	10/28/08	1056	-2.51	0.30	Ebb	3.87	120	86.6	1214	0.18	2.5	168	4714						20.8	7.22	31.81	17608	3.49	0.3		
W6B	-8.53	11/13/08	1121	-2.51	0.12	Ebb	3.44	106	75.5	1057	0.16	2.2	163	4585						21.7	7.70	29.38	16263	3.99	0.48		
W6B	-8.53	12/15/08	1423	-2.56	0.61	Ebb	4.45	138	94.3	1321	0.11	1.5	173	4857						22.0	7.80	28.77	15925	4.72			
W6B	-8.53	1/22/09	1107	-2.54	0.15	High	4.16	129	100.0	1401	0.59	8.3	176	4956						20.2	7.61	28.67	15870	3.39	0.16		
W6B	-8.53	2/24/09	1038	-2.66	0.06	Low	3.93	122	155.9	2183	0.49	6.9	220	6172						20.0	7.48	27.57	15261	3.06	0.11		
W6B	-8.53	3/16/09	1117	-2.61	0.09	Ebb	3.42	106	91.7	1285	0.29	4.0	161	4526						20.2	7.39	27.68	15322	4.32	0.12		
W6B	-8.53	4/30/09	1622	-2.72	0.24	Flood	5.31	165	85.4	1196	0.43	6.0	139	3902						19.4	7.92	28.16	15587	4.87			
W6B	-8.53	5/29/09	1039	-2.40	0.21	Ebb	4.43	137	81.8	1146	0.21	2.9	213	5996						18.2	7.68	28.43	15737	5.06	0.11		
W6B	-8.53	6/16/09	1427	-2.27	0.40	Flood	2.86	89	49.1	688	0.28	3.9	113	3163						18.0	8.21	28.86	15975	5.55	0.24		
W6B	-8.53	7/14/09	1354	-2.40	0.37	Ebb	2.79	86	53.6	751	0.33	4.6	103	2895						19.4	7.74	29.08	16097	4.65	0.24		
W6B	-8.53	8/19/09	1407	-1.93	0.67	Flood	3.78	117	73.2	1026	1.34	18.7	157	4412						19.4	7.13	29.82	16506	4.97	0.22		
W6B	-8.53	9/21/09	1551	-2.37	0.30	Flood	3.75	116	77.7	1088	0.36	5	137	3860						20.6	8.19	29.77	16478	4.67	0.33		
W6B	-8.53	10/22/09	1624	-2.53	0.18	Flood	3.57	111	70.4	987	0.56	7.9	92	2583						20.8	7.71	29.43	16290	4.86	0.57		
W6B	-8.53	11/17/09	858	-2.46	0.30	Ebb	3.88	120	65.2	913	0.87	12.2	230	6474						20.8	7.70	29.33	16235	4.92	0.07		
W6B	-8.53	12/8/09	919	-2.17	0.55	High	3.75	116	72.0	1009	1.00	14	201	5657						20.7	7.71	29.14	16130	5.22	0.08		
W6B	-8.53	1/6/10	842	-2.20	0.43	High	3.29	102	69.8	977	1.36	19	182	5112						20.2	7.67	28.85	15969	5.09	0.63		
W6B	-8.53	2/2/10	843	-1.98	0.37	Ebb	3.94	122	89.8	1258	0.71	10	172	4827						20.2	7.77	28.77	15925	5.15	0.61		
W6B	-8.53	3/10/10	817	-2.64	0.09	Low	4.16	129	82.3	1153	0.43	6	204	5720						19.6	7.74	28.08	15543	5.16	0.37		
W6B	-8.53	4/6/10	1421	-2.60	0.12	Ebb	4.29	133	71.6	1003	0.79	11	198	5562						21.4	7.75	25.94	14358	5.70	0.12		
W6B	-8.53	5/11/10	1447	-2.04	0.55	High	3.68	114	55.4	776	1.21	17	192	5405						18.6	7.79	28.95	16025	5.79	0.60		
W6B	-8.53	6/16/10	1014	-2.38	0.15	Ebb	3.87	120	67.2	941	1.14	16	211	5933						18.8	7.82	28.98	16041	5.12	0.17		
W6B	-8.53	7/13/10	1458	-2.27	0.40	Flood	3.78	117	65.0	910	0.64	9	220	6192						19.4	7.76	29.19	16157	5.44	0.36		
W6B	-8.53	8/3/10	1459	-2.19	0.40	Ebb	4.00	124	64.5	904	0.28	3.9	206	5780						19.5	7.78	29.39	16268	5.62	0.30		
W6B	-8.53	9/14/10	1510	-2.34	0.30	Ebb	3.68	114	66.8	935	0.29	4.1	207	5821						19.9	7.75	29.42	16285	5.42	0.66		
W6B	-8.53	10/12/10	1533	-2.41	0.18	Low	3.62	112	66.8	935	0.68	9.5	201	5637						19.9	7.75	29.35	16246	5.21	0.19		
W6B	-8.53	11/16/10	1423	-2.18	0.34	Ebb	3.58	111	70.9	993	0.16	2.3	199	5597						19.9	7.75	29.74	16462	5.42	0.28		
W6B	-8.53	12/14/10	1450	-2.45	0.12	Ebb	3.75	116	87.6	1227	0.09	1.2	175	4902						19.7	7.77	29.17	16146	5.45	0.16		
W6B	-8.53	1/4/11	1433	-2.45	0.15	Flood	3.84	119	86.5	1211	0.48	6.7	192	5396						19.3	7.71	28.67	15870	5.65	0.37		
W6B	-8.53	4/5/11	1452	-2.31	0.34	Flood	4.00	124	80.3	1125	0.13	1.8	192	5396						17.0	7.72	27.77	15371	5.57	0.20		
W6B	-8.53	7/11/11	1152	-2.22	0.49	Flood	3.81	118	82.7	1159	0.14	2.0	214	5997						18.6	7.70	28.65	15859	5.69	0.27		
W6B	-8.53	10/11/11	1336	-2.32	0.34	Flood	3.49	108	58.9	825	0.28	3.9	201	5653						19.5	7.67	29.43	16290	4.03	0.29		
W6B	-8.53	1/9/12	1445	-2.67	0.15	Flood	4.62	143	77.2	1082	0.11	1.5	198	5569						18.9	7.70	28.24	15632	3.32	0.11		
W6B	-8.53	4/30/12	1503	-2.36	0.24	ebb	4.46	138	73.9	1035	0.06	0.9	214	6023						17.0	7.60	28.70	15886	4.95	0.21		
W6B	-8.53	7/17/12	1522	-1.92	0.73	Flood	4.20	130	95.0	1331	0.22	3.1	210	5890						17.6	7.47	29.40	16274	3.58	0.51		
W6B	-8.53	10/15/12	1332	-2.37	0.24	Flood	3.97	123	75.2	1054	0.07	1.0	219	6153						17.8	7.44	29.31	16224	2.16	0.24		
W6B	-8.53	1/7/13	1418	-2.39	0.18	Ebb	4.88	151	89.5	1254	0.44	6.2	264	7426						17.6	7.49	28.45	15748	4.75	0.08		
W6B	-8.53	4/8/13	1339	-2.25	0.37	Flood	4.68	145	70.7	990	0.31	4.3	221	6210						16.5	7.51	28.21	15615	4.22	0.18		

NELHA Water Quality Laboratory

Well 6B Data Table

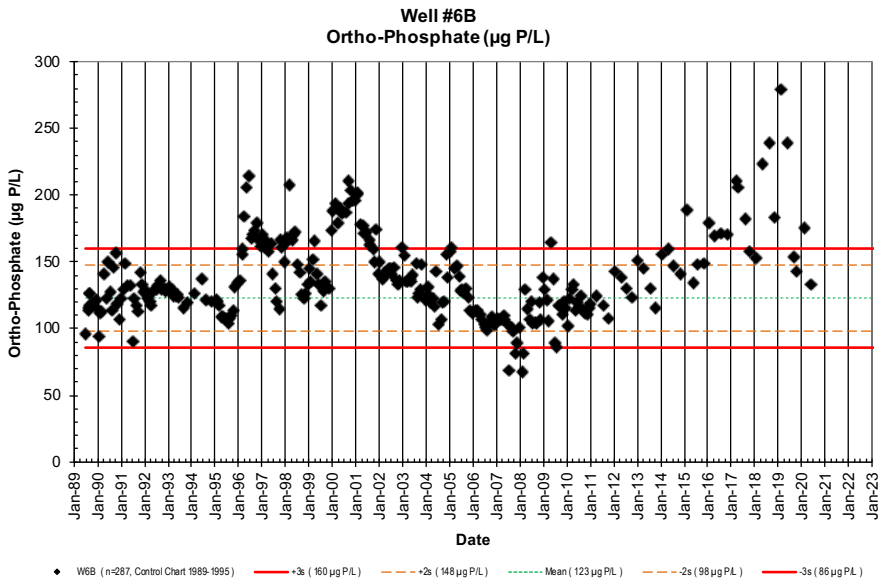
6/23/1989 - 7/21/20

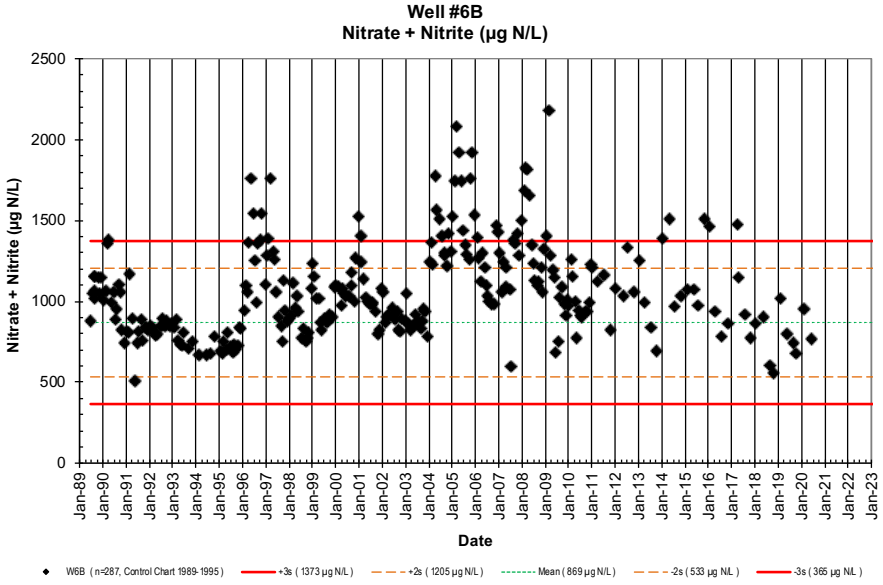
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W6B	-8.53	7/16/13	1622	-2.37	0.30	Ebb	4.20	130	59.7	836	0.18	2.5	230	6449						17.7	7.44	28.86	15975	2.84	0.30		
W6B	-8.53	10/14/13	1701	-2.37	0.18	Ebb	3.75	116	49.6	695	0.32	4.5	219	6144						18.4	7.50	28.90	15997	3.28	0.18		
W6B	-8.53	1/14/14	1554	-2.31	0.18	Ebb	5.04	156	99.2	1389	0.39	5.4	220	6170						18.0	7.56	28.64	15853	4.38	0.93		
W6B	-8.53	4/28/14	1551	-2.01	0.52	Flood	5.17	160	108.0	1513	0.37	5.2	206	5782						18.3	7.68	28.27	15648	3.55	0.10		
W6B	-8.53	7/28/14	15.49	-2.07	0.49	Flood	4.75	147	69.4	972	0.14	2	207	5827						18.3	7.53	29.30	16218	3.95	0.12		
W6B	-8.53	11/3/14	13.15	-2.04	0.46	High	4.55	141	73.8	1033	0.09	1.3	196	5512						18.9	7.55	28.89	15991	4.57	0.21		
W6B	-8.53	2/9/15	1713	-2.35	0.18	Low	6.11	189	76.9	1077	0.45	6.3	183	5152						17.6	7.54	28.23	15626	5.17	0.13		
W6B	-8.53	5/19/15	1034	-2.33	-0.06	Low	4.33	134	76.6	1073	0.74	10.3	210	5898						18.0	7.57	28.10	15554	4.25	0.02		
W6B	-8.53	7/21/15	1328	-2.51	0.18	Low	4.78	148	69.9	979	0.02	0.3	210	5906						18.7	7.41	29.06	16085	3.02	0.07		
W6B	-8.53	11/9/15	1053	-2.28	0.25	Flood	4.79	148	108.0	1513	0.26	3.6	193	5430						20.3	7.44	28.56	15809	3.81	0.18		
W6B	-8.53	1/26/16	1048	-2.49	0.07	Low	5.78	179	104.0	1457	0.02	0.3	202	5660						20.3	7.44	28.57	15814	3.45	0.07		
W6B	-8.53	4/21/16	1204	-2.46	0.20	Flood	5.48	170	66.9	938	0.39	5.4	184	5179						19.2	7.48	29.10	16108	4.38	0.10		
W6B	-8.53	7/26/16	921	-2.25	0.20	Flood	5.53	171	55.6	779	0.08	1.1	170	4764						19.4	7.47	29.21	16168	3.81	0.11		
W6B	-8.53	11/10/16	1140	-2.13	0.55	High	5.49	170	61.6	863	0.79	11.1	175	4908						19.7	7.38	29.10	16108	4.46	0.14		
W6B	-8.53	3/21/17	1523	-2.33	0.10	Ebb	6.81	211	105.5	1477	0.17	2.4	181	5087						19.7	7.73	29.39	16268	3.34	0.11		
W6B	-8.53	4/13/17	1438	-2.30	0.35	Flood	6.62	205	82.0	1148	0.26	3.6	189	5299						19.4	7.78	29.12	16119	2.35	0.30		
W6B	-8.53	8/4/17	1125	-2.15	0.30	Flood	5.89	182	65.4	916	0.03	0.4	178	5008						19.9	7.77	30.14	16683	3.44	0.07		
W6B	-8.53	10/19/17	947	-2.40	0.09	Low	5.08	157	55.3	775	0.24	3.4	184	5166						20.0	7.66	29.29	16213	3.50	0.16		
W6B	-8.53	1/17/18	1313	-2.48	0.15	Flood	4.95	153	61.3	859	0.13	1.8	184	5159						20.3	7.55	28.97	16036	3.00	0.07		
W6B	-8.53	5/10/18	1123	-2.30	0.35	Flood	7.21	223	64.5	904	0.08	1.1	174	4898						18.3	7.90	33.16	18355	1.80	0.06		
W6B	-8.53	8/20/18	1050	-2.16	0.52	Flood	7.72	239	43.3	607	0.30	4.2	181	5078						20.2	7.81	28.86	15975	1.77	0.08		
W6B	-8.53	10/25/18	1332	-2.33	0.22	Flood	5.90	183	39.8	557	0.06	0.9	170	4786						21.7	7.80	29.26	16196	1.76	0.12		
W6B	-8.53	2/7/19	1341	-2.63	0.18	Flood	9.00	279	72.7	1018	0.06	0.8	173	4857						19.7	7.81	29.08	16097	4.02	0.10		
W6B	-8.53	5/16/19	1136	-2.46	0.35	Flood	7.70	239	56.9	797	0.09	1.2	172	4817						18.9	7.69	30.01	16611	3.98	0.10		
W6B	-8.53	8/29/19	909	-2.54	-0.05	Low	4.97	154	53.2	746	0.15	2.1	190	5322						20.2	7.79	29.25	16191	4.04	0.24		
W6B	-8.53	10/10/19	1346	-1.95	0.50	High	4.61	143	48.2	676	0.99	13.8	181	5092						22.1	7.86	30.15	16689	3.49	0.19		
W6B	-8.53	2/4/20	1413	-2.39	0.10	Ebb	5.65	175	68.2	956	-0.40	-5.6	175	4922						20.2	7.82	29.44	16296	3.78	0.07		
W6B	-8.53	6/2/20	1013	-2.29	0.20	Flood	4.31	134	54.8	767	0.34	4.8	168	4707						19.2	7.77	29.83	16512	3.76	0.08		
W6B	-8.53	7/1/20																									
W6B	-8.53	10/1/20																									
W6B	-8.53	1/1/21																									
W6B	-8.53	4/1/21																									
W6B	-8.53	7/1/21																									
W6B	-8.53	10/1/21																									
W6B	-8.53	1/1/22																									
W6B	-8.53	4/1/22																									
W6B	-8.53	7/1/22																									
W6B	-8.53	10/1/22																									
W6B	-8.53	1/1/23																									
W6B	-8.53	4/1/23																									
Mean				-2.33	0.27		4.44	137	75.70	1060	0.24	3.4	206	5770	4.61	143	80	1114	0.72	19.8	7.73	28.70	15831	5.20	0.23		
Std. Dev.				0.19	0.17		0.98	30	20.28	284	0.31	4.4	51	1428	0.89	28	22	315	0.15	1.7	0.13	1.27	1172	1.09	0.18		
Maximum				-1.92	0.73		9.00	279	156	2183	3.79	53.1	649	18227	7.20	223	165	2317	1.37	22.9	8.21	33.16	18355	7.63	0.93		
Minimum				-2.72	-0.09		2.19	68	36	506	-0.40	-5.6	92	2583	2.54	79	33	457	0.29	16.0	7.13	25.73	0	1.76	0.02		
n				79	80		287	287	287	287	286	287	280	279	206	206	206	206	174	288	287	285	286	285	64		

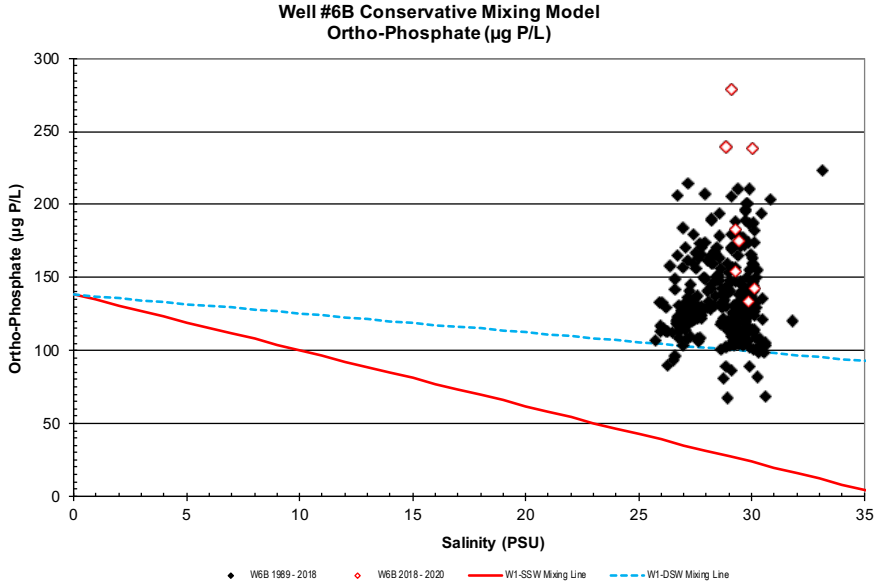
NELHA Water Quality Laboratory

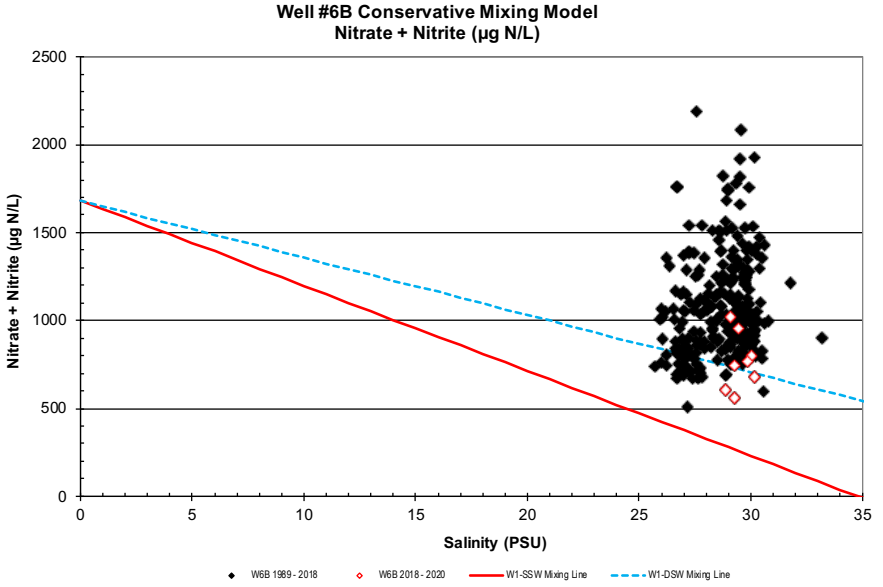
Well 6B Charts

6/23/1989 - 7/21/20





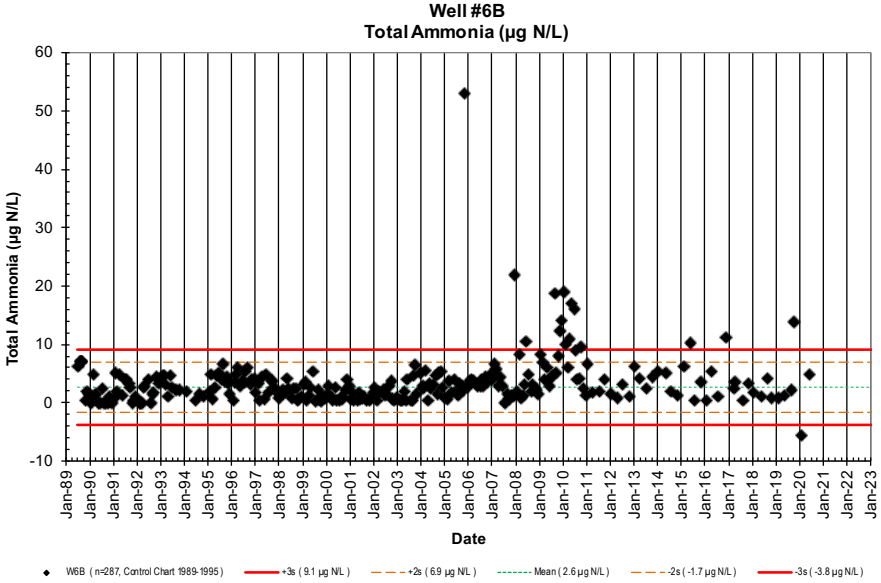


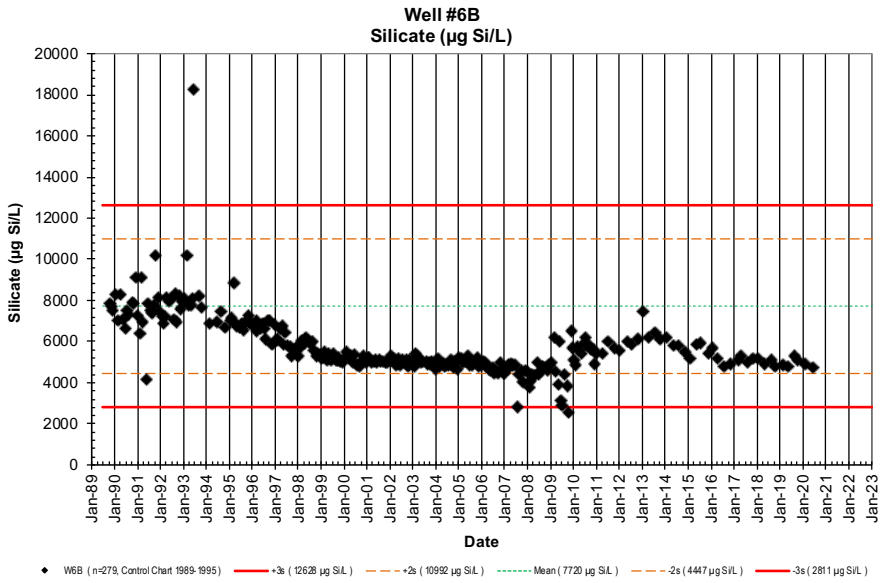


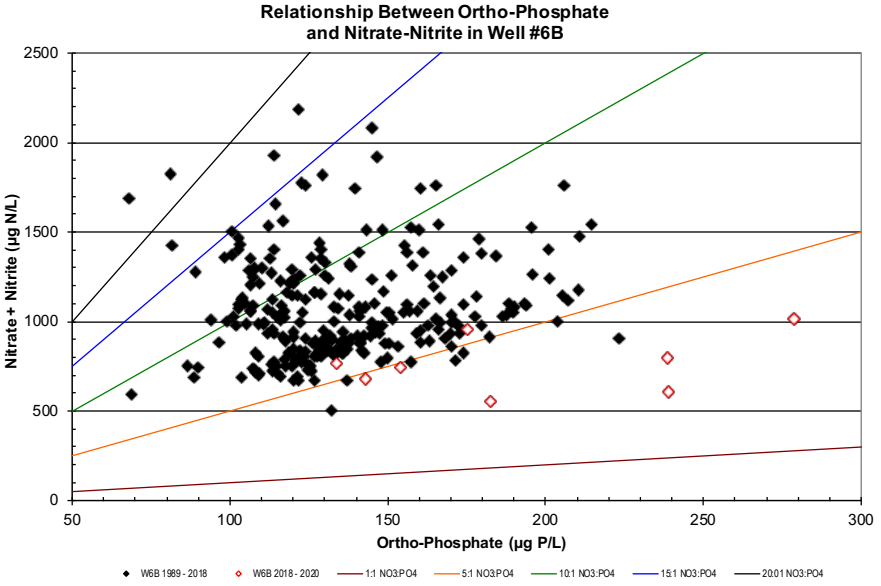
NELHA Water Quality Laboratory

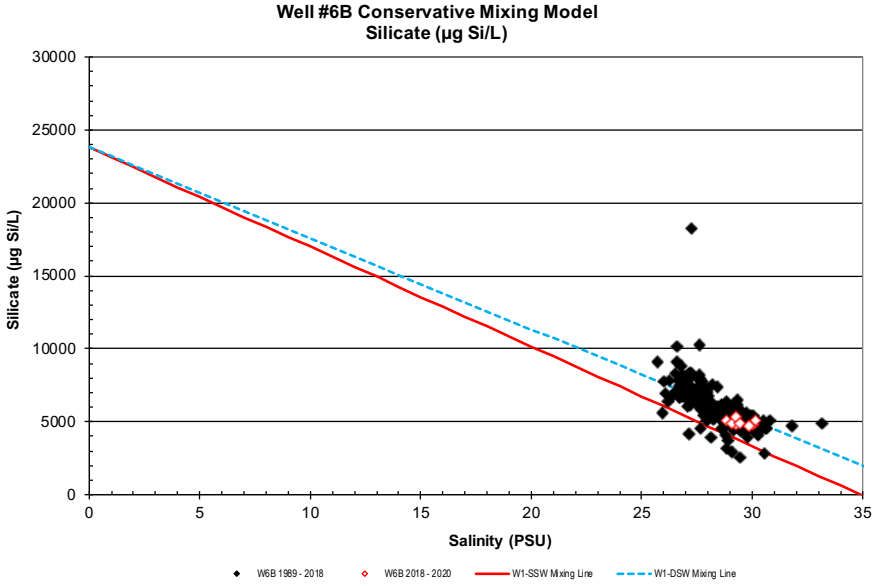
Well 6B Charts

6/23/1989 - 7/21/20







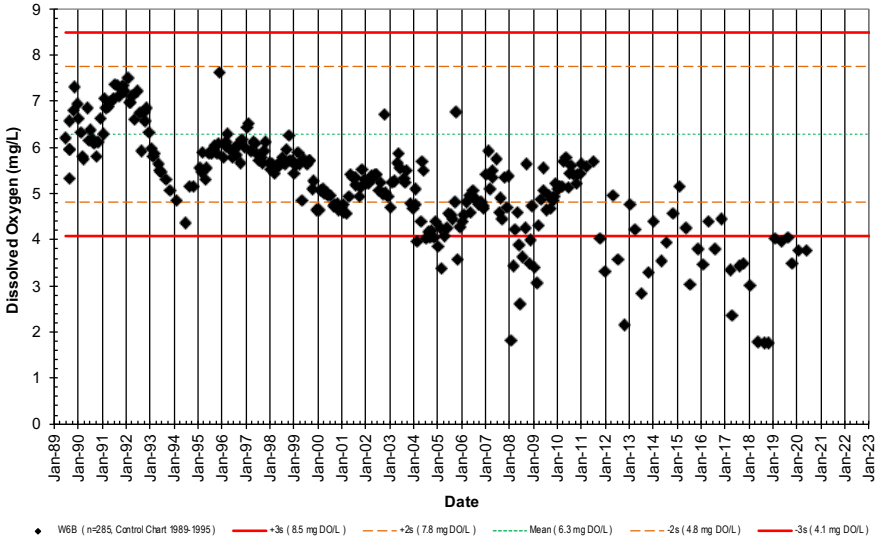


NELHA Water Quality Laboratory

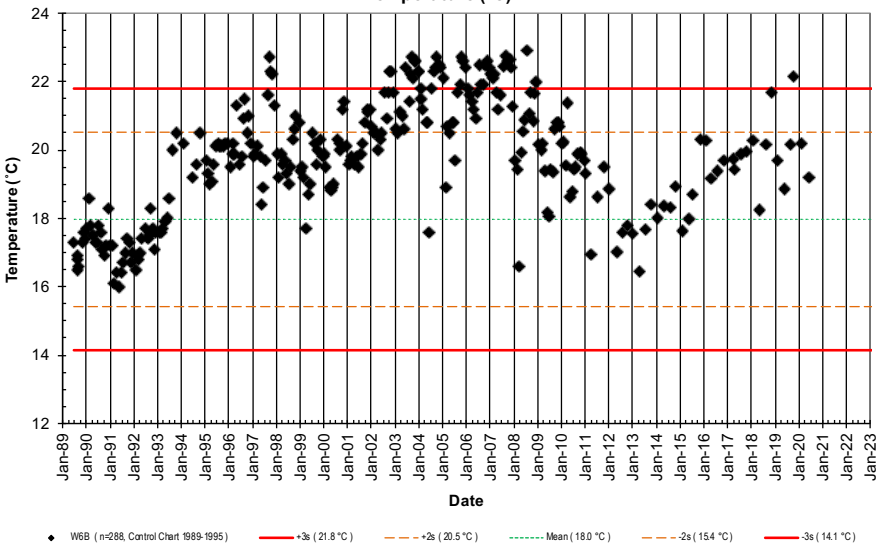
Well 6B Charts

6/23/1989 - 7/21/20

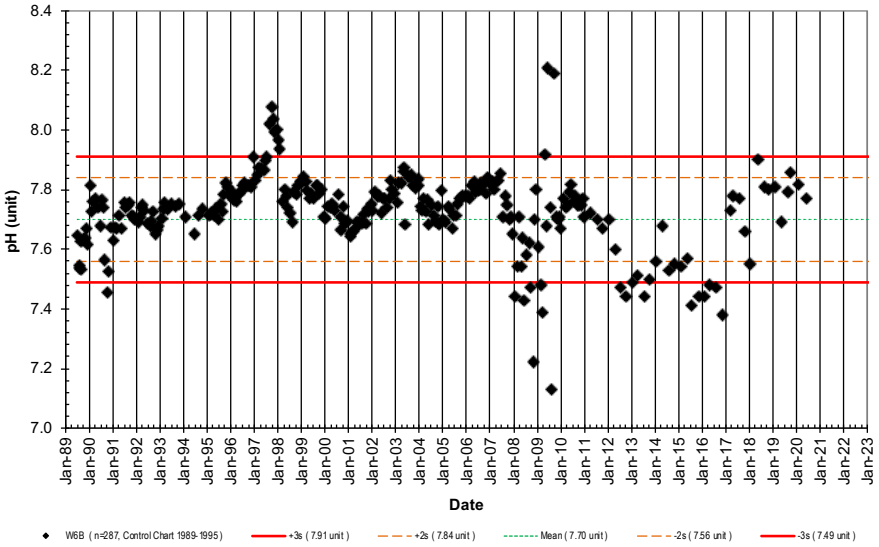
Well #6B
Dissolved Oxygen (mg DO/L)



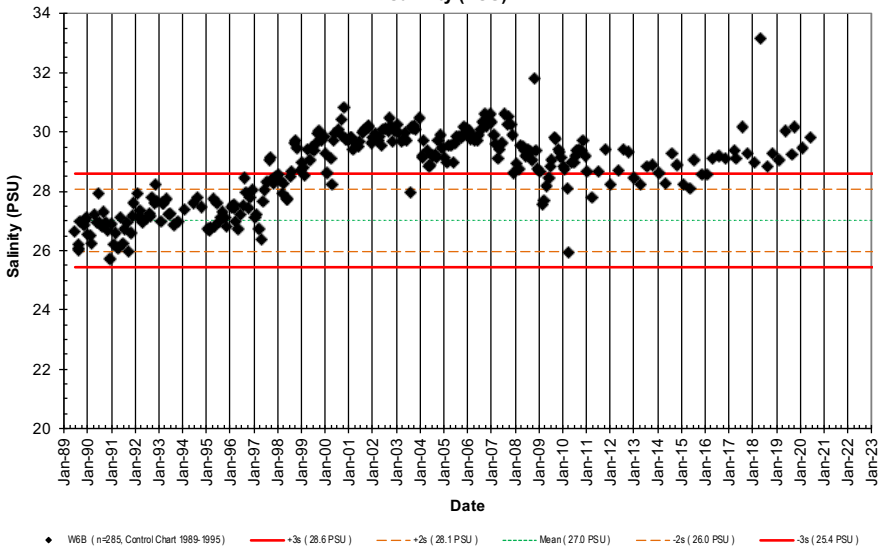
Well #6B
Temperature (˚C)



Well #6B
pH (unit)



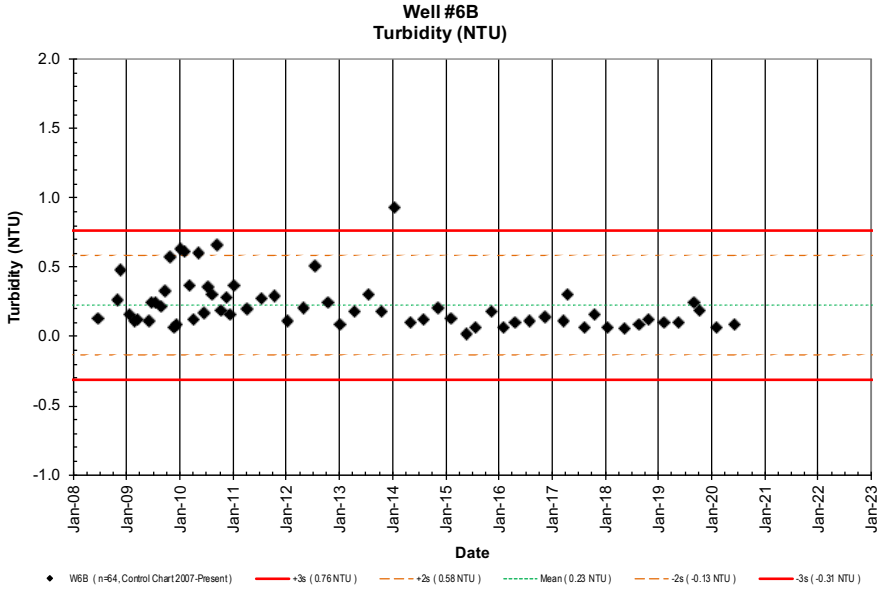
Well #6B
Salinity (PSU)

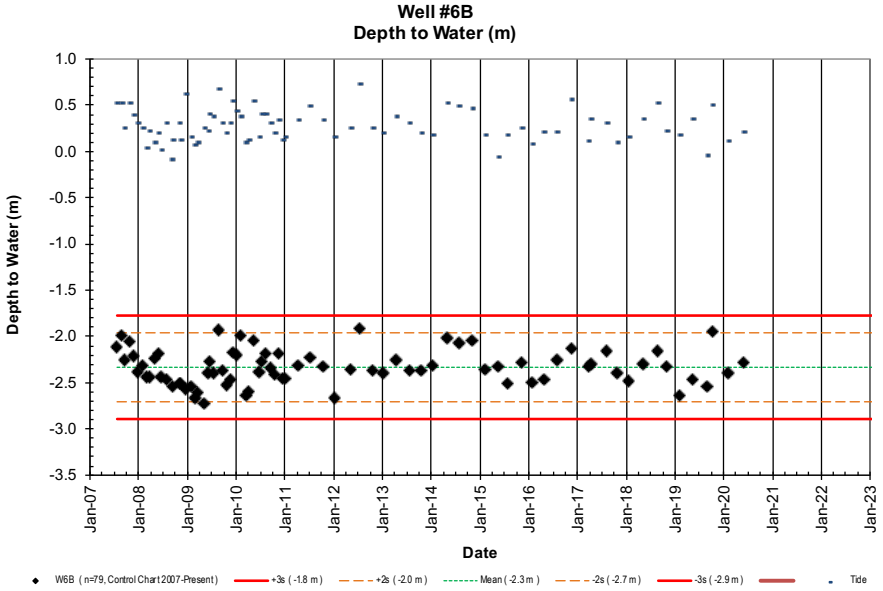


NELHA Water Quality Laboratory

Well 6B Charts

6/23/1989 - 7/21/20





NELHA Water Quality Laboratory

Well 7 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	5/20/92	834			0.80	25	54.7	766	1.34	18.8	161	4522	0.90	27.9	55.7	780	0.74	16.6	7.877	30.780	17038	9.30		<1	<1
W7	-17.68	6/24/92	839			1.70	53	50.5	707	1.22	17.1	129	3623	1.87	57.9	54.4	762	1.16	16.6	7.785	30.960	17137	8.81		<1	<1
W7	-17.68	7/30/92	803			2.52	78	35.7	500	1.56	21.9	154	4325	2.61	80.8	38.8	544	0.93	18.5	7.711	31.458	17413	5.74		<1	<1
W7	-17.68	8/26/92	1006			3.14	97	57.8	810	0.21	2.9	161	4522	3.19	98.8	61.6	862	0.84	18.6	7.719	31.471	17420	5.48		<1	<1
W7	-17.68	9/23/92	827			2.83	88	44.0	616	0.39	5.5	164	4606	2.88	89.2	55.3	774	0.69	17.9	7.788	31.091	17210	5.45		<1	<1
W7	-17.68	10/28/92	902			2.80	87	56.0	784	0.28	3.9	155	4353	2.98	92.3	58.5	819	0.75	17.2	7.818	30.660	16971	5.32		<1	<1
W7	-17.68	11/18/92	852			2.75	85	55.5	777	0.25	3.5	152	4269	2.96	91.7	60.9	853	0.89	16.9	7.803	30.512	16889	5.14		<1	<1
W7	-17.68	12/9/92	843			2.70	84	57.5	805	0.24	3.4	187	5252	2.91	90.1	55.1	772	0.87	17.0	7.806	30.441	16850	5.13		<1	<1
W7	-17.68	1/27/93	822			2.59	80	30.9	433	0.24	3.4	161	4513	2.68	83.0	34.0	476	0.64	20.7	7.944	32.034	17732	5.86		<1	<1
W7	-17.68	2/24/93	807			1.98	61	14.2	199	0.36	5.0	147	4129	2.01	62.3	17.6	247	0.67	21.9	8.071	32.956	18242	5.63		<1	<1
W7	-17.68	3/17/93	816			2.15	67	20.1	282	0.38	5.3	142	3999	2.18	67.5	23.6	331	0.63	21.7	8.051	32.633	18063	4.62		<1	<1
W7	-17.68	4/28/93	808			2.28	71	31.7	444	0.32	4.5	131	3679	2.31	71.5	35.2	493	0.56	18.7	8.007	31.256	17301	3.71		<1	<1
W7	-17.68	5/26/93	810			2.02	63	29.4	412	0.43	6.0	260	7302	2.14	66.3	32.9	461	0.63	17.9	7.984	31.237	17290	3.07		<1	<1
W7	-17.68	6/29/93	823			2.18	68	28.6	400	0.24	3.4	112	3146	2.28	70.6	31.5	441	0.54	18.5	7.945	31.478	17424	3.70		<1	<1
W7	-17.68	9/1/93	823			2.16	67	31.3	438	0.24	3.4	153	4283	2.21	68.5	36.1	506	0.72	19.1	7.929	31.072	17199	2.87		<1	<1
W7	-17.68	10/27/93	816			2.15	67	30.1	421	0.18	2.5	140	3932	2.16	66.9	32.8	460	0.68	19.4	7.943	30.978	17147	2.14		<1	<1
W7	-17.68	3/1/94	1035			2.52	78	19.1	268	0.34	4.8	132	3707	2.48	76.8	23.6	330	0.78	21.2	7.929	31.763	17582	3.68		<1	<1
W7	-17.68	6/22/94	754			2.30	71	31.0	435	0.29	4.1	126	3552	2.31	71.5	35.3	495	0.59	19.0	7.918	31.095	17212	1.97		<1	<1
W7	-17.68	8/24/94	816			2.09	65	32.0	448	0.00	0.0	121	3387	2.14	66.3	39.0	546	0.54	19.2	7.949	30.888	17097	2.34		<1	<1
W7	-17.68	11/28/94	1010			2.19	68	29.5	414	0.59	8.3	120	3374	2.24	69.4	34.3	480	0.53	19.9	7.820	31.019	17170	2.11		<1	<1
W7	-17.68	1/25/95	851			2.20	68	29.7	416	0.00	0.0	115	3216	2.25	69.7	31.5	441	0.51	19.3	7.966	30.843	17072	2.71		<1	<1
W7	-17.68	2/15/94	905			2.05	63	16.8	235	0.00	0.0	121	3393	2.11	65.4	18.6	260	0.58	22.2	8.034	32.241	17846	4.68		1	<1
W7	-17.68	3/29/95	846			2.01	62	31.1	436	0.27	3.8	118	3300	2.06	63.8	33.1	463	0.51	20.0	8.030	30.937	17124	1.98		<1	<1
W7	-17.68	4/26/95	839			1.93	60	32.9	461	0.12	1.7	111	3109	1.96	60.7	33.9	475	0.55	19.4	8.003	30.836	17069	1.74		<1	<1
W7	-17.68	5/9/95	1023			1.96	61	34.4	482	0.29	4.1	116	3266	1.97	61.0	36.0	505	0.62	19.4	7.961	30.787	17041	1.60		<1	<1
W7	-17.68	6/28/95	837			2.04	63	34.0	476	0.49	6.9	121	3401	2.08	64.4	36.6	512	0.60	19.6	7.937	30.988	17153	1.67		<1	<1
W7	-17.68	7/26/95	1017			2.15	67	34.0	476	0.22	3.1	121	3387	2.18	67.5	36.3	508	0.55	19.7	7.973	31.382	17371	1.59		<1	<1
W7	-17.68	8/23/95	934			2.10	65	27.9	390	0.50	7.0	121	3396	2.14	66.3	29.5	413	0.53	20.1	7.957	30.946	17129	2.10		<1	<1
W7	-17.68	9/12/95	925			2.16	67	27.2	381	0.13	1.8	129	3620	2.18	67.5	29.8	418	0.51	20.2	7.970	31.292	17321	1.61		<1	<1
W7	-17.68	10/17/95	1108			2.07	64	25.2	353	0.21	2.9	132	3699	2.09	64.7	26.7	374	0.91	19.9	7.975	31.567	17473	1.54		<1	<1
W7	-17.68	11/7/95	951			2.04	63	26.6	372	0.44	6.2	128	3592	2.10	65.0	28.1	393	0.79	23.1	8.002	31.486	17428	1.50		<1	<1
W7	-17.68	12/6/95	1038			1.86	58	25.8	362	0.37	5.2	121	3398	2.04	63.2	28.2	394	0.90	20.2	8.018	31.478	17424	1.78		<1	<1
W7	-17.68	1/30/96	1130			1.65	51	16.4	230	0.13	1.8	118	3311	1.82	56.4	16.9	237	0.64	23.1	8.133	32.561	18023	3.85		<1	<1
W7	-17.68	2/27/96	1240			1.66	51	15.8	221	0.29	4.1	121	3396	1.79	55.4	18.7	262	0.71	23.8	8.089	32.679	18089	4.13		<1	12
W7	-17.68	3/13/96	1154			1.58	49	18.4	258	0.46	6.4	109	3073	1.72	53.3	20.3	284	0.72	23.4	8.049	32.184	17815	4.92		<1	<1
W7	-17.68	4/2/96	1038			1.55	48	20.3	284	0.22	3.1	127	3567	1.68	52.0	22.8	320	0.76	23.4	8.041	31.959	17690	5.47		<1	<1
W7	-17.68	5/15/96	1206			1.70	53	36.0	504	0.05	0.7	120	3380	1.73	53.6	38.5	539	0.51	22.6	8.056	31.501	17437	2.49		<1	<1
W7	-17.68	6/18/96	1141			1.59	49	47.6	666	0.12	1.7	106	2981	1.62	50.2	50.6	708	0.57	20.6	8.059	30.850	17076	2.95		<1	<1
W7	-17.68	7/17/96	1200			1.53	47	47.5	665	0.22	3.1	102	2857	1.61	49.9	54.9	769	0.63	20.3	8.055	30.570	16921	3.13		<1	<1
W7	-17.68	8/6/96	1216			1.39	43	49.7	696	0.58	8.1	103	2880	1.47	45.5	52.5	736	0.65	20.4	8.032	30.425	16841	3.23		<1	<1
W7	-17.68	9/4/96	1202			1.51	47	55.9	783	0.48	6.7	106	2989	1.53	47.4	58.4	818	0.69	20.2	8.003	30.355	16802	2.69		<1	1
W7	-17.68	10/9/96	1256			1.79	55	45.3	635	0.49	6.9	125	3508	1.92	59.5	47.9	671	0.68	20.9	7.957	30.756	17024	2.60		<1	<1
W7	-17.68	11/6/96	1201			1.96	61	34.9	489	0.19	2.7	120	3378	2.06	63.8	39.6	554	0.69	21.3	7.908	31.067	17196	1.87		<1	<1
W7	-17.68	12/17/96	1243			1.89	59	22.4	313	0.29	4.1	126	3535	1.99	61.6	26.7	374	0.93	24.2	8.076	31.910	17663	5.63		<1	<1

NELHA Water Quality Laboratory

Well 7 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	1/14/97	1215			2.00	62	30.0	420	0.69	9.7	136	3820	2.06	63.8	33.8	473	0.80	23.5	7.973	31.491	17431	4.06		<1	1
W7	-17.68	2/11/97	1050			1.65	51	40.5	567	0.24	3.4	126	3550	1.74	53.9	42.8	600	0.88	23.9	8.037	31.752	17576	5.39		<1	<1
W7	-17.68	3/11/97	928			1.76	55	37.8	529	0.44	6.2	131	3690	2.01	62.3	39.8	557	0.75	23.5	8.067	31.957	17689	4.40		<1	<1
W7	-17.68	4/23/97	1209			1.95	60	94.2	1320	0.46	6.4	115	3219	1.98	61.3	117.8	1650	0.72	21.3	8.031	30.787	17041	2.25		<1	<1
W7	-17.68	5/28/97	1040			2.36	73	94.8	1328	0.13	1.8	128	3595	2.65	82.1	108.1	1514	0.68	20.4	8.013	30.900	17104	1.79		<1	<1
W7	-17.68	6/17/97	1121			2.27	70	72.1	1010	0.29	4.1	119	3351	2.36	73.1	78.5	1100	0.71	20.1	8.024	30.878	17092	1.77		<1	<1
W7	-17.68	7/15/97	1115			2.56	79	83.7	1172	0.06	0.8	114	3210	2.70	83.6	92.1	1289	0.60	19.7	8.037	30.686	16985	1.87		<1	<1
W7	-17.68	8/26/97	1147			2.50	77	89.2	1249	0.35	4.9	127	3561	2.50	77.4	93.3	1306	0.64	21.4	8.102	30.724	17007	1.01		<1	<1
W7	-17.68	9/23/97	1015			2.55	79	147.5	2066	0.25	3.5	123	3449	2.55	79.0	157.8	2210	0.64	21.1	8.121	30.792	17044	0.47		<1	<1
W7	-17.68	10/14/97	1050			2.68	83	186.4	2611	0.21	2.9	120	3370	2.68	83.0	203	2842	0.52	21.0	8.130	30.728	17009	0.69		<1	<1
W7	-17.68	11/4/97	919			2.58	80	195.5	2738	0.10	1.4	125	3513	2.64	81.8	248	3471	0.64	20.1	8.146	30.896	17102	0.90		<1	<1
W7	-17.68	12/16/97	1120			2.64	82	71.5	1001	0.15	2.1	132	3699	2.74	84.9	76.4	1070	0.58	21.3	8.105	31.156	17246	1.62		<1	<1
W7	-17.68	1/5/98	942			2.73	85	56.2	787	0.03	0.4	124	3469	2.83	87.7	62.0	868	0.66	21.7	8.091	31.466	17417	2.63		<1	<1
W7	-17.68	2/3/98	911			2.15	67	22.4	314	0.08	1.1	118	3306	2.38	73.7	25.5	358	0.72	23.7	8.202	32.728	18116	5.38		<1	<1
W7	-17.68	3/10/98	942			2.50	77	25.5	357	0.27	3.8	128	3598	2.64	81.8	28.0	392	0.59	23.6	8.006	32.592	18041	4.94		<1	<1
W7	-17.68	4/14/98	1113			2.55	79	32.2	451	0.01	0.1	126	3536	2.61	80.8	33.7	472	0.52	23.5	8.010	32.481	17979	4.71		<1	<1
W7	-17.68	5/12/98	942			2.39	74	51.7	725	0.09	1.3	123	3440	2.54	78.7	54.9	769	0.57	23.4	8.031	32.514	17997	3.39		<1	<1
W7	-17.68	6/2/98	943			2.39	74	93.0	1303	0.09	1.3	119	3332	2.48	76.8	95.7	1340	0.67	22.5	8.036	31.925	17671	1.02		<1	<1
W7	-17.68	7/14/98	935			2.31	72	96.2	1348	0.23	3.2	120	3373	2.45	75.9	98.1	1374	0.69	21.4	7.974	31.463	17416	0.11		<1	<1
W7	-17.68	8/11/98	958			2.62	81	103.1	1444	0.05	0.7	118	3323	2.72	84.2	111.0	1555	0.63	21.1	7.924	31.501	17437	0.16		<1	<1
W7	-17.68	9/15/98	949			2.71	84	73.5	1030	0.01	0.1	123	3463	2.79	86.4	73.1	1024	0.66	21.1	7.888	31.555	17467	1.70		<1	<1
W7	-17.68	10/13/98	849			2.87	89	67.7	948	0.05	0.7	128	3601	2.92	90.4	70.3	985	0.71	21.3	7.887	31.487	17429	1.75		<1	<1
W7	-17.68	11/4/98	942			2.92	90	69.3	970	0.07	1.0	128	3603	3.07	95.1	73.7	1032	0.81	21.2	7.886	31.461	17414	1.21		3	21
W7	-17.68	12/16/98	932			3.05	94	104.4	1462	0.09	1.3	131	3674	3.19	98.8	108.9	1525	0.93	21.5	7.866	31.575	17478	0.30		<1	<1
W7	-17.68	1/12/99	1003			2.85	88	78.6	1101	0.08	1.1	133	3724	2.94	91.1	80.0	1120	0.79	21.7	7.854	31.853	17631	1.88		<1	<1
W7	-17.68	2/3/99	955			2.74	85	89.8	1258	0.17	2.4	131	3665	2.90	89.8	96.3	1348	0.76	21.3	7.847	30.075	16647	0.62		<1	<1
W7	-17.68	3/2/99	952			3.03	94	85.8	1202	0.06	0.8	132	3710	3.17	98.2	89.9	1259	0.78	21.3	7.857	31.700	17547	0.46		<1	<1
W7	-17.68	4/6/99	939			3.04	94	79.7	1116	0.01	0.1	132	3710	3.16	97.9	82.4	1154	0.80	21.0	7.858	31.731	17564	0.22		<1	<1
W7	-17.68	5/4/99	948			3.03	94	74.4	1042	0.06	0.8	126	3525	3.15	97.6	78.3	1097	0.65	20.6	7.868	31.819	17613	0.67		<1	<1
W7	-17.68	6/2/99	938			2.86	89	46.9	657	0.09	1.3	130	3651	3.04	94.2	47.4	664	0.66	20.3	7.873	31.843	17626	3.86		<1	<1
W7	-17.68	7/7/99	1016			3.08	95	43.9	615	0.09	1.3	129	3629	3.16	97.9	46.0	644	0.59	19.8	7.897	31.628	17507	3.78		<1	<1
W7	-17.68	8/25/99	940			3.00	93	47.1	660	0.06	0.8	128	3592	3.22	99.7	50.2	703	0.62	20.3	7.940	31.624	17505	3.23		<1	<1
W7	-17.68	9/8/99	951			3.03	94	47.9	671	0.02	0.3	129	3623	3.24	100.4	53.2	745	0.59	19.9	7.938	31.611	17498	3.29		<1	<1
W7	-17.68	10/6/99	957			2.98	92	78.3	1097	0.04	0.6	134	3752	3.05	94.5	80.9	1133	0.66	20.7	7.888	31.955	17688	1.12		<1	<1
W7	-17.68	11/3/99	1012			2.26	70	46.9	657	0.13	1.8	143	4025	2.53	78.4	49.8	698	0.59	22.4	7.846	32.588	18038	3.11		<1	<1
W7	-17.68	12/15/99	1031			2.85	88	41.1	576	0.04	0.6	140	3929	2.98	92.3	43.8	613	0.66	21.5	7.834	32.074	17754	3.53		<1	<1
W7	-17.68	1/11/00	1007			2.60	81	45.4	635	0.18	2.5	132	3710	2.75	85.2	49.2	689	0.71	20.8	7.855	32.002	17714	3.40		<1	<1
W7	-17.68	2/14/00	1006			2.81	87	44.4	622	0.03	0.4	130	3662	2.95	91.4	49.0	686	0.61	20.5	7.875	31.978	17701	3.63		<1	<1
W7	-17.68	3/22/00	1023			2.88	89	67.1	940	0.07	1.0	130	3654	2.75	85.2	69.2	969	0.71	20.4	7.878	31.762	17581	2.75		<1	<1
W7	-17.68	4/12/00																								
W7	-17.68	5/17/00																								
W7	-17.68	6/6/00	1015			2.79	86	67.3	943	0.03	0.4	231	6496	2.82	87.3	71.9	1007	0.76	22.4	7.818	32.493	17986	0.33		<1	<1

NELHA Water Quality Laboratory

Well 7 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	7/31/00	959				3.22	100	37.7	528	0.10	1.4	148	4159	3.36	104.1	39.6	555	0.76	23.8	7.769	33.704	18656	0.20		<1	<1
W7	-17.68	8/30/00	1010				3.34	103	47.4	664	0.02	0.3	150	4202	3.44	106.5	49.3	691	0.71	23.9	7.727	33.648	18625	0.41		<1	<1
W7	-17.68	9/6/00	942				3.31	103	48.2	675	0.01	0.1	150	4213	3.47	107.5	51.1	716	0.84	23.9	7.727	33.584	18590	0.23		<1	<1
W7	-17.68	10/25/00	1129				3.51	109	42.3	592	0.16	2.2	168	4718	3.67	113.7	48.0	672	0.69	24.4	7.727	33.645	18623	1.45		<1	<1
W7	-17.68	11/14/00	1011				3.42	106	49.2	689	0.24	3.4	163	4570	3.60	111.5	53.1	744	0.64	24.0	7.728	33.341	18455	0.63		<1	1
W7	-17.68	12/19/00	945				3.58	111	79.7	1116	0.15	2.1	163	4564	3.83	118.6	81.8	1146	0.67	23.4	7.747	32.645	18070	0.82		<1	<1
W7	-17.68	1/24/01	935				3.10	96	64.4	902	0.14	2.0	162	4536	3.32	102.8	68.8	964	0.66	23.0	7.750	32.597	18043	2.16		<1	<1
W7	-17.68	2/7/01	953				3.33	103	91.8	1286	0.07	1.0	151	4230	3.40	105.3	95.0	1331	0.66	22.6	7.814	32.435	17954	0.92		<1	<1
W7	-17.68	3/12/01	942				3.29	102	106	1486	0.01	0.1	150	4218	3.44	106.5	107	1499	0.76	22.2	7.752	32.494	17986	0.53		<1	<1
W7	-17.68	4/18/01	931				3.10	96	92.1	1290	0.03	0.4	153	4306	3.23	100.0	95.1	1332	0.76	22.1	7.715	32.708	18105	0.15		<1	<1
W7	-17.68	5/14/01	1048				3.16	98	79.4	1112	0.19	2.7	159	4474	3.16	97.9	80.6	1129	0.61	22.9	7.695	33.002	18267	0.17		<1	<1
W7	-17.68	6/13/01	955				3.10	96	73.3	1027	0.02	0.3	165	4631	3.08	95.4	75.1	1051	0.62	23.0	7.672	33.264	18412	0.15		<1	<1
W7	-17.68	7/24/01	958				3.06	95	55.1	771	0.04	0.6	173	4848	3.17	98.2	57.9	811	0.75	24.0	7.646	33.793	18705	0.23		<1	<1
W7	-17.68	8/22/01	958				3.38	105	44.7	627	0.01	0.1	173	4848	3.60	111.5	47.1	660	0.74	24.6	7.625	34.020	18831	0.15		<1	<1
W7	-17.68	9/17/01	1049				3.42	106	46.7	654	0.05	0.7	175	4901	3.60	111.5	49.2	689	0.74	24.8	7.655	33.958	18797	0.20		<1	<1
W7	-17.68	10/22/01	1028				3.34	103	43.9	615	0.03	0.4	170	4786	3.58	110.9	47.0	659	0.70	24.6	7.676	33.638	18620	1.27		<1	<1
W7	-17.68	11/5/01	1100				3.44	107	46.0	644	0.04	0.6	172	4831	3.54	109.6	50.5	707	0.66	24.0	7.675	33.651	18627	1.03		<1	<1
W7	-17.68	12/12/01	1053				3.36	104	58.9	825	0.05	0.7	179	5036	3.47	107.5	93.1	1303	0.60	23.9	7.700	33.382	18478	0.17		<1	<1
W7	-17.68	1/7/02	1043				3.48	108	95.4	1336	0.21	2.9	168	4721	3.67	113.7	114	1597	0.57	23.5	7.711	32.505	17992	0.90		<1	<1
W7	-17.68	2/25/02	1003				3.50	108	107	1499	0.04	0.6	168	4707	3.60	111.5	115	1608	0.56	22.9	7.731	32.668	18083	0.51		<1	732
W7	-17.68	3/18/02	1028				3.54	110	87.4	1225	0.30	4.2	171	4797	3.70	114.6	85.7	1200	0.56	22.9	7.740	32.749	18127	0.54		<1	1
W7	-17.68	4/10/02	1034				3.34	103	104	1450	0.05	0.7	165	4645	3.48	107.8	108	1506	0.56	22.8	7.724	32.625	18059	0.66		<1	<1
W7	-17.68	5/22/02	1042				3.26	101	106	1488	0.16	2.2	167	4676	3.33	103.1	107	1495	0.55	22.5	7.749	32.490	17984	0.82		<1	<1
W7	-17.68	6/19/02	1127				3.32	103	100	1406	0.10	1.4	162	4550	3.42	105.9	108	1511	0.63	22.3	7.764	32.167	17805	1.13		<1	<1
W7	-17.68	7/22/02	1110				3.20	99	106	1479	0.06	0.8	155	4353	3.36	104.1	111	1559	0.69	21.6	7.799	31.956	17688	0.85		<1	<1
W7	-17.68	8/21/02	1150				3.11	96	111	1553	0.21	2.9	153	4300	3.26	101.0	118	1651	0.64	21.2	7.781	31.872	17642	0.56		<1	<1
W7	-17.68	9/25/02	1017				3.05	94	109	1527	0.28	3.9	160	4494	3.18	98.5	107	1492	0.56	21.4	7.794	31.894	17654	0.65		<1	<1
W7	-17.68	10/15/02	1055				2.99	93	103	1444	0.15	2.1	156	4387	3.19	98.8	98.5	1380	0.54	21.8	7.763	32.034	17732	0.57		<1	1
W7	-17.68	11/17/02	1031				3.17	98	100	1401	0.36	5.0	158	4449	3.29	101.9	94.3	1321	0.64	21.9	7.742	31.978	17701	0.65		<1	<1
W7	-17.68	12/18/02	1057				3.24	100	57.7	809	0.03	0.4	161	4527	3.34	103.5	51.7	724	0.55	23.6	7.742	32.468	17972	2.58		<1	22
W7	-17.68	1/23/03	1040				1.76	55	12.6	176	0.04	0.6	94.6	2657	2.00	61.9	21.1	296	0.70	24.4	8.039	34.175	18917	5.84		<1	<1
W7	-17.68	2/11/03	1100				2.42	75	28.1	394	0.07	1.0	117	3286	3.44	106.5	35.9	503	0.57	24.3	7.984	33.406	18491	4.42		<1	<1
W7	-17.68	3/20/03	1141				2.65	82	87.7	1228	0.06	0.8	137	3839	2.87	88.9	109	1525	0.63	23.2	7.937	32.699	18100	0.02		<1	<1
W7	-17.68	4/30/03	1028				2.92	90	90.1	1262	0.12	1.7	144	4036	3.06	94.8	110	1539	0.65	23.2	7.859	34.827	19278	0.12		<1	<1
W7	-17.68	5/14/03	932				3.01	93	87.2	1221	0.08	1.1	146	4109	3.04	94.2	86.7	1214	0.59	22.8	7.821	32.883	18202	0.15		<1	<1
W7	-17.68	6/4/03	1020				3.09	96	83.6	1171	0.05	0.7	147	4131	3.25	100.7	89.4	1252	0.62	23.2	7.780	34.957	19350	0.12		<1	<1
W7	-17.68	7/30/03	951				3.20	99	94.7	1326	0.03	0.4	154	4336	3.35	103.8	109	1527	NA	23.2	7.836	32.851	18184	0.42		<1	<1
W7	-17.68	8/28/03	945				3.28	102	99.9	1400	0.02	0.3	152	4277	3.42	105.9	136	1906	NA	23.8	7.769	32.710	18106	0.02		<1	<1
W7	-17.68	9/16/03	1006				3.42	106	93.9	1316	0.15	2.1	155	4348	3.48	107.8	127	1777	NA	23.1	7.771	32.477	17977	0.32		<1	<1
W7	-17.68	10/8/03	938				3.34	103	105	1476	0.10	1.4	155	4339	3.56	110.3	129	1801	NA	22.9	7.780	32.383	17925	NA		<1	<1
W7	-17.68	11/5/03	1007				3.36	104	101	1415	0.39	5.5	154	4328	3.56	110.3	104	1457	NA	22.7	7.771	32.234	17842	NA		<1	<1
W7	-17.68	11/14/03	1015																	23.0				0.12			
W7	-17.68	12/17/03	1036				3.58	111	75.3	1055	0.16	2.2	169	4732	3.72	115.2	78.2	1095	NA	23.6	7.821	32.528	18005	2.13		<1	<1

NELHA Water Quality Laboratory

Well 7 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	1/28/04	1100			3.39	105	42.8	600	0.78	10.9	139	3893	3.56	110.3	41.3	578	0.69	23.7	7.873	32.470	17973	4.02		<1	<1
W7	-17.68	2/11/04	938			3.32	103	70.5	987	0.40	5.6	141	3954	3.56	110.3	75.6	1059	0.91	22.9	7.832	32.310	17884	2.53		<1	<1
W7	-17.68	3/16/04	1025			3.45	107	41.7	584	0.14	2.0	135	3777	3.84	118.9	48.2	675	NA	24.5	7.917	34.865	19299			<1	<1
W7	-17.68	3/30/04	936																23.5				1.40			
W7	-17.68	4/22/04	1011			3.18	98	105	1471	0.22	3.1	138	3867	3.38	104.7	113	1584	NA	22.5	7.893	31.863	17637	0.40		<1	<1
W7	-17.68	5/18/04	1006			3.08	95	102	1424	0.20	2.8	132	3704	3.18	98.5	107	1503	NA	22.0	7.856	30.91	17109	0.41		<1	<1
W7	-17.68	6/8/04	1043			2.98	92	99.3	1391	0.11	1.5	131	3679	3.12	96.6	105	1464	NA	22.3	7.587	30.75	17021	0.18		<1	<1
W7	-17.68	7/15/04	1005			3.17	98	95.1	1333	0.20	2.8	137	3851	3.12	96.6	113	1584	NA	21.8	7.792	30.70	16993	0.53		<1	<1
W7	-17.68	8/25/04	1046			2.92	90	98.2	1375	0.13	1.8	143	4016	3.06	94.8	101	1408	NA	21.7	7.778	30.55	16910	0.79		<1	<1
W7	-17.68	9/27/04	1157			3.18	98	97.9	1371	0.15	2.1	152	4275	3.26	101.0	100	1401	NA	21.5	7.765	30.52	16894	2.55		<1	<1
W7	-17.68	10/4/04	1116			3.14	97	98.0	1373	0.20	2.8	142	3991	3.40	105.3	105	1465	NA	21.6	7.779	30.51	16888	1.04		<1	<1
W7	-17.68	11/23/04	1123			3.16	98	112	1570	0.10	1.4	151	4238	3.38	104.7	159	2221	NA	21.8	7.797	30.37	16811	1.11		<1	<1
W7	-17.68	12/8/04	947			3.08	95	105	1470	0.07	1.0	150	4207	3.20	99.1	137	1915	NA	22.6	7.794	30.42	16838	1.06		<1	<1
W7	-17.68	1/18/05	946			3.18	98	19.9	279	0.09	1.3	126	3550	3.38	104.7	25.2	354	NA	23.9	7.883	33.227	18392	5.49		<1	<1
W7	-17.68	2/10/05	930			3.24	100	53.7	752	0.27	3.8	139	3910	3.32	102.8	79.8	1118	NA	23.9	7.908	32.486	17982	3.03		<1	<1
W7	-17.68	3/22/05	935			3.24	100	106	1478	0.12	1.7	144	4039	3.50	108.4	116	1625	0.85	22.8	7.879	31.763	17582	0.63		<1	<1
W7	-17.68	4/20/05	929			3.06	95	111	1560	0.14	2.0	141	3966	3.08	95.4	112	1567	NA	22.3	7.869	31.606	17495	0.47		<1	<1
W7	-17.68	5/25/05	947			3.28	102	115	1605	0.12	1.7	144	4056	3.30	102.2	124	1741	NA	20.9	7.841	31.523	17449	0.25		<1	<1
W7	-17.68	6/14/05	948			3.18	98	109	1526	0.12	1.7	142	3980	3.18	98.5	117	1636	NA	22.2	7.839	31.438	17402	0.28		<1	<1
W7	-17.68	7/19/05	939			3.24	100	107	1493	0.11	1.5	141	3963	3.46	107.2	112	1563	0.51	21.7	7.836	31.390	17375	0.31		<1	<1
W7	-17.68	8/3/05	1009			3.34	103	96.5	1352	0.06	0.8	141	3960	3.46	107.2	100	1402	0.47	22.0	7.876	31.382	17371	0.43		<1	<1
W7	-17.68	9/22/05	931			3.52	109	122	1705	0.14	2.0	144	4039	3.68	114.0	123	1720	0.54	22.1	7.848	31.353	17355	0.37		<1	<1
W7	-17.68	10/19/05	943			3.52	109	114	1593	0.06	0.8	144	4033	3.72	115.2	122	1710	NA	22.9	7.847	31.374	17366	0.37		<1	<1
W7	-17.68	11/8/05	929			3.50	108	114	1590	0.09	1.3	142	3994	3.66	113.4	122	1713	NA	22.5	7.841	31.394	17377	0.37		<1	1
W7	-17.68	12/22/05	901			3.46	107	67.2	941	0.32	4.5	143	4013	3.64	112.7	69.3	970	NA	23.3	7.805	32.011	17719	2.48		<1	<1
W7	-17.68	1/31/06	928			3.18	98	93.4	1308	0.33	4.6	139	3907	3.30	102.2	94.3	1321	NA	23.2	7.841	31.665	17527	0.93		<1	<1
W7	-17.68	2/16/06	925			3.24	100	95.4	1336	0.27	3.8	142	3977	3.82	118.3	99.5	1394	0.60	22.5	7.851	31.353	17355	0.53		<1	<1
W7	-17.68	3/22/06	916			3.18	98	97.7	1368	0.31	4.3	144	4044	3.28	101.6	103	1443	0.53	22.2	7.799	31.580	17480	0.52		<1	<1
W7	-17.68	4/27/06	1009			3.22	100	97.5	1366	0.23	3.2	141	3960	3.39	105.0	91.8	1286	0.58	21.9	7.802	31.677	17534	0.74		<1	<1
W7	-17.68	5/24/06	1022			3.03	94	95.5	1338	0.05	0.7	149	4185	3.22	99.7	90.0	1261	0.64	21.9	7.798	31.622	17504	1.12		<1	<1
W7	-17.68	6/28/06	1022			3.06	95	103	1443	0.29	4.1	139	3904	3.28	101.6	99.3	1391	0.50	21.9	7.797	31.531	17453	0.82		<1	<1
W7	-17.68	7/19/06	944			3.02	94	101	1415	0.21	2.9	142	3988	3.11	96.3	87.6	1227	0.51	21.8	7.788	31.456	17412	1.20		1	<1
W7	-17.68	8/9/06	1050			3.05	94	101	1415	0.15	2.1	145	4072	3.16	97.9	93.4	1309	0.51	21.4	7.797	31.436	17401	1.40		<1	<1
W7	-17.68	9/20/06	1055			3.07	95	79.6	1115	0.15	2.1	150	4213	3.26	101.0	73.3	1026	0.53	23.2	7.768	32.067	17750	0.89		<1	<1
W7	-17.68	10/25/06	1014			3.16	98	87.7	1228	0.28	3.9	150	4213	3.20	99.1	85.2	1194	0.69	21.9	7.773	31.898	17656	0.73		<1	<1
W7	-17.68	11/29/06	1102			2.91	90	89.0	1247	0.21	2.9	151	4241	2.97	92.0	76.1	1066	0.50	22.9	7.722	32.017	17722	0.80		<1	<1
W7	-17.68	12/13/06	1052			2.94	91	85.7	1200	0.19	2.7	149	4185	3.09	95.7	79.6	1115	0.47	22.5	7.727	31.913	17665	0.82		<1	<1
W7	-17.68	1/10/07	1045			2.85	88	70.6	989	0.22	3.1	148	4157	3.00	92.9	71.5	1001	0.56	23.3	7.682	32.363	17914	0.74		<1	<1
W7	-17.68	2/21/07	1110			2.41	75	45.6	639	0.39	5.5	147	4129	2.53	78.4	51.4	720	0.58	24.5	7.654	32.869	18194	1.38		<1	<1
W7	-17.68	3/7/07	1104			2.54	79	44.6	625	0.30	4.2	150	4213	2.68	83.0	45.0	630	0.62	24.7	7.495	32.863	18191	2.48		<1	<1
W7	-17.68	4/19/07	1102			2.56	79	60.6	849	0.29	4.1	141	3960	2.62	81.2	52.4	733	0.52	23.7	7.743	32.019	17723	0.32		<1	<1
W7	-17.68	5/2/07	1051			2.54	79	65.4	916	0.32	4.5	141	3960	2.75	85.2	63.6	890	0.54	23.2	7.717	31.988	17706	0.65		<1	<1
W7	-17.68	6/20/07	1055			2.35	73	53.3	746	0.23	3.2	139	3904	2.56	79.3				22.9	7.700	32.164	17804	0.16		<1	<1

NELHA Water Quality Laboratory

Well 7 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	7/25/07	1249		0.55	Flood	2.67	83	50.2	704	0.31	4.4	135	3788	2.75	85.1	50.4	706		22.1	7.55	31.96	17691	0.12			
W7	-17.68	8/27/07	1215		0.24	Flood	2.53	78	39.8	558	0.11	1.5	111	3104	2.62	81.2	42.7	598		22.1	7.63	31.72	17558	0.12			
W7	-17.68	9/13/07	1540		0.40	Flood	2.60	80	41.7	584	0.14	2.0	138	3881	2.87	88.8	45.4	636		21.4	7.64	31.74	17569	0.08			
W7	-17.68	10/23/07	1157		0.38	Flood	4.71	146	60.4	846	1.99	27.9	275	7712	4.71	145.9	59.2	829		21.5	7.62	31.76	17580	0.10			
W7	-17.68	11/20/07	1202		0.43	Flood	2.36	73	68.2	955	0.36	5.1	126	3546	2.13	65.9	74.9	1049		22.3	7.61	31.67	17530	0.11			
W7	-17.68	12/19/07	1152		0.30	High	2.31	72	48.2	676	1.02	14.3	123	3468						20.8	7.67	31.69	17541	0.10			
W7	-17.68	1/25/08	905		0.43	Ebb	1.66	51	14.2	199	0.63	8.8	86	2405						21.1	7.32	31.78	17591	0.20			
W7	-17.68	2/26/08	1100		0.09	Ebb	2.58	80	74.3	1040	0.08	1.1	123	3446						20.9	7.48	32.00	17713	0.06			
W7	-17.68	3/17/08					Well bladder Pump Air Line Leak No Sample																				
W7	-17.68	4/30/08	1209		0.27	Flood	2.18	68	94.6	1325	0.09	1.2	126	3538						23.3	7.36	32.13	17785	0.41			
W7	-17.68	5/15/08					Well bladder Pump Air Line Leak No Sample																				
W7	-17.68	6/16/08	1226		0.30	Flood	2.95	91	73.4	1028	0.18	2.5	141	3954						21.2	7.47	32.18	17812	3.25			
W7	-17.68	7/21/08	1145		0.09	Low	3.10	96	77.2	1082	0.41	5.8	128	3586						20.7	6.61	32.20	17824	0.93	0.09		
W7	-17.68	8/30/08	1448		0.58	Flood	3.31	102	79.4	1112	0.14	1.9	68	1896						20.4	7.49	32.02	17724	0.75	0.11		
W7	-17.68	9/15/08	1208		0.12	Flood	3.46	107	84.4	1183	0.10	1.4	129	3632						21.9	7.46	31.92	17669	0.91			
W7	-17.68	10/30/08	1025		0.15	Low	4.02	124	98.0	1372	0.20	2.8	127	3580						22.7	7.46	29.25	16191	3.49	0.11		
W7	-17.68	11/25/08	1000		0.15	Low	3.92	122	105.5	1477	0.07	1.0	294	8244						20.7	7.33	31.70	17547	0.17	0.07		
W7	-17.68	12/16/08	1043		0.40	Ebb	4.80	149	104.3	1461	0.11	1.5	135	3786						20.4	7.61	31.92	17669	0.72			
W7	-17.68	1/26/09	1436		0.15	Flood	4.13	128	84.9	1189	0.65	9.1	116	3254						20.2	7.70	31.49	17431	4.63	0.13		
W7	-17.68	2/26/09	1104		0.03	Low	3.49	108	86.0	1204	0.59	8.2	120	3359						19.3	7.59	31.06	17193	4.58	0.15		
W7	-17.68	3/23/09	1039		0.06	Flood	3.92	121	82.6	1157	0.13	1.8	115	3219						18.0	7.53	30.71	16999	4.67	1.41		
W7	-17.68	4/27/09	1050		-0.1	Low	5.30	164	77.6	1087	0.24	3.4	114	3208						18.7	7.65	31.11	17220	4.77	0.16		
W7	-17.68	5/27/09	1422		0.24	Flood	4.58	142	70.9	993	0.17	2.4	96	2683						18.5	7.77	30.87	17087	4.64	0.11		
W7	-17.68	6/19/09	1120		0.46	Flood	3.74	116	59.9	840	0.64	8.9	105	2957						17.8	7.26	30.54	16905	4.97	0.06		
W7	-17.68	7/31/09	1030		0.46	Flood	4.18	130	67.3	943	0.13	1.8	91	2555						18.1	7.63	30.65	16966	5.07	0.04		
W7	-17.68	8/20/09	1133		0.09	Flood	3.45	107	51.8	726	1.69	23.7	90	2524						20.4	7.64	30.92	17115	3.95	0.03		
W7	-17.68	9/24/09	1043		0.52	Ebb	3.75	116	51.1	716	0.49	6.8	74	2076						18.3	8.26	30.85	17076	4.49	0.03		
W7	-17.68	10/30/09	1029		0.21	Flood	4.91	152	80.0	1121	0.62	8.7	165	4625						19.1	7.54	30.87	17087	4.57	0.02		
W7	-17.68	11/17/09	1133		0.12	Low	4.87	151	67.6	947	0.86	12.0	119	3339						18.1	7.56	30.92	17115	3.61	0.03		
W7	-17.68	12/8/09	1440		0.09	Ebb	5.10	158	74.4	1042	1.15	16.1	150	4216						19.3	7.55	30.93	17121	1.26	0.02		
W7	-17.68	1/4/10	1459		0.0	Low	4.55	141	56.5	792	1.57	22.0	154	4313						21.7	7.44	31.48	17425	1.30	0.07		
W7	-17.68	2/2/10	1419		-0.1	Low	4.75	147	41.8	585	1.43	20.0	138	3885						23.7	7.65	32.56	18023	2.41	0.16		
W7	-17.68	3/10/10	1339		0.21	High	5.13	159	65.0	911	0.57	8.0	163	4571						23.4	7.64	31.76	17580	0.78	0.11		
W7	-17.68	4/7/10	1234		0.21	High	4.84	150	83.3	1167	0.50	7.0	166	4673						20.4	7.57	31.96	17691	1.01	0.24		
W7	-17.68	5/12/10	1344		0.46	Flood	3.97	123	77.5	1085	0.86	12.0	155	4361						20.4	7.63	31.69	17541	0.91	0.05		
W7	-17.68	6/16/10	1159		0.09	Low	4.46	138	93.7	1313	0.36	5.0	171	4814						21.7	7.62	31.54	17458	1.66	0.08		
W7	-17.68	7/14/10	949		0.15	Ebb	4.13	128	96.0	1344	0.43	6.0	176	4939						20.5	7.54	31.72	17558	0.93	0.07		
W7	-17.68	8/4/10	1025		0.52	Flood	4.42	137	92.9	1301	0.16	2.2	164	4619						20.5	7.60	31.55	17464	0.80	0.13		
W7	-17.68	9/13/10	1606		0.21	Low	4.39	136	94.4	1322	0.16	2.3	165	4623						20.2	7.57	31.60	17491	0.73	0.11		
W7	-17.68	10/11/10	1130		0.34	Ebb	4.42	137	96.5	1351	0.62	8.7	159	4468						20.9	7.63	31.36	17359	0.72	0.36		
W7	-17.68	11/15/10	1234		0.43	High	4.33	134	95.6	1339	0.20	2.8	159	4455						20.5	7.56	31.55	17464	0.76	0.04		
W7	-17.68	12/13/10	1015		0.40	High	4.46	138	87.6	1227	0.09	1.2	158	4439						19.9	7.51	31.32	17336	0.67	0.09		

NELHA Water Quality Laboratory

Well 7 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	1/3/11	1430		0.15	Flood	4.36	135	80.2	1123	0.19	2.6	150	4214						20.5	7.56	31.36	17359	0.93	0.04		
W7	-17.68	4/4/11	1506		0.34	Flood	4.33	134	71.5	1002	0.02	0.3	131	3672						19.3	7.56	30.73	17010	3.80	0.15		
W7	-17.68	7/11/11	1429		0.73	High	4.78	148	57.5	806	0.08	1.1	143	4005						20.3	7.59	31.26	17303	3.58	0.07		
W7	-17.68	10/10/11	1326		0.37	Flood	5.04	156	66.9	937	0.06	0.8	139	3908						19.6	7.63	31.53	17453	2.93	0.11		
W7	-17.68	1/9/12	1348		0.06	Flood	4.36	135	79.2	1110	0.10	1.4	137	3847						20.8	7.64	31.47	17419	1.69	0.03		
W7	-17.68	5/8/12	1444		0.30	Flood	4.42	137	78.0	1092	0.09	1.2	146	4104						20.5	7.56	31.63	17508	3.18	0.23		
W7	-17.68	7/17/12	1400		0.61	Flood	4.62	143	57.8	810	0.18	2.5	138	3862						19.4	7.59	31.55	17464	4.29	0.14		
W7	-17.68	10/15/12	1202		0.06	Flood	4.68	145	48.8	683	0.24	3.4	134	3751						19.1	7.60	31.53	17453	4.05	0.02		
W7	-17.68	1/7/13	1256		0.24	High	4.49	139	58.1	814	0.06	0.9	174	4899						20.1	7.67	32.05	17741	3.96	0.06		
W7	-17.68	4/8/13	1235		0.18	Flood	4.13	128	63.0	882	0.23	3.2	122	3418						18.7	7.80	31.29	17320	4.51	0.06		
W7	-17.68	7/16/13	1446		0.37	Ebb	3.39	105	40.3	564	0.10	1.4	122	3433						19.8	7.74	31.75	17574	4.45	0.11		
W7	-17.68	10/1/13	1610		0.30	Ebb	4.97	154	85.7	1200	0.30	4.2	149	4175						19.1	7.79	31.56	17469	5.14	0.05		
W7	-17.68	1/14/14	1506		0.70	High	3.29	102	48.1	674	0.24	3.3	128	3605						19.6	7.76	31.72	17558	4.41	0.02		
W7	-17.68	4/28/14	1714		0.579	High	3.07	95	53.8	754	0.27	3.8	125	3522						20.9	7.76	31.23	17287	5.77	0.07		
W7	-17.68	7/28/14	1502		0.488	Flood	3.16	98	49.0	686	0.14	2.0	119	3355						20.0	7.67	31.63	17508	4.55	0.02		
W7	-17.68	11/13/14	1154		0.37	Flood	3.33	103	43.0	602	0.05	0.7	124	3484						20.9	7.74	31.65	17519	4.15	0.03		
W7	-17.68	2/9/15	1600		0.30	Low	3.89	121	89.6	1256	0.32	4.5	153	4297						22.0	7.71	32.17	17807	3.72	0.13		
W7	-17.68	4/1/15			No sample																						
W7	-17.68	8/14/15	1053		0.09	Flood	3.12	97	55.6	779	0.72	10.1	114	3204						20.1	7.57	31.85	17630	4.13	0.02		
W7	-17.68	11/13/15	1003		0.15	Low	3.47	108	65.7	921	0.07	1.0	123	3447						21.3	7.79	31.02	17170	3.62	0.08		
W7	-17.68	1/27/16	1628		0.30	Flood	3.13	97	59.4	832	0.02	0.3	121	3405						20.7	7.82	31.48	17425	4.60	0.13		
W7	-17.68	4/21/16	1702		0.50	Ebb	2.89	89	48.6	681	0.19	2.6	115	3217						22.1	7.68	32.07	17752	3.78	0.42		
W7	-17.68	7/27/16	1148		0.50	Flood	2.81	87	70.1	982	0.09	1.3	111	3126						20.4	7.70	31.68	17536	2.32	0.10		
W7	-17.68	11/15/16	1448		0.40	Flood	3.08	96	55.6	779	0.41	5.8	115	3230						20.8	7.58	31.51	17442	3.57	0.16		
W7	-17.68	3/22/17	1511		0.15	Ebb	3.20	99	71.2	997	0.21	3.0	118	3309						20.5	7.75	31.68	17536	3.52	0.74		
W7	-17.68	4/19/17	1409		0.12	Ebb	3.17	98	59.9	839	0.83	11.6	115	3230						23.3	7.78	31.47	17419	3.58	0.03		
W7	-17.68	9/19/17	1644		0.55	Ebb	2.98	92	41.6	583	0.47	6.6	115	3241						20.9	7.80	31.53	17453	4.00	0.27		
W7	-17.68	10/19/17	1538		0.53	High	3.21	100	48.3	677	0.32	4.5	111	3123						20.8	7.78	31.53	17453	3.89	0.05		
W7	-17.68	3/23/18	1137		0.08	Ebb	2.78	86	70.0	980	0.12	1.7	90	2521						18.3	7.79	30.22	16728	4.47	0.05		
W7	-17.68	5/11/18	1344		0.45	High	2.97	92	71.9	1008	0.11	1.6	114	3201						18.8	7.73	30.67	16977	4.00	0.04		
W7	-17.68	9/4/18	1259		0.67	High	3.32	103	52.4	734	0.66	9.3	124	3483						19.2	7.69	30.99	17154	4.55	0.08		
W7	-17.68	11/1/18	1047		0.61	High	2.98	92	53.1	744	0.01	0.2	132	3714						20.7	7.65	30.96	17137	5.22	0.09		
W7	-17.68	2/8/19	1408		0.10	Flood	3.92	121	85.4	1196	0.10	1.4	120	3375						18.9	7.58	29.92	16561	5.31	0.08		
W7	-17.68	5/16/19	1005		0.08	Flood	3.78	117	74.0	1037	0.09	1.2	128	3592						21.0	7.56	31.90	17657	1.78	0.24		
W7	-17.68	8/28/19	1600		0.65	High	3.57	111	70.7	991	0.09	1.2	156	4375						21.4	7.61	31.92	17669	0.75	0.52		
W7	-17.68	10/16/19	1120		0.16	Low	3.57	111	75.6	1058	0.91	12.8	154	4312						21.6	7.56	32.30	17879	1.22	0.23		
W7	-17.68	2/5/20	1543		0.15	Ebb	4.00	124	51.3	719	-0.24	-3.3	133	3742						21.4	7.70	32.21	17829	3.19	0.22		
W7	-17.68	6/3/20	1445		0.67	High	3.06	95	75.6	1059	0.49	6.9	124	3484						20.8	7.66	31.81	17608	1.83	0.30		
W7	-17.68	7/1/20																									
W7	-17.68	10/1/20																									
W7	-17.68	1/1/21																									
W7	-17.68	4/1/21																									
W7	-17.68	7/1/21																									
W7	-17.68	10/1/21																									
W7	-17.68	1/1/22																									
W7	-17.68	4/1/22																									

NELHA Water Quality Laboratory

Well 7 Data Table

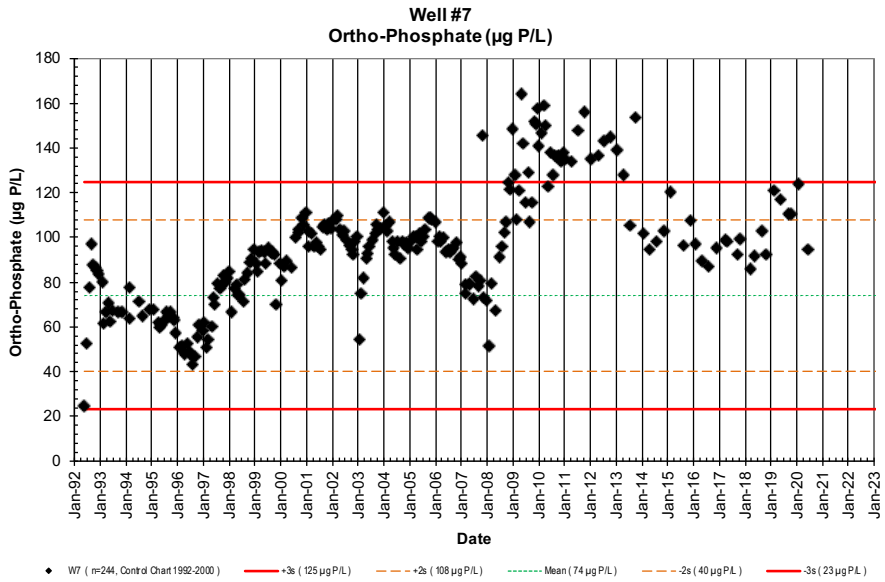
5/20/1992 - 7/21/20

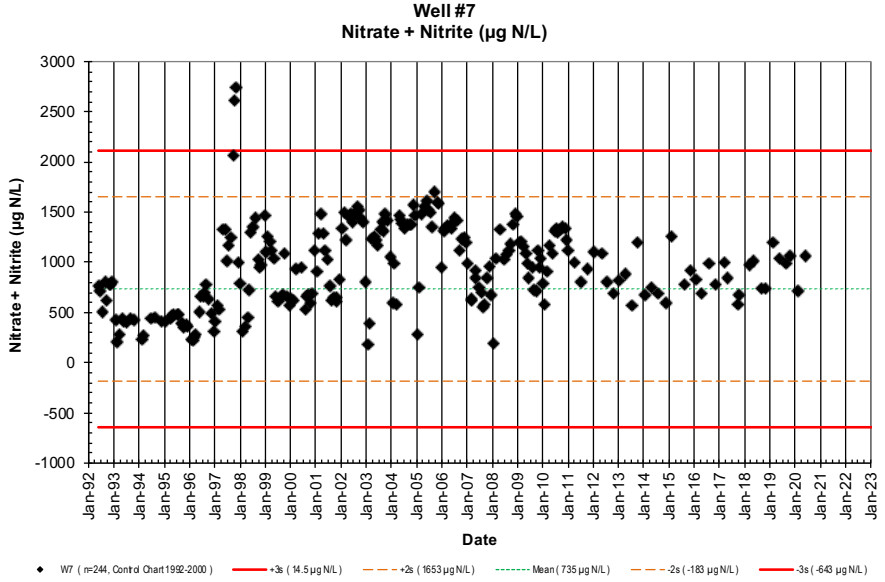
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7	-17.68	7/1/22																									
W7	-17.68	10/1/22																									
W7	-17.68	1/1/23																									
W7	-17.68	4/1/23																									
Mean					0.30		3.06	95	67.81	950	0.26	3.6	138	3889	2.87	88.8	72.0	1009	0.66	21.4	7.79	31.76	17581	2.22	0.14		
Std. Dev.					0.20		0.82	25	29.53	414	0.30	4.2	26	722	0.62	19.3	36.9	516	0.12	1.8	0.19	0.88	486	1.85	0.20		
Maximum					0.73		5.30	164	195.50	2738	1.99	27.9	294	8244	4.71	145.9	247.8	3471	1.16	24.8	8.26	34.96	19350	9.30	1.41		
Minimum					-0.06		0.80	25	12.56	176	-0.24	-3.3	68	1896	0.90	27.9	16.9	237	0.47	16.6	6.61	29.25	16191	0.02	0.02		
n					77		244	244	244	244	244	244	244	244	172	172	171	171	141	246	244	244	244	243	65		

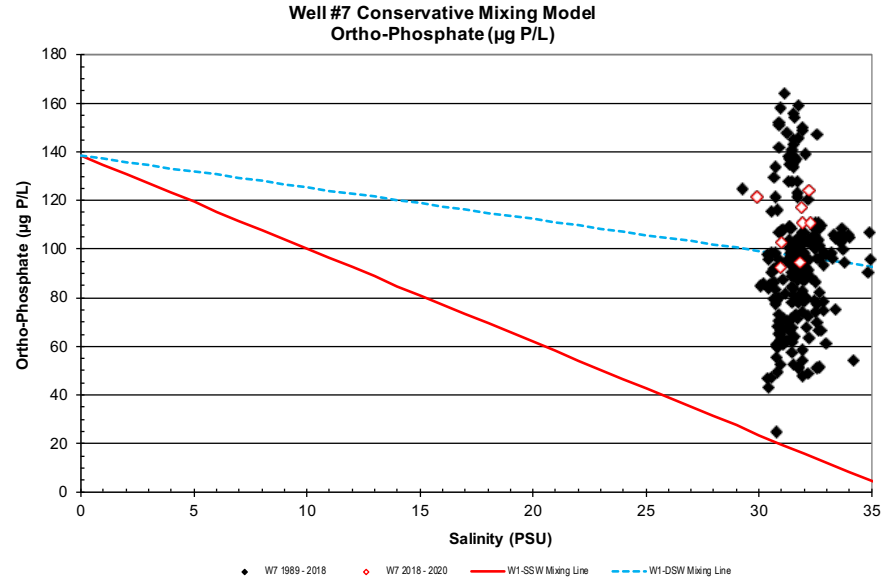
NELHA Water Quality Laboratory

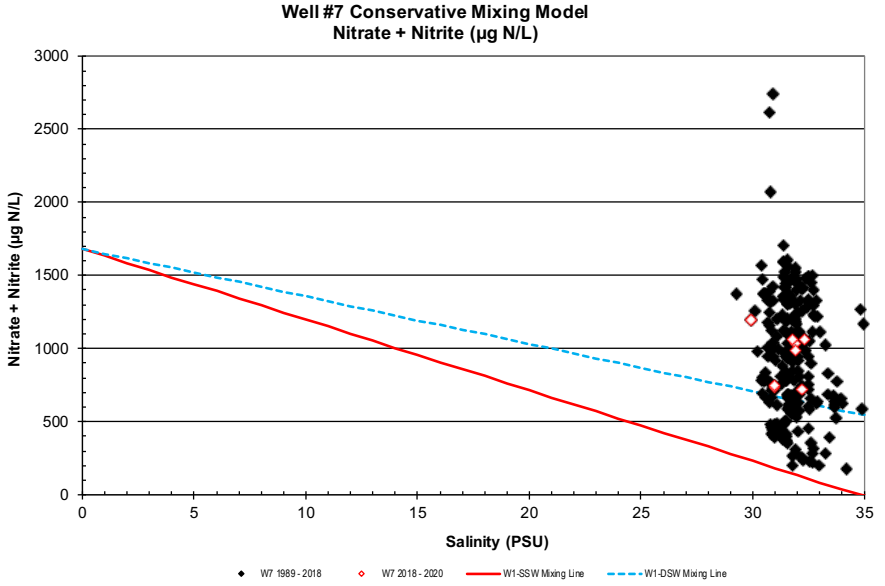
Well 7 Charts

5/20/1992 - 7/21/20





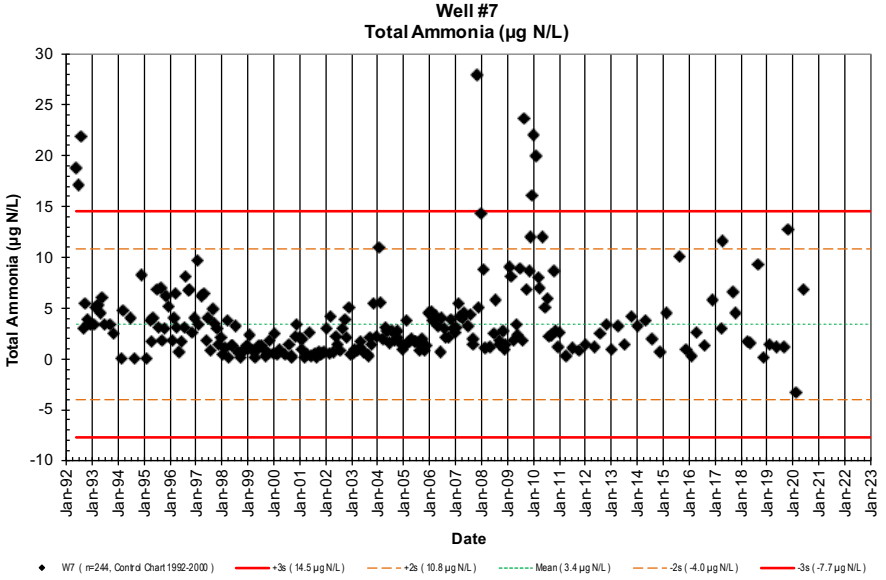


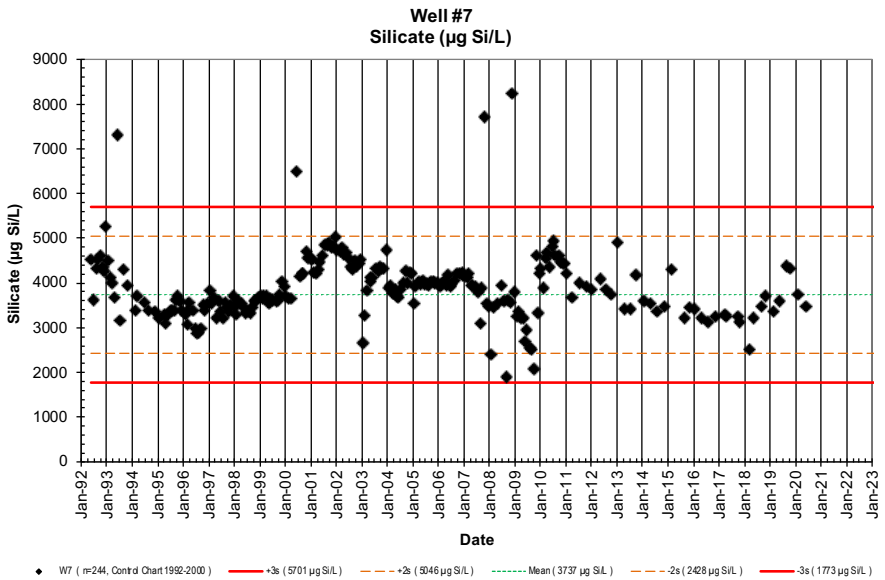


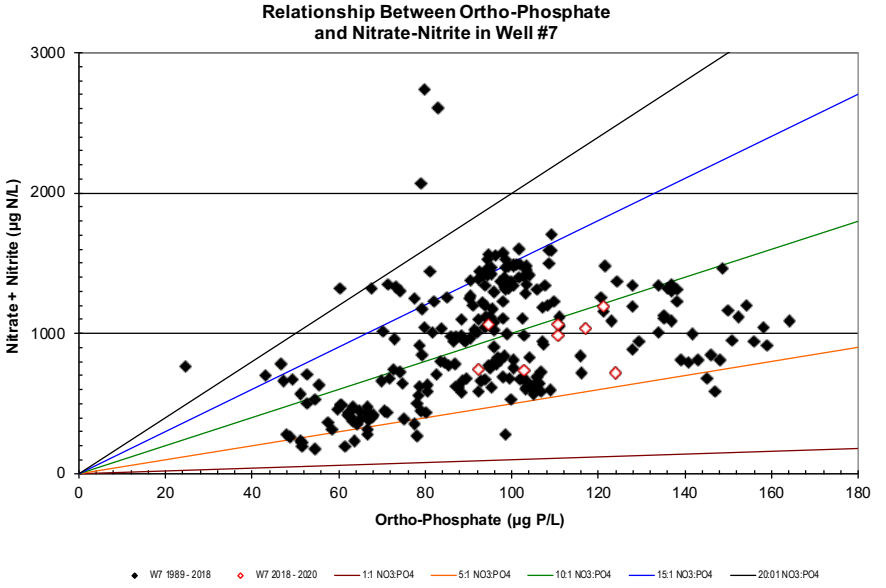
NELHA Water Quality Laboratory

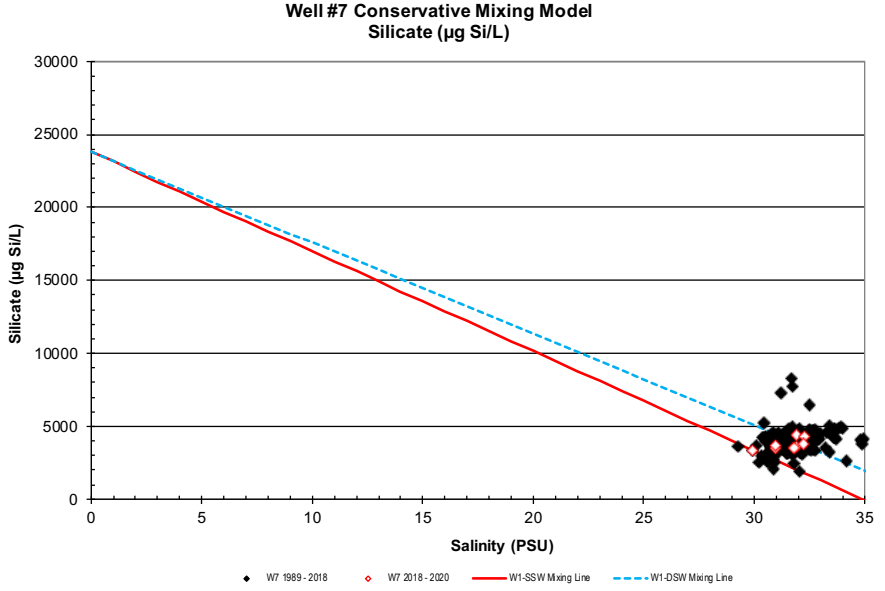
Well 7 Charts

5/20/1992 - 7/21/20







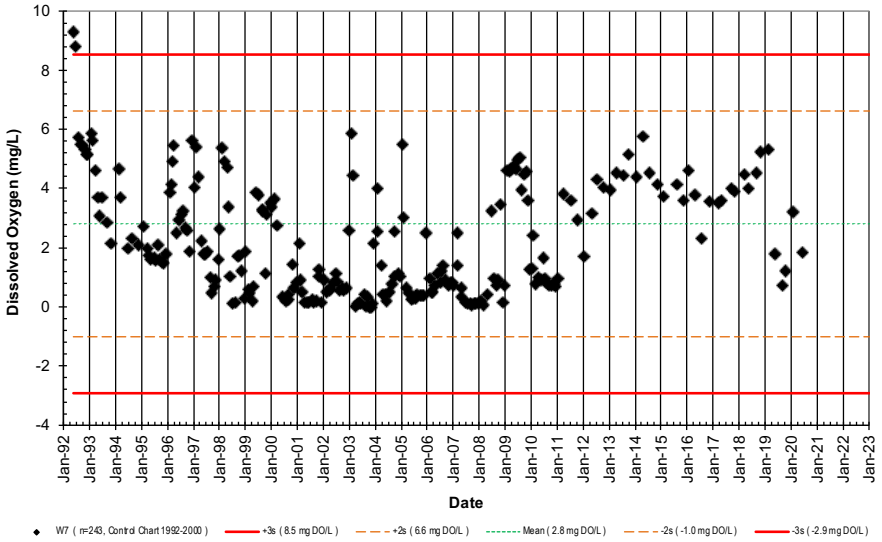


NELHA Water Quality Laboratory

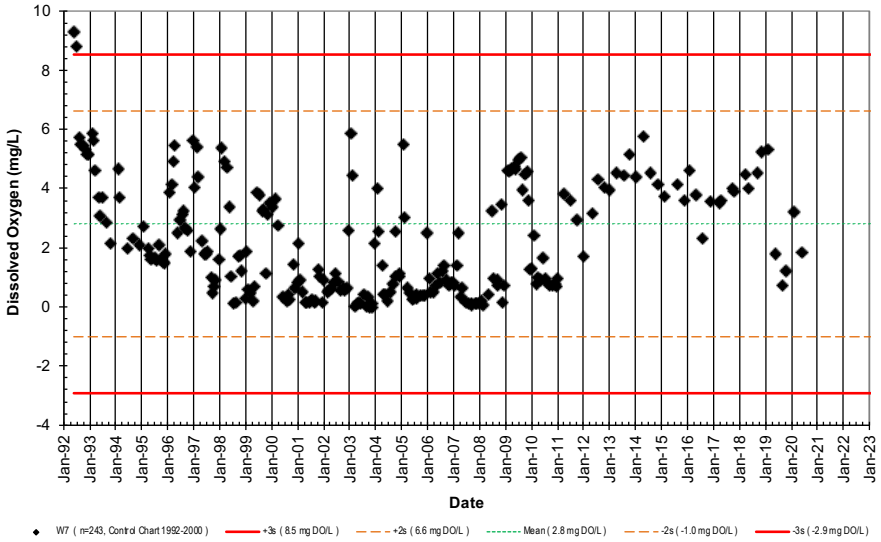
Well 7 Charts

5/20/1992 - 7/21/20

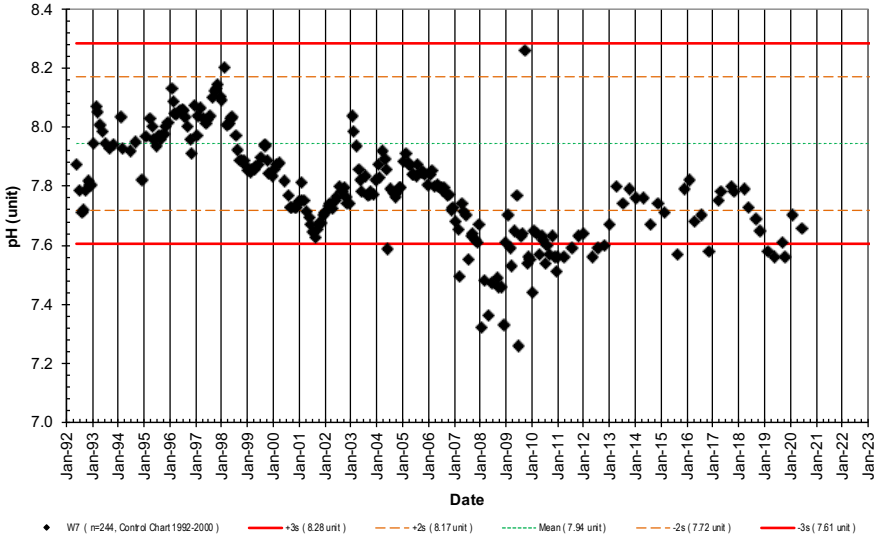
Well #7
Dissolved Oxygen (mg DO/L)



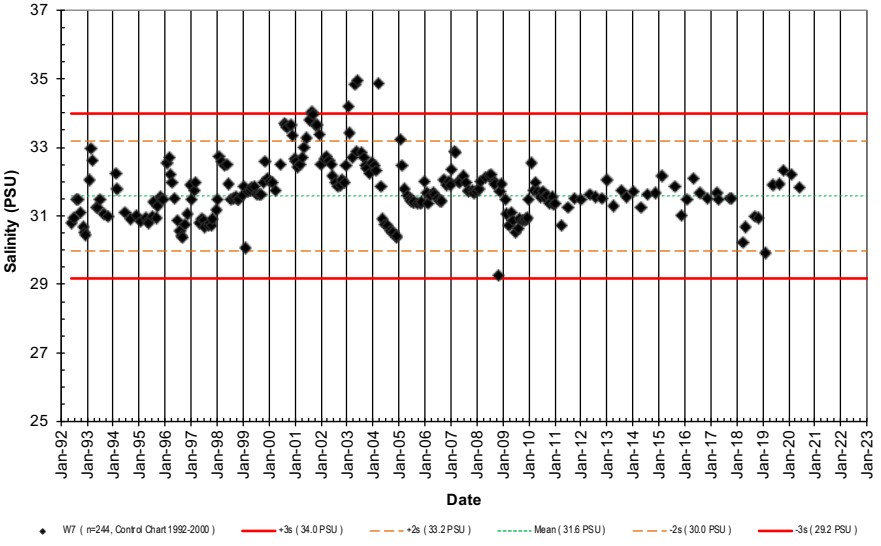
Well #7
Dissolved Oxygen (mg/L)



Well #7
pH (unit)



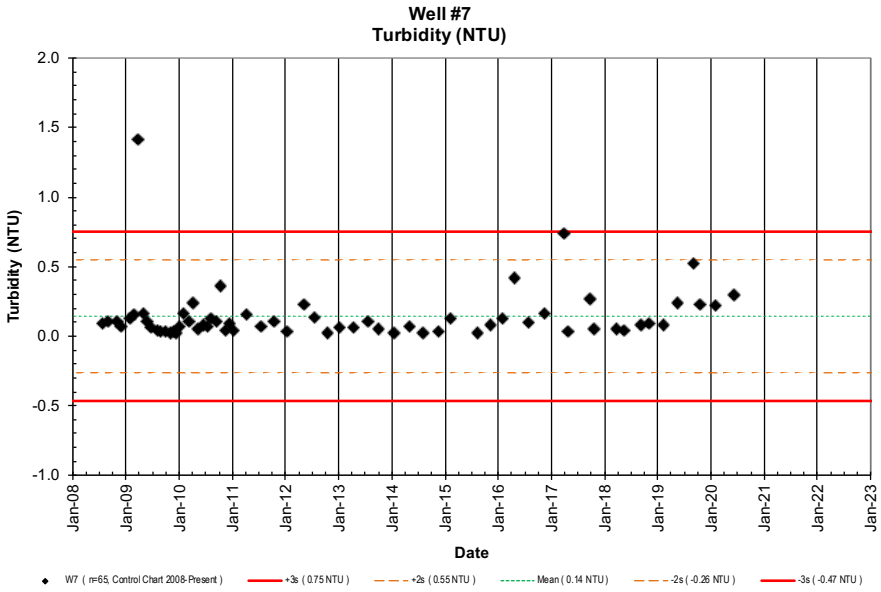
Well #7
Salinity (PSU)



NELHA Water Quality Laboratory

Well 7 Charts

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NELHA Water Quality Laboratory

Well 7A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	5/20/92	815			3.87	120	58.3	817	0.35	4.9	253	7106	3.95	122.3	59.5	833	0.71	15.1	7.506	28.256	15640	6.98		<1	<1
W7A	-10.36	6/24/92	820			3.55	110	53.7	752	0.72	10.1	217	6095	3.66	113.4	56.6	793	1.13	16.7	7.622	29.313	16226	6.72		<1	<1
W7A	-10.36	7/30/92	744			3.21	99	50.4	706	1.22	17.1	189	5308	3.32	102.8	53.6	751	0.90	19.6	7.779	29.578	16372	6.61		31	22
W7A	-10.36	8/26/92	948			4.22	131	60.4	846	0.18	2.5	229	6432	4.24	131.3	32.6	457	0.78	16.5	7.648	28.509	15780	6.56		<1	<1
W7A	-10.36	9/23/92	807			3.93	122	51.4	720	0.31	4.3	248	6965	3.97	123.0	57.8	809	0.73	16.6	7.648	28.346	15690	6.51		<1	<1
W7A	-10.36	10/28/92	842			3.59	111	53.8	754	0.21	2.9	230	6460	3.68	114.0	56.3	788	0.73	17.3	7.685	28.800		5.86		<1	<1
W7A	-10.36	11/18/92	833			3.77	117	59.9	839	0.21	2.9	248	6965	4.23	131.0	65.8	921	0.79	16.7	7.620	27.953	15473	6.14		<1	<1
W7A	-10.36	12/9/92	825			3.56	110	53.3	747	0.20	2.8	235	6600	3.70	114.6	56.5	792	0.80	16.8	7.682	28.598	15830	6.40		<1	<1
W7A	-10.36	1/27/93	801			2.09	65	30.5	427	0.29	4.1	183	5137	2.32	71.9	33.7	473	0.76	20.8	7.986	30.356	16803	5.71		<1	<1
W7A	-10.36	2/24/93	749			2.86	89	44.8	628	0.35	4.9	208	5847	2.89	89.5	47.2	661	0.69	21.9	8.071	28.986	16045	5.05		<1	<1
W7A	-10.36	3/17/93	756			3.19	99	47.8	669	0.38	5.3	226	6336	3.24	100.4	51.2	717	0.61	21.7	8.051	28.120	15565	5.21		<1	<1
W7A	-10.36	4/28/93	748			2.92	90	40.1	562	0.32	4.5	209	5870	2.95	91.4	43.0	602	0.58	18.7	7.901	28.551	15804	4.73		<1	<1
W7A	-10.36	5/26/93	752			2.57	80	38.4	537	0.24	3.4	260	7302	2.67	82.7	42.9	601	0.61	18.8	7.932	28.719	15897	4.52		<1	<1
W7A	-10.36	6/29/93	805			2.82	87	41.7	584	0.21	2.9	208	5842	2.93	90.8	45.6	638	0.58	18.7	7.878	28.528	15791	4.65		<1	<1
W7A	-10.36	9/1/93	805			3.42	106	53.5	749	0.23	3.2	268	7527	3.51	108.7	63.9	895	0.66	19.1	7.763	26.930	14906	3.74		<1	<1
W7A	-10.36	10/27/93	758			3.26	101	42.9	600	0.17	2.4	234	6572	3.31	102.5	46.1	645	0.68	19.8	7.846	27.248	15082	1.65		<1	<1
W7A	-10.36	3/1/94	1018			3.40	105	39.2	549	0.25	3.5	224	6291	3.35	103.8	45.6	639	0.71	19.6	7.809	26.547	14694	1.77		<1	<1
W7A	-10.36	6/22/94	737			2.98	92	27.9	390	0.29	4.1	195	5485	2.99	92.6	32.0	448	0.65	19.4	7.824	27.780	15377	0.96		<1	<1
W7A	-10.36	8/24/94	759			2.99	93	37.0	518	0.00	0.0	168	4727	3.05	94.5	44.5	624	0.67	19.4	7.817	29.064	16088	2.52		<1	<1
W7A	-10.36	11/28/94	952			2.87	89	53.7	752	0.43	6.0	387	10878	2.92	90.4	52.1	730	0.55	20.4	7.750	26.527	14683	1.43		<1	<1
W7A	-10.36	1/25/95	830			2.71	84	42.2	591	0.00	0.0	197	5538	2.75	85.2	44.9	628	0.55	19.6	7.897	27.646	15303	2.47		<1	<1
W7A	-10.36	2/15/94	848			2.62	81	46.4	650	0.00	0.0	188	5280	2.64	81.8	53.6	751	0.57	20.2	7.934	27.924	15457	2.03		<1	<1
W7A	-10.36	3/29/95	828			2.81	87	47.7	669	0.30	4.2	210	5895	2.83	87.7	50.7	710	0.55	19.9	7.926	26.852	14863	1.83		<1	<1
W7A	-10.36	4/26/95	822			3.01	93	56.3	788	0.08	1.1	195	5488	3.15	97.6	60.3	845	0.64	20.0	7.919	27.178	15044	1.88		<1	<1
W7A	-10.36	5/9/95	1005			3.31	103	56.1	786	0.27	3.8	232	6510	3.31	102.5	58.7	821	0.58	20.3	7.864	26.112	14454	1.28		<1	<1
W7A	-10.36	6/28/95	820			3.12	97	49.5	694	0.51	7.1	213	5977	3.13	96.9	52.1	730	0.58	20.2	7.846	26.409	14618	2.17		<1	<1
W7A	-10.36	7/26/95	1000			3.03	94	42.9	601	0.21	2.9	215	6041	3.09	95.7	45.4	636	0.55	20.7	7.884	26.609	14729	2.34		<1	<1
W7A	-10.36	8/23/95	914			2.54	79	35.6	498	0.44	6.2	169	4741	2.64	81.8	37.1	520	0.57	20.7	7.891	28.595	15828	2.01		<1	<1
W7A	-10.36	9/12/95	907			2.73	85	37.1	520	0.14	2.0	191	5359	2.80	86.7	39.8	558	0.51	20.5	7.896	27.584	15268	1.93		<1	<1
W7A	-10.36	10/17/95	10			2.79	86	49.1	688	0.17	2.4	375	10529	2.95	91.4	50.7	711	0.69	20.6	7.888	28.393	15716	2.78		<1	<1
W7A	-10.36	11/7/95	1005			2.47	77	34.8	487	0.44	6.2	178	5010	2.48	76.8	36.3	508	0.67	20.5	7.952	28.312	15671	2.52		<1	<1
W7A	-10.36	12/6/95	1019			2.12	66	31.8	446	0.38	5.3	165	4645	2.34	72.5	34.4	481	0.71	21.1	7.989	28.931	16014	2.52		<1	<1
W7A	-10.36	1/30/96	1106			2.93	91	43.7	612	0.11	1.5	208	5850	3.12	96.6	44.9	629	0.57	21.0	7.936	26.655	14754	2.45		<1	<1
W7A	-10.36	2/27/96	1220			3.15	98	60.9	852	0.21	2.9	199	5586	3.29	101.9	64.1	898	0.74	20.8	7.918	26.682	14769	2.52		<1	<1
W7A	-10.36	2/27/96	1135			3.51	109	80.2	1123	0.40	5.6	206	5780	3.59	111.2	83.3	1166	0.73	21.2	7.849	26.247	14528	2.39		<1	<1
W7A	-10.36	4/2/96	1020			3.71	115	86.1	1206	0.20	2.8	224	6282	3.84	118.9	91.8	1285	0.78	21.0	7.829	26.749	14806	2.54		<1	<1
W7A	-10.36	5/15/96	1148			3.77	117	76.4	1070	0.05	0.7	203	5713	3.83	118.6	81.7	1144	0.58	20.8	7.855	27.670	15316	2.75		<1	<1
W7A	-10.36	6/18/96	1116			3.67	114	64.2	899	0.11	1.5	195	5483	3.71	114.9	67.8	950	0.59	20.5	7.875	23.773	13159	2.77		<1	<1
W7A	-10.36	7/17/96	1143			4.64	144	117.7	1649	125	1756	197	5531	4.60	142.5	197.2	2763	0.80	21.0	7.929	27.469	15205	0.34		<1	<1
W7A	-10.36	8/6/96	1159			4.21	130	90.6	1269	0.46	6.4	206	5778	4.27	132.3	96.3	1348	0.70	21.8	7.764	27.690	15327	1.93		<1	<1
W7A	-10.36	9/4/96	1145			3.86	120	69.5	974	0.42	5.9	195	5481	3.87	119.9	72.4	1014	0.72	22.1	7.807	28.271	15649	2.61		<1	<1
W7A	-10.36	10/9/96	1239			3.05	94	45.4	636	0.47	6.6	197	5529	3.23	100.0	49.6	694	0.66	21.5	7.877	28.926	16011	3.92		<1	<1
W7A	-10.36	11/6/96	1143			3.18	98	49.5	693	0.20	2.8	181	5091	3.33	103.1	54.8	768	0.71	21.3	7.842	28.254	15639	2.73		<1	<1
W7A	-10.36	12/17/96	1204			2.90	90	54.6	764	0.21	2.9	170	4764	2.99	92.6	59.8	838	0.47	22.3	7.889	28.486	15768	3.19		<1	1

NELHA Water Quality Laboratory

Well 7A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	1/14/97	1157			3.18	98	74.8	1048	0.21	2.9	192	5401	3.23	100.0	79.3	1111	0.67	22.1	7.890	27.845	15413	2.63		<1	<1
W7A	-10.36	2/11/97	1021			2.46	76	75.3	1054	0.21	2.9	173	4856	2.47	76.5	78.4	1098	0.84	22.7	7.973	29.586	16377	4.14		<1	<1
W7A	-10.36	3/11/97	909			3.45	107	138.0	1933	0.22	3.1	189	5300	3.69	114.3	141.1	1976	0.71	21.4	7.938	28.416	15729	2.46		<1	<1
W7A	-10.36	4/23/97	1147			3.38	105	150.7	2111	0.34	4.8	170	4783	3.60	111.5	169.8	2378	0.92	21.3	7.987	28.442	15743	1.93		<1	<1
W7A	-10.36	5/28/97	1034			3.61	112	147.5	2066	0.02	0.3	178	5005	4.13	127.9	171.5	2402	0.75	20.5	7.975	28.503	15777	1.84		<1	<1
W7A	-10.36	6/17/97	1115			4.27	132	123.4	1728	0.21	2.9	174	4881	4.31	133.5	149.5	2094	0.71	20.7	7.963	28.724	15899	1.61		<1	<1
W7A	-10.36	7/15/97	1110			5.55	172	154.1	2158	0.14	2.0	173	4862	5.58	172.8	159.4	2233	0.64	21.0	7.903	28.524	15789	0.41		<1	<1
W7A	-10.36	8/26/97	1142			5.94	184	164.2	2300	0.29	4.1	186	5230	5.94	184.0	176.8	2476	0.66	23.2	7.925	29.156	16139	0.50		<1	<1
W7A	-10.36	9/23/97	957			5.85	181	121.5	1702	0.23	3.2	189	5294	5.85	181.2	125.3	1755	0.69	22.9	7.940	28.498	15774	0.91		<1	<1
W7A	-10.36	10/14/97	1045			5.12	159	85.5	1198	0.21	2.9	189	5303	5.12	158.6	96.5	1352	0.65	22.3	7.932	28.419	15731	1.90		<1	<1
W7A	-10.36	11/4/97	914			4.41	137	75.9	1063	0.22	3.1	182	5112	4.59	142.2	89.0	1247	0.67	21.4	7.993	28.698	15885	1.78		<1	<1
W7A	-10.36	12/16/97	1115			5.14	159	104.6	1465	0.08	1.1	193	5409	5.32	164.8	107.0	1499	0.69	21.9	7.898	28.709	15891	1.32		<1	<1
W7A	-10.36	1/5/98	938			4.50	139	81.8	1146	0.02	0.3	168	4714	4.64	143.7	88.3	1237	0.63	21.9	7.972	29.479	16317	2.32		<1	<1
W7A	-10.36	2/3/98	906			3.84	119	68.5	959	0.04	0.6	171	4814	4.06	125.8	73.6	1031	0.64	22.4	8.028	29.549	16356	2.83		<1	<1
W7A	-10.36	3/10/98	935			5.11	158	83.7	1172	0.11	1.5	198	5555	5.33	165.1	89.0	1246	0.77	21.8	7.741	28.274	15650	2.04		1	1
W7A	-10.36	4/14/98	1103			5.04	156	100.5	1408	0.01	0.1	190	5342	5.21	161.4	103.1	1444	0.73	22.0	7.780	29.041	16075	1.94		<1	<1
W7A	-10.36	5/12/98	937			4.80	149	109.3	1531	0.09	1.3	191	5356	4.89	151.5	110.9	1553	0.71	21.9	7.778	28.920	16008	2.44		<1	<1
W7A	-10.36	6/2/98	938			4.66	144	110.3	1545	0.10	1.4	191	5369	4.80	148.7	114.0	1597	0.68	21.8	7.773	28.861	15975	2.06		<1	<1
W7A	-10.36	7/14/98	930			4.77	148	110.1	1542	0.18	2.5	186	5235	4.93	152.7	110.8	1552	0.62	22.4	7.684	29.583	16375	1.76		<1	<1
W7A	-10.36	8/11/98	952			3.98	123	76.3	1068	0.09	1.3	175	4912	4.16	128.9	84.5	1184	0.85	21.6	7.774	29.845	16520	2.22		<1	<1
W7A	-10.36	9/15/98	944			3.90	121	67.8	949	0.05	0.7	171	4797	3.97	123.0	69.5	973	0.85	21.3	7.749	30.350	16800	1.59		<1	<1
W7A	-10.36	10/13/98	844			4.60	142	95.2	1333	0.06	0.8	176	4937	4.61	142.8	99.5	1394	0.71	22.4	7.704	30.368	16809	1.19		<1	<1
W7A	-10.36	11/4/98	937			4.38	136	84.4	1182	0.10	1.4	176	4932	4.52	140.0	89.3	1251	1.12	23.1	7.724	30.295	16769	1.13		<1	<1
W7A	-10.36	12/16/98	927			4.65	144	82.4	1154	0.09	1.3	173	4853	4.83	149.6	88.9	1245	0.86	23.2	7.698	29.843	16519	1.77		1	<1
W7A	-10.36	1/12/99	958			4.20	130	76.4	1070	0.07	1.0	181	5078	4.36	135.0	78.9	1105	0.89	22.9	7.712	30.024	16619	2.24		<1	<1
W7A	-10.36	2/3/99	950			4.34	134	97.4	1364	0.48	6.7	164	4603	4.45	137.8	103.6	1451	0.85	22.7	7.695	30.096	16659	2.25		<1	<1
W7A	-10.36	3/2/99	947			4.31	133	89.2	1249	0.04	0.6	165	4640	4.48	138.8	91.1	1276	0.79	22.6	7.724	30.075	16647	2.70		<1	<1
W7A	-10.36	4/6/99	934			4.19	130	89.8	1258	0.02	0.3	164	4592	4.28	132.6	93.4	1308	0.63	22.3	7.701	30.596	16936	2.09		<1	<1
W7A	-10.36	5/4/99	943			3.78	117	72.4	1014	0.04	0.6	155	4364	3.88	120.2	78.9	1105	0.69	21.2	7.759	30.276	16759	2.73		<1	<1
W7A	-10.36	6/2/99	933			3.20	99	58.7	822	0.10	1.4	150	4213	3.37	104.4	61.4	860	0.66	20.6	7.768	30.459	16860	2.77		<1	<1
W7A	-10.36	7/7/99	1011			3.53	109	59.8	838	0.07	1.0	150	4224	3.61	111.8	62.4	874	0.69	21.2	7.758	30.340	16794	2.73		<1	<1
W7A	-10.36	8/25/99	935			3.80	118	76.2	1067	0.15	2.1	147	4129	3.92	121.4	81.9	1147	0.76	23.2	7.703	30.791	17044	1.77		<1	<1
W7A	-10.36	9/8/99	946			3.88	120	77.8	1089	0.06	0.8	153	4303	4.07	126.1	89.9	1259	0.76	22.9	7.705	30.838	17070	1.36		<1	<1
W7A	-10.36	10/6/99	952			3.45	107	55.3	775	0.01	0.1	146	4109	3.61	111.8	58.7	822	0.66	22.0	7.738	30.699	16993	2.95		<1	<1
W7A	-10.36	11/3/99	1007			3.04	94	55.8	782	0.13	1.8	150	4210	3.26	101.0	59.9	839	0.65	21.7	7.783	30.485	16874	2.74		<1	<1
W7A	-10.36	12/15/99	1026			3.50	108	60.3	845	0.03	0.4	148	4162	3.93	121.7	72.4	1014	0.72	22.6	7.712	30.849	17076	2.87		<1	<1
W7A	-10.36	1/11/00	1002			3.62	112	73.9	1035	0.15	2.1	149	4176	3.69	114.3	81.4	1140	0.74	22.3	7.715	30.096	16659	2.33		<1	<1
W7A	-10.36	2/14/00	1001			4.02	125	73.2	1025	0.06	0.8	145	4081	4.15	128.5	88.2	1235	0.81	22.6	7.720	30.349	16799	2.31		<1	<1
W7A	-10.36	3/22/00	1018			3.94	122	73.5	1029	0.05	0.7	146	4100	3.86	119.6	75.7	1060	0.76	22.3	7.739	30.235	16736	2.48		<1	<1
W7A	-10.36	4/12/00	1008			4.07	126	66.4	930	0.03	0.4	150	4210	3.98	123.3	70.1	982	0.78	22.2	7.767	29.897	16549	2.50		<1	<1
W7A	-10.36	5/17/00	948			3.95	122	69.6	975	0.02	0.3	147	4123	4.10	127.0	75.2	1053	0.80	21.9	7.718	29.977	16593	2.10		<1	<1
W7A	-10.36	6/6/00	1010			4.16	129	72.9	1021	0.03	0.4	200	5609	4.29	132.9	79.6	1115	0.75	21.9	7.687	29.871	16534	1.93		<1	<1

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Well 7A Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	7/31/00	954			4.31	133	71.1	996	0.11	1.5	167	4679	4.35	134.7	73.3	1027	0.82	22.5	7.677	29.921	16562	1.75		<1	<1
W7A	-10.36	8/30/00	955			4.00	124	74.9	1049	0.01	0.1	158	4423	4.10	127.0	75.9	1063	1.33	23.3	7.576	30.513	16890	1.29		<1	<1
W7A	-10.36	9/6/00	937			3.90	121	75.7	1060	0.04	0.6	157	4409	4.10	127.0	79.0	1107	0.79	23.4	7.545	30.773	17034	1.01		<1	<1
W7A	-10.36	10/25/00	1124			4.05	125	73.4	1028	0.10	1.4	158	4449	4.21	130.4	81.0	1135	0.76	24.4	7.525	31.003	17161	1.56		<1	<1
W7A	-10.36	11/14/00	959			3.90	121	82.7	1158	0.27	3.8	154	4322	4.18	129.5	88.5	1240	0.85	24.2	7.545	30.909	17109	1.34		<1	<1
W7A	-10.36	12/19/00	935			3.89	120	100	1405	0.11	1.5	151	4235	4.33	134.1	102	1429	0.76	23.6	7.609	30.101	16662	1.16		<1	<1
W7A	-10.36	1/24/01	922			3.75	116	72.4	1014	0.11	1.5	170	4775	3.90	120.8	76.2	1067	0.71	23.3	7.618	30.788	17042	1.09		<1	<1
W7A	-10.36	2/7/01	948			3.60	112	75.2	1053	0.08	1.1	150	4221	3.63	112.4	77.2	1081	0.71	23.2	7.682	30.786	17041	0.67		<1	<1
W7A	-10.36	3/12/01	928			3.96	123	79.8	1118	0.01	0.1	156	4381	4.14	128.2	81.4	1140	0.79	22.7	7.542	30.234	16735	0.63		<1	<1
W7A	-10.36	4/18/01	916			4.73	147	75.8	1062	0.03	0.4	143	4019	4.80	148.7	76.6	1073	0.73	22.0	7.548	30.327	16787	1.53		<1	<1
W7A	-10.36	5/14/01	1050			4.94	153	78.6	1101	0.18	2.5	147	4117	4.98	154.2	80.8	1131	0.64	21.9	7.589	30.169	16699	1.67		<1	<1
W7A	-10.36	6/13/01	942			4.88	151	80.2	1124	0.02	0.3	148	4159	4.88	151.2	81.9	1147	0.61	21.9	7.593	30.316	16781	1.46		<1	<1
W7A	-10.36	7/24/01	1002			4.24	131	80.7	1130	0.06	0.8	154	4314	4.22	130.7	83.9	1175	0.76	22.4	7.597	30.530	16899	0.90		<1	<1
W7A	-10.36	8/22/01	1001			4.34	134	88.6	1241	0.01	0.1	148	4143	4.28	132.6	90.4	1266	0.91	22.8	7.586	30.572	16922	0.82		<1	<1
W7A	-10.36	9/17/01	1035			4.32	134	86.5	1212	0.02	0.3	153	4289	4.36	135.0	93.9	1315	0.89	23.6	7.621	30.523	16895	0.91		<1	<1
W7A	-10.36	10/22/01	1023			4.12	128	82.6	1157	0.02	0.3	149	4196	4.24	131.3	85.6	1199	0.71	23.4	7.631	30.478	16870	1.31		<1	<1
W7A	-10.36	11/5/01	1055			4.16	129	88.1	1234	0.02	0.3	150	4213	4.22	130.7	102	1434	0.72	23.3	7.622	30.409	16832	1.30		<1	<1
W7A	-10.36	12/12/01	1039			4.24	131	86.6	1213	0.03	0.4	155	4359	4.31	133.5	97.5	1366	0.75	22.8	7.642	29.943	16574	1.70		<1	<1
W7A	-10.36	1/7/02	1038			2.80	87	47.4	664	0.26	3.6	133	3741	3.18	98.5	55.8	782	0.74	23.3	7.848	31.262	17304	4.33		<1	1
W7A	-10.36	2/25/02	958			4.58	142	97.1	1361	0.05	0.7	158	4429	4.62	143.1	104	1462	0.68	22.1	7.692	30.216	16725	1.78		<1	<1
W7A	-10.36	3/18/02	1023			4.90	152	97.4	1364	0.28	3.9	147	4129	5.04	156.1	102	1431	0.70	21.9	7.727	30.218	16726	1.36		<1	<1
W7A	-10.36	4/10/02	1029			5.56	172	126	1761	2.97	41.6	150	4224	5.66	175.3	136	1898	1.51	22.0	7.780	30.104	16663	0.37		<1	89
W7A	-10.36	5/22/02	1037			6.94	215	79.1	1108	0.14	2.0	157	4415	7.11	220.2	93.5	1310	0.84	22.1	7.862	29.592	16380	0.19		<1	2
W7A	-10.36	6/19/02	1122			6.62	205	73.3	1027	0.11	1.5	156	4379	6.76	209.4	78.6	1101	0.74	22.4	7.778	30.000	16606	0.40		<1	2
W7A	-10.36	7/22/02	1105			6.36	197	59.9	839	0.15	2.1	159	4468	6.66	206.3	64.7	906	0.76	23.2	7.727	30.064	16641	0.81		<1	2
W7A	-10.36	8/21/02	1133			5.87	182	54.8	767	0.22	3.1	159	4454	6.02	186.5	58.3	816	0.79	23.4	7.656	30.380	16816	0.61		<1	1
W7A	-10.36	9/25/02	1039			5.54	172	60.7	850	0.26	3.6	171	4794	5.76	178.4	58.9	825	0.78	23.4	7.622	30.531	16900	0.42		<1	<1
W7A	-10.36	10/15/02	1050			6.31	195	61.1	856	0.25	3.5	158	4429	6.68	206.9	62.7	878	0.87	23.9	7.637	30.344	16796	0.27		<1	<1
W7A	-10.36	11/17/02	1018			6.25	194	72.5	1015	0.36	5.0	163	4567	6.27	194.2	69.6	974	0.88	24.1	7.634	30.244	16741	0.26		<1	<1
W7A	-10.36	12/18/02	1042			5.92	183	68.9	965	0.05	0.7	161	4511	6.12	189.6	64.4	902	0.67	23.8	7.690	29.967	16588	0.82		<1	27
W7A	-10.36	1/23/03	1050			3.54	110	50.7	710	0.02	0.3	123	3446	3.68	114.0	56.9	797	0.74	24.1	7.854	32.297	17877	4.16		<1	<1
W7A	-10.36	2/11/03	1107			6.80	211	97.3	1363	0.07	1.0	153	4291	7.00	216.8	106	1478	0.97	23.1	7.718	30.150	16689	0.53		<1	<1
W7A	-10.36	3/20/03	1136			7.85	243	149.4	2093	0.09	1.3	157	4409	7.84	242.8	151	2118	1.18	23.9	7.793	29.848	16522	0.58		<1	<1
W7A	-10.36	4/30/03	1013			7.44	230	102.5	1436	0.16	2.2	156	4387	7.74	239.7	124	1740	1.28	22.7	7.835	30.083	16652	0.61		<1	1
W7A	-10.36	5/14/03	918			7.24	224	86.3	1208	0.04	0.6	153	4291	7.35	227.7	88.2	1235	1.36	22.6	7.815	30.195	16714	0.19		<1	1
W7A	-10.36	6/4/03	1001			7.76	240	62.3	873	1.07	15.0	152	4272	8.04	249.0	79.1	1107	1.56	22.9	7.803	30.290	16766	0.37		<1	7636
W7A	-10.36	7/30/03	934			9.05	280	47.7	667	7.28	102.0	156	4384	9.38	290.5	67.3	943		23.0	7.836	30.056	16637	0.42		<1	1
W7A	-10.36	8/28/03	938			3.10	96	70.4	986	0.15	2.1	151	4249	8.38	259.6	97.6	1366		23.9	7.748	30.199	16716	0.77		<1	6
W7A	-10.36	9/16/03	946			7.38	229	65.1	912	0.08	1.1	152	4255	7.56	234.2	102	1422		23.6	7.709	30.344	16796	0.41		19	TNTC
W7A	-10.36	10/8/03	933			7.46	231	51.4	720	0.86	12.0	155	4353	7.82	242.2	65.8	922		23.5	7.685	30.257	16748	NA		<1	TNTC
W7A	-10.36	11/5/03	946			7.24	224	51.9	727	2.09	29.3	166	4662	7.60	235.4	56.1	786		23.7	7.684	29.795	16492			<1	TNTC
W7A	-10.36	11/14/03	959																23.3				0.16			
W7A	-10.36	12/17/03	1154			6.91	214	72.0	1008	1.12	15.7	162	4541	7.91	245.0	87.9	1231		24.7	7.646	29.984	16597	0.60		<1	2

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Well 7A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	1/28/04	1037			6.38	198	73.8	1034	0.73	10.2	177	4968	6.54	202.6	86.0	1204	0.74	24.0	7.662	29.374	16259	0.72		<1	<1
W7A	-10.36	2/11/04	933			6.50	201	90.8	1271	0.13	1.8	160	4480	6.72	208.1	96.0	1344	1.35	23.0	7.600	29.503	16331	0.73		<1	<1
W7A	-10.36	3/16/04	1020			7.12	221	94.7	1326	0.16	2.2	165	4620	7.80	241.6	104	1458		23.3	7.621	29.295	16216	0.54		<1	<1
W7A	-10.36	4/22/04	1006			7.26	225	96.7	1355	0.28	3.9	162	4558	7.52	232.9	107	1504		22.5	7.705	29.299	16218	1.30		<1	1
W7A	-10.36	5/18/04	1001			7.29	226	83.0	1162	0.20	2.8	163	4572	7.31	226.4	86.0	1205		22.2	7.591	28.74	15908	0.94		<1	<1
W7A	-10.36	6/8/04	1038			6.96	216	84.2	1180	0.15	2.1	165	4620	7.36	228.0	87.6	1228		22.3	7.587	28.85	15969	1.20		<1	<1
W7A	-10.36	7/15/04	951			7.41	230	88.2	1235	0.18	2.5	165	4637	7.36	228.0	100	1403		22.5	7.537	28.67	15870	1.06		<1	<1
W7A	-10.36	8/25/04	1027			6.66	206	93.1	1304	0.18	2.5	162	4561	6.80	210.6	99.0	1387		22.6	7.540	28.90	15997	1.05		<1	<1
W7A	-10.36	9/27/04	1139			6.78	210	95.7	1340	0.22	3.1	173	4859	6.92	214.3	100	1395		22.8	7.524	29.20	16163	0.78		<1	<1
W7A	-10.36	10/4/04	1058			6.60	204	86.6	1214	0.20	2.8	156	4384	6.96	215.6	96.2	1347		22.8	7.551	29.36	16252	1.02		<1	<1
W7A	-10.36	11/23/04	932			6.36	197	64.1	898	0.08	1.1	174	4892	6.74	208.8	85.9	1203		23.3	7.494	29.24	16185	1.26		<1	<1
W7A	-10.36	12/8/04	942			6.40	198	61.6	863	0.92	12.9	170	4769	6.68	206.9	75.1	1052		23.9	7.492	29.53	16346	0.47		<1	<1
W7A	-10.36	1/18/05	941			4.70	146	46.3	649	0.06	0.8	141	3952	4.86	150.5	49.5	694		23.7	7.764	31.050	17187	3.15		<1	<1
W7A	-10.36	2/10/05	925			6.16	191	62.7	878	0.24	3.4	159	4463	6.46	200.1	79.8	1118		23.1	7.641	29.914	16558	0.66		<1	<1
W7A	-10.36	3/22/05	930			9.18	284	75.4	1056	0.13	1.8	153	4289	9.52	294.9	78.0	1092	1.16	23.1	7.832	29.829	16511	0.36		<1	<1
W7A	-10.36	4/20/05	930			7.46	231	85.9	1203	0.09	1.3	146	4100	7.70	238.5	88.2	1236		22.9	7.782	30.257	16748	1.21		<1	<1
W7A	-10.36	5/25/05	942			7.26	225	68.8	963	0.15	2.1	150	4202	7.48	231.7	78.3	1097		21.8	7.699	30.109	16666	1.21		<1	<1
W7A	-10.36	6/14/05	943			6.94	215	65.0	910	0.10	1.4	150	4218	7.22	223.6	70.8	991		23.4	7.687	30.170	16700	0.48		<1	<1
W7A	-10.36	7/19/05	934			6.56	203	69.0	967	0.09	1.3	150	4207	6.86	212.5	74.5	1044	0.65	23.1	7.674	30.298	16771	1.64		<1	<1
W7A	-10.36	8/3/05	1004			6.56	203	60.0	841	0.06	0.8	153	4286	6.82	211.2	61.1	856	0.62	24.1	7.711	30.287	16765	1.32		<1	<1
W7A	-10.36	9/22/05	926			6.20	192	61.0	854	0.14	2.0	156	4370	6.42	198.9	65.5	917	0.53	24.4	7.719	30.378	16815	1.80		<1	<1
W7A	-10.36	10/19/05	938			5.90	183	74.7	1046	0.11	1.5	158	4432	6.08	188.3	101	1416		24.9	7.703	30.340	16794	1.42		<1	<1
W7A	-10.36	11/8/05	924			5.62	174	73.2	1025	0.12	1.7	141	3952	5.86	181.5	77.4	1084		24.5	7.710	30.095	16658	1.14		<1	<1
W7A	-10.36	12/22/05	856			4.22	131	52.3	732	0.32	4.5	141	3946	4.36	135.0	54.9	769		24.3	7.767	31.121	17226	2.45		<1	<1
W7A	-10.36	1/31/06	923			4.00	124	68.6	961	0.35	4.9	144	4036	4.24	131.3	77.7	1088		24.4	7.595	30.715	17002	1.41		<1	<1
W7A	-10.36	2/16/06	920			3.96	123	67.7	949	0.27	3.8	141	3954	4.34	134.4	69.2	969	0.92	23.9	7.605	30.729	17009	1.53		<1	<1
W7A	-10.36	3/22/06	911			3.74	116	69.5	973	0.29	4.1	135	3792	3.96	122.7	71.5	1001	0.75	23.6	7.478	30.627	16953	0.33		<1	<1
W7A	-10.36	4/27/06	957			3.91	121	68.6	961	0.10	1.4	129	3623	4.06	125.8	65.4	915	0.63	24.1	7.524	30.766	17030	1.82		<1	<1
W7A	-10.36	5/24/06	1017			3.79	117	63.6	891	0.05	0.7	133	3735	3.91	121.1	60.6	848	0.67	24.6	7.522	30.594	16935	3.19		<1	<1
W7A	-10.36	6/28/06	1001			3.89	120	57.8	810	0.19	2.7	125	3511	4.11	127.3	53.6	751	0.60	24.9	7.547	30.894	17101	2.18		<1	1
W7A	-10.36	7/19/06	939			4.07	126	60.1	842	0.21	2.9	137	3848	4.38	135.7	51.1	716	0.62	24.7	7.55	30.275	16758	2.82		<1	1
W7A	-10.36	8/9/06	1034			3.50	108	53.1	744	0.19	2.7	127	3567	3.79	117.4	51.4	719	0.62	25.8	7.536	31.424	17394	1.28		<1	<1
W7A	-10.36	9/20/06	1050			3.41	106	44.0	616	4.6	64.4	123	3455	3.63	112.4	44.5	623	0.70	25.7	7.428	31.270	17309	0.47		<1	<1
W7A	-10.36	10/25/06	1009			3.45	107	43.1	604	0.94	13.2	127	3567	3.67	113.7	42.0	588	0.81	26.2	7.429	31.277	17313	0.81		<1	<1
W7A	-10.36	11/29/06	1047			3.52	109	45.5	637	0.31	4.3	124	3483	3.67	113.7	40.9	573	0.69	25.9	7.43	31.394	17377	0.57		<1	<1
W7A	-10.36	12/13/06	1037			3.59	111	46.3	649	0.24	3.4	120	3370	3.76	116.5	42.6	596	0.69	25.7	7.455	31.509	17441	0.64		<1	<1
W7A	-10.36	1/10/07	1040			3.86	120	45.9	643	0.22	3.1	118	3314	3.97	123.0	47.7	668	0.62	24.5	7.483	31.381	17370	1.28		<1	<1
W7A	-10.36	2/21/07	1105			3.47	107	43.2	605	0.51	7.1	115	3230	3.71	114.9	50.7	710	0.63	24.7	7.624	30.830	17065	1.84		<1	<1
W7A	-10.36	3/7/07	1059			3.48	108	55.4	776	0.30	4.2	120	3370	3.61	111.8	55.3	774	0.64	24.1	7.602	31.127	17230	1.39		<1	<1
W7A	-10.36	4/19/07	1043			3.46	107	55.0	770	0.25	3.5	124	3483	3.69	114.3	46.6	652	0.59	24.9	7.541	31.039	17181	0.85		<1	<1
W7A	-10.36	5/2/07	1046			3.40	105	45.4	636	0.25	3.5	119	3342	3.74	115.8	44.4	622	0.60	24.6	7.536	31.372	17365	0.86		<1	<1
W7A	-10.36	6/20/07	1050			3.21	99	36.5	511	0.27	3.8	113	3174	3.37	104.4				25.3	7.509	31.574	17477	0.80		<1	<1

NELHA Water Quality Laboratory

Well 7A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	7/25/07	1211		1.8	Flood	3.56	110	46.0	645	0.76	10.6	106	2966	3.53	109.4	50.0	700.7		25.2	7.46	31.70	17547	1.15			
W7A	-10.36	8/27/07	1200		0.8	Flood	3.78	117	47.1	660	0.31	4.4	99	2777	3.80	117.8	50.5	707.9		25.8	7.52	31.25	17298	2.98			
W7A	-10.36	9/13/07	1613		1.3	Flood	3.46	107	50.0	700	0.81	11.4	117	3286	3.90	120.7	53.6	750.7		25.0	7.49	30.74	17015	0.60			
W7A	-10.36	10/23/07	1143		1.25	Flood	4.72	146	54.2	759	0.01	0.2	142	3986	4.73	146.5	50.3	704.3		22.8	7.39	30.34	16794	0.14			
W7A	-10.36	11/20/07	1151		1.4	Flood	5.08	157	55.6	779	0.79	11.1	159	4468	4.74	146.7	62.7	877.7		23.0	7.38	29.86	16528	2.67			
W7A	-10.36	12/19/07	1143		1	High	5.06	157	66.8	936	1.06	14.8	155	4364						22.5	7.39	29.07	16091	1.36			
W7A	-10.36	1/28/08	854		1.4	Ebb	4.31	134	28.8	404	0.80	11.2	138	3880						22.6	7.22	29.94	16573	0.87			
W7A	-10.36	2/26/08	1037		0.3	Ebb	5.87	182	74.9	1050	0.67	9.4	151	4237						22.1	7.42	29.89	16545	0.72			
W7A	-10.36	3/17/08	1237		0.6	Flood	6.21	192	94.0	1316	0.09	1.2	193	5423						22.5	7.49	29.68	16429	3.78			
W7A	-10.36	4/30/08	1153		0.9	Flood	6.50	201	97.3	1363	0.09	1.2	155	4344						21.0	7.25	29.58	16373	1.88			
W7A	-10.36	5/27/08	1147		0.8	High	5.59	173	94.3	1321	0.09	1.2	183	5147						20.3	7.35	29.36	16252	6.47			
W7A	-10.36	6/16/08	1211		1	Flood	5.88	182	88.6	1241	0.02	0.3	164	4595						21.0	7.38	29.78	16484	5.87			
W7A	-10.36	7/21/08	1134		0.3	Low	5.87	182	88.1	1234	0.20	2.8	144	4058						21.1	7.27	30.29	16766	1.62	0.21		
W7A	-10.36	8/30/08	1448		1.9	Flood	6.29	195	84.3	1181	0.89	12.4	149	4175						22.6	7.38	30.51	16888	1.01	0.14		
W7A	-10.36	9/15/08	1201		0.4	Flood	7.05	219	98.8	1383	0.10	1.4	145	4069						22.3	7.36	30.27	16755	2.54			
W7A	-10.36	10/30/08	1045		0.5	Low	4.02	124	98.0	1372	0.20	2.8	127	3580						21.2	7.14	30.13	16678	0.10	0.37		
W7A	-10.36	11/25/08	1015		0.5	Low	7.34	228	130.3	1826	0.18	2.5	168	4717						21.1	7.33	29.73	16456	0.16	0.23		
W7A	-10.36	12/16/08	1033		1.3	Ebb	7.32	227	110.3	1545	0.11	1.5	155	4367						20.7	7.48	30.21	16722	1.66			
W7A	-10.36	1/26/09	1420		0.5	Flood	5.88	182	99.3	1391	0.71	10.0	125	3510						20.6	7.57	31.16	17248	2.94	0.18		
W7A	-10.36	2/26/09	1052		0.1	Low	6.03	187	105.7	1480	0.53	7.4	143	4006						20.6	7.39	30.98	17148	2.28	0.06		
W7A	-10.36	3/23/09	1023		0.2	Flood	5.04	156	97.6	1367	0.13	1.8	133	3748						20.1	7.34	30.79	17043	1.78	0.15		
W7A	-10.36	4/27/09	1025		-0.2	Low	7.87	244	91.6	1283	0.29	4.1	129	3627						20.8	7.46	31.00	17159	1.69	0.07		
W7A	-10.36	5/27/09	1405		0.6	Flood	5.98	185	80.5	1127	0.24	3.3	111	3130						20.8	7.42	30.70	16993	1.64	0.03		
W7A	-10.36	6/19/09	1044		1.3	Flood	4.72	146	62.7	879	0.39	5.5	107	2997						20.4	7.45	30.83	17065	1.91	0.05		
W7A	-10.36	7/31/09	1002		1.5	Flood	7.20	223	80.2	1123	0.30	4.2	105	2954						22.3	7.46	30.86	17082	1.70	0.06		
W7A	-10.36	8/20/09	1121		0.3	Flood	4.46	138	60.3	845	1.22	17.1	107	2992						21.6	7.46	30.81	17054	1.00	0.02		
W7A	-10.36	9/24/09	1025		1.7	Ebb	5.54	172	79.5	1114	0.51	7.2	114	3198						20.1	8.21	29.84	16517	0.46	0.02		
W7A	-10.36	10/30/09	1050		0.7	Flood	6.24	193	74.4	1042	0.40	5.6	112	3147						21.5	7.37	29.75	16467	0.32	0.02		
W7A	-10.36	11/17/09	1114		0.4	Low	6.88	213	91.7	1285	0.92	12.9	157	4413						21.4	7.39	29.63	16401	0.51	0.04		
W7A	-10.36	12/8/09	1505		0.3	Ebb	6.17	191	90.5	1268	1.12	15.7	169	4738						21.8	7.40	29.78	16484	1.04	0.16		
W7A	-10.36	1/4/10	1516		-0.1	Low	6.10	189	83.6	1171	1.14	16.0	172	4829						21.1	7.50	29.84	16517	2.35	0.02		
W7A	-10.36	2/2/10	1516		-0.2	Low	5.78	179	102.5	1436	0.50	7.0	150	4203						23.7	7.58	29.96	16584	2.03	0.15		
W7A	-10.36	3/10/10	1355		0.7	High	6.07	188	85.7	1201	0.50	7.0	181	5078						22.8	7.59	29.28	16207	2.70	0.11		
W7A	-10.36	4/7/10	1217		0.7	High	5.49	170	77.1	1080	0.86	12.0	181	5095						19.2	7.65	29.45	16301	3.88	0.18		
W7A	-10.36	5/12/10	1337		1.5	Flood	4.97	154	70.8	992	0.86	12.0	164	4605						20.1	7.70	29.66	16418	4.10	0.07		
W7A	-10.36	6/16/10	1153		0.3	Low	5.39	167	69.9	979	0.36	5.0	174	4880						20.5	7.65	30.01	16611	3.36	0.21		
W7A	-10.36	7/14/10	936		0.5	Ebb	4.97	154	67.4	944	0.07	1.0	180	5045						20.0	7.62	30.00	16606	3.01	0.09		
W7A	-10.36	8/4/10	1017		1.7	Flood	5.62	174	68.9	965	0.18	2.5	176	4938						19.7	7.67	30.11	16667	3.46	0.14		
W7A	-10.36	9/13/10	1555		0.7	Low	5.71	177	64.8	907	0.17	2.4	174	4876						20.0	7.61	30.10	16661	2.85	0.11		
W7A	-10.36	10/11/10	1110		1.3	Ebb	5.71	177	62.3	872	0.49	6.8	174	4891						20.2	7.65	29.88	16539	2.98	0.07		
W7A	-10.36	11/15/10	1223		1.3	High	5.78	179	69.2	969	0.61	8.6	173	4848						20.5	7.62	30.23	16733	3.05	0.08		
W7A	-10.36	12/13/10	1002		1.3	High	6.26	194	73.7	1032	0.09	1.3	158	4439						20.1	7.56	29.90	16550	2.16	0.07		

NELHA Water Quality Laboratory

Well 7A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	1/3/11	1418		0.5	Flood	6.59	204	76.2	1067	0.13	1.8	173	4849						20.7	7.55	29.72	16451	1.84	0.06		
W7A	-10.36	4/4/11	1459		1.3	Flood	4.81	149	72.8	1019	0.04	0.6	151	4233						19.5	7.58	30.11	16667	3.11	0.02		
W7A	-10.36	7/11/11	1419		2.4	High	4.78	148	67.2	941	0.12	1.7	165	4647						20.3	7.63	29.77	16478	3.64	0.05		
W7A	-10.36	10/10/11	1315		1.1	Flood	4.71	146	64.5	904	0.21	3.0	158	4449						20.6	7.66	30.29	16766	3.94	0.08		
W7A	-10.36	1/9/12	1338		0.2	Flood	5.59	173	82.5	1155	0.10	1.4	170	4771						21.2	7.59	29.56	16362	2.08	0.08		
W7A	-10.36	5/8/12	1437		0.8	Flood	4.78	148	64.2	899	0.25	3.5	167	4694						20.0	7.66	30.26	16750	3.90	0.09		
W7A	-10.36	7/17/12	1348		2.1	Flood	4.68	145	74.7	1046	2.16	30.3	153	4293						19.9	7.60	30.93	17121	3.35	0.68		
W7A	-10.36	10/15/12	1147		0.2	Flood	5.20	161	74.0	1037	0.16	2.2	153	4288						20.6	7.54	30.96	17137	2.44	0.02		
W7A	-10.36	1/7/13	1244		0.8	High	5.94	184	107.2	1502	0.05	0.7	187	5264						20.0	7.59	30.91	17109	2.71	0.09		
W7A	-10.36	4/8/13	1225		0.6	Flood	5.39	167	81.0	1134	0.27	3.8	143	4015						19.8	7.66	30.73	17010	2.78	0.06		
W7A	-10.36	7/16/13	1434		1.2	Ebb	3.97	123	60.5	848	0.11	1.5	139	3894						19.9	7.66	30.65	16966	3.77	0.10		
W7A	-10.36	10/1/13	1602		1.0	Ebb	4.97	154	85.7	1200	0.30	4.2	149	4175						20.2	7.54	30.70	16993	2.57	0.12		
W7A	-10.36	1/14/14	1459		0.7	High	6.10	189	95.1	1332	0.36	5.1	156	4376						20.1	7.55	30.54	16905	2.47	0.02		
W7A	-10.36	4/28/14	1720		0.579	High	4.65	144	90.2	1264	0.34	4.7	143	4019						20.2	7.64	30.12	16672	4.47	0.42		
W7A	-10.36	7/28/14	1454		0.488	Flood	4.94	153	74.9	1049	0.29	4.0	146	4113						20.8	7.54	30.72	17004	2.78	0.05		
W7A	-10.36	11/13/14	1146		0.37	Flood	4.81	149	70.2	983	0.18	2.5	140	3938						21.6	7.82	30.67	16977	2.62	0.05		
W7A	-10.36	2/9/15	1555		0.30	Low	7.42	230	122.4	1714	0.26	3.7	169	4739						21.2	7.51	30.95	17132	1.91	0.02		
W7A	-10.36	4/1/15			No sample																						
W7A	-10.36	8/14/15	1047		0.09	Flood	5.02	156	72.3	1012	0.49	6.9	133	3735						20.7	7.53	31.06	17193	4.65	0.05		
W7A	-10.36	11/13/15	952		0.15	Low	6.15	191	104.7	1467	0.18	2.5	146	4114						21.8	7.61	29.89	16545	2.07	0.07		
W7A	-10.36	1/27/16	1610		0.3	Flood	5.21	162	87.5	1226	0.14	1.9	140	3932						20.5	7.67	30.58	16927	3.52	0.03		
W7A	-10.36	4/26/16	1525		0.3	Flood	5.27	163	88.8	1244	0.44	6.2	128	3599						21.4	7.31	30.95	17132	4.30	0.08		
W7A	-10.36	7/27/16	1226		0.5	Flood	4.32	134	66.8	936	0.60	8.4	124	3477						21.8	7.70	30.58	16927	3.69	0.15		
W7A	-10.36	11/10/16	1306		0.55	High	4.80	149	80.5	1128	0.79	11.1	130	3652						26.0	7.59	31.03	17176	3.03	0.22		
W7A	-10.36	3/22/17			No Sample - well clogged																						
W7A	-10.36	4/19/17			No Sample - well clogged																						
W7A	-10.36	9/19/17			No Sample - well clogged																						
W7A	-10.36	10/19/17			No Sample - well clogged																						
W7A	-10.36	3/23/18			No Sample - well clogged																						
W7A	-10.36	5/11/18			No Sample - well clogged																						
W7A	-10.36	9/4/18	1249		0.67	High	4.71	146	53.5	749	0.71	10.0	145	4069						20.0	7.68	30.30	16772	3.74	0.07		
W7A	-10.36	11/1/18	1102		0.61	High	4.64	144	67.1	940	0.05	0.7	148	4147						21.0	7.59	29.89	16545	3.66	0.09		
W7A	-10.36	2/8/19	1419		0.10	Flood	5.84	181	78.8	1104	0.06	0.8	162	4536						21.8	7.44	29.46	16307	2.94	0.63		
W7A	-10.36	5/16/19	1027		0.08	Flood	3.88	120	73.5	1029	0.50	7.0	144	4052						27.6	7.61	30.95	17132	4.01	7.12		
W7A	-10.36	8/28/19	1628		0.65	High	4.72	146	73.6	1030	0.15	2.1	161	4535						30.3	7.69	30.16	16694	5.94	1.82		
W7A	-10.36	10/16/19	1138		0.16	Low	4.13	128	62.1	870	0.37	5.2	152	4279						28.1	7.80	30.47	16866	5.43	2.43		
W7A	-10.36	2/5/20	1611		0.15	Ebb	4.67	145	71.1	996	-0.22	-3.1	156	4392						25.2	7.70	30.54	16905	5.18	2.46		
W7A	-10.36	6/3/20	1459		0.67	High	3.36	104	67.5	945	0.33	4.6	153	4301						26.8	7.69	30.58	16927	6.01	2.22		
W7A	-10.36	7/1/20																									
W7A	-10.36	10/1/20																									
W7A	-10.36	1/1/21																									
W7A	-10.36	4/1/21																									
W7A	-10.36	7/1/21																									
W7A	-10.36	10/1/21																									
W7A	-10.36	1/1/22																									
W7A	-10.36	4/1/22																									

NELHA Water Quality Laboratory

Well 7A Data Table

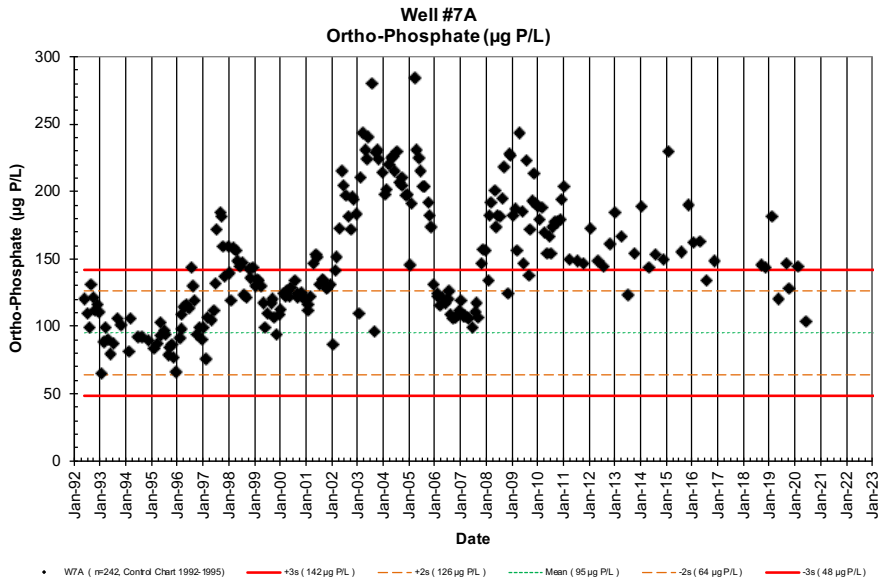
5/20/1992 - 7/21/20

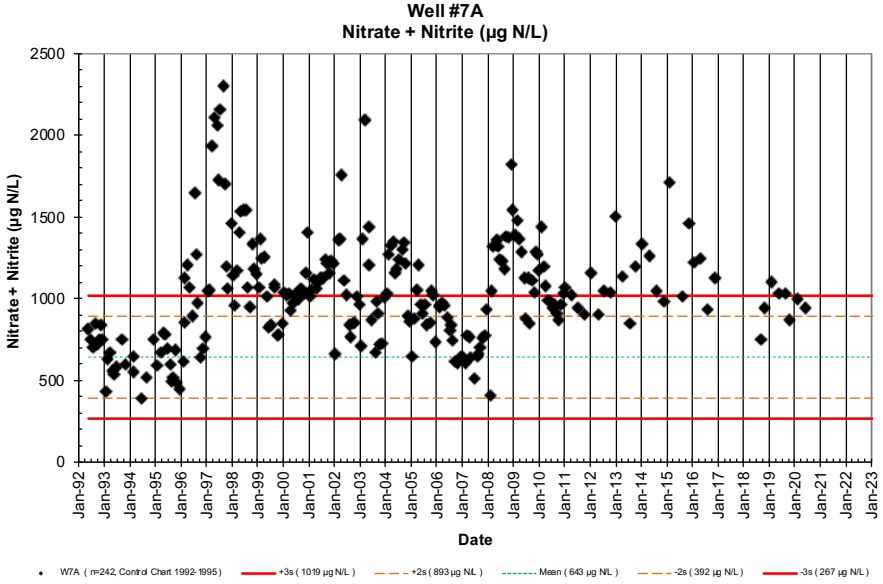
Site	Pump Depth (m)	Date (M/D/Y)	Time -2400	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7A	-10.36	7/1/22																									
W7A	-10.36	10/1/22																									
W7A	-10.36	1/1/23																									
W7A	-10.36	4/1/23																									
Mean					0.74		4.77	148	73.47	1029	0.85	11.9	165	4638	4.67	144.7	76.6	1073	0.75	22.1	7.67	29.74	16463	2.19	0.38		
Std. Dev.					0.56		1.43	44	23.35	327	8.05	112.7	36	998	1.57	48.5	28.8	403	0.18	2.0	0.18	1.22	678	1.51	1.05		
Maximum					2.40		9.18	284	164.20	2300	125.40	1756.4	387	10878	9.52	294.9	197.2	2763	1.56	30.3	8.21	32.30	17877	6.98	7.12		
Minimum					-0.20		2.09	65	27.85	390	-0.22	-3.1	99	2777	2.32	71.9	32.0	448	0.47	15.1	7.14	23.77	13159	0.10	0.02		
n					73		242	242	242	242	242	242	242	242	174	174	173	173	143	243	242	242	241	241	59		

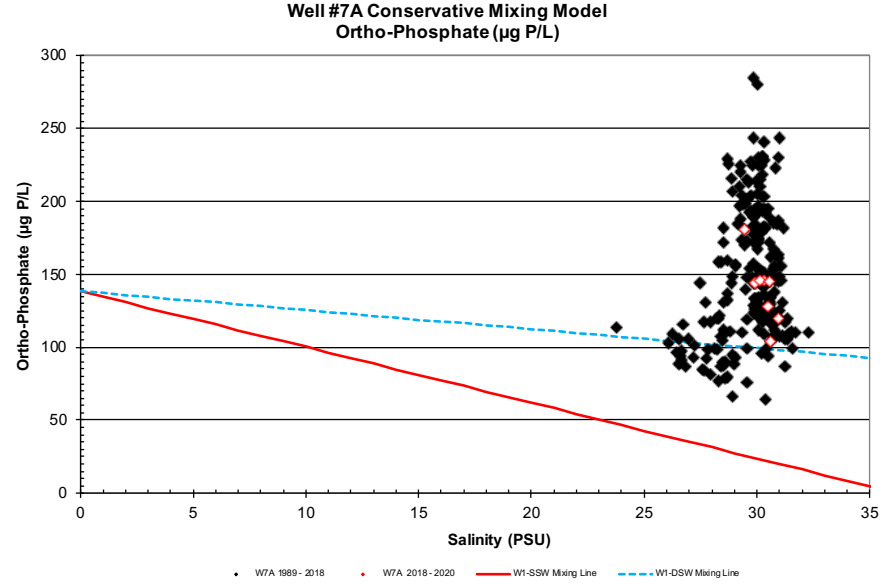
NELHA Water Quality Laboratory

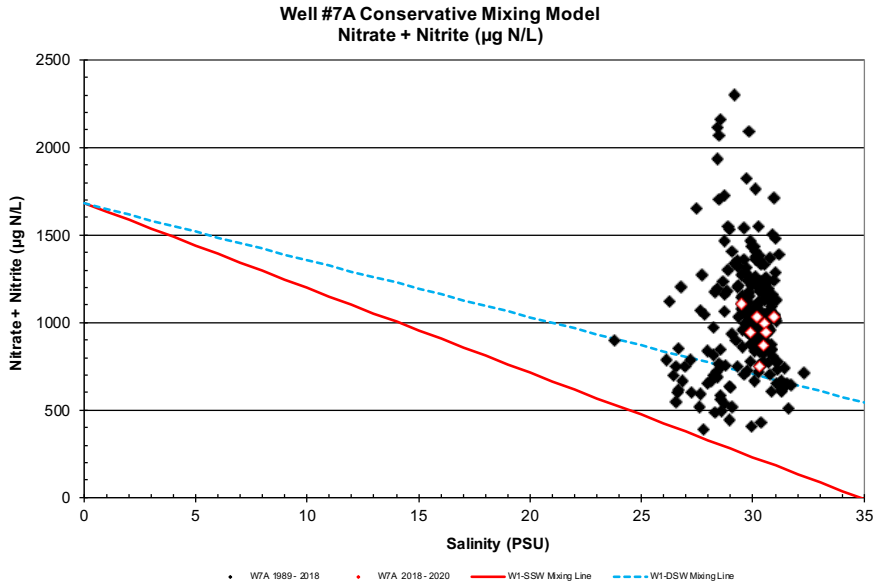
Well 7A Charts

5/20/1992 - 7/21/20





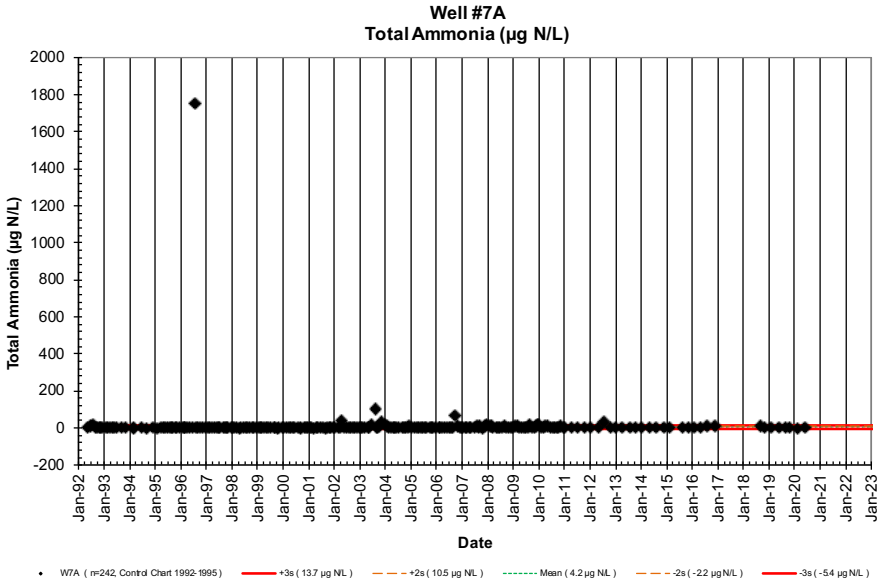


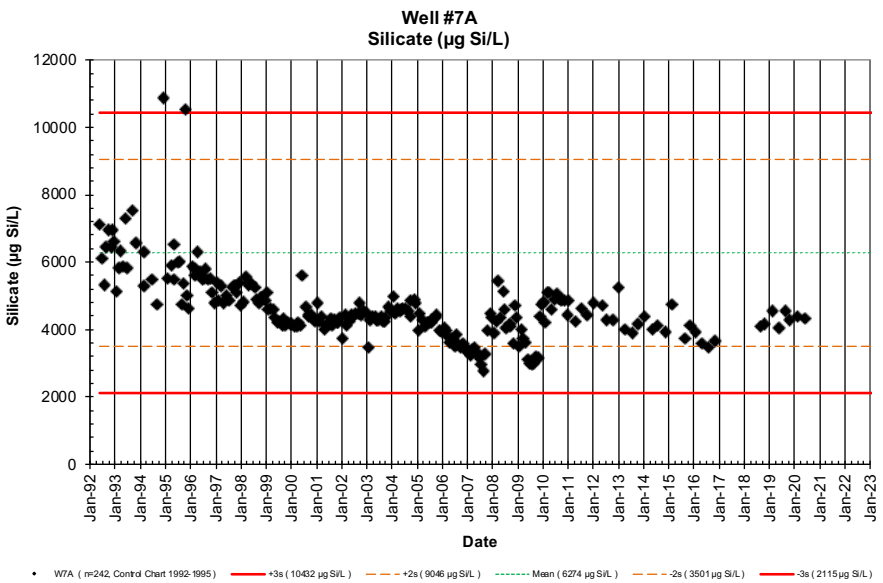


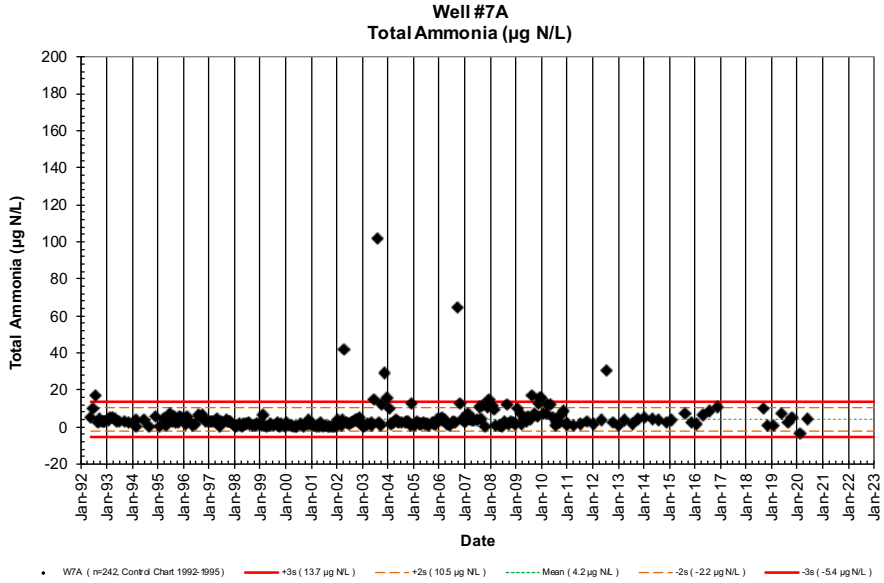
NELHA Water Quality Laboratory

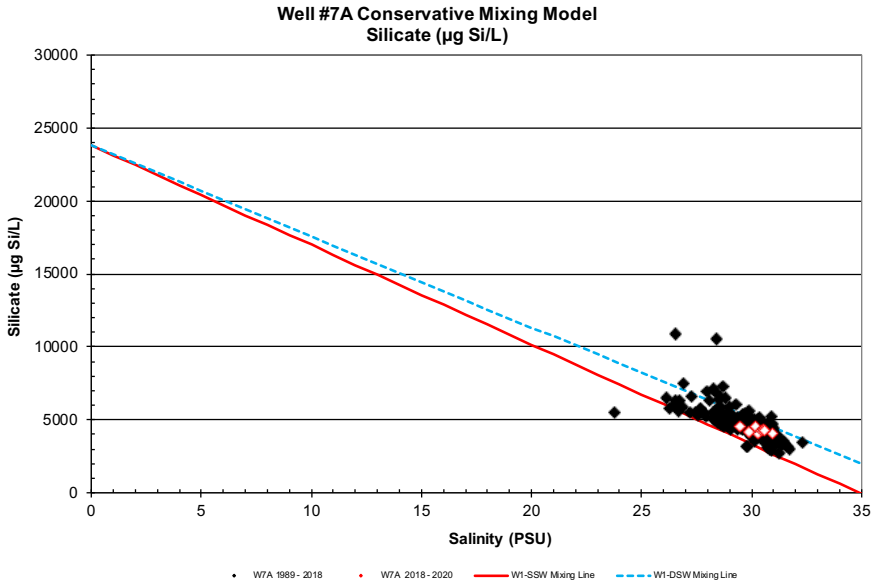
Well 7A Charts

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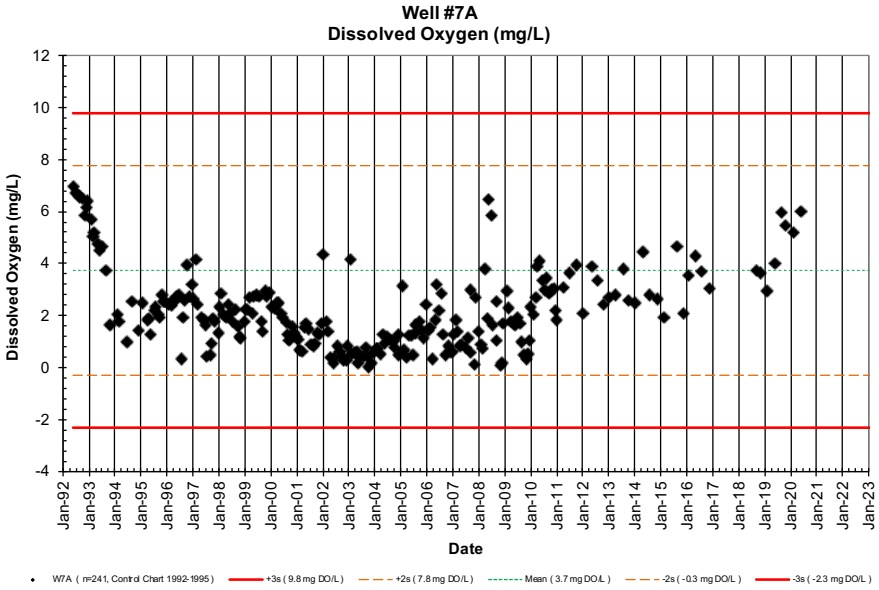


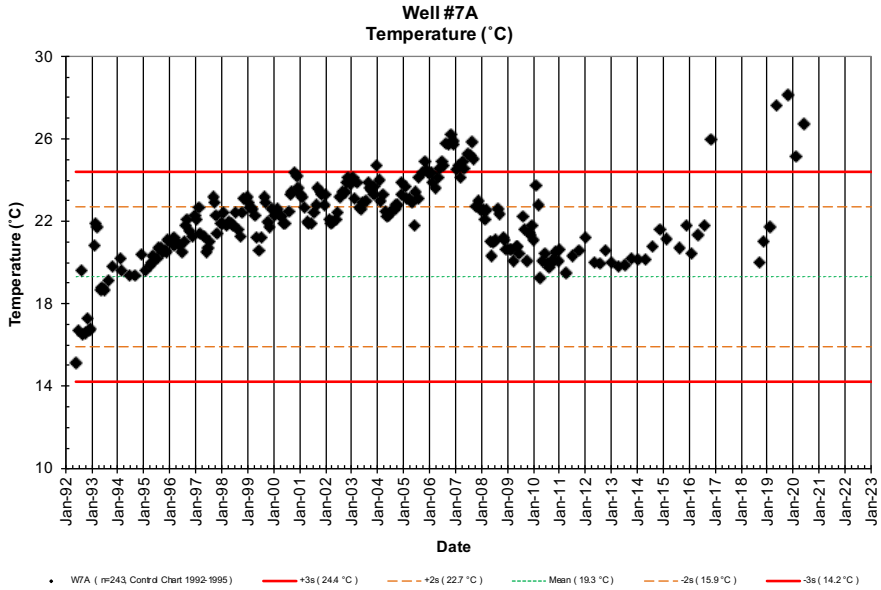


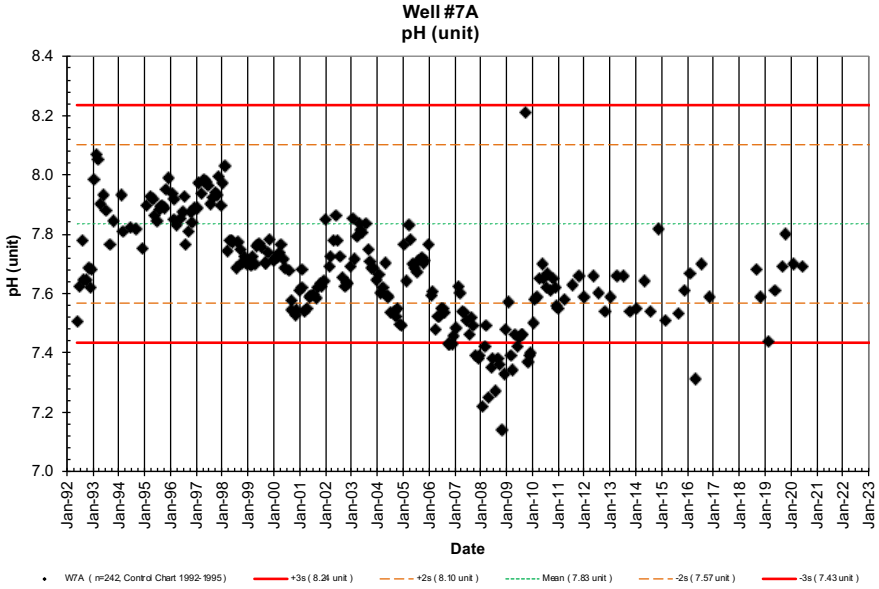
NELHA Water Quality Laboratory

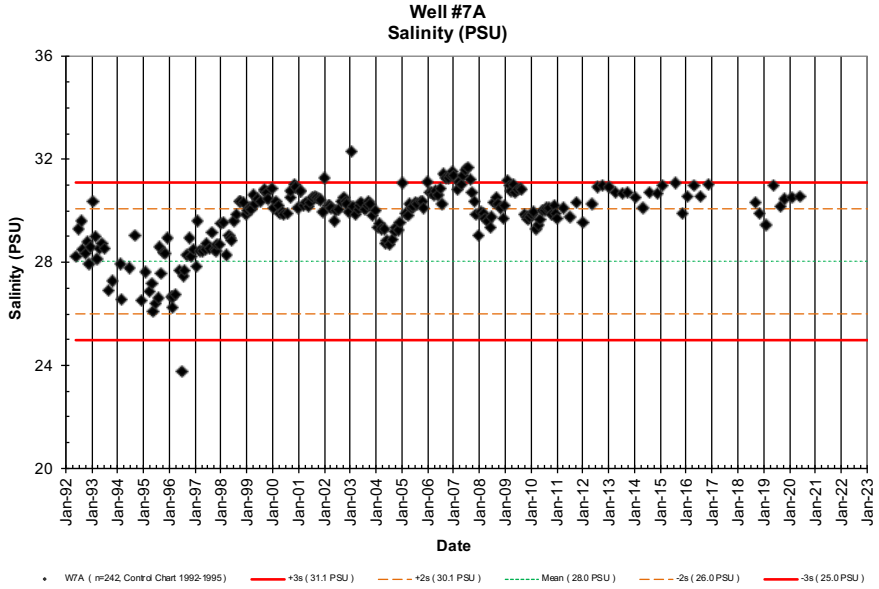
Well 7A Charts

5/20/1992 - 7/21/20





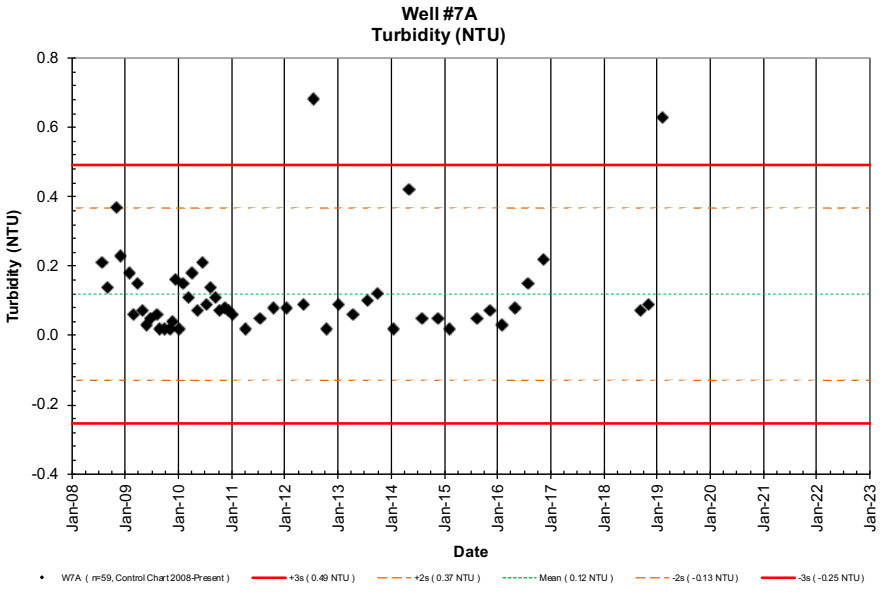


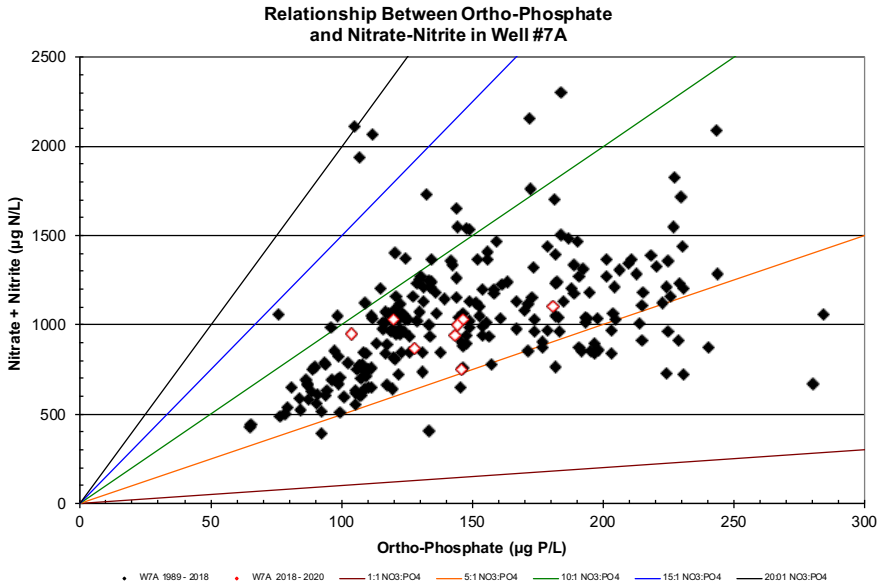


NELHA Water Quality Laboratory

Well 7A Charts

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NELHA Water Quality Laboratory

Well 7B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	5/20/92	801			2.91	90	53.3	747	0.31	4.3	461	12947	2.99	92.6	54.3	761	0.54	19.5	7.591	21.101	11680	5.30		<1	1
W7B	-6.1	6/24/92	806			2.99	93	50.3	705	0.47	6.6	446	12526	3.09	95.7	52.1	730	0.93	19.6	7.662	21.911	12128	5.14		<1	<1
W7B	-6.1	7/30/92	730			2.81	87	49.3	690	0.81	11.3	455	12779	2.85	88.3	51.1	716	0.91	20.5	7.543	21.081	11669	5.15		<1	<1
W7B	-6.1	8/26/92	933			3.10	96	58.5	820	0.04	0.6	502	14099	3.14	97.3	31.8	445	0.85	21.1	7.519	19.776	10947	5.00		5	<1
W7B	-6.1	9/23/92	754			2.98	92	52.1	729	0.17	2.4	474	13313	3.02	93.5	57.9	811	0.52	21.8	7.638	21.440	11868	4.89		<1	<1
W7B	-6.1	10/28/92	827			3.21	99	51.4	719	0.14	2.0	399	11206	3.28	101.6	54.1	758	0.64	21.0	7.592	24.433		5.17		<1	<1
W7B	-6.1	11/18/92	819			3.16	98	53.4	748	0.16	2.2	404	11347	3.63	112.4	58.7	822	0.63	20.1	7.730	23.377	12940	5.64		<1	<1
W7B	-6.1	12/9/92	812			3.15	98	56.5	792	0.09	1.3	442	12414	3.30	102.2	59.5	833	0.67	20.6	7.550	22.467	12436	5.44		1	1
W7B	-6.1	1/27/93	748			2.79	86	46.7	655	0.16	2.2	302	8485	2.90	89.8	51.8	726	0.75	20.9	7.812	26.470	14652	5.45		<1	<1
W7B	-6.1	2/24/93	736			2.89	90	50.4	706	0.32	4.5	355	9976	2.89	89.5	52.6	737	0.66	20.8	7.804	25.057	13870	4.88		<1	2
W7B	-6.1	3/17/93	744			2.80	87	52.0	728	0.32	4.5	441	12372	2.85	88.3	55.7	780	0.60	20.2	7.775	21.213	11742	5.09		2	1
W7B	-6.1	4/28/93	734			2.94	91	50.1	702	0.23	3.2	434	12175	2.97	92.0	53.8	753	0.48	19.9	7.736	21.386	11838	4.93		<1	<1
W7B	-6.1	5/26/93	739			2.80	87	49.5	693	0.37	5.2	493	13832	2.87	88.9	55.2	773	0.54	20.2	7.720	21.039	11646	4.95		<1	<1
W7B	-6.1	6/29/93	752			2.66	82	54.6	765	0.12	1.7	475	13349	2.80	86.7	59.1	828	0.58	20.5	7.616	19.668	10887	4.88		<1	<1
W7B	-6.1	9/1/93	752			2.77	86	53.8	754	0.15	2.1	562	15778	2.87	88.9	70.4	986	0.68	21.6	7.490	16.516	9142	5.48		<1	6
W7B	-6.1	10/27/93	744			2.88	89	82.3	1152	0.02	0.3	514	14436	2.96	91.7	87.1	1219	1.09	21.8	7.561	16.879	9343	4.90		221	161
W7B	-6.1	3/1/94	1005			3.20	99	74.6	1045	0.36	5.0	404	11347	3.22	99.7	99.7	1396	0.59	21.4	7.815	19.054	10547	4.28		1	2
W7B	-6.1	6/22/94	722			2.90	90	54.1	757	0.16	2.2	558	15667	2.77	85.8	56.6	793	0.55	21.9	7.625	17.769	9836	4.97		1	2
W7B	-6.1	8/24/94	746			2.81	87	47.1	660	0.08	1.1	389	10914	2.87	88.9	54.9	769	0.60	22.3	7.731	21.547	11927	3.13		<1	<1
W7B	-6.1	11/28/94	938			2.87	89	53.7	752	0.43	6.0	387	10878	2.92	90.4	59.2	829	0.46	22.9	7.740	20.071	11110	3.72		1	<1
W7B	-6.1	1/25/95	817			2.94	91	52.5	735	0.00	0.0	339	9524	2.94	91.1	56.2	787	0.48	22.2	7.835	23.232	12860	2.93		<1	<1
W7B	-6.1	2/15/94	835			3.07	95	61.9	868	0.00	0.0	374	10507	3.08	95.4	72.3	1013	0.58	22.4	7.845	21.411	11852	3.65		<1	<1
W7B	-6.1	3/29/95	815			2.88	89	61.8	866	0.25	3.5	432	12130	2.88	89.2	66.5	932	0.60	21.9	7.857	18.604	10298	4.91		<1	<1
W7B	-6.1	4/26/95	808			2.95	91	82.5	1156	0.11	1.5	461	12956	3.14	97.3	86.3	1209	0.73	22.1	7.825	16.284	9014	5.04		6	11
W7B	-6.1	5/9/95	952			2.96	92	68.9	965	0.20	2.8	392	11007	2.96	91.7	72.7	1019	0.62	22.1	7.887	19.885	11007	4.06		<1	<1
W7B	-6.1	6/28/95	807			3.12	97	71.2	997	0.44	6.2	462	12961	3.18	98.5	74.7	1046	0.58	22.4	7.793	16.661	9222	5.46		<1	<1
W7B	-6.1	7/26/95	947			3.04	94	70.1	981	0.13	1.8	479	13447	3.25	100.7	73.2	1026	0.50	22.8	7.785	15.944	8825	4.97		3	2
W7B	-6.1	8/23/95	900			3.02	94	58.0	812	0.47	6.6	421	11835	3.11	96.3	59.8	837	0.59	22.8	7.741	18.942	10485	4.28		<1	<1
W7B	-6.1	9/12/95	854			3.07	95	56.9	797	0.12	1.7	435	12206	3.10	96.0	59.8	837	0.51	23.3	7.768	18.648	10322	3.95		<1	<1
W7B	-6.1	10/17/95	1036			2.94	91	49.1	688	0.17	2.4	375	10531	2.95	91.4	50.7	711	0.68	23.1	7.812	21.261	11769	3.45		<1	<1
W7B	-6.1	11/7/95	1021			3.04	94	59.3	831	0.41	5.7	434	12181	3.06	94.8	62.8	879	0.70	20.1	7.811	18.369	10168	4.54		1	1
W7B	-6.1	12/6/95	1005			2.89	90	54.6	765	0.35	4.9	423	11891	3.09	95.7	57.1	800	0.60	22.9	7.779	19.435	10758	4.01		1	1
W7B	-6.1	1/30/96	1048			2.88	89	63.4	888	0.07	1.0	395	11097	3.05	94.5	65.5	917	0.57	22.8	7.916	19.571	10833	4.23		15	77
W7B	-6.1	2/27/96	1207			3.06	95	84.2	1180	0.16	2.2	360	10114	3.14	97.3	87.9	1231	0.74	20.8	7.868	20.286	11229	3.98		<1	1
W7B	-6.1	3/13/96	1122			3.33	103	83.1	1164	0.37	5.2	344	9653	3.41	105.6	86.2	1207	0.66	22.6	7.861	20.738	11479	3.74		<1	1
W7B	-6.1	4/2/96	1006			3.78	117	101.7	1424	0.19	2.7	415	11649	3.93	121.7	101.1	1416	0.69	22.5	7.804	18.642	10319	4.44		<1	<1
W7B	-6.1	5/15/96	1136			4.32	134	105.0	1470	0.05	0.7	393	11036	4.35	134.7	107.0	1499	0.62	23.0	7.756	20.735	11477	3.05		<1	<1
W7B	-6.1	6/18/96	1123			3.64	113	75.9	1063	0.12	1.7	433	12149	3.69	114.3	80.1	1121	0.58	23.0	7.756	19.186	10620	6.36		<1	1
W7B	-6.1	7/17/96	1130			4.23	131	108.9	1525	27	373	446	12531	3.69	114.3	113.0	1583	0.71	23.1	7.676	18.528	10256	3.22		<1	1
W7B	-6.1	8/6/96	1146			3.84	119	97.9	1371	0.46	6.4	366	10280	3.87	119.9	103.3	1447	0.64	23.1	7.753	22.145	12258	1.89		<1	1
W7B	-6.1	9/4/96	1133			3.84	119	75.7	1061	0.38	5.3	400	11226	3.86	119.6	78.6	1101	0.57	23.8	7.739	21.550	11928	2.69		<1	1
W7B	-6.1	10/9/96	1227			3.70	115	57.5	806	0.31	4.3	345	9679	3.85	119.2	61.0	855	0.62	23.7	7.782	24.590	13611	2.81		<1	<1
W7B	-6.1	11/6/96	1131			3.48	108	57.1	800	0.27	3.8	348	9763	3.60	111.5	61.3	859	0.59	23.8	7.751	23.119	12797	3.32		<1	<1
W7B	-6.1	12/17/96	1147			3.19	99	63.4	888	0.18	2.5	255	7163	3.27	101.3	67.8	950	0.90	24.2	7.821	25.843	14305	2.24		<1	<1

NELHA Water Quality Laboratory

Well 7B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	1/14/97	1144			3.18	98	93.9	1315	0.08	1.1	278	7813	3.23	100.0	98.8	1384	0.78	23.3	7.862	24.544	13586	3.09		<1	<1
W7B	-6.1	2/11/97	1008			2.96	92	98.4	1378	0.10	1.4	214	6010	3.06	94.8	101.6	1423	0.79	22.7	7.902	27.342	15135	3.47		<1	<1
W7B	-6.1	3/11/97	855			3.92	121	134.2	1880	0.17	2.4	381	10696	4.16	128.9	136.3	1908	0.58	22.4	7.837	20.612	11409	3.64		<1	<1
W7B	-6.1	4/23/97	1132			3.75	116	130.3	1825	0.26	3.6	385	10802	3.69	114.3	162.1	2270	0.72	22.9	7.832	21.704	12014	2.85		<1	<1
W7B	-6.1	5/28/97	1029			3.24	100	108.8	1524	0.06	0.8	357	10015	3.85	119.2	118.0	1653	0.70	22.0	7.848	22.582	12500	3.19		<1	<1
W7B	-6.1	6/17/97	1110			3.67	114	88.3	1237	0.22	3.1	344	9661	3.80	117.7	105.4	1476	0.67	21.9	7.829	21.979	12166	4.70		<1	<1
W7B	-6.1	7/15/97	1105			4.18	129	96.5	1352	0.14	2.0	341	9577	4.33	134.1	104.8	1468	0.61	22.2	7.838	26.629	14740	2.17		<1	<1
W7B	-6.1	8/26/97	1137			4.80	149	100.6	1409	0.23	3.2	316	8881	4.80	148.7	105.1	1472	0.66	23.7	7.883	24.584	13608	0.41		<1	<1
W7B	-6.1	9/23/97	945			4.89	151	80.8	1132	0.40	5.6	337	9470	4.96	153.6	89.0	1247	0.63	23.9	7.884	23.139	12808	1.10		<1	1
W7B	-6.1	10/14/97	1040			4.68	145	66.2	927	0.17	2.4	356	9996	4.68	145.0	78.3	1097	0.65	23.8	7.877	22.428	12414	1.87		<1	<1
W7B	-6.1	11/4/97	909			4.42	137	71.5	1001	0.19	2.7	333	9338	4.57	141.6	81.5	1142	0.54	23.9	7.877	23.683	13109	1.65		<1	<1
W7B	-6.1	12/16/97	1110			4.34	134	74.3	1041	0.10	1.4	380	10667	4.51	139.7	78.8	1104	0.60	23.4	7.893	21.688	12005	3.65		<1	<1
W7B	-6.1	1/5/98	932			4.55	141	73.5	1029	0.02	0.3	277	7793	4.70	145.6	78.4	1098	0.62	22.7	7.890	25.829	14297	1.62		<1	<1
W7B	-6.1	2/3/98	901			4.09	127	67.9	950	0.01	0.1	237	6651	4.32	133.8	72.6	1017	0.60	23.2	7.959	27.470	15205	2.45		<1	<1
W7B	-6.1	3/10/98	929			4.53	140	66.6	932	0.23	3.2	339	9515	4.69	145.3	71.2	997	0.57	22.9	7.752	23.127	12801	3.76		<1	<1
W7B	-6.1	4/14/98	1055			4.39	136	79.3	1111	0.05	0.7	326	9145	4.58	141.9	81.5	1142	0.59	22.9	7.760	23.986	13277	4.39		<1	<1
W7B	-6.1	5/12/98	932			4.15	129	76.6	1073	0.05	0.7	364	10223	4.22	130.7	79.7	1116	0.53	22.8	7.752	22.171	12272	4.48		<1	<1
W7B	-6.1	6/2/98	933			3.96	123	80.7	1131	0.08	1.1	346	9730	4.05	125.4	83.7	1172	0.49	22.9	7.823	22.707	12569	4.20		<1	<1
W7B	-6.1	7/14/98	925			4.06	126	94.3	1321	0.12	1.7	316	8867	4.18	129.5	95.3	1335	0.55	23.2	7.720	24.842	13751	2.95		<1	<1
W7B	-6.1	8/11/98	947			3.98	123	84.7	1186	0.18	2.5	339	9521	4.06	125.8	90.8	1272	0.71	23.2	7.663	24.589	13611	2.70		<1	<1
W7B	-6.1	9/15/98	940			3.91	121	79.8	1118	0.06	0.8	318	8928	3.99	123.6	81.8	1146	0.65	23.4	7.670	25.357	14036	1.80		<1	<1
W7B	-6.1	10/13/98	839			4.07	126	82.0	1149	0.04	0.6	310	8712	4.17	129.2	85.8	1202	0.64	23.6	7.709	25.822	14293	1.29		<1	6
W7B	-6.1	11/4/98	932			4.31	133	89.9	1259	0.09	1.3	386	10835	4.48	138.8	95.7	1340	0.84	23.8	7.713	22.578	12498	2.05		1	3
W7B	-6.1	12/16/98	922			4.70	146	82.7	1158	0.12	1.7	383	10768	4.87	150.8	87.9	1231	0.72	24.0	7.772	21.999	12177	3.12		2	1
W7B	-6.1	1/12/99	953			4.20	130	76.4	1070	0.07	1.0	302	8493	4.36	135.0	78.9	1105	0.79	23.8	7.771	25.346	14030	2.83		<1	<1
W7B	-6.1	2/3/99	945			4.02	125	76.7	1074	0.16	2.2	346	9715	4.17	129.2	83.5	1169	0.69	23.7	7.744	23.220	12853	3.84		<1	<1
W7B	-6.1	3/2/99	942			4.03	125	78.9	1105	0.02	0.3	351	9850	4.23	131.0	80.2	1123	0.71	23.8	7.752	22.694	12562	4.51		<1	<1
W7B	-6.1	4/6/99	929			4.10	127	74.9	1049	0.09	1.3	322	9046	4.17	129.2	77.6	1087	0.67	23.6	7.726	24.888	13776	2.72		<1	<1
W7B	-6.1	5/4/99	938			3.85	119	78.0	1093	0.04	0.6	350	9841	3.95	122.3	82.5	1156	0.57	23.4	7.739	22.700	12565	3.43		<1	<1
W7B	-6.1	6/2/99	928			3.64	113	70.0	980	0.12	1.7	370	10392	3.74	115.8	73.2	1025	0.55	23.0	7.722	23.686	13111	3.35		<1	<1
W7B	-6.1	7/7/99	1006			4.02	125	71.8	1006	0.14	2.0	321	9004	4.12	127.6	73.3	1027	0.64	22.9	7.754	24.188	13389	2.38		<1	<1
W7B	-6.1	8/25/99	930			4.19	130	75.6	1059	0.11	1.5	341	9588	4.33	134.1	81.9	1147	0.66	23.3	7.798	23.105	12789	3.17		<1	<1
W7B	-6.1	9/8/99	941			4.15	129	75.3	1054	0.02	0.3	341	9580	4.33	134.1	84.2	1179	0.65	23.3	7.801	23.637	13084	3.27		<1	<1
W7B	-6.1	10/6/99	947			4.00	124	67.8	950	0.04	0.6	315	8844	4.08	126.4	70.9	993	0.54	23.7	7.775	24.448	13533	2.99		<1	<1
W7B	-6.1	11/3/99	1002			3.62	112	67.8	950	0.15	2.1	315	8850	3.86	119.6	72.0	1008	0.57	23.7	7.801	24.448	13533	3.13		<1	13
W7B	-6.1	12/15/99	1021			3.83	119	69.8	978	0.03	0.4	271	7611	3.93	121.7	72.4	1014	0.66	23.6	7.737	27.126	15015	2.86		<1	6
W7B	-6.1	1/11/00	957			3.93	122	80.9	1133	0.15	2.1	293	8232	3.97	123.0	87.2	1221	0.63	23.5	7.748	24.900	13783	3.35		<1	15
W7B	-6.1	2/14/00	956			4.14	128	81.5	1142	0.03	0.4	280	7850	4.11	127.3	88.2	1235	0.65	23.1	7.792	25.188	13942	2.09		<1	<1
W7B	-6.1	3/22/00	1013			3.93	122	81.4	1140	0.08	1.1	375	10524	3.70	114.6	85.0	1191	0.79	23.3	7.808	21.397	11844	3.76		<1	<1
W7B	-6.1	4/12/00			well plugged - unable to collect																					
W7B	-6.1	5/17/00	947			3.84	119	76.7	1074	0.04	0.6	396	11113	3.82	118.3	88.7	1242	0.65	23.3	7.739	21.054	11654	3.72		<1	<1
W7B	-6.1	6/6/00	1011			3.85	119	77.7	1088	0.02	0.3	407	11428	3.95	122.3	83.6	1171	0.63	23.5	7.707	22.363	12379	3.33		<1	<1

NELHA Water Quality Laboratory

Well 7B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	7/31/00	949				3.78	117	78.5	1100	0.23	3.2	417	11703	3.80	117.7	79.5	1114	0.74	23.7	7.687	19.512	10800	4.33		<1	<1
W7B	-6.1	8/30/00	950				3.65	113	76.6	1073	0.05	0.7	430	12077	3.68	114.0	79.1	1108	0.69	24.1	7.564	19.730	10921	3.69		<1	10
W7B	-6.1	9/6/00	932				4.08	126	78.1	1094	0.08	1.1	316	8861	4.21	130.4	81.4	1140	0.60	24.0	7.646	24.804	13730	1.79		<1	<1
W7B	-6.1	10/25/00	1119				4.18	129	83.8	1174	0.15	2.1	340	9560	4.26	131.9	89.1	1248	0.66	24.3	7.641	24.654	13647	2.17		<1	<1
W7B	-6.1	11/14/00	954				3.92	121	100	1400	0.21	2.9	382	10734	4.15	128.5	106	1488	0.80	24.4	7.622	21.812	12074	2.97		1	2
W7B	-6.1	12/19/00	930				4.36	135	122	1709	0.09	1.3	313	8796	4.52	140.0	124	1733	0.71	24.4	7.660	25.164	13929	1.92		<1	<1
W7B	-6.1	1/24/01	917				3.94	122	86.6	1212	0.11	1.5	327	9176	3.94	122.0	88.5	1240	0.61	24.2	7.674	24.632	13634	2.75		<1	<1
W7B	-6.1	2/7/01	957				3.82	118	79.7	1116	0.08	1.1	357	10032	3.84	118.9	83.3	1167	0.60	24.1	7.719	22.900	12676	2.81		<1	<1
W7B	-6.1	3/12/01	923				3.91	121	77.2	1081	0.01	0.1	293	8229	4.05	125.4	79.2	1109	0.59	23.7	7.647	25.534	14134	2.47		<1	<1
W7B	-6.1	4/18/01	911				4.14	128	79.5	1114	0.05	0.7	387	10875	4.26	131.9	81.6	1143	0.50	23.4	7.631	21.183	11725	3.74		<1	<1
W7B	-6.1	5/14/01	1038				5.00	155	78.7	1102	0.13	1.8	296	8313	5.03	155.8	79.2	1109	0.46	23.3	7.632	22.278	12331	3.41		<1	<1
W7B	-6.1	6/13/01	937				4.60	142	76.2	1068	0.06	0.8	351	9864	4.60	142.5	78.3	1097	0.50	23.2	7.639	23.367	12934	3.06		<1	<1
W7B	-6.1	7/24/01	948				4.10	127	75.1	1052	0.07	1.0	346	9704	4.01	124.2	78.8	1103	0.72	23.3	7.629	23.688	13112	3.49		<1	1
W7B	-6.1	8/22/01	948				4.12	128	86.0	1205	0.04	0.6	368	10333	3.92	121.4	89.6	1255	0.97	23.5	7.581	21.975	12164	3.35		<1	1
W7B	-6.1	9/17/01	1030				4.12	128	81.1	1136	0.05	0.7	384	10788	4.12	127.6	83.7	1173	0.83	23.9	7.622	21.911	12128	3.51		<1	2
W7B	-6.1	10/22/01	1018				4.08	126	71.2	998	0.08	1.1	306	8586	4.28	132.6	75.5	1058	0.80	24.3	7.641	21.602	11957	2.04		<1	2
W7B	-6.1	11/5/01	1050				3.86	120	73.5	1029	0.06	0.8	363	10181	3.90	120.8	82.5	1155	0.58	24.3	7.614	23.039	12753	3.27		<1	2
W7B	-6.1	12/12/01	1034				3.76	116	82.3	1153	0.15	2.1	377	10577	3.71	114.9	92.0	1289	0.67	24.1	7.668	21.540	11923	3.64		<1	1
W7B	-6.1	1/7/02	1033				3.20	99	63.2	886	0.21	2.9	245	6889	3.60	111.5	69.0	967	0.76	23.9	7.756	27.481	15211	4.00		<1	1
W7B	-6.1	2/25/02	953				4.24	131	86.8	1216	0.05	0.7	325	9131	4.28	132.6	91.6	1284	0.56	23.6	7.707	24.101	13341	3.02		<1	<1
W7B	-6.1	3/18/02	1018				4.28	133	101	1419	0.25	3.5	375	10532	4.37	135.4	103	1438	0.69	23.1	7.727	21.569	11939	3.30		2	2
W7B	-6.1	4/10/02	1024				4.96	154	115	1609	0.02	0.3	83.6	2348	4.92	152.4	119	1660	0.91	23.3	7.769	23.840	13196	1.43		<1	tntc
W7B	-6.1	5/22/02	1032				6.12	190	104	1456	0.16	2.2	312	8765	6.15	190.5	109	1531	0.82	23.3	7.853	23.995	13282	0.96		<1	1
W7B	-6.1	6/19/02	1117				6.58	204	75.4	1057	0.10	1.4	299	8384	6.64	205.7	79.9	1119	0.67	23.4	7.848	24.648	13643	0.71		<1	<1
W7B	-6.1	7/22/02	1100				6.52	202	64.5	903	0.06	0.8	338	9501	6.82	211.2	66.6	933	0.81	23.9	7.813	23.058	12763	1.44		<1	<1
W7B	-6.1	8/21/02	1122				5.53	171	65.5	918	0.16	2.2	386	10847	5.64	174.7	67.0	939	0.60	23.0	7.710	21.886	12114	2.34		<1	<1
W7B	-6.1	9/25/02	1047				4.94	153	73.5	1029	0.22	3.1	434	12189	5.12	158.6	69.6	975	0.62	24.4	7.638	20.161	11160	3.10		<1	1
W7B	-6.1	10/15/02	1045				5.95	184	75.5	1058	0.45	6.3	358	10063	6.13	189.9	70.6	989	0.68	24.3	7.730	23.621	13075	1.40		<1	1
W7B	-6.1	11/17/02	1013				6.51	202	87.2	1221	0.05	0.7	391	10973	6.71	207.8	83.0	1163	1.03	24.6	7.647	22.130	12250	1.47		<1	<1
W7B	-6.1	12/18/02	1037				6.23	193	81.0	1134	0.06	0.8	312	8765	6.38	197.6	73.6	1031	0.72	24.6	7.752	24.753	13701	1.23		<1	<1
W7B	-6.1	1/23/03	1034				4.10	127	61.2	857	<0.02	0.0	193	5421	4.32	133.8	67.8	950	0.86	24.6	7.834	30.322	16784	2.04		<1	<1
W7B	-6.1	2/11/03	1052				6.76	209	104	1459	0.21	2.9	281	7878	6.80	210.6	124	1731	0.84	24.2	7.790	25.636	14190	1.25		<1	<1
W7B	-6.1	3/20/03	1131				7.24	224	172	2406	0.02	0.3	350	9830	7.20	223.0	185	2595	0.95	23.7	7.821	22.310	12349	2.82		<1	3
W7B	-6.1	4/30/03	1008				6.81	211	136	1899	0.26	3.6	389	10931	6.93	214.6	161	2255	1.10	23.5	7.827	20.387	11285	3.14		<1	1
W7B	-6.1	5/14/03	913				6.69	207	112	1567	0.31	4.3	318	8931	6.71	207.8	116	1630	1.08	23.5	7.810	20.551	11376	3.06		<1	15
W7B	-6.1	6/4/03	956				7.60	235	85.5	1198	0.36	5.0	330	9265	7.77	240.7	97.2	1362	1.37	23.7	7.805	23.216	12851	1.54		1	680
W7B	-6.1	7/30/03	941				10.14	314	97.3	1363	5.72	80.1	405	11361	10.54	326.5	120	1681		23.7	7.817	19.712	10911	2.09		<1	TNTC
W7B	-6.1	8/28/03	933				9.54	295	85.3	1195	4.72	66.1	365	10260	9.74	301.7	126	1762		24.2	7.817	21.395	11843	1.44		<1	TNTC
W7B	-6.1	9/16/03	941				9.84	305	58.2	815	3.33	46.6	313	8802	10.2	317.2	91.1	1276		24.5	7.864	24.320	13462	1.13		<1	10
W7B	-6.1	10/8/03	928				9.22	286	65.5	917	0.67	9.4	310	8695	9.48	293.6	80.5	1128		24.2	7.858	24.221	13407	NA		<1	<1
W7B	-6.1	11/5/03	941				8.42	261	66.6	933	0.82	11.5	308	8645	8.68	268.9	71.6	1003		24.2	7.842	24.384	13497			<1	TNTC
W7B	-6.1	11/14/03	1527																	24.3				0.69			
W7B	-6.1	12/17/03	1122				7.60	235	82.8	1160	<0.10	0.0	261	7330	7.91	245.0	87.9	1231		24.9	7.779	26.065	14428	0.28		<1	<1

NELHA Water Quality Laboratory

Well 7B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	1/28/04	1015			6.64	206	92.2	1291	0.73	10.2	231	6496	6.78	210.0	94.6	1324	0.77	24.4	7.773	26.919	14900	0.56		<1	<1
W7B	-6.1	2/11/04	928			7.34	227	135	1891	0.27	3.8	261	7339	7.72	239.1	142	1989	0.89	24.2	7.751	25.512	14122	0.43		<1	<1
W7B	-6.1	3/16/04	1035			7.30	226	125	1751	0.17	2.4	251	7052	7.76	240.4	146	2048		27.9	7.813	25.968	14374			<1	<1
W7B	-6.1	3/30/04	931																25.1				0.71			
W7B	-6.1	4/22/04	1001			7.60	235	150	2095	0.35	4.9	282	7920	7.64	236.6	140	1964		24.0	7.824	24.765	13708	0.59		<1	26
W7B	-6.1	5/18/04	956			7.40	229	128	1794	0.19	2.7	318	8917	7.54	233.5	133	1861		24.3	7.801	22.87	12659	1.12		<1	<1
W7B	-6.1	6/8/04	1033			7.20	223	105	1474	0.14	2.0	288	8083	7.44	230.4	111	1551	NA	24.2	7.745	24.47	13545	0.91		<1	<1
W7B	-6.1	7/15/04	946			7.60	235	97.4	1364	0.15	2.1	309	8687	7.76	240.4	115	1608		24.2	7.738	23.11	12792	0.99		<1	<1
W7B	-6.1	8/25/04	1022			7.26	225	90.1	1263	0.16	2.2	287	8046	7.48	231.7	93.9	1315		24.5	7.702	24.75	13700	0.88		<1	<1
W7B	-6.1	9/27/04	1134			7.38	229	89.2	1249	0.24	3.4	320	8982	7.50	232.3	95.2	1333		24.9	7.681	24.18	13384	0.91		<1	<1
W7B	-6.1	10/4/04	1053			7.46	231	83.8	1173	0.19	2.7	285	8004	7.76	240.4	88.2	1235		24.6	7.691	24.98	13827	0.70		<1	<1
W7B	-6.1	11/23/04	927			7.38	229	78.5	1099	0.13	1.8	290	8136	7.68	237.9	101	1415		24.1	7.692	25.09	13888	0.73		<1	<1
W7B	-6.1	12/8/04	927			7.26	225	78.9	1105	0.13	1.8	298	8378	7.44	230.4	97.4	1364		25.4	7.700	24.93	13799	0.70		<1	<1
W7B	-6.1	1/18/05	950			5.42	168	60.4	846	0.06	0.8	199	5595	5.58	172.8	60.9	853		24.7	7.769	29.005	16055	2.99		<1	<1
W7B	-6.1	2/10/05	920			6.56	203	96.5	1351	0.28	3.9	240	6735	6.84	211.9	124	1742		24.6	7.768	26.655	14754	0.74		<1	<1
W7B	-6.1	3/22/05	945			8.98	278	105	1464	0.12	1.7	249	6999	9.18	284.3	118	1651	1.76	24.9	7.924	26.100	14447	0.49		<1	<1
W7B	-6.1	4/20/05	930			8.70	269	89.4	1252	0.09	1.3	256	7201	9.06	280.6	90.4	1266		25.0	7.962	25.595	14167	0.79		<1	<1
W7B	-6.1	5/25/05	954			8.28	256	92.7	1299	0.24	3.4	291	8176	8.34	258.3	101	1410		24.3	7.943	23.600	13063	2.24		<1	<1
W7B	-6.1	6/14/05	952			8.12	252	81.2	1137	0.16	2.2	266	7465	8.32	257.7	87.6	1226		25.7	7.929	25.198	13948	1.59		<1	<1
W7B	-6.1	7/19/05	941			7.58	235	90.8	1272	0.15	2.1	291	8176	7.94	245.9	94.9	1329	0.62	24.9	7.936	23.665	13099	1.84		<1	<1
W7B	-6.1	8/3/05	1013			7.58	235	87.0	1218	0.13	1.8	294	8260	7.86	243.5	88.4	1238	0.66	25.2	7.978	23.995	13282	2.05		<1	<1
W7B	-6.1	9/22/05	935			7.08	219	67.2	941	0.17	2.4	256	7193	7.32	226.7	75.2	1054	0.49	26.2	7.935	26.326	14572	2.05		<1	<1
W7B	-6.1	10/19/05	948			6.44	199	77.1	1080	0.14	2.0	265	7445	6.68	206.9	82.0	1148		26.4	7.938	26.019	14402	2.39		<1	<1
W7B	-6.1	11/8/05	932			6.10	189	74.5	1043	0.08	1.1	236	6614	6.32	195.8	77.8	1090		26.0	7.944	26.897	14888	1.78		<1	<1
W7B	-6.1	12/22/05	906			4.88	151	55.6	778	0.32	4.5	183	5126	5.04	156.1	57.0	799		25.8	7.782	30.232	16734	2.13		<1	1
W7B	-6.1	1/31/06	931			5.44	168	67.5	945	0.29	4.1	224	6288	5.58	172.8	69.5	973		25.1	7.732	28.208	15614	0.99		<1	<1
W7B	-6.1	2/16/06	931			5.16	160	70.7	990	0.24	3.4	211	5932	5.48	169.7	72.7	1018	0.69	24.8	7.731	28.837	15962	1.18		<1	<1
W7B	-6.1	3/22/06	927			5.24	162	79.1	1108	0.29	4.1	239	6712	5.38	166.6	82.5	1156	0.50	24.0	7.697	27.211	15062	0.82		<1	<1
W7B	-6.1	4/27/06	1004			5.32	165	79.9	1119	0.16	2.2	263	7386	5.61	173.8	73.8	1033	0.53	24.1	7.712	26.195	14500	1.49		<1	<1
W7B	-6.1	5/24/06	1024			5.22	162	74.1	1038	<0.05	0.0	261	7330	5.63	174.4	68.6	960	0.60	24.1	7.696	26.330	14574	1.13		<1	<1
W7B	-6.1	6/28/06	1007			5.02	155	68.6	961	0.30	4.2	258	7246	5.18	160.4	64.9	908	0.48	24.5	7.693	26.699	14779	1.70		<1	<1
W7B	-6.1	7/19/06	934			4.69	145	62.8	880	0.27	3.8	228	6403	4.88	151.2	52.5	735	0.54	25.1	7.684	27.543	15246	1.56		<1	<1
W7B	-6.1	8/9/06	1032			4.91	152	65.8	922	0.18	2.5	268	7527	5.05	156.4	61.9	867	0.49	24.8	7.682	26.584	14715	1.75		<1	<1
W7B	-6.1	9/20/06	1102			4.87	151	61.6	863	0.18	2.5	257	7218	5.16	159.8	57.1	800	0.53	24.6	7.696	27.123	15013	1.20		<1	<1
W7B	-6.1	10/25/06	1012			4.77	148	57.3	803	0.33	4.6	242	6797	4.98	154.2	56.3	788	0.60	25.6	7.658	27.770	15371	1.31		<1	1
W7B	-6.1	11/29/06	1042			4.55	141	57.3	803	0.24	3.4	233	6544	4.78	148.1	52.9	740	0.59	24.6	7.625	28.169	15592	0.93		<1	<1
W7B	-6.1	12/13/06	1032			4.74	147	56.3	789	0.25	3.5	236	6628	4.96	153.6	52.2	731	0.50	25.0	7.642	28.235	15629	0.84		<1	<1
W7B	-6.1	1/10/07	1048			4.74	147	55.4	776	0.23	3.2	228	6403	4.81	149.0	57.3	802	0.52	24.4	7.642	28.472	15760	1.14		<1	<1
W7B	-6.1	2/21/07	1100			3.87	120	50.9	713	0.46	6.4	211	5926	4.21	130.4	56.8	795	0.60	24.4	7.671	27.963	15478	1.87		<1	<1
W7B	-6.1	3/7/07	1054			4.40	136	55.6	779	0.33	4.6	229	6432	4.58	141.9	56.5	791	0.59	25.8	7.761	27.817	15397	1.91		<1	<1
W7B	-6.1	4/19/07	1047			4.57	142	68.0	952	0.25	3.5	257	7218	4.73	146.5	57.8	809	0.45	25.6	7.705	26.363	14593	2.02		<1	<1
W7B	-6.1	5/2/07	1050			4.59	142	62.4	874	0.26	3.6	262	7358	5.01	155.2	59.4	832	0.44	24.0	7.693	26.395	14610	1.79		<1	<1
W7B	-6.1	6/20/07	1050			4.46	138	54.3	761	0.28	3.9	249	6993	4.66	144.3				24.7	7.687	27.289	15105	1.47		<1	<1

NELHA Water Quality Laboratory

Well 7B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	7/25/07	1234		1.80	Flood	4.59	142	55.8	782	0.10	1.4	255	7166	4.57	141.5	55.8	782.1		24.8	7.51	27.45	15194	2.04			
W7B	-6.1	8/27/07	1152		0.80	Flood	5.66	175	64.7	906	0.21	2.9	275	7728	5.35	165.6	67.3	942.3		25.0	7.57	27.20	15056	1.53			
W7B	-6.1	9/13/07	1608		1.30	Flood	4.61	143	54.7	766	0.29	4.0	266	7480	4.92	152.3	61.7	863.9		24.8	7.55	27.12	15012	1.30			
W7B	-6.1	10/23/07	1103		1.25	Flood	2.44	75	69.6	975	0.19	2.6	112	3146	2.47	76.5	65.7	920.1		24.5	7.54	26.22	14513	1.56			
W7B	-6.1	11/20/07	1141		1.40	Flood	4.84	150	58.0	812	0.00	0.1	265	7443	4.48	138.7	64.0	896.2		25.2	7.57	26.49	14663	1.68			
W7B	-6.1	12/19/07	1132		1.00	High	4.62	143	59.9	839	0.78	10.9	252	7079						24.1	7.56	25.56	14148	1.89			
W7B	-6.1	1/25/08	826		1.40	Ebb	4.28	133	40.9	573	0.14	1.9	228	6400						23.4	7.50	26.74	14801	1.21			
W7B	-6.1	2/26/08	1017		0.30	Ebb	5.48	170	74.6	1045	0.84	11.8	273	7665						23.2	7.53	25.39	14054	1.61			
W7B	-6.1	3/17/08	1224		0.60	Flood	4.95	153	61.6	864	0.39	5.4	291	8169						23.3	7.64	24.77	13711	3.32			
W7B	-6.1	4/30/08	1143		0.90	Flood	4.98	154	81.3	1139	0.09	1.2	240	6741						23.9	7.47	26.16	14480	1.78			
W7B	-6.1	5/27/08	1129		0.80	High	4.58	142	79.0	1106	0.09	1.2	290	8140						22.7	7.59	25.44	14082	1.90			
W7B	-6.1	6/16/08	1157		1.00	Flood	4.73	146	77.1	1080	0.11	1.5	264	7404						23.4	7.66	25.85	14309	2.15			
W7B	-6.1	7/21/08	1126		0.30	Low	4.61	143	78.3	1097	0.20	2.8	311	8722						24.4	7.60	23.23	12858	4.51	0.12		
W7B	-6.1	8/30/08	1424		1.90	Flood	3.90	121	66.2	927	0.24	3.3	221	6209						22.7	7.58	25.84	14303	1.43	0.32		
W7B	-6.1	9/15/08	1145		0.40	Flood	5.61	174	85.7	1200	0.10	1.4	282	7929						26.3	7.58	24.99	13833	2.27			
W7B	-6.1	10/30/08	1057		0.50	Low	5.73	177	100.9	1413	0.24	3.4	280	7877						23.9	7.37	25.82	14292	1.22	0.09		
W7B	-6.1	11/25/08	1030		0.50	Low	5.32	165	108.0	1512	0.19	2.7	294	8244						23.3	7.65	25.23	13965	1.73	0.15		
W7B	-6.1	12/16/08	1023		1.30	Ebb	6.42	199	110.5	1547	0.11	1.5	225	6315						23.6	7.65	27.60	15277	1.58			
W7B	-6.1	1/26/09	1401		0.50	Flood	5.07	157	111.1	1556	0.76	10.7	231	6499						24.1	7.73	27.97	15482	2.39	0.22		
W7B	-6.1	2/26/09	1040		0.10	Low	5.19	161	113.7	1592	0.89	12.4	262	7359						23.8	7.55	27.09	14995	2.51	0.27		
W7B	-6.1	3/23/09	1004		0.20	Flood	4.83	150	92.7	1299	0.13	1.8	267	7486						23.3	7.44	26.09	14441	1.88	0.54		
W7B	-6.1	4/27/09	1010		-0.20	Ebb	6.50	201	95.3	1335	0.42	5.9	242	6811						24.0	7.62	25.59	14165	1.89	0.16		
W7B	-6.1	5/27/09	1352		0.50	Flood	5.32	165	87.3	1222	0.22	3.1	368	10344						24.0	7.72	26.18	14491	3.35	0.14		
W7B	-6.1	6/19/09	1014		0.90	Flood	3.73	116	61.3	859	0.31	4.3	211	5912						24.8	7.71	25.92	14347	1.88	0.10		
W7B	-6.1	7/31/09	950		1.50	Flood	4.66	144	80.2	1124	0.40	5.6	180	5047						23.9	7.62	27.46	15200	2.28	0.21		
W7B	-6.1	8/20/09	1103		0.30	Flood	4.60	143	79.2	1110	0.78	10.9	245	6880						26.4	7.62	26.62	14735	1.31	0.37		
W7B	-6.1	9/24/09	1003		1.70	Ebb	4.94	153	80.8	1132	0.51	7.2	232	6503						24.9	8.27	25.97	14375	1.79	0.12		
W7B	-6.1	10/30/09	1117		0.70	Flood	4.55	141	59.6	835	0.42	5.9	104	2916						26.2	7.55	25.41	14065	0.32	0.12		
W7B	-6.1	11/17/09	1103		0.40	Low	4.98	154	79.1	1108	0.96	13.4	292	8192						23.8	7.60	23.99	13279	2.70	0.10		
W7B	-6.1	12/8/09	1530		0.30	Ebb	5.13	159	90.2	1263	1.08	15.1	256	7200						24.9	7.78	27.35	15139	2.12	0.10		
W7B	-6.1	1/4/10	1530		-0.10	Low	4.97	154	79.4	1112	1.36	19.0	271	7623						23.5	7.57	26.28	14547	3.50	0.07		
W7B	-6.1	2/2/10	1550		-0.20	Low	4.81	149	108.0	1513	3.07	43.0	226	6354						24.9	7.67	27.55	15250	2.22	0.43		
W7B	-6.1	3/10/10	1419		0.70	High	5.88	182	105.1	1472	0.36	5.0	271	7610						24.4	7.68	26.50	14668	2.88	0.22		
W7B	-6.1	4/7/10	1210		0.70	High	5.94	184	97.5	1366	0.71	10.0	276	7741						24.0	7.71	26.18	14491	4.31	0.93		
W7B	-6.1	5/12/10	1330		1.50	Flood	5.23	162	81.9	1147	1.07	15.0	307	8609						23.8	7.66	26.61	14729	3.40	0.11		
W7B	-6.1	6/16/10	1145		0.30	Low	5.59	173	91.0	1274	0.43	6.0	321	9007						24.2	7.67	25.90	14336	2.90	0.24		
W7B	-6.1	7/14/10	929		0.50	Ebb	5.39	167	89.1	1248	0.50	7.0	312	8776						24.1	7.65	25.92	14347	7.12	0.17		
W7B	-6.1	8/4/10	1008		1.60	Flood	6.07	188	92.1	1290	0.76	10.6	274	7690						24.0	7.71	26.93	14906	2.68	0.18		
W7B	-6.1	9/13/10	1542		0.70	Low	5.88	182	87.1	1220	0.39	5.4	302	8472						23.6	7.64	26.62	14735	1.89	0.21		
W7B	-6.1	10/11/10	1053		1.40	Ebb	6.13	190	87.0	1218	0.33	4.6	292	8208						24.0	7.74	26.60	14724	1.53	0.18		
W7B	-6.1	11/15/10	1211		1.30	High	6.17	191	91.0	1274	0.52	7.3	273	7657						24.3	7.68	27.41	15172	1.68	0.25		
W7B	-6.1	12/13/10	948		1.30	High	6.10	189	88.2	1235	0.09	1.3	284	7967						22.7	7.62	27.19	15050	1.31	0.16		

NELHA Water Quality Laboratory

Well 7B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	1/3/11	1404		0.50	Flood	6.10	189	88.1	1234	0.07	1.0	275	7726						23.7	7.62	26.64	14746	1.67	0.16		
W7B	-6.1	4/4/11	1450		1.10	Flood	5.17	160	92.5	1295	0.09	1.2	216	6064						22.7	7.63	27.02	14956	1.93	0.19		
W7B	-6.1	7/11/11	1405		2.40	High	5.75	178	91.9	1287	0.24	3.3	266	7484						26.4	7.61	26.73	14796	1.54	0.12		
W7B	-6.1	10/10/11	1301		1.10	Flood	5.49	170	76.6	1073	0.14	2.0	272	7634						24.5	7.59	26.95	14918	1.73	0.12		
W7B	-6.1	1/9/12	1331		0.20	Flood	5.65	175	85.0	1190	0.16	2.3	262	7351						24.8	7.63	26.77	14818	2.41	0.17		
W7B	-6.1	5/8/12	1426		0.80	Flood	5.55	172	73.2	1025	0.37	5.2	276	7742						23.9	7.60	27.54	15244	3.60	0.26		
W7B	-6.1	7/17/12	1333		1.90	Flood	5.81	180	94.0	1316	0.32	4.5	251	7056						23.8	7.57	27.76	15366	1.79	0.18		
W7B	-6.1	10/15/12	1134		0.20	Flood	5.81	180	83.5	1169	0.11	1.5	279	7848						23.8	7.55	26.74	14801	1.57	0.11		
W7B	-6.1	1/7/13	1233		0.80	High	6.07	188	111.2	1558	0.23	3.2	290	8143						23.6	7.58	28.23	15626	4.62	0.14		
W7B	-6.1	4/8/13	1209		0.50	Flood	5.94	184	93.9	1315	0.29	4.1	253	7096						22.9	7.64	27.62	15288	2.80	0.18		
W7B	-6.1	7/16/13	1426		1.20	Ebb	5.52	171	88.2	1236	0.22	3.1	276	7738						23.8	7.62	26.63	14740	4.93	0.28		
W7B	-6.1	10/1/13	1552		1.00	Ebb	5.46	169	111.7	1565	0.44	6.2	264	7407						23.8	7.61	27.46	15200	4.44	0.14		
W7B	-6.1	1/14/14	1450		0.70	High	5.81	180	98.1	1374	0.31	4.3	244	6853						24.1	7.67	27.77	15371	6.05	0.38		
W7B	-6.1	4/28/14	1728		0.58	High	5.49	170	97.2	1361	0.26	3.6	250	7020						22.6	7.70	27.07	14984	2.96	0.03		
W7B	-6.1	7/28/14	1448		0.49	Flood	5.26	163	98.7	1383	0.21	3.0	249	7004						24.2	7.57	27.22	15067	1.98	0.18		
W7B	-6.1	11/13/14	1138		0.37	Flood	5.91	183	86.3	1209	0.07	1.0	244	6845						25.1	7.61	27.21	15061	3.10	0.37		
W7B	-6.1	2/9/15	1542		0.30	Low	8.11	251	122.5	1716	0.26	3.7	202	5686						23.7	7.58	28.67	15870	2.32	0.14		
W7B	-6.1	4/1/15			No sample																						
W7B	-6.1	8/14/15	1059		0.09	Flood	5.90	183	96.0	1344	0.83	11.6	255	7175						24.9	7.62	30.75	17021	4.77	0.33		
W7B	-6.1	11/13/15	942		0.15	Low	7.24	224	114.0	1597	0.14	1.9	266	7473						24.6	7.64	27.07	14984	2.65	0.31		
W7B	-6.1	1/27/16	1649		0.3	Flood	5.71	177	99.8	1398	0.06	0.9	185	5195						23.2	7.68	29.68	16429	5.91	0.48		
W7B	-6.1	4/26/16	1551		0.3	Flood	5.87	182	77.8	1090	0.74	10.3	202	5662						24.9	7.58	28.35	15692	6.06	0.82		
W7B	-6.1	7/27/16	1250		0.5	Flood	5.56	172	87.3	1223	0.41	5.8	225	6319						25.7	7.71	26.81	14840	3.14	0.72		
W7B	-6.1	10/1/16			No sample																						
W7B	-6.1	3/22/16			No sample - well clogge																						
W7B	-6.1	4/19/17			No sample - well clogge																						
W7B	-6.1	9/19/17			No sample - well clogge																						
W7B	-6.1	10/19/17			No sample - well clogge																						
W7B	-6.1	3/23/18			No sample - well clogge																						
W7B	-6.1	5/11/18			No sample - well clogge																						
W7B	-6.1	9/4/18	1239		0.67	High	7.37	228	79.4	1113	1.82	25.5	221	6221						25.5	7.67	27.27	15095	1.54	1.20		
W7B	-6.1	11/1/18	1118		0.61	High	8.17	253	72.1	1010	0.20	2.8	224	6279						25.6	7.71	26.63	14740	2.42	0.74		
W7B	-6.1	2/8/19	1431		0.10	Flood	7.42	230	84.3	1181	0.12	1.7	228	6412						24.4	7.65	26.57	14707	2.58	1.07		
W7B	-6.1	5/16/19	1059		0.08	Flood	5.27	163	89.4	1252	0.33	4.6	232	6514						33.1	7.84	27.83	15405	4.15	9.12		
W7B	-6.1	8/28/19	1616		0.65	High	4.99	155	98.9	1385	0.43	6.0	237	6663						30.3	7.71	27.51	15227	3.65	9.44		
W7B	-6.1	10/16/19	1201		0.16	Low	4.88	151	70.5	988	0.11	1.6	221	6217						29.3	7.78	27.26	15089	3.53	18.50		
W7B	-6.1	2/5/20	1601		0.15	Ebb	4.96	154	86.0	1204	-0.16	-2.3	207	5806						25.9	7.73	28.60	15831	4.78	9.41		
W7B	-6.1	6/3/20	1512		0.67	High	3.99	124	79.5	1114	0.54	7.5	219	6142						26.5	7.68	27.45	15194	2.72	2.57		
W7B	-6.1	7/1/20																									
W7B	-6.1	10/1/20																									
W7B	-6.1	1/1/21																									
W7B	-6.1	4/1/21																									
W7B	-6.1	7/1/21																									
W7B	-6.1	10/1/21																									
W7B	-6.1	1/1/22																									
W7B	-6.1	4/1/22																									

NELHA Water Quality Laboratory

Well 7B Data Table

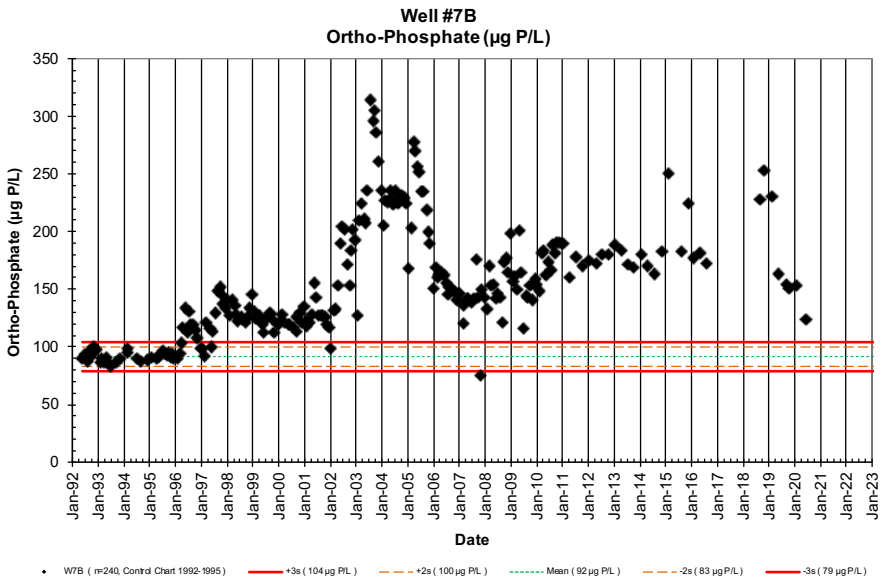
5/20/1992 - 7/21/20

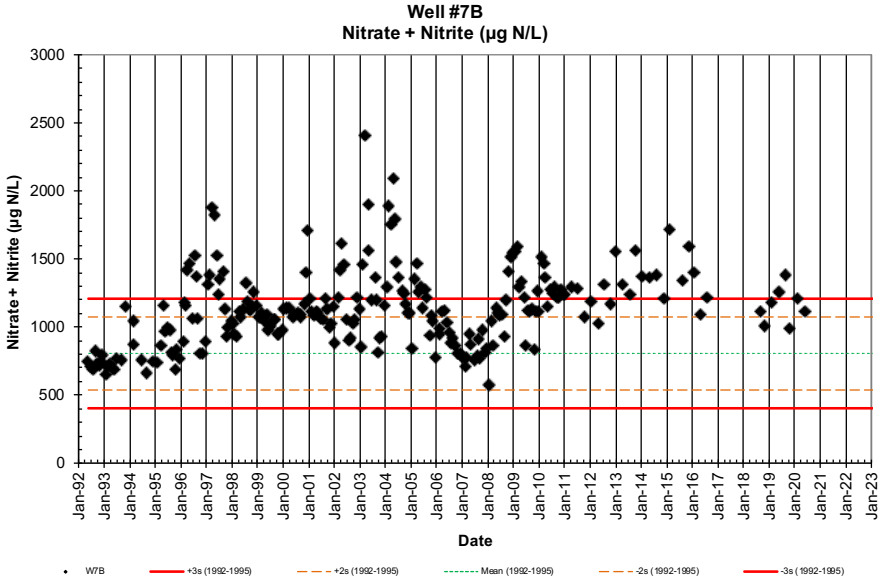
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W7B	-6.1	7/1/22																									
W7B	-6.1	10/1/22																									
W7B	-6.1	1/1/23																									
W7B	-6.1	4/1/23																									
Mean					0.73		4.93	153	80.34	1125	0.42	5.8	312	8755	4.83	149.6	82.5	1155	0.67	23.8	7.72	24.43	13521	2.74	1.11		
Std. Dev.					0.55		1.55	48	19.92	279	1.80	25.1	78	2202	1.75	54.3	23.9	335	0.17	1.5	0.11	2.94	1632	1.41	3.10		
Maximum					2.40		10.14	314	171.80	2406	26.65	373.3	562	15778	10.54	326.5	185.3	2595	1.76	33.1	8.27	30.75	17021	7.12	18.50		
Minimum					-0.20		2.44	75	40.93	573	-0.16	-2.3	84	2348	2.47	76.5	31.8	445	0.44	19.5	7.37	15.94	8825	0.28	0.03		
n					72		240	240	240	240	237	240	240	240	173	173	172	172	142	242	240	240	239	239	58		

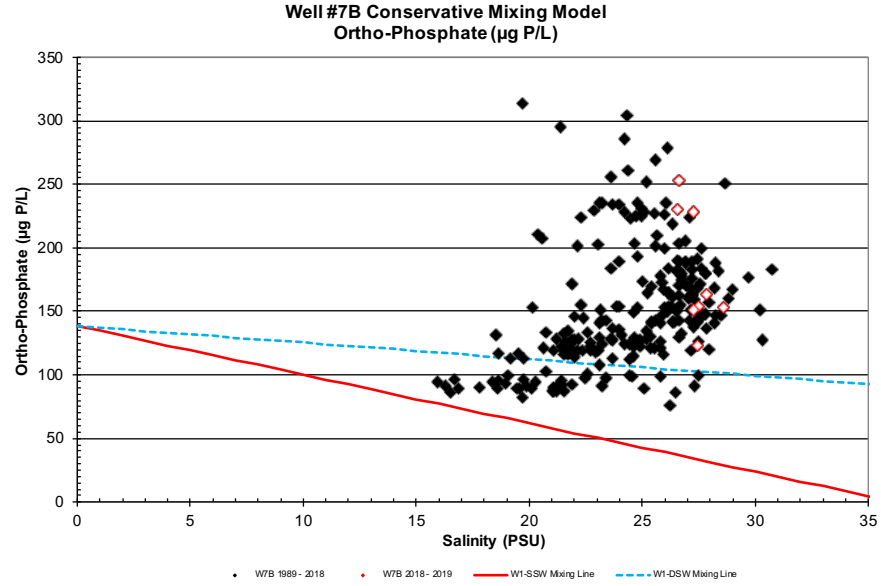
NELHA Water Quality Laboratory

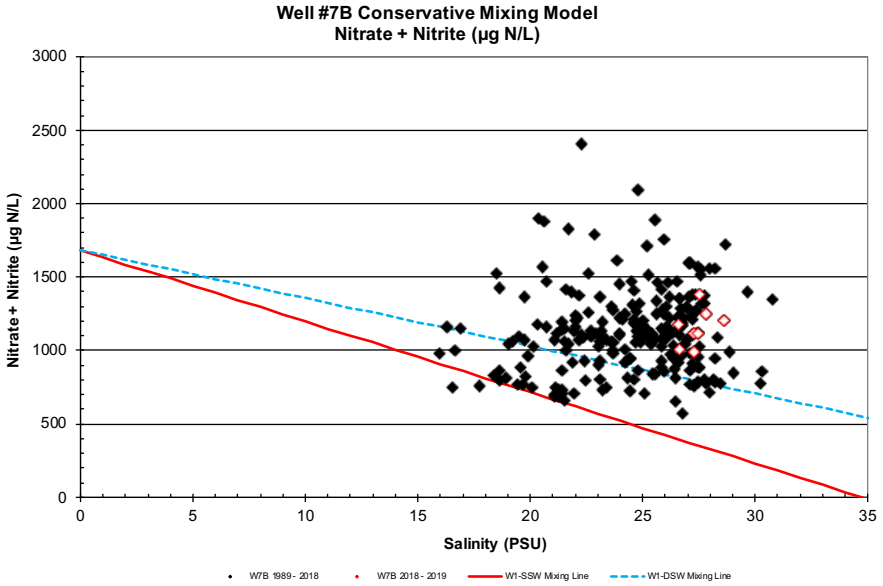
Well 7B Charts

5/20/1992 - 7/21/20





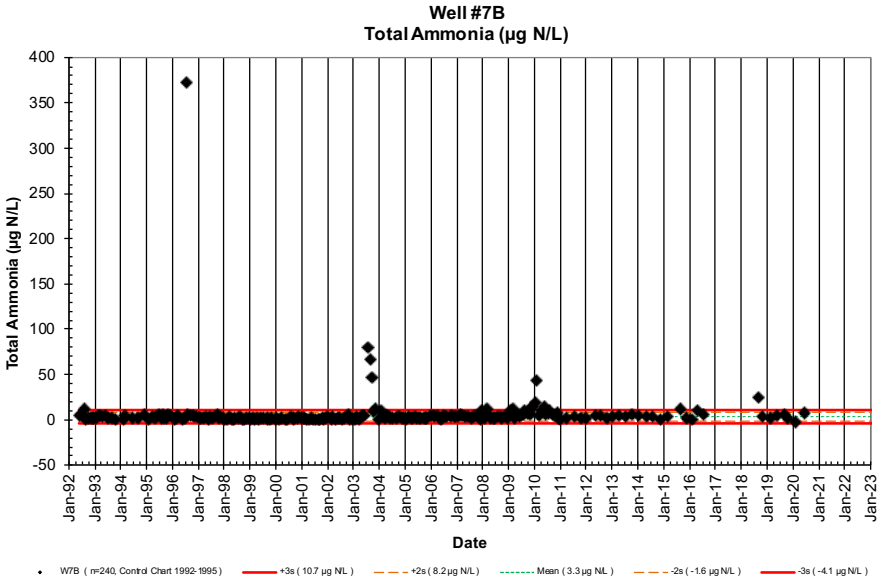


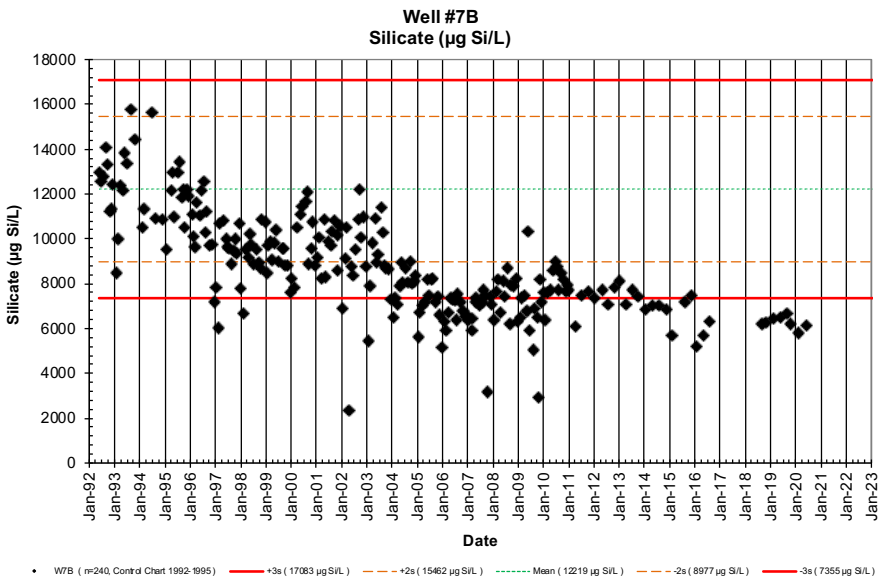


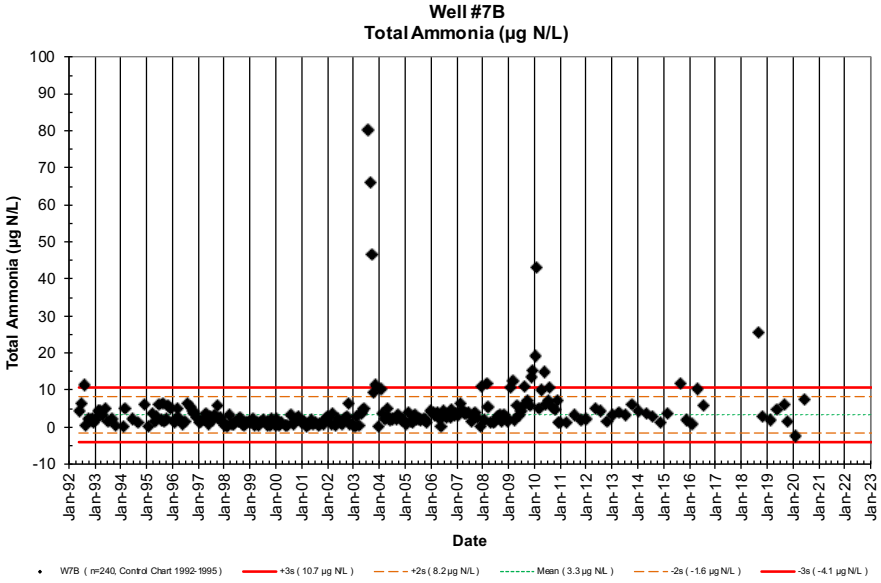
NELHA Water Quality Laboratory

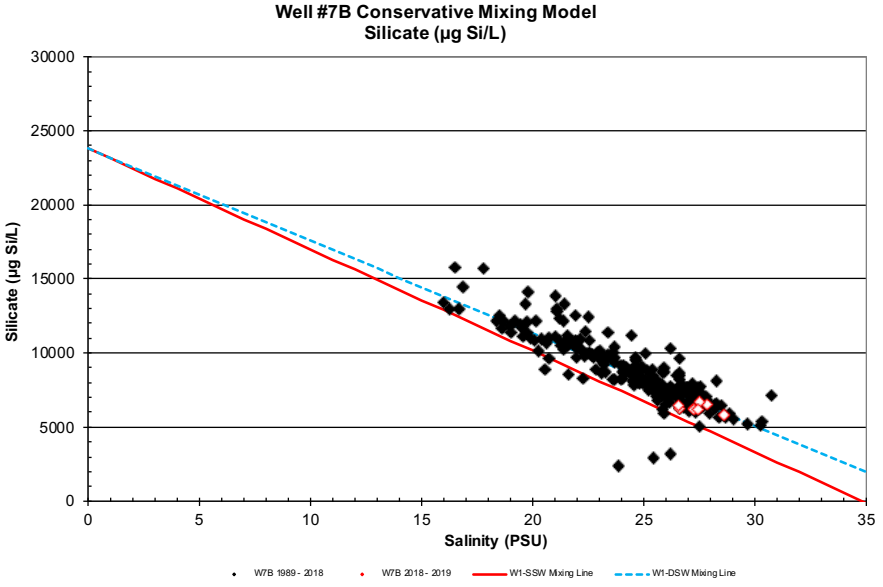
Well 7B Charts

5/20/1992 - 7/21/20







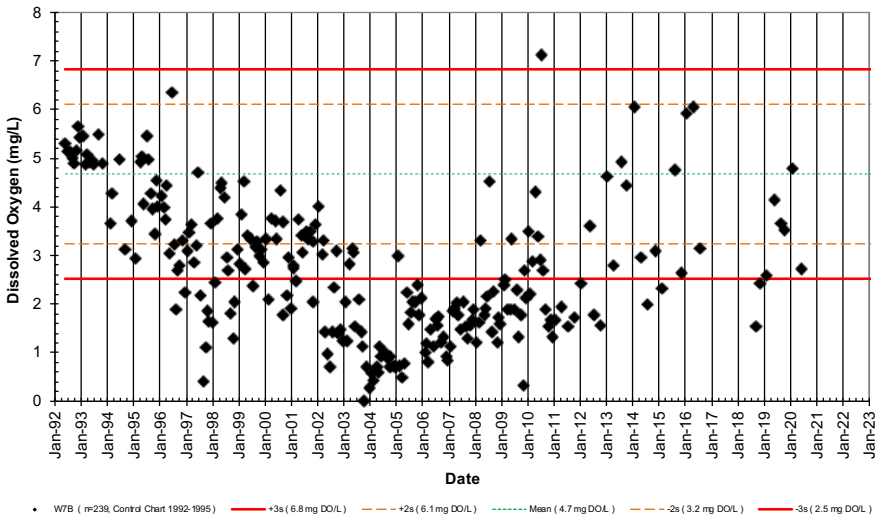


NELHA Water Quality Laboratory

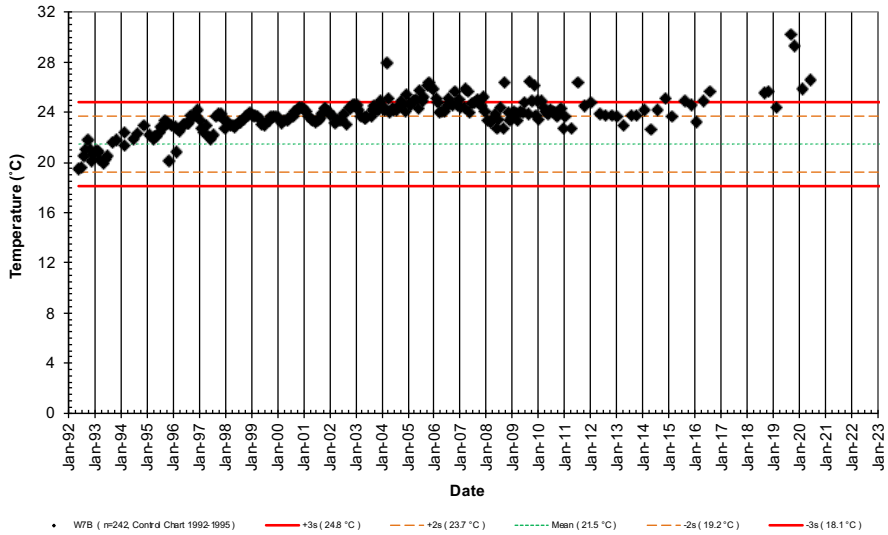
Well 7B Charts

5/20/1992 - 7/21/20

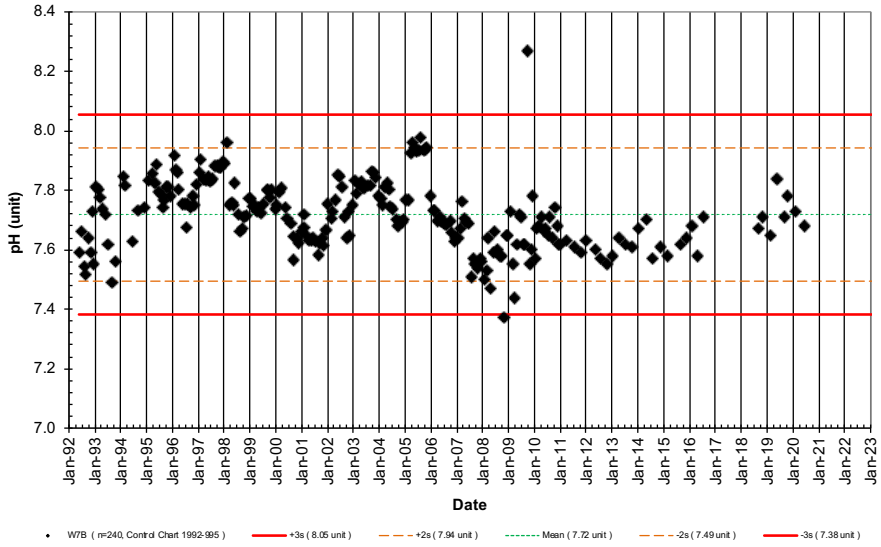
Well #7B
Dissolved Oxygen (mg DO/L)



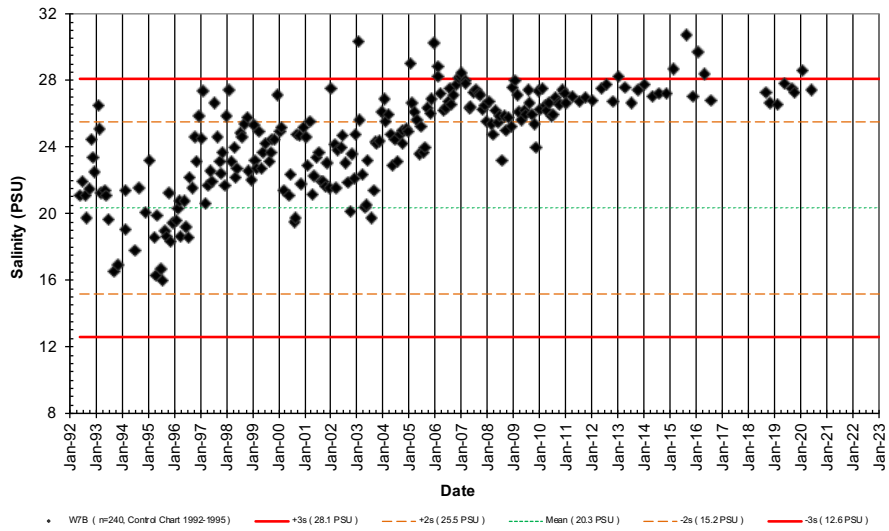
Well #7B
Temperature (˚C)



Well #7B
pH (unit)



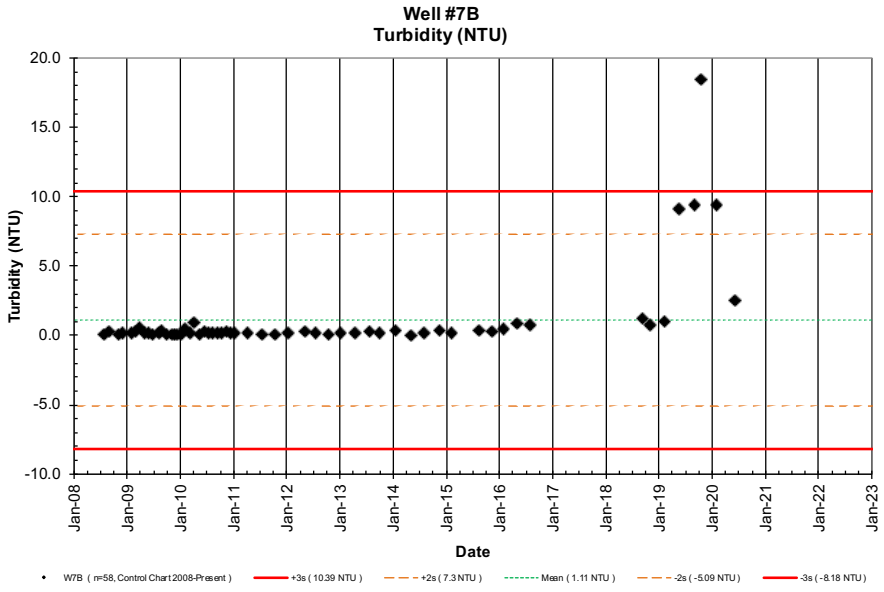
Well #7B
Salinity (PSU)

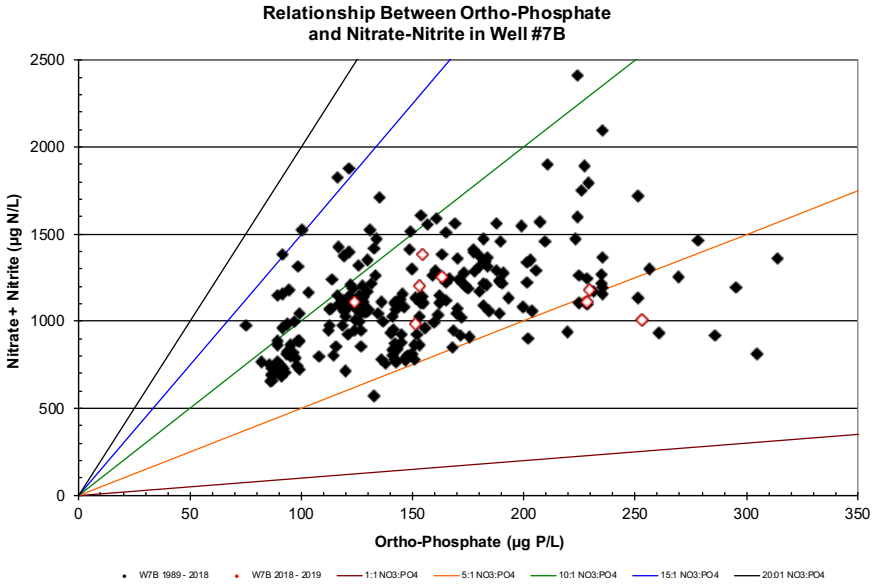


NELHA Water Quality Laboratory

Well 7B Charts

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NELHA Water Quality Laboratory

Well 8 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	5/20/92	957			5.71	177	54.2	759	0.18	2.5	195	5477	5.84	180.9	63.1	884	0.69	14.0	7.395	30.048	16632	6.38		<1	<1
W8	-18.9	6/24/92	938			5.13	159	51.0	714	0.72	10.1	197	5533	5.22	161.7	53.6	751	1.18	14.7	7.440	30.278	16760	6.03		<1	<1
W8	-18.9	7/30/92	858			4.81	149	51.3	718	1.17	16.4	187	5252	5.09	157.7	53.8	754	0.81	14.0	7.535	29.812	16502	7.04		<1	<1
W8	-18.9	8/31/92	916															0.77	15.4	7.623	30.317	16781	7.36		<1	<1
W8	-18.9	9/23/92	946			4.33	134	44.1	617	0.33	4.6	203	5701	4.41	136.6	52.4	734	0.80	14.7	7.652	29.924	16564	7.09		<1	<1
W8	-18.9	10/28/92	1010			4.15	129	48.6	681	0.29	4.1	211	5926	4.27	132.3	52.5	735	0.67	15.4	7.647	29.595		6.78		<1	<1
W8	-18.9	11/18/92	1039			4.13	128	55.5	777	0.23	3.2	207	5814	4.47	138.5	61.5	861	0.69	15.0	7.617	29.284	16209	6.28		<1	<1
W8	-18.9	12/9/92	941			3.84	119	59.2	829	0.11	1.5	207	5814	4.11	127.3	62.0	869	0.86	14.0	7.615	28.951	16025	6.57		<1	<1
W8	-18.9	1/27/93	925			3.95	122	58.3	816	0.27	3.8	208	5836	4.05	125.4	63.5	890	0.66	14.1	7.588	29.261	16197	6.60		<1	<1
W8	-18.9	2/24/93	909			4.15	129	63.4	888	0.09	1.3	217	6106	4.17	129.2	65.3	915	0.75	13.9	7.584	29.252	16192	6.71		<1	<1
W8	-18.9	3/17/93	933			4.06	126	64.6	905	0.40	5.6	212	5960	4.13	127.9	68.9	965	0.84	13.8	7.561	29.090	16102	6.71		<1	<1
W8	-18.9	4/28/93	903			4.20	130	60.9	854	0.32	4.5	205	5752	4.25	131.6	56.6	793	0.61	13.7	7.562	29.099	16107	6.84		<1	<1
W8	-18.9	5/26/93	905			4.18	129	59.1	828	0.37	5.2	245	6881	4.30	133.2	65.7	921	0.77	13.4	7.555	29.201	16164	6.92		<1	<1
W8	-18.9	6/29/93	918			4.22	131	58.3	817	0.17	2.4	203	5701	4.30	133.2	63.2	885	0.54	13.7	7.542	29.218	16173	6.33		<1	<1
W8	-18.9	9/1/93	920			5.02	155	47.5	666	0.22	3.1	240	6741	5.20	161.1	57.6	807	0.97	15.2	7.517	29.111	16114	3.74		<1	<1
W8	-18.9	10/27/93	915			5.31	164	46.8	656	0.13	1.8	224	6291	5.39	166.9	50.5	707	0.74	16.1	7.540	29.172	16147	3.53		<1	<1
W8	-18.9	3/1/94	1128			5.96	185	57.7	808	0.27	3.8	199	5589	5.96	184.6	60.2	843	0.77	17.6	7.551	29.583	16375	1.46		<1	<1
W8	-18.9	6/22/94	853			5.70	177	40.1	562	0.19	2.7	195	5471	5.75	178.1	44.7	626	0.91	18.1	7.548	30.096	16659	0.41		<1	<1
W8	-18.9	8/24/94	935			5.71	177	31.2	437	0.04	0.6	190	5326	5.81	180.0	39.2	550	0.83	18.3	7.558	30.297	16770	0.15		<1	<1
W8	-18.9	11/28/94	1115			6.07	188	8.7	121	0.57	8.0	200	5619	6.17	191.1	13.2	184	0.86	19.7	7.530	30.232	16734	0.14		<1	<1
W8	-18.9	1/25/95	946			6.16	191	10.0	140	0.10	1.4	188	5277	6.32	195.8	13.5	189	0.89	19.6	7.590	30.304	16774	0.10		<1	<1
W8	-18.9	2/15/94	959			6.14	190	12.9	181	0.01	0.1	193	5429	6.25	193.6			0.92	19.5	7.589	30.310	16777	0.09		<1	<1
W8	-18.9	3/29/95	945			6.12	190	16.8	235	0.27	3.8	199	5600	6.21	192.3	18.9	265	1.07	19.7	7.574	30.288	16765	0.18		<1	<1
W8	-18.9	4/26/95	936			5.99	186	21.8	305	0.17	2.4	190	5333	6.30	195.1	24.6	345	0.86	19.6	7.586	30.340	16794	0.15		<1	<1
W8	-18.9	5/9/95	1115			5.20	161	20.0	281	0.31	4.3	207	5814	6.34	196.4	22.1	310	0.76	20.0	7.573	30.373	16812	0.20		<1	<1
W8	-18.9	6/28/95	932			6.22	193	28.6	401	0.48	6.7	200	5611	6.31	195.4	31.4	440	0.80	20.0	7.551	30.438	16848	0.10		<1	<1
W8	-18.9	7/26/95	1114			6.45	200	30.3	424	0.39	5.5	201	5631	6.49	201.0	33.2	466	0.92	20.1	7.606	30.478	16870	0.10		<1	<1
W8	-18.9	8/23/95	1030			5.95	184	33.0	462	0.53	7.4	188	5269	6.11	189.2	35.6	498	0.77	19.8	7.591	30.482	16873	0.81		<1	<1
W8	-18.9	9/12/95	1016			6.10	189	32.4	454	0.19	2.7	193	5421	6.26	193.9	35.4	495	0.72	19.8	7.639	30.482	16873	0.32		<1	<1
W8	-18.9	10/17/95	1203			6.04	187	34.2	479	0.16	2.2	193	5426	6.10	188.9	36.4	510	0.92	19.9	7.642	30.541	16905	0.25		<1	<1
W8	-18.9	11/7/95	1114			5.79	179	33.0	463	0.39	5.5	188	5274	5.90	182.7	35.6	499	1.07	20.0	7.692	30.658	16970	0.47		<1	<1
W8	-18.9	12/6/95	1128			5.46	169	32.5	455	0.40	5.6	182	5098	5.60	173.5	34.6	485	0.78	20.2	7.718	30.678	16981	0.70		<1	<1
W8	-18.9	1/30/96	912			6.08	188	36.8	515	0.51	7.1	197	5519	6.19	191.7	41.1	576	0.78	20.0	7.700	30.448	16854	0.32		<1	<1
W8	-18.9	2/27/96	1125			6.03	187	39.9	558	0.25	3.5	188	5286	6.23	193.0	42.2	592	0.69	20.5	7.657	30.394	16824	0.41		<1	<1
W8	-18.9	3/13/96	1241			6.19	192	41.8	586	0.48	6.7	186	5217	6.47	200.4	45.1	631	0.79	20.6	7.650	30.317	16781	0.46		<1	<1
W8	-18.9	4/2/96	1133			6.32	196	44.4	622	0.13	1.8	205	5745	6.61	204.7	51.3	719	0.95	20.6	7.630	31.193	17266	0.76		<1	<1
W8	-18.9	5/15/96	1119			6.30	195	43.7	613	0.40	5.6	199	5601	6.52	201.9	46.6	653	0.59	20.5	7.612	30.161	16695	1.12		<1	<1
W8	-18.9	6/18/96	1054			6.10	189	42.9	601	0.14	2.0	191	5377	6.46	200.1	50.7	710	0.64	20.5	7.635	30.263	16751	1.22		<1	<1
W8	-18.9	7/17/96	1114			6.79	210	48.5	679	0.19	2.7	186	5234	7.04	218.1	51.5	721	0.72	20.3	7.630	29.881	16540	1.39		<1	<1
W8	-18.9	8/6/96	1128			6.96	216	59.2	829	0.46	6.4	189	5295	7.19	222.7	63.0	882	0.66	23.2	7.610	29.594	16381	2.65		<1	<1
W8	-18.9	9/4/96	1116			6.40	198	54.8	767	0.57	8.0	194	5441	6.50	201.3	57.9	811	0.77	21.1	7.648	30.127	16676	3.42		<1	<1
W8	-18.9	10/9/96	1212			6.13	190	61.5	862	0.44	6.2	205	5757	6.38	197.6	65.2	914	0.79	21.1	7.638	30.205	16719	3.03		<1	<1
W8	-18.9	11/6/96	1115			6.16	191	60.3	845	0.18	2.5	185	5201	6.53	202.3	66.0	925	0.79	21.0	7.611	30.158	16693	4.40		<1	<1
W8	-18.9	12/17/96	1107			6.00	186	50.5	708	0.20	2.8	181	5090	6.09	188.6	53.3	746	0.83	20.8	7.644	30.293	16768	5.12		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	1/14/97	1107			5.66	175	53.7	752	0.16	2.2	190	5331	5.67	175.6	56.3	789	0.78	21.0	7.668	30.202	16718	5.21		<1	<1
W8	-18.9	2/11/97	952			5.40	167	70.7	990	0.19	2.7	192	5378	5.50	170.4	72.3	1012	0.79	21.0	7.675	30.008	16610	4.95		<1	<1
W8	-18.9	3/11/97	1016			5.31	164	103.3	1447	0.20	2.8	260	7288	5.52	171.0	106.1	1486	0.91	20.7	7.720	29.976	16592	4.83		<1	<1
W8	-18.9	4/23/97	1115			5.51	171	152.6	2137	0.37	5.2	251	7052	5.54	171.6	179.9	2520	0.75	20.5	7.738	30.053	16635	4.07		<1	<1
W8	-18.9	5/28/97	1008			5.22	162	240.7	3371	0.02	0.3	177	4978	5.46	169.1	232.8	3260	0.97	20.0	7.776	30.143	16685	3.08		<1	<1
W8	-18.9	6/17/97	1050			5.69	176	187.0	2619	0.23	3.2	180	5055	5.73	177.5	209.1	2929	1.41	20.6	7.808	30.287	16765	3.08		<1	<1
W8	-18.9	7/15/97	1044			6.58	204	120.0	1681	0.12	1.7	174	4873	6.72	208.1	138.3	1937	0.68	21.3	7.876	30.717	17003	3.46		<1	<1
W8	-18.9	8/26/97	1111			5.86	182	58.7	822	0.28	3.9	201	5656	5.93	183.7	59.3	831	0.73	22.8	7.948	31.132	17232	4.44		<1	<1
W8	-18.9	9/23/97	927			4.02	125	58.6	821	0.33	4.6	159	4467	4.12	127.6	67.6	947	0.71	21.5	8.023	30.737	17014	4.13		<1	<1
W8	-18.9	10/14/97	1021			3.55	110	46.9	657	0.20	2.8	153	4289	3.63	112.4	55.7	780	0.71	21.3	8.022	30.697	16992	3.98		<1	<1
W8	-18.9	11/4/97	850			3.32	103	50.3	705	0.11	1.5	148	4154	3.55	110.0	56.2	788	0.71	21.1	8.023	30.789	17043	3.91		<1	<1
W8	-18.9	12/16/97	1051			3.45	107	56.6	793	0.09	1.3	152	4280	3.64	112.7	60.4	846	0.86	21.5	7.960	31.013	17167	3.65		<1	<1
W8	-18.9	1/5/98	912			3.64	113	53.6	750	0.02	0.3	138	3870	3.91	121.1	57.9	811	0.88	21.6	7.961	31.095	17212	3.79		<1	<1
W8	-18.9	2/3/98	751			4.05	125	61.0	854	0.04	0.6	150	4207	4.38	135.7	66.3	929	0.79	21.3	7.961	31.044	17184	3.76		<1	<1
W8	-18.9	3/10/98	908			4.33	134	85.3	1195	0.26	3.6	146	4103	4.48	138.8	89.3	1251	0.82	21.4	7.825	30.886	17096	2.78		<1	<1
W8	-18.9	4/14/98	1033			3.98	123	92.0	1289	0.03	0.4	143	4008	4.17	129.2	93.8	1314	0.87	21.5	7.833	30.805	17051	2.49		<1	<1
W8	-18.9	5/12/98	910			3.81	118	98.8	1384	0.08	1.1	143	4011	3.93	121.7	100.1	1402	0.81	21.5	7.824	30.868	17086	2.14		<1	<1
W8	-18.9	6/2/98	912			3.75	116	99.3	1391	0.10	1.4	144	4046	3.84	118.9	104.0	1457	0.80	21.8	7.807	30.939	17126	2.06		<1	<1
W8	-18.9	7/14/98	904			3.89	120	90.3	1265	0.16	2.2	147	4120	4.11	127.3	94.3	1321	0.82	22.2	7.721	31.035	17179	2.05		<1	<1
W8	-18.9	8/11/98	928			3.86	120	78.2	1096	0.07	1.0	151	4230	4.05	125.4	87.7	1228	0.93	23.1	7.645	31.810	17608	0.87		<1	<1
W8	-18.9	9/15/98	916			3.42	106	77.8	1089	0.06	0.8	154	4317	3.51	108.7	83.4	1168	0.90	24.4	7.622	32.438	17955	2.02		<1	<1
W8	-18.9	10/13/98	822			3.37	104	59.8	838	0.06	0.8	149	4182	3.56	110.3	63.0	882	0.90	25.1	7.641	32.710	18106	0.52		<1	<1
W8	-18.9	11/4/98	914			3.41	106	64.2	899	0.10	1.4	149	4176	3.55	110.0	68.0	952	0.97	24.9	7.654	32.597	18043	1.02		<1	<1
W8	-18.9	12/16/98	905			3.35	104	65.4	916	0.11	1.5	141	3960	3.48	107.8	69.5	973	0.95	24.7	7.665	32.546	18015	0.82		<1	<1
W8	-18.9	1/12/99	936			3.45	107	77.7	1088	0.10	1.4	142	3980	3.55	110.0	81.4	1140	0.85	24.0	7.681	32.241	17846	0.96		<1	<1
W8	-18.9	2/3/99	918			3.22	100	56.2	788	0.11	1.5	132	3693	3.42	105.9	60.6	849	0.94	23.8	7.671	32.260	17857	2.97		<1	<1
W8	-18.9	3/2/99	917			3.01	93	66.5	931	0.06	0.8	123	3452	3.23	100.0	69.7	976	0.91	23.7	7.650	32.190	17818	2.91		<1	<1
W8	-18.9	4/6/99	911			2.79	86	64.9	909	0.05	0.7	120	3367	2.93	90.8	69.1	968	0.82	23.2	7.613	32.414	17942	1.80		<1	<1
W8	-18.9	5/4/99	920			2.64	82	62.6	877	0.08	1.1	104	2915	2.82	87.3	64.2	899	0.78	23.6	7.541	32.901	18212	1.70		<1	<1
W8	-18.9	6/2/99	901			2.73	85	55.7	780	0.10	1.4	101	2837	2.95	91.4	60.4	846	0.81	23.9	7.516	33.086	18314	1.71		<1	<1
W8	-18.9	7/7/99	949			3.18	98	51.9	727	0.02	0.3	90.6	2545	3.22	99.7	54.8	768	0.86	24.6	7.567	33.377	18475	2.25		<1	<1
W8	-18.9	8/25/99	912			2.73	85	55.8	782	0.11	1.5	84.9	2384	2.88	89.2	60.5	847	0.89	25.2	7.675	33.535	18562	2.01		<1	<1
W8	-18.9	9/8/99	924			2.46	76	67.3	942	0.06	0.8	85.8	2410	2.67	82.7	77.4	1084	0.81	25.2	7.665	33.556	18574	1.23		<1	<1
W8	-18.9	10/6/99	919			1.73	54	60.3	844	0.02	0.3	83.1	2333	1.84	57.0	62.4	875	0.77	25.5	7.549	33.633	18617	0.78		<1	<1
W8	-18.9	11/3/99	942			2.16	67	43.7	612	0.11	1.5	74.9	2104	2.30	71.2	46.5	651	0.81	25.2	7.593	33.335	18452	2.78		<1	<1
W8	-18.9	12/15/99	1002			3.05	94	53.9	755	0.04	0.6	84.8	2382	3.24	100.4	57.4	804	0.79	25.0	7.643	33.431	18505	1.68		<1	<1
W8	-18.9	1/11/00	941			2.81	87	56.5	791	0.16	2.2	76.1	2137	2.94	91.1	62.2	871	0.80	24.3	7.659	33.116	18331	2.18		<1	<1
W8	-18.9	2/14/00	934			2.83	88	56.8	796	0.06	0.8	75.0	2106	2.90	89.8	62.2	871	0.81	23.6	7.666	32.658	18077	2.63		<1	<1
W8	-18.9	3/22/00	953			3.98	123	43.3	606	0.05	0.7	88.1	2474	4.05	125.4	46.5	651	0.91	23.3	7.750	32.531	18007	3.55		<1	<1
W8	-18.9	4/12/00	932			4.54	141	49.8	698	0.06	0.8	78.4	2202	4.56	141.2	53.7	752	1.03	23.3	7.810	32.463	17969	3.11		<1	<1
W8	-18.9	5/17/00	923			3.64	113	73.1	1024	0.02	0.3	70.3	1974	3.67	113.7	76.2	1067	0.85	21.2	7.816	31.388	17374	2.43		<1	<1
W8	-18.9	6/6/00	940			3.50	108	67.5	945	0.02	0.3	72.0	2022	3.55	110.0	75.6	1059	0.89	20.2	7.737	31.194	17267	1.43		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	7/31/00	930			3.60	112	57.5	805	0.08	1.1	90.1	2531	3.73	115.5	60.4	846	0.97	22.1	7.698	31.952	17686	2.64		<1	<1
W8	-18.9	8/30/00	925			2.93	91	61.4	860	0.02	0.3	95.5	2682	3.05	94.5	64.7	906	0.86	25.7	7.563	33.579	18587	0.89		<1	<1
W8	-18.9	9/6/00	915			2.52	78	65.0	910	0.07	1.0	97.6	2741	2.71	83.9	69.0	966	1.01	25.9	7.519	33.643	18622	0.35		<1	<1
W8	-18.9	10/25/00	923			1.92	59	63.6	891	0.13	1.8	88.5	2486	2.03	62.9	67.4	944	0.83	26.2	7.430	33.631	18616	0.94		<1	1
W8	-18.9	11/14/00	936			2.26	70	47.5	665	0.21	2.9	82.9	2328	2.42	75.0	51.6	723	0.84	25.8	7.468	33.796	18707	1.85		<1	<1
W8	-18.9	12/19/00	913			2.76	85	56.0	784	0.13	1.8	68.6	1927	3.01	93.2	58.8	824	0.81	24.9	7.588	33.459	18520	0.92		<1	<1
W8	-18.9	1/24/01	857			2.30	71	53.5	750	0.08	1.1	71.6	2011	2.50	77.4	57.9	811	0.78	24.2	7.514	33.100	18322	0.54		<1	<1
W8	-18.9	2/7/01	928			2.16	67	49.3	691	0.03	0.4	73.3	2059	2.28	70.6	53.0	742	0.76	24.3	7.532	33.247	18403	0.37		<1	<1
W8	-18.9	3/12/01	905			2.23	69	53.4	748	0.01	0.1	74.0	2078	2.45	75.9	58.0	813	0.78	23.3	7.444	32.906	18214	0.18		<1	<1
W8	-18.9	4/18/01	853			3.20	99	41.7	584	0.04	0.6	74.1	2081	3.28	101.6	43.8	613	0.73	23.6	7.461	33.044	18291	1.61		<1	<1
W8	-18.9	5/14/01	1017			4.44	138	36.6	512	0.18	2.5	66.8	1876	4.50	139.4	39.4	552	0.72	23.8	7.614	34.250	18958	2.18		<1	<1
W8	-18.9	6/13/01	921			4.76	147	37.3	523	0.01	0.1	72.3	2031	4.88	151.2	40.5	567	0.74	23.8	7.707	33.239	18399	2.28		<1	<1
W8	-18.9	7/24/01	921			4.04	125	59.5	834	0.03	0.4	75.6	2123	4.11	127.3	61.7	864	0.83	24.3	7.756	33.061	18300	1.77		<1	<1
W8	-18.9	8/22/01	929			4.24	131	75.7	1060	0.03	0.4	69.8	1961	4.46	138.1	78.8	1104	0.83	23.5	7.766	32.468	17972	1.11		<1	<1
W8	-18.9	9/17/01	1007			3.60	112	82.0	1149	0.02	0.3	71.7	2014	3.76	116.5	86.3	1209	0.85	23.5	7.803	32.337	17899	1.40		<1	<1
W8	-18.9	10/22/01	1002			2.54	79	89.6	1255	0.10	1.4	71.8	2017	2.60	80.5	97.8	1370	0.80	22.9	7.671	32.105	17771	1.15		<1	<1
W8	-18.9	11/5/01	1031			2.52	78	94.2	1319	0.02	0.3	74.3	2087	2.56	79.3	106	1489	0.76	22.2	7.642	31.850	17630	1.81		<1	<1
W8	-18.9	12/12/01	1014			3.36	104	76.9	1077	0.15	2.1	85.4	2399	3.49	108.1	82.7	1158	0.85	23.7	7.648	32.538	18011	2.36		<1	<1
W8	-18.9	1/7/02	953			4.48	139	89.5	1254	0.21	2.9	92.3	2592	4.68	145.0	91.0	1274	0.82	23.2	7.660	32.137	17789	2.53		<1	<1
W8	-18.9	2/25/02	922			4.14	128	49.3	691	0.07	1.0	94.1	2643	4.26	131.9	51.5	721	0.70	23.2	7.743	32.522	18002	3.00		<1	<1
W8	-18.9	3/18/02	957			4.14	128	87.2	1221	0.35	4.9	80.0	2247	4.34	134.4	91.3	1278	0.86	21.9	7.742	31.850	17630	1.80		<1	<1
W8	-18.9	4/10/02	958			4.02	125	75.3	1055	0.01	0.1	80.1	2250	4.08	126.4	78.6	1101	1.01	22.5	7.746	32.163	17803	1.75		<1	<1
W8	-18.9	5/22/02	1015			4.74	147	92.8	1300	0.18	2.5	87.0	2443	4.97	153.9	92.9	1302	0.93	23.3	7.812	32.283	17869	0.77		<1	<1
W8	-18.9	6/19/02	1046			3.90	121	57.4	804	0.08	1.1	85.5	2401	4.08	126.4	62.6	876	0.79	23.1	7.858	32.151	17796	1.98		<1	<1
W8	-18.9	7/22/02	1040			5.52	171	32.5	455	0.12	1.7	134	3772	5.90	182.7	30.2	423	0.86	25.3	7.839	33.235	18396	2.88		<1	<1
W8	-18.9	8/21/02	1049			3.75	116	43.4	608	0.16	2.2	87.7	2464	3.94	122.0	45.8	641	0.90	25.9	7.814	33.388	18481	1.15		<1	<1
W8	-18.9	9/25/02	929			2.44	76	41.5	581	0.27	3.8	89.0	2498	2.58	79.9	40.1	561	0.74	26.1	7.730	33.675	18640	0.54		2	<1
W8	-18.9	10/15/02	1001			2.18	68	38.3	536	0.17	2.4	98.3	2761	2.29	70.9	40.3	565	0.68	26.1	7.727	33.616	18607	1.08		<1	<1
W8	-18.9	11/17/02	951			2.96	92	44.0	616	0.01	0.1	89.8	2523	3.07	95.1	45.8	641	0.90	25.9	7.745	33.539	18565	1.71		<1	<1
W8	-18.9	12/18/02	1005			2.61	81	32.8	459	0.02	0.3	78.6	2208	2.73	84.6	34.3	481	0.75	25.3	7.796	33.363	18467	1.41		<1	<1
W8	-18.9	1/23/03	954			2.56	79	48.7	682	0.02	0.3	86.2	2421	2.66	82.4	52.7	738	0.89	24.9	7.819	33.270	18416	1.63		<1	<1
W8	-18.9	2/11/03	1008			2.00	62	48.3	677	0.19	2.7	88.7	2491	3.58	110.9	56.8	796	0.98	24.3	7.783	32.968	18249	0.07		<1	<1
W8	-18.9	3/20/03	1110			2.92	90	71.4	1000	0.04	0.6	85.0	2387	2.96	91.7	79.7	1116	0.79	24.1	7.805	32.898	18210	0.76		<1	<1
W8	-18.9	4/30/03	943			3.17	98	48.6	681	0.04	0.6	80.8	2269	3.27	101.3	55.5	777	0.75	24.5	7.876	34.445	19066	2.17		<1	<1
W8	-18.9	5/14/03	855			3.09	96	44.5	624	0.09	1.3	78.6	2208	3.16	97.9	48.1	674	0.91	24.5	7.896	33.190	18372	2.08		<1	<1
W8	-18.9	6/4/03	932			3.15	98	41.6	582	0.01	0.1	82.8	2324	3.33	103.1	48.0	672	1.10	24.5	7.854	33.068	18304	1.26		<1	<1
W8	-18.9	7/30/03	919			3.00	93	54.2	759	0.03	0.4	85.0	2386	3.18	98.5	65.3	915	NA	24.3	7.849	32.649	18072	0.27		<1	<1
W8	-18.9	8/28/03	908			2.52	78	56.1	786	1.59	22	75.7	2126	2.64	81.8	82.4	1154	NA	23.1	7.818	31.922	17670	0.15		<1	<1
W8	-18.9	9/16/03	902			2.00	62	94.8	1328	3.53	49	81.3	2283	1.96	60.7	92.8	1299	NA	23.0	7.713	31.718	17557	0.19		<1	<1
W8	-18.9	10/8/03	902			2.62	81	58.6	821	1.80	25	88.1	2474	2.86	88.6	75.6	1059	NA	23.9	7.679	32.363	17914	NA		<1	<1
W8	-18.9	11/5/03	909			4.48	139	20.8	291	40.2	563	97.6	2741	4.82	149.3	69.2	969	NA	24.1	7.607	32.476	17976	NA		<1	<1
W8	-18.9	12/17/03	945			4.41	137	37.9	530	23.0	322	100	2804	4.66	144.3	65.6	919	NA	23.6	7.553	32.351	17907	0.15		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	1/28/04	949			4.96	154	76.0	1064	6.55	92	102	2853	5.12	158.6	87.4	1224	1.11	22.8	7.508	31.682	17537	0.05		<1	<1
W8	-18.9	2/11/04	901			5.06	157	83.5	1170	2.27	32	98.9	2778	5.42	167.9	92.4	1294	0.87	21.8	7.477	31.369	17364	0.17		<1	<1
W8	-18.9	3/16/04	951			5.84	181	71.8	1006	7.03	98	101	2845	6.23	193.0	87.8	1229	NA	22.3	7.524	31.469	17419	0.11		<1	<1
W8	-18.9	4/22/04	935			6.13	190	74.9	1050	44.6	625	101	2831	6.22	192.7	90.9	1273	NA	22.1	7.583	31.389	17375	0.14		<1	<1
W8	-18.9	5/18/04	915			6.28	195	61.5	861	5.90	83	104	2924	6.64	205.7	75.9	1062	NA	22.0	7.522	30.54	16905	1.70		<1	<1
W8	-18.9	6/8/04	917			6.68	207	45.7	639	8.23	115	105	2949	7.16	221.8	62.8	880	NA	22.5	7.514	30.74	17015	0.25		<1	<1
W8	-18.9	7/19/04	1017			6.58	204	69.3	971	3.9	54	104	2921	6.74	208.8	75.1	1052	NA	22.4	7.504	30.56	16916	0.15		<1	<1
W8	-18.9	8/25/04	958			7.14	221	76.8	1075	0.15	2.1	106	2980	7.38	228.6	81.9	1147	NA	22.1	7.444	30.29	16766	2.50		<1	<1
W8	-18.9	9/27/04	1114			6.54	203	31.2	436	0.19	2.7	118	3303	6.86	212.5	34.7	486	NA	22.4	7.459	30.50	16883	0.29		<1	<1
W8	-18.9	10/4/04	1033			7.02	217	66.8	936	0.35	4.9	117	3280	7.44	230.4	74.1	1038	NA	23.1	7.449	30.79	17043	0.13		<1	1
W8	-18.9	11/23/04	930			6.02	186	58.3	817	5.0	70	126	3547	6.16	190.8	83.0	1163	NA	24.3	7.458	31.23	17287	0.36		<1	<1
W8	-18.9	12/8/04	1017			5.94	184	72.0	1009	4.1	57	123	3440	6.16	190.8	91.1	1276	NA	24.4	7.439	31.05	17187	0.30		<1	<1
W8	-18.9	1/18/05	1024			6.22	193	48.2	675	6.0	85	116	3252	6.52	201.9	63.6	891	NA	23.5	7.487	31.901	17658	0.17		<1	<1
W8	-18.9	2/10/05	1011			5.96	185	35.1	492	7.2	101	113	3176	6.18	191.4	54.2	759	NA	23.0	7.508	31.867	17639	0.30		<1	<1
W8	-18.9	3/22/05	1017			8.18	253	42.3	593	6.3	88	112	3134	8.68	268.9	50.6	708	1.55	21.7	7.637	31.818	17612	0.28		<1	<1
W8	-18.9	4/20/05	1010			8.45	262	42.4	594	16.5	231	106	2969	9.00	278.8	57.3	802	NA	21.9	7.675	31.779	17591	0.22		<1	<1
W8	-18.9	5/25/05	1033			8.79	272	32.6	457	10.7	149	107	3008	9.48	293.6	49.8	698	NA	22.4	7.686	32.204	17826	0.24		<1	<1
W8	-18.9	6/14/05	1026			9.36	290	39.8	557	8.5	119	108	3022	9.72	301.1	53.3	747	NA	24.0	7.667	32.146	17794	0.18		<1	<1
W8	-18.9	7/19/05	1015			7.98	247	31.7	444	9.4	131	107	3008	8.38	259.6	43.4	608	0.88	24.2	7.648	32.263	17858	0.16		<1	<1
W8	-18.9	8/3/05	1053			7.84	243	39.6	554	9.3	130	109	3047	8.02	248.4	53.9	755	0.83	24.3	7.664	32.284	17870	0.24		<1	<1
W8	-18.9	9/22/05	1009			7.22	224	26.8	376	12.0	169	119	3339	7.52	232.9	41.1	575	0.79	25.8	7.579	32.909	18216	0.21		<1	<1
W8	-18.9	10/19/05	1018			7.28	225	38.0	532	14.8	207	114	3210	7.66	237.3	59.2	829	NA	25.4	7.606	32.621	18057	0.25		<1	<1
W8	-18.9	11/8/05	1003			6.68	207	45.6	639	22.7	318	104	2912	6.92	214.3	76.0	1064	NA	25.0	7.612	32.583	18036	0.13		<1	<1
W8	-18.9	12/22/05	934			6.22	193	53.8	753	18.2	255	108	3042	6.48	200.7	76.6	1073	NA	23.7	7.614	32.050	17741	0.13		<1	<1
W8	-18.9	1/31/06	1002			5.70	177	61.3	858	8.5	118	105	2955	5.86	181.5	72.9	1021	NA	22.9	7.754	31.828	17618	0.17		<1	<1
W8	-18.9	2/16/06	1003			5.62	174	46.5	652	5.8	81	108	3039	6.02	186.5	54.0	756	0.92	22.8	7.563	31.845	17627	0.25		<1	<1
W8	-18.9	3/22/06	1002			5.06	157	96.6	1353	0.25	3.5	107	3005	5.32	164.8	99.9	1399	0.68	21.5	7.530	31.465	17417	0.46		<1	<1
W8	-18.9	4/27/06	1040			5.49	170	109	1527	0.16	2.2	103	2893	5.63	174.4	99.6	1395	0.68	21.1	7.512	31.296	17323	0.25		<1	<1
W8	-18.9	5/24/06	1105			5.83	181	65.3	915	2.38	33.3	110	3089	6.12	189.6	63.9	894	0.82	21.3	7.554	31.354	17355	0.25		<1	<1
W8	-18.9	6/28/06	1052			6.00	186	75.3	1055	0.33	4.6	106	2977	6.34	196.4	71.4	1000	0.62	21.7	7.559	31.446	17406	0.25		<1	<1
W8	-18.9	7/19/06	1024			5.76	178	46.9	657	8.4	117	110	3089	6.02	186.5	50.9	712	0.83	22.2	7.596	31.707	17551	0.26		<1	<1
W8	-18.9	8/9/06	1006			5.89	182	65.4	916	1.07	15.0	117	3286	6.24	193.3	63.4	888	0.68	23.0	7.547	31.998	17712	0.46		<1	<1
W8	-18.9	9/20/06	1015			5.96	185	27.5	385	17.0	238	124	3483	6.36	197.0	42.9	601	0.81	23.5	7.58	32.429	17950	0.21		<1	<1
W8	-18.9	10/25/06	1053			5.70	177	54.5	763	0.81	11.3	129	3623	5.88	182.1	54.4	761	0.78	24.8	7.517	32.796	18153	0.25		<1	<1
W8	-18.9	11/29/06	1020			4.83	150	24.6	345	0.76	10.6	125	3511	5.06	156.7	28.3	396	0.86	24.4	7.478	32.542	18013	0.22		<1	<1
W8	-18.9	12/13/06	1013			4.91	152	55.8	782	0.23	3.2	117	3286	5.14	159.2	55.1	771	0.70	24.0	7.464	32.383	17925	0.03		<1	<1
W8	-18.9	1/10/07	1015			5.54	172	53.0	742	0.32	4.5	117	3286	5.84	180.9	55.6	779	0.71	23.4	7.498	32.283	17869	0.18		<1	<1
W8	-18.9	2/21/07	1036			4.85	150	56.7	794	0.47	6.6	107	3005	5.41	167.6	66.1	925	0.74	22.4	7.475	31.925	17671	0.45		<1	<1
W8	-18.9	3/7/07	1028			4.52	140	48.1	674	0.30	4.2	106	2977	4.71	145.9	49.4	692	0.79	22.2	7.699	31.870	17641	0.25		<1	<1
W8	-18.9	4/19/07	1011			3.50	108	42.8	599	0.23	3.2	113	3174	3.69	114.3	35.9	502	0.69	23.2	7.44	32.196	17821	0.31		<1	<1
W8	-18.9	5/2/07	1023			3.45	107	44.5	623	0.36	5.0	114	3202	3.75	116.2	42.9	600	0.70	22.7	7.396	32.135	17788	0.18		<1	<1
W8	-18.9	6/20/07	1023			3.33	103	25.2	353	0.28	3.9	117	3286	3.53	109.3				24.0	7.368	32.665	18081	0.26		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	7/25/07	1132	-3.96	0.46	Flood	3.33	103	21.7	304	5.00	70	110	3100	3.48	107.9	28.8	403.9		24.3	7.23	32.83	18172	0.09			
W8	-18.9	8/27/07	1110		0.06	Flood	3.78	117	47.2	661	0.32	5	99	2778	4.11	127.3	39.7	555.9		24.6	7.37	32.96	18244	0.13			
W8	-18.9	9/13/07	1530	-3.58	0.40	Flood	4.43	137	14.9	209	20.63	289	127	3573	4.74	146.9	40.7	570.5		25.0	7.36	33.31	18438	0.06			
W8	-18.9	10/23/07	1030	-4.22	0.24	Flood	5.98	185	3.8	53	36.80	515	96	2710	6.36	197.1	43.0	601.7		26.2	7.38	34.01	18825	1.00			
W8	-18.9	11/20/07	1102	-3.96	0.40	Flood	7.78	241	18.9	265	1.93	27	98	2747	7.41	229.6	28.0	391.7		25.5	7.56	33.82	18720	0.38			
W8	-18.9	12/19/07	1045	-3.96	0.30	High	6.06	188	19.1	268	0.78	11	82	2298						24.8	7.67	33.47	18527	2.34			
W8	-18.9	1/24/08	1445	-3.63	0.06	Flood	5.88	182	23.9	335	0.64	8.9	79	2224						24.3	7.69	33.39	18482	2.21			
W8	-18.9	2/26/08	934	-3.96	0.18	Ebb	4.43	137	22.4	314	1.14	16	74	2083						23.5	7.81	33.10	18322	2.67			
W8	-18.9	3/17/08	1115	-4.01	0.06	Flood	4.44	138	20.1	282	0.08	1.1	71	1994						23.5	7.81	32.77	18139	2.11			
W8	-18.9	4/30/08	1111	-3.66	0.21	Flood	3.24	101	17.7	249	0.09	1.2	75	2102						23.9	7.77	33.16	18355	2.87			
W8	-18.9	5/27/08	1055	-4.17	0.24	High	3.40	105	14.6	205	0.66	9.2	95	2662						23.9	7.72	33.38	18477	0.81			
W8	-18.9	6/16/08	1120	-3.61	0.24	Flood	3.06	95	14.3	200	0.18	2.5	92	2585						24.1	7.82	33.51	18549	3.09			
W8	-18.9	7/21/08	1027	-4.11	0.12	Ebb	2.72	84	21.4	300	0.20	2.8	77	2162						24.6	7.84	33.74	18676	2.40	0.08		
W8	-18.9	8/30/08	1352		0.46	Flood	1.68	52	11.4	159	0.20	2.8	62	1752						25.1	7.83	34.19	18925	2.55	0.08		
W8	-18.9	9/15/08	1117	-4.44	0.09	Low	2.66	82	21.1	296	0.10	1.4	82	2293						25.2	7.81	33.93	18781	1.97			
W8	-18.9	10/31/08	1031	-4.18	0.30	Ebb	1.77	55	14.7	206	0.38	5.3	78	2195						28.1	7.63	34.01	18825	2.05			
W8	-18.9	11/14/08	1041	-4.13	0.15	Ebb	2.11	65	38.1	534	0.01	0.1	75	2093						27.0	7.86	34.01	18825	1.24	0.83		
W8	-18.9	12/15/08	1353	-4.36	0.03	Low	1.85	57	36.7	514	0.11	1.5	77	2161						26.4	7.93	33.60	18598	2.60			
W8	-18.9	1/27/09	856	-4.07	0.30	Ebb	1.81	56	44.1	617	0.36	5.0	73	2053						25.6	7.82	34.77	19246	1.41	0.38		
W8	-18.9	2/24/09	1330	-4.33	0.15	Flood	1.52	47	34.4	482	0.42	5.9	76	2127						25.5	7.72	33.72	18665	2.19	0.10		
W8	-18.9	3/16/09	1335	-4.59	0.03	Low	1.89	58	16.8	236	0.13	1.8	70	1967						25.9	7.59	33.49	18538	2.60	0.30		
W8	-18.9	4/22/09	1119	-4.40	0.18	Flood	2.54	79	35.2	492	0.07	1.0	68	1896						24.9	8.09	33.00	18266	2.53	0.94		
W8	-18.9	5/27/09	1130	-4.27	0.00	Low	2.27	70	22.8	319	0.17	2.4	66	1842						23.2	7.81	33.25	18405	1.91	0.02		
W8	-18.9	6/19/09	1453	-3.82	0.73	High	2.66	83	47.1	660	0.20	2.8	73	2039						23.4	7.95	32.95	18239	1.26	0.02		
W8	-18.9	7/31/09	1305	-3.81	0.67	High	2.31	72	39.4	552	0.21	3.0	61	1703						24.5	7.85	33.37	18471	1.06	0.06		
W8	-18.9	8/20/09	1335	-3.98	0.46	Flood	2.35	73	52.1	730	0.71	10.0	79	2232						23.9	7.85	33.09	18316	0.67	0.05		
W8	-18.9	9/24/09	1528	-4.21	0.21	Ebb	2.29	71	38.2	535	0.49	6.8	58	1618						23.8	8.29	33.13	18338	0.19	0.03		
W8	-18.9	10/23/09	1119	-4.05	0.43	Ebb	2.11	66	31.1	436	0.37	5.2	83	2324						24.8	7.75	33.32	18443	0.40	0.08		
W8	-18.9	11/17/09	1634	-4.20	0.37	High	2.68	83	40.9	573	0.86	12.0	136	3807						24.7	7.69	33.43	18504	1.08	0.02		
W8	-18.9	12/8/09	1058	-4.00	0.52	Ebb	2.13	66	34.8	488	1.11	15.5	82	2290						25.8	7.71	33.55	18571	1.33	0.02		
W8	-18.9	1/6/10	1022	-4.05	0.30	Ebb	1.97	61	43.5	609	1.29	18.0	89	2489						24.7	7.73	32.80	18156	1.33	0.11		
W8	-18.9	2/2/10	1008	-4.10	0.15	Ebb	2.07	64	52.3	732	0.64	9.0	79	2232						24.9	7.76	32.97	18250	1.10	0.25		
W8	-18.9	3/10/10	952	-4.40	0.09	Flood	2.84	88	37.3	523	0.36	5.0	89	2501						25.8	7.80	33.02	18277	1.09	0.16		
W8	-18.9	4/7/10	938	-4.32	0.12	Flood	3.00	93	37.6	526	0.86	12.0	82	2307						25.6	7.74	32.81	18161	1.00	0.25		
W8	-18.9	5/12/10	924	-4.48	-0.03	Flood	1.97	61	38.6	541	0.64	9.0	84	2350						24.3	7.79	32.71	18106	1.11	0.08		
W8	-18.9	6/16/10	1523	-4.28	0.24	Flood	2.52	78	43.9	615	0.29	4.0	92	2593						23.1	7.81	32.55	18017	0.86	0.10		
W8	-18.9	7/13/10	1530	-3.93	0.49	Flood	3.07	95	29.7	416	0.07	1.0	95	2673						23.8	7.78	32.82	18167	1.44	0.09		
W8	-18.9	8/3/10	1533	-4.01	0.37	Ebb	3.84	119	39.6	554	0.24	3.3	98	2762						24.4	7.77	33.18	18366	1.33	0.08		
W8	-18.9	9/14/10	1540	-4.11	0.21	Ebb	3.78	117	37.6	526	0.01	0.1	96	2699						25.0	7.79	33.32	18443	1.29	0.18		
W8	-18.9	10/12/10	1602	-4.17	0.18	Low	3.29	102	30.3	425	0.06	0.8	95	2661						24.8	7.80	32.24	17846	0.92	0.09		
W8	-18.9	11/16/10	1446	-4.00	0.30	Ebb	3.49	108	26.6	373	0.28	3.9	97	2718						25.4	7.74	33.59	18593	0.79	0.30		
W8	-18.9	12/14/10	1512	-4.23	0.12	Ebb	3.16	98	26.2	367	0.09	1.3	98	2764						25.4	7.73	33.25	18405	0.46	0.09		
W8	-18.9	1/4/11	1456	-4.22	0.15	Flood	3.00	93	24.8	348	0.19	2.6	94	2626						25.4	7.72	33.49	18538	1.22	0.08		
W8	-18.9	4/5/11	1513	-4.02	0.37	Flood	2.87	89	37.1	519	0.05	0.7	80	2239						24.2	7.71	32.94	18233	1.71	0.13		

NELHA Water Quality Laboratory

Well 8 Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	7/12/11	1505	-3.78	0.73	High	2.29	71	26.2	367	11.18	157	89	2513						24.9	7.77	33.34	18455	0.09	0.18		
W8	-18.9	10/11/11	1407	-4.03	0.34	Flood	2.42	75	28.4	398	8.79	123	82	2291						23.5	7.73	32.88	18200	0.02	0.07		
W8	-18.9	1/10/12	1531	-4.27	0.18	Flood	2.26	70	44.6	625	0.07	1.0	85	2395						23.3	7.66	32.19	17818	0.76	0.07		
W8	-18.9	5/8/12	1329	-4.34	0.06	Flood	3.36	104	49.5	694	0.21	2.9	89	2499						21.0	7.56	31.61	17497	0.67	0.08		
W8	-18.9	7/17/12	1441	-3.70	0.70	Flood	4.49	139	13.5	189	0.14	2.0	106	2965						23.3	7.50	32.77	18139	0.15	0.55		
W8	-18.9	10/15/12	1358	-4.00	0.30	Flood	4.65	144	36.4	510	0.15	2.1	99	2784						23.1	7.57	32.71	18106	0.57	0.02		
W8	-18.9	1/7/13	1519	-4.25	0.12	Ebb	4.49	139	75.7	1060	0.10	1.4	138	3886						21.7	7.50	32.04	17735	0.51	0.02		
W8	-18.9	1/14/13	1008	-3.94	0.24	Ebb	4.55	141	71.8	1006	0.32	4.5	104	2920						21.5	7.61	32.00	17713	0.54	0.19		
W8	-18.9	1/29/13	1426	-4.05	0.09	Flood	4.55	141	92.5	1296	0.81	11.4	100	2808						21.3	7.44	31.72	17558	0.68			
W8	-18.9	3/20/13	1025	-4.24	0.18	High	4.39	136	83.8	1174	1.00	14.0	99	2775						21.4	7.60	31.62	17502	0.67	0.19		
W8	-18.9	4/8/13	1456	-4.03	0.49	Flood	4.81	149	54.8	767	0.13	1.8	103	2897						22.4	7.55	32.30	17879	0.36	0.02		
W8	-18.9	7/16/13	1643	-4.17	0.24	Ebb	4.71	146	47.5	666	3.72	52	104	2920						22.8	7.52	32.51	17995	0.10	0.29		
W8	-18.9	10/14/13	1721	-4.20	0.12	Ebb	3.91	121	62.1	870	0.23	3.2	106	2986						23.1	7.52	32.77	18139	0.29	0.02		
W8	-18.9	1/14/14	1525	-4.13	0.18	High	4.26	132	71.3	998	10.75	151	108	3027						20.4	7.49	31.77	17586	0.49	0.22		
W8	-18.9	4/28/14	1456	-3.90	0.55	Flood	3.00	93	58.5	819	7.21	101	103	2902						20.0	8.03	31.09	17209	0.99	0.02		
W8	-18.9	7/28/14	1617	-3.86	0.55	Flood	3.84	119	7.0	98	32.41	454	121	3400						20.6	7.43	31.57	17475	0.62	0.09		
W8	-18.9	11/3/14	1341	-3.79	0.46	Flood	7.07	219	11.5	161	51.53	722	131	3679						21.9	7.36	31.99	17707	0.47	0.15		
W8	-18.9	2/10/15	1637	-4.25	0.31	High	9.94	308	37.5	525	2.14	30.0	229	6437						23.0	7.34	32.50	17990	0.16	0.36		
W8	-18.9	5/20/15	913	-4.27	0.00	Ebb	7.65	237	54.8	767	125.53	1758.2	127	3559						22.0	7.44	32.06	17746	0.51	0.03		
W8	-18.9	7/22/15	1043	-4.21	0.31	Ebb	21.85	677	4.5	63	37.81	529.6	135	3781						24.1	7.41	34.09	18870	0.05	0.01		
W8	-18.9	11/9/15	1413	-3.91	0.48	High	8.14	252	24.2	339	37.42	524.2	132	3704						25.1	7.47	32.78	18145	0.09	0.07		
W8	-18.9	1/27/16	1412	-4.40	0.10	Flood	9.78	303	37.6	526	110.12	1542.4	133	3740						24.5	7.40	32.71	18106	0.13	0.08		
W8	-18.9	4/22/16	1137	-4.35	0.05	Flood	22.32	691	32.7	458	189.40	2652.9	133	3737						24.2	7.67	32.62	18056	0.29	0.08		
W8	-18.9	7/26/16	1300	-4.00	0.55	High	17.60	545	0.6	8	143.33	2007.6	140	3922						24.8	7.79	33.20	18377	0.70	0.02		
W8	-18.9	11/15/16	954	-4.11	0.10	Low	8.50	263	9.0	127	91.51	1281.7	132	3698						25.6	7.38	33.48	18532	0.38	0.02		
W8	-18.9	3/22/17	954	-4.19	0.20	Flood	7.71	239	19.2	269	49.41	692.1	126	3531						24.3	7.47	33.05	18294	0.42	0.06		
W8	-18.9	4/19/17	926	-4.16	0.18	Flood	8.81	273	0.2	3	131.74	1845.2	123	3468						24.4	7.67	33.02	18277	0.31	0.31		
W8	-18.9	8/9/17	1450	-4.00	0.50	Flood	6.34	196	20.1	282	63.40	888.0	121	3393						24.4	7.56	33.39	18482	0.16	0.08		
W8	-18.9	10/18/17	1125	-4.20	0.20	Flood	8.95	277	1.0	14	141.48	1981.6	110	3103						26.5	7.59	33.77	18693	0.74	0.08		
W8	-18.9	1/18/18	1225	-4.28	0.10	Low	10.43	323	0.2	3	226.32	3170.0	138	3867						25.5	7.51	33.22	18388	0.12	0.05		
W8	-18.9	5/10/18	1601	-3.99	0.25	Ebb	12.27	380	0.7	10	160.49	2248.0	148	4150						23.4	7.58	31.10	17215	0.19	0.04		
W8	-18.9	8/30/18	1200	-4.15	0.18	Ebb	14.76	457	0.3	4	98.16	1375.0	158	4435						25.9	7.61	33.27	18416	0.17	0.10		
W8	-18.9	10/24/18	1458	-3.95	0.53	High	12.80	396	0.6	9	80.25	1124.0	146	4110						26.0	7.61	33.09	18316	0.96	0.07		
W8	-18.9	2/8/19	1124	-4.28	0.09	Ebb	11.38	352	0.8	11	81.24	1137.9	148	4148						24.5	7.48	32.10	17768	0.02	0.08		
W8	-18.9	5/15/19	1526	-3.90	0.50	High	8.19	254	0.1	1	54.90	769.0	137	3844						23.6	7.47	33.30	18432	0.01	0.04		
W8	-18.9	8/28/19	1109	-4.17	0.30	Flood	8.63	267	1.0	14	61.58	862.6	148	4144						25.8	7.63	33.91	18770	0.02	0.07		
W8	-18.9	10/11/19	1152	-4.07	0.40	Flood	8.23	255	1.1	16	79.95	1119.8	221	6209						26.5	7.67	33.56	18576	0.02	0.58		
W8	-18.9	2/4/20	1217	-4.21	0.26	High	10.19	316	0.3	4	130.15	1823.0	149	4194						25.4	7.66	33.94	18787	0.03	0.02		
W8	-18.9	6/3/20	1247	-3.77	0.45	Flood	9.28	287.40	0.3	4.3	111.95	1568.00	143	4014						23.9	7.60	33.47	18527	0.03	0.17		
W8	-18.9	7/1/20																									
W8	-18.9	10/1/20																									
W8	-18.9	1/1/21																									
W8	-18.9	4/1/21																									

NELHA Water Quality Laboratory

Well 8 Data Table

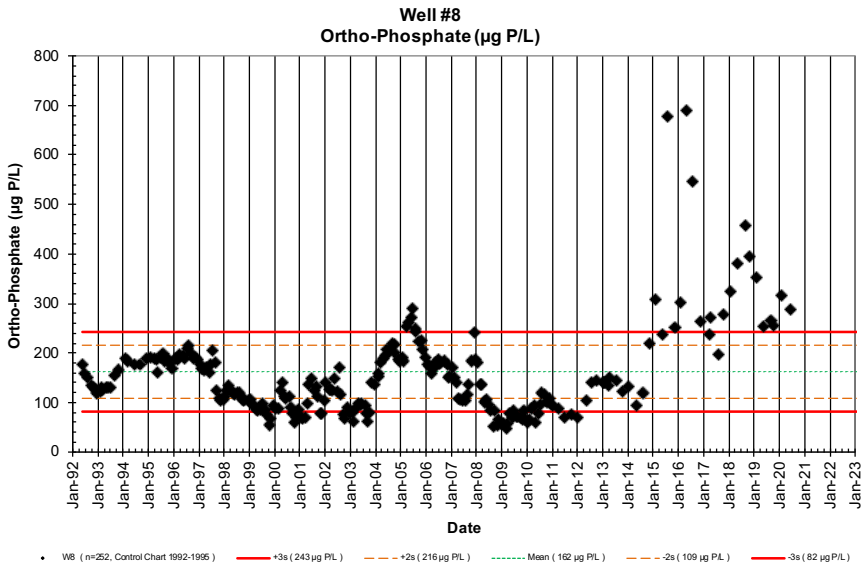
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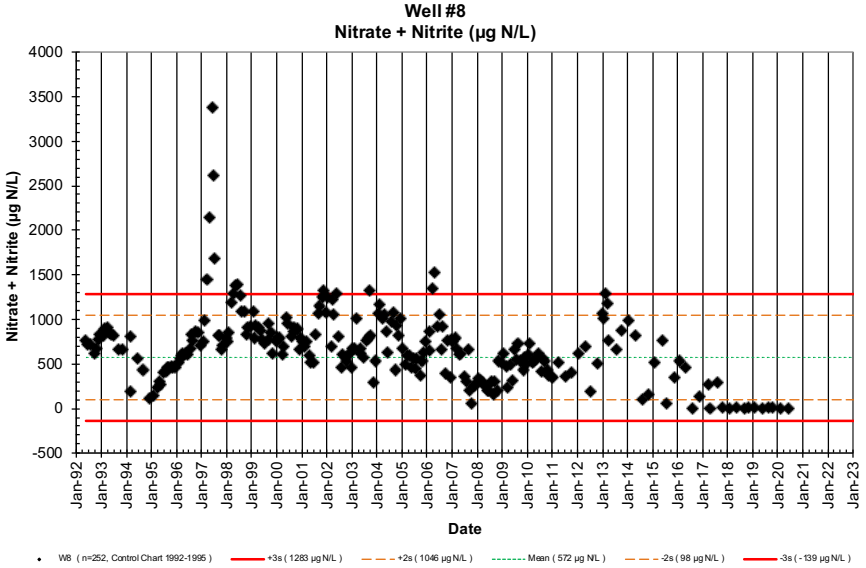
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8	-18.9	7/1/21																									
W8	-18.9	10/1/21																									
W8	-18.9	1/1/22																									
W8	-18.9	4/1/22																									
W8	-18.9	7/1/22																									
W8	-18.9	10/1/22																									
W8	-18.9	1/1/23																									
W8	-18.9	4/1/23																									
Mean					0.27		4.91	152	48.08	674	11.05	154.8	123	3468	4.88	151.1	63.3	887	0.83	22.7	7.65	32.06	17749	1.54	0.14		
Std. Dev.					0.18		2.77	86	28.64	401	32.41	454.0	46	1303	1.64	50.8	27.8	389	0.13	2.8	0.15	1.33	733	1.72	0.18		
Maximum					0.73		22.32	691	240.70	3371	226.32	3170.0	260	7288	9.72	301.1	232.8	3260	1.55	28.1	8.29	34.77	19246	7.36	0.94		
Minimum					-0.03		1.52	47	0.06	0.9	0.01	0.1	58	1618	1.84	57.0	13.2	184	0.54	13.4	7.23	28.95	16025	0.01	0.01		
n					83		252	252	252	252	252	252	252	252	174	174	172	172	144	253	253	253	252	251	67		

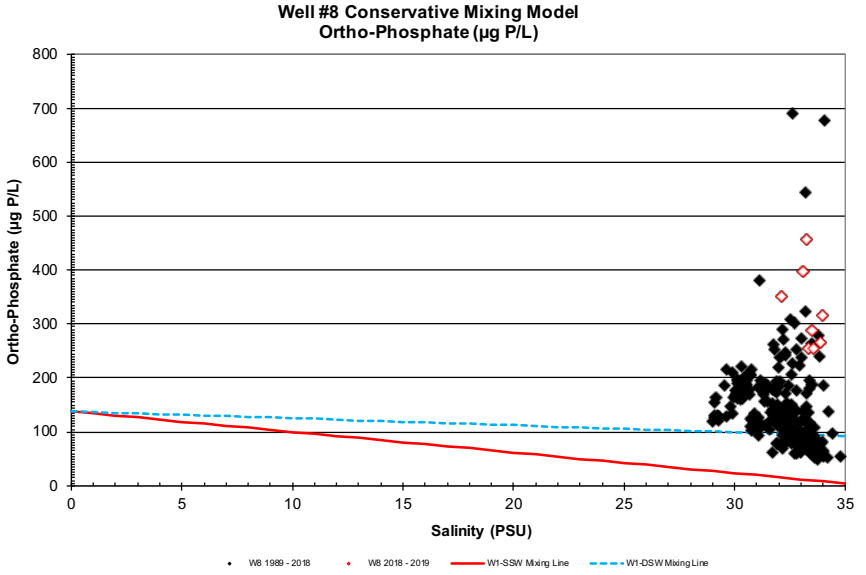
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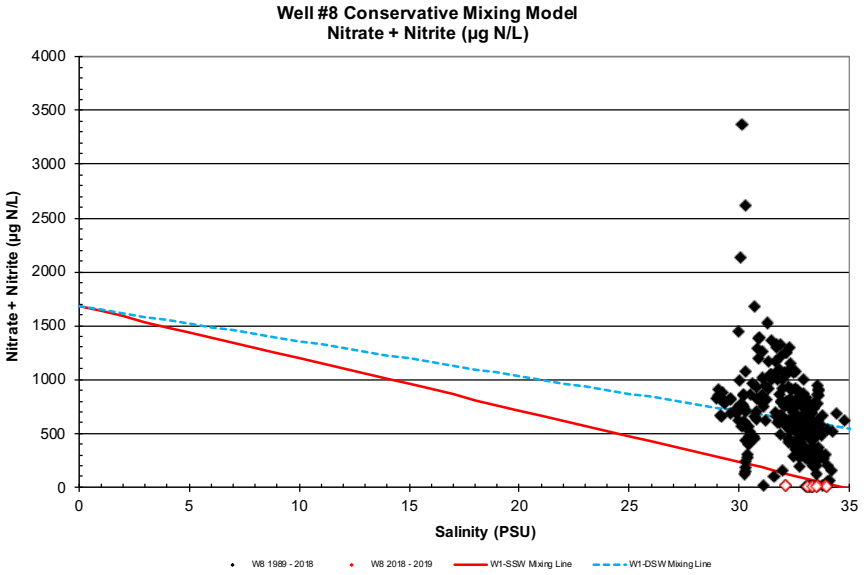
Well 8 Charts

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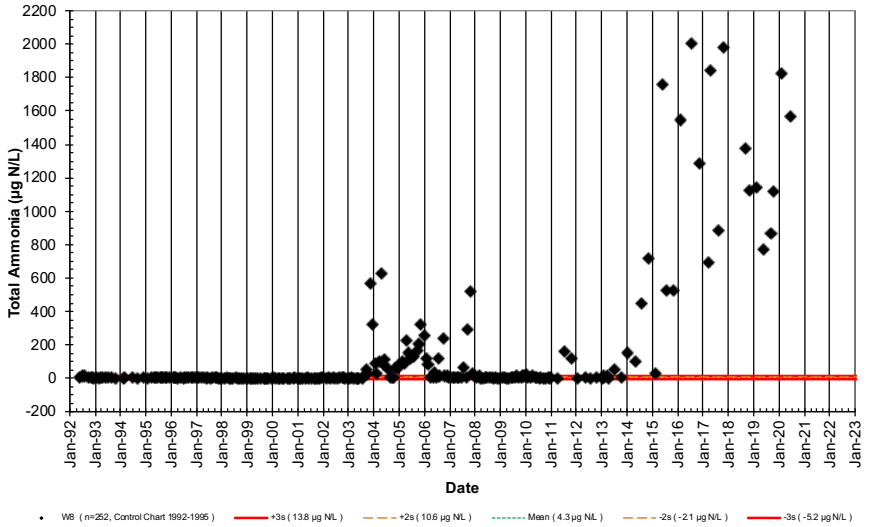


NELHA Water Quality Laboratory

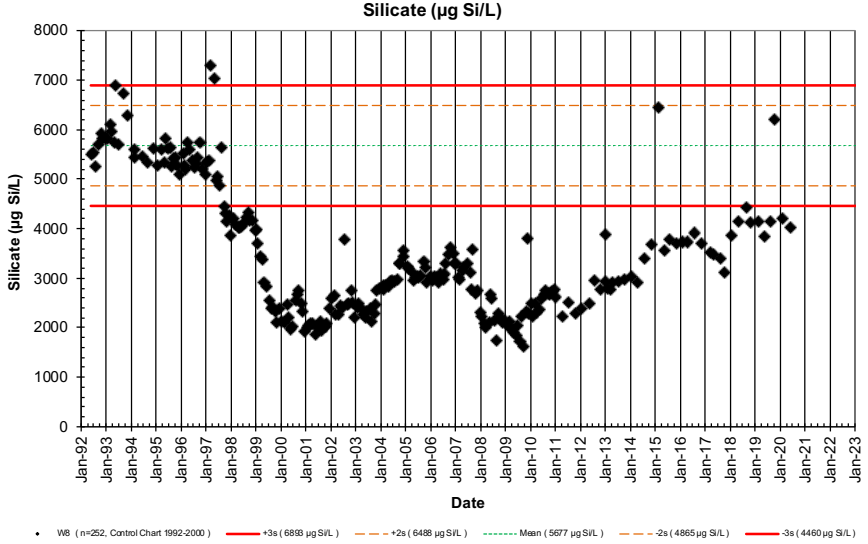
Well 8 Charts

5/20/1992 - 7/21/20

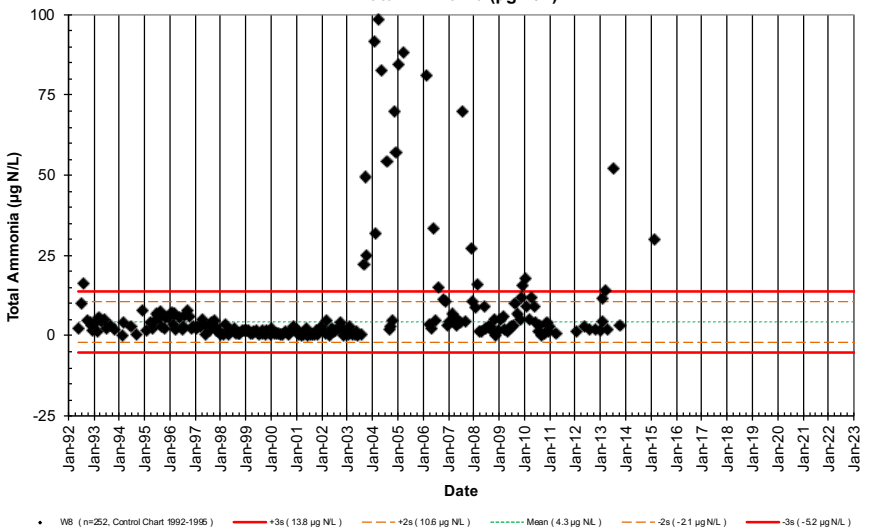
Well #8
Total Ammonia (µg N/L)



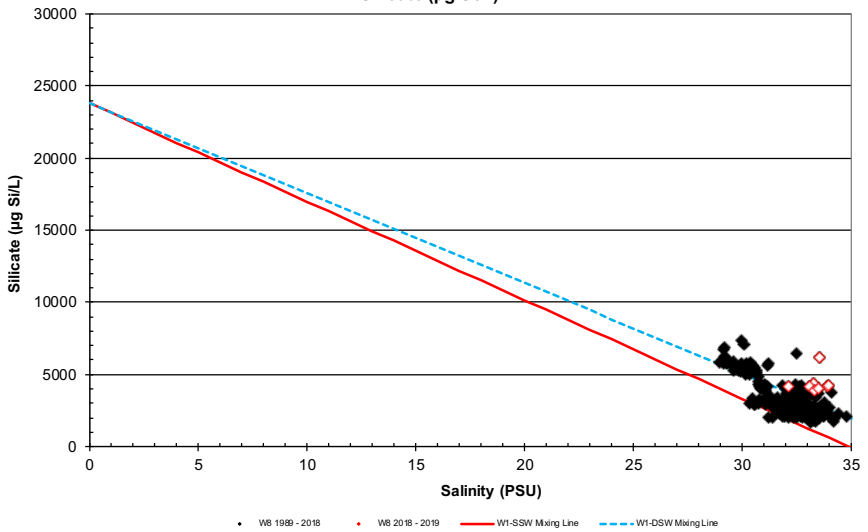
Well #8
Silicate (µg Si/L)



Well #8
Total Ammonia (µg N/L)



Well #8 Conservative Mixing Model
Silicate (µg Si/L)

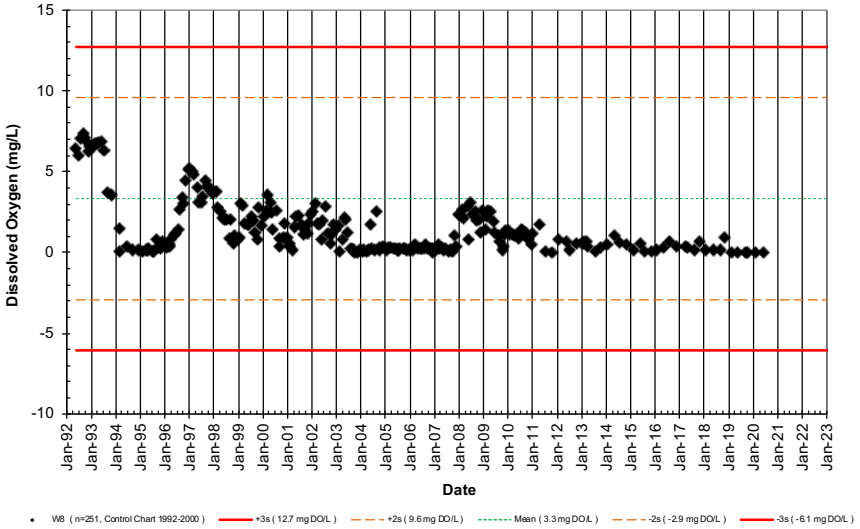


NELHA Water Quality Laboratory

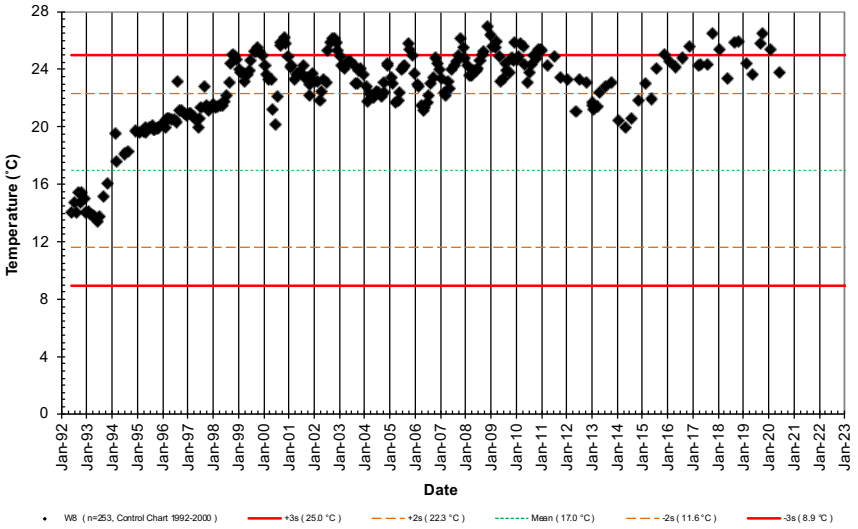
Well 8 Charts

5/20/1992 - 7/21/20

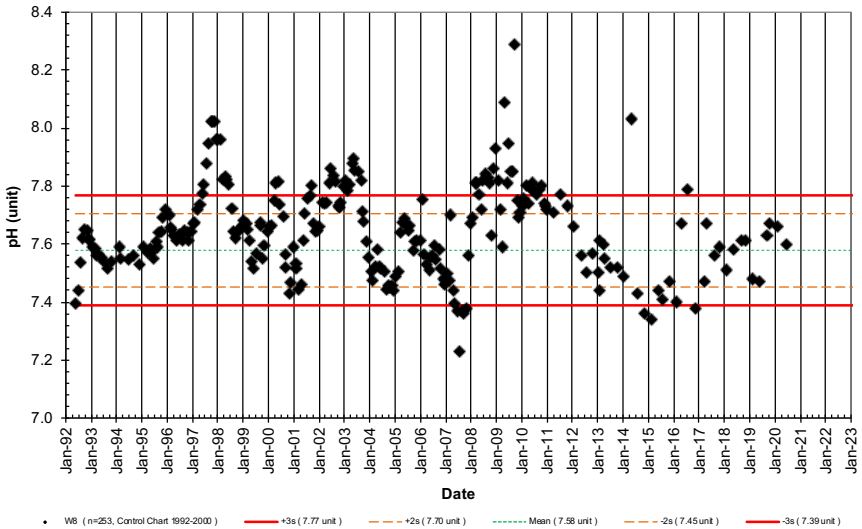
Well #8
Dissolved Oxygen (mg DO/L)



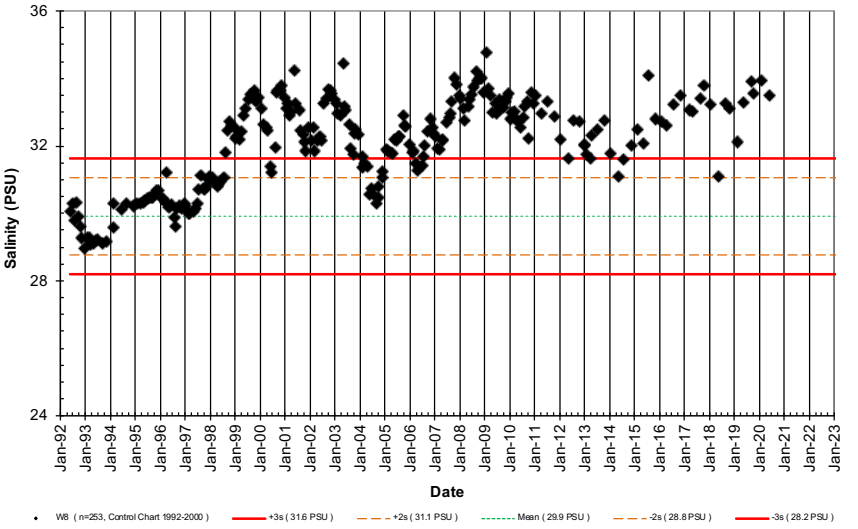
Well #8
Temperature (˚C)



Well #8
pH (unit)



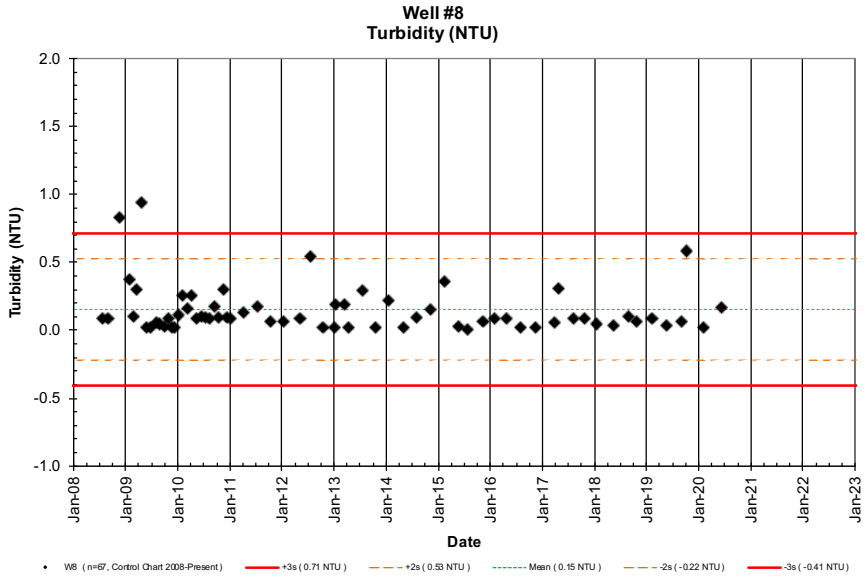
Well #8
Salinity (PSU)

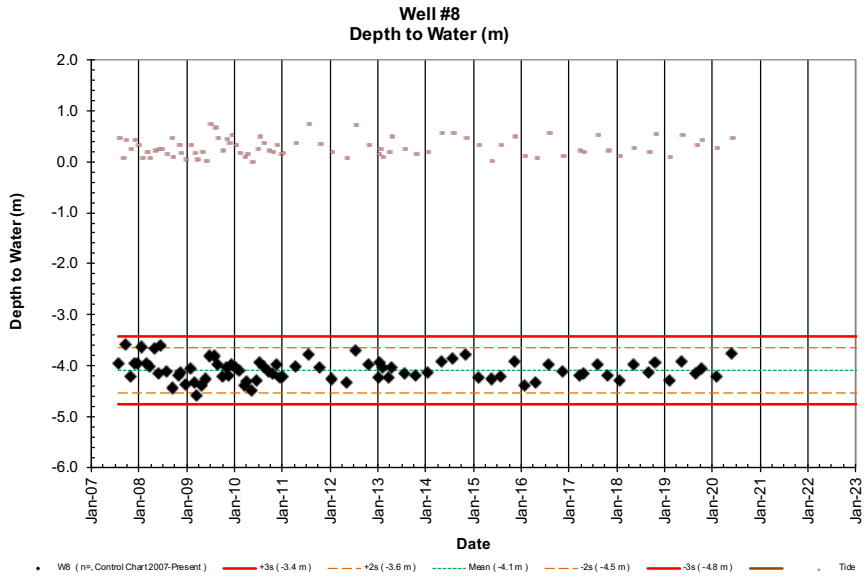


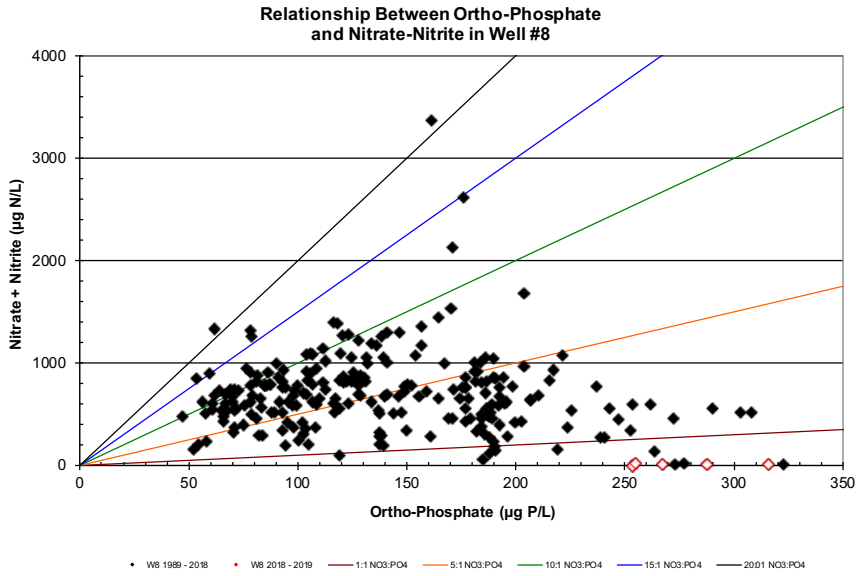
NELHA Water Quality Laboratory

Well 8 Charts

5/20/1992 - 7/21/20







NELHA Water Quality Laboratory

Well 8A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	5/20/92	938			4.02	125	59.9	839	0.31	4.3	283	7948	4.23	131.0	62.2	871	0.64	14.7	7.486	27.588	15271	7.07		<1	<1
W8A	-11.0	6/24/92	920			3.99	124	53.3	747	0.63	8.8	260	7302	4.12	127.6	55.8	782	1.14	15.4	7.533	28.335	15684	6.56		<1	<1
W8A	-11.0	7/30/92	838			4.13	128	53.1	744	1.17	16	254	7134	4.25	131.6	56.1	786	0.78	15.2	7.583	28.140	15576	6.67		<1	<1
W8A	-11.0	8/31/92	856															1.10	15.9	7.606	27.870	15427	6.75		<1	<1
W8A	-11.0	9/23/92	928			4.23	131	54.7	766	0.32	4.5	279	7836	4.31	133.5	62.1	870	0.65	15.9	7.570	27.866	15425	6.44		<1	<1
W8A	-11.0	10/28/92	950			4.22	131	62.1	870	0.20	2.8	294	8257	4.30	133.2	64.7	906	0.69	15.2	7.495	27.436		6.69		<1	<1
W8A	-11.0	11/18/92	932			4.43	137	61.8	866	0.21	2.9	279	7836	4.63	143.4	37.5	526	0.70	14.7	7.474	27.767	15370	6.52		<1	<1
W8A	-11.0	12/9/92	923			4.29	133	61.3	859	0.09	1.3	288	8089	4.46	138.1	63.9	895	0.64	15.1	7.524	27.022	14957	6.68		<1	<1
W8A	-11.0	1/27/93	907			4.30	133	58.3	816	0.22	3.1	302	8485	4.49	139.1	66.3	929	0.85	16.1	7.631	26.821	14846	5.45		<1	<1
W8A	-11.0	2/24/93	850			4.34	134	56.3	788	0.05	0.7	297	8341	4.34	134.4	58.6	820	0.65	16.6	7.744	27.111	15007	5.32		<1	<1
W8A	-11.0	3/17/93	915			4.08	126	47.2	661	0.36	5.0	309	8676	4.18	129.5	50.6	709	0.57	17.1	7.772	25.983	14382	5.08		<1	<1
W8A	-11.0	4/28/93	845			4.34	134	48.9	685	0.28	3.9	293	8229	4.41	136.6	53.2	745	0.60	17.4	7.733	26.791	14830	4.99		<1	<1
W8A	-11.0	5/26/93	848			4.22	131	46.1	645	0.24	3.4	330	9268	4.33	134.1	52.2	731	0.58	17.3	7.737	26.692	14775	4.92		<1	<1
W8A	-11.0	6/29/93	901			4.27	132	46.0	644	0.15	2.1	294	8257	4.38	135.7	50.5	707	0.60	17.6	7.732	26.985	14937	4.61		<1	<1
W8A	-11.0	9/1/93	903			4.77	148	60.5	847	0.24	3.4	360	10100	4.91	152.1	74.5	1043	0.88	19.5	7.559	25.037	13859	1.37		<1	<1
W8A	-11.0	10/27/93	858			4.67	145	39.4	552	0.15	2.1	344	9661	4.78	148.1	47.9	671	0.67	21.2	7.640	25.499	14114	0.64		<1	<1
W8A	-11.0	3/1/94	1110			4.10	127	45.3	634	0.37	5.2	234	6572	4.11	127.3	53.6	750	0.75	21.0	7.675	24.469	13544	1.27		<1	<1
W8A	-11.0	6/22/94	835			3.26	101	23.1	324	0.29	4.1	312	8776	3.26	101.0	27.4	383	0.67	21.9	7.789	26.346	14583	0.97		<1	<1
W8A	-11.0	8/24/94	918			3.99	124	33.2	464	0.01	0.1	287	8052	4.09	126.7	40.5	568	0.67	21.7	7.649	26.288	14551	1.49		<1	<1
W8A	-11.0	11/28/94	1058			3.24	100	49.0	686	0.46	6.4	304	8538	3.31	102.5	55.1	772	0.59	22.7	7.680	24.534	13580	1.27		<1	<1
W8A	-11.0	1/25/95	929			3.65	113	49.8	697	0.01	0.1	288	8080	3.70	114.6	53.7	752	0.92	21.8	7.830	25.102	13895	1.06		<1	<1
W8A	-11.0	2/15/94	943			4.45	138	73.4	1028	0.04	0.6	289	8108	4.46	138.1	88.8	1244	0.86	21.4	7.858	25.029	13854	1.13		<1	<1
W8A	-11.0	3/29/95	928			4.16	129	65.4	916	0.33	4.6	303	8510	4.20	130.1	71.6	1003	0.80	21.7	7.856	24.858	13760	0.80		<1	<1
W8A	-11.0	4/26/95	919			4.24	131	62.9	881	0.10	1.4	288	8097	4.40	136.3	67.4	944	0.60	21.6	7.818	25.309	14009	0.73		<1	<1
W8A	-11.0	5/9/95	1057			3.30	102	49.7	697	0.28	3.9	330	9263	4.10	127.0	53.2	745	0.66	21.8	7.747	24.386	13498	0.65		<1	<1
W8A	-11.0	6/28/95	915			4.11	127	43.2	605	0.49	6.9	328	9198	4.17	129.2	46.6	653	0.57	21.6	7.506	24.031	13302	0.90		<1	<1
W8A	-11.0	7/26/95	1056			4.30	133	36.8	515	0.25	3.5	340	9538	4.41	136.6	39.9	558	0.55	21.4	7.436	23.863	13209	0.85		<1	<1
W8A	-11.0	8/23/95	1023			4.32	134	37.0	518	0.56	7.8	335	9409	4.46	138.1	38.9	544	0.75	21.3	7.465	24.582	13607	BOTTLE BROKE		<1	<1
W8A	-11.0	9/12/95	957			4.26	132	35.7	500	0.18	2.5	332	9336	4.31	133.5	38.0	532	0.48	21.1	7.511	24.207	13399	1.38		<1	<1
W8A	-11.0	10/17/95	1145			4.99	155	45.2	633	0.19	2.7	350	9841	5.03	155.8	47.1	660	0.66	21.1	7.469	23.660	13096	1.19		<1	<1
W8A	-11.0	11/7/95	1057			4.70	146	41.3	579	0.41	5.7	328	9220	4.73	146.5	43.8	613	0.60	21.0	7.595	24.380	13495	1.64		<1	<1
W8A	-11.0	12/6/95	1110			4.80	149	47.8	670	0.35	4.9	320	8993	4.88	151.2	50.2	703	0.66	21.2	7.611	24.435	13525	1.49		<1	<1
W8A	-11.0	1/30/96	854			5.68	176	55.0	770	0.22	3.1	340	9543	5.73	177.5	63.2	886	0.55	21.0	7.642	24.038	13306	1.41		<1	1
W8A	-11.0	2/27/96	1106			6.13	190	90.3	1265	0.21	2.9	315	8844	6.21	192.3	93.3	1307	0.63	21.3	7.627	24.025	13298	1.41		<1	<1
W8A	-11.0	2/27/96	1224			7.12	221	158.8	2224	0.40	5.6	307	8630	7.43	230.1	198.0	2773	0.88	21.6	7.662	23.711	13125	0.65		<1	<1
W8A	-11.0	4/2/96	1115			7.30	226	158.0	2213	0.16	2.2	318	8918	7.51	232.6	166.2	2328	0.84	21.5	7.735	24.124	13353	1.33		<1	<1
W8A	-11.0	5/15/96	1102			7.00	217	102.0	1429	0.07	1.0	310	8707	7.12	220.5	108.3	1516	0.66	22.5	7.893	24.343	13474	0.95		<1	<1
W8A	-11.0	6/18/96	1035			6.75	209	76.7	1074	0.14	2.0	292	8205	6.80	210.6	84.4	1182	0.66	21.6	7.866	25.418	14070	1.10		<1	<1
W8A	-11.0	7/17/96	1057			6.30	195	67.1	939	0.14	2.0	273	7670	6.51	201.6	69.7	976	0.75	22.3	7.851	26.121	14459	1.74		<1	<1
W8A	-11.0	8/6/96	1119			5.57	173	65.2	913	0.47	6.6	255	7167	5.74	177.8	68.9	966	0.84	23.6	7.853	26.635	14743	2.34		<1	<1
W8A	-11.0	9/4/96	1059			5.83	181	60.1	841	0.48	6.7	267	7496	5.95	184.3	63.2	886	0.72	23.5	7.810	26.330	14574	1.98		<1	<1
W8A	-11.0	10/9/96	1154			5.33	165	51.4	719	0.34	4.8	279	7835	5.49	170.0	54.9	770	0.71	23.5	7.790	26.385	14605	3.04		<1	<1
W8A	-11.0	11/6/96	1041			6.07	188	60.5	847	0.17	2.4	284	7964	6.37	197.3	66.3	929	0.67	23.5	7.727	25.347	14030	1.76		<1	<1
W8A	-11.0	12/17/96	1120			5.06	157	78.6	1100	0.20	2.8	272	7637	5.12	158.6	85.2	1193	0.82	23.1	7.759	25.827	14296	1.66		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	1/14/97	1119			5.90	183	111.1	1555	0.11	1.5	269	7541	6.00	185.8	114.0	1597	0.76	22.7	7.764	25.269	13987	1.84		<1	<1
W8A	-11.0	2/11/97	934			6.10	189	222.1	3111	0.26	3.6	247	6948	6.20	192.0	225.0	3152	0.99	22.3	7.915	26.227	14517	2.12		<1	<1
W8A	-11.0	3/11/97	958			6.04	187	262.7	3679	0.20	2.8	260	7288	6.23	193.0	270.0	3782	1.01	22.3	8.022	26.018	14402	0.94		<1	<1
W8A	-11.0	4/23/97	1056			5.34	165	158.6	2221	0.33	4.6	335	9409	5.65	175.0	186.1	2607	0.83	22.5	7.889	25.613	14177	1.68		<1	<1
W8A	-11.0	5/28/97	1003			5.78	179	91.5	1282	0.02	0.3	248	6960	5.95	184.3	104.1	1458	0.85	21.9	7.887	26.434	14632	2.69		<1	<1
W8A	-11.0	6/17/97	1045			5.82	180	77.6	1087	0.25	3.5	245	6873	5.83	180.6	93.1	1304	0.80	22.0	7.886	26.342	14581	2.18		<1	<1
W8A	-11.0	7/15/97	1039			6.91	214	76.3	1069	0.42	5.9	252	7080	7.11	220.2	88.1	1234	0.67	21.9	7.830	25.791	14276	0.40		<1	<1
W8A	-11.0	8/26/97	1106			5.80	180	64.2	899	0.43	6.0	237	6651	5.93	183.7	75.5	1058	0.64	23.0	7.952	27.557	15254	2.16		<1	<1
W8A	-11.0	9/23/97	910			6.20	192	52.4	734	0.25	3.5	255	7173	6.39	197.9	61.5	861	0.58	21.9	7.870	25.819	14291	0.73		<1	<1
W8A	-11.0	10/14/97	1016			6.10	189	44.2	619	0.14	2.0	266	7468	6.14	190.2	53.8	754	0.54	21.7	7.840	25.769	14264	0.96		<1	<1
W8A	-11.0	11/4/97	845			6.04	187	57.0	798	0.12	1.7	263	7389	6.28	194.5	66.0	924	0.54	21.6	7.915	25.707	14229	1.24		<1	<1
W8A	-11.0	12/16/97	1044			5.82	180	59.4	832	0.07	1.0	242	6808	6.09	188.6	62.4	874	0.63	21.7	7.965	26.989	14939	2.59		<1	<1
W8A	-11.0	1/5/98	907			5.55	172	60.1	842	0.02	0.3	218	6118	5.76	178.4	64.5	903	0.69	21.6	7.993	27.373	15152	2.95		<1	<1
W8A	-11.0	2/3/98	755			5.45	169	62.8	880	0.01	0.1	240	6729	5.73	177.5	67.6	947	0.66	21.2	7.949	26.562	14703	2.30		<1	<1
W8A	-11.0	3/10/98	903			5.95	184	96.8	1356	0.14	2.0	243	6828	6.17	191.1	104.4	1462	0.89	21.3	7.852	26.403	14615	2.56		<1	<1
W8A	-11.0	4/14/98	1025			5.02	155	94.6	1325	0.02	0.3	226	6339	5.24	162.3	96.5	1352	0.79	21.7	7.863	27.802	15389	2.71		<1	1
W8A	-11.0	5/12/98	905			4.39	136	123.1	1724	0.08	1.1	239	6707	4.50	139.4	127.3	1783	0.75	21.7	7.865	27.301	15112	2.54		<1	<1
W8A	-11.0	6/2/98	907			4.02	125	114.5	1604	0.08	1.1	234	6583	4.13	127.9	120.4	1686	0.72	21.8	7.850	27.218	15066	2.07		<1	<1
W8A	-11.0	7/14/98	859			4.61	143	93.3	1306	0.16	2.2	194	5457	4.84	149.9	97.2	1361	0.80	22.5	7.785	29.033	16071	2.84		<1	<1
W8A	-11.0	8/11/98	923			4.91	152	99.9	1399	0.08	1.1	198	5569	5.01	155.2	105.8	1482	0.82	22.4	7.798	29.001	16053	1.86		<1	<1
W8A	-11.0	9/15/98	911			4.47	138	86.4	1211	0.12	1.7	181	5069	4.52	140.0	92.1	1290	0.90	23.3	7.774	29.777	16482	3.22		<1	<1
W8A	-11.0	10/13/98	817			4.72	146	84.6	1185	0.04	0.6	170	4786	4.88	151.2	90.0	1261	0.90	24.1	7.731	29.893	16547	1.40		<1	<1
W8A	-11.0	11/4/98	909			5.07	157	83.1	1164	0.04	0.6	190	5345	5.30	164.2	89.4	1252	0.85	23.7	7.749	29.408	16278	1.74		<1	<1
W8A	-11.0	12/16/98	900			5.57	173	82.5	1156	0.12	1.7	207	5800	5.77	178.7	88.1	1234	0.80	22.4	7.776	27.739	15354	2.79		<1	<1
W8A	-11.0	1/12/99	931			5.10	158	82.2	1151	0.18	2.5	208	5831	5.24	162.3	86.2	1207	0.82	22.1	7.795	27.800	15388	3.57		<1	<1
W8A	-11.0	2/3/99	913			5.16	160	103.0	1442	0.08	1.1	190	5325	5.33	165.1	112.2	1572	0.96	22.2	7.839	28.288	15658	2.78		<1	<1
W8A	-11.0	3/2/99	912			5.05	156	80.7	1131	0.02	0.3	204	5735	5.19	160.8	84.1	1178	0.85	21.8	7.818	27.791	15383	3.34		<1	<1
W8A	-11.0	4/6/99	906			4.66	144	80.2	1123	0.09	1.3	182	5123	4.82	149.3	85.4	1196	0.83	22.1	7.788	29.212	16170	2.77		<1	<1
W8A	-11.0	5/4/99	915			4.72	146	77.2	1081	0.06	0.8	191	5362	4.88	151.2	80.0	1121	0.79	21.8	7.814	28.491	15771	2.12		<1	<1
W8A	-11.0	6/2/99	856			4.38	136	59.9	839	0.10	1.4	166	4662	4.55	140.9	64.6	905	0.78	22.8	7.748	29.859	16528	2.63		<1	<1
W8A	-11.0	7/7/99	944			4.52	140	67.9	951	0.01	0.1	176	4937	4.67	144.6	71.4	1000	0.76	22.8	7.803	29.037	16073	2.50		<1	<1
W8A	-11.0	8/25/99	907			4.56	141	68.7	962	0.10	1.4	181	5086	4.73	146.5	74.8	1048	0.80	23.2	7.812	28.967	16034	2.27		<1	<1
W8A	-11.0	9/8/99	919			4.39	136	67.4	945	0.07	1.0	171	4789	4.59	142.2	77.1	1080	0.82	23.6	7.753	29.759	16472	2.19		<1	<1
W8A	-11.0	10/6/99	914			4.41	137	57.0	798	0.02	0.3	154	4311	4.55	140.9	60.4	846	0.73	23.8	7.747	30.082	16651	2.50		<1	<1
W8A	-11.0	11/3/99	937			4.01	124	52.2	731	0.10	1.4	141	3966	4.16	128.9	61.8	866	0.74	23.9	7.797	30.134	16680	2.99		<1	<1
W8A	-11.0	12/15/99	957			4.85	150	79.5	1114	0.05	0.7	160	4505	5.02	155.5	84.9	1189	0.82	23.2	7.751	29.213	16170	2.42		<1	<1
W8A	-11.0	1/11/00	936			5.30	164	94.7	1326	0.16	2.2	177	4982	5.32	164.8	97.5	1366	1.03	22.6	7.744	28.117	15563	2.30		<1	<1
W8A	-11.0	2/14/00	929			5.20	161	73.4	1028	0.05	0.7	186	5232	5.24	162.3	79.1	1108	0.78	22.3	7.823	28.201	15610	3.26		<1	<1
W8A	-11.0	3/22/00	948			4.89	151	71.6	1003	0.09	1.3	188	5280	4.72	146.2	73.3	1027	0.88	22.6	7.813	28.502	15777	2.03		<1	<1
W8A	-11.0	4/12/00	927			5.04	156	63.2	885	0.05	0.7	197	5533	4.97	153.9	68.7	962	0.79	22.5	7.798	28.309	15670	2.17		<1	<1
W8A	-11.0	5/17/00	918			5.01	155	63.6	891	0.02	0.3	188	5286	5.06	156.7	67.7	948	0.82	22.5	7.772	28.486	15768	1.76		<1	<1
W8A	-11.0	6/6/00	935			4.87	151	63.9	895	0.03	0.4	178	4991	5.02	155.5	71.7	1004	0.92	22.4	7.721	29.139	16129	1.88		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	7/31/00	925			5.10	158	78.3	1097	0.09	1.3	206	5791	5.12	158.6	83.3	1167	0.93	22.9	7.698	18.876	10448	1.67		<1	<1
W8A	-11.0	8/30/00	920			4.63	143	74.2	1039	0.02	0.3	185	5204	4.81	149.0	78.3	1097	0.78	23.7	7.559	20.540	11369	1.38		<1	<1
W8A	-11.0	9/6/00	910			4.73	147	72.0	1008	0.01	0.1	181	5095	4.92	152.4	74.8	1048	0.82	23.8	7.537	20.976	11611	1.03		<1	<1
W8A	-11.0	10/25/00	918			4.40	136	77.8	1090	0.13	1.8	170	4777	4.70	145.6	74.4	1042	0.78	24.1	7.540	29.836	16515	1.89		<1	1
W8A	-11.0	11/14/00	931			4.53	140	118	1654	0.23	3.2	156	4393	4.96	153.6	128	1787	1.16	23.8	7.615	29.677	16427	1.71		<1	<1
W8A	-11.0	12/19/00	908			5.13	159	109	1532	0.13	1.8	184	5173	5.43	168.2	118	1650	0.85	21.6	7.719	27.824	15401	1.77		<1	<1
W8A	-11.0	1/24/01	852			4.83	150	82.8	1159	0.12	1.7	181	5083	5.03	155.8	88.8	1243	0.79	22.0	7.604	28.656	15862	1.20		<1	<1
W8A	-11.0	2/7/01	923			5.03	156	77.9	1091	0.07	1.0	186	5224	5.20	161.1	82.1	1150	0.73	21.6	7.706	28.458	15752	1.46		<1	<1
W8A	-11.0	3/12/01	900			5.74	178	78.9	1105	0.03	0.4	188	5272	6.14	190.2	88.5	1240	1.05	20.9	7.590	28.375	15706	0.37		<1	<1
W8A	-11.0	4/18/01	848			6.36	197	81.3	1139	0.02	0.3	212	5951	6.48	200.7	84.4	1182	0.77	20.5	7.649	27.341	15134	1.87		<1	<1
W8A	-11.0	5/14/01	1021			6.29	195	75.6	1058	0.18	2.5	210	5895	6.29	194.8	78.6	1101	0.61	20.7	7.671	27.398	15166	1.98		<1	<1
W8A	-11.0	6/13/01	906			5.84	181	65.9	923	0.02	0.3	200	5628	5.82	180.3	68.5	959	0.64	21.3	7.688	28.362	15699	2.17		<1	<1
W8A	-11.0	7/24/01	927			4.80	149	77.7	1089	0.04	0.6	182	5123	4.76	147.4	80.5	1127	0.88	22.6	7.714	28.988	16046	1.65		<1	<1
W8A	-11.0	8/22/01	924			4.54	141	75.7	1060	0.03	0.4	146	4109	4.50	139.4	79.9	1119	0.91	23.1	7.711	29.782	16485	1.64		<1	<1
W8A	-11.0	9/17/01	1003			4.44	138	75.5	1058	0.02	0.3	168	4724	4.44	137.5	75.0	1050	0.85	23.6	7.718	29.576	16371	1.51		<1	<1
W8A	-11.0	10/22/01	957			4.44	138	73.0	1022	0.12	1.7	163	4578	4.62	143.1	79.7	1116	0.82	23.2	7.677	29.298	16217	1.80		<1	<1
W8A	-11.0	11/5/01	1026			4.54	141	75.4	1056	0.01	0.1	167	4696	4.66	144.3	87.1	1220	0.80	23.0	7.675	29.254	16193	2.04		<1	<1
W8A	-11.0	12/12/01	1009			5.19	161	79.8	1118	0.31	4.3	204	5732	5.27	163.2	90.2	1263	0.76	22.2	7.730	28.055	15529	2.07		<1	<1
W8A	-11.0	1/7/02	948			5.46	169	96.3	1349	0.25	3.5	204	5718	5.40	167.3	102	1429	0.84	22.6	7.732	28.377	15707	2.44		<1	<1
W8A	-11.0	2/25/02	917			5.82	180	116	1618	0.08	1.1	183	5128	6.02	186.5	125	1755	1.14	21.7	7.867	28.358	15697	1.08		<1	1
W8A	-11.0	3/18/02	952			6.04	187	88.3	1237	0.33	4.6	182	5103	6.32	195.8	92.8	1300	0.82	21.5	7.923	28.137	15575	1.14		<1	<1
W8A	-11.0	4/10/02	953			9.16	284	173	2423	29.2	409	180	5041	9.50	294.3	225	3154	2.87	21.5	8.233	28.054	15529	0.59		<1	<1
W8A	-11.0	5/22/02	1010			10.3	318	52.1	730	1.80	25	191	5373	10.5	326.2	57.5	806	1.01	22.1	7.977	28.452	15749	0.31		<1	<1
W8A	-11.0	6/19/02	1041			7.92	245	45.4	636	0.16	2.2	168	4730	8.16	252.7	51.9	726	0.87	23.1	7.803	29.573	16369	0.76		<1	<1
W8A	-11.0	7/22/02	1035			7.82	242	40.6	568	0.11	1.5	207	5817	8.10	250.9	44.9	630	1.04	22.9	7.775	28.136	15574	0.85		<1	<1
W8A	-11.0	8/21/02	1101			7.01	217	40.4	566	0.28	3.9	202	5670	7.32	226.7	45.3	635	1.06	22.8	7.645	29.237	16183	0.48		<1	<1
W8A	-11.0	9/25/02	942			8.54	265	61.0	854	0.26	3.6	202	5659	8.88	275.0	64.5	903	1.32	23.9	7.708	28.890	15991	0.28		<1	1
W8A	-11.0	10/15/02	956			9.34	289	60.3	845	0.19	2.7	188	5280	9.72	301.1	64.0	896	1.12	23.5	7.816	28.605	15834	0.21		<1	1
W8A	-11.0	11/17/02	946			8.12	252	64.5	903	0.03	0.4	176	4937	8.50	263.3	66.6	933	1.10	23.6	7.751	29.275	16204	0.20		<1	<1
W8A	-11.0	12/18/02	1000			8.58	266	69.4	972	0.07	1.0	195	5471	8.69	269.2	66.3	928	0.91	22.8	7.724	27.979	15487	0.26		1	<1
W8A	-11.0	1/23/03	949			9.56	296	94.8	1328	0.02	0.3	169	4741	9.80	303.5	109	1521	1.51	22.6	7.792	29.628	16400	0.02		<1	<1
W8A	-11.0	2/11/03	1014			13.3	411	171	2390	0.10	1.4	191	5373	13.4	415.7	198	2776	2.00	22.0	7.981	27.728	15348	0.14		<1	<1
W8A	-11.0	3/20/03	1105			12.7	393	206	2885	0.06	0.8	188	5291	13.1	405.8	251	3521	2.03	22.1	8.117	28.004	15501	0.12		<1	<1
W8A	-11.0	4/30/03	938			11.6	359	81.6	1143	0.12	1.7	194	5451	11.9	368.6	107	1503	2.14	22.5	8.075	27.836	15408	1.21		1	<1
W8A	-11.0	5/14/03	850			12.3	382	49.8	697	3.36	47	185	5199	12.8	396.2	67.0	939	2.36	22.5	8.082	28.635	15850	1.31		<1	<1
W8A	-11.0	6/4/03	927			15.1	469	25.2	354	22.1	309	188	5274	15.79	489.1	61.4	861	2.88	22.9	8.101	28.684	15877	0.09		<1	<1
W8A	-11.0	7/30/03	922			12.15	376	24.6	344	6.73	94	194	5437	12.57	389.3	50.1	702	1.52	22.8	8.056	27.924	15457	0.07		<1	<1
W8A	-11.0	8/28/03	901			9.90	307	41.3	578	3.04	43	196	5513	12.78	395.8	57.8	810		23.3	7.852	28.292	15660	0.09		<1	<1
W8A	-11.0	9/16/03	857			9.42	292	26.7	374	0.23	3.2	195	5482	9.52	294.9	43.5	610		23.8	7.774	28.800	15942	0.15		<1	1
W8A	-11.0	10/8/03	857			8.80	273	39.7	556	2.70	38	209	5859	9.22	285.6	52.2	731		23.6	7.726	28.033	15517	NA		<1	<1
W8A	-11.0	11/5/03	904			9.04	280	36.8	515	4.63	65	222	6232	9.42	291.8	46.9	657		22.8	7.687	27.378	15155			<1	<1
W8A	-11.0	11/14/03	1512																22.9				0.22			
W8A	-11.0	12/17/03	940			9.46	293	70.0	980	1.50	21	218	6117	9.59	297.0	76.9	1077		22.5	7.624	27.566	15258	0.24		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	1/28/04	944			8.12	252	74.3	1041	0.55	7.7	239	6715	8.40	260.2	77.7	1089	1.52	21.6	7.611	26.511	14675	0.32		<1	<1
W8A	-11.0	2/11/04	856			9.28	287	73.1	1024	0.21	2.9	198	5569	10.1	314.1	80.9	1134	1.10	22.0	7.591	27.720	15344	0.39		<1	2
W8A	-11.0	3/16/04	946			8.65	268	75.0	1051	0.17	2.4	215	6041	9.25	286.5	84.8	1187		21.9	7.632	27.410	15172	0.86		<1	<1
W8A	-11.0	4/22/04	930			8.10	251	65.9	923	0.27	3.8	216	6055	8.14	252.1	73.8	1034		22.1	7.634	27.348	15138	1.22		<1	<1
W8A	-11.0	5/18/04	910			7.20	223	66.4	930	0.15	2.1	219	6154	7.45	230.8	70.5	987		22.0	7.558	26.65	14751	3.29		<1	2
W8A	-11.0	6/8/04	912			7.48	232	63.6	891	0.12	1.7	220	6168	7.82	242.2	66.8	936		22.3	7.525	27.09	14995	0.83		<1	<1
W8A	-11.0	7/19/04	1006			6.94	215	70.8	992	0.19	2.7	208	5828	6.98	216.2	72.1	1010		21.9	7.489	26.98	14934	1.57		<1	6
W8A	-11.0	8/25/04	942			6.84	212	65.4	915	0.15	2.1	222	6243	7.00	216.8	69.2	969		21.6	7.483	26.74	14801	1.60		5	1
W8A	-11.0	9/27/04	1101			7.68	238	51.8	725	0.19	2.7	224	6280	7.92	245.3	57.7	808		23.4	7.462	27.75	15360	0.77		<1	<1
W8A	-11.0	10/4/04	1020			7.56	234	47.3	663	0.26	3.6	194	5454	7.98	247.2	55.3	774		24.0	7.452	27.99	15493	0.69		<1	<1
W8A	-11.0	11/23/04	1014			6.96	216	37.6	526	2.55	35.7	207	5822	7.10	219.9	51.3	719		23.8	7.629	27.69	15327	0.82		<1	<1
W8A	-11.0	12/8/04	1012			6.68	207	40.4	566	0.34	4.8	199	5583	6.86	212.5	48.7	682		23.9	7.411	27.90	15443	0.69		<1	<1
W8A	-11.0	1/18/05	1019			6.7	209	59.4	832	0.07	1.0	213	5991	6.92	214.3	65.4	915		22.5	7.513	27.565	15258	0.71		<1	<1
W8A	-11.0	2/10/05	1006			10.4	322	70.9	994	0.56	7.8	187	5249	10.8	335.8	91.9	1287		22.2	7.959	27.675	15319	0.28		<1	<1
W8A	-11.0	3/22/05	1012			14.0	433	74.6	1044	0.13	1.8	198	5572	14.5	450.4	80.6	1128	1.54	21.8	8.114	27.106	15004	0.19		<1	<1
W8A	-11.0	4/20/05	1005			8.52	264	56.9	797	0.14	2.0	182	5106	9.00	278.8	57.8	810		22.4	7.906	28.296	15663	0.49		<1	<1
W8A	-11.0	5/25/05	1028			8.52	264	66.9	937	0.15	2.1	208	5828	9.04	280.0	75.3	1054		21.1	7.910	27.315	15120	1.25		<1	<1
W8A	-11.0	6/14/05	1021			7.66	237	52.5	735	0.13	1.8	201	5645	7.90	244.7	55.4	776		22.8	7.823	27.828	15404	0.56		<1	<1
W8A	-11.0	7/19/05	1010			7.64	237	34.0	477	1.85	26	191	5359	7.64	236.6	42.5	595	0.90	24.1	7.674	28.560	15809	0.42		<1	<1
W8A	-11.0	8/3/05	1048			8.3	256	38.3	536	0.29	4.1	200	5628	8.46	262.0	41.9	587	0.84	24.1	7.734	28.175	15596	0.48		<1	<1
W8A	-11.0	9/22/05	1004			7.46	231	56.0	784	0.17	2.4	212	5957	7.62	236.0	59.5	833	0.68	24.6	7.674	27.973	15484	0.60		<1	<1
W8A	-11.0	10/19/05	1013			6.36	197	99.6	1395	0.13	1.8	216	6064	6.50	201.3	106	1482		23.7	7.641	27.665	15313	0.43		<1	<1
W8A	-11.0	11/8/05	958			6.49	201	57.7	809	0.04	0.6	222	6235	6.68	206.9	61.7	865		22.8	7.614	27.349	15138	0.71		<1	<1
W8A	-11.0	12/22/05	929			6.90	214	42.1	590	0.34	4.8	236	6628	7.02	217.4	43.8	614		22.2	7.632	27.427	15182	0.62		<1	<1
W8A	-11.0	1/31/06	957			6.74	209	62.8	879	0.24	3.4	242	6808	6.82	211.2	63.5	890		21.6	7.637	27.351	15139	0.84		<1	<1
W8A	-11.0	2/16/06	958			6.50	201	61.9	866	0.12	1.7	239	6707	6.84	211.9	62.9	881	0.71	21.4	7.663	27.318	15121	1.01		<1	1
W8A	-11.0	3/22/06	957			6.18	191	87.4	1224	0.23	3.2	254	7134	6.28	194.5	89.0	1247	0.55	20.9	7.629	26.818	14844	1.67		<1	<1
W8A	-11.0	4/27/06	1035			6.01	186	71.0	994	0.10	1.4	238	6684	6.16	190.8	63.1	883	0.54	20.5	7.653	27.354	15141	2.11		<1	<1
W8A	-11.0	5/24/06	1100			5.87	182	71.8	1006	0.05	0.7	257	7218	6.12	189.6	65.6	919	0.59	20.6	7.64	26.968	14927	2.71		<1	<1
W8A	-11.0	6/28/06	1047			5.67	176	58.3	817	0.26	3.6	244	6853	5.93	183.7	55.9	783	0.61	21.2	7.605	27.529	15238	2.29		<1	<1
W8A	-11.0	7/19/06	1019			5.60	173	65.1	912	0.19	2.7	253	7106	5.74	177.8	59.2	829	0.57	20.8	7.605	27.227	15071	2.81		<1	<1
W8A	-11.0	8/9/06	1001			5.57	173	53.2	745	0.11	1.5	260	7302	5.85	181.2	50.3	704	0.58	21.5	7.597	27.471	15206	2.39		<1	<1
W8A	-11.0	9/20/06	1010			5.54	172	54.8	768	0.09	1.3	254	7134	5.84	180.9	51.2	717	0.58	21.7	7.579	27.507	15226	2.34		<1	<1
W8A	-11.0	10/25/06	1048			5.42	168	55.1	772	0.21	2.9	238	6684	5.70	176.6	53.9	755	0.68	23.3	7.579	27.475	15208	1.44		<1	<1
W8A	-11.0	11/29/06	1015			5.46	169	54.3	761	0.23	3.2	227	6375	5.55	171.9	52.5	735	0.66	22.3	7.612	27.603	15279	1.53		<1	<1
W8A	-11.0	12/13/06	1007			5.45	169	49.9	699	0.21	2.9	225	6319	5.59	173.1	47.4	663	0.58	22.3	7.606	27.557	15254	1.48		<1	<1
W8A	-11.0	1/10/07	1010			5.72	177	57.3	803	0.28	3.9	250	7021	5.95	184.3	59.0	826	0.56	21.2	7.581	26.652	14753	2.08		<1	<1
W8A	-11.0	2/21/07	1031			5.49	170	51.4	720	0.40	5.6	262	7358	5.86	181.5	56.9	797	0.59	20.5	7.576	26.432	14631	1.93		<1	1
W8A	-11.0	3/7/07	1023			5.46	169	53.5	749	0.18	2.5	264	7415	5.64	174.7	52.6	737	0.61	20.6	7.587	26.300	14558	2.01		<1	<1
W8A	-11.0	4/19/07	1006			5.32	165	61.7	864	0.18	2.5	272	7639	5.49	170.0	53.8	753	0.49	21.2	7.586	26.363	14593	2.19		<1	1
W8A	-11.0	5/2/07	1018			5.26	163	55.5	777	0.27	3.8	272	7639	5.77	178.7	52.4	733	0.48	20.8	7.592	26.363	14593	2.27		<1	<1
W8A	-11.0	6/20/07	1018			5.11	158			0.17	2.4	258	7246	5.40	167.3	48.0	672		21.7	7.635	26.967	14927	2.00		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	7/25/07	1046	-4.06	0.46	Flood	6.26	194	57.0	798	0.61	8.5	273	7657	5.52	171.1	55.2	773		21.4	7.46	27.07	14984	2.48			
W8A	-11.0	8/27/07	1054		0.06	Flood	5.68	176	64.7	906	0.16	2.3	276	7747	5.40	167.2	54.1	758		22.1	7.52	27.11	15006	2.60			
W8A	-11.0	9/13/07	1515	-4.14	0.40	Flood	5.44	169	46.4	650	0.21	2.9	265	7430	5.70	176.5	49.9	699		21.7	7.56	27.67	15316	2.39			
W8A	-11.0	10/23/07	1015	-2.87	0.24	Flood	5.02	156	53.1	744	0.02	0.3	239	6699	6.16	190.7	92.2	1291		22.3	7.41	27.54	15244	2.16			
W8A	-11.0	11/20/07	1050	-3.30	0.40	Flood	4.88	151	56.8	795	0.04	0.5	256	7189	4.57	141.4	62.2	872		21.6	7.42	27.21	15061	2.49			
W8A	-11.0	12/19/07	1035	-3.96	0.30	High	6.02	187	57.8	810	6.22	87	227	6377						21.3	7.55	27.02	14956	1.83			
W8A	-11.0	1/24/08	1428	-3.33	0.06	Flood	6.35	197	72.9	1021	0.76	11	218	6120						21.1	7.53	26.71	14785	1.63			
W8A	-11.0	2/26/08	904	-4.19	0.18	Ebb	5.93	184	66.0	925	0.42	5.9	251	7045						20.4	7.53	26.23	14519	2.39			
W8A	-11.0	3/17/08	1102	-1.93	0.06	Flood	5.32	165	60.8	852	0.06	0.8	247	6928						20.5	7.47	26.30	14558	2.56			
W8A	-11.0	4/30/08	1101	-2.44	0.21	Flood	4.98	154	50.7	711	0.09	1.2	222	6243						21.2	7.49	27.20	15056	2.22			
W8A	-11.0	5/27/08	1037	-3.96	0.24	High	4.38	136	58.5	819	0.09	1.2	256	7184						20.6	7.55	26.35	14585	3.05			
W8A	-11.0	6/16/08	1101	-3.35	0.24	Flood	4.30	133	55.1	771	0.16	2.3	257	7220						21.1	7.56	26.68	14768	4.63			
W8A	-11.0	7/21/08	957	-5.82	0.12	Ebb	5.08	157	55.4	776	0.29	4.0	228	6408						22.4	7.58	26.93	14906	3.34	0.02		
W8A	-11.0	8/30/08	1352		0.46	Flood	4.70	146	58.1	814	0.31	4.4	227	6375						21.2	7.57	27.84	15410	2.35	0.16		
W8A	-11.0	9/15/08	1107	-4.50	0.09	Low	5.77	179	80.5	1128	0.13	1.8	227	6374						21.0	7.54	27.32	15122	2.27			
W8A	-11.0	10/31/08	1041	-4.29	0.30	Ebb	5.98	185	69.7	977	0.22	3.1	246	6902													
W8A	-11.0	11/14/08	1024	-4.23	0.15	Ebb	5.80	180	90.1	1262	0.01	0.2	231	6487						22.6	7.65	26.40	14613	3.62	0.29		
W8A	-11.0	12/15/08	1337	-4.45	0.03	Low	5.91	183	86.7	1215	0.11	1.5	227	6377						22.8	7.73	26.45	14641	3.09			
W8A	-11.0	1/27/09	837	-4.15	0.30	Ebb	5.55	172	172.0	2409	0.66	9.3	274	7692						21.8	7.60	25.87	14320	2.60	1.93		
W8A	-11.0	2/24/09	1313	-4.41	0.15	Flood	5.37	166	135.4	1897	1.04	14.5	267	7491						21.3	7.55	26.16	14480	2.78	0.17		
W8A	-11.0	3/16/09	1324	-4.56	0.03	Low	4.37	135	69.0	966	0.13	1.8	212	5965						21.9	7.39	24.67	13655	3.46	0.32		
W8A	-11.0	4/22/09	1133	-4.47	0.18	Flood	6.28	195	95.8	1342	0.32	4.5	241	6770						22.1	7.66	25.67	14209	3.33	2.06		
W8A	-11.0	5/27/09	1114	-4.33	0.00	Low	5.97	185	106.2	1488	0.24	3.4	491	13802						20.4	7.69	23.68	13107	2.98	0.12		
W8A	-11.0	6/19/09	1438	-3.88	0.73	High	6.27	194	61.8	866	0.44	6.1	193	5413						21.1	7.61	28.10	15554	3.06	0.06		
W8A	-11.0	7/31/09	1246	-3.91	0.67	High	6.72	208	66.1	926	0.68	9.5	140	3927						21.0	7.58	28.30	15665	3.29	0.04		
W8A	-11.0	8/20/09	1319	-4.07	0.46	Flood	3.30	102	36.5	511	0.27	3.8	94	2642						21.3	7.67	28.29	15659	2.52	0.04		
W8A	-11.0	9/24/09	1503	-4.30	0.21	Ebb	4.89	152	70.5	987	0.59	8.3	186	5236						20.5	8.20	26.93	14906	3.54	3.57		
W8A	-11.0	10/23/09	1056	-4.17	0.43	Ebb	4.27	132	50.9	712	0.56	7.8	102	2863						21.1	7.53	27.24	15078	2.97	0.08		
W8A	-11.0	11/17/09	1618	-4.39	0.37	High	4.76	148	59.9	839	0.97	13.6	223	6250						20.2	7.52	26.90	14890	3.63	0.07		
W8A	-11.0	12/8/09	1110	-4.12	0.52	Ebb	4.46	138	82.2	1152	1.04	14.5	307	8619						20.4	7.53	25.90	14336	3.50	0.21		
W8A	-11.0	1/6/10	1039	-4.15	0.30	Ebb	5.26	163	103.7	1453	1.29	18.0	265	7438						21.2	7.63	26.20	14502	2.50	2.59		
W8A	-11.0	2/2/10	1016	-4.21	0.15	Ebb	5.91	183	124.2	1739	0.57	8.0	244	6861						20.9	7.66	25.96	14370	2.54	0.61		
W8A	-11.0	3/10/10	950	-4.50	0.09	Flood	6.04	187	90.0	1261	0.36	5.0	280	7874						20.1	7.65	25.39	14054	3.57	0.05		
W8A	-11.0	4/7/10	931	-4.44	0.12	Flood	5.78	179	80.1	1122	1.07	15	276	7744						19.9	7.66	25.89	14331	3.58	0.03		
W8A	-11.0	5/12/10	929	-4.57	-0.03	Flood	4.78	148	59.5	834	1.21	17	216	6056						20.3	7.71	27.31	15117	3.40	0.04		
W8A	-11.0	6/16/10	1513	-4.38	0.24	Flood	5.46	169	72.9	1021	0.43	6.0	276	7742						20.3	7.69	27.27	15095	3.38	0.06		
W8A	-11.0	7/13/10	1537	-4.06	0.49	Flood	5.42	168	67.3	942	0.14	2.0	264	7413						20.1	7.74	27.38	15156	3.26	0.13		
W8A	-11.0	8/3/10	1542	-4.13	0.37	Ebb	5.88	182	67.0	938	0.44	6.2	276	7758						20.2	7.73	27.20	15056	3.49	0.07		
W8A	-11.0	9/14/10	1548	-4.22	0.21	Ebb	5.97	185	65.8	922	0.18	2.5	273	7654						20.5	7.66	27.24	15078	3.43	0.10		
W8A	-11.0	10/12/10	1611	-4.26	0.18	Low	5.78	179	63.1	884	0.17	2.4	277	7777						20.2	7.63	27.18	15045	3.19	0.07		
W8A	-11.0	11/16/10	1453	-4.14	0.30	Ebb	5.81	180	66.5	932	0.31	4.4	272	7652						21.0	7.57	27.29	15106	2.80	0.18		
W8A	-11.0	12/14/10	1520	-4.33	0.12	Ebb	5.88	182	71.3	999	0.19	2.7	265	7448						21.8	7.53	27.06	14978	1.93	0.10		
W8A	-11.0	1/4/11	1503	-4.32	0.15	Flood	5.29	164	81.0	1135	0.28	3.9	263	7373						21.3	7.48	26.69	14774	2.63	0.08		
W8A	-11.0	4/5/11	1518	-4.14	0.37	Flood	5.46	169	91.7	1285	0.07	1.0	240	6739						21.1	7.59	26.77	14818	2.10	0.03		

NELHA Water Quality Laboratory

Well 8A Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	7/12/11	1457	-3.89	0.73	High	5.75	178	69.5	973	0.25	3.5	239	6725						20.9	7.95	27.46	15200	2.31	0.05		
W8A	-11.0	10/11/11	1426	-4.12	0.34	Flood	6.68	207	43.8	614	5.04	71	236	6636						21.2	7.64	27.79	15382	0.02	0.05		
W8A	-11.0	1/10/12	1538	-4.36	0.18	Flood	5.39	167	46.1	646	0.35	4.9	303	8498						20.4	7.75	25.59	14165	2.49	0.04		
W8A	-11.0	5/8/12	1338	-4.45	0.06	Flood	6.65	206	60.3	845	0.30	4.2	269	7567						20.4	7.66	27.51	15227	1.96	0.10		
W8A	-11.0	7/17/12	1450	-3.86	0.70	Flood	6.75	209	67.8	949	0.31	4.4	237	6645						20.4	7.58	28.15	15582	2.28	0.18		
W8A	-11.0	10/15/12	1406	-4.21	0.30	Flood	6.20	192	66.8	936	0.46	6.4	253	7119						20.1	7.61	27.62	15288	0.70	0.02		
W8A	-11.0	1/7/13	1511	-4.35	0.12	Ebb	5.46	169	62.8	879	0.13	1.8	341	9581						20.0	7.57	26.22	14513	1.66	0.15		
W8A	-11.0	1/14/13	958	-4.03	0.24	Ebb	5.84	181	63.3	887	0.20	2.8	298	8358						20.5	7.67	26.73	14796	1.56	0.11		
W8A	-11.0	1/29/13	1434	-4.30	0.09	Flood	5.62	174	62.2	871	0.99	14	292	8192						20.4	7.55	26.47	14652	1.77			
W8A	-11.0	3/20/13	1035	-4.33	0.18	High	5.20	161	61.0	855	1.14	16	289	8114						20.4	7.64	25.88	14325	2.82	0.04		
W8A	-11.0	4/8/13	1505	-4.08	0.49	Flood	5.42	168	74.4	1042	0.39	5.5	269	7552						20.3	7.61	26.62	14735	2.25	0.02		
W8A	-11.0	7/16/13	1652	-4.29	0.24	Ebb	5.71	177	60.2	843	0.22	3.1	294	8262						20.7	7.54	26.34	14580	2.31	0.10		
W8A	-11.0	10/14/13	1728	-4.30	0.12	Ebb	5.88	182	60.3	844	2.98	42	272	7640						20.3	7.51	26.81	14840	2.49	0.02		
W8A	-11.0	1/14/14	1533	-4.24	0.18	High	7.65	237	42.2	591	10.24	143	313	8788						22.2	7.48	23.21	12847	0.33	0.02		
W8A	-11.0	4/28/14	1504	-4.02	0.55	Flood	5.20	161	76.9	1077	0.49	6.8	264	7418						20.1	7.73	26.41	14619	3.21	0.02		
W8A	-11.0	7/28/14	1623	-4.01	0.55	Flood	6.26	194	62.0	869	2.21	31	241	6769						21.5	7.38	27.50	15222	0.83	0.06		
W8A	-11.0	11/3/14	1349	-3.92	0.46	Flood	7.75	240	29.0	406	31.27	438	236	6615						22.6	7.40	27.92	15454	0.08	0.10		
W8A	-11.0	2/10/15	1632	-4.37	0.31	High	10.25	317	96.7	1354	1.23	17.2	311	8745						22.0	7.40	26.64	14746	0.17	0.35		
W8A	-11.0	5/20/15	923	-4.38	0.00	Ebb	7.22	224	48.2	675	16.10	225.5	232	6502						22.9	7.53	27.28	15100	0.85	0.02		
W8A	-11.0	7/22/15	1036	-4.23	0.31	Ebb	8.83	274	12.4	174	36.40	509.9	233	6533						24.2	7.37	28.67	15870	0.08	0.51		
W8A	-11.0	11/9/15	1403	-4.00	0.48	High	7.72	239	19.2	269	47.40	663.9	209	5881						25.4	7.45	28.90	15997	0.09	0.71		
W8A	-11.0	1/27/16	1401	-4.50	0.10	Flood	7.12	221	40.5	568	27.59	386.4	241	6762						23.7	7.46	27.73	15349	0.18	0.30		
W8A	-11.0	4/22/16	1126	-4.45	0.05	Flood	5.96	185	33.8	473	5.38	75.3	212	5959						23.5	7.36	28.52	15787	0.50	0.15		
W8A	-11.0	7/26/16	1305	-4.13	0.55	Flood	6.34	196	41.0	574	2.48	34.7	215	6031						22.6	7.65	27.22	15067	1.23	0.51		
W8A	-11.0	11/15/16	944	-4.21	0.10	Low	5.81	180	35.3	494	4.25	59.5	210	5901						23.7	7.40	27.85	15416	0.58	0.15		
W8A	-11.0	3/22/17	942	-4.26	0.20	Flood	6.95	215	74.7	1047	2.52	35.3	234	6577						22.8	7.73	26.87	14873	1.37	0.06		
W8A	-11.0	4/19/17	914	-4.26	0.18	Flood	6.72	208	63.4	888	1.64	23.0	245	6888						22.0	7.73	26.49	14663	1.01	0.05		
W8A	-11.0	8/9/17	1437	-4.09	0.50	Flood	5.90	183	37.8	529	5.15	72.2	233	6546						22.8	7.57	28.26	15643	0.44	0.10		
W8A	-11.0	10/18/17	1112	-4.31	0.20	Flood	5.62	174	43.0	602	8.81	123.4	205	5752						24.7	7.21	28.05	15526	1.01	0.21		
W8A	-11.0	1/18/18	1210	-4.38	0.10	Low	5.40	167	69.2	969	0.99	13.9	233	6551						23.1	7.14	26.81	14840	0.55	0.73		
W8A	-11.0	5/10/18	1547	-4.12	0.25	Ebb	10.29	319	0.3	4	42.14	590.2	179	5022						22.8	7.78	28.58	15820	0.19	0.25		
W8A	-11.0	8/30/18	1150	-4.2	0.18	Ebb	15.49	480	4.6	64	13.35	187.0	195	5488						23.5	7.85	27.71	15338	0.15	0.63		
W8A	-11.0	10/24/18	1445	-4.03	0.53	High	10.95	339	0.5	7	39.66	555.5	184	5163						24.7	7.56	28.58	15820	0.30	0.08		
W8A	-11.0	2/8/19	1112	-4.39	0.09	Ebb	8.55	265	37.2	521	5.39	75.5	209	5882						22.1	7.54	26.48	14657	0.87	0.12		
W8A	-11.0	5/15/19	1515	-4.01	0.52	High	7.55	234	18.5	259	13.83	193.7	219	6145						22.3	7.41	28.90	15997	0.07	0.33		
W8A	-11.0	8/28/19	1053	-4.28	0.30	Flood	6.63	205	21.4	299	9.28	130.0	203	5707						24.3	7.52	29.06	16085	0.14	0.31		
W8A	-11.0	10/11/19	1139	-4.17	0.40	Flood	6.56	203	16.6	232	8.57	120.1	195	5468						24.5	7.60	28.96	16030	0.12	0.41		
W8A	-11.0	2/4/20	1203	-4.3	0.26	High	7.39	229	60.3	844	0.79	11.0	234	6566						23.0	7.65	26.84	14857	1.79	0.20		
W8A	-11.0	6/3/20	1236	-3.87	0.45	Flood	5.25	163	33.5	469	2.67	37.4	232	6523						22.8	7.53	27.80	15388	0.43	0.16		
W8A	-11.0	7/1/20																									
W8A	-11.0	10/1/20																									
W8A	-11.0	1/1/21																									
W8A	-11.0	4/1/21																									
W8A	-11.0	7/1/21																									
W8A	-11.0	10/1/21																									
W8A	-11.0	1/1/22																									
W8A	-11.0	4/1/22																									

NELHA Water Quality Laboratory

Well 8A Data Table

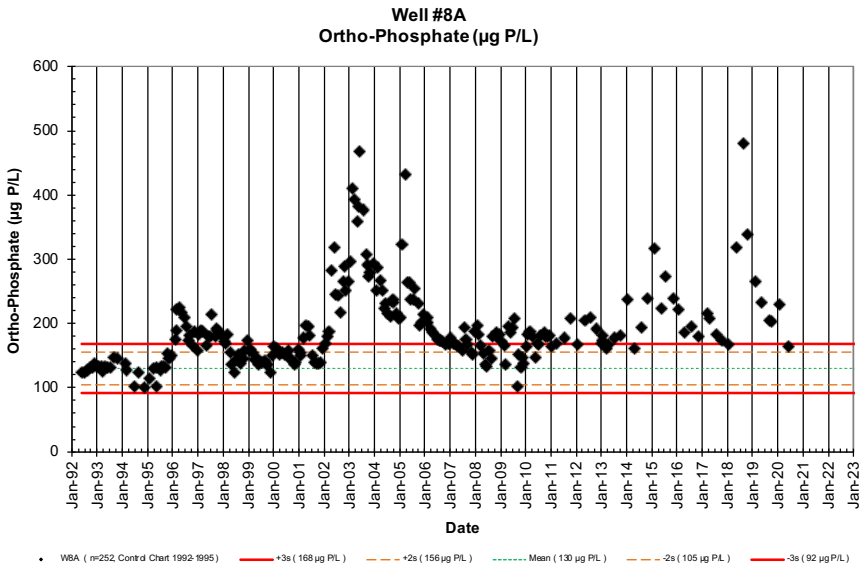
5/20/1992 - 7/21/20

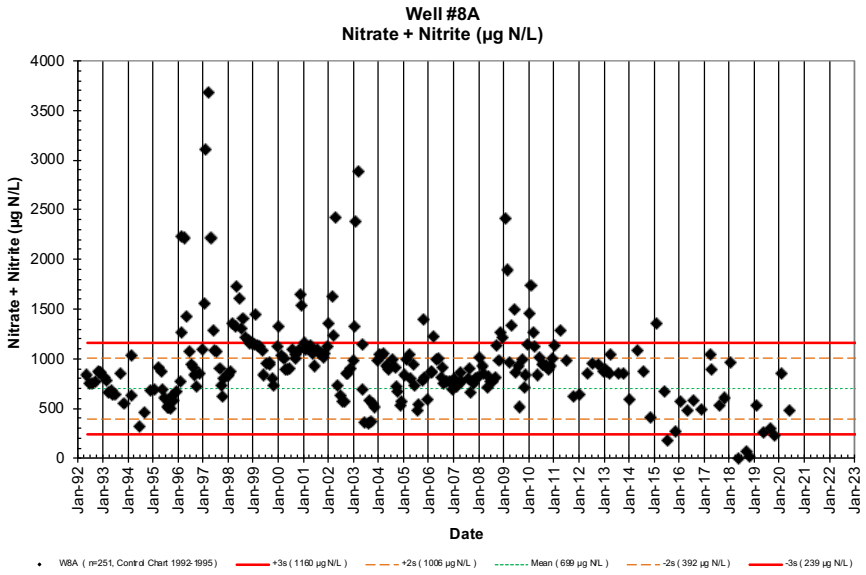
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W8A	-11.0	7/1/22																									
W8A	-11.0	10/1/22																									
W8A	-11.0	1/1/23																									
W8A	-11.0	4/1/23																									
Mean					0.27		6.12	190	67.70	948	1.92	26.9	236	6641	6.29	194.9	76.7	1074	0.85	21.7	7.68	27.14	15021	1.91	0.31		
Std. Dev.					0.18		1.98	61	31.98	448	6.43	90.1	51	1425	2.21	68.6	36.9	517	0.38	1.8	0.17	1.59	880	1.42	0.61		
Maximum					0.73		15.49	480	262.66	3679	47.40	663.9	491	13802	15.79	489.1	270.0	3782	2.88	25.4	8.23	30.13	16680	7.07	3.57		
Minimum					-0.03		3.24	100	0.26	4	0.01	0.1	94	2642	3.26	101.0	27.4	383	0.48	14.7	7.14	18.88	10448	0.02	0.02		
n					83		252	252	251	251	252	252	252	252	174	174	174	174	145	253	252	252	251	250	67		

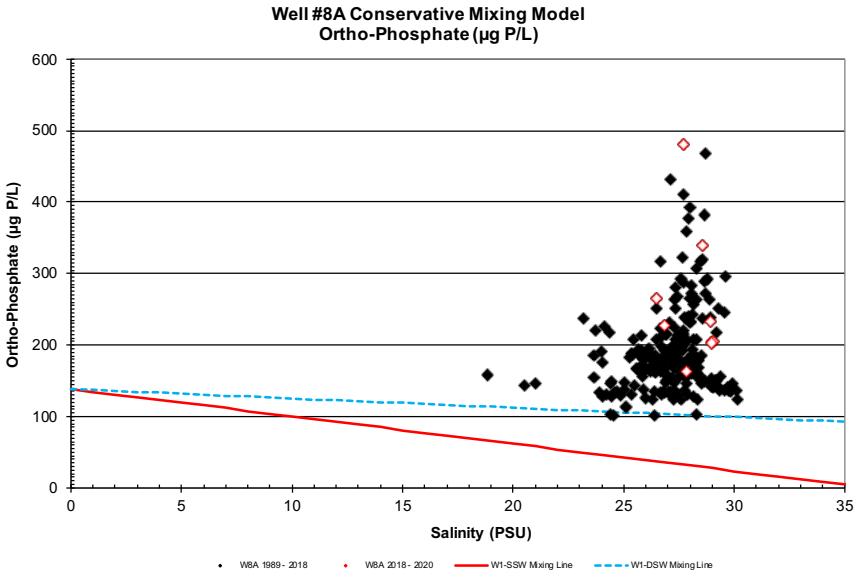
NELHA Water Quality Laboratory

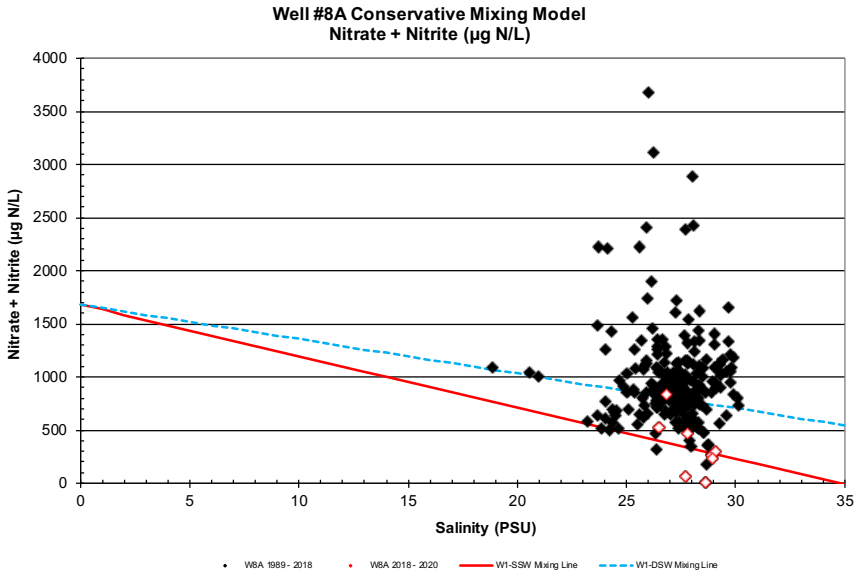
Well 8A Charts

5/20/1992 - 7/21/20







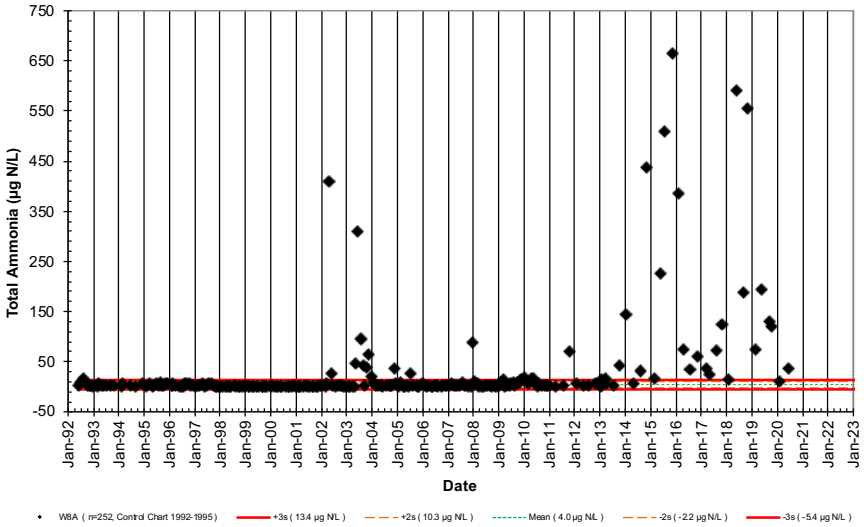


NELHA Water Quality Laboratory

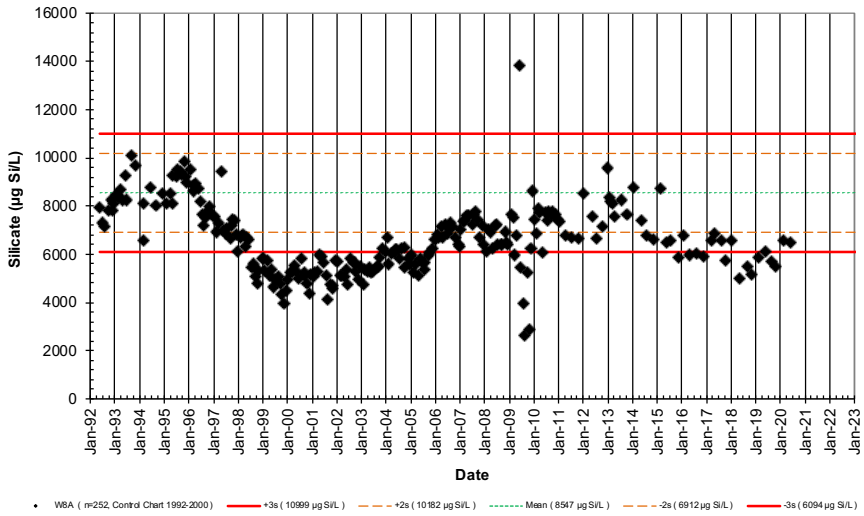
Well 8A Charts

5/20/1992 - 7/21/20

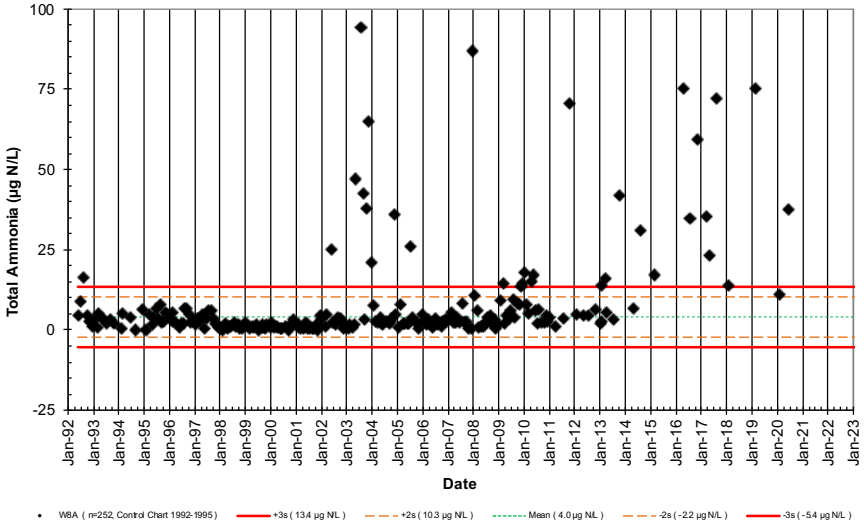
Well #8A
Total Ammonia (µg N/L)



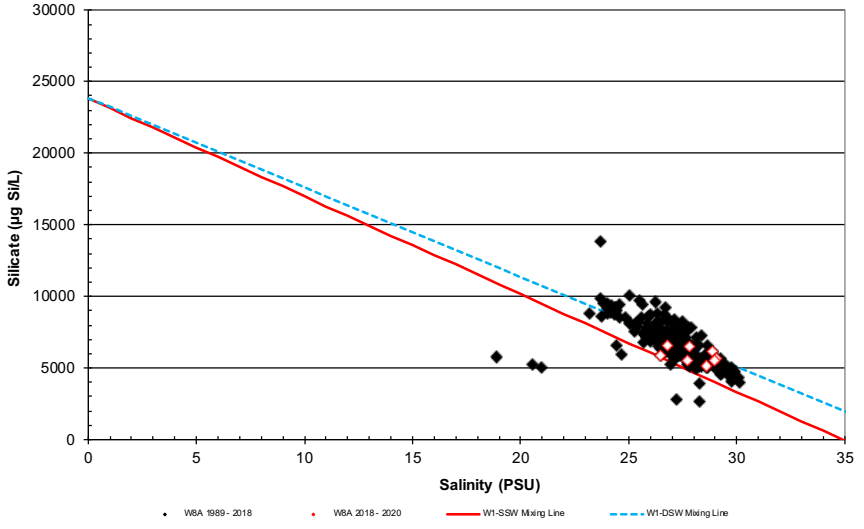
Well #8A
Silicate (µg Si/L)



Well #8A
Total Ammonia (µg N/L)



Well #8A Conservative Mixing Model
Silicate (µg Si/L)

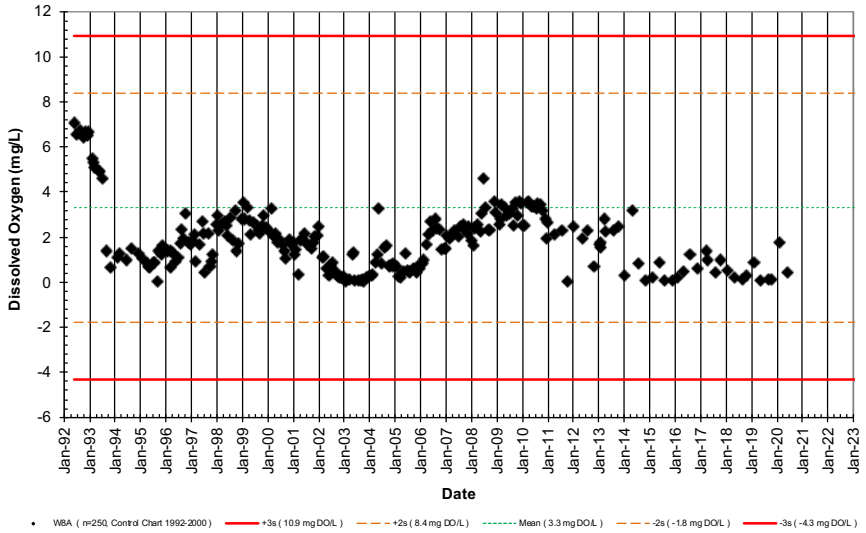


NELHA Water Quality Laboratory

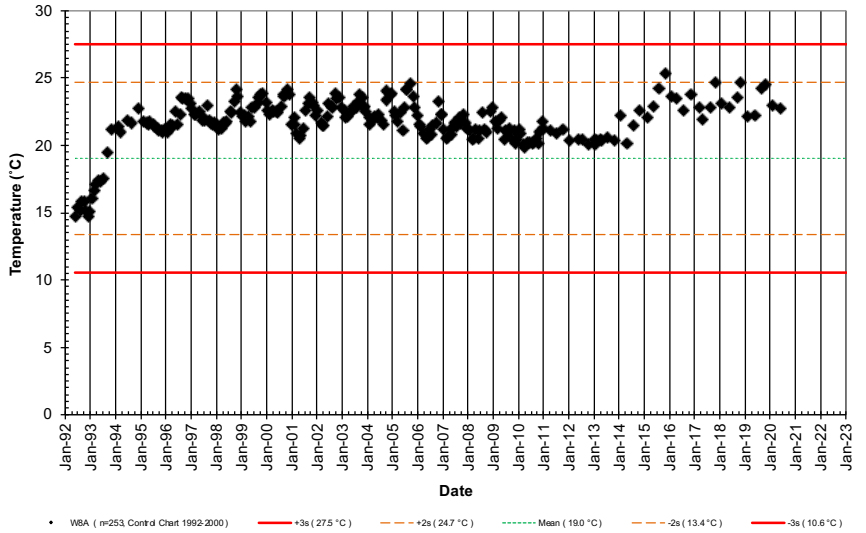
Well 8A Charts

5/20/1992 - 7/21/20

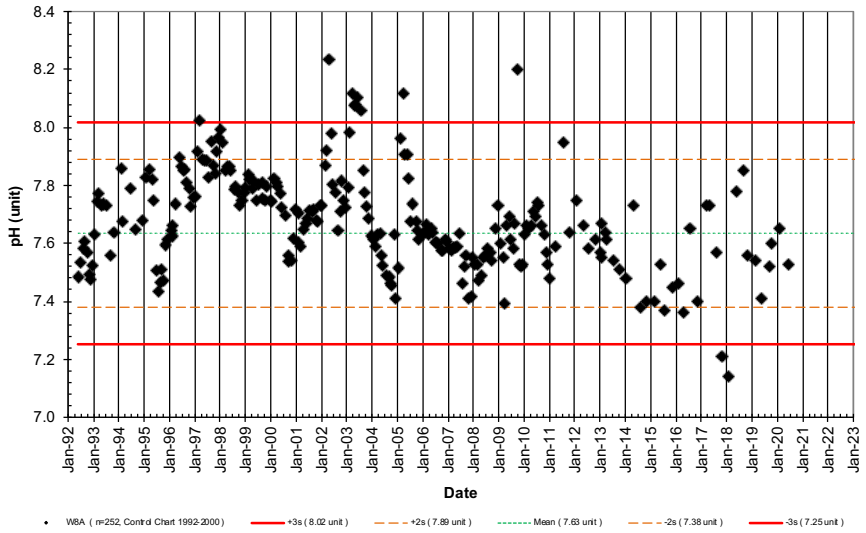
Well #8A
Dissolved Oxygen (mg/L)



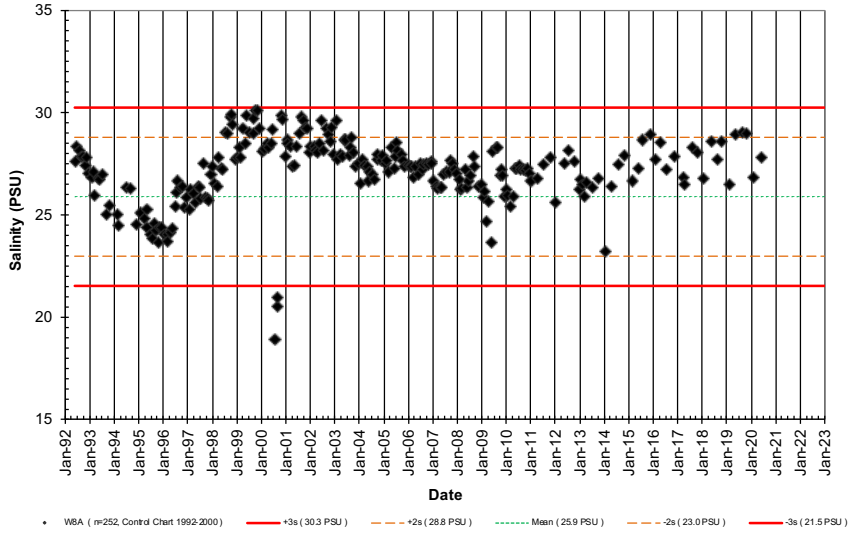
Well #8A
Temperature (˚C)



Well #8A
pH (unit)



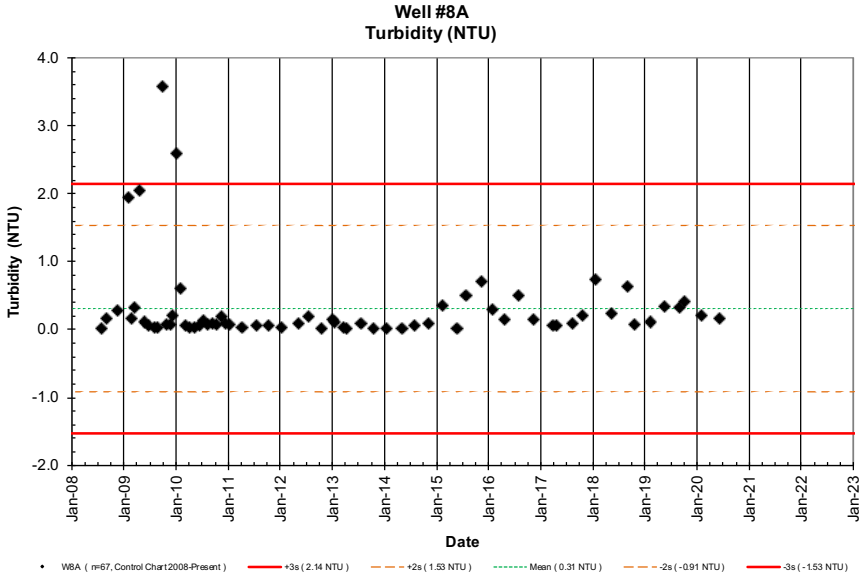
Well #8A
Salinity (PSU)

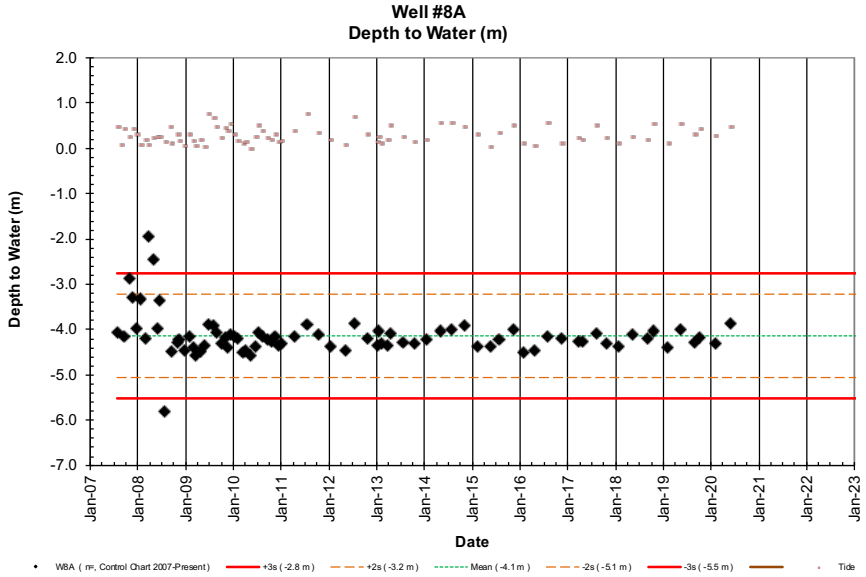


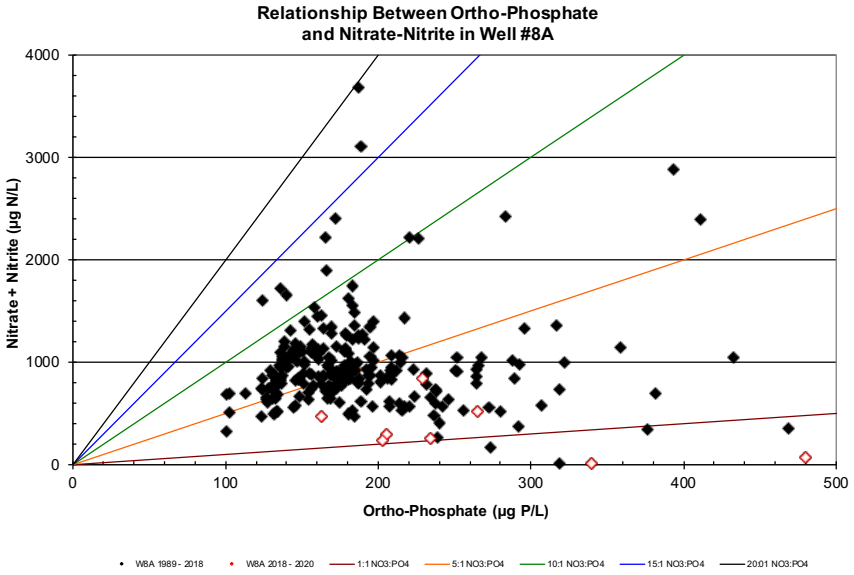
NELHA Water Quality Laboratory

Well 8A Charts

5/20/1992 - 7/21/20







NELHA Water Quality Laboratory

Well 8B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	5/20/92	923			3.09	96	58.5	819	0.26	3.6	496	13930	3.17	98.2	64.9	909	0.50	19.9	7.66	20.05	11097	4.66		<1	<1
W8B	-7.01	6/24/92	904			2.91	90	49.3	691	0.50	7.0	477	13397	3.03	93.9	51.4	720	0.99	20.2	7.69	20.94	11589	4.48		<1	<1
W8B	-7.01	7/30/92	824			3.03	94	49.3	690	0.76	10.6	472	13256	3.12	96.6	50.6	708	0.60	20.3	7.71	20.20	11183	4.67		<1	<1
W8B	-7.01	8/31/92	842															0.55	20.4	7.72	20.55	11377	4.79		<1	<1
W8B	-7.01	9/23/92	915			2.90	90	46.7	654	0.17	2.4	279	7836	2.99	92.6	42.6	597	0.49	20.4	7.75	20.53	11362	4.65		<1	<1
W8B	-7.01	10/28/92	936			3.06	95	51.2	718	0.13	1.8	483	13565	3.17	98.2	54.6	765	0.50	20.6	7.74	21.31		5.09		<1	<1
W8B	-7.01	11/18/92	919			3.73	116	39.0	546	0.12	1.7	481	13509	3.99	123.6	41.0	575	0.57	19.4	7.59	20.12	11139	6.23		<1	<1
W8B	-7.01	12/9/92	910			3.55	110	63.9	895	0.01	0.1	497	13958	3.73	115.5	66.9	936	0.60	19.2	7.65	20.34	11257	6.76		<1	<1
W8B	-7.01	1/27/93	854			2.66	82	62.1	870	0.13	1.8	510	14321	2.84	88.0	68.0	952	0.62	20.3	7.80	19.52	10806	4.88		<1	<1
W8B	-7.01	2/24/93	838			2.51	78	59.6	835	0.27	3.8	502	14102	2.60	80.5	50.7	711	0.50	16.6	7.74	20.20	11180	4.85		<1	<1
W8B	-7.01	3/17/93	903			2.64	82	59.3	831	0.29	4.1	545	15312	2.70	83.6	63.2	885	0.55	20.9	7.88	17.55	9712	5.64		<1	<1
W8B	-7.01	4/28/93	832			2.65	82	55.2	773	0.19	2.7	527	14801	2.71	83.9	58.9	825	0.44	21.0	7.87	18.41	10188	7.05		<1	<1
W8B	-7.01	5/26/93	836			2.67	83	55.8	781	0.06	0.8	565	15868	2.75	85.2	61.8	865	0.33	21.0	7.88	17.89	9900	5.60		<1	<1
W8B	-7.01	6/29/93	848			2.68	83	60.1	841	0.09	1.3	557	15644	2.80	86.7	63.4	888	0.45	21.2	7.88	17.08	9455	5.76		<1	<1
W8B	-7.01	9/1/93	850			3.06	95	67.1	940	0.27	3.8	602	16907	3.06	94.8	78.6	1101	0.54	21.9	7.90	14.99	8298	5.86		<1	<1
W8B	-7.01	10/27/93	845			3.32	103	68.8	964	0.17	2.4	574	16121	3.39	105.0	71.3	998	0.54	22.4	7.90	14.64	8101	5.94		<1	<1
W8B	-7.01	3/1/94	1057			3.59	111	91.4	1280	0.30	4.2	546	15335	3.59	111.2	119.5	1673	0.69	22.3	7.84	14.42	7981	5.74		<1	<1
W8B	-7.01	6/22/94	821			3.18	98	68.0	953	0.26	3.6	457	12835	3.19	98.8	70.5	987	0.59	22.6	7.91	14.97	8286	6.12		<1	<1
W8B	-7.01	8/24/94	906			3.36	104	62.1	870	0.00	0.0	487	13676	3.44	106.5	71.8	1005	0.54	22.8	7.77	17.67	9782	3.62		<1	<1
W8B	-7.01	11/28/94	1043			3.32	103	64.3	901	0.34	4.8	488	13717	3.51	108.7	70.3	985	0.40	23.2	7.75	17.04	9430	4.68		<1	<1
W8B	-7.01	1/25/95	916			4.54	141	83.6	1171	0.00	0.0	467	13124	4.54	140.6	90.0	1261	0.51	22.7	7.98	17.74	9819	4.50		<1	<1
W8B	-7.01	2/15/95	930			4.71	146	87.7	1228	0.05	0.7	480	13484	4.71	145.9	105.2	1473	0.54	22.5	8.03	17.02	9422	4.79		<1	<1
W8B	-7.01	3/29/95	915			3.91	121	84.3	1181	0.29	4.1	504	14147	3.91	121.1	92.3	1292	0.83	22.3	8.00	16.18	8958	5.15		<1	1
W8B	-7.01	4/26/95	905			4.19	130	97.1	1360	0.05	0.7	531	14913	4.27	132.3	104.9	1469	0.48	22.4	8.03	13.93	7708	5.78		<1	<1
W8B	-7.01	5/9/95	1045			4.13	128	94.7	1326	0.15	2.1	513	14399	4.18	129.5	98.2	1375	0.54	22.5	7.93	16.03	8871	4.54		<1	4
W8B	-7.01	6/28/95	902			4.42	137	84.9	1190	0.42	5.9	524	14703	4.48	138.8	89.1	1248	0.50	22.7	7.87	14.56	8058	5.26		<1	<1
W8B	-7.01	7/26/95	1043			4.29	133	79.9	1120	0.19	2.7	537	15088	4.32	133.8	83.9	1175	0.41	22.7	7.88	14.27	7899	5.41		<1	<1
W8B	-7.01	8/23/95	957			4.15	129	66.4	929	0.44	6.2	502	14090	4.29	132.9	68.4	958	0.51	22.7	7.76	16.35	9051	4.35		<1	<1
W8B	-7.01	9/12/95	945			4.01	124	70.4	986	0.15	2.1	510	14321	4.03	124.8	73.1	1024	0.48	22.6	7.82	15.79	8742	5.48		<1	<1
W8B	-7.01	10/17/95	1131			3.99	124	71.6	1003	0.20	2.8	519	14571	4.05	125.4	73.0	1022	0.84	22.7	7.83	15.86	8780	4.71		<1	<1
W8B	-7.01	11/7/95	1045			3.96	123	73.2	1025	0.33	4.6	526	14776	3.98	123.3	76.8	1076	0.65	22.7	7.90	15.18	8402	5.48		<1	<1
W8B	-7.01	12/6/95	1057			4.02	125	75.7	1060	0.28	3.9	512	14388	4.05	125.4	77.7	1088	0.63	22.7	7.89	15.63	8650	5.19		<1	<1
W8B	-7.01	1/30/96	841			4.10	127	86.2	1207	0.14	2.0	562	15787	4.13	127.9	96.8	1356	0.55	22.1	7.98	13.20	7304	6.50		2	1
W8B	-7.01	2/27/96	1053			4.44	138	110.2	1544	0.20	2.8	509	14307	4.45	137.8	109.4	1532	0.60	22.6	7.88	15.61	8642	5.18		<1	<1
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W8B	-7.01	5/15/96	1049			4.71	146	105.2	1473	0.05	0.7	518	14536	4.81	149.0			0.64	23.8	7.92	14.71	8140	5.36		<1	<1
W8B	-7.01	6/18/96	1022			4.50	139	89.8	1258	0.11	1.5	522	14673	4.59	142.2	92.4	1294	0.47	22.7	7.93	16.24	8987	5.12		<1	<1
W8B	-7.01	7/17/96	1044			4.21	130	87.9	1232	0.10	1.4	512	14386	4.28	132.6	90.9	1273	0.55	22.8	7.91	16.21	8974	5.18		<1	<1
W8B	-7.01	8/6/96	1106			4.40	136	83.7	1172	0.36	5.0	480	13495	4.52	140.0	88.8	1243	0.54	20.4	7.86	17.79	9848	3.91		<1	<1
W8B	-7.01	9/4/96	1047			4.38	136	78.4	1097	0.35	4.9	493	13846	4.41	136.6	81.7	1144	0.57	23.3	7.82	17.85	9880	4.42		1	<1
W8B	-7.01	10/9/96	1142			3.79	117	69.6	975	0.37	5.2	475	13347	3.88	120.2	73.2	1026	0.59	23.2	7.80	18.13	10038	5.10		<1	<1
W8B	-7.01	11/6/96	1041			3.88	120	77.1	1079	0.18	2.5	477	13402	4.03	124.8	82.6	1156	0.43	23.1	7.74	18.03	9980	4.89		<1	<1
W8B	-7.01	12/17/96	1129			4.69	145	240.7	3372	0.14	2.0	469	13169	4.57	141.6	225.9	3164	0.97	23.2	7.94	17.69	9789	3.46		2	<1

NELHA Water Quality Laboratory

Well 8B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	1/14/97	1126			5.53	171	223.9	3136	0.09	1.3	454	12748	5.80	179.6	226.0	3166	0.74	23.3	7.97	16.98	9397	4.01		<1	<1
W8B	-7.01	2/11/97	919			5.64	175	213.2	2986	0.35	4.9	443	12436	5.92	183.4	218.0	3053	0.78	23.0	8.03	17.24	9542	3.96		<1	<1
W8B	-7.01	3/11/97	944			5.59	173	229.5	3215	0.09	1.3	457	12829	5.66	175.3	240.0	3362	0.60	22.9	8.09	16.60	9187	4.21		<1	<1
W8B	-7.01	4/23/97	1043			4.80	149	150.5	2108	0.21	2.9	483	13571	5.66	175.3	193.0	2703	0.64	22.8	7.96	15.40	8525	4.93		<1	<1
W8B	-7.01	5/28/97	958			4.26	132	106.1	1486	0.04	0.6	437	12276	4.85	150.2	112.4	1574	0.66	22.0	7.85	17.85	9881	4.77		<1	<1
W8B	-7.01	6/17/97	1040			4.54	141	103.2	1445	0.21	2.9	438	12304	4.59	142.2	106.4	1490	0.60	22.1	7.84	16.93	9371	4.66		<1	<1
W8B	-7.01	7/15/97	1034			6.69	207	142.9	2002	1.74	24.4	463	12995	6.78	210.0	165.4	2317	0.84	21.9	7.61	16.85	9329	0.93		<1	<1
W8B	-7.01	8/26/97	1101			6.03	187	106.5	1492	0.29	4.1	460	12905	6.05	187.4	116.9	1637	0.54	22.9	7.59	18.93	10478	0.69		<1	<1
W8B	-7.01	9/23/97	857			5.87	182	96.9	1357	0.19	2.7	473	13290	5.89	182.4	106.9	1497	0.57	22.9	7.59	16.88	9344	1.58		<1	<1
W8B	-7.01	10/14/97	1011			5.93	184	105.3	1475	0.15	2.1	506	14206	5.96	184.6	123.2	1726	0.58	23.1	7.60	15.73	8706	2.35		<1	<1
W8B	-7.01	11/4/97	840			6.12	190	115.9	1623	0.05	0.7	462	12978	6.37	197.3	134.7	1887	0.60	22.8	7.69	17.61	9745	2.43		<1	<1
W8B	-7.01	12/16/97	1036			5.05	156	90.5	1268	0.08	1.1	465	13051	5.26	162.9	94.8	1328	0.67	22.8	7.74	18.14	10042	3.87		<1	<1
W8B	-7.01	1/5/98	902			4.86	151	78.4	1099	0.01	0.1	418	11731	4.98	154.2	82.9	1161	0.58	22.5	7.75	19.91	11020	3.39		<1	<1
W8B	-7.01	2/3/98	741			4.46	138	74.9	1049	0.01	0.1	442	12411	4.69	145.3	79.9	1119	0.58	22.0	7.82	19.09	10568	4.08		<1	<1
W8B	-7.01	3/10/98	857			4.37	135	84.8	1188	0.13	1.8	460	12914	4.51	139.7	90.9	1273	0.58	22.1	7.77	18.14	10042	5.03		<1	<1
W8B	-7.01	4/14/98	1016			3.73	116	77.0	1079	0.03	0.4	459	12883	3.94	122.0	79.0	1107	0.54	22.2	7.75	18.97	10499	5.03		<1	<1
W8B	-7.01	5/12/98	901			3.56	110	83.5	1170	0.08	1.1	469	13172	3.66	113.4	86.7	1214	0.51	22.2	7.81	18.33	10148	5.27		<1	<1
W8B	-7.01	6/2/98	902			3.40	105	79.3	1111	0.07	1.0	459	12883	3.51	108.7	83.2	1165	0.44	22.2	7.75	18.74	10375	5.05		<1	<1
W8B	-7.01	7/14/98	854			4.06	126	96.2	1347	0.13	1.8	430	12063	4.28	132.6	99.1	1388	0.55	22.2	7.76	20.59	11398	3.06		<1	<1
W8B	-7.01	8/11/98	918			4.76	147	98.1	1374	0.06	0.8	423	11889	4.91	152.1	108.0	1513	1.12	22.2	7.75	20.83	11532	3.22		<1	<1
W8B	-7.01	9/15/98	906			4.91	152	108.0	1513	0.07	1.0	415	11647	5.01	155.2	118.0	1653	0.80	22.4	7.82	20.81	11521	2.69		<1	<1
W8B	-7.01	10/13/98	812			7.03	218	141.9	1988	10.38	145.4	387	10866	7.30	226.1	160.1	2242	1.43	22.8	8.21	20.87	11550	0.45		<1	<1
W8B	-7.01	11/4/98	904			7.77	241	132.3	1853	0.11	1.5	418	11740	7.88	244.1	150.6	2109	0.89	22.9	8.08	20.47	11332	1.38		<1	<1
W8B	-7.01	12/16/98	855			5.90	183	93.8	1314	0.15	2.1	420	11807	6.14	190.2	99.1	1388	0.77	22.4	7.89	20.05	11099	3.61		<1	2
W8B	-7.01	1/12/99	926			4.95	153	89.5	1254	0.10	1.4	417	11706	5.04	156.1	95.0	1330	0.70	22.2	7.82	20.40	11293	4.31		<1	1
W8B	-7.01	2/3/99	908			4.56	141	96.1	1345	0.17	2.4	408	11462	4.86	150.5	105.9	1483	0.77	22.0	7.81	20.45	11317	4.26		<1	<1
W8B	-7.01	3/2/99	907			4.28	133	84.2	1179	0.04	0.6	425	11934	4.44	137.5	88.5	1240	0.65	21.9	7.80	20.09	11120	5.13		<1	<1
W8B	-7.01	4/6/99	901			5.09	158	95.5	1338	0.01	0.1	392	11004	5.21	161.4	103	1448	0.77	21.7	7.89	21.41	11853	1.97		<1	<1
W8B	-7.01	5/4/99	910			4.80	149	107	1503	0.07	1.0	400	11220	4.87	150.8	111	1558	0.68	21.8	7.77	20.67	11444	2.39		<1	<1
W8B	-7.01	6/2/99	851			4.79	148	83.3	1167	0.14	2.0	393	11038	4.98	154.2	89.7	1256	1.05	21.9	7.81	21.39	11838	3.87		<1	<1
W8B	-7.01	7/7/99	939			6.34	196	108	1511	0.02	0.3	369	10352	6.43	199.2	113	1587	1.23	22.1	7.98	20.52	11357	2.61		<1	<1
W8B	-7.01	8/25/99	902			5.22	162	91.1	1276	0.11	1.5	377	10597	5.42	167.9	102	1427	0.82	22.2	7.95	20.61	11407	4.19		<1	<1
W8B	-7.01	9/8/99	914			5.18	160	90.7	1270	0.17	2.4	390	10951	5.32	164.8	103	1441	0.81	22.2	7.92	20.65	11429	4.00		<1	<1
W8B	-7.01	10/6/99	909			5.10	158	84.7	1186	0.08	1.1	368	10321	5.33	165.1	92.0	1289	0.74	22.3	7.84	20.73	11475	4.12		<1	<1
W8B	-7.01	11/3/99	932			5.45	169	96.3	1349	0.10	1.4	375	10529	5.53	171.3	104	1450	0.74	22.5	7.85	20.61	11407	4.59		<1	<1
W8B	-7.01	12/15/99	952			5.22	162	103	1447	0.02	0.3	362	10175	5.32	164.8	109	1523	0.65	22.3	7.77	22.02	12186	3.99		<1	<1
W8B	-7.01	1/11/00	931			5.44	168	130	1821	0.14	2.0	359	10091	5.41	167.6	134	1877	0.76	22.0	7.76	21.15	11709	3.55		<1	<1
W8B	-7.01	2/14/00	924			5.79	179	111	1555	0.09	1.3	365	10251	5.59	173.1	118	1653	0.76	21.8	7.84	20.10	11126	1.17		<1	<1
W8B	-7.01	3/22/00	943			5.24	162	109	1523	0.12	1.7	370	10380	4.66	144.3	116	1625	0.74	22.1	7.67	20.00	11070	2.69		<1	<1
W8B	-7.01	4/12/00	922			5.05	156	104	1458	0.08	1.1	414	11636	4.77	147.7	110	1539	0.68	22.0	7.65	19.61	10855	3.52		<1	<1
W8B	-7.01	5/17/00	913			4.90	152	102	1431	0.06	0.8	415	11641	4.87	150.8	104	1457	0.81	22.3	7.66	19.87	10997	3.80		<1	<1
W8B	-7.01	6/6/00	930			4.87	151	103	1444	0.04	0.6	409	11490	4.89	151.5	113	1580	0.67	22.4	7.63	20.42	11304	3.24		<1	<1

NELHA Water Quality Laboratory

Well 8B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/31/00	918			4.89	151	103	1447	0.04	0.6	422	11855	4.83	149.6	117	1639	0.64	23.0	7.73	27.90	15445	4.27		<1	1
W8B	-7.01	8/30/00	915			4.69	145	99.3	1391	0.11	1.5	401	11257	4.78	148.1	101	1409	0.63	22.6	7.59	29.21	16170	3.56		<1	<1
W8B	-7.01	9/6/00	905			4.95	153	105	1468	0.11	1.5	395	11094	5.03	155.8	107	1496	0.70	22.7	7.57	29.34	16239	3.38		<1	<1
W8B	-7.01	10/25/00	913			5.45	169	139	1946	0.11	1.5	408	11470	5.61	173.8	150	2107	0.87	23.0	7.76	19.07	10554	3.89		<1	<1
W8B	-7.01	11/14/00	926			5.59	173	166	2318	0.19	2.7	395	11097	5.84	180.9	169	2367	0.93	22.8	7.76	19.19	10623	3.45		1	<1
W8B	-7.01	12/19/00	903			4.86	151	127	1773	0.13	1.8	393	11024	5.08	157.3	133	1859	0.81	22.1	7.79	19.68	10893	3.22		<1	<1
W8B	-7.01	1/24/01	847			4.22	131	91.0	1275	0.13	1.8	403	11327	4.44	137.5	96.3	1349	0.75	21.6	7.70	21.31	11797	3.23		<1	<1
W8B	-7.01	2/7/01	918			4.32	134	87.8	1230	0.12	1.7	425	11948	4.48	138.8	90.4	1266	0.70	21.7	7.77	20.08	11116	3.21		<1	<1
W8B	-7.01	3/12/01	855			4.78	148	83.1	1164	0.13	1.8	422	11863	5.01	155.2	87.2	1221	0.71	21.5	7.63	20.31	11239	2.70		<1	<1
W8B	-7.01	4/18/01	843			4.72	146	101	1420	0.04	0.6	422	11846	4.70	145.6	105	1468	0.66	21.4	7.61	18.91	10464	3.75		<1	<1
W8B	-7.01	5/14/01	1007			5.66	175	109	1531	0.16	2.2	421	11824	5.70	176.6	114	1595	0.77	21.2	7.66	19.10	10572	4.06		<1	<1
W8B	-7.01	6/13/01	901			4.98	154	98.6	1381	0.04	0.6	408	11448	4.62	143.1	103	1448	0.88	21.2	7.70	19.94	11036	4.13		<1	<1
W8B	-7.01	7/24/01	911			4.70	146	120	1683	0.06	0.8	387	10858	4.44	137.5	127	1774	1.10	21.8	7.76	20.12	11134	3.77		<1	<1
W8B	-7.01	8/22/01	919			4.76	147	114	1597	0.02	0.3	359	10088	4.80	148.7	117	1639	0.91	22.2	7.73	20.25	11209	4.07		<1	<1
W8B	-7.01	9/17/01	957			4.18	129	99.7	1396	0.06	0.8	412	11568	4.14	128.2	104	1451	0.70	22.5	7.74	19.35	10713	4.52		<1	<1
W8B	-7.01	10/22/01	952			4.30	133	107	1504	0.18	2.5	385	10810	5.96	184.6	117	1632	0.74	22.2	7.63	20.73	11477	3.43		<1	<1
W8B	-7.01	11/5/01	1021			4.16	129	92.5	1295	0.06	0.8	395	11105	4.33	134.1	109	1526	0.64	22.5	7.60	20.77	11495	3.40		<1	<1
W8B	-7.01	12/12/01	1004			5.24	162	128	1786	0.31	4.3	417	11720	5.50	170.4	148	2077	1.01	22.7	7.69	19.53	10813	3.68		<1	1
W8B	-7.01	1/7/02	943			5.36	166	142	1989	0.12	1.7	396	11111	5.08	157.3	143	2007	0.89	22.4	7.75	20.74	11481	3.21		<1	<1
W8B	-7.01	2/25/02	912			6.72	208	248	3474	8.74	122.4	363	10195	6.74	208.8	284	3981	2.84	21.9	8.22	20.09	11122	0.67		<1	<1
W8B	-7.01	3/18/02	947			7.68	238	140	1954	0.25	3.5	377	10577	7.87	243.8	146	2044	0.95	21.6	8.09	19.58	10839	1.63		<1	<1
W8B	-7.01	4/10/02	948			21.6	669	429	6002	121	1691	287	8046	25.4	786.7	573	8023	8.59	22.2	8.59	19.73	10922	2.92		<1	<1
W8B	-7.01	5/22/02	1005			15.7	487	92.6	1298	14.5	203.5	360	10119	16.3	504.9	110	1541	1.26	22.0	8.22	19.64	10872	0.37		<1	<1
W8B	-7.01	6/19/02	1036			16.3	505	28.3	396	19.0	266.1	360	10100	16.6	515.4	56.2	787	1.73	22.5	8.13	20.68	11449	0.19		<1	<1
W8B	-7.01	7/22/02	1030			13.7	424	42.6	596	13.7	191.6	415	11664	14.7	455.3	60.2	844	1.40	23.2	7.90	19.43	10757	0.16		<1	<1
W8B	-7.01	8/21/02	1108			9.83	304	50.0	700	0.30	4.2	427	11990	10.2	315.3	54.7	766	1.09	22.4	7.67	20.51	11355	0.85		<1	<1
W8B	-7.01	9/25/02	951			11.3	351	63.1	884	0.24	3.4	411	11546	11.6	358.7	67.0	938	1.38	23.9	7.65	21.43	11862	0.33		<1	<1
W8B	-7.01	10/15/02	951			11.8	365	90.1	1262	0.15	2.1	376	10560	12.4	382.5	96.0	1345	1.64	23.8	7.83	21.07	11661	0.41		1	<1
W8B	-7.01	11/17/02	941			11.8	365	96.9	1357	0.09	1.3	357	10027	12.2	378.5	101	1408	1.90	23.9	7.91	20.92	11579	0.55		<1	<1
W8B	-7.01	12/18/02	955			8.68	269	110	1544	0.09	1.3	349	9791	8.81	272.9	102	1422	1.03	23.5	7.79	21.31	11796	0.86		<1	<1
W8B	-7.01	1/23/03	944			9.82	304	123	1716	0.11	1.5	329	9243	9.88	306.0	138	1933	1.37	22.7	7.80	23.41	12960	2.14		<1	<1
W8B	-7.01	2/11/03	958			9.70	300	174	2443	1.14	16.0	345	9689	9.70	300.4	213	2989	1.44	22.4	7.83	21.93	12140	0.89		<1	<1
W8B	-7.01	3/20/03	1110			10.4	323	254	3556	0.13	1.8	368	10335	10.4	323.1	270	3786	1.28	22.3	7.99	20.40	11292	1.57		<1	<1
W8B	-7.01	4/30/03	933			10.5	325	163	2279	0.12	1.7	380	10672	10.6	328.3	248	3474	1.56	22.4	7.95	19.55	10824	1.67		<1	1
W8B	-7.01	5/14/03	845			12.7	392	115.2	1614	0.57	8.0	390	10951	12.8	395.8	120	1675	1.54	22.7	7.95	19.79	10954	1.28		<1	<1
W8B	-7.01	6/4/03	922			17.9	554	59.5	833	27.6	386.0	362	10164	17.8	550.1	104	1452	2.44	22.9	8.14	20.66	11438	0.17		<1	<1
W8B	-7.01	7/30/03	909			33.7	1045	22.4	314	216	3023	315	8836	36.3	1124.0	352	4932		23.0	8.46	18.75	10380	0.27		<1	<1
W8B	-7.01	8/28/03	855			28.7	889	36.4	509	116	1622	320	8996	26.9	833.2	162	2269		24.2	8.17	19.95	11043	0.45		<1	<1
W8B	-7.01	9/16/03	852			24.3	753	21.4	300	3.45	48.3	316	8875	24.1	746.8	150	2101		23.6	8.07	21.41	11848	0.19		<1	<1
W8B	-7.01	10/8/03	852			24.9	771	54.6	765	54.0	756.4	341	9583	25.3	783.6	149	2087		23.5	8.07	19.83	10976			<1	<1
W8B	-7.01	11/5/03	859			22.4	694	70.9	993	43.6	610.7	364	10215	22.6	700.0	154	NA		23.1	8.03	19.47	10775			<1	<1
W8B	-7.01	11/14/03	928																23.3				0.19			
W8B	-7.01	12/17/03	935			21.0	651	92.0	1288	33.0	462.2	341	9569	22.0	682.7	135	1891		22.9	8.02	20.53	11363	0.17		<1	<1

NELHA Water Quality Laboratory

Well 8B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	1/28/04	939			18.0	556	150	2097	1.20	16.8	333	9361	20.7	640.5	177	2476	1.64	22.6	7.99	20.40	11290	0.04		<1	<1
W8B	-7.01	2/11/04	851			17.4	540	181	2536	0.40	5.6	325	9114	17.7	548.2	222	3104	1.77	22.5	8.02	20.51	11351	0.26		<1	<1
W8B	-7.01	3/16/04	941			21.9	677	141	1969	0.21	2.9	336	9434	23.3	721.7	160	2238		22.4	8.13	18.31	10132	0.07		<1	<1
W8B	-7.01	4/22/04	925			16.6	513	180	2521	0.17	2.4	346	9720	19.6	607.1	211	2961		22.3	8.07	18.54	10262	0.64		<1	<1
W8B	-7.01	5/18/04	905			14.7	455	142	1988	0.16	2.2	368	10347	14.7	456.6	147	2062		22.3	8.01	17.03	9427	2.96		<1	<1
W8B	-7.01	6/8/04	907			15.6	484	109	1524	0.08	1.1	358	10055	16.3	504.9	116	1630		22.4	7.86	18.66	10329	0.75		<1	<1
W8B	-7.01	7/19/04	1001			16.2	503	105	1464	0.13	1.8	377	10595	16.2	503.0	114	1593		22.3	7.81	17.82	9864	0.98		<1	<1
W8B	-7.01	8/25/04	937			15.7	485	91.2	1277	0.19	2.7	384	10779	16.0	495.9	106	1479		22.2	7.77	18.90	10462	0.30		<1	<1
W8B	-7.01	9/27/04	1056			23.7	734	25.7	361	24	331.1	456	12799	23.8	737.2	58.4	817		22.9	7.70	17.68	9786	0.16		<1	<1
W8B	-7.01	10/4/04	1015			21.1	654	14.2	199	20	283.9	403	11304	21.8	675.2	48.5	679		23.0	7.67	19.31	10689	0.19		<1	<1
W8B	-7.01	11/23/04	1009			15.9	492	25.5	357	14.2	198.3	454	12740	16.3	505.5	52.5	735		23.0	7.43	17.97	9947	0.39		<1	<1
W8B	-7.01	12/8/04	1007			16.2	501	16.8	236	16.7	233.5	442	12414	16.6	515.4	43.8	613		23.2	7.61	18.24	10096	0.19		<1	<1
W8B	-7.01	1/18/05	1014			14.0	435	58.7	822	0.24	3.4	396	11127	14.9	462.7	69.1	968		22.6	7.80	18.86	10438	0.67		<1	<1
W8B	-7.01	2/10/05	1001			18.2	563	179	2513	65.1	911.8	238	6676	18.8	583.5	260	3643		21.9	8.68	18.40	10183	1.24		<1	<1
W8B	-7.01	3/22/05	1007			12.3	382	151	2112	30.3	424.3	222	6235	13.0	402.7	185	2591	3.19	23.0	8.56	18.44	10205	0.70		<1	<1
W8B	-7.01	4/20/05	1000			13.8	427	89.8	1257	1.34	18.8	258	7246	14.3	442.9	93.0	1302		23.0	8.40	19.04	10540	0.20		<1	<1
W8B	-7.01	5/25/05	1023			13.7	425	95.8	1342	0.13	1.8	338	9493	14.1	435.5	110	1546		20.9	8.32	17.79	9847	1.49		<1	4
W8B	-7.01	6/14/05	1016			13.8	426	76.6	1072	0.16	2.2	294	8243	13.9	429.3	83.0	1162		22.4	8.28	19.66	10880	0.44		<1	<1
W8B	-7.01	7/19/05	1005			19.1	592	83.2	1165	0.19	2.7	332	9324	19.6	608.3	87.9	1231	1.21	23.9	8.16	18.09	10015	0.28		<1	<1
W8B	-7.01	8/3/05	1043			24.0	743	41.4	580	0.65	9.1	312	8749	25.4	786.7	49.1	688	1.71	23.3	8.22	18.42	10194	0.39		<1	<1
W8B	-7.01	9/22/05	959			15.2	470	74.4	1042	0.24	3.4	317	8897	15.6	482.6	79.6	1115	0.84	24.0	8.10	20.90	11567	0.31		<1	<1
W8B	-7.01	10/19/05	1008			13.4	415	115	1607	0.21	2.9	328	9218	13.9	430.5	120	1684		24.1	8.08	20.01	11076	0.49		<1	1
W8B	-7.01	11/8/05	953			11.5	356	89.6	1255	0.05	0.7	317	8892	17.8	551.3	97.3	1363		23.4	8.00	21.50	11902	0.60		<1	1
W8B	-7.01	12/22/05	924			10.0	311	62.4	874	0.23	3.2	324	9111	10.2	316.6	68.5	959		22.4	8.01	21.88	12113	0.59		<1	<1
W8B	-7.01	1/31/06	952			9.62	298	75.2	1053	0.26	3.6	360	10097	9.86	305.4	78.2	1095		22.3	8.01	20.41	11296	1.49		<1	<1
W8B	-7.01	2/16/06	953			9.24	286	69.5	973	0.12	1.7	352	9895	9.64	298.6	69.6	975	0.72	22.1	8.03	21.11	11684	1.19		<1	<1
W8B	-7.01	3/22/06	952			8.75	271	72.4	1014	0.19	2.7	366	10279	8.95	277.2	79.1	1108	0.62	21.7	7.98	19.89	11007	0.77		<1	<1
W8B	-7.01	4/27/06	1030			10.9	338	104	1457	0.05	0.7	379	10644	11.0	340.7	93.4	1308	0.78	22.0	7.92	18.98	10503	2.25		<1	<1
W8B	-7.01	5/24/06	1055			10.2	316	76.0	1065	0.05	0.7	380	10672	10.5	325.2	68.6	961	0.70	22.0	7.89	20.11	11131	1.68		<1	6
W8B	-7.01	6/28/06	1042			8.50	263	71.9	1007	0.19	2.7	374	10504	8.78	271.9	65.5	917	0.60	22.2	7.86	20.69	11451	1.81		<1	<1
W8B	-7.01	7/19/06	1014			8.92	276	72.2	1011	0.21	2.9	354	9942	9.20	285.0	63.4	888	0.68	22.1	7.79	21.68	12001	0.96		<1	<1
W8B	-7.01	8/9/06	956			8.04	249	66.7	934	0.10	1.4	383	10757	8.36	258.9	61.9	866	0.58	22.3	7.82	20.66	11438	1.75		<1	<1
W8B	-7.01	9/20/06	1005			8.45	262	66.2	927	0.18	2.5	388	10897	8.93	276.6	60.9	852	0.66	22.2	7.79	21.02	11633	0.60		<1	<1
W8B	-7.01	10/25/06	1043			7.45	231	72.2	1011	0.19	2.7	386	10841	7.71	238.8	72.6	1017	0.72	22.5	7.78	20.56	11383	0.93		<1	<1
W8B	-7.01	11/29/06	1010			7.92	245	66.8	936	0.24	3.4	360	10111	8.37	259.3	57.0	798	0.74	22.0	7.79	21.39	11840	0.65		<1	<1
W8B	-7.01	12/13/06	1003			7.32	227	53.8	754	0.22	3.1	342	9605	7.64	236.6	52.4	733	0.63	21.9	7.78	21.66	11991	0.62		<1	<1
W8B	-7.01	1/10/07	1005			8.00	248	56.3	789	0.32	4.5	357	10027	8.22	254.6	57.9	810	0.65	21.4	7.75	21.31	11793	1.06		<1	<1
W8B	-7.01	2/21/07	1026			7.76	240	56.5	791	0.52	7.3	376	10560	8.08	250.3	63.5	889	0.66	21.2	7.75	20.73	11477	1.27		<1	<1
W8B	-7.01	3/7/07	1018			7.30	226	54.1	758	0.15	2.1	369	10364	7.54	233.5	54.5	763	0.66	21.3	7.70	21.21	11742	1.06		<1	<1
W8B	-7.01	4/19/07	1001			6.80	211	68.3	957	0.18	2.5	379	10644	7.18	222.4	58.9	824	0.58	21.8	7.77	20.77	11497	1.67		<1	<1
W8B	-7.01	5/2/07	1013			6.70	208	57.3	803	0.35	4.9	382	10729	7.16	221.8	53.9	754	0.57	21.7	7.77	20.84	11534	1.04		<1	<1
W8B	-7.01	6/20/07	1013			5.79	179	48.3	677	0.19	2.7	368	10335	5.91	183.1	n/a	n/a		22.0	7.77	21.38	11833	1.51		<1	<1

NELHA Water Quality Laboratory

Well 8B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/25/07	1104	-4.11	0.46	Flood	9.02	279	68.8	964	0.04	0.5	480	13477	8.66	268.2	69.1	968		21.8	7.54	20.60	11403	0.72			
W8B	-7.01	8/27/07	1039		0.06	Flood	4.35	135	20.8	292	14.71	206.0	108	3037	7.89	244.5	80.2	1123		22.1	7.65	19.63	10866	2.02			
W8B	-7.01	9/13/07	1505	-4.17	0.40	Flood	7.24	224	73.1	1023	0.37	5.3	425	11931	7.43	230.1	76.0	1064		22.1	7.67	20.91	11574	2.22			
W8B	-7.01	10/23/07	951	-4.17	0.24	Flood	6.39	198	83.4	1168	0.04	0.5	395	11106	5.08	157.5	50.5	707		22.1	7.64	19.75	10932	2.50			
W8B	-7.01	11/20/07	1037	-3.89	0.40	Flood	6.05	187	77.2	1081	0.04	0.5	426	11977	5.54	171.7	84.6	1185		21.7	7.62	19.99	11065	2.39			
W8B	-7.01	12/19/07	1008	-2.44	0.30	High	10.97	340	79.3	1111	1.88	26.3	330	9264						21.6	8.02	17.94	9930	0.33			
W8B	-7.01	1/28/08	1400	-4.47	0.06	Flood	10.04	311	110.6	1549	1.03	14.4	345	9677						21.3	7.81	18.80	10406	2.19			
W8B	-7.01	2/26/08	851	-4.34	0.18	Ebb	9.53	295	87.2	1221	0.65	9.1	379	10637						20.9	7.71	19.41	10744	2.07			
W8B	-7.01	3/17/08	1049	-3.84	0.06	Flood	8.48	263	83.4	1168	0.06	0.8	361	10131						21.1	7.70	19.55	10821	2.39			
W8B	-7.01	4/30/08	1044	-4.17	0.21	Flood	8.30	257	81.8	1146	0.09	1.2	353	9919						21.3	7.54	20.40	11292	2.83			
W8B	-7.01	5/27/08	1021	-4.22	0.24	High	7.96	247	86.6	1213	0.09	1.2	414	11636						20.9	7.64	19.83	10976	7.76			
W8B	-7.01	6/16/08	1054	-4.27	0.24	Flood	8.54	265	78.7	1103	0.28	3.9	410	11519						21.2	7.64	19.49	10788	5.22			
W8B	-7.01	7/21/08	945	-4.34	0.12	Ebb	7.77	241	87.5	1226	0.56	7.9	352	9878						22.0	7.64	20.85	11541	3.53	0.10		
W8B	-7.01	8/30/08	1341		0.46	Flood	9.83	305	87.4	1225	0.44	6.1	379	10656						20.7	7.67	20.83	11530	3.51			
W8B	-7.01	9/15/08	1053	-4.42	0.09	Low	10.79	334	123.8	1734	0.20	2.8	376	10549						22.3	7.58	19.94	11037	3.07	0.12		
W8B	-7.01	10/31/08	1104	-4.25	0.30	Ebb	6.09	189	1.2	17	0.22	3.1	374	10500						22.6	7.56	20.09	11120	3.52			
W8B	-7.01	11/14/08	1003	-4.17	0.15	Ebb	8.00	248	140.6	1969	0.18	2.5	338	9483						22.3	7.54	20.06	11104	4.13	0.32		
W8B	-7.01	12/15/08	1320	-4.40	0.03	Low	8.57	265	136.0	1905	0.11	1.5	377	10575						22.2	7.93	18.75	10379	4.44			
W8B	-7.01	1/27/09	824	-4.09	0.30	Ebb	7.36	228	193.1	2704	0.73	10.2	341	9590						21.9	7.65	20.48	11336	2.31	0.19		
W8B	-7.01	2/24/09	1302	-4.37	0.15	Flood	6.93	215	151.1	2117	0.69	9.7	386	10844						22.0	7.65	19.91	11021	2.48	0.25		
W8B	-7.01	3/16/09	1311	-4.51	0.03	Low	5.24	162	51.7	725	0.13	1.8	259	7266						23.9	7.50	18.64	10318	2.94	0.58		
W8B	-7.01	4/22/09	1145	-4.35	0.18	Flood	9.63	298	125.9	1763	0.41	5.8	389	10931						22.9	7.78	19.87	10999	1.59	0.96		
W8B	-7.01	5/27/09	1104	-4.29	0.00	Low	8.60	266	127.3	1784	0.27	3.8	532	14928						21.1	7.66	19.89	11010	3.13	0.23		
W8B	-7.01	6/19/09	1427	-3.81	0.73	High	8.38	260	98.7	1382	0.54	7.6	192	5399						21.3	7.56	21.85	12095	2.42	0.05		
W8B	-7.01	7/31/09	1237	-3.26	0.67	High	4.81	149	61.8	866	0.35	4.9	204	5717						22.5	7.57	22.23	12305	2.51	0.19		
W8B	-7.01	8/20/09	1308	-4.02	0.46	Flood	5.96	185	93.0	1303	0.59	8.3	310	8717						21.6	8.29	21.85	12095	2.64	0.26		
W8B	-7.01	9/24/09	1449	-4.24	0.21	Ebb	5.99	185	92.5	1296	0.59	8.3	195	5482						21.7	8.39	20.61	11408	2.87	0.12		
W8B	-7.01	10/23/09	1040	-4.13	0.43	Ebb	6.17	191	72.9	1021	0.46	6.5	150	4202						21.9	7.66	21.17	11718	2.37	0.12		
W8B	-7.01	11/17/09	1605	-4.34	0.37	High	7.00	217	71.5	1002	0.94	13.2	397	11150						21.6	7.56	20.57	11386	2.55	0.09		
W8B	-7.01	12/8/09	1050	-4.06	0.52	Ebb	5.84	181	88.8	1244	0.91	12.7	415	11647						21.5	7.56	21.17	11718	2.83	0.03		
W8B	-7.01	1/6/10	1036	-4.12	0.30	Ebb	5.97	185	133.9	1876	1.64	23.0	370	10381						22.1	7.79	21.23	11751	1.97	0.22		
W8B	-7.01	2/2/10	1000	-4.18	0.15	Ebb	7.07	219	149.3	2091	0.57	8.0	324	9087						21.9	7.81	21.49	11895	2.95	0.13		
W8B	-7.01	3/10/10	940	-4.46	0.09	Flood	9.94	308	124.7	1746	0.36	5.0	407	11437						21.7	8.03	19.11	10578	2.51	0.22		
W8B	-7.01	4/7/10	924	-4.39	0.12	Flood	10.62	329	123.7	1732	0.07	1.0	387	10856						21.3	7.89	19.11	10578	2.27	0.10		
W8B	-7.01	5/12/10	917	-4.53	-0.03	Flood	10.62	329	118.4	1658	2.07	29.0	302	8475						21.4	7.75	17.74	9820	2.67	0.03		
W8B	-7.01	6/16/10	1503	-4.33	0.24	Flood	9.33	289	107.2	1502	0.43	6.0	446	12522						21.4	7.85	19.61	10855	2.94	0.26		
W8B	-7.01	7/13/10	1543	-4.03	0.49	Flood	9.04	280	85.5	1197	0.79	11.0	419	11756						21.3	7.76	21.10	11679	2.26	0.09		
W8B	-7.01	8/3/10	1551	-4.18	0.34	Ebb	9.65	299	86.3	1209	0.44	6.1	434	12185						21.5	7.74	21.25	11762	1.75	0.13		
W8B	-7.01	9/14/10	1555	-4.18	0.21	Ebb	11.82	366	93.5	1310	0.33	4.6	462	12983						21.3	7.65	20.36	11270	1.61	0.11		
W8B	-7.01	10/12/10	1621	-4.22	0.18	Low	11.69	362	84.6	1185	0.44	6.1	458	12855						21.2	7.65	20.47	11331	1.72	0.05		
W8B	-7.01	11/16/10	1500	-4.12	0.30	Ebb	9.78	303	88.5	1240	0.30	4.2	430	12084						21.2	7.61	21.46	11879	1.62	0.11		
W8B	-7.01	12/14/10	1526	-4.28	0.12	Ebb	8.91	276	98.6	1381	0.28	3.9	451	12654						21.3	7.65	19.88	11004	2.18	0.12		
W8B	-7.01	1/4/11	1510	-4.28	0.15	Flood	8.07	250	105.3	1475	0.27	3.8	424	11914						21.3	7.59	19.99	11065	2.69	0.10		
W8B	-7.01	4/5/11	1525	-4.12	0.37	Flood	8.30	257	133.8	1874	0.22	3.1	358	10053						21.0	7.62	20.47	11331	1.69	0.09		

NELHA Water Quality Laboratory

Well 8B Data Table

5/20/1992 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/12/11	1449	-3.85	0.73	High	7.97	247	116.7	1634	0.20	2.8	398	11185						21.3	7.70	20.39	11286	1.67	0.37		
W8B	-7.01	10/11/11	1434	-4.06	0.34	Flood	12.33	382	69.3	971	0.09	1.2	340	9549						21.8	8.01	20.41	11297	0.06	0.02		
W8B	-7.01	1/10/12	1547	-4.31	0.18	Flood	12.75	395	84.0	1177	0.51	7.1	380	10672						21.8	8.01	18.53	10257	2.11	0.11		
W8B	-7.01	4/30/12	1550	-4.16	0.21	Ebb	22.37	693	27.6	386	40.41	566.0	373	10485						21.6	8.16	20.83	11530	0.08	0.07		
W8B	-7.01	5/8/12	1348	-4.47	0.40	Flood	20.89	647	68.0	953	19.48	272.8	379	10651						21.9	8.10	19.78	10949	0.03	0.11		
W8B	-7.01	5/14/12	1350	-4.04	0.43	Ebb	24.99	774	33.9	475	35.70	500.0	344	9673						21.9	8.18	21.28	11779	0.08	0.10		
W8B	-7.01	7/17/12	1400	-3.82	0.70	Flood	16.11	499	35.4	496	8.81	123.4	336	9429						21.8	7.99	22.01	12183	1.80	0.12		
W8B	-7.01	10/15/12	1413	-4.17	0.30	Flood	9.94	308	65.7	920	0.46	6.4	388	10905						22.1	7.90	20.59	11397	1.02	0.02		
W8B	-7.01	1/7/13	1502	-4.31	0.12	Ebb	11.11	344	304.1	4260	0.48	6.7	409	11496						21.8	8.13	19.44	10761	1.50	0.03		
W8B	-7.01	1/14/13	949	-4.03	0.24	Ebb	11.11	344	249.4	3494	0.93	13.0	376	10568						21.9	8.11	19.39	10733	2.21	0.47		
W8B	-7.01	1/29/13	1442	-4.31	0.09	Flood	12.04	373	296.8	4158	1.26	17.7	364	10220						21.9	8.11	19.39	10733	2.21	0.47		
W8B	-7.01	3/20/13	1143	-4.31	0.18	High	8.75	271	116.2	1627	1.93	27.0	354	9946						22.0	7.98	19.88	11004	5.24	0.09		
W8B	-7.01	4/8/13	1513	-4.04	0.49	Flood	9.10	282	143.9	2015	0.44	6.2	363	10196						21.9	7.94	20.25	11209	1.34	0.12		
W8B	-7.01	7/16/13	1658	-4.24	0.24	Ebb	8.43	261	97.5	1365	0.26	3.6	366	10271						22.2	7.87	20.43	11309	1.64	0.08		
W8B	-7.01	10/14/13	1736	-4.27	0.12	Ebb	8.62	267	108.2	1515	0.77	10.8	368	10339						20.2	7.76	20.42	11303	1.69	0.44		
W8B	-7.01	1/14/14	1540	-4.19	0.18	High	9.72	301	128.2	1795	1.32	18.5	358	10057						22.4	7.73	19.22	10639	1.23	0.04		
W8B	-7.01	4/28/14	1512	-3.97	0.55	Flood	9.65	299	183.1	2565	0.76	10.7	317	8908						22.5	7.86	20.55	11375	1.21	0.06		
W8B	-7.01	7/28/14	1630	-3.93	0.55	Flood	9.49	294	68.5	959	0.64	8.9	316	8882						23.3	7.59	21.70	12012	0.63	0.21		
W8B	-7.01	11/3/14	1357	-3.87	0.46	Flood	8.94	277	84.3	1181	0.18	2.5	320	8978						22.9	7.61	21.13	11696	0.47	0.14		
W8B	-7.01	2/10/15	1622	-4.31	0.31	High	8.20	254	104.8	1468	0.96	13.5	371	10417						22.3	7.69	20.73	11475	0.64	0.31		
W8B	-7.01	5/20/15	930	-4.36	0.00	Ebb	7.52	233	142.4	1995	1.78	25.0	311	8727						22.3	7.88	20.42	11303	2.11	0.12		
W8B	-7.01	7/22/15	1029	-4.53	0.31	Ebb	7.27	225	103.5	1449	0.48	6.7	334	9376						23.0	7.80	21.14	11702	2.68	0.04		
W8B	-7.01	11/9/15	1353	-3.99	0.48	High	7.45	231	141.7	1985	0.74	10.4	305	8564						23.9	7.79	21.03	11641	1.60	0.18		
W8B	-7.01	1/27/16	1351	-4.45	0.10	Flood	7.10	220	98.1	1374	0.11	1.5	329	9235						22.8	7.70	20.88	11558	1.54	0.10		
W8B	-7.01	4/22/16	1116	-4.40	0.05	Flood	8.66	268	50.8	712	4.41	61.7	293	8231						23.6	7.58	21.05	11652	1.40	0.15		
W8B	-7.01	7/26/16	1325	-4.10	0.55	High	6.97	216	108.3	1516	0.34	4.8	312	8775						22.4	7.95	20.07	11109	3.18	0.03		
W8B	-7.01	11/15/16	934	-4.16	0.10	Low	6.94	215	125.6	1760	0.28	3.9	280	7855						23.7	7.44	20.94	11591	2.16	0.02		
W8B	-7.01	3/22/17	930	-4.23	0.20	Flood	8.90	276	182.9	2562	0.26	3.6	275	7730						23.2	7.87	21.42	11857	1.25	0.08		
W8B	-7.01	4/19/17	905	-4.23	0.18	Flood	10.21	316	156.1	2187	0.39	5.4	297	8355						22.8	7.92	20.38	11281	0.81	0.10		
W8B	-7.01	8/9/17	1426	-4.05	0.50	Flood	7.66	237	116.6	1634	0.10	1.4	321	9012						22.7	7.84	22.20	12288	2.69	0.08		
W8B	-7.01	10/18/17	1059	-4.25	0.20	Flood	8.31	257	145.1	2032	1.43	20.0	285	8005						23.8	7.63	21.51	11906	2.37	0.09		
W8B	-7.01	1/18/18	1158	-4.33	0.10	Low	7.54	233	130.3	1826	0.23	3.2	310	8694						22.8	7.56	21.60	11956	2.00	0.11		
W8B	-7.01	5/10/18	1533	-4.08	0.25	Ebb	11.81	366	48.0	672	65.25	914.0	205	5760						22.3	8.31	22.29	12338	0.24	0.21		
W8B	-7.01	8/30/18	1139	-4.19	0.18	Ebb	15.04	466	126.7	1775	0.43	6.0	279	7842						23.5	7.94	21.29	11785	0.79	0.52		
W8B	-7.01	10/24/18	1433	-4.02	0.53	High	11.74	364	131.5	1841	0.13	1.8	267	7497						23.8	7.88	20.92	11580	0.43	0.08		
W8B	-7.01	2/8/19	1102	-4.33	0.03	Ebb	9.46	293	142.9	2002	0.19	2.7	289	8129						22.7	7.65	21.43	11862	1.57	0.09		
W8B	-7.01	5/15/19	1505	-3.95	0.52	High	8.77	272	156.0	2184	0.04	0.6	331	9293						22.5	7.61	21.37	11829	1.50	0.04		
W8B	-7.01	8/28/19	1042	-4.23	0.30	Flood	8.28	257	134.3	1882	0.17	2.4	284	7976						22.5	7.59	22.06	12211	1.29	0.13		
W8B	-7.01	10/11/19	1130	-4.11	0.40	Flood	7.94	246	114.2	1599	0.44	6.1	284	7984						24.9	7.60	21.94	12144	1.20	0.16		
W8B	-7.01	2/4/20	1153	-4.25	0.26	High	8.10	251	130.4	1827	-0.56	-7.9	315	8843						23.8	7.50	21.55	11928	1.74	0.10		
W8B	-7.01	6/3/20	1226	-3.86	0.45	Flood	6.09	189	111.2	1557	-0.16	-2.2	305	8574						23.9	7.38	22.26	12321	0.46	0.21		
W8B	-7.01	7/1/20																									
W8B	-7.01	10/1/20																									
W8B	-7.01	1/1/21																									
W8B	-7.01	4/1/21																									

NELHA Water Quality Laboratory

Well 8B Data Table

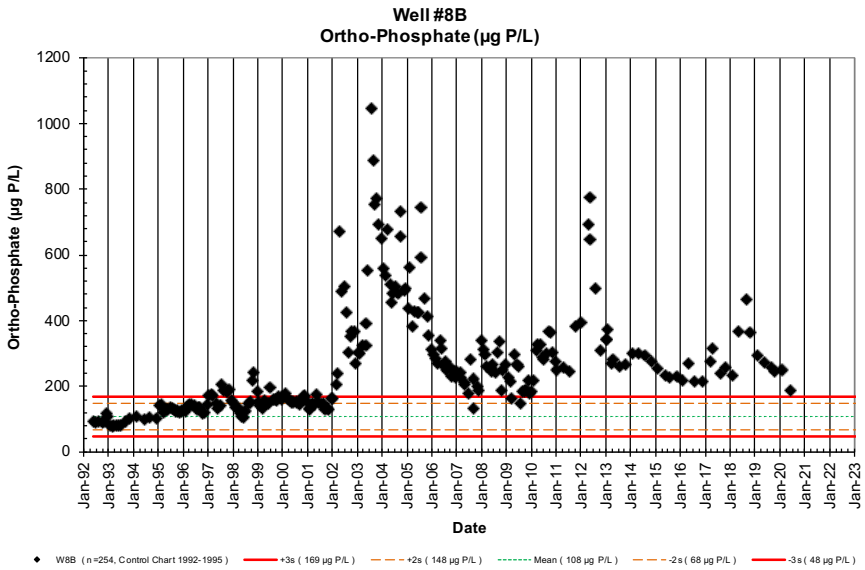
5/20/1992 - 7/21/20

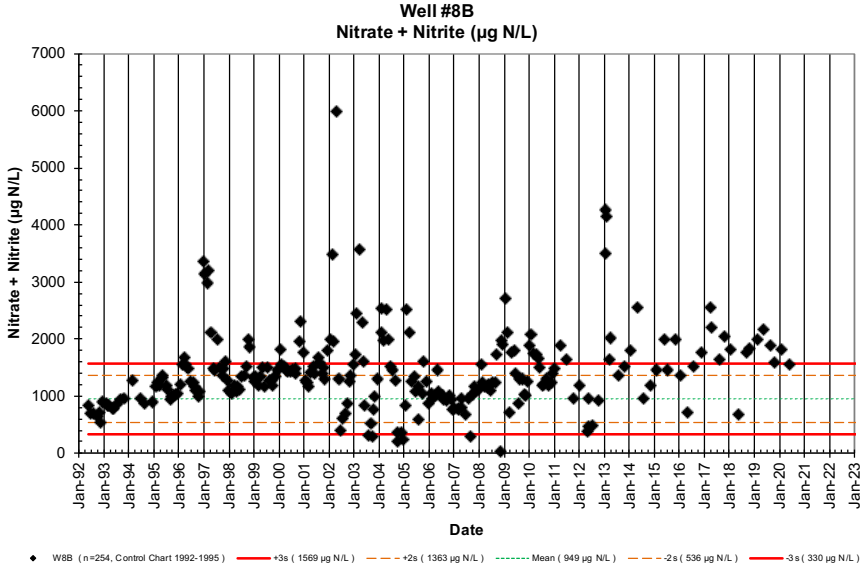
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/1/21																									
W8B	-7.01	10/1/21																									
W8B	-7.01	1/1/22																									
W8B	-7.01	4/1/22																									
W8B	-7.01	7/1/22																									
W8B	-7.01	10/1/22																									
W8B	-7.01	1/1/23																									
W8B	-7.01	4/1/23																									
Mean					0.28		8.49	263	100.10	1402	4.36	61.1	393	11033	8.36	258.9	108.9	1521	0.87	22.2	7.83	19.66	10879	2.64	0.16		
Std. Dev.					0.18		5.23	162	49.71	696	19.05	266.9	78	2200	6.14	190.1	61.7	866	0.78	0.9	0.21	2.12	1177	1.79	0.16		
Maximum					0.73		33.73	1045	428.50	6002	215.80	3022.6	602	16907	36.29	1124.0	572.8	8023	8.59	24.9	8.68	29.34	16239	7.76	0.96		
Minimum					-0.03		2.51	78	1.21	17	-0.56	-7.9	108	3037	2.60	80.5	41.0	575	0.33	16.6	7.38	13.20	7304	0.03	0.02		
n					85		254	254	254	254	254	254	254	254	174	174	172	171	144	256	255	255	254	254	70		

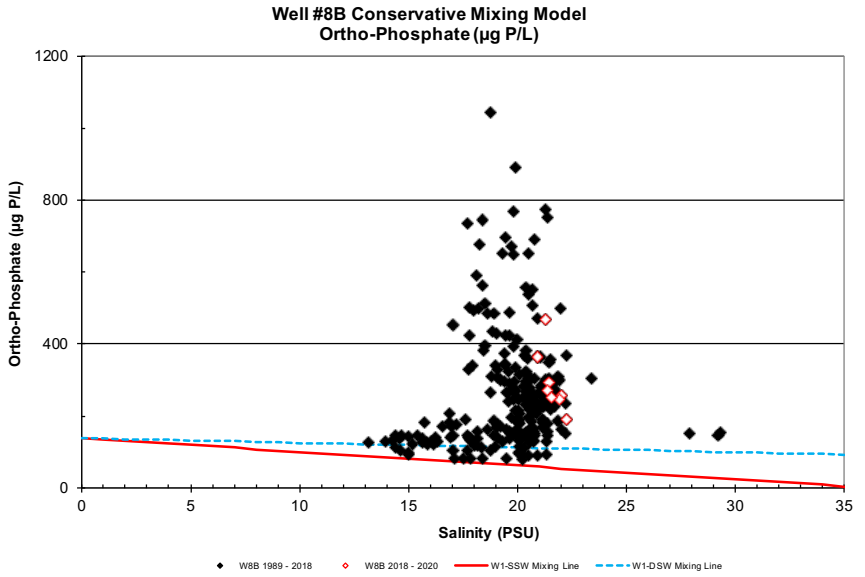
NELHA Water Quality Laboratory

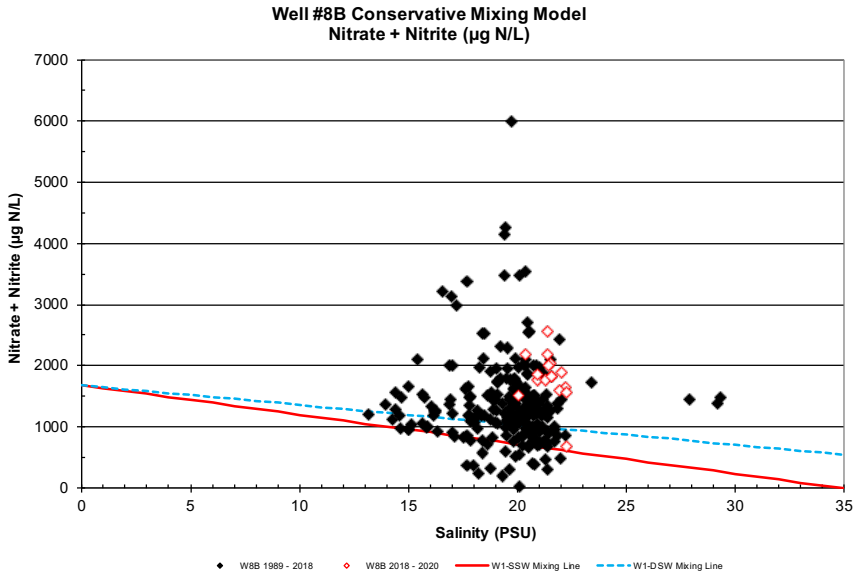
Well 8B Charts

5/20/1992 - 7/21/20





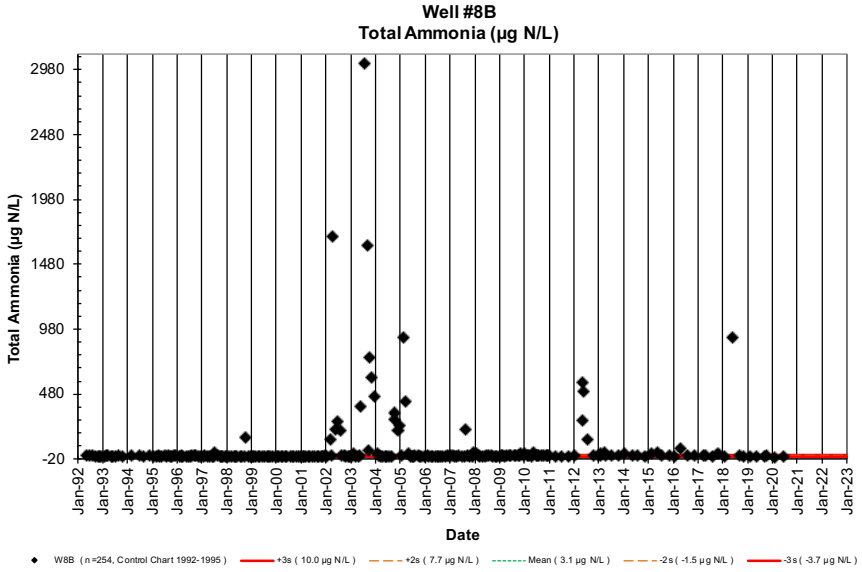


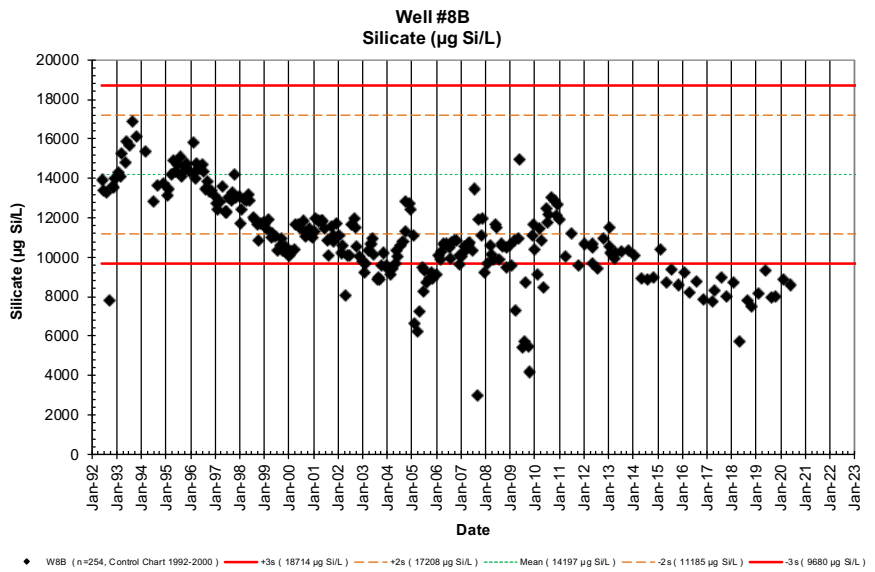


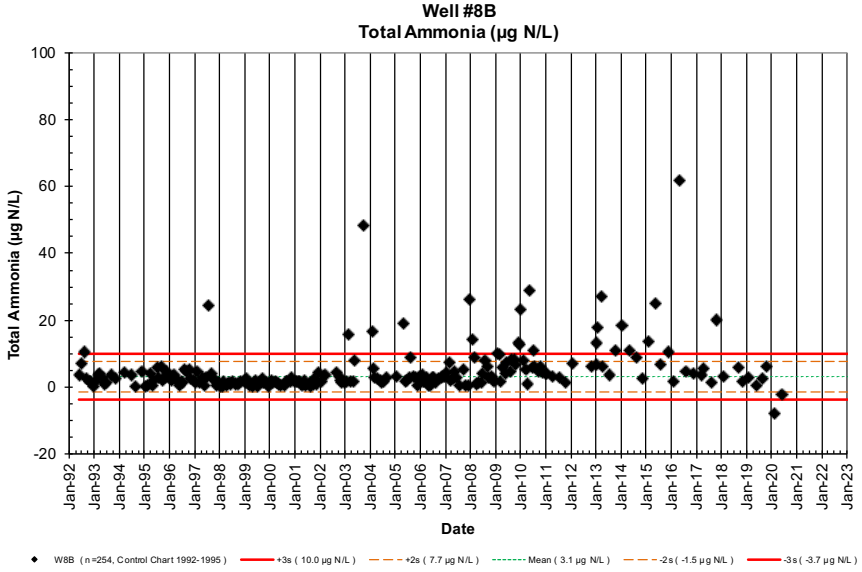
NELHA Water Quality Laboratory

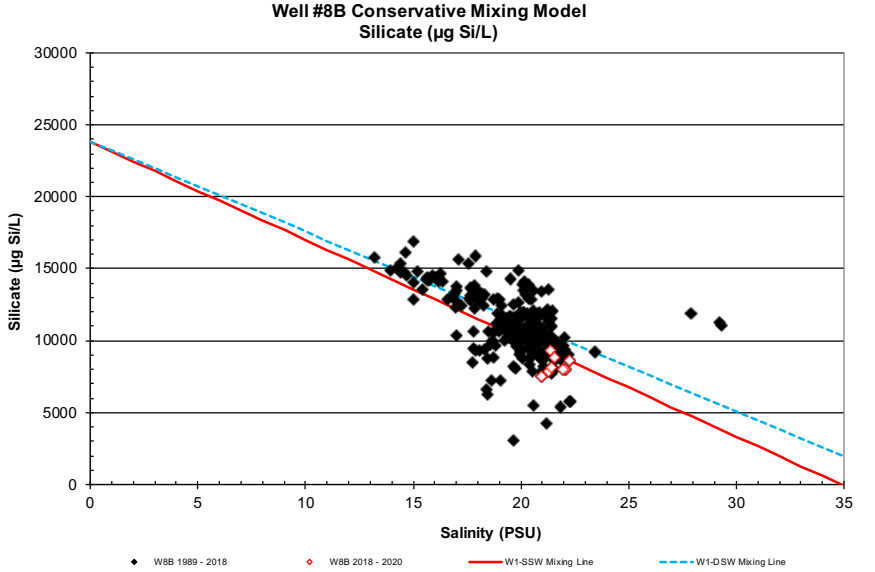
Well 8B Charts

5/20/1992 - 7/21/20





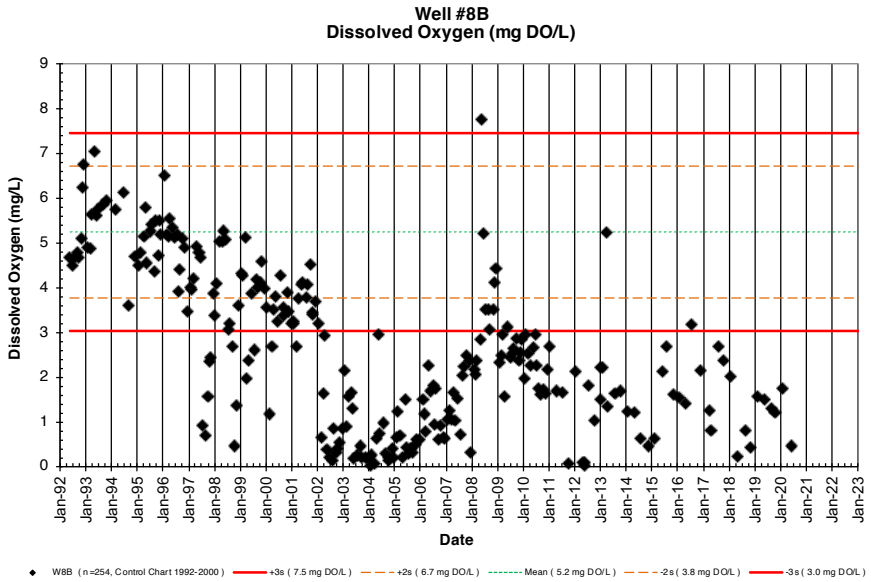


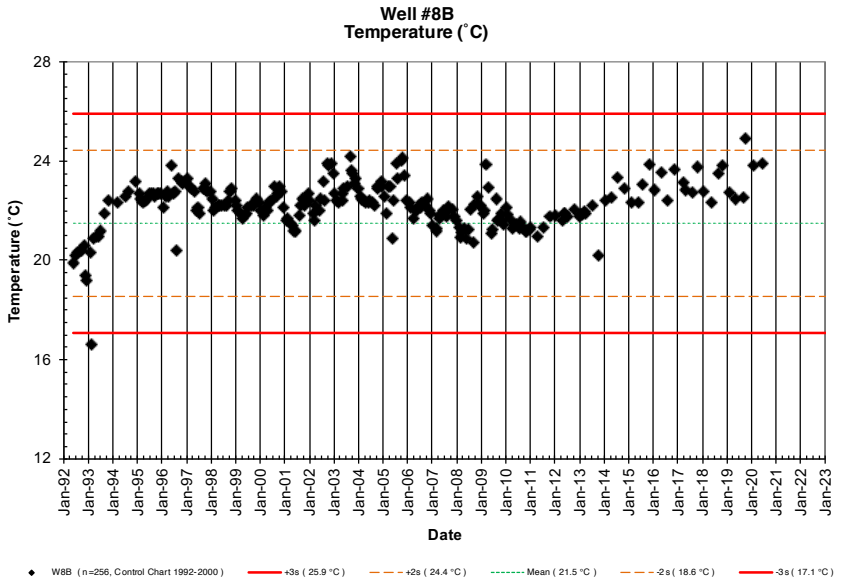


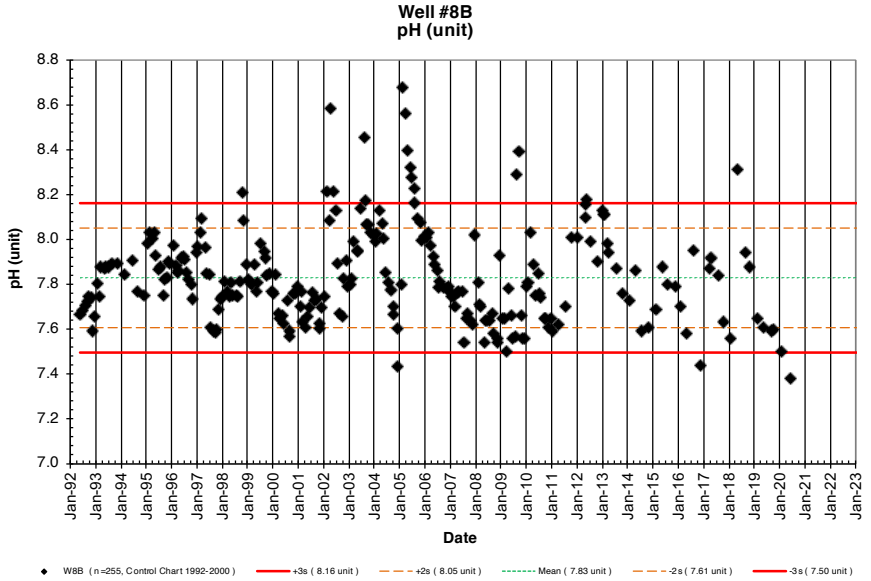
NELHA Water Quality Laboratory

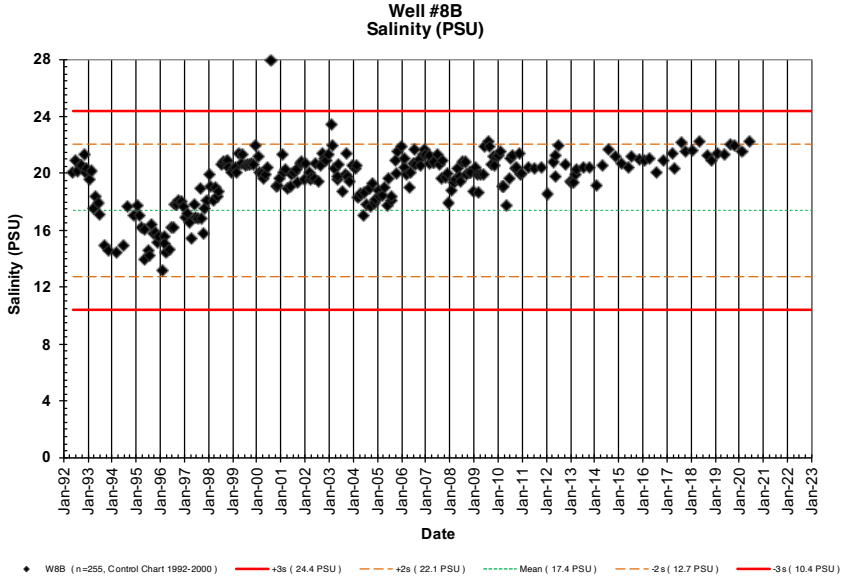
Well 8B Charts

5/20/1992 - 7/21/20





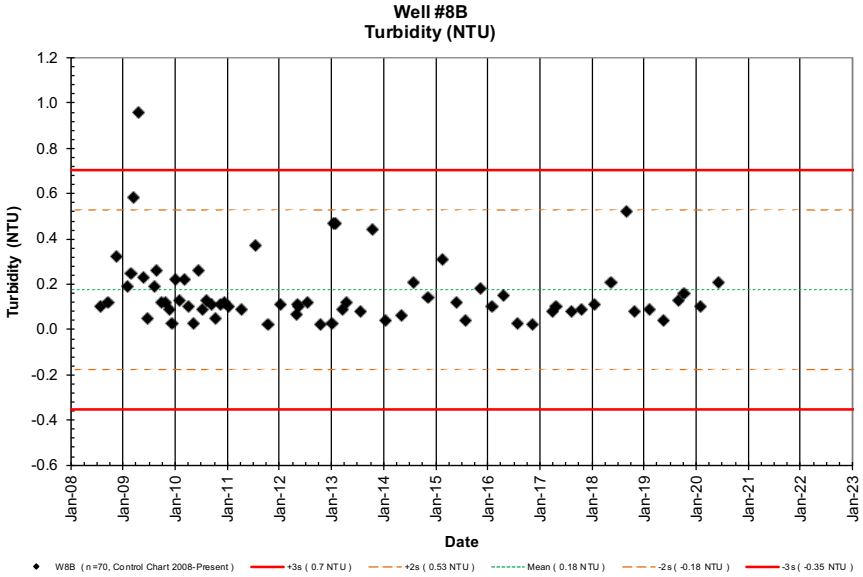


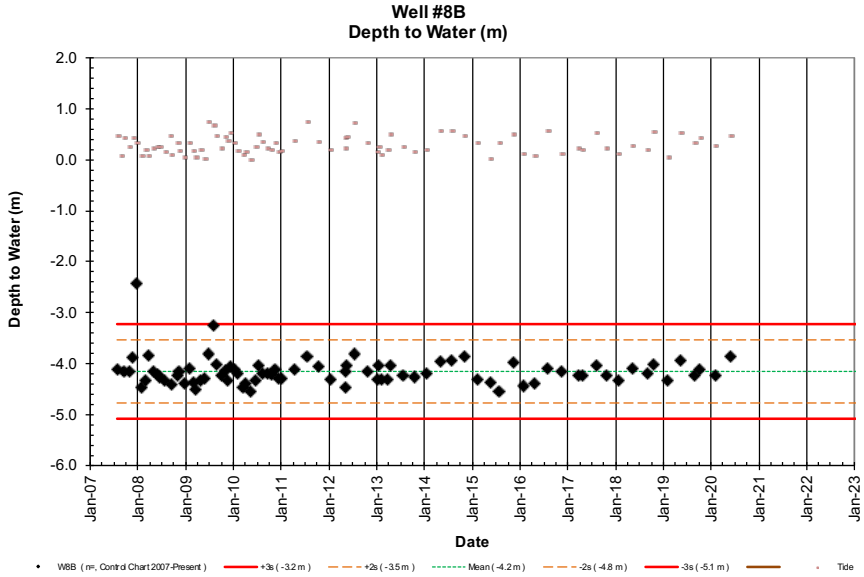


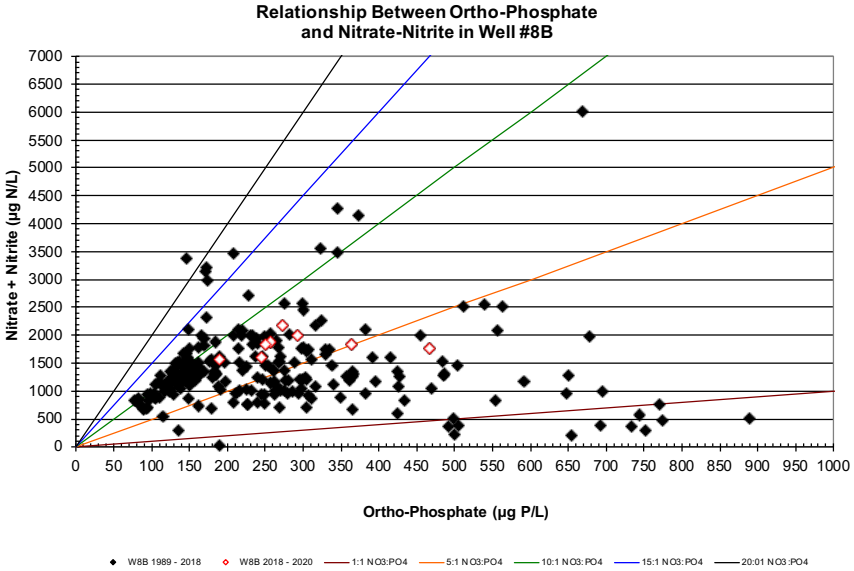
NELHA Water Quality Laboratory

Well 8B Charts

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NELHA Water Quality Laboratory

Well 9 Data Table

1/23/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W9	-22.86	1/23/09	1145	-8.50	0.09	Low	2.24	70	59.0	826	1.03	14.4	340	9561						20.4	7.90	22.65	12537	6.21	5.75		
W9	-22.86	2/23/09	1355	-9.11	0.09	Ebb	1.88	58	58.8	824	0.15	2.1	367	10305						20.4	7.75	22.61	12515	6.17	2.91		
W9	-22.86	3/13/09	1354	-9.36	0.09	Flood	1.93	60	13.5	189	0.13	1.8	274	7700						20.8	7.81	22.36	12377	6.33	0.30		
W9	-22.86	4/20/09	1058	-9.32	0.21	Flood	2.91	90	55.6	778	0.36	5.0	272	7648						19.3	7.71	22.58	12499	6.58	0.41		
W9	-22.86	5/21/09	1352	-9.35	0.55	Flood	2.34	72	52.8	740	0.19	2.7	506	14206						18.1	7.90	23.00	12731	6.57	1.30		
W9	-22.86	6/16/09	1030	-9.14	0.40	Flood	1.45	45	29.1	407	0.27	3.8	93	2611						17.8	7.22	22.65		6.20	0.09		
W9	-22.86	7/13/09	1343	-9.15	0.21	Low	2.17	67	51.3	719	0.51	7.1	100	2795						17.6	7.91	22.82	12631	6.18	0.23		
W9	-22.86	8/18/09	1333	-8.99	0.61	Flood	2.42	75	55.0	771	0.59	8.2	321	9023						17.8	7.80	22.78	12609	6.47	0.18		
W9	-22.86	9/21/09	1220	-9.17	0.15	Low	2.52	78	54.6	765	0.61	8.6	185	5207						18.0	8.38	22.63	12526	6.36	0.18		
W9	-22.86	10/19/09	1457	-9.26	0.21	Flood	1.57	49	31.9	447	0.32	4.5	115	3224						18.0	8.16	22.87	12659	5.92	0.25		
W9	-22.86	11/16/09	1212	-9.30	0.09	Low	2.60	80	48.9	686	0.92	12.9	359	10093						18.4	7.93	23.08	12775	5.86	0.12		
W9	-22.86	12/7/09	1045	-9.03	0.46	Ebb	2.29	71	53.3	747	0.94	13.2	359	10088						18.9	7.85	23.13	12803	5.65	0.42		
W9	-22.86	1/5/10	815	-8.94	0.49	High	2.23	69	45.9	643	1.86	26.0	355	9975						18.9	7.58	23.17	12825	5.47	0.12		
W9	-22.86	2/1/10	1018	-9.04	0.12	Ebb	2.52	78	56.6	793	0.57	8.0	316	8862						18.9	7.94	22.95	12703	5.94	0.39		
W9	-22.86	3/9/10	951	-9.32	0.12	Flood	2.42	75	50.9	713	0.71	10.0	376	10563						18.9	7.92	23.04	12753	5.79	0.18		
W9	-22.86	4/6/10	918	-9.33	0.12	Flood	2.94	91	54.5	763	1.57	22.0	381	10706						19.9	7.88	23.21	12847	6.22	0.50		
W9	-22.86	5/11/10	936	-9.39	0.00	Flood	2.13	66	49.9	699	1.43	20.0	304	8545						19.1	7.99	22.93	12692	6.67	0.21		
W9	-22.86	6/15/10	1035	-9.36	0.06	Ebb	2.26	70	56.5	792	0.43	6.0	402	11277						19.7	7.93	22.91	12681	6.30	0.13		
W9	-22.86	7/13/10	948	-9.31	0.06	Ebb	2.23	69	53.0	743	0.57	8.0	391	10975						19.5	7.90	22.81	12626	6.10	0.28		
W9	-22.86	8/3/10	940	-9.03	0.49	Flood	2.39	74	55.3	774	0.62	8.7	393	11036						19.7	7.91	23.04	12753	6.01	0.94		
W9	-22.86	9/14/10	939	-8.92	0.58	High	2.26	70	54.4	762	0.28	3.9	404	11335						19.4	7.87	22.95	12703	6.32	0.44		
W9	-22.86	10/12/10	945	-8.86	0.58	Ebb	2.20	68	51.5	721	0.34	4.8	406	11410						19.4	7.88	23.00	12731	6.02	0.38		
W9	-22.86	11/16/10	913	-9.12	0.02	Flood	2.20	68	53.8	754	0.13	1.8	396	11119						19.5	7.88	22.94	12698	6.10	0.27		
W9	-22.86	12/14/10	936	-9.07	0.34	Flood	2.20	68	52.9	741	0.32	4.5	402	11288						19.4	7.88	22.78	12609	6.01	0.61		
W9	-22.86	1/4/11	938	-9.09	0.12	Ebb	2.23	69	50.5	708	0.22	3.1	371	10411						19.3	7.81	22.60	12510	6.03	0.84		
W9	-22.86	4/5/11	1013	-9.26	-0.06	Low	2.32	72	48.9	685	0.10	1.4	352	9888						19.8	7.76	22.80	12620	5.07	0.27		
W9	-22.86	7/12/11	929	-9.44	0.37	Flood	2.20	68	50.3	705	0.06	0.8	390	10958						19.4	7.84	22.81	12626	5.73	0.26		
W9	-22.86	10/11/11	948	-9.18	0.12	Low	2.32	72	52.2	731	0.18	2.5	378	10619						19.2	7.81	23.06	12764	6.48	0.42		
W9	-22.86	1/10/12	947	-9.11	0.21	Ebb	2.13	66	52.0	728	0.41	5.7	369	10358						18.9	7.88	23.00	12731	6.55	0.61		
W9	-22.86	5/1/12	1004	-9.22	0.18	Flood	2.29	71	46.3	648	0.18	2.5	373	10485						18.8	7.88	23.42	12964	5.93	0.09		
W9	-22.86	7/18/12	919	-9.34	0.00	Low	2.23	69	50.2	703	0.48	6.7	382	10736						17.8	7.92	23.31	12903	6.33	0.18		
W9	-22.86	10/16/12	1000	-9.15	0.18	Ebb	2.20	68	51.3	718	0.13	1.8	379	10654						18.0	7.85	23.36	12930	5.95	0.04		
W9	-22.86	1/8/13	1022	-9.20	0.12	Flood	2.49	77	53.8	753	1.65	23.1	428	12016						17.9	7.83	23.27	12881	6.17	0.06		
W9	-22.86	4/9/13	956	-9.37	-0.09	Low	2.49	77	49.5	693	0.21	2.9	374	10491						18.2	7.87	23.69	13113	0.86	0.06		
W9	-22.86	7/17/13	1017	-9.17	0.49	Flood	2.13	66	45.6	639	0.29	4.1	373	10469						17.9	7.79	23.41	12958	5.66	0.22		
W9	-22.86	10/15/13	945	-9.20	0.27	Flood	2.16	67	50.0	700	0.34	4.8	367	10304						17.9	7.83	23.56	13041	6.12	0.25		
W9	-22.86	1/15/14	922	-9.15	0.15	Ebb	2.49	77	51.0	715	0.64	9.0	361	10138						17.9	7.89	23.32	12908	6.12	0.02		
W9	-22.86	4/29/14	1037	-9.45	0.00	Flood	2.23	69	49.9	699	0.36	5.1	359	10074						18.1	7.85	23.21	12847	6.61	0.02		
W9	-22.86	7/29/14	1012	-9.25	0.12	Ebb	2.36	73	49.3	691	0.14	2.0	368	10331						17.8	7.80	22.14	12255	6.37	0.04		
W9	-22.86	11/5/14	1013	-9.17	0.12	Low	2.68	83	61.3	859	0.11	1.5	351	9866						17.8	7.87	22.88	12665	7.36	0.04		
W9	-22.86	2/11/15	915	-9.09	0.24	Ebb	3.49	108	82.6	1156	0.50	7.0	445	12508						17.4	7.81	22.96	12709	7.00	0.10		
W9	-22.86	5/19/15	1436	-9.23	0.48	Flood	2.60	81	64.1	897	0.59	8.3	338	9480						17.3	7.90	22.70	12565	7.17	0.02		
W9	-22.86	7/21/15	1123	-9.16	0.24	Ebb	2.62	81	68.4	958	0.34	4.7	344	9655						17.4	7.80	23.47	12991	7.20	0.04		
W9	-22.86	11/9/15	933	-9.10	0.13	Low	3.03	94	71.2	997	0.35	4.9	346	9720						17.0	7.76	22.33	12360	7.88	0.08		
W9	-22.86	1/26/16	1544	-9.29	0.35	Flood	2.80	87	78.2	1096	0.21	3.0	348	9778						16.9	7.66	22.67	12548	7.03	0.08		
W9	-22.86	4/21/16	1010	-9.32	0.00	Flood	3.01	93	84.6	1184	0.79	11.1	339	9507						16.9	7.67	22.37	12382	7.82	0.10		

NELHA Water Quality Laboratory

Well 9 Data Table

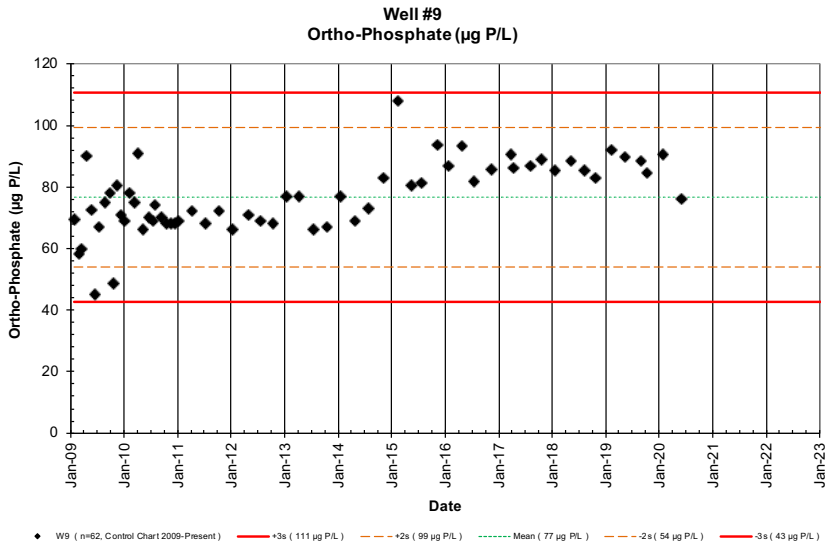
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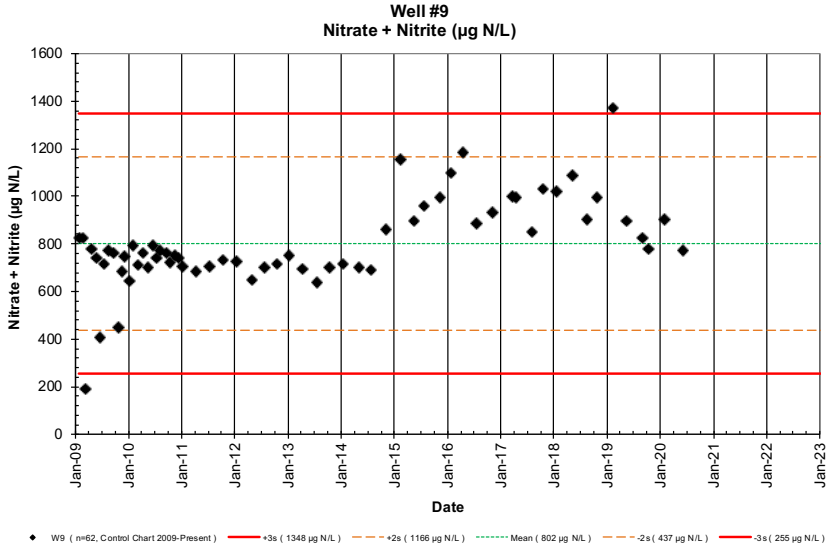
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W9	-22.86	7/20/16	1445	-9.19	0.35	Flood	2.64	82	63.2	885	0.29	4.1	302	8482						16.7	7.79	22.24	12310	6.77	0.03		
W9	-22.86	11/7/16	1340	-8.95	0.30	Ebb	2.77	86	66.5	931	0.10	1.4	339	9515						16.5	7.69	22.54	12476	8.35	0.07		
W9	-22.86	3/22/17	1359	-9.10	0.15	Ebb	2.93	91	71.3	998	0.14	1.9	375	10530						16.6	7.69	22.38	12388	7.82	0.10		
W9	-22.86	4/13/17	1010	-9.22	-0.05	Low	2.78	86	71.2	997	0.27	3.8	372	10438						16.6	7.80	22.39	12393	6.35	0.14		
W9	-22.86	8/4/17	951	-9.19	0.10	Flood	2.81	87	60.6	848	0.06	0.9	364	10225						16.4	7.83	22.78	12609	7.98	0.11		
W9	-22.86	10/18/17	1557	-8.91	0.50	Ebb	2.87	89	73.5	1030	0.81	11.4	342	9607						16.0	7.82	22.44	12421	7.69	0.11		
W9	-22.86	1/17/18	1047	-9.08	0.16	Ebb	2.75	85	72.9	1021	0.33	4.6	352	9880						16.0	7.75	22.49	12449	8.39	0.05		
W9	-22.86	5/9/18	1131	-9.21	0.30	High	2.85	88	77.6	1087	0.55	7.7	351	9847						16.0	7.74	22.97	12714	7.74	0.05		
W9	-22.86	8/13/18	1710	-8.96	0.64	Flood	2.76	85	64.4	902	0.30	4.2	364	10221						17.2	7.76	22.87	12659	7.08	0.09		
W9	-22.86	10/24/18	1041	-9.15	0.20	Flood	2.68	83	71.2	997	0.07	1.0	338	9482						17.4	7.71	22.52	12465	5.92	0.10		
W9	-22.86	2/7/19	1222	-9.12	0.07	Low	2.97	92	97.8	1370	0.17	2.4	352	9892						16.4	7.56	22.91	12681	8.11	0.05		
W9	-22.86	5/15/19	1241	-9.21	0.45	Flood	2.90	90	63.8	894	0.04	0.6	351	9863						16.2	7.61	23.35	12925	7.14	0.05		
W9	-22.86	8/28/19	1016	-9.25	0.15	Flood	2.85	88	59.0	826	0.27	3.8	350	9830						16.2	7.78	23.01	12737	6.60	0.11		
W9	-22.86	10/10/19	1450	-8.91	0.58	High	2.73	85	55.5	777	0.29	4.0	332	9320						16.7	7.90	22.24	12310	7.42	0.08		
W9	-22.86	1/31/20	1407	-9.23	0.07	Low	2.92	91	64.3	900	-0.41	-5.7	338	9482						16.8	7.84	24.80	13727	6.29	0.02		
W9	-22.86	6/2/20	1515	-8.84	0.55	High	2.45	76	55.3	774	0.12	1.7	343	9622						17.1	7.84	23.85	13202	5.89	0.09		
W9	-22.86	7/1/20																									
W9	-22.86	10/1/20																									
W9	-22.86	1/1/21																									
W9	-22.86	4/1/21																									
W9	-22.86	7/1/21																									
W9	-22.86	10/1/21																									
W9	-22.86	1/1/22																									
W9	-22.86	4/1/22																									
W9	-22.86	7/1/22																									
W9	-22.86	10/1/22																									
W9	-22.86	1/1/23																									
W9	-22.86	4/1/23																									
Mean				-9.16	0.23		2.47	77	57.23	802	0.43	6.0	347	9746						18.1	7.82	22.92	12689	6.46	0.35		
Std. Dev.				0.17	0.19		0.37	11	13.01	182	0.41	5.7	70	1962						1.3	0.14	0.44	246	1.04	0.81		
Maximum				-8.50	0.64		3.49	108	97.84	1370	1.86	26.0	506	14206						20.8	8.38	24.80	13727	8.39	5.75		
Minimum				-9.45	-0.09		1.45	45	13.49	189	-0.41	-5.7	93	2611						16.0	7.22	22.14	12255	0.86	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	61	62	62		

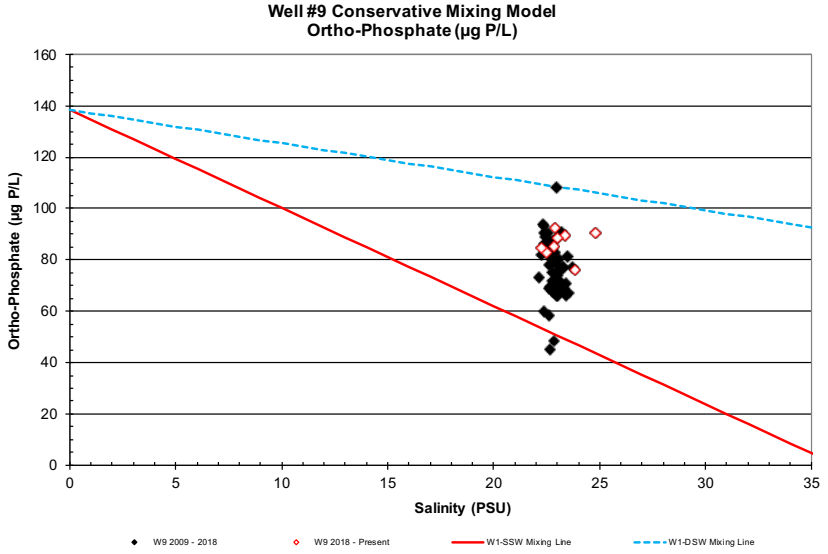
NELHA Water Quality Laboratory

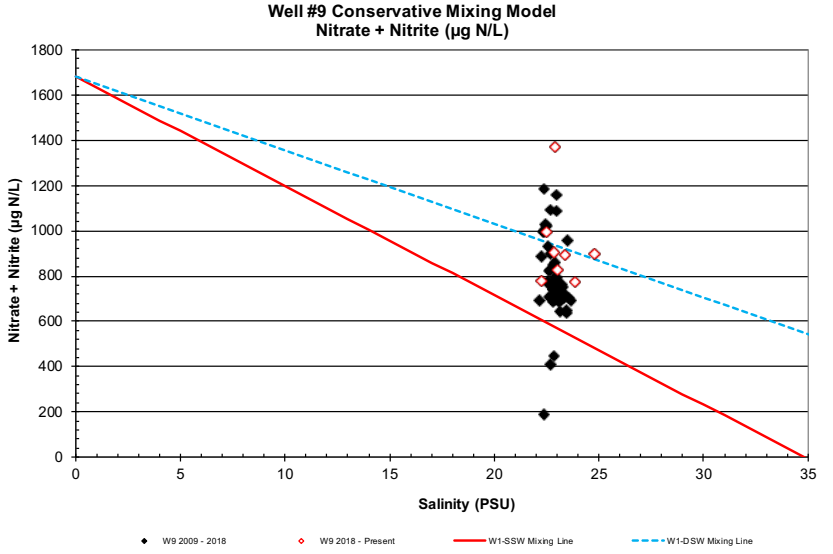
Well 9 Charts

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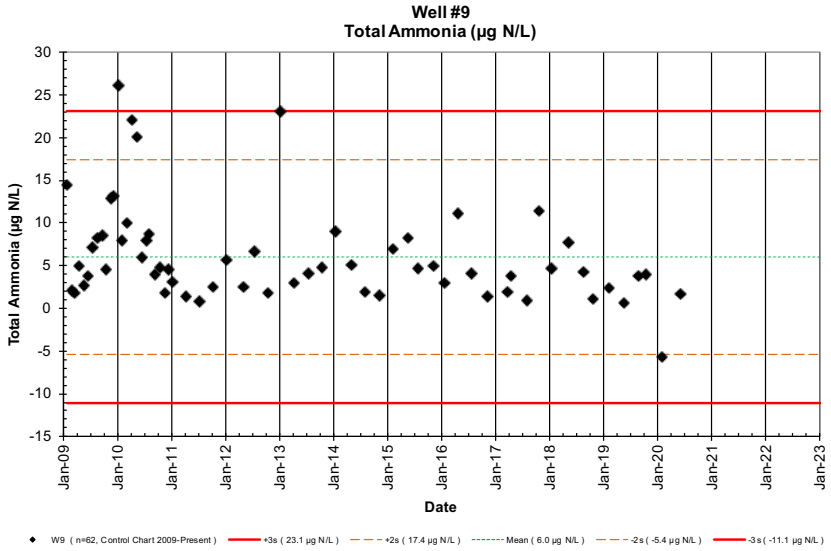


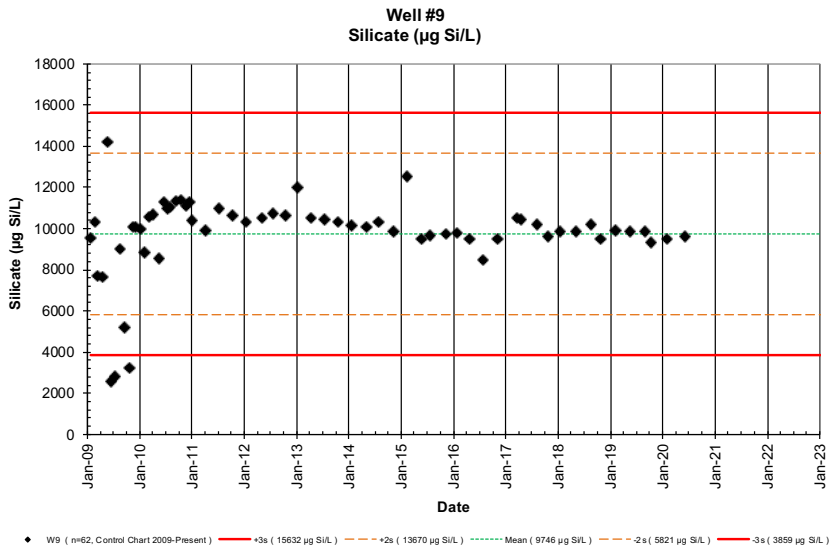


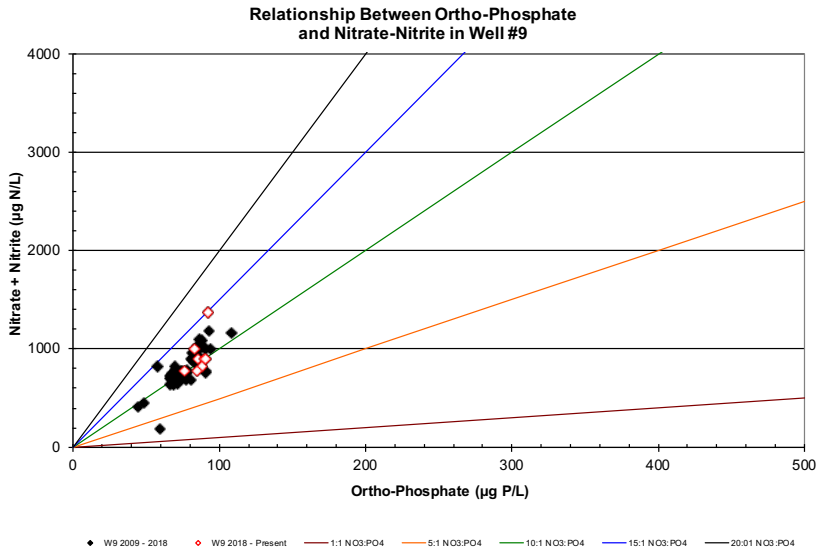
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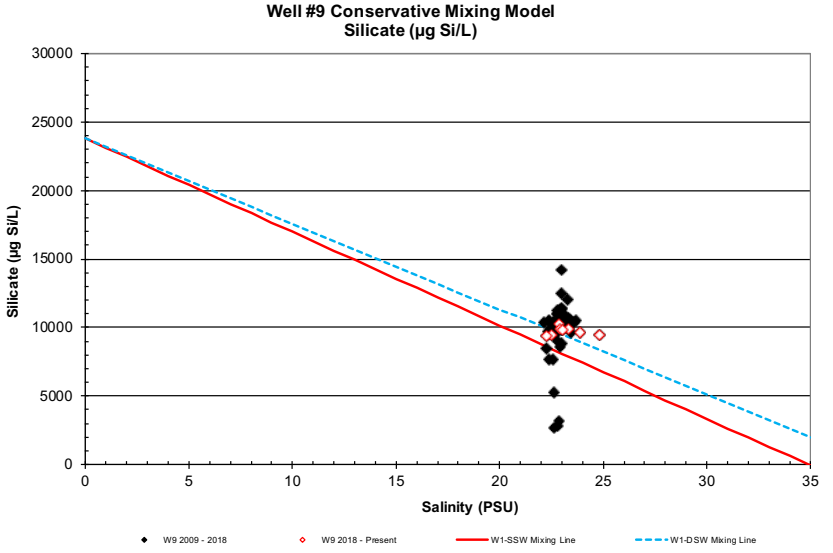
Well 9 Charts

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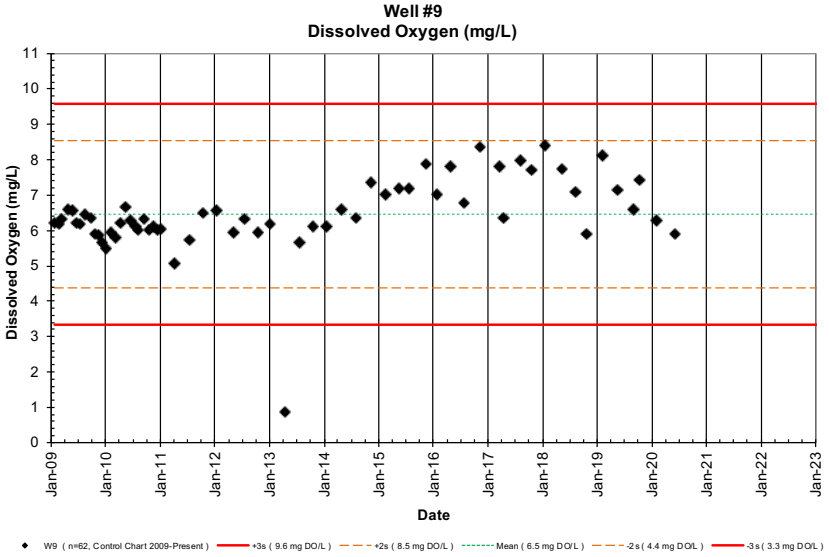


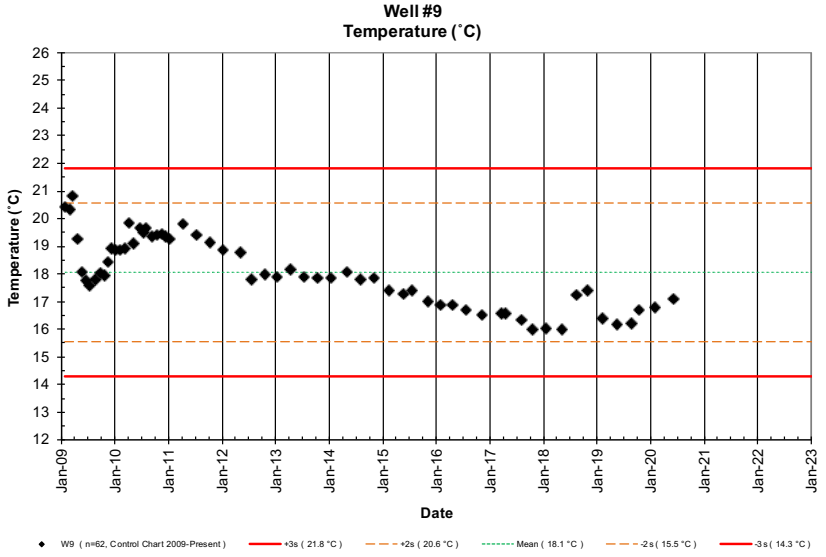


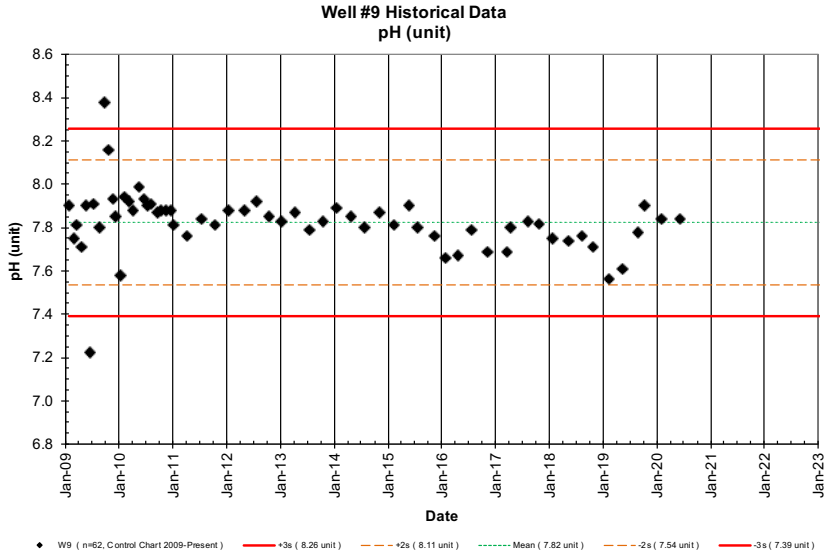
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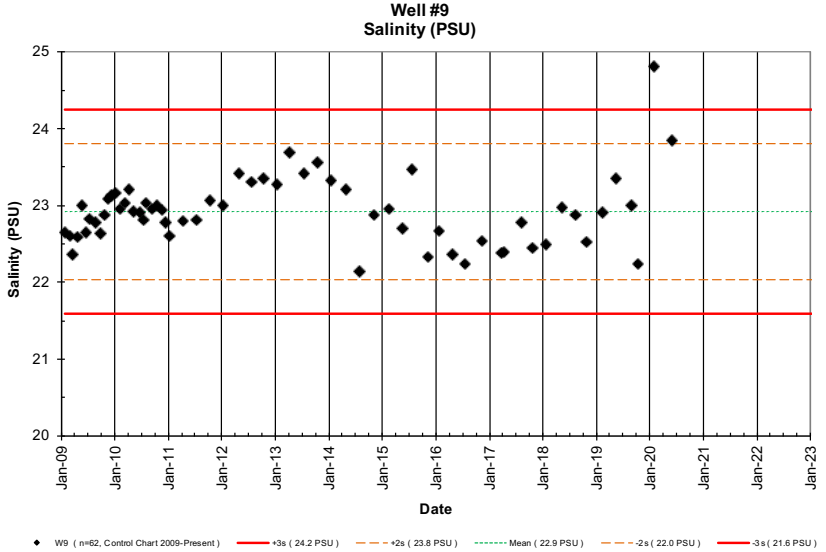
Well 9 Charts

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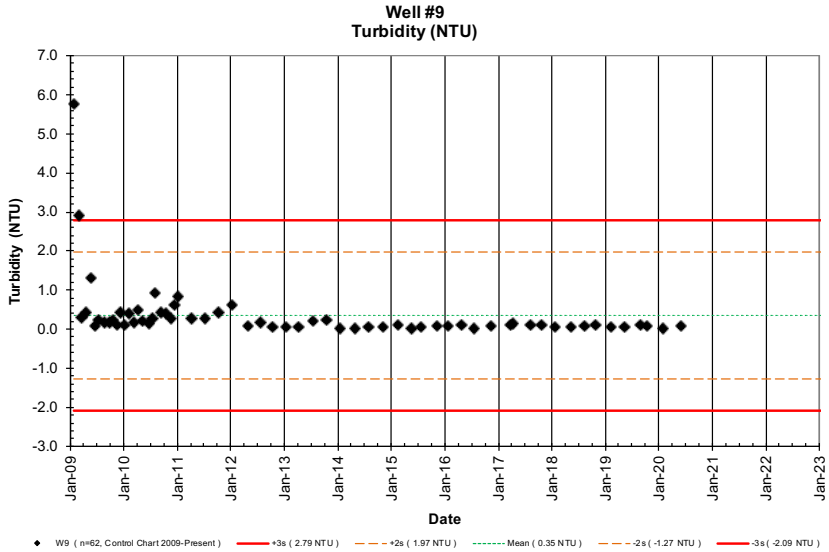


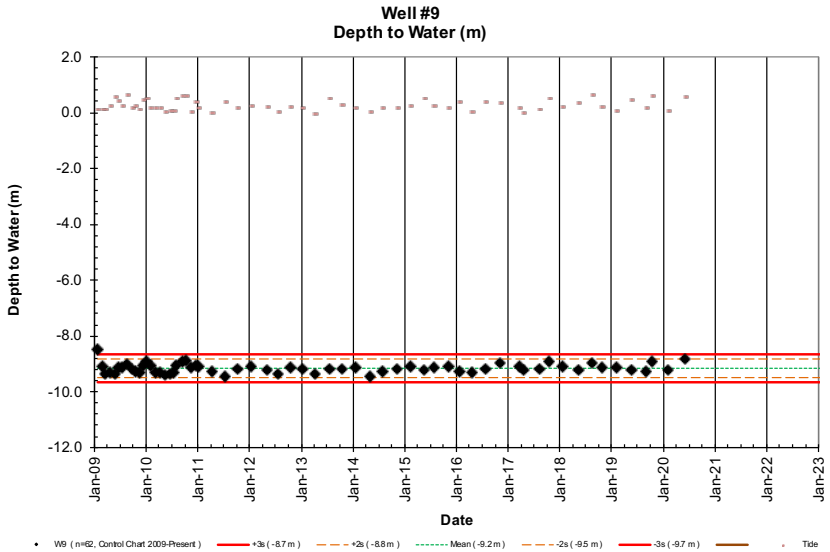


NELHA Water Quality Laboratory

Well 9 Charts

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NELHA Water Quality Laboratory

Well 9A Data Table

1/23/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W9A	-16.76	1/23/09	1130	-9.88	0.09	Low	2.46	76	67.1	940	0.21	3.0	405	11371						20.4	7.90	19.26	10661	6.17	1.03		
W9A	-16.76	2/23/09	1340	-9.15	0.09	Ebb	2.16	67	65.9	923	0.15	2.1	408	11468						20.0	7.74	20.03	11087	6.50	8.11		
W9A	-16.76	3/13/09	1338	-9.36	0.09	Flood	1.75	54	41.4	580	0.13	1.8	331	9286						21.0	7.82	19.52	10805	6.63	1.08		
W9A	-16.76	4/20/09	1120	-9.24	0.21	Flood	3.43	106	61.9	867	0.42	5.9	368	10333						19.9	7.67	19.11	10578	6.48	19.1		
W9A	-16.76	5/21/09	1057	-9.36	0.55	Flood	2.42	75	62.1	869	0.19	2.6	534	14987						21.7	7.89	19.57	10833	5.95	1.26		
W9A	-16.76	6/16/09	1013	-9.07	0.40	Flood	2.46	76	54.0	756	0.42	5.9	242	6803						18.4	7.79	18.82		6.21	0.97		
W9A	-16.76	7/13/09	1322	-9.15	0.21	Low	2.13	66	58.8	823	0.29	4.0	147	4116						18.4	7.78	19.64	10871	6.40	1.80		
W9A	-16.76	8/18/09	1315	-8.90	0.61	Flood	2.58	80	64.6	906	0.92	12.9	351	9866						18.6	7.84	19.66	10882	6.86	0.48		
W9A	-16.76	9/21/09	1133	-9.10	0.15	Low	2.45	76	56.3	789	0.69	9.6	173	4862						18.8	8.38	19.76	10938	6.23	0.38		
W9A	-16.76	10/19/09	1411	-9.18	0.21	Flood	2.36	73	56.5	791	0.46	6.5	206	5786						18.8	8.16	19.88	11004	6.32	0.81		
W9A	-16.76	11/16/09	1140	-9.21	0.09	Low	2.71	84	59.7	836	0.79	11.0	414	11633						20.4	7.92	19.61	10855	5.05	0.14		
W9A	-16.76	12/7/09	1142	-8.97	0.46	Ebb	2.87	89	62.0	869	0.79	11.0	434	12181						19.6	7.85	20.10	11126	6.64	0.70		
W9A	-16.76	1/5/10	851	-8.91	0.49	High	2.39	74	58.1	814	1.71	24.0	429	12052						19.0	7.91	19.62	10860	6.22	2.26		
W9A	-16.76	2/1/10	1035	-9.07	0.12	Ebb	2.62	81	69.4	972	0.57	8.0	405	11386						19.0	7.93	19.46	10772	6.26	1.66		
W9A	-16.76	3/9/10	1008	-9.28	0.12	Flood	2.62	81	64.4	902	0.29	4.0	444	12477						19.4	7.90	19.72	10916	6.32	0.62		
W9A	-16.76	4/6/10	936	-9.26	0.12	Flood	3.07	95	66.8	935	1.21	17.0	428	12015						20.3	7.87	19.22	10639	6.36	3.21		
W9A	-16.76	5/11/10	1001	-9.32	0.00	Flood	2.42	75	57.5	806	2.36	33.0	453	12718						20.3	7.98	19.39	10733	6.84	2.03		
W9A	-16.76	6/15/10	1043	-9.28	0.06	Ebb	2.45	76	64.2	899	0.36	5.0	456	12815						18.5	7.94	19.05	10545	6.65	0.26		
W9A	-16.76	7/13/10	1002	-9.23	0.03	Ebb	2.45	76	63.1	884	0.86	12.0	479	13462						20.2	7.90	19.00	10517	6.43	3.01		
W9A	-16.76	8/3/10	955	-8.94	0.49	Flood	2.58	80	61.8	865	0.96	13.4	457	12847						20.2	7.92	19.71	10910	6.58	3.61		
W9A	-16.76	9/14/10	949	-8.87	0.58	High	2.62	81	66.5	932	0.46	6.5	488	13709						18.8	7.88	18.88	10451	6.34	0.35		
W9A	-16.76	10/12/10	958	-8.16	0.58	Ebb	2.87	89	64.3	900	0.26	3.6	486	13641						18.4	7.89	19.35	10711	6.52	0.13		
W9A	-16.76	11/16/10	919	-8.99	0.24	Flood	2.62	81	68.4	958	0.22	3.1	485	13622						18.5	7.88	18.58	10285	6.40	0.08		
W9A	-16.76	12/14/10	948	-8.93	0.34	High	2.65	82	67.3	942	0.21	2.9	483	13558						18.3	7.87	18.77	10390	6.47	0.21		
W9A	-16.76	1/4/11	946	-9.02	0.12	Ebb	2.71	84	65.5	918	0.34	4.7	468	13153						18.5	7.80	18.16	10052	6.28	0.12		
W9A	-16.76	4/5/11	1023	-9.21	-0.06	Low	2.58	80	60.5	847	0.24	3.4	443	12436						18.6	7.82	18.22	10085	5.47	0.12		
W9A	-16.76	7/12/11	941	-9.39	0.37	Flood	2.65	82	62.9	881	0.10	1.4	467	13107						18.3	7.86	18.96	10495	6.37	0.08		
W9A	-16.76	10/11/11	1007	-9.10	0.12	Low	2.55	79	58.8	824	0.26	3.6	435	12220						18.2	7.81	19.59	10844	6.65	0.12		
W9A	-16.76	1/10/12	956	-9.04	0.15	Ebb	2.32	72	56.3	789	0.44	6.1	420	11795						18.5	7.84	19.49	10788	6.19	0.09		
W9A	-16.76	5/1/12	1014	-9.14	0.18	Flood	2.84	88	60.3	844	0.36	5.1	472	13252						17.9	7.89	19.46	10772	6.56	0.06		
W9A	-16.76	7/18/12	931	-9.25	0.00	Low	2.65	82	61.5	861	0.50	7.0	443	12431						18.2	7.95	20.11	11131	6.83	0.57		
W9A	-16.76	10/16/12	1008	-9.07	0.18	Ebb	2.58	80	62.1	870	0.21	2.9	441	12389						18.6	7.85	20.03	11087	6.41	0.55		
W9A	-16.76	1/8/13	1029	-9.13	0.12	Flood	2.78	86	66.7	934	0.88	12.3	507	14246						18.3	7.81	19.39	10733	6.49	0.13		
W9A	-16.76	4/9/13	1010	-9.30	-0.09	Low	2.81	87	59.4	832	2.65	37.1	434	12177						18.4	7.86	20.08	11115	7.09	0.66		
W9A	-16.76	7/17/13	1043	-9.09	0.49	Flood	2.52	78	56.3	789	0.41	5.8	441	12398						18.8	7.80	20.20	11181	6.33	0.18		
W9A	-16.76	10/15/13	952	-9.15	0.27	Flood	2.58	80	63.0	882	0.29	4.1	424	11914						18.4	7.84	20.28	11226	7.11	0.05		
W9A	-16.76	1/15/14	929	-9.08	0.15	Ebb	2.94	91	68.2	955	0.46	6.4	411	11533						18.2	7.86	20.21	11187	7.14	0.11		
W9A	-16.76	4/29/14	1045	-9.36	0.00	Flood	2.65	82	67.3	942	0.46	6.5	408	11467						18.6	7.82	20.04	11093	7.21	0.13		
W9A	-16.76	7/29/14	1031	-9.17	0.12	Ebb	2.74	85	68.4	958	0.21	3.0	408	11457						18.6	7.75	20.36	11270	7.58	0.31		
W9A	-16.76	11/5/14	1023	-9.07	0.12	Low	3.00	93	74.5	1044	0.36	5.0	403	11319						18.5	7.83	20.28	11226	7.81	0.24		
W9A	-16.76	2/11/15	926	-9.00	0.24	Low	4.22	131	101.2	1418	0.40	5.6	560	15741						17.9	7.81	20.49	11342	7.50	0.54		
W9A	-16.76	5/19/15	1427	-9.11	0.48	Flood	2.83	88	75.5	1057	0.39	5.5	376	10571						17.7	7.91	20.11	11131	7.87	0.22		
W9A	-16.76	7/21/15	1111	-9.27	0.24	Ebb	3.03	94	71.1	996	0.02	0.3	386	10836						19.2	7.81	21.11	11685	7.32	0.12		
W9A	-16.76	11/9/15	922	-9.02	0.12	Low	3.50	108	82.8	1160	0.21	2.9	417	11700						17.5	7.76	19.64	10871	8.14	0.14		
W9A	-16.76	1/26/16	1534	-9.24	0.35	Flood	3.27	101	92.6	1297	0.00	0.0	401	11264						17.6	7.79	19.99	11065	7.52	0.05		
W9A	-16.76	4/21/16	957	-9.22	0.00	Flood	3.35	104	79.0	1107	0.65	9.1	383	10745						18.2	7.71	19.69	10899	7.85	0.14		

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Well 9A Data Table

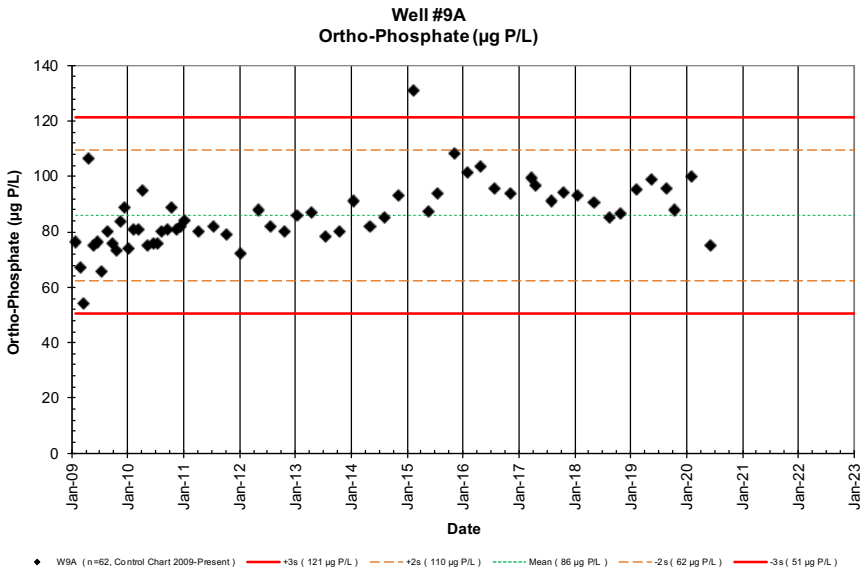
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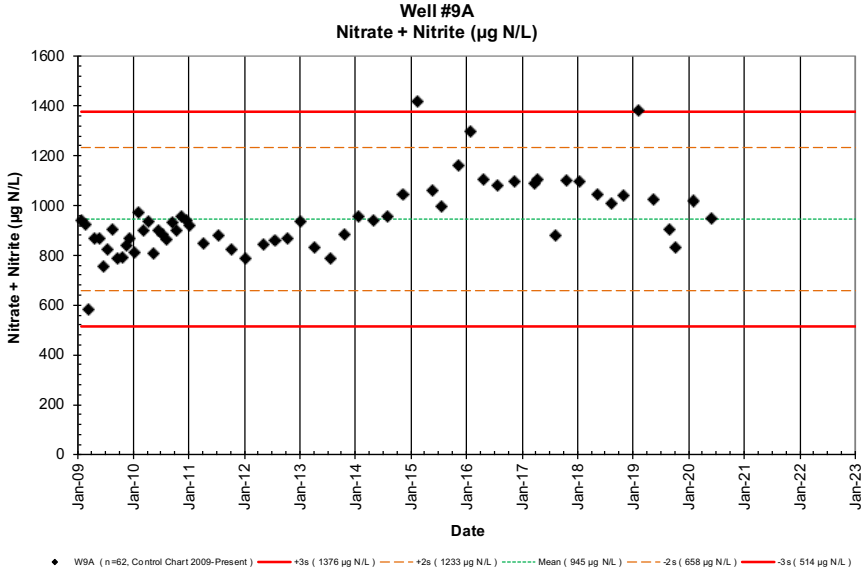
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W9A	-16.76	7/20/16	1457	-9.26	0.35	Flood	3.10	96	77.0	1078	0.39	5.4	332	9320						17.4	7.78	20.17	11165	7.52	0.09		
W9A	-16.76	11/7/16	1327	-8.85	0.30	Ebb	3.04	94	78.2	1095	0.44	6.2	357	10034						17.2	7.71	20.14	11148	8.29	0.14		
W9A	-16.76	3/21/17	1349	-9.03	0.15	Ebb	3.21	99	77.8	1090	0.19	2.7	430	12087						17.2	7.72	19.83	10976	7.79	0.18		
W9A	-16.76	4/13/17	958	-9.10	-0.05	Low	3.13	97	78.9	1105	0.36	5.1	427	12001						17.1	7.81	19.89	11010	6.25	0.13		
W9A	-16.76	8/4/17	936	-9.10	0.10	Flood	2.94	91	62.7	879	0.07	1.0	425	11925						17.3	7.83	20.16	11159	7.93	0.32		
W9A	-16.76	10/18/17	1542	-8.83	0.50	Ebb	3.05	95	78.7	1103	0.63	8.8	397	11157						17.1	7.82	19.99	11065	7.39	0.16		
W9A	-16.76	1/17/18	1027	-9.00	0.16	Ebb	3.00	93	78.4	1098	0.21	3.0	421	11832						17.1	7.73	19.86	10993	7.02	0.13		
W9A	-16.76	5/9/18	1112	-9.12	0.30	High	2.92	91	74.6	1045	0.34	4.8	416	11672						17.3	7.76	20.10	11126	7.08	0.18		
W9A	-16.76	8/13/18	1653	-8.89	0.64	Flood	2.75	85	71.8	1006	0.30	4.2	433	12157						19.7	7.80	20.05	11098	6.65	0.16		
W9A	-16.76	10/24/18	1028	-9.04	0.20	Flood	2.79	87	74.2	1039	0.11	1.6	389	10939						18.3	7.76	19.92	11026	6.04	0.09		
W9A	-16.76	2/7/19	1210	-9.03	0.07	Low	3.08	95	98.8	1384	0.16	2.2	414	11636						17.4	7.57	20.07	11109	7.73	0.06		
W9A	-16.76	5/15/19	1230	-9.12	0.45	Flood	3.20	99	73.0	1023	0.73	10.2	426	11969						17.0	7.64	20.17	11165	6.92	0.07		
W9A	-16.76	8/28/19	1006	-9.16	0.15	Flood	3.10	96	64.7	906	0.19	2.7	407	11424						17.1	7.83	19.97	11054	6.76	0.08		
W9A	-16.76	10/10/19	1436	-8.82	0.58	High	2.83	88	59.5	833	0.40	5.6	383	10750						17.4	7.87	20.09	11120	7.36	0.16		
W9A	-16.76	1/31/20	1352	-9.13	0.07	Low	3.23	100	72.8	1019	-0.64	-8.9	409	11476						17.4	7.86	21.40	11845	6.98	0.19		
W9A	-16.76	6/2/20	1502	-8.72	0.55	High	2.42	75	67.5	946	0.41	5.8	425	11944						18.1	7.86	20.34	11259	6.45	0.11		
W9A	-16.76	7/1/20																									
W9A	-16.76	10/1/20																									
W9A	-16.76	1/1/21																									
W9A	-16.76	4/1/21																									
W9A	-16.76	7/1/21																									
W9A	-16.76	10/1/21																									
W9A	-16.76	1/1/22																									
W9A	-16.76	4/1/22																									
W9A	-16.76	7/1/22																									
W9A	-16.76	10/1/22																									
W9A	-16.76	1/1/23																									
W9A	-16.76	4/1/23																									
Mean				-9.10	0.23		2.77	86	67	945	0.47	6.6	412	11572						18.5	7.84	19.74	10934	6.79	0.97		
Std. Dev.				0.22	0.19		0.38	12	10	144	0.50	6.9	73	2038						1.1	0.11	0.59	322	0.65	2.65		
Maximum				-8.16	0.64		4.22	131	101	1418	2.65	37.1	560	15741						21.7	8.38	21.40	11845	8.29	19.10		
Minimum				-9.88	-0.09		1.75	54	41	580	-0.64	-8.9	147	4116						17.0	7.57	18.16	10052	5.05	0.05		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	61	62	62		

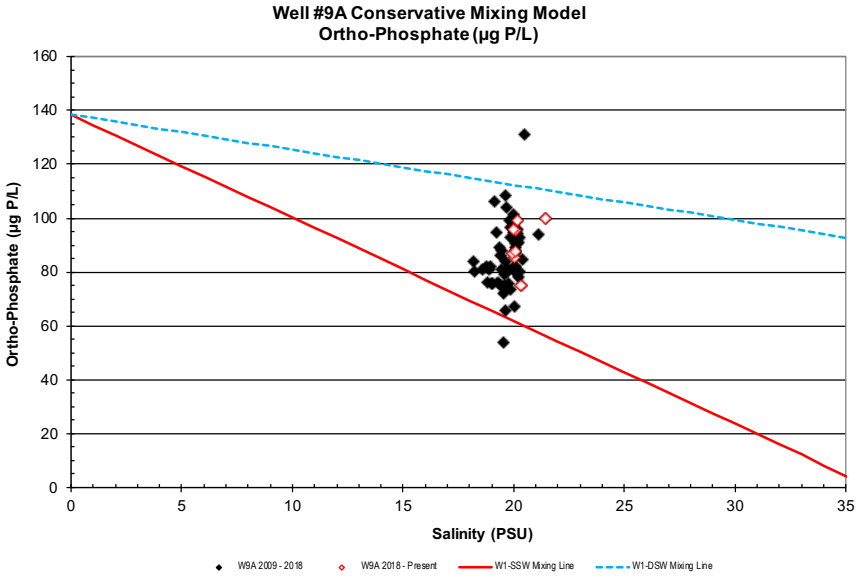
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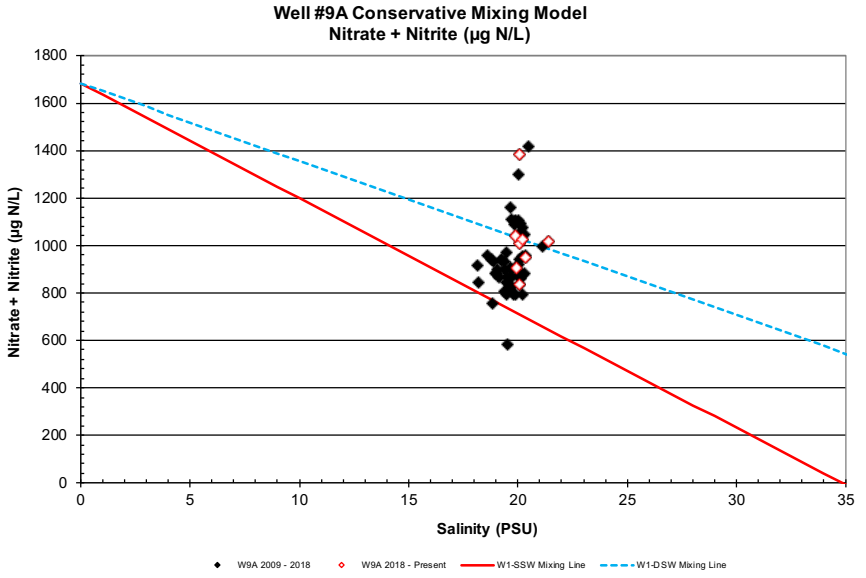
Well 9A Charts

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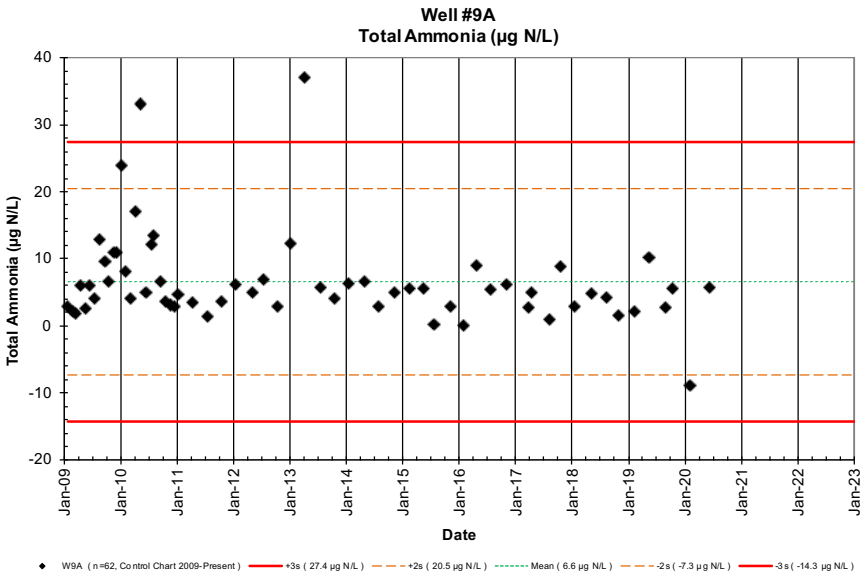


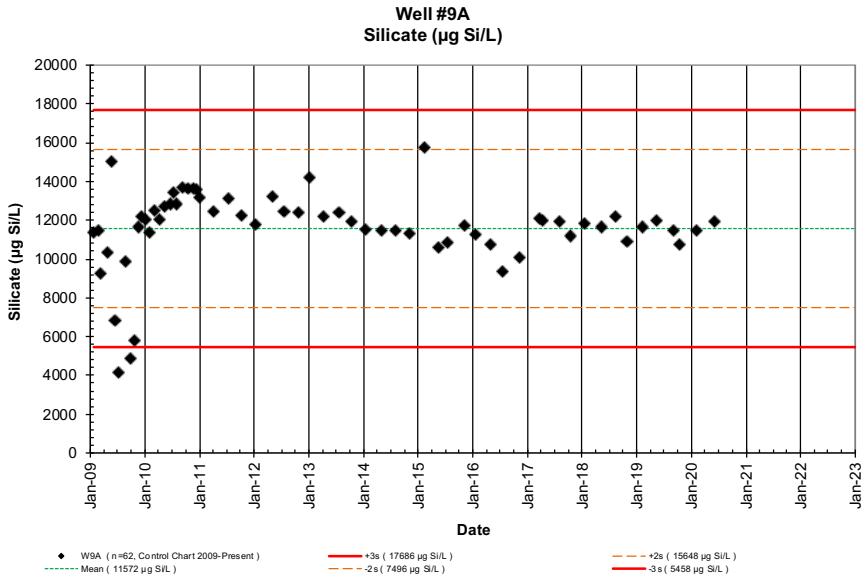


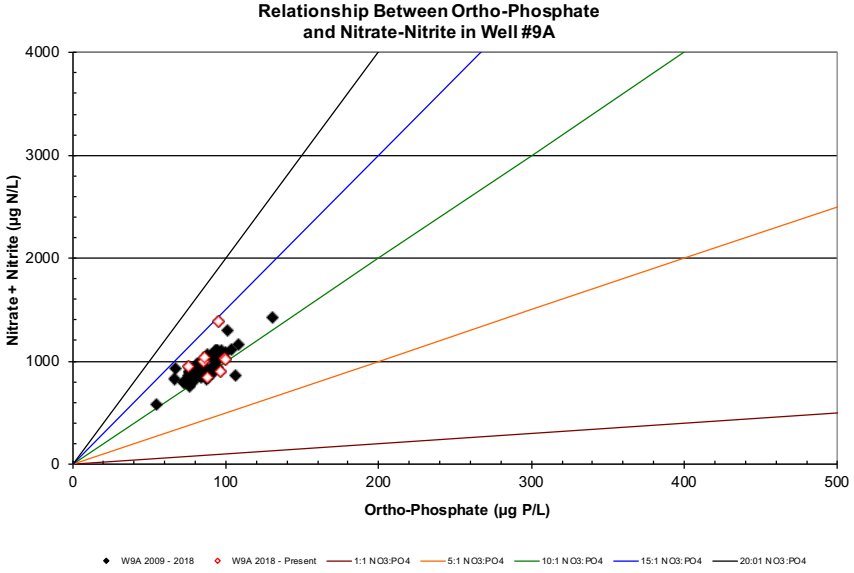
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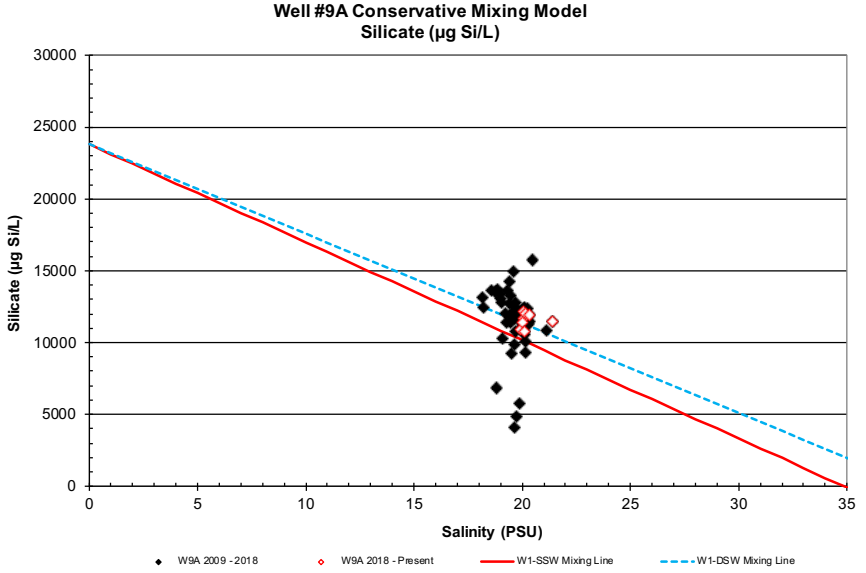
Well 9A Charts

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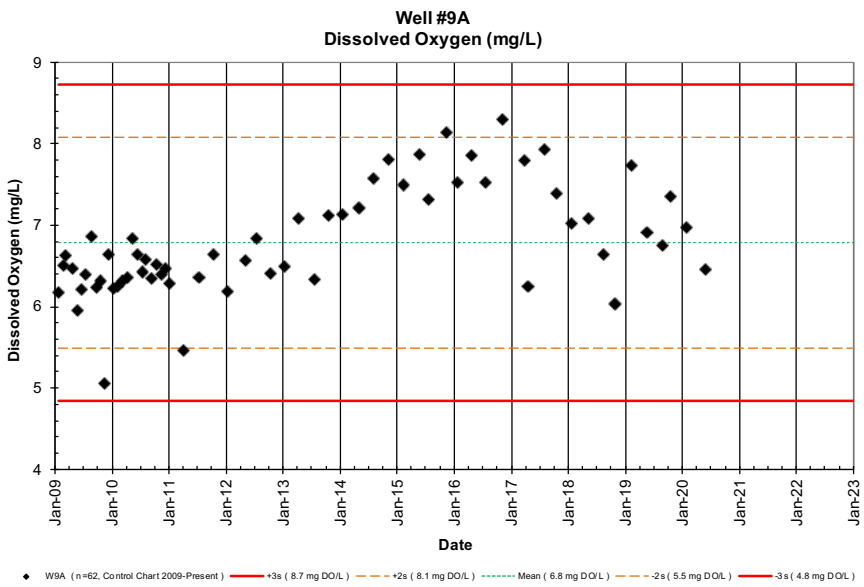


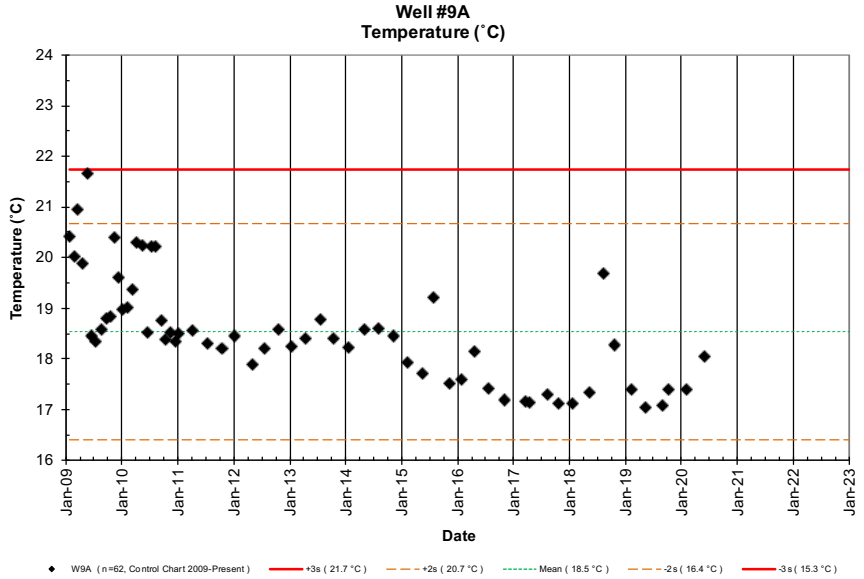


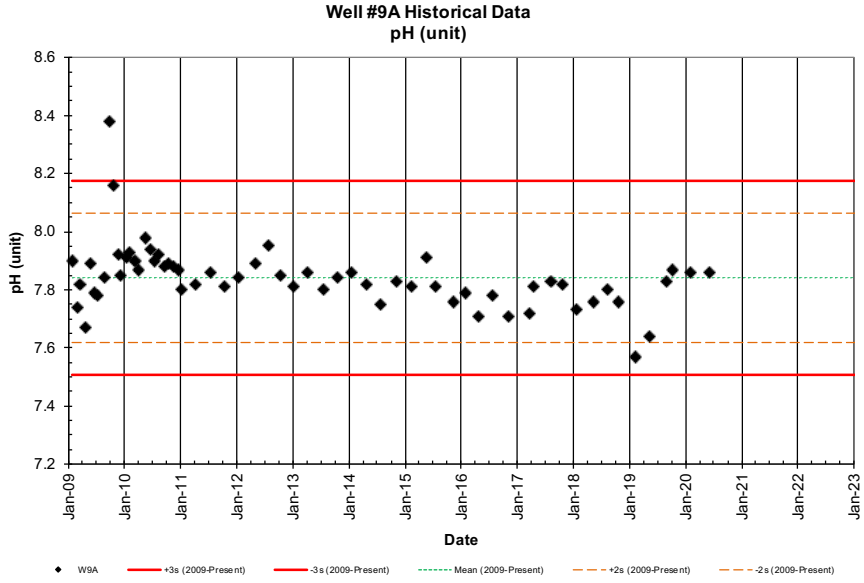
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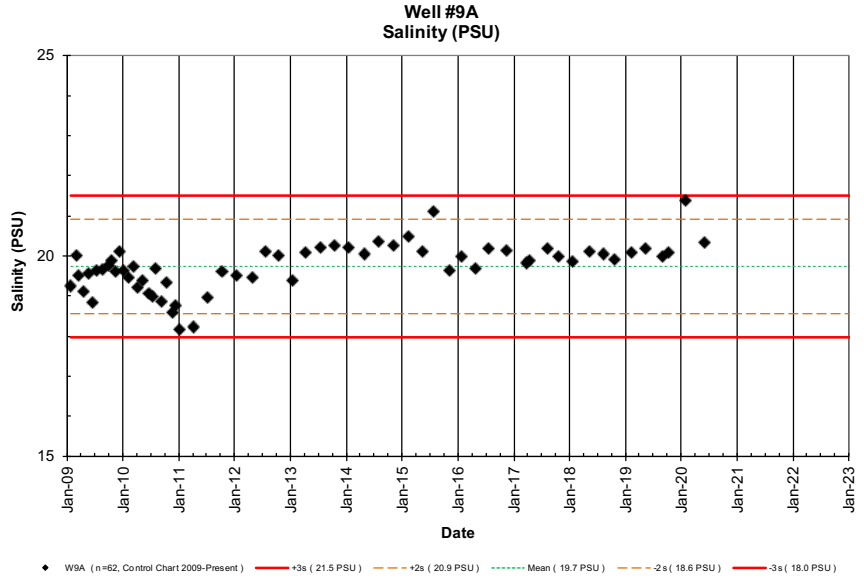
Well 9A Charts

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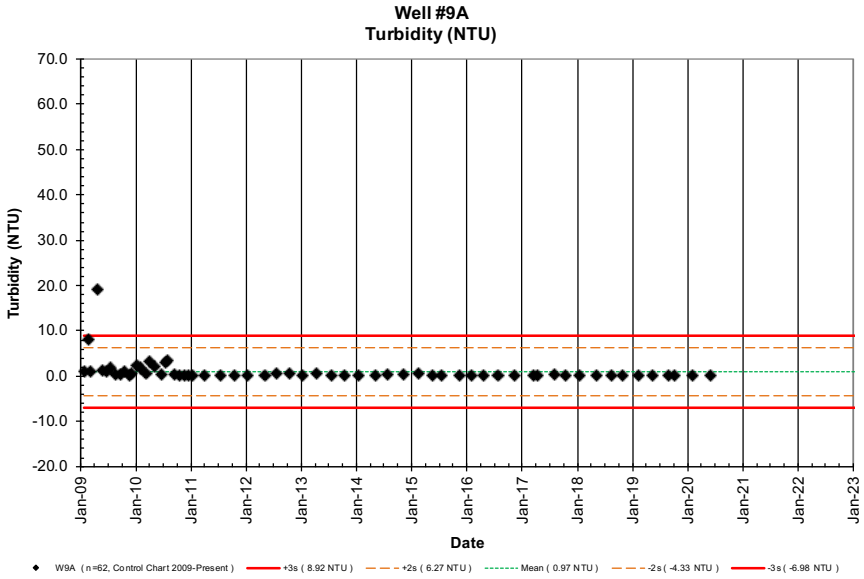


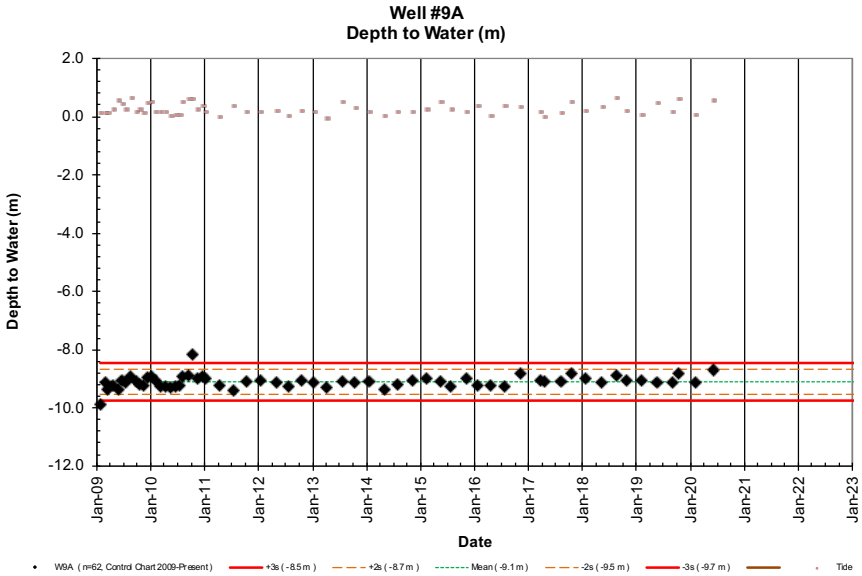


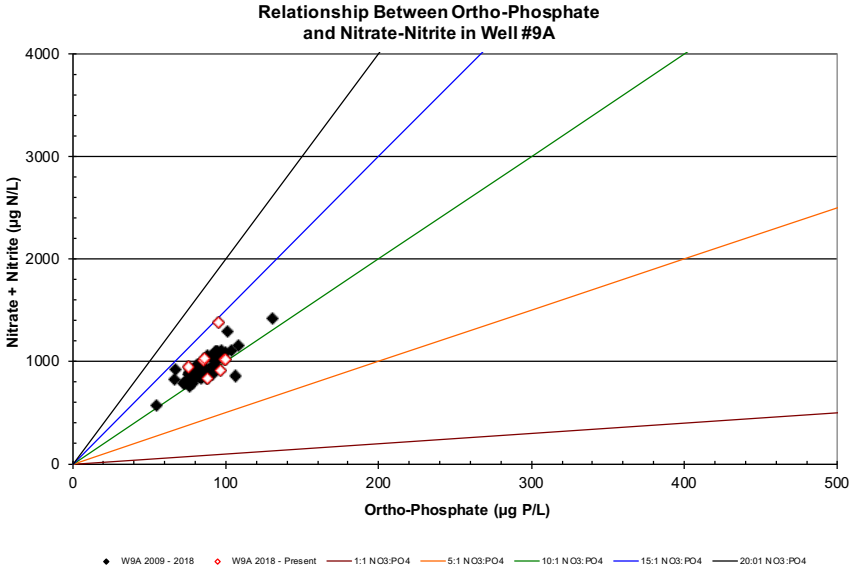
NELHA Water Quality Laboratory

Well 9A Charts

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Well 9B Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W9B	-13.716	1/23/09	1115	-9.24	0.09	Low	3.20	99	123.0	1723	0.28	3.9	560	15730						21.9	8.03	8.54	4727	7.44	1.62		
W9B	-13.716	2/23/09	1328	-9.15	0.09	Ebb	2.71	84	103.3	1447	0.15	2.1	560	15726						21.9	7.78	11.70	6476	7.30	0.16		
W9B	-13.716	3/13/09	1313	-9.33	0.09	Flood	2.12	66	66.4	931	0.13	1.8	423	11887						23.0	7.91	8.50	4705	7.54	0.40		
W9B	-13.716	4/20/09	1131	-9.22	0.21	Flood	3.85	119	112.9	1582	0.32	4.5	525	14757						21.7	7.85	8.92	4937	7.06	1.93		
W9B	-13.716	5/21/09	1033	-9.26	0.55	Flood	3.18	99	98.7	1382	0.18	2.5	381	10712						22.4	7.98	11.09	6139	6.97	0.16		
W9B	-13.716	6/16/09	1001	-9.14	0.40	Flood	3.12	97	97.9	1371	0.44	6.2	300	8415						20.0	7.98	9.24		7.71	0.04		
W9B	-13.716	7/13/09	1307	-9.17	0.21	Low	2.77	86	68.7	962	0.40	5.6	259	7270						19.7	7.95	15.56	8613	6.40	0.12		
W9B	-13.716	8/18/09	1302	-8.93	0.61	Flood	1.82	56	46.2	648	0.32	4.5	366	10266						20.3	7.87	15.66	8668	6.21	0.06		
W9B	-13.716	9/21/09	1101	-9.11	0.15	Low	3.02	94	99.6	1395	0.46	6.4	238	6674						20.3	8.44	12.02	6653	7.14	0.07		
W9B	-13.716	10/19/09	1346	-9.21	0.21	Flood	3.27	101	61.8	865	4.98	69.8	255	7152						20.9	8.19	11.30	6255	7.50	0.16		
W9B	-13.716	11/16/09	1105	-9.29	0.09	Low	2.71	84	69.6	975	0.81	11.4	608	17071						21.5	7.89	16.89	9349	4.85	0.21		
W9B	-13.716	12/7/09	1128	-9.02	0.46	Ebb	3.36	104	106.4	1491	0.54	7.6	582	16342						20.3	7.88	12.27	6792	7.47	0.02		
W9B	-13.716	1/5/10	902	-8.96	0.49	High	2.74	85	91.6	1283	1.29	18.0	467	13104						20.3	7.95	12.70	7030	6.80	0.65		
W9B	-13.716	2/1/10	1029	-9.03	0.12	Ebb	3.20	99	115.5	1618	0.43	6.0	461	12938						19.5	8.00	10.54	5834	7.52	0.10		
W9B	-13.716	3/9/10	940	-9.30	0.12	Flood	3.33	103	104.2	1459	0.14	2.0	558	15660						19.9	7.95	11.31	6260	6.79	0.03		
W9B	-13.716	4/6/10	927	-9.29	0.12	Flood	2.81	87	69.5	974	0.43	6.0	525	14739						18.9	7.87	17.89	9903	6.49	0.09		
W9B	-13.716	5/11/10	946	-9.33	0.00	Flood	3.07	95	94.0	1317	2.28	32.0	683	19181						19.8	8.05	10.51	5818	7.70	0.02		
W9B	-13.716	6/15/10	1026	-9.28	0.06	Ebb	3.20	99	101.5	1421	0.43	6.0	610	17139						19.7	8.00	12.32	6819	7.39	0.02		
W9B	-13.716	7/13/10	956	-9.27	0.03	Ebb	3.13	97	101.2	1417	0.50	7.0	613	17228						19.9	7.95	9.90	5480	7.55	0.09		
W9B	-13.716	8/3/10	945	-8.97	0.49	Flood	2.84	88	71.2	997	3.34	46.8	525	14756						19.4	7.92	16.78	9288	6.54	0.13		
W9B	-13.716	9/14/10	1000	-8.90	0.58	High	2.84	88	78.3	1097	0.44	6.1	558	15685						19.6	7.91	15.66	8668	6.86	0.11		
W9B	-13.716	10/12/10	1010	-8.80	0.58	Ebb	2.94	91	82.0	1149	0.36	5.1	577	16194						19.5	7.90	14.80	8192	6.79	0.11		
W9B	-13.716	11/16/10	929	-9.06	0.24	Flood	3.00	93	92.3	1293	0.25	3.5	588	16524						19.5	7.91	13.33	7379	7.05	0.05		
W9B	-13.716	12/14/10	1009	-8.99	0.34	High	2.97	92	87.3	1223	0.34	4.8	574	16113						19.4	7.90	14.06	7783	6.92	0.11		
W9B	-13.716	1/4/11	958	-9.04	0.12	Ebb	3.10	96	100.2	1404	0.21	3.0	576	16176						19.6	7.90	10.44	5779	7.37	0.05		
W9B	-13.716	4/5/11	1032	-9.22	-0.06	Low	2.84	88	93.0	1303	0.12	1.7	525	14744						19.6	7.89	9.84	5447	6.56	0.08		
W9B	-13.716	7/12/11	957	-9.37	0.37	Flood	3.23	100	98.7	1383	0.19	2.6	605	16998						19.6	7.95	11.28	6244	7.28	0.05		
W9B	-13.716	10/11/11	1015	-9.11	0.12	Low	2.87	89	79.2	1109	0.15	2.1	542	15234						19.5	7.85	14.03	7766	6.90	0.03		
W9B	-13.716	1/10/12	1007	-9.07	0.15	Ebb	2.68	83	80.1	1122	0.96	13.4	529	14857						19.6	7.86	13.50	7473	6.96	0.07		
W9B	-13.716	5/1/12	1022	-9.17	0.18	Flood	3.16	98	80.7	1130	0.46	6.4	585	16440						19.6	7.96	14.04	7772	6.86	0.04		
W9B	-13.716	7/18/12	927	-9.28	0.00	Low	2.97	92	80.5	1128	0.45	6.3	545	15302						19.2	7.99	14.91	8253	7.00	0.30		
W9B	-13.716	10/16/12	1016	-9.11	0.18	Ebb	2.97	92	85.9	1203	0.39	5.5	556	15616						19.5	7.92	13.69	7578	6.87	0.23		
W9B	-13.716	1/8/13	1036	-9.15	0.12	Flood	3.39	105	99.5	1393	0.50	7.0	620	17409						19.5	7.89	12.07	6681	7.22	0.35		
W9B	-13.716	4/9/13	1003	-9.32	-0.09	Low	3.75	116	112.6	1577	1.16	16.3	652	18302						19.9	7.98	8.68	4805	8.42	0.04		
W9B	-13.716	7/17/13	1028	-9.14	0.49	Flood	3.16	98	104.9	1469	0.50	7.0	566	15889						19.8	7.92	10.12	5602	7.58	0.08		
W9B	-13.716	10/15/13	1001	-9.16	0.27	Flood	2.84	88	82.1	1150	0.56	7.9	530	14872						19.5	7.86	14.97	8286	7.08	0.06		
W9B	-13.716	1/15/14	938	-9.09	0.15	Ebb	3.42	106	93.4	1308	0.53	7.4	516	14506						19.6	7.91	12.59	6969	7.90	1.27		
W9B	-13.716	4/29/14	1052	-9.38	0.00	Flood	2.87	89	83.7	1173	0.44	6.1	490	13775						19.8	7.85	15.00	8303	7.34	0.04		
W9B	-13.716	7/29/14	1031	-9.17	0.12	Ebb	3.29	102	93.2	1305	0.43	6.0	542	15222						19.4	7.82	13.47	7456	7.53	0.06		
W9B	-13.716	11/5/14	1031	-9.12	0.12	Low	3.36	104	90.6	1269	0.12	1.7	500	14029						19.7	7.88	14.43	7987	7.57	0.05		
W9B	-13.716	2/11/15	937	-9.03	0.24	Low	4.29	133	80.0	1120	0.59	8.2	439	12321						19.3	7.85	14.42	7982	7.28	0.11		
W9B	-13.716	5/19/15	1416	-9.20	0.48	Flood	3.19	99	84.7	1186	0.31	4.3	458	12873						19.1	7.96	15.78	8735	7.49	0.02		
W9B	-13.716	7/21/15	1100	-10.02	0.24	Ebb	3.45	107	90.7	1271	0.09	1.3	499	14026						21.8	7.88	14.34	7938	7.22	0.03		
W9B	-13.716	11/9/15	909	-9.03	0.12	Low	3.88	120	116.3	1628	0.02	0.3	585	16442						19.1	7.83	12.75	7057	8.35	0.14		
W9B	-13.716	1/26/16	1522	-9.18	0.35	Flood	3.73	116	117.2	1642	0.16	2.3	525	14753						19.3	7.90	13.12	7262	7.00	0.08		
W9B	-13.716	4/21/16	942	-9.24	0.00	Flood	3.57	111	90.4	1266	0.40	5.6	503	14139						19.7	7.77	12.78	7074	7.82	0.08		

NELHA Water Quality Laboratory

Well 9B Data Table

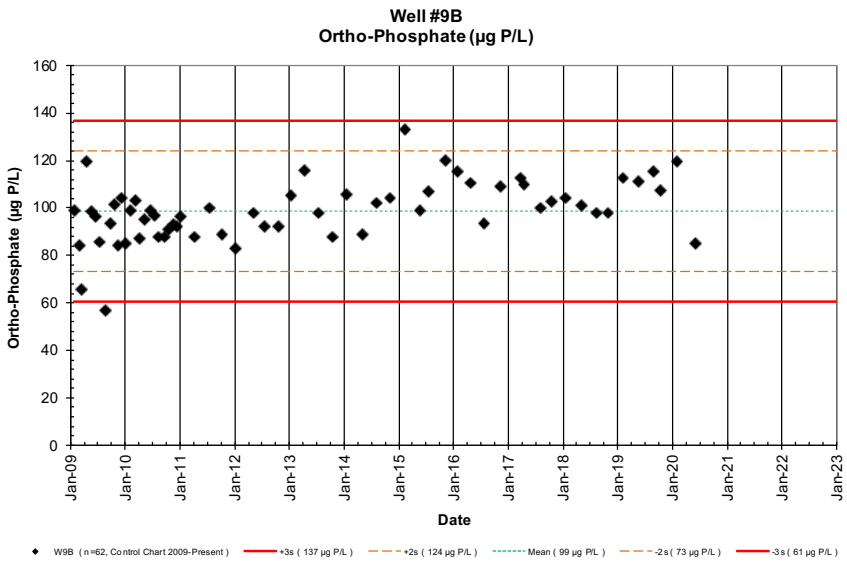
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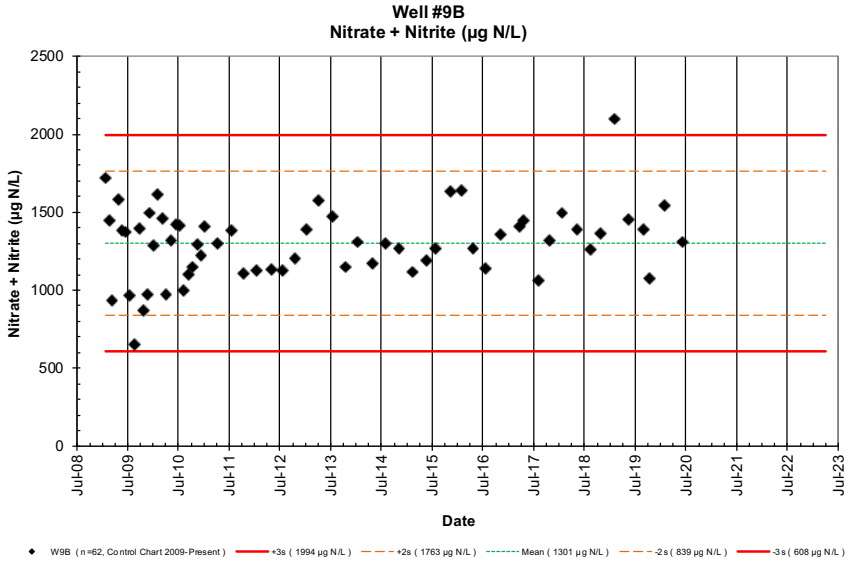
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W9B	-13.716	7/20/16	1510	-9.30	0.35	Flood	3.02	94	81.4	1140	0.13	1.8	384	10789						18.9	7.86	16.26	9000	6.99	0.04		
W9B	-13.716	11/7/16	1316	-8.91	0.30	Ebb	3.52	109	97.0	1358	0.28	3.9	495	13910						19.0	7.40	14.31	7921	8.18	0.02		
W9B	-13.716	3/22/17	1335	-9.05	0.15	Ebb	3.64	113	100.3	1404	0.11	1.6	540	15165						18.9	7.80	14.22	7871	7.70	0.05		
W9B	-13.716	4/13/17	947	-9.15	-0.05	Low	3.55	110	103.0	1443	0.71	9.9	553	15532						18.9	7.87	13.51	7478	6.36	0.02		
W9B	-13.716	8/4/17	925	-9.12	0.10	Flood	3.23	100	75.8	1062	0.00	0.0	542	15209						19.1	7.89	14.74	8159	7.76	0.05		
W9B	-13.716	10/18/17	1530	-8.86	0.50	Ebb	3.31	102	94.2	1319	0.55	7.7	505	14179						18.9	7.87	14.80	8192	7.44	0.02		
W9B	-13.716	1/17/18	1015	-9.03	0.16	Ebb	3.36	104	106.7	1495	0.15	2.1	547	15362						19.0	7.82	13.47	7456	7.68	0.04		
W9B	-13.716	5/9/18	1100	-9.14	0.30	High	3.25	101	99.4	1392	0.39	5.5	527	14794						19.1	7.83	14.35	7943	7.14	0.05		
W9B	-13.716	8/13/18	1710	-8.96	0.64	Flood	3.15	98	89.8	1258	0.30	4.2	548	15402						19.9	7.83	15.55	8607	7.03	0.07		
W9B	-13.716	10/24/18	1015	-9.09	0.20	Flood	3.15	98	97.5	1366	0.01	0.1	489	13724						19.9	7.82	13.93	7711	6.05	0.05		
W9B	-13.716	2/7/19	1158	-9.06	0.07	Low	3.64	113	149.5	2094	0.19	2.6	553	15542						19.3	7.66	12.44	6886	7.96	0.05		
W9B	-13.716	5/15/19	1220	-9.15	0.45	Flood	3.58	111	103.7	1452	0.10	1.4	531	14906						18.9	7.74	14.03	7766	7.21	0.03		
W9B	-13.716	8/28/19	956	-9.18	0.15	Flood	3.73	116	99.2	1390	0.21	3.0	521	14630						19.0	7.90	13.77	7622	7.34	0.06		
W9B	-13.716	10/10/19	1424	-8.84	0.58	High	3.46	107	76.9	1077	0.36	5.0	486	13648						19.4	7.90	15.52	8591	7.77	0.07		
W9B	-13.716	1/31/20	1340	-9.16	0.07	Low	3.86	120	110.3	1546	-0.78	-10.9	511	14361						19.4	7.90	14.31	7921	7.55	0.02		
W9B	-13.716	6/2/20	1451	-8.76	0.55	High	2.75	85	93.5	1310	0.04	0.5	488	13696						20.2	7.89	14.24	7882	6.36	0.07		
W9B	-13.716	7/1/20																									
W9B	-13.716	10/1/20																									
W9B	-13.716	1/1/21																									
W9B	-13.716	4/1/21																									
W9B	-13.716	7/1/21																									
W9B	-13.716	10/1/21																									
W9B	-13.716	1/1/22																									
W9B	-13.716	4/1/22																									
W9B	-13.716	7/1/22																									
W9B	-13.716	10/1/22																									
W9B	-13.716	1/1/23																									
W9B	-13.716	4/1/23																									
Mean				-9.14	0.23		3.18	99	92.89	1301	0.50	6.9	515	14452						19.8	7.90	13.18	7331	7.20	0.17		
Std. Dev.				0.18	0.19		0.41	13	16.49	231	0.79	11.0	89	2509						0.9	0.12	2.22	1204	0.58	0.35		
Maximum				-8.76	0.64		4.29	133	149.53	2094	4.98	69.8	683	19181						23.0	8.44	17.89	9903	8.42	1.93		
Minimum				-10.02	-0.09		1.82	56	46.23	648	-0.78	-10.9	238	6674						18.9	7.40	8.50	4705	4.85	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	61	62	62		

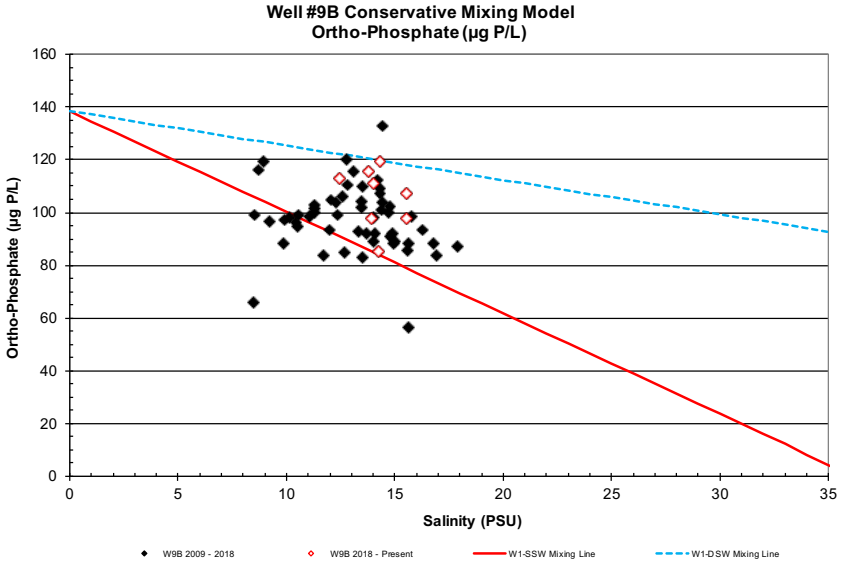
NELHA Water Quality Laboratory

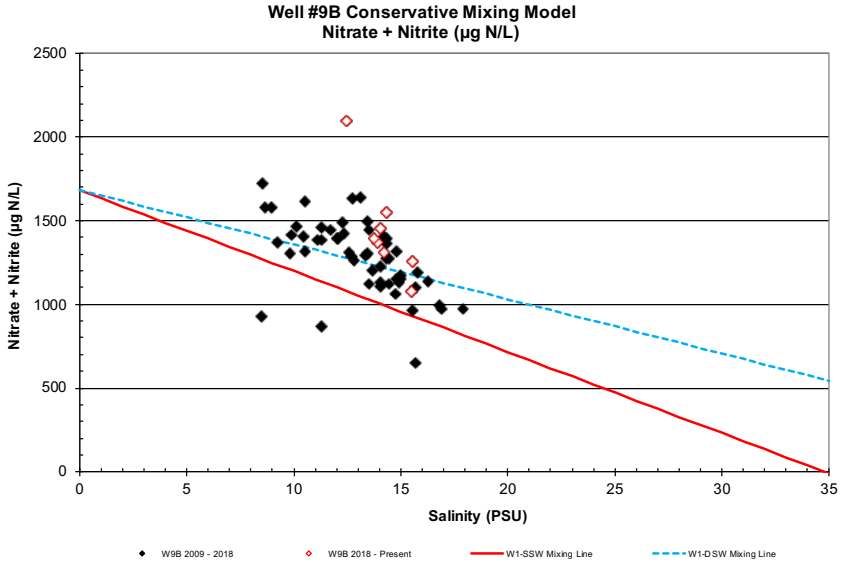
Well 9B Charts

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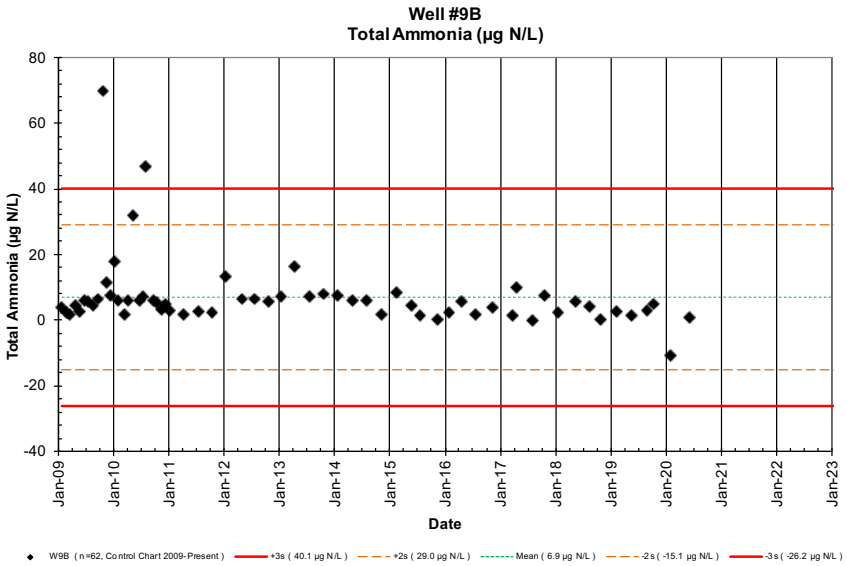


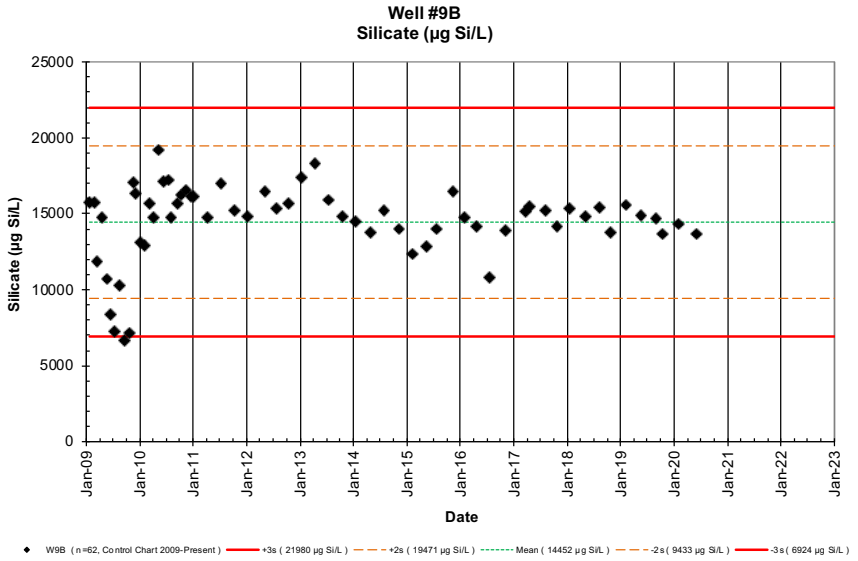


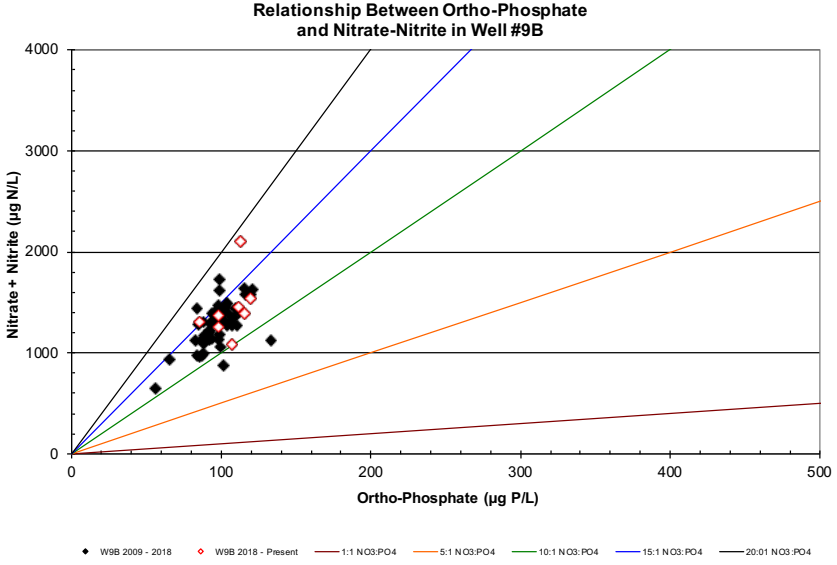
NELHA Water Quality Laboratory

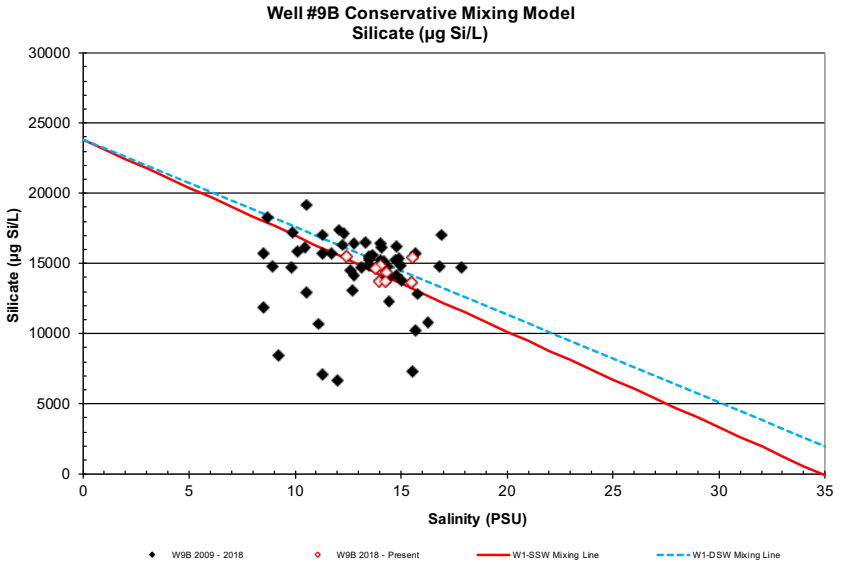
Well 9B Charts

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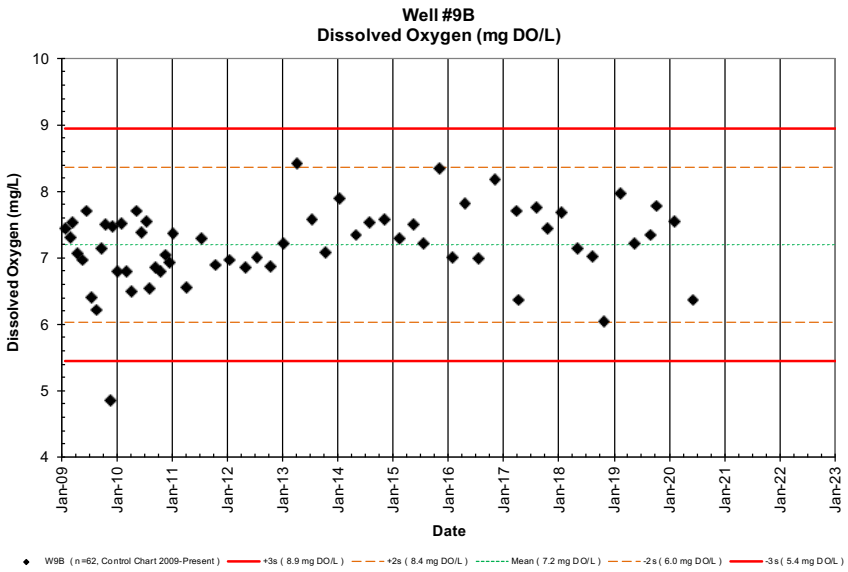


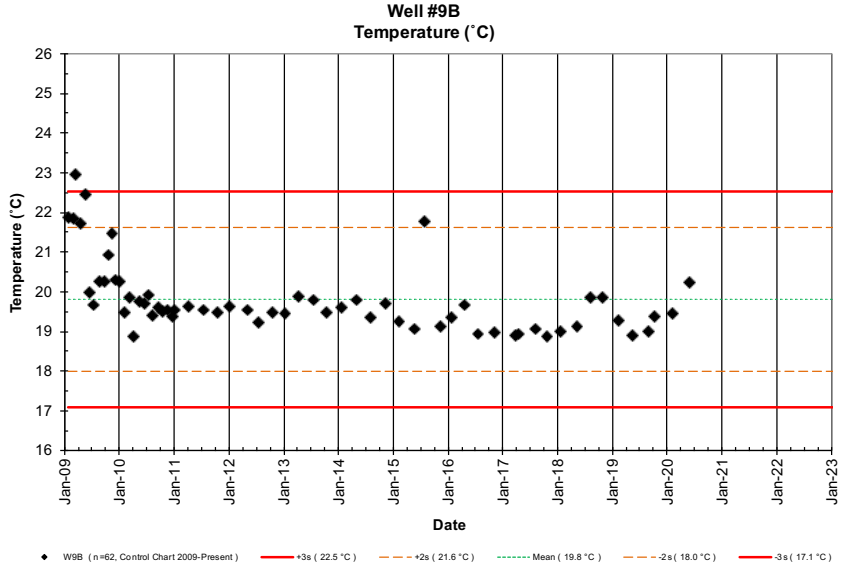


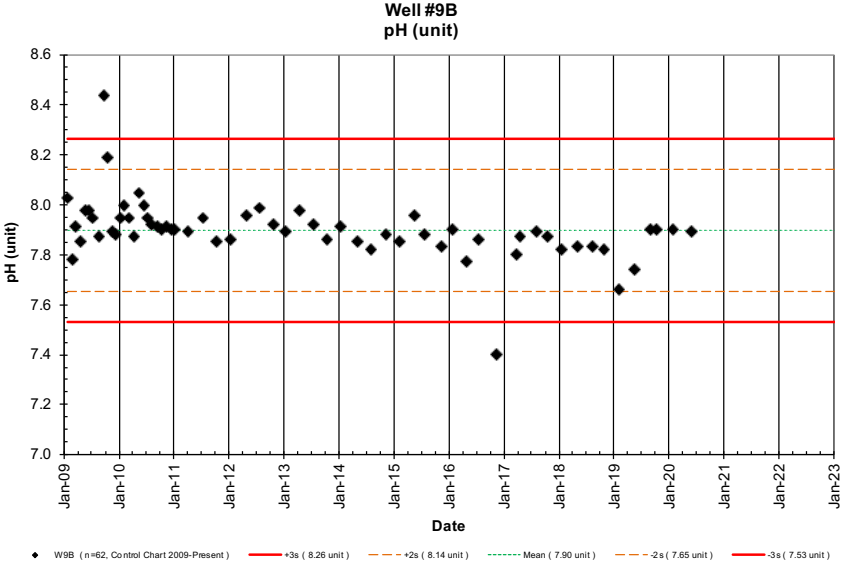
NELHA Water Quality Laboratory

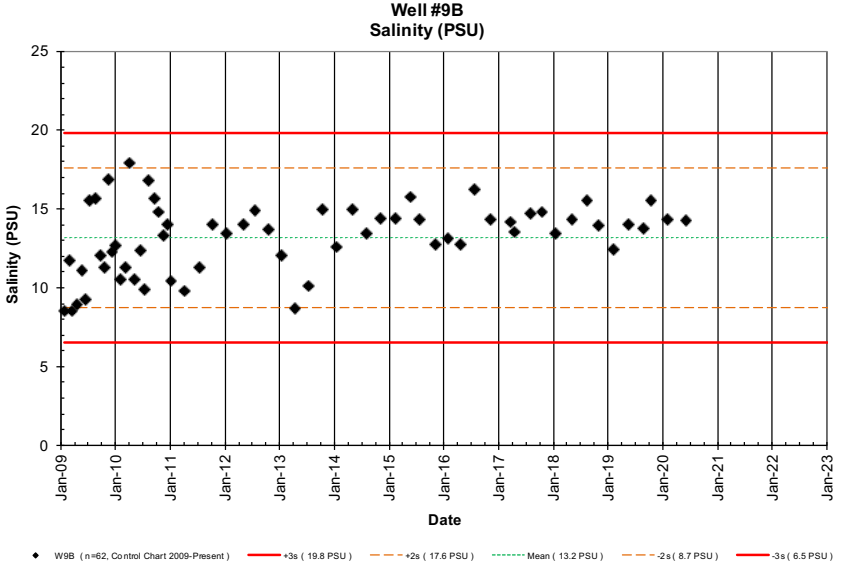
Well 9B Charts

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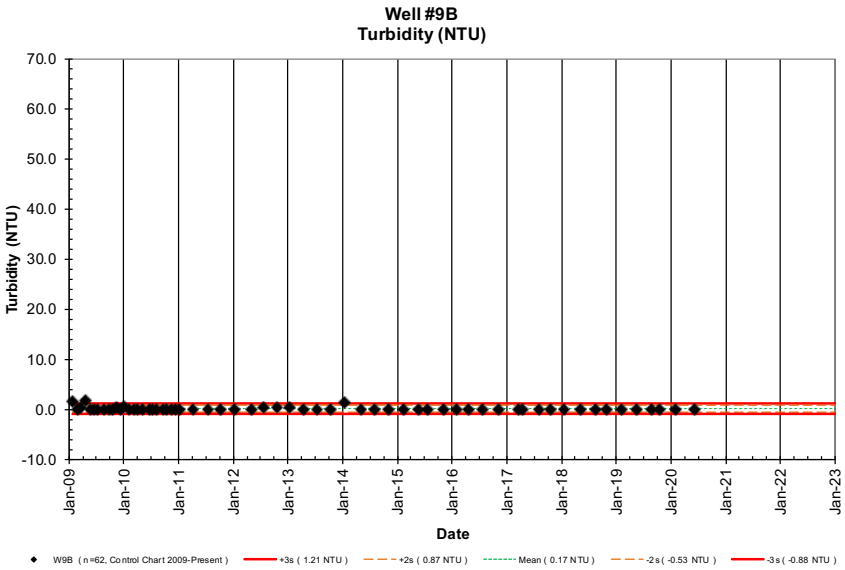


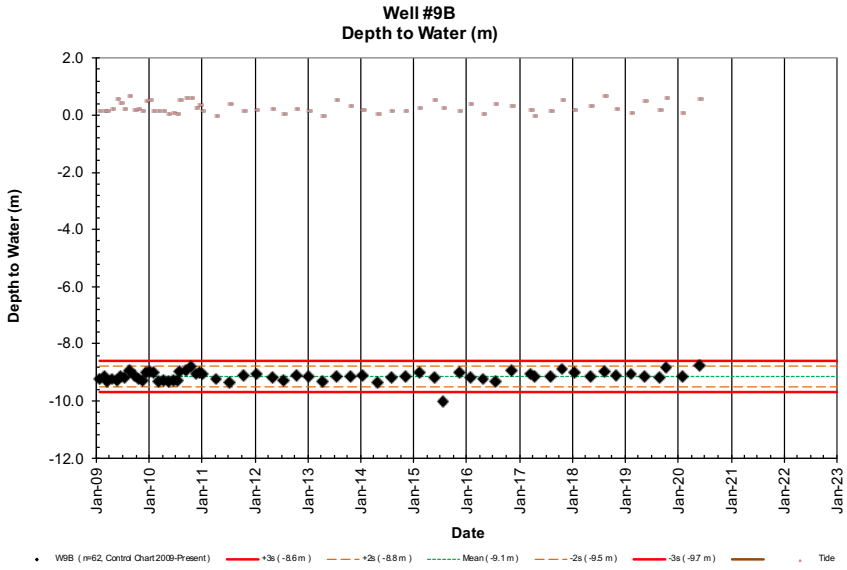


NELHA Water Quality Laboratory

Well 9B Charts

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NELHA Water Quality Laboratory

Well 10 Data Table

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Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W10	-18.288	1/21/09	1118	-2.02	0.12	Flood	1.28	40	24.7	347	0.14	1.9	135	3801						23.9	8.02	29.96	16584	2.50	2.39		
W10	-18.288	2/24/09	1239	-2.40	0.09	Flood	0.72	22	24.4	342	0.15	2.1	143	4018						23.6	7.95	29.79	16490	2.07	2.77		
W10	-18.288	3/13/09	1555	-2.23	0.37	Flood	1.93	60	13.5	189	0.13	1.8	274	7700						23.3	7.91	29.89	16545	2.48	1.50		
W10	-18.288	4/20/09	1535	-2.09	0.37	Flood	1.89	59	20.0	280	0.35	4.9	123	3447						24.9	7.79	30.06	16639	2.91	2.42		
W10	-18.288	5/27/09	827	-2.28	0.12	Ebb	1.66	51	22.3	313	0.15	2.1	120	3372						22.5	7.91	29.79	16490	2.88	0.67		
W10	-18.288	6/18/09	931	-2.21	0.21	Flood	1.97	61	25.1	352	0.36	5.1	147	4121						22.5	8.03	29.60		3.25	0.48		
W10	-18.288	7/14/09	1017	-2.10	0.43	High	1.78	55	18.1	254	0.38	5.3	94	2638						22.3	8.06	29.89	16545	3.39	0.34		
W10	-18.288	8/19/09	825	-2.45	0.03	Ebb	1.97	61	23.3	327	0.84	11.7	114	3190						22.3	7.98	30.05	16633	3.57	0.49		
W10	-18.288	9/22/09	834	-2.00	0.58	Ebb	1.94	60	21.1	296	0.60	8.4	101	2827						22.5	7.94	30.28	16761	2.65	0.48		
W10	-18.288	10/19/09	1608	-2.27	0.27	Flood	3.00	93	19.2	269	1.61	22.5	85	2388						23.1	8.22	30.58	16927	2.71	0.90		
W10	-18.288	11/17/09	1411	-2.50	0.15	Flood	2.75	85	22.7	318	0.86	12.1	108	3022						23.4	7.90	31.14	17237	1.87	0.33		
W10	-18.288	12/7/09	1449	-2.55	0.09	Ebb	2.39	74	28.0	392	0.96	13.4	166	4660						24.0	7.83	30.74	17015	1.07	0.21		
W10	-18.288	1/5/10	1257	-2.45	0.09	Ebb	1.94	60	21.8	306	1.29	18.0	150	4206						24.1	7.88	30.38	16816	2.75	0.64		
W10	-18.288	2/1/10	1426	-2.33	0.00	Flood	2.20	68	24.3	340	0.64	9.0	143	4025						23.1	7.90	30.09	16656	2.82	0.20		
W10	-18.288	3/9/10	1343	-2.44	0.15	High	2.71	84	21.3	299	0.36	5.0	156	4370						24.2	7.92	30.47	16866	3.69	0.55		
W10	-18.288	4/6/10	1143	-2.40	0.15	High	2.58	80	22.6	317	0.79	11.0	150	4204						25.1	7.97	30.62	16949	3.67	0.44		
W10	-18.288	5/11/10	1214	-2.18	0.30	Flood	1.58	49	16.8	235	1.50	21.0	124	3469						24.6	8.09	30.53	16899	3.62	0.46		
W10	-18.288	6/15/10	1325	-2.52	0.09	Flood	1.87	58	23.3	326	0.29	4.0	158	4434						22.4	8.08	30.35	16800	3.40	0.14		
W10	-18.288	7/13/10	1155	-2.57	0.09	Flood	1.90	59	26.9	377	0.07	1.0	155	4346						22.1	7.98	30.28	16761	2.28	0.63		
W10	-18.288	8/3/10	1153	-1.97	0.55	High	2.23	69	31.7	444	0.43	6.0	159	4458						22.0	7.95	30.10	16661	1.48	0.61		
W10	-18.288	9/14/10	1152	-1.97	0.52	Ebb	2.23	69	36.6	513	0.14	2.0	170	4765						22.5	7.82	30.68	16982	1.00	0.17		
W10	-18.288	10/12/10	1205	-2.07	0.40	Ebb	2.45	76	31.6	442	0.06	0.9	173	4847						22.6	7.82	30.39	16822	1.47	0.23		
W10	-18.288	11/16/10	1118	-2.05	0.37	Flood	2.74	85	29.5	413	0.19	2.7	174	4874						22.6	7.79	30.36	16805	2.40	0.13		
W10	-18.288	12/14/10	1156	-2.11	0.30	Ebb	2.62	81	25.1	351	0.09	1.3	180	5064						22.6	7.81	30.39	16822	2.28	0.17		
W10	-18.288	1/4/11	1146	-2.49	0.03	Low	2.87	89	24.7	346	0.27	3.8	171	4813						23.0	7.74	30.59	16932	2.56	0.13		
W10	-18.288	4/5/11	1211	-2.46	0.00	Flood	2.26	70	29.2	409	0.06	0.8	141	3967						23.4	7.90	30.82	17060	2.34	0.06		
W10	-18.288	7/12/11	1201	-2.22	0.43	Flood	2.10	65	32.4	454	0.12	1.7	156	4391						22.6	7.56	30.80	17049	0.39	0.67		
W10	-18.288	10/10/11	1416	-2.02	0.43	Flood	2.62	81	32.2	451	0.16	2.3	155	4345						22.7	7.57	30.87	17087	0.18	0.27		
W10	-18.288	1/10/12	1202	-2.50	0.00	Low	2.26	70	29.5	413	5.21	73	153	4290						22.9	7.54	30.44	16849	0.10	0.10		
W10	-18.288	5/1/12	1220	-2.07	0.40	Flood	3.00	93	27.7	388	0.11	1.5	159	4475						20.1	7.78	29.92	16561	3.89	0.10		
W10	-18.288	7/18/12	1108	-2.42	0.09	Flood	2.29	71	38.5	539	0.50	7.0	167	4695						22.0	7.83	30.25	16744	4.43	0.15		
W10	-18.288	10/16/12	1211	-2.39	0.09	Low	2.13	66	36.3	508	0.27	3.8	166	4649						22.1	7.72	30.37	16811	3.86	0.14		
W10	-18.288	1/8/13	1215	-2.25	0.18	Flood	2.36	73	37.6	527	0.19	2.7	196	5492						22.2	7.77	29.95	16578	3.94	0.08		
W10	-18.288	4/9/13	1410	-2.12	0.43	Flood	3.58	111	23.6	331	4.80	67.3	180	5059						20.7	7.60	29.69	16434	1.68	0.13		
W10	-18.288	7/17/13	1411	-1.97	0.58	Ebb	3.07	95	39.5	553	0.15	2.1	144	4036						19.5	7.70	29.46	16307	3.69	0.29		
W10	-18.288	10/15/13	1143	-2.11	0.46	Flood	2.91	90	24.2	339	0.09	1.2	164	4595						23.0	7.53	31.93	17674	0.57	0.09		
W10	-18.288	1/15/14	1141	-2.40	0.00	Low	3.13	97	33.2	465	0.26	3.7	146	4105						21.6	7.69	30.36	16805	1.61	0.13		
W10	-18.288	4/29/14	1415	-2.21	0.40	Flood	3.00	93	30.3	425	0.41	5.8	176	4937						18.8	7.53	28.81	15947	1.73	0.06		
W10	-18.288	7/29/14	1224	-2.36	0.12	Flood	2.42	75	39.6	554	0.50	7.0	142	3994						23.0	7.48	31.50	17436	3.77	0.23		
W10	-18.288	11/5/04	1220	-2.17	0.15	Flood	2.74	85	30.5	427	0.34	4.7	142	3987						23.4	7.62	30.84	17071	1.91	0.10		
W10	-18.288	2/10/15	1219	-2.24	0.24	High	3.65	113	54.0	757	0.66	9.3	248	6975						22.5	7.47	30.36	16805	1.21	0.15		
W10	-18.288	5/19/15	1224	-2.49	0.00	Flood	2.93	91	27.2	381	1.11	15.5	138	3869						23.7	7.82	29.90	16550	4.51	0.03		
W10	-18.288	7/21/15	1442	-2.36	0.18	Flood	2.90	90	28.7	402	34.35	481.1	147	4123						22.8	7.60	30.58	16927	0.24	0.04		
W10	-18.288	11/9/15	1325	-2.05	0.42	Flood	5.26	163	28.5	399	0.11	1.5	175	4910						22.7	7.46	29.90	16550	0.66	0.08		
W10	-18.288	1/26/16	1232	-2.46	0.08	Low	3.07	95	56.3	788	0.02	0.3	158	4426						23.3	7.32	30.73	17010	0.25	0.05		
W10	-18.288	4/21/16	1453	-2.00	0.55	High	3.06	95	60.0	840	1.56	21.9	143	4014						22.6	7.27	30.69	16988	0.30	0.08		

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Well 10 Data Table

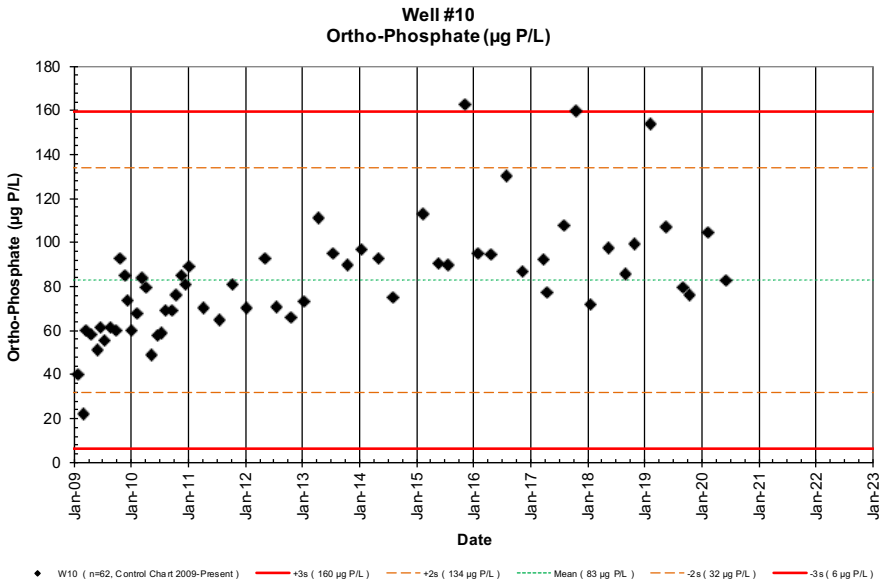
1/21/2009 - 7/21/20

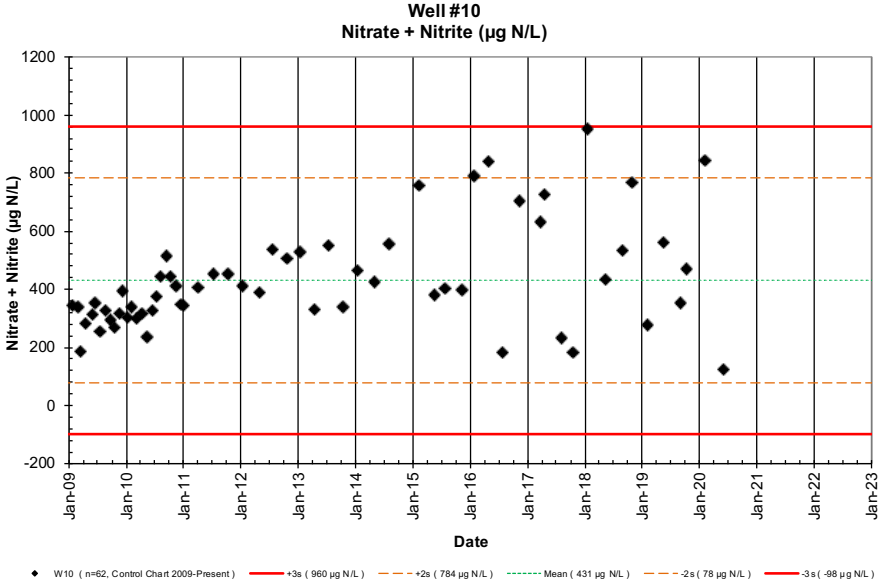
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W10	-18.288	7/26/16	1047	-2.02	0.40	Flood	4.21	130	13.1	183	4.85	67.9	166	4670						21.8	7.39	30.64	16960	0.23	0.05		
W10	-18.288	11/10/16	1407	-1.94	0.50	Ebb	2.81	87	50.2	703	1.30	18.2	130	3662						21.4	7.34	30.68	16982	3.01	0.15		
W10	-18.288	3/21/17	1700	-2.19	0.07	Low	2.98	92	45.2	633	0.03	0.4	153	4308						21.7	7.36	30.70	16993	2.36	0.06		
W10	-18.288	4/13/17	1141	-2.35	-0.05	Low	2.49	77	52.0	728	0.28	3.9	138	3863						22.9	7.39	31.62	17502	1.39	0.08		
W10	-18.288	8/4/17	1439	-1.71	0.62	High	3.48	108	16.7	234	19.90	278.8	162	4554						22.2	7.43	31.28	17314	0.22	0.07		
W10	-18.288	10/19/17	1129	-2.29	0.20	Flood	5.17	160	13.2	185	54.74	766.7	163	4575						21.9	7.32	30.52	16894	0.44	0.11		
W10	-18.288	1/17/18	1510	-2.26	0.35	High	2.32	72	67.9	952	0.22	3.1	143	4029						22.3	7.17	30.43	16844	0.70	0.06		
W10	-18.288	5/10/18	1449	-2.06	0.35	Ebb	3.16	98	30.9	433	0.89	12.4	148	4144						21.4	7.20	33.32	18443	0.69	0.07		
W10	-18.288	8/29/18	1640	-1.95	0.52	Flood	2.77	86	38.1	533	1.29	18.0	149	4181						23.2	7.23	30.59	16932	0.74	0.19		
W10	-18.288	10/25/18	1150	-2.27	0.20	Flood	3.21	99	54.6	765	0.02	0.3	126	3526						24.4	7.32	31.46	17414	1.70	0.07		
W10	-18.288	2/7/19	1527	-2.38	0.30	Flood	4.98	154	19.8	277	0.01	0.1	144	4036						22.1	7.29	30.87	17087	0.47	0.05		
W10	-18.288	5/16/19	1445	-1.93	0.45	Flood	3.46	107	39.9	559	3.31	46.3	145	4072						21.6	7.15	30.89	17098	0.25	0.02		
W10	-18.288	8/29/19	1053	-2.34	0.17	Flood	2.57	80	25.3	355	17.22	241.2	141	3963						25.0	7.27	31.37	17364	0.02	0.04		
W10	-18.288	10/10/19	1240	-1.97	0.55	High	2.46	76	33.7	472	0.62	8.7	129	3629						25.2	7.37	32.02	17724	0.13	0.16		
W10	-18.288	2/4/20	1547	-2.31	0.10	Ebb	3.39	105	60.3	844	-0.74	-10.4	126	3546						23.7	7.38	32.08	17757	0.20	0.10		
W10	-18.288	6/2/20	1150	-1.99	0.45	Flood	2.67	83	9.0	126	5.46	76.5	153	4287						21.7	7.47	31.11	17220	0.34	0.05		
W10	-18.288	7/1/20																									
W10	-18.288	10/1/20																									
W10	-18.288	1/1/21																									
W10	-18.288	4/1/21																									
W10	-18.288	7/1/21																									
W10	-18.288	10/1/21																									
W10	-18.288	1/1/22																									
W10	-18.288	4/1/22																									
W10	-18.288	7/1/22																									
W10	-18.288	10/1/22																									
W10	-18.288	1/1/23																									
W10	-18.288	4/1/23																									
Mean				-2.22	0.26		2.68	83	30.76	431	2.79	39.1	151	4249						22.7	7.66	30.56	16925	1.92	0.35		
Std. Dev.				0.20	0.19		0.82	26	12.60	176	8.61	120.6	29	823						1.2	0.28	0.71	390	1.34	0.56		
Maximum				-1.71	0.62		5.26	163	67.94	952	54.74	766.7	274	7700						25.2	8.22	33.32	18443	4.51	2.77		
Minimum				-2.57	-0.05		0.72	22	9.00	126	-0.74	-10.4	85	2388						18.8	7.15	28.81	15947	0.02	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	61	62	62		

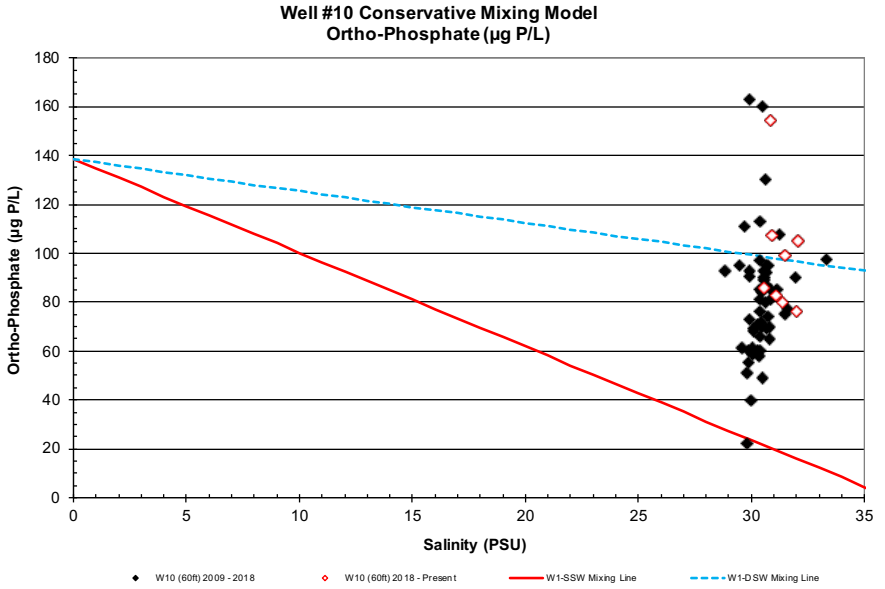
NELHA Water Quality Laboratory

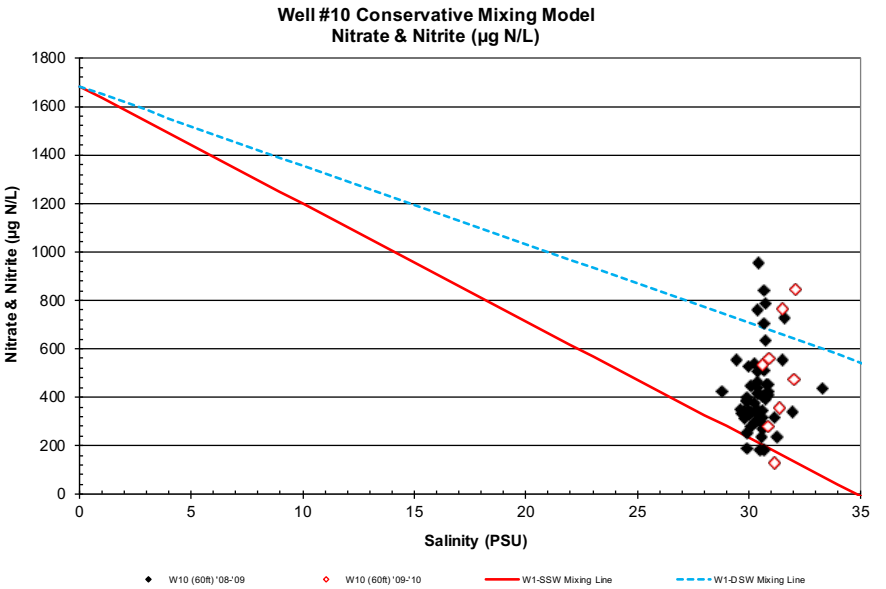
Well 10 Charts

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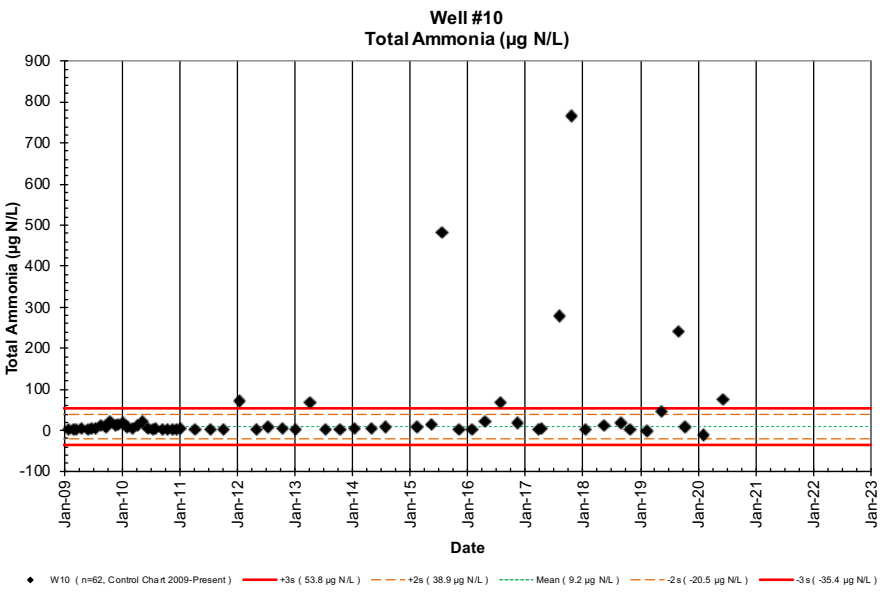


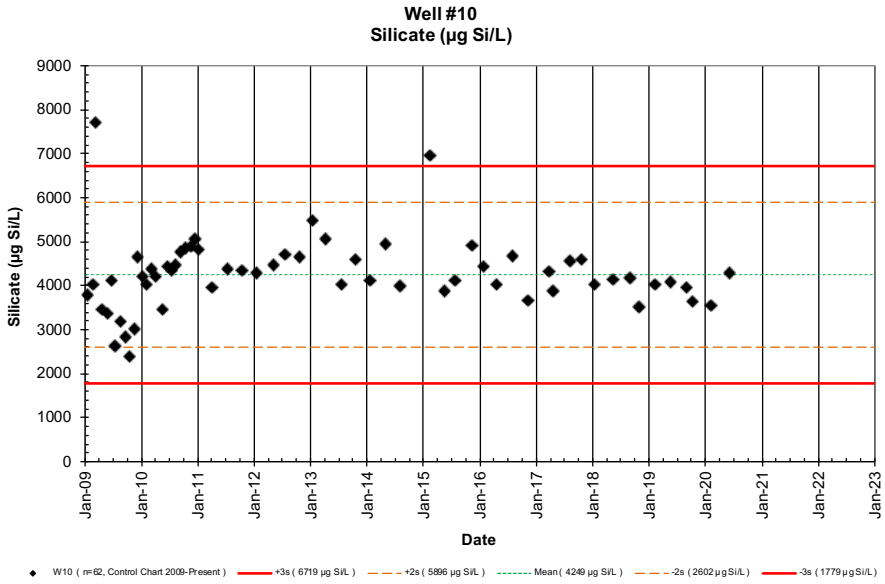


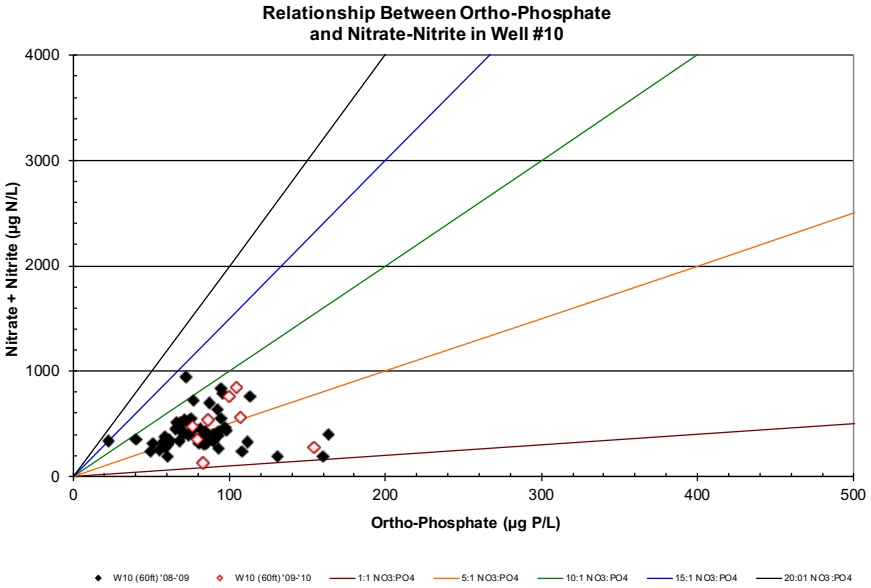
NELHA Water Quality Laboratory

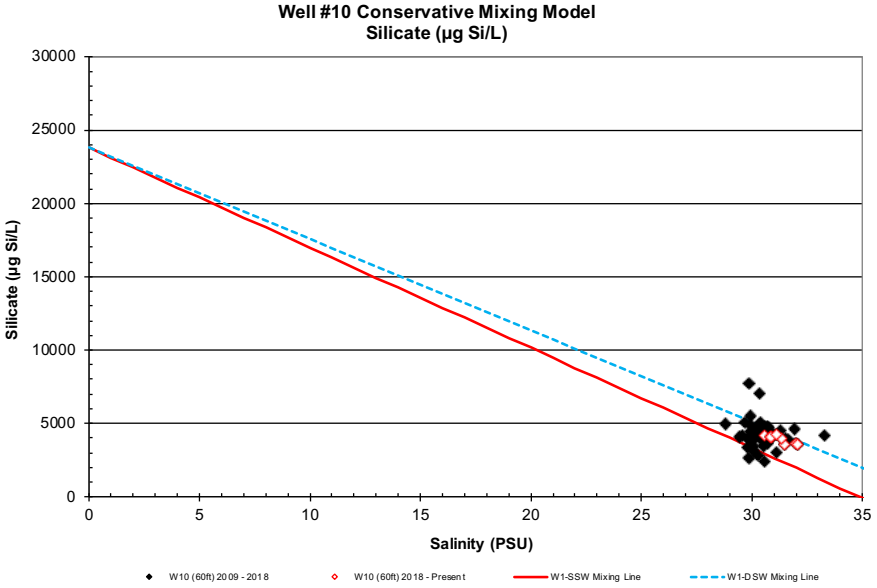
Well 10 Charts

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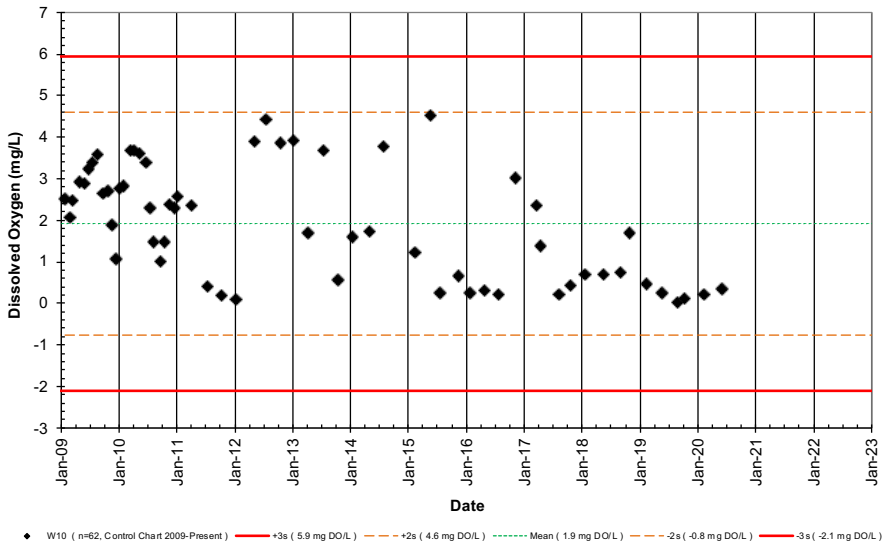


NELHA Water Quality Laboratory

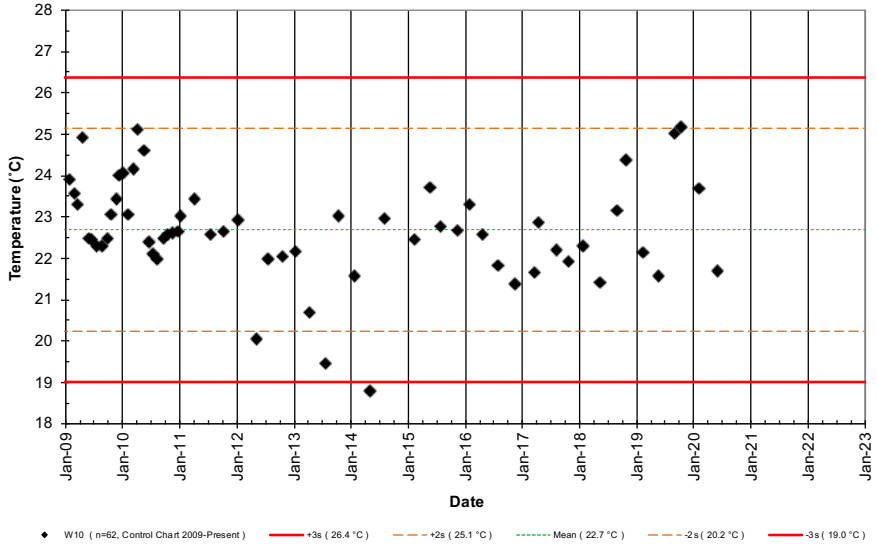
Well 10 Charts

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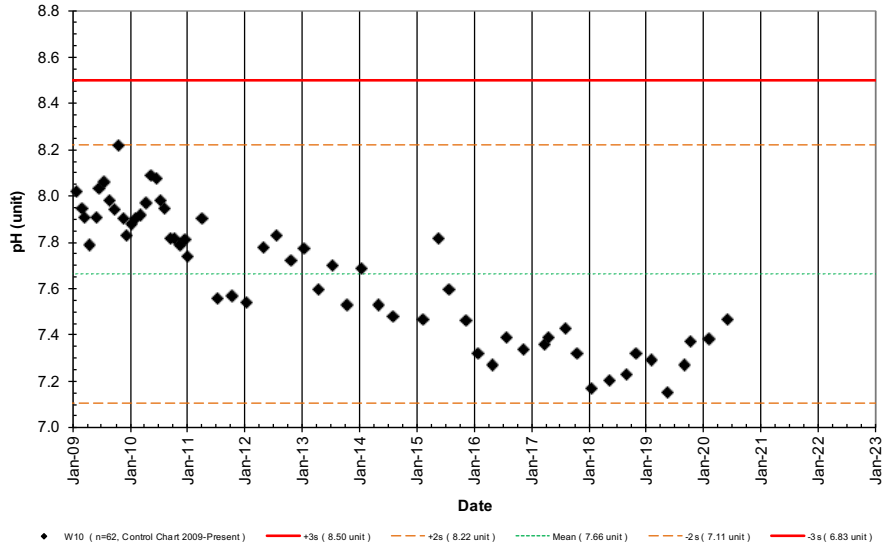
Well #10
Dissolved Oxygen (mg DO/L)



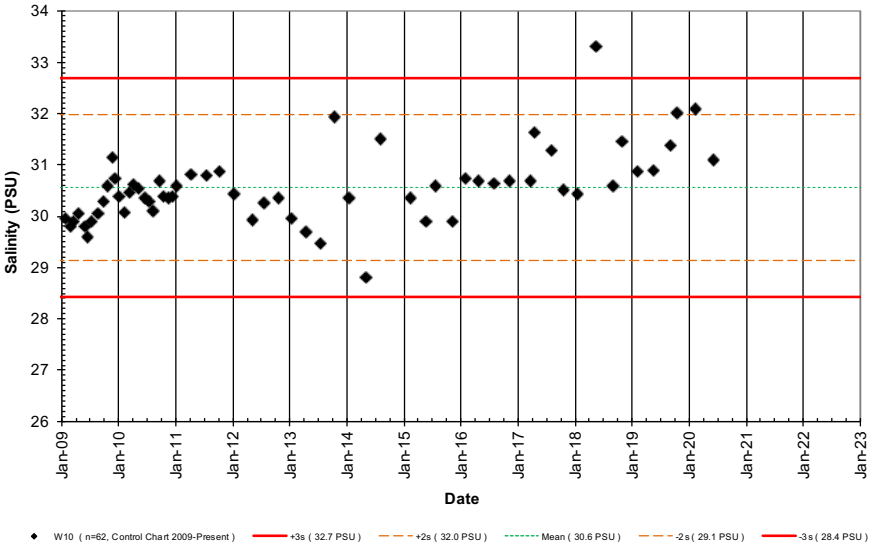
Well #10
Temperature (˚C)



Well #10
pH (unit)



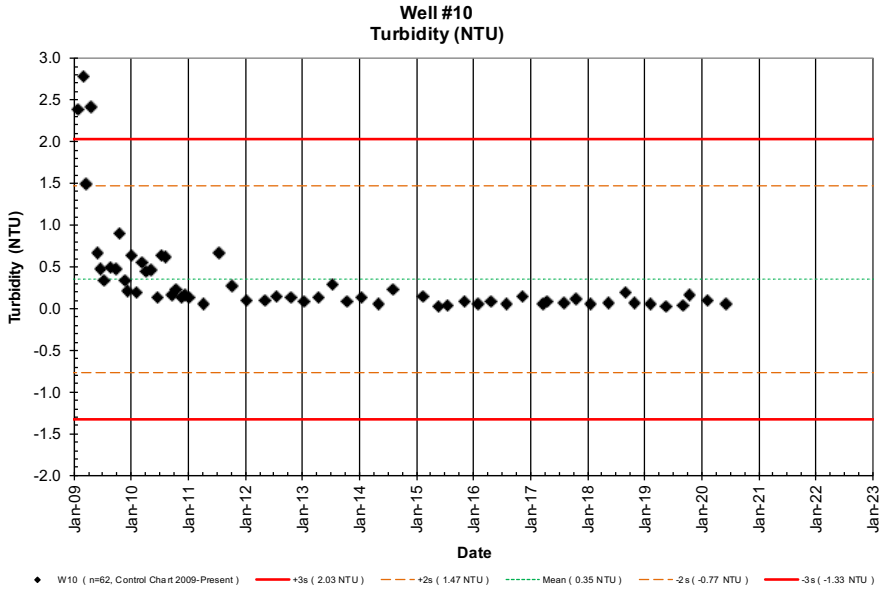
Well #10
Salinity (PSU)

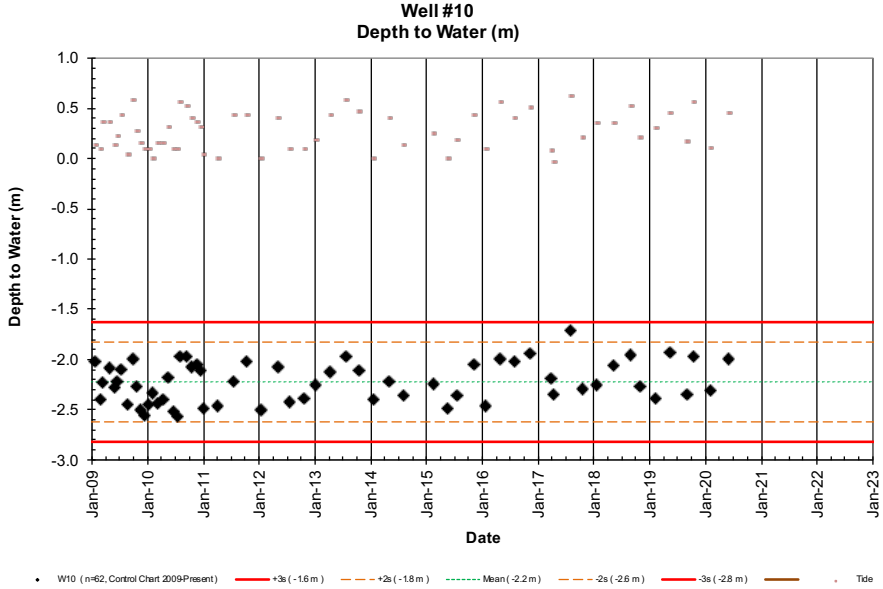


NELHA Water Quality Laboratory

Well 10 Charts

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NELHA Water Quality Laboratory

Well 10A Data Table

1/21/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W10A	-12.192	1/21/09	1104	-2.97	0.12	Flood	3.03	94	65.5	917	0.14	1.9	252	7090						21.6	7.68	25.09	13888	5.16	1.70		
W10A	-12.192	2/24/09	1224	-2.46	0.09	Flood	3.05	95	51.4	720	0.15	2.1	257	7224						21.6	7.65	26.03	14408	5.06	3.03		
W10A	-12.192	3/13/09	1539	-2.23	0.37	Flood	2.62	81	32.8	460	0.13	1.8	198	5561						21.2	7.64	25.31	14010	4.79	0.42		
W10A	-12.192	4/20/09	1551	-2.23	0.37	Flood	3.38	105	39.8	557	0.35	4.9	183	5145						22.5	7.67	25.86	14314	5.01	15.1		
W10A	-12.192	5/27/09	840	-2.37	0.12	Ebb	3.11	96	42.0	588	0.13	1.8	377	10600						21.1	7.83	26.89	14884	4.40	0.53		
W10A	-12.192	6/18/09	915	-2.31	0.21	Flood	2.19	68	31.6	443	0.31	4.3	158	4426						21.3	7.72	27.58		5.11	0.81		
W10A	-12.192	7/14/09	953	-2.16	0.43	High	2.82	87	40.3	564	0.62	8.7	137	3854						21.3	7.79	27.53	15239	5.04	0.35		
W10A	-12.192	8/19/09	814	-2.44	0.03	Ebb	2.82	88	41.6	582	0.98	13.7	164	4619						21.6	7.83	28.64	15853	4.83	0.21		
W10A	-12.192	9/22/09	817	-1.97	0.58	Ebb	2.20	68	26.7	374	0.50	7.0	112	3140						20.9	8.20	27.42	15178	4.49	0.13		
W10A	-12.192	10/19/09	1543	-2.30	0.27	Flood	4.25	132	46.4	650	0.67	9.4	87	2450						20.7	7.91	27.36	15144	4.93	3.98		
W10A	-12.192	11/17/09	1350	-2.49	0.15	Flood	3.33	103	44.1	618	0.85	11.9	149	4177						20.6	7.59	27.33	15128	4.82	0.16		
W10A	-12.192	12/7/09	1458	-2.55	0.09	Ebb	3.45	107	54.4	762	1.01	14.2	254	7136						20.9	7.64	26.63	14740	4.88	0.04		
W10A	-12.192	1/5/10	1323	-2.43	0.09	Ebb	2.94	91	45.0	630	1.07	15.0	245	6891						21.1	7.67	26.55	14696	4.25	1.62		
W10A	-12.192	2/1/10	1451	-2.36	0.00	Flood	3.71	115	56.0	785	0.57	8.0	224	6288						21.1	7.68	26.36	14591	4.49	1.44		
W10A	-12.192	3/9/10	1354	-2.41	0.15	High	4.20	130	53.0	742	0.64	9.0	269	7553						22.0	7.70	25.54	14137	4.84	5.89		
W10A	-12.192	4/6/10	1138	-2.38	0.15	High	4.23	131	48.4	678	1.07	15.0	259	7283						20.6	7.68	26.28	14547	4.84	0.30		
W10A	-12.192	5/11/10	1210	-2.17	0.30	Flood	3.55	110	45.7	640	0.79	11.0	233	6544						21.2	7.81	27.17	15039	4.72	0.28		
W10A	-12.192	6/15/10	1338	-2.38	0.09	Flood	3.23	100	43.6	611	0.36	5.0	236	6626						20.6	7.74	26.99	14940	4.29	0.17		
W10A	-12.192	7/13/10	1206	-2.50	0.09	Flood	3.81	118	50.6	709	0.21	3.0	265	7437						20.6	7.67	27.26	15089	4.18	0.10		
W10A	-12.192	8/3/10	1202	-2.03	0.55	High	4.29	133	54.3	761	0.71	10.0	245	6883						20.9	7.66	27.84	15410	4.09	0.20		
W10A	-12.192	9/14/10	1202	-1.98	0.52	Ebb	4.29	133	51.3	718	0.74	10.3	256	7201						20.6	7.62	27.62	15288	3.58	0.24		
W10A	-12.192	10/12/10	1214	-2.11	0.40	Ebb	4.23	131	54.5	764	0.10	1.4	250	7013						20.9	7.61	27.72	15344	4.49	0.09		
W10A	-12.192	11/16/10	1126	-2.06	0.37	Flood	3.78	117	58.1	814	0.19	2.6	229	6445						21.6	7.67	27.77	15371	4.93	0.12		
W10A	-12.192	12/14/10	1205	-2.11	0.30	Ebb	4.55	141	60.1	842	0.23	3.2	251	7038						21.0	7.66	26.65	14751	4.47	0.28		
W10A	-12.192	1/4/11	1154	-2.39	0.03	Low	4.29	133	58.5	819	0.48	6.7	270	7592						20.8	7.50	25.60	14170	3.32	0.18		
W10A	-12.192	4/5/11	1217	-2.37	0.00	Flood	3.94	122	39.5	553	0.03	0.4	232	6520						21.2	7.64	26.39	14608	2.36	0.19		
W10A	-12.192	7/12/11	1152	-2.23	0.43	Flood	4.33	134	51.3	718	0.09	1.3	270	7584						20.8	7.50	27.10	15001	2.47	0.47		
W10A	-12.192	10/10/11	1426	-2.03	0.43	Flood	3.94	122	53.9	755	0.13	1.8	275	7726						19.8	7.55	26.82	14846	3.99	0.35		
W10A	-12.192	1/10/12	1213	-2.50	0.00	Low	3.78	117	54.8	768	0.13	1.8	249	7000						20.5	7.39	26.35	14585	2.53	0.42		
W10A	-12.192	5/1/12	1227	-2.05	0.40	Flood	3.39	105	47.9	671	0.08	1.1	228	6403						20.5	7.75	28.60	15831	4.84	0.20		
W10A	-12.192	7/18/12	1114	-2.45	0.21	Flood	2.91	90	46.9	657	0.34	4.7	209	5873						20.5	7.81	25.54	14137	5.69	0.23		
W10A	-12.192	10/16/12	1204	-2.37	0.09	Low	2.84	88	47.0	658	0.31	4.4	214	6000						20.6	7.68	28.84	15964	4.92	0.33		
W10A	-12.192	1/8/13	1230	-2.24	0.18	Flood	3.39	105	53.1	744	0.52	7.3	271	7625						20.5	7.58	27.61	15283	4.31	0.67		
W10A	-12.192	4/9/13	1422	-2.12	0.43	Flood	4.81	149	48.9	685	0.36	5.1	270	7573						19.0	7.51	26.71	14785	3.80	2.41		
W10A	-12.192	7/17/13	1422	-1.96	0.58	Ebb	3.78	117	51.5	721	0.16	2.3	256	7203						19.0	7.50	27.23	15073	5.07	0.54		
W10A	-12.192	10/15/13	1153	-2.10	0.46	Flood	3.52	109	49.3	691	0.41	5.7	244	6840						19.9	7.47	28.45	15748	3.99	0.59		
W10A	-12.192	1/15/14	1148	-2.43	0.00	Low	4.20	130	69.6	975	0.44	6.1	260	7303						18.6	7.49	26.60	14724	4.68	0.73		
W10A	-12.192	4/29/14	1415	-2.21	0.40	Flood	3.55	110	59.3	831	0.55	7.7	245	6878						18.0	7.46	27.10	15001	5.57	0.11		
W10A	-12.192	7/29/14	1224	-2.38	0.12	Flood	2.71	84	39.1	547	0.29	4.0	158	4441						22.4	7.59	30.58	16927	4.70	0.71		
W10A	-12.192	11/5/14	1220	-2.17	0.15	Flood	3.45	107	50.5	708	0.15	2.1	207	5819						21.6	7.57	28.25	15637	3.32	0.72		
W10A	-12.192	2/10/15	1229	-2.25	0.24	High	5.01	155	55.3	775	0.49	6.8	267	7491						19.7	7.44	26.76	14812	4.07	0.36		
W10A	-12.192	5/19/15	1212	-2.53	0.00	Flood	2.65	82	40.4	565	0.60	8.4	170	4763						23.3	7.87	28.52	15787	4.84	0.24		
W10A	-12.192	7/21/15	1435	-2.36	0.18	Flood	4.33	134	55.1	772	0.57	8.0	225	6332						22.1	7.47	28.06	15532	2.71	0.88		
W10A	-12.192	11/9/15	1314	-2.03	0.42	Flood	4.58	142	58.7	822	0.17	2.4	220	6175						21.3	7.34	27.14	15023	4.34	0.34		
W10A	-12.192	1/26/16	1220	-2.47	0.08	Low	3.69	114	66.6	934	0.06	0.8	203	5692						21.6	7.14	28.33	15681	1.16	0.05		
W10A	-12.192	4/21/16	1439	-1.98	0.55	High	4.22	131	54.1	758	0.36	5.0	211	5918						21.1	7.21	27.96	15477	2.76	0.07		

NELHA Water Quality Laboratory

Well 10A Data Table

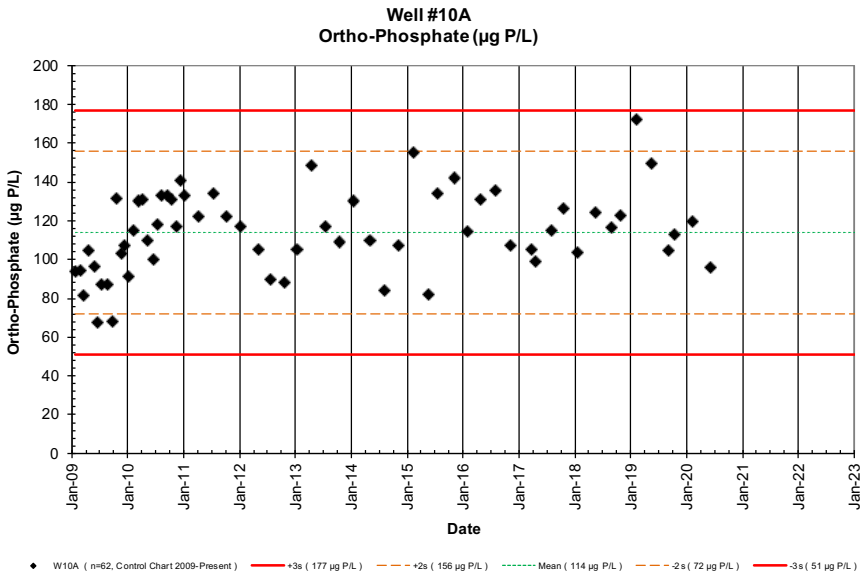
1/21/2009 - 7/21/20

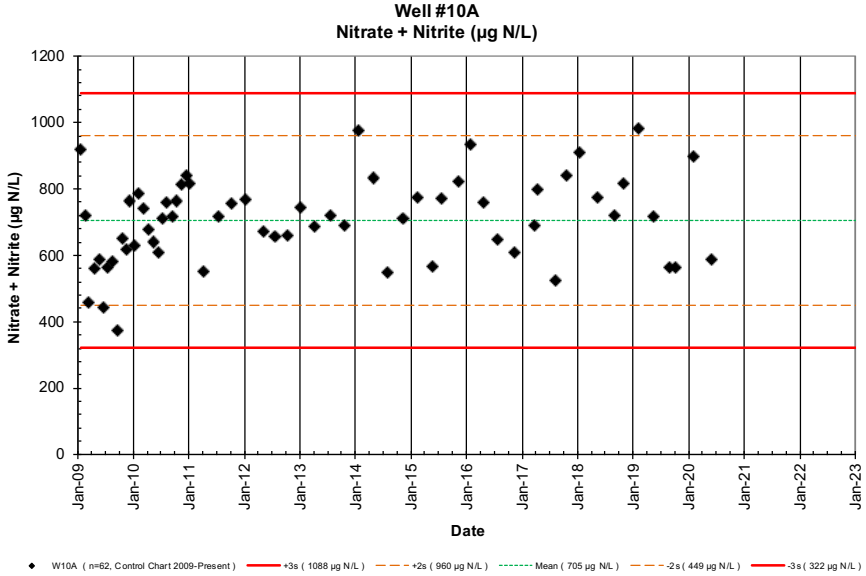
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W10A	-12.192	7/26/16	1100	-2.05	0.40	Flood	4.38	136	46.1	646	0.24	3.4	235	6612						20.5	7.30	26.64	14746	3.83	0.49		
W10A	-12.192	11/10/16	1356	-1.93	0.50	Ebb	3.47	107	43.6	610	0.18	2.5	197	5536						21.7	7.27	27.98	15488	3.49	0.50		
W10A	-12.192	3/22/17	1649	-2.22	0.07	Low	3.40	105	49.2	690	0.32	4.5	203	5691						21.2	7.23	29.07	16091	2.70	2.34		
W10A	-12.192	4/13/17	1128	-2.39	-0.05	Low	3.21	100	57.1	799	0.31	4.4	180	5048						21.5	7.26	29.93	16567	1.49	0.25		
W10A	-12.192	8/4/17	1425	-1.72	0.62	High	3.71	115	37.4	524	0.09	1.2	221	6196						21.4	7.50	28.87	15980	4.17	1.02		
W10A	-12.192	10/19/17	1114	-2.28	0.20	Flood	4.07	126	60.0	840	1.40	19.6	220	6167						21.1	7.38	27.34	15133	3.98	0.49		
W10A	-12.192	1/17/18	1457	-2.25	0.35	High	3.35	104	64.9	909	0.36	5.0	198	5548						21.3	7.15	28.47	15759	1.90	0.25		
W10A	-12.192	5/10/18	1434	-2.05	0.35	ebb	4.02	125	55.3	774	0.22	3.1	213	5971						20.6	7.42	30.05	16633	4.10	0.37		
W10A	-12.192	8/29/18	1649	-1.93	0.52	Flood	3.75	116	51.4	721	0.29	4.1	224	6295						21.6	7.47	27.32	15122	3.90	1.21		
W10A	-12.192	10/25/18	1135	-2.31	0.20	Flood	3.97	123	58.4	818	0.03	0.4	162	4536						22.8	7.32	30.02	16617	2.21	0.77		
W10A	-12.192	2/7/19	1512	-2.42	0.30	Flood	5.57	172	70.2	983	0.04	0.5	265	7453						19.6	7.25	26.46	14646	4.31	0.22		
W10A	-12.192	5/16/19	1434	-1.95	0.45	Flood	4.83	150	51.3	718	0.11	1.5	204	5733						20.5	7.14	28.59	15825	2.58	0.33		
W10A	-12.192	8/29/19	1039	-2.35	0.17	Flood	3.38	105	40.2	564	0.01	0.1	169	4750						24.1	7.23	29.91	16556	0.40	0.71		
W10A	-12.192	10/10/19	1229	-1.97	0.55	High	3.65	113	40.3	564	0.60	8.4	167	4701						23.5	7.38	29.62	16395	2.49	1.24		
W10A	-12.192	2/4/20	1534	-2.31	0.10	Ebb	3.86	120	64.2	900	-0.60	-8.4	175	4923						21.9	7.36	30.10	16661	1.02	0.12		
W10A	-12.192	6/2/20	1137	-1.97	0.45	Flood	3.09	96	41.9	586	0.07	1.0	206	5796						21.5	7.64	28.92	16008	4.11	0.52		
W10A	-12.192	7/1/20																									
W10A	-12.192	10/1/20																									
W10A	-12.192	1/1/21																									
W10A	-12.192	4/1/21																									
W10A	-12.192	7/1/21																									
W10A	-12.192	10/1/21																									
W10A	-12.192	1/1/22																									
W10A	-12.192	4/1/22																									
W10A	-12.192	7/1/22																									
W10A	-12.192	10/1/22																									
W10A	-12.192	1/1/23																									
W10A	-12.192	4/1/23																									
Mean				-2.24	0.26		3.68	114	50.32	705	0.37	5.2	221	6199						21.0	7.55	27.57	15260	3.93	0.95		
Std. Dev.				0.21	0.19		0.68	21	9.12	128	0.33	4.6	47	1314						1.1	0.21	1.29	722	1.18	2.08		
Maximum				-1.72	0.62		5.57	172	70.19	983	1.40	19.6	377	10600						24.1	8.20	30.58	16927	5.69	15.10		
Minimum				-2.97	-0.05		2.19	68	26.70	374	-0.60	-8.4	87	2450						18.0	7.14	25.09	13888	0.40	0.04		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	61	62	62		

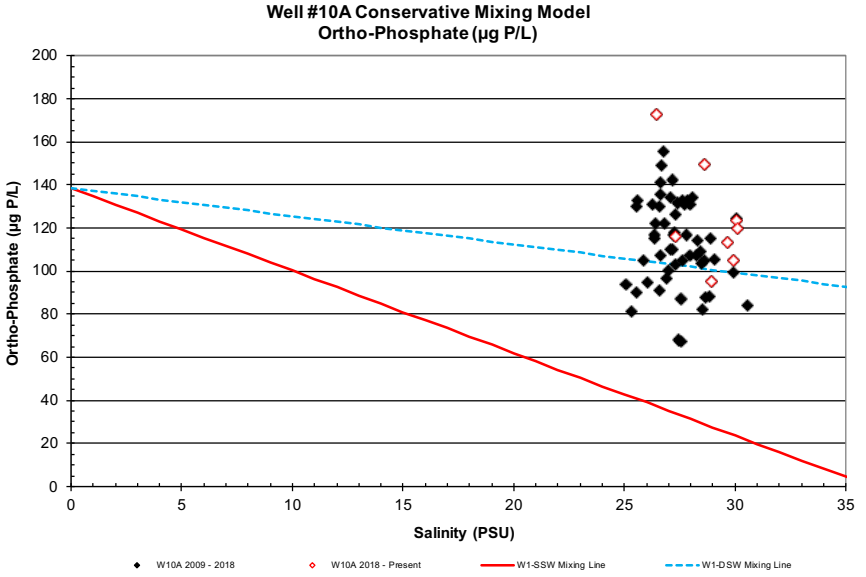
NELHA Water Quality Laboratory

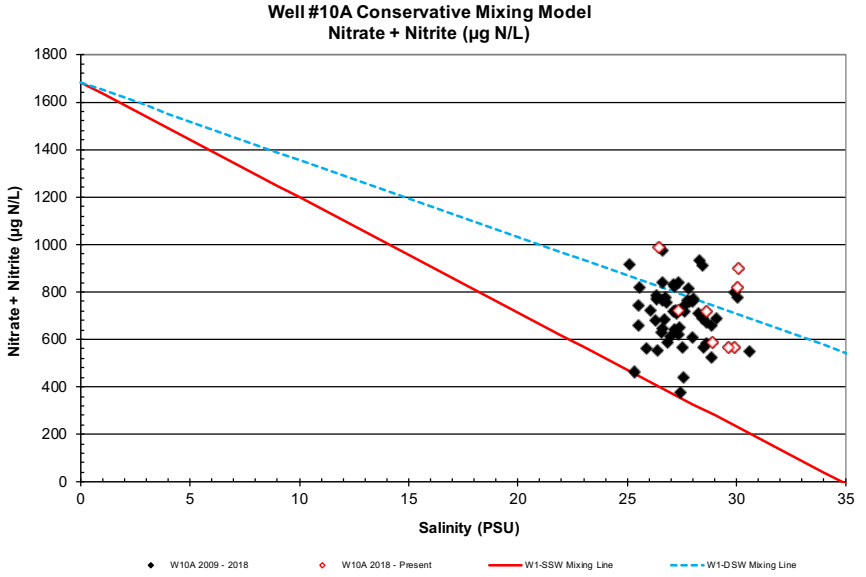
Well 10A Charts

1/21/2009 - 7/21/20





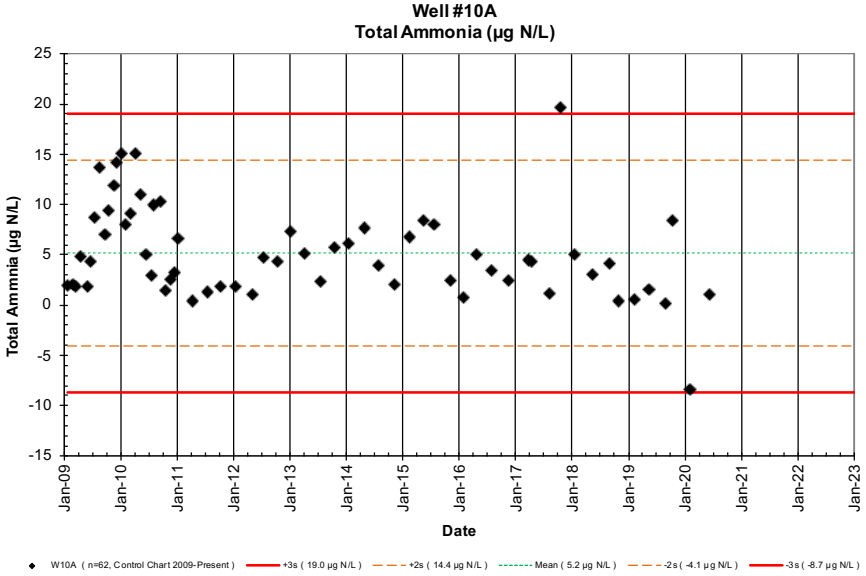


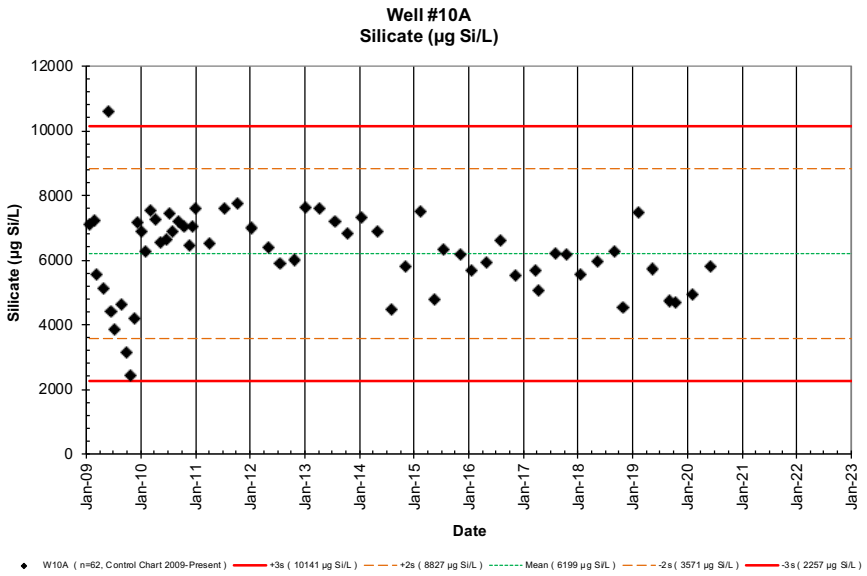


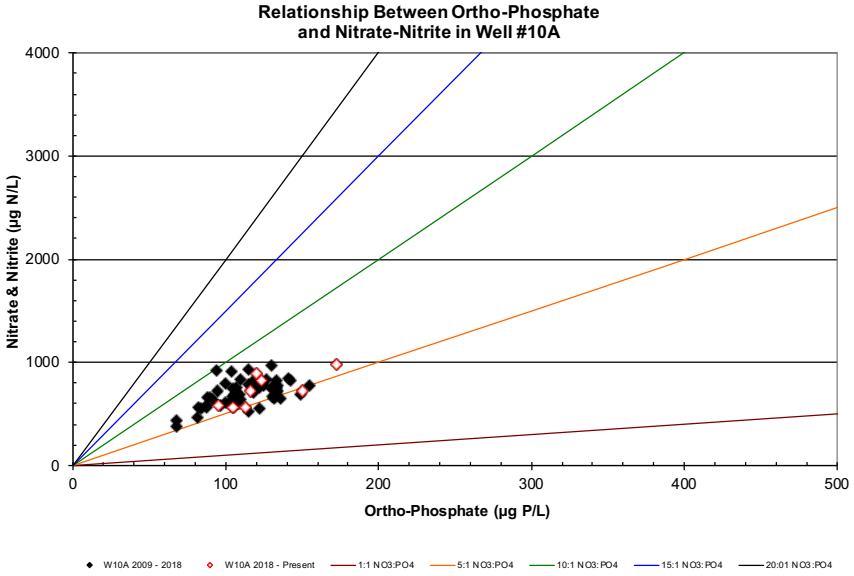
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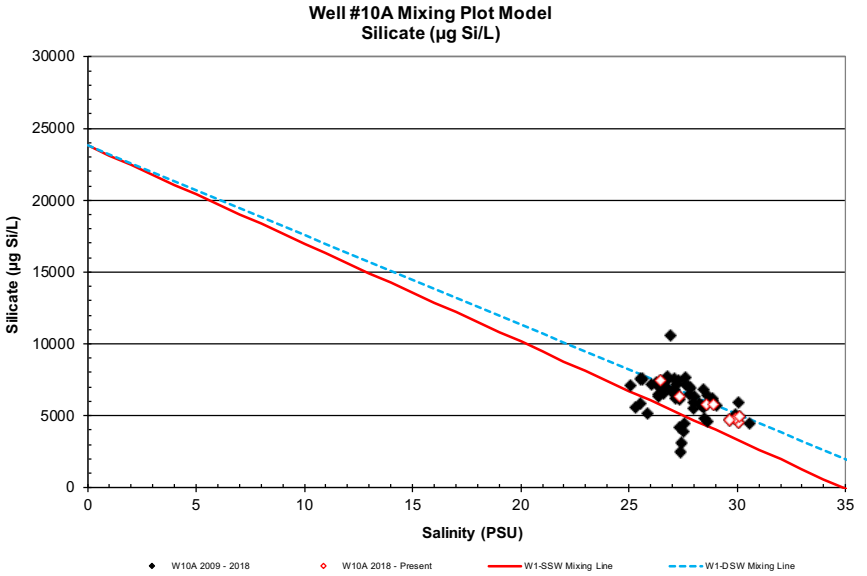
Well 10A Charts

1/21/2009 - 7/21/20







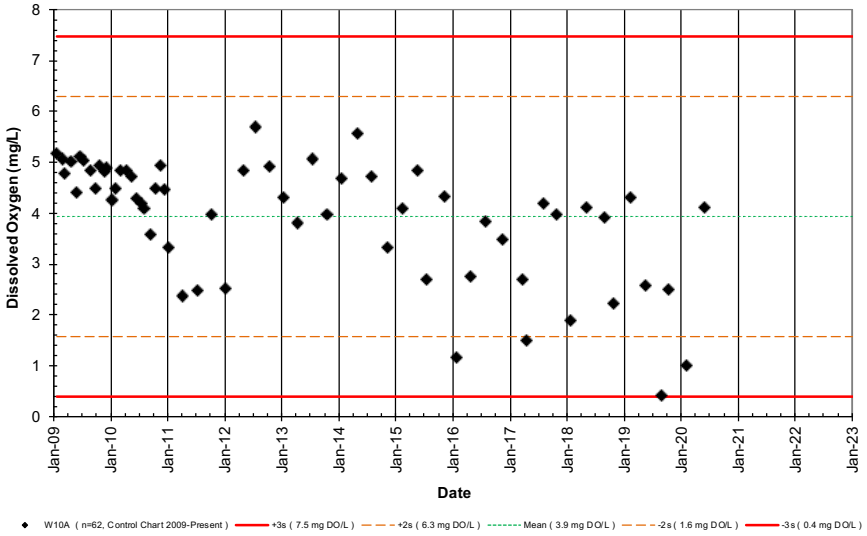


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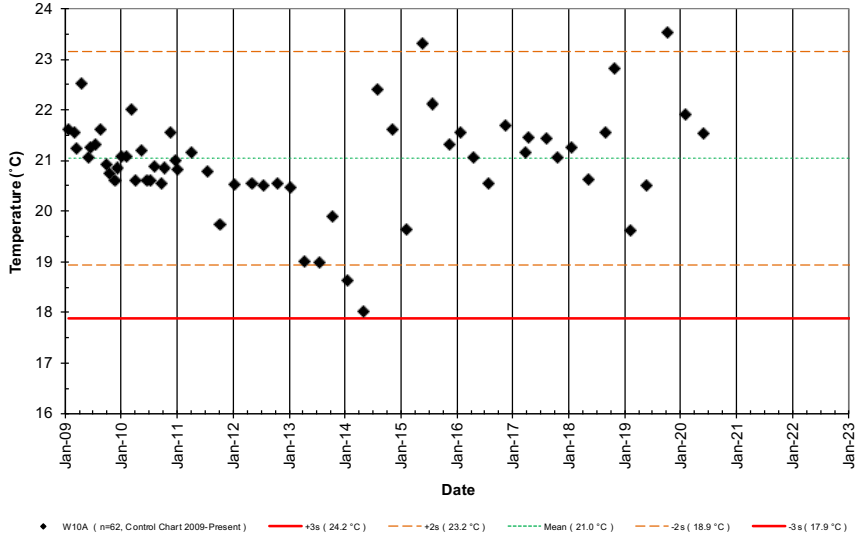
Well 10A Charts

1/21/2009 - 7/21/20

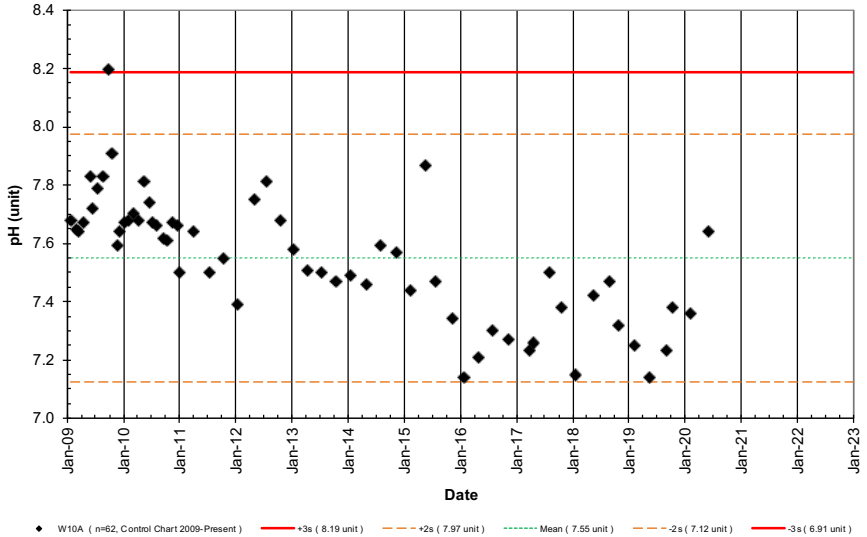
Well #10A
Dissolved Oxygen (mg DO/L)



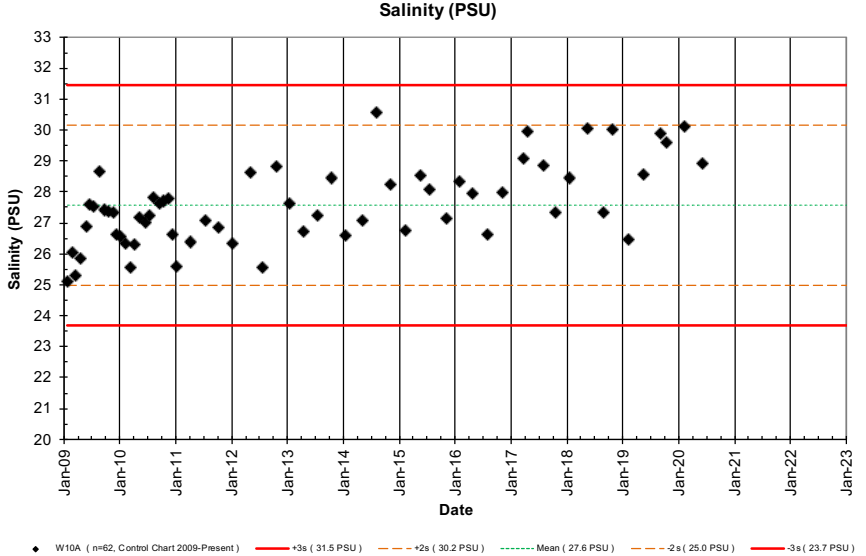
Well #10A
Temperature (˚C)



Well #10A
pH (unit)



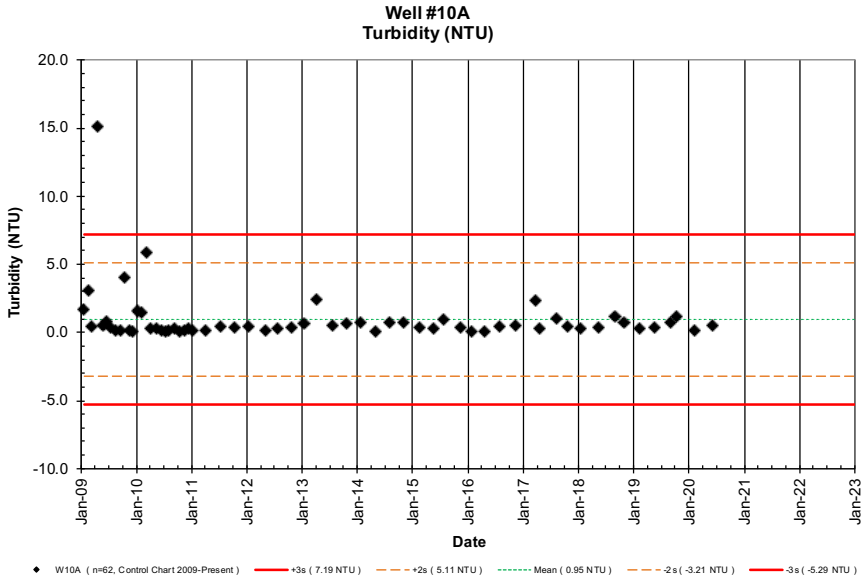
Well #10A
Salinity (PSU)

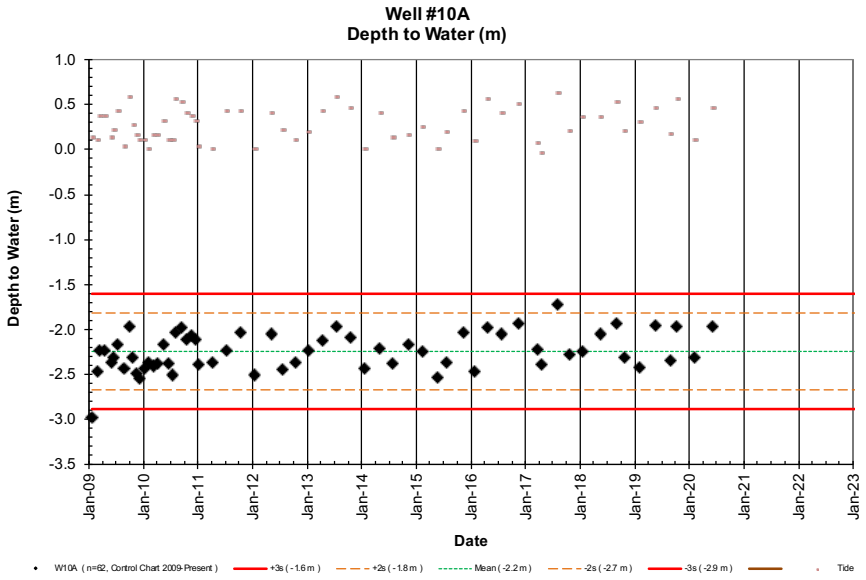


NELHA Water Quality Laboratory

Well 10A Charts

1/21/2009 - 7/21/20





NELHA Water Quality Laboratory

Well 10B Data Table

1/21/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W10B	-4.572	01/21/09	1050	-2.44	0.12	Flood	2.98	92	75.8	1062	0.14	1.9	343	9647						22.0	7.71	21.08	11668	5.23	8.13		
W10B	-4.572	02/24/09	1213	-2.50	0.09	Flood	3.05	95	51.4	720	0.15	2.1	257	7224						22.2	7.55	21.39	11840	4.89	2.01		
W10B	-4.572	03/13/09	1521	-2.26	0.37	Flood	3.51	109	49.4	692	0.13	1.8	304	8533						21.6	7.64	22.61	12515	4.65	37.40		
W10B	-4.572	04/20/09	1602	-2.19	0.37	Flood	4.37	135	52.0	728	0.35	4.9	298	8363						22.8	7.64	22.03	12194	4.26	24.70		
W10B	-4.572	05/27/09	848	-2.44	0.12	Ebb	3.47	108	48.5	679	0.26	3.6	517	14533						21.8	7.74	23.78	13163	4.18	1.72		
W10B	-4.572	06/18/09	901	-2.36	0.21	Flood	2.49	77	38.1	534	0.35	4.9	104	2930						21.2	7.56	24.99	13833	5.58	0.76		
W10B	-4.572	07/14/09	922	-2.20	0.43	High	3.10	96	53.7	753	0.38	5.3	185	5206						21.5	7.81	24.23	13412	5.34	0.13		
W10B	-4.572	08/19/09	758	-2.50	0.03	Ebb	3.04	94	43.9	616	0.84	11.7	224	6295						21.8	7.70	25.08	13882	3.74	1.96		
W10B	-4.572	09/22/09	759	-2.02	0.58	Ebb	2.87	89	43.1	603	0.60	8.4	183	5127						22.2	8.20	25.05	13866	4.93	0.23		
W10B	-4.572	10/19/09	1525	-2.29	0.27	Flood	2.89	90	25.6	358	0.50	7.0	63	1778						22.5	7.16	24.87	13766	5.34	0.12		
W10B	-4.572	11/17/09	1334	-2.52	0.15	Flood	3.50	109	55.8	781	0.86	12.0	290	8152						21.7	7.68	24.21	13401	5.62	0.28		
W10B	-4.572	12/07/09	1445	-2.60	0.09	Ebb	3.36	104	67.6	947	0.96	13.4	344	9648						21.1	7.72	22.18	12277	5.42	0.10		
W10B	-4.572	01/05/10	1308	-2.51	0.09	Ebb	3.62	112	55.8	781	0.71	10.0	311	8741						21.3	7.70	21.68	12000	4.86	0.13		
W10B	-4.572	02/01/10	1435	-2.41	0.00	Flood	3.58	111	65.8	922	0.50	7.0	292	8192						20.0	7.67	22.82	12631	4.99	0.30		
W10B	-4.572	03/09/10	1347	-2.38	0.15	High	4.00	124	65.0	910	0.36	5.0	346	9717						20.2	7.67	22.07	12216	5.21	0.17		
W10B	-4.572	04/06/10	1134	-2.43	0.15	High	4.20	130	63.9	895	0.93	13.0	352	9887						20.0	7.67	22.21	12294	5.30	0.26		
W10B	-4.572	05/11/10	1200	-2.22	0.30	Flood	3.49	108	52.3	732	1.36	19.0	344	9656						20.2	7.70	24.11	13346	5.46	0.17		
W10B	-4.572	06/15/10	1347	-2.57	0.09	Flood	3.68	114	62.3	872	0.50	7.0	344	9662						20.4	7.72	24.08	13329	5.27	0.12		
W10B	-4.572	07/13/10	1217	-2.55	0.09	Flood	3.65	113	59.0	826	0.50	7.0	353	9906						20.5	7.65	23.86	13207	4.77	0.23		
W10B	-4.572	08/03/10	1210	-2.00	0.55	High	4.16	129	61.0	855	0.41	5.7	316	8868						20.4	7.64	25.63	14187	4.70	0.28		
W10B	-4.572	09/14/10	1212	-2.03	0.52	Ebb	4.13	128	60.0	841	0.36	5.0	333	9359						20.4	7.65	25.25	13977	4.29	0.44		
W10B	-4.572	10/12/10	1220	-2.14	0.40	Ebb	4.00	124	63.3	886	0.21	2.9	339	9530						20.5	7.61	24.45	13534	4.82	0.19		
W10B	-4.572	11/16/10	1135	-2.15	0.37	Flood	3.75	116	65.3	914	0.22	3.1	324	9112						21.0	7.66	24.64	13639	5.25	0.11		
W10B	-4.572	12/14/10	1211	-2.11	0.30	Ebb	3.87	120	78.7	1103	0.25	3.5	348	9765						21.1	7.64	23.00	12731	5.16	0.18		
W10B	-4.572	01/04/11	1202	-2.45	0.03	Low	4.23	131	78.7	1102	0.46	6.4	355	9976						20.8	7.48	21.73	12028	4.87	0.38		
W10B	-4.572	04/05/11	1223	-2.49	0.00	Flood	4.29	133	57.3	802	0.09	1.3	323	9081						21.1	7.59	22.73	12582	3.59	0.24		
W10B	-4.572	07/12/11	1145	-2.28	0.43	Flood	4.23	131	53.3	747	0.14	1.9	341	9590						20.6	7.56	24.60	13617	4.65	0.50		
W10B	-4.572	10/11/11	1434	-2.07	0.43	Flood	3.78	117	62.4	874	0.10	1.4	326	9148						20.2	7.59	24.82	13739	5.09	2.62		
W10B	-4.572	01/10/12	1220	-2.54	0.00	Low	3.55	110	64.0	897	0.17	2.4	311	8723						20.2	7.47	23.30	12897	4.95	0.31		
W10B	-4.572	5/1/12	1237	-2.12	0.40	Flood	3.94	122	59.6	835	0.29	4.1	322	9044						20.1	7.57	25.75	14253	4.51	0.09		
W10B	-4.572	7/18/12	1123	-2.51	0.09	Flood	3.84	119	65.8	921	0.34	4.8	328	9209						20.1	7.66	25.15	13921	5.98	3.02		
W10B	-4.572	10/16/12	1156	-2.46	0.09	Low	3.52	109	61.0	854	0.24	3.3	308	8663						19.9	7.53	25.56	14148	5.35	1.85		
W10B	-4.572	1/8/13	1235	-2.29	0.18	Flood	4.33	134	72.5	1016	0.40	5.6	375	10534						19.2	7.48	23.95	13257	4.77	0.69		
W10B	-4.572	4/9/13	1429	-2.13	0.43	Flood	4.75	147	49.3	690	0.72	10.1	322	9045						19.6	7.48	24.92	13794	3.71	1.12		
W10B	-4.572	7/17/13	1432	-2.01	0.58	Ebb	3.78	117	55.2	773	0.23	3.2	335	9409						21.0	7.46	25.18	13938	4.86	0.25		
W10B	-4.572	10/15/13	1200	-2.15	0.46	Flood	3.42	106	55.9	783	0.38	5.3	295	8282						20.3	7.48	26.42	14624	4.34	0.09		
W10B	-4.572	1/15/14	1207	-2.46	0.00	Low	3.84	119	71.5	1002	0.51	7.2	328	9218						20.7	7.58	22.84	12643	5.23	0.06		
W10B	-4.572	4/29/14	1352	-2.27	0.40	Flood	3.65	113	62.3	873	0.49	6.8	306	8585						19.6	7.45	25.19	13943	5.45	0.13		
W10B	-4.572	7/29/14	1218	-2.42	0.12	Flood	3.91	121	58.6	821	0.36	5.0	282	7928						19.7	7.42	26.47	14652	5.34	0.26		
W10B	-4.572	11/5/14	1227	-2.21	0.15	Flood	3.84	119	64.4	902	0.28	3.9	269	7567						21.8	7.56	25.55	14143	4.87	0.16		
W10B	-4.572	2/10/15	1236	-2.31	0.24	High	5.51	171	84.0	1176	0.45	6.3	252	7073						20.8	7.58	23.39	12947	5.20	0.72		
W10B	-4.572	5/19/15	1203	-2.54	0.00	Flood	4.45	138	72.6	1017	0.41	5.8	312	8775						21.6	7.56	23.14	12809	4.47	0.34		
W10B	-4.572	7/21/15	1435	-2.36	0.18	Flood	4.49	139	70.7	990	0.20	2.8	338	9481						22.2	7.51	22.82	12631	5.03	0.18		
W10B	-4.572	11/9/15	1304	-2.08	0.42	Flood	5.06	157	79.7	1117	0.21	2.9	307	8615						21.6	7.36	24.42	13517	5.02	0.23		
W10B	-4.572	1/26/16	1212	-2.51	0.08	Low	4.84	150	68.3	957	0.54	7.5	307	8629						20.3	7.25	24.06	13318	2.78	0.30		
W10B	-4.572	4/21/16	1425	-2.04	0.55	High	5.10	158	66.4	930	0.31	4.3	295	8287						20.4	7.15	24.84	13750	3.63	0.08		

NELHA Water Quality Laboratory

Well 10B Data Table

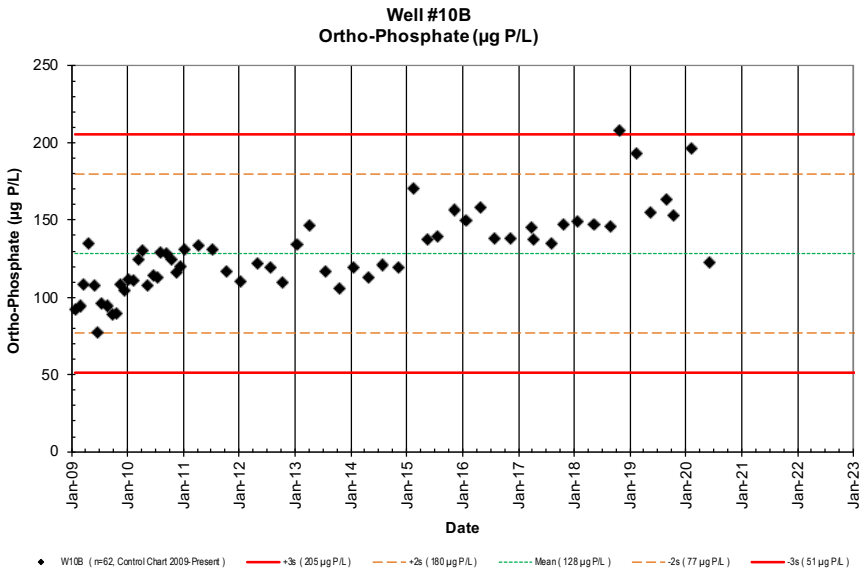
1/21/2009 - 7/21/20

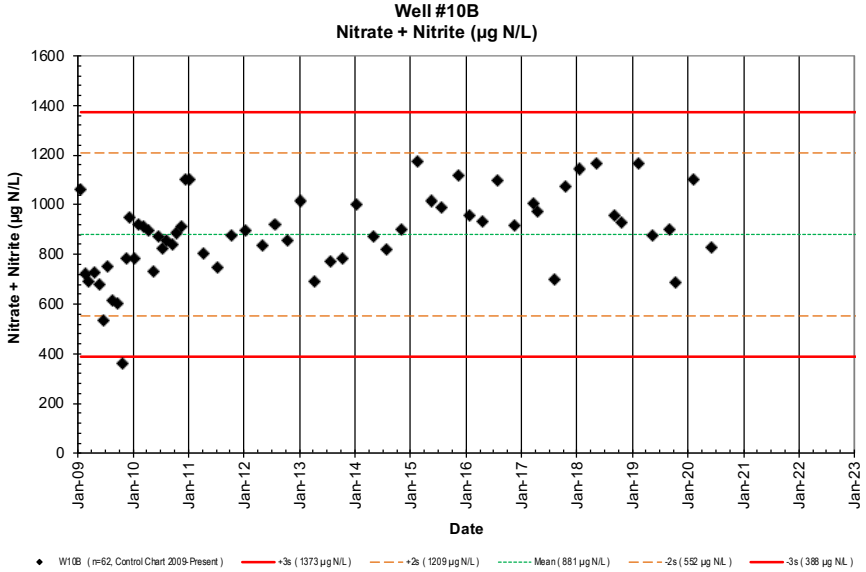
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W10B	-4.572	7/26/16	1110	-2.09	0.40	Flood	4.46	138	78.5	1100	0.08	1.1	294	8261						20.9	7.31	23.60	13063	4.88	0.65		
W10B	-4.572	11/10/16	1345	-1.99	0.50	Ebb	4.46	138	65.6	919	0.21	2.9	290	8147						20.9	7.12	24.38	13495	4.49	0.48		
W10B	-4.572	3/21/17	1637	-2.28	0.07	Low	4.67	145	71.6	1003	0.36	5.0	334	9372						20.0	7.17	24.02	13296	3.79	0.21		
W10B	-4.572	4/13/17	1114	-2.46	-0.05	Low	4.44	138	69.4	972	0.24	3.3	324	9109						20.4	7.25	24.89	13777	3.44	0.09		
W10B	-4.572	8/4/17	1414	-1.75	0.62	High	4.36	135	50.0	700	0.06	0.9	299	8388						20.8	7.46	25.94	14358	4.57	0.14		
W10B	-4.572	10/19/17	1100	-2.33	0.20	Flood	4.76	147	76.3	1069	0.65	9.1	306	8593						21.1	7.26	24.27	13434	4.18	0.35		
W10B	-4.572	1/17/18	1447	-2.30	0.35	High	4.82	149	81.7	1144	0.23	3.2	321	9029						20.3	7.16	24.23	13412	3.28	0.42		
W10B	-4.572	5/10/18	1421	-2.09	0.35	Ebb	4.76	147	83.0	1162	0.25	3.5	315	8856						22.0	7.24	26.75	14807	4.71	0.63		
W10B	-4.572	8/29/18	1659	-1.98	0.52	Flood	4.70	146	68.4	959	0.29	4.1	315	8847						20.8	7.41	24.71	13678	4.16	1.58		
W10B	-4.572	10/25/18	1125	-2.36	0.20	Flood	6.72	208	66.1	926	0.09	1.3	284	7979						21.2	7.39	25.31	14010	3.59	0.25		
W10B	-4.572	2/7/19	1501	-2.48	0.30	Flood	6.23	193	83.1	1164	0.03	0.4	309	8669						19.8	7.20	24.43	13523	4.66	0.17		
W10B	-4.572	5/16/19	1424	-1.99	0.45	Flood	5.00	155	62.6	876	0.13	1.8	274	7703						19.6	7.15	25.51	14120	4.34	0.70		
W10B	-4.572	8/29/19	1027	-2.41	0.17	Flood	5.27	163	64.2	899	0.24	3.3	312	8755						21.2	7.32	24.60	13617	3.64	0.47		
W10B	-4.572	10/10/19	1220	0.02	0.55	High	4.95	153	48.9	685	0.41	5.8	272	7638						21.7	7.45	24.94	13805	3.45	2.38		
W10B	-4.572	2/4/20	1520	-2.35	0.10	Ebb	6.33	196	78.8	1104	-0.23	-3.2	306	8589						20.3	7.50	23.15	12814	4.41	2.74		
W10B	-4.572	6/2/20	1126	-2.03	0.45	Flood	3.95	122	59.2	829	-0.13	-1.8	295	8294						21.2	7.62	25.35	14032	3.48	1.01		
W10B	-4.572	7/1/20																									
W10B	-4.572	10/1/20																									
W10B	-4.572	1/1/21																									
W10B	-4.572	4/1/21																									
W10B	-4.572	7/1/21																									
W10B	-4.572	10/1/21																									
W10B	-4.572	1/1/22																									
W10B	-4.572	4/1/22																									
W10B	-4.572	7/1/22																									
W10B	-4.572	10/1/22																									
W10B	-4.572	1/1/23																									
W10B	-4.572	4/1/23																									
Mean				-2.25	0.26		4.14	128	62.87	881	0.35	5.0	305	8563						20.8	7.51	24.16	13376	4.65	1.71		
Std. Dev.				0.35	0.19		0.83	26	11.72	164	0.27	3.7	60	1693						0.8	0.20	1.31	728	0.69	5.65		
Maximum				0.02	0.62		6.72	208	83.95	1176	1.36	19.0	517	14533						22.8	8.20	26.75	14807	5.98	37.40		
Minimum				-2.60	-0.05		2.49	77	25.59	358	-0.23	-3.2	63	1778						19.2	7.12	21.08	11668	2.78	0.06		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	62	62	62		

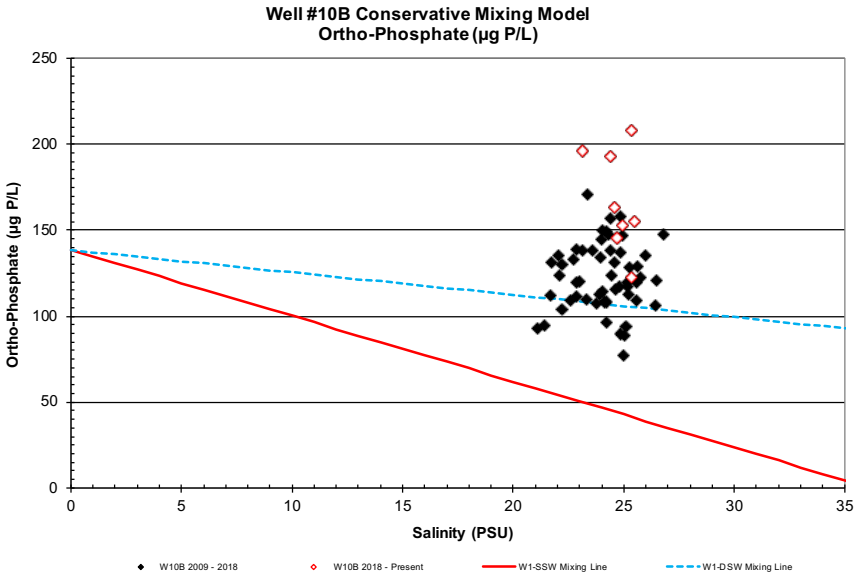
NELHA Water Quality Laboratory

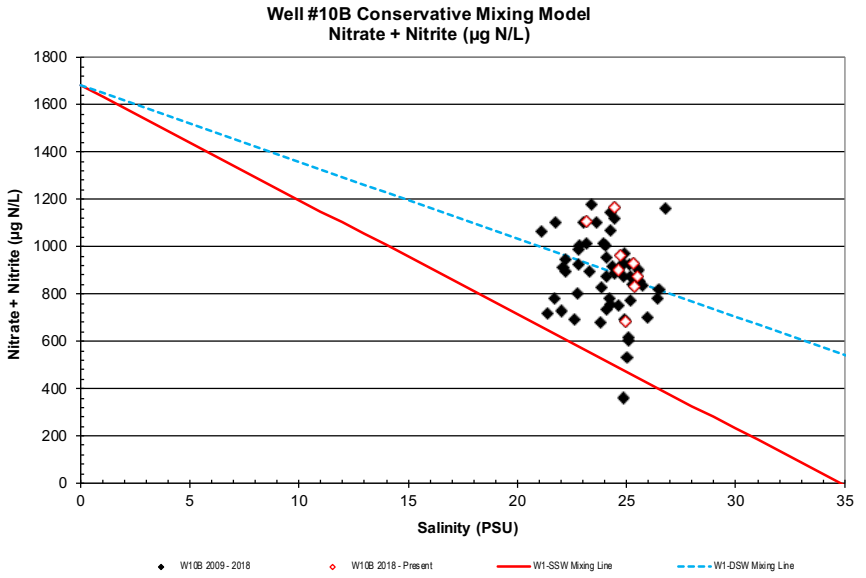
Well 10B Charts

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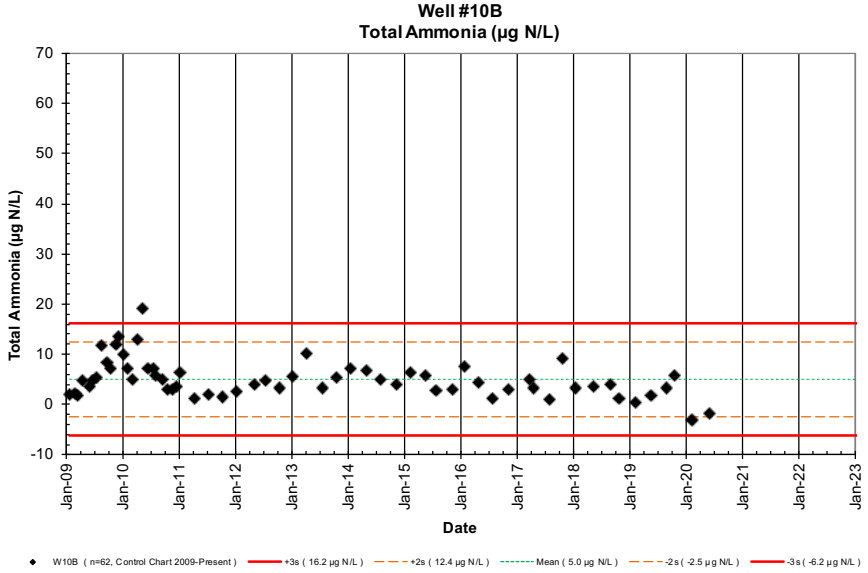


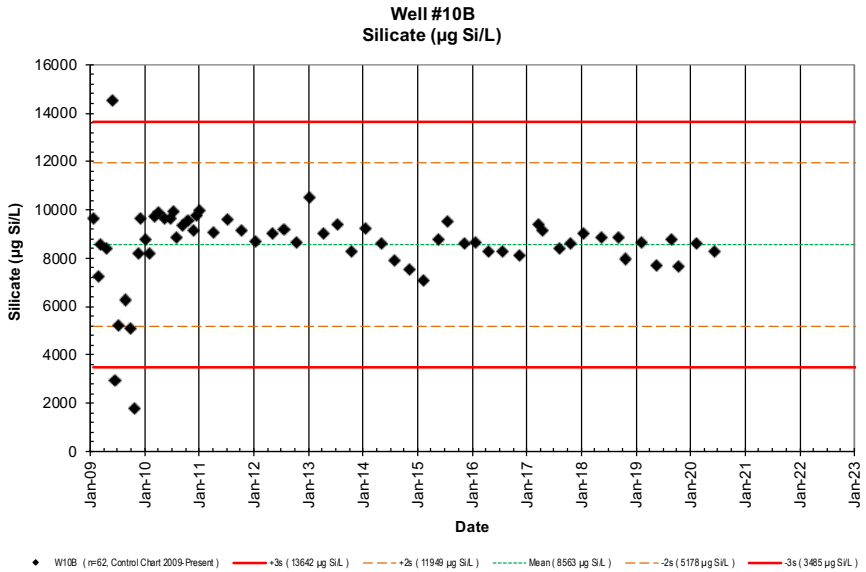


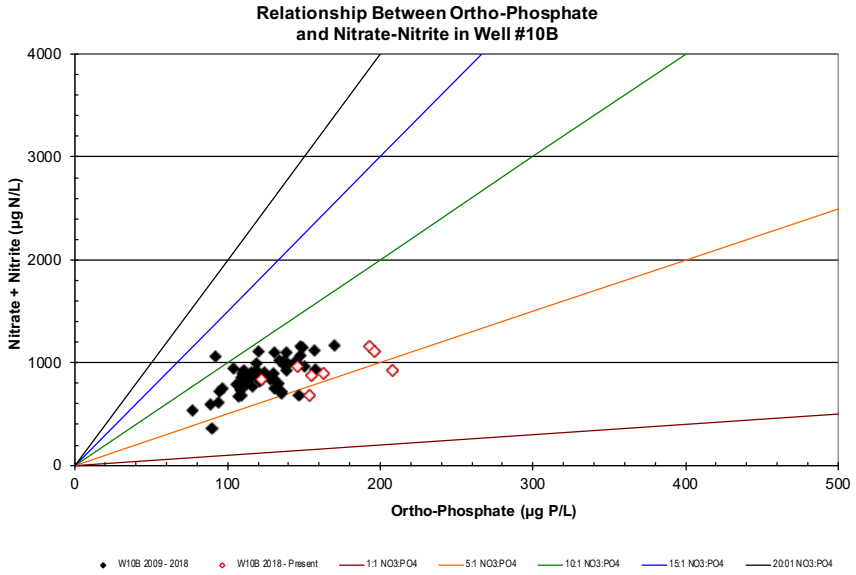
NELHA Water Quality Laboratory

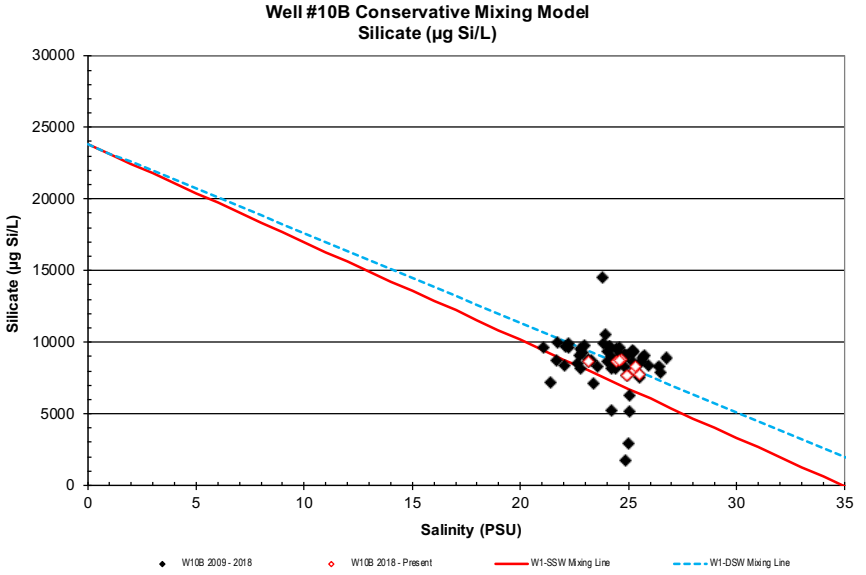
Well 10B Charts

1/21/2009 - 7/21/20





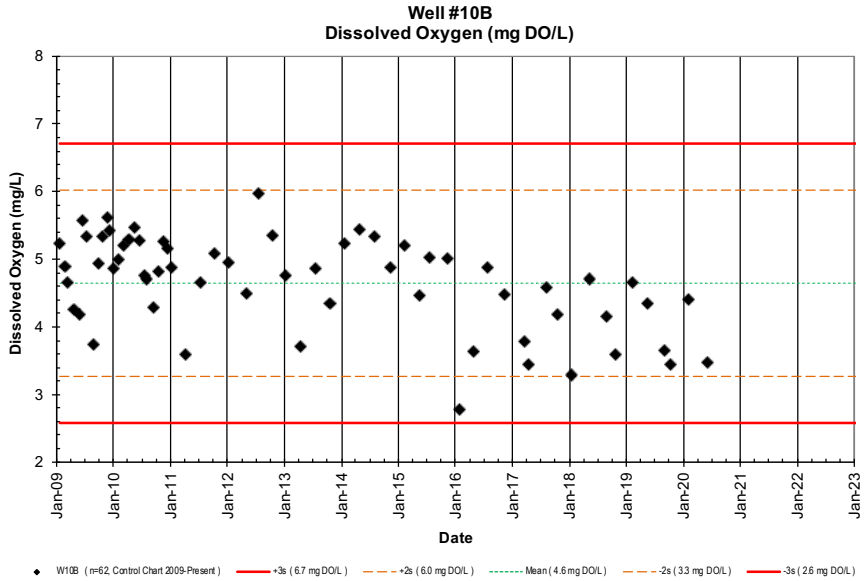


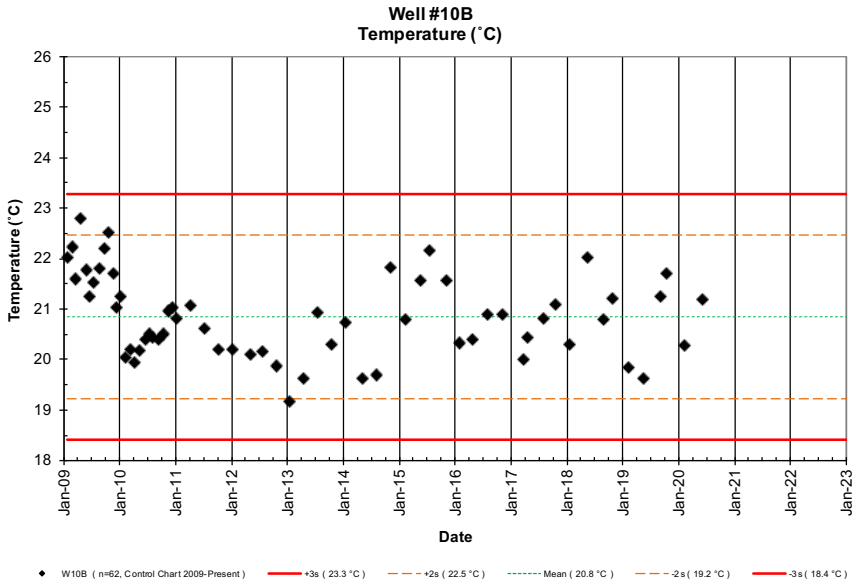


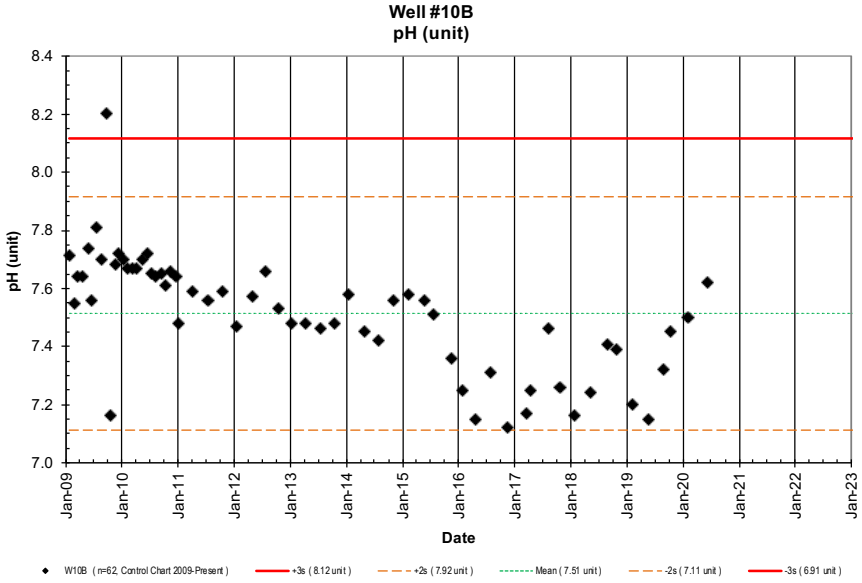
NELHA Water Quality Laboratory

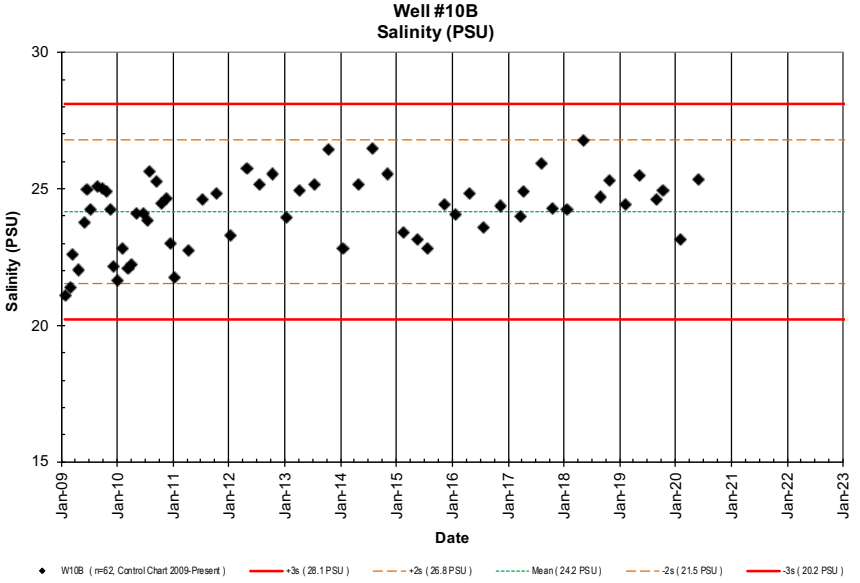
Well 10B Charts

1/21/2009 - 7/21/20





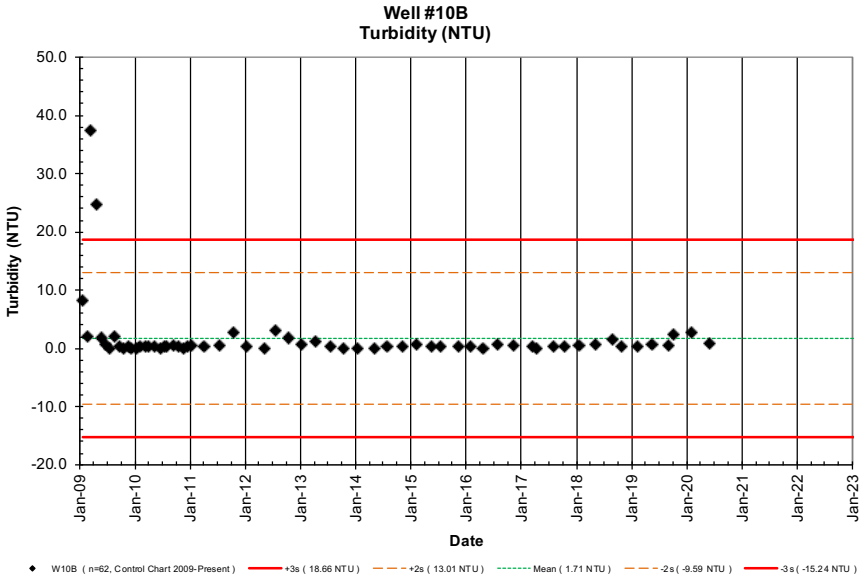


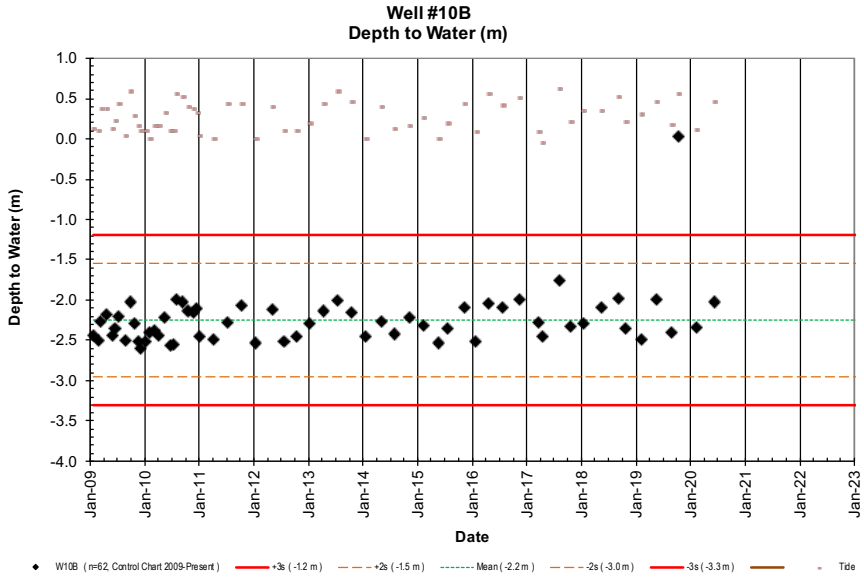


NELHA Water Quality Laboratory

Well 10B Charts

1/21/2009 - 7/21/20





NELHA Water Quality Laboratory

Well 11 Data Table

1/22/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W11	-18.288	1/22/09	1037	-3.23	0.09	Low	1.67	52	56.4	790	1.79	25.1	106	2966						22.7	8.09	30.05	16633	3.01	0.95		
W11	-18.288	2/24/09	958	-3.32	0.06	Ebb	0.89	28	49.3	690	0.50	7.0	105	2949						20.7	7.91	30.17	16700	3.33	0.75		
W11	-18.288	3/16/09	1044	-3.31	0.09	Ebb	1.13	35	35.2	493	0.13	1.8	87	2436						22.3	7.75	29.49	16323	3.84	0.41		
W11	-18.288	4/22/09	1218	-3.10	0.34	Flood	1.55	48	39.6	555	0.19	2.6	108	3035						21.6	7.80	29.82	16506	3.32	9.77		
W11	-18.288	5/27/09	920	-3.29	0.09	Ebb	1.62	50	47.9	671	0.16	2.2	101	2835						19.4	7.77	30.10	16661	3.84	0.52		
W11	-18.288	6/16/09	1359	-2.97	0.40	Ebb	1.90	59	45.9	643	0.53	7.4	124	3494						19.5	7.58	30.06	16639	4.23	0.29		
W11	-18.288	7/14/09	1256	-3.08	0.40	Ebb	1.81	56	38.5	540	0.48	6.7	77	2168						19.7	7.89	30.10	16661	4.16	0.19		
W11	-18.288	8/19/09	1334	-2.80	0.52	Flood	2.36	73	50.0	701	0.69	9.7	118	3312						20.9	7.78	30.34	16794	3.59	0.19		
W11	-18.288	9/21/09	1518	-3.21	0.24	Flood	2.44	76	48.8	684	0.59	8.3	93	2600						21.4	8.31	30.70	16993	3.90	0.15		
W11	-18.288	10/22/09	1555	-3.29	0.15	Low	3.63	113	51.6	723	0.70	9.8	92	2579						22.7	7.82	31.12	17226	3.55	0.06		
W11	-18.288	11/17/09	821	-3.06	0.40	Ebb	3.22	100	56.5	792	0.81	11.4	144	4058						21.5	7.82	30.53	16899	3.87	0.06		
W11	-18.288	12/8/09	811	-2.99	0.49	Flood	3.16	98	67.4	944	1.16	16.2	166	4671						22.4	7.91	29.93	16567	4.12	0.05		
W11	-18.288	1/5/10	1432	-3.44	-0.03	Low	2.87	89	56.2	787	0.93	13.0	142	3977						22.3	7.87	30.00	16606	4.33	0.07		
W11	-18.288	2/1/10	1529	-3.22	0.15	Flood	2.84	88	51.8	725	0.50	7.0	130	3651						22.3	7.94	30.46	16860	4.19	0.07		
W11	-18.288	3/9/10	1517	-3.35	0.12	Ebb	3.29	102	39.9	559	0.57	8.0	147	4117						23.6	7.93	30.37	16811	3.96	0.07		
W11	-18.288	4/6/10	1349	-3.35	0.12	Ebb	3.62	112	44.8	627	1.36	19.0	161	4519						23.6	7.90	30.35	16800	4.42	0.14		
W11	-18.288	5/11/10	1414	-2.90	0.52	Flood	2.68	83	41.3	578	0.93	13.0	140	3933						22.6	7.96	30.10	16661	4.58	0.06		
W11	-18.288	6/16/10	920	-3.19	0.09	Ebb	3.07	95	46.9	657	0.36	5.0	152	4278						22.2	7.90	30.02	16617	4.24	0.19		
W11	-18.288	7/13/10	1402	-3.22	0.24	Flood	3.00	93	40.1	561	0.57	8.0	152	4268						20.5	7.87	30.35	16800	3.96	0.10		
W11	-18.288	8/3/10	1403	-2.96	0.43	Ebb	3.07	95	35.5	497	0.48	6.7	160	4484						23.5	7.94	30.65	16966	3.98	0.05		
W11	-18.288	9/14/10	1417	-3.02	0.34	Ebb	2.94	91	34.1	478	0.14	1.9	161	4516						21.8	7.88	30.77	17032	3.96	0.12		
W11	-18.288	10/12/10	1442	-3.14	0.18	Low	2.78	86	31.2	437	0.48	6.7	157	4410						23.1	7.95	31.19	17264	3.96	0.08		
W11	-18.288	11/16/10	1331	-3.10	0.37	Ebb	2.91	90	35.6	499	0.51	7.1	156	4394						23.1	7.94	31.14	17237	4.12	0.09		
W11	-18.288	12/14/10	1402	-3.17	0.18	Ebb	2.91	90	40.1	562	0.13	1.8	159	4473						22.1	7.92	30.74	17015	4.01	0.10		
W11	-18.288	1/4/11	1400	-3.31	0.12	Flood	3.16	98	39.5	553	0.49	6.9	153	4292						21.7	7.81	30.60	16938	3.85	0.11		
W11	-18.288	4/5/11	1409	-3.06	0.21	Flood	2.97	92	35.6	498	0.05	0.7	140	3945						20.8	7.77	30.07	16645	3.38	0.05		
W11	-18.288	7/12/11	1426	-2.85	0.73	Flood	3.00	93	32.4	454	0.12	1.7	156	4391						21.1	7.86	30.50	16883	3.70	0.10		
W11	-18.288	10/11/11	1240	-3.08	0.24	Flood	3.07	95	24.8	347	0.19	2.7	156	4390						22.2	7.87	31.40	17381	3.66	0.07		
W11	-18.288	1/10/12	1504	-3.36	0.09	Flood	3.00	93	27.8	389	0.09	1.3	145	4082						21.7	7.81	30.55	16910	2.65	0.09		
W11	-18.288	5/1/12	1450	-3.05	0.40	Ebb	3.65	113	32.9	461	0.22	3.1	151	4240						19.5	7.83	30.29	16766	3.00	0.05		
W11	-18.288	7/18/12	1406	-2.91	0.52	Flood	2.94	91	22.2	311	0.23	3.2	157	4420						21.5	7.89	31.31	17331	2.79	0.34		
W11	-18.288	10/16/12	1358	-3.21	0.24	Flood	2.78	86	17.2	241	0.04	0.5	153	4299						21.9	7.82	31.24	17292	1.64	0.07		
W11	-18.288	1/8/13	1448	-3.26	0.15	Ebb	2.39	74	13.8	193	0.14	1.9	171	4812						20.3	7.75	30.56	16916	0.63	0.04		
W11	-18.288	4/9/13	1427	-3.05	0.46	Flood	2.32	72	13.7	192	0.70	9.8	143	4013						18.6	7.76	30.20	16716	0.34	0.07		
W11	-18.288	7/17/13	1545	-3.06	0.46	Ebb	2.03	63	26.9	377	0.10	1.4	151	4239						19.4	7.64	30.51	16888	1.09	0.29		
W11	-18.288	10/15/13	1424	-2.80	0.52	Ebb	1.87	58	20.6	288	0.16	2.3	146	4104						19.3	7.68	30.96	17137	0.98	0.06		
W11	-18.288	1/15/14	1412	-2.95	0.15	Flood	2.36	73	28.4	398	0.31	4.4	154	4328						19.2	7.69	30.82	17060	1.30	0.07		
W11	-18.288	4/29/14	1640	-2.84	0.58	High	2.00	62	37.2	521	0.41	5.7	155	4357						18.5	7.57	30.10	16661	1.41	0.12		
W11	-18.288	7/29/14	1505	-3.08	0.40	Flood	2.16	67	39.7	556	0.21	3.0	152	4272						19.0	7.69	30.82	17060	1.30	0.07		
W11	-18.288	11/5/14	1447	-2.92	0.40	High	2.42	75	45.0	631	0.07	1.0	154	4315						20.1	7.62	30.56	16916	1.08	0.10		
W11	-18.288	2/10/15	1158	-3.15	0.24	High	2.95	91	47.4	664	0.53	7.4	182	5118						20.4	7.53	30.06	16639	1.04	0.21		
W11	-18.288	5/19/15	1138	-3.50	0.00	Flood	2.54	79	56.9	797	0.43	6.0	162	4538						19.3	7.59	29.92	16561	1.35	0.02		
W11	-18.288	7/21/15	1414	-3.34	0.15	Flood	3.10	96	38.2	535	0.01	0.2	163	4581						20.1	7.48	31.11	17220	1.24	0.07		
W11	-18.288	11/9/15	1245	-3.06	0.40	Flood	3.17	98	62.5	875	0.06	0.8	197	5538						20.4	7.68	30.37	16811	1.48	0.08		
W11	-18.288	1/26/16	1153	-3.40	0.08	Low	2.98	92	60.5	848	0.16	2.2	158	4428						21.2	7.55	30.26	16750	1.22	0.05		
W11	-18.288	4/21/16	1403	-3.06	0.40	Flood	7.16	222	27.6	387	0.31	4.3	157	4407						21.4	7.55	30.94	17126	0.96	0.04		

NELHA Water Quality Laboratory

Well 11 Data Table

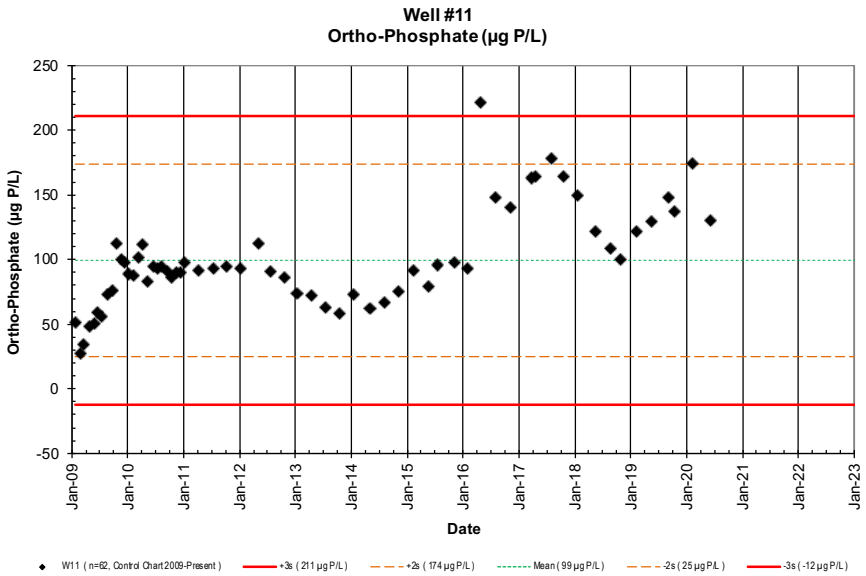
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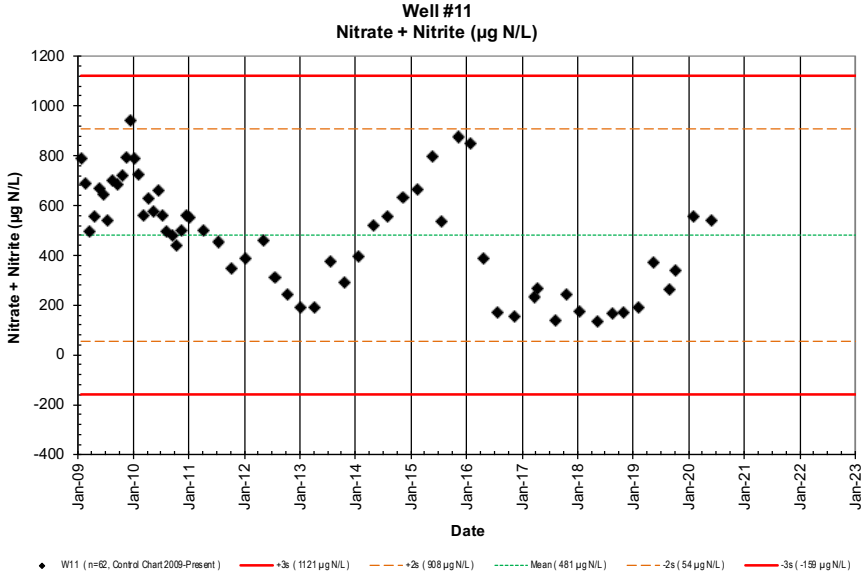
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W11	-18.288	7/26/16	1000	-3.00	0.30	Flood	4.78	148	12.1	170	0.27	3.8	139	3912						22.2	7.63	31.46	17414	0.78	0.10		
W11	-18.288	11/10/16	1328	-2.92	0.30	Ebb	4.54	141	11.2	156	0.02	0.3	154	4314						22.5	7.63	31.27	17309	0.88	0.02		
W11	-18.288	3/21/17	1618	-3.17	0.07	Low	5.26	163	16.7	234	0.81	11.4	155	4367						20.9	7.65	30.77	17032	0.76	0.30		
W11	-18.288	4/13/17	1414	-3.25	0.30	Flood	5.30	164	19.1	268	0.66	9.2	160	4492						21.2	7.68	30.81	17054	1.07	0.08		
W11	-18.288	8/4/17	1350	-2.74	0.62	High	5.73	178	9.9	139	1.44	20.2	157	4418						20.3	7.73	31.23	17287	0.54	0.09		
W11	-18.288	10/19/17	1038	-3.30	0.09	Low	5.30	164	17.2	241	0.44	6.1	146	4112						21.5	7.71	31.12	17226	1.66	0.04		
W11	-18.288	1/17/18	1421	-3.27	0.25	Flood	4.82	149	12.5	176	0.12	1.7	163	4566						21.3	7.70	30.64	16960	0.79	0.03		
W11	-18.288	5/10/18	1402	-3.00	0.35	Ebb	3.91	121	9.4	132	2.21	30.9	161	4516						19.6	7.56	33.31	18438	0.95	0.22		
W11	-18.288	8/20/18	1229	-2.90	0.61	Flood	3.51	109	11.8	166	0.29	4.1	160	4496						21.4	7.61	30.23	16733	1.66	0.05		
W11	-18.288	10/25/18	1430	-3.11	0.40	Flood	3.21	99	12.3	172	0.01	0.1	160	4488						21.9	7.70	30.64	16960	0.99	0.05		
W11	-18.288	2/7/19	1439	-3.37	0.20	Flood	3.92	121	13.7	192	0.10	1.4	169	4733						20.5	7.56	29.96	16584	1.50	0.05		
W11	-18.288	5/16/19	1403	-2.97	0.50	Flood	4.19	130	26.7	373	0.11	1.6	166	4659						18.9	7.38	30.80	17049	0.40	0.19		
W11	-18.288	8/29/19	1007	-3.36	0.00	Flood	4.79	148	18.8	264	0.88	12.3	167	4693						20.9	7.67	30.51	16888	1.66	5.03		
W11	-18.288	10/10/19	1203	-3.02	0.45	Flood	4.45	138	24.3	340	0.21	2.9	161	4512						23.7	7.82	31.49	17431	2.51	0.07		
W11	-18.288	2/4/20	1503	-3.28	0.10	Ebb	5.60	174	39.6	555	1.87	26.2	168	4712						21.0	7.73	30.86	17082	0.35	0.02		
W11	-18.288	6/2/20	1107	-3.04	0.35	Flood	4.22	131	38.6	541	5.34	74.8	168	4730						19.6	7.65	30.79	17043	0.12	0.03		
W11	-18.288	7/1/20																									
W11	-18.288	10/1/20																									
W11	-18.288	1/1/21																									
W11	-18.288	4/1/21																									
W11	-18.288	7/1/21																									
W11	-18.288	10/1/21																									
W11	-18.288	1/1/22																									
W11	-18.288	4/1/22																									
W11	-18.288	7/1/22																									
W11	-18.288	10/1/22																									
W11	-18.288	1/1/23																									
W11	-18.288	4/1/23																									
Mean				-3.12	0.29		3.21	99	34.34	481	0.56	7.8	148	4144						21.1	7.76	30.61	16941	2.44	0.37		
Std. Dev.				0.18	0.18		1.20	37	15.23	213	0.78	10.9	24	661						1.4	0.16	0.58	320	1.45	1.37		
Maximum				-2.74	0.73		7.16	222	67.40	944	5.34	74.8	197	5538						23.7	8.31	33.31	18438	4.58	9.77		
Minimum				-3.50	-0.03		0.89	28	9.45	132	0.01	0.1	77	2168						18.5	7.38	29.49	16323	0.12	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	62	62	62		

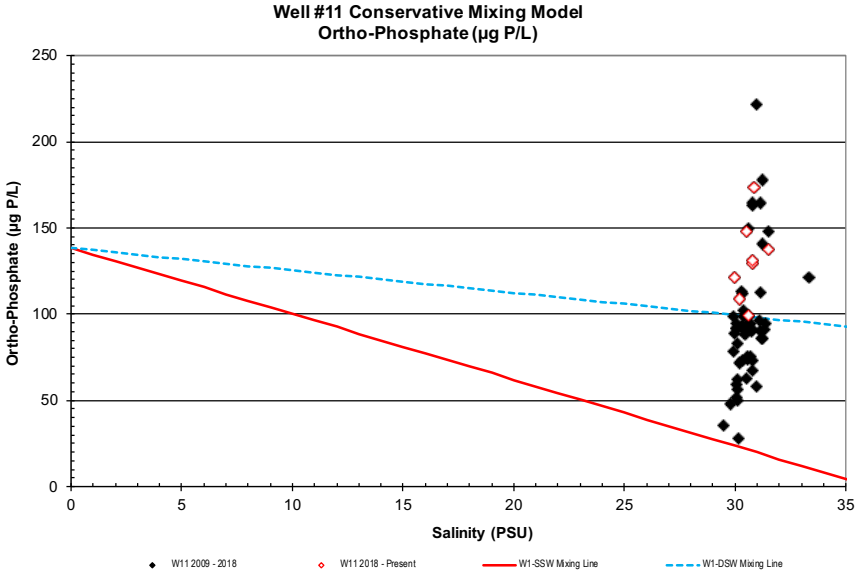
NELHA Water Quality Laboratory

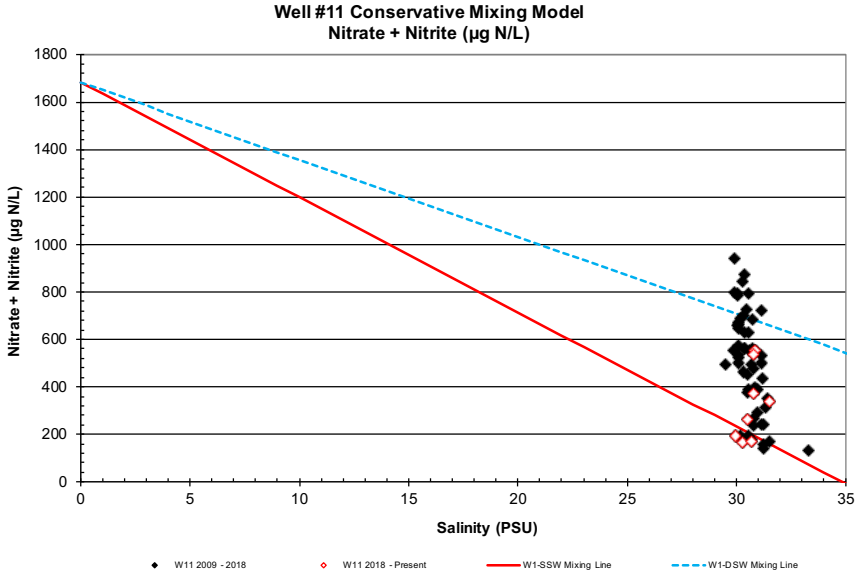
Well 11 Charts

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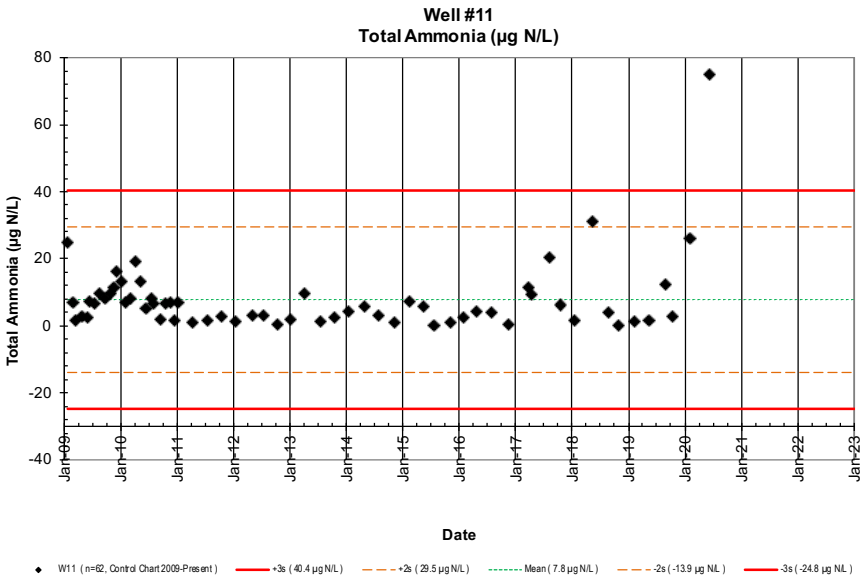


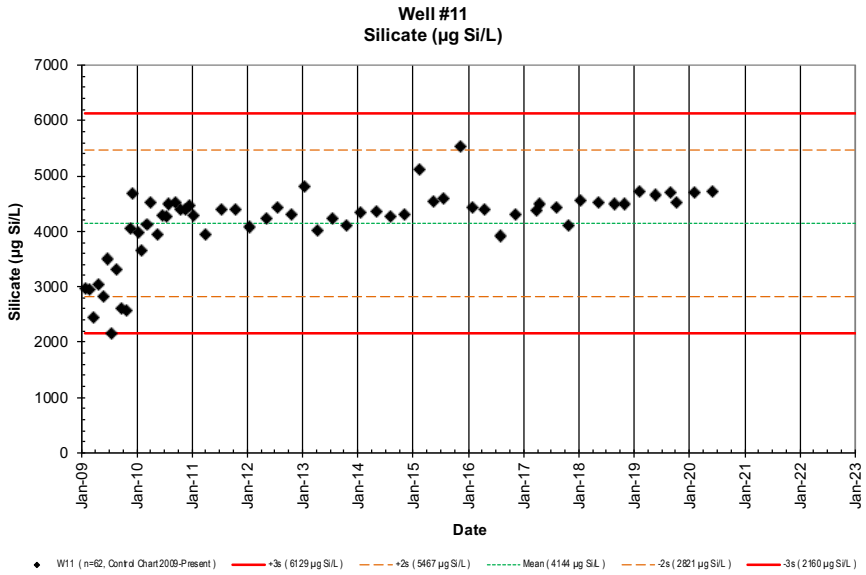


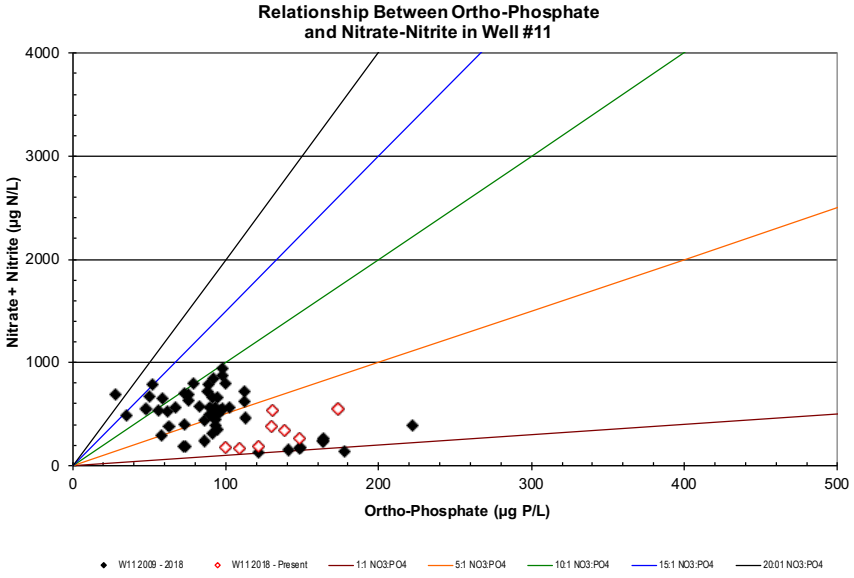
NELHA Water Quality Laboratory

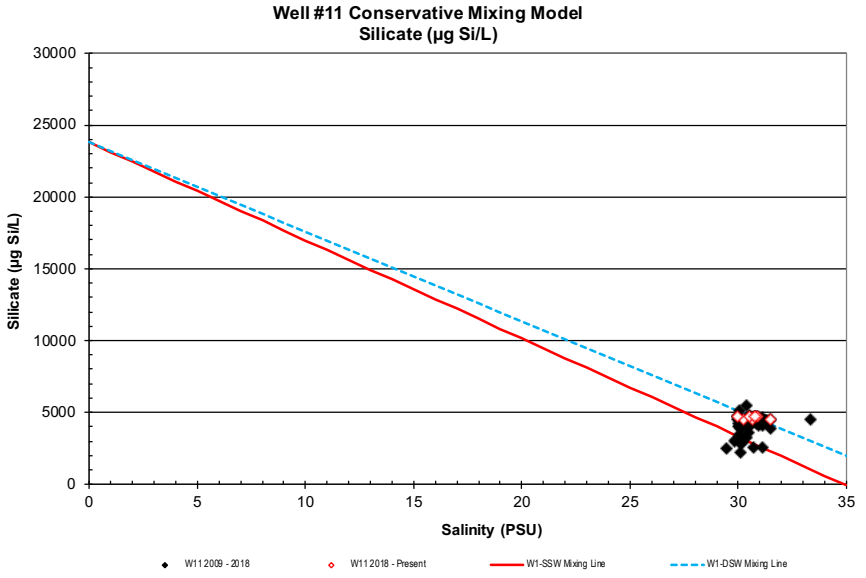
Well 11 Charts

1/22/2009 - 7/21/20







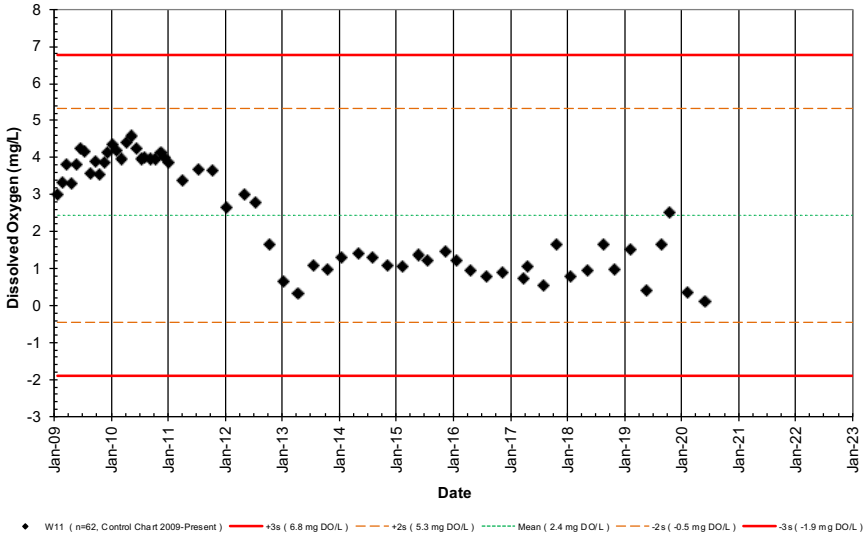


NELHA Water Quality Laboratory

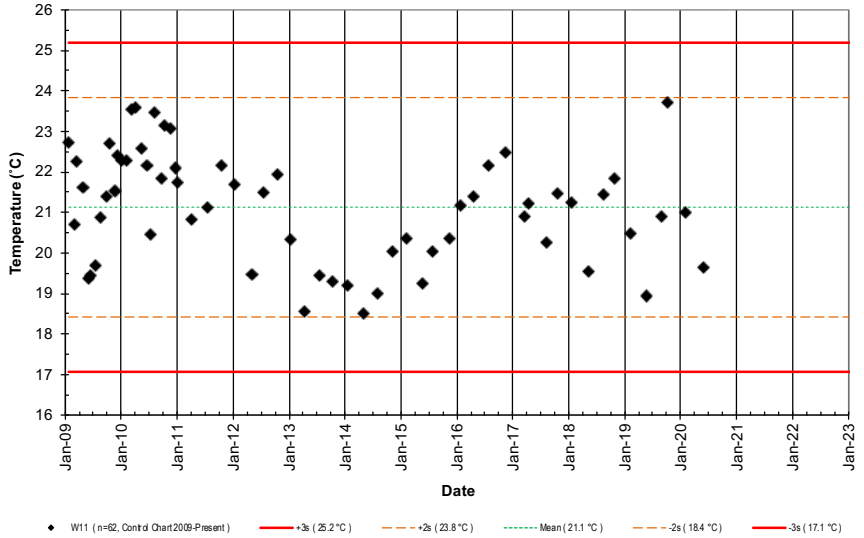
Well 11 Charts

1/22/2009 - 7/21/20

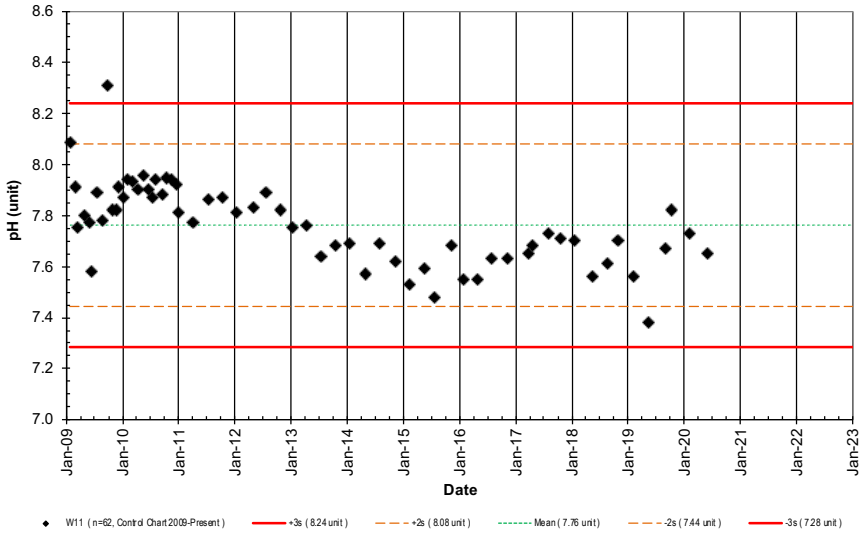
Well #11
Dissolved Oxygen (mg DO/L)



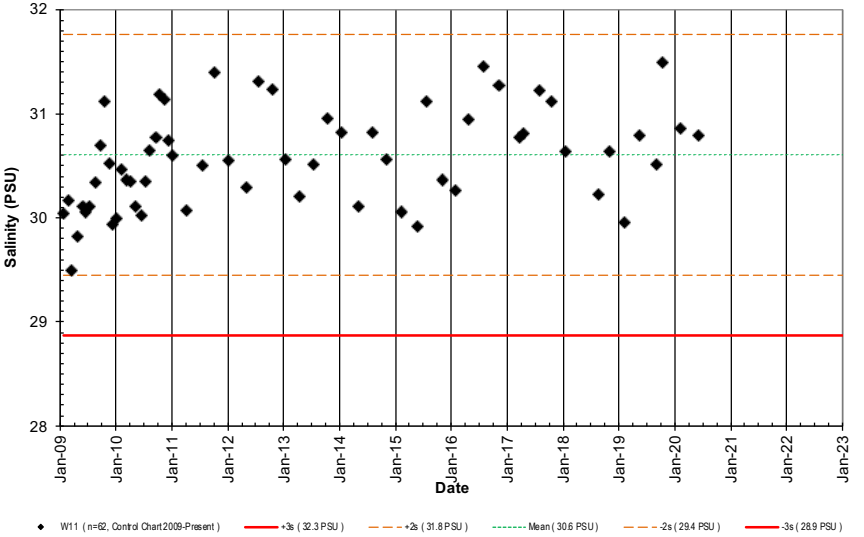
Well #11
Temperature (˚C)



Well #11
pH (unit)



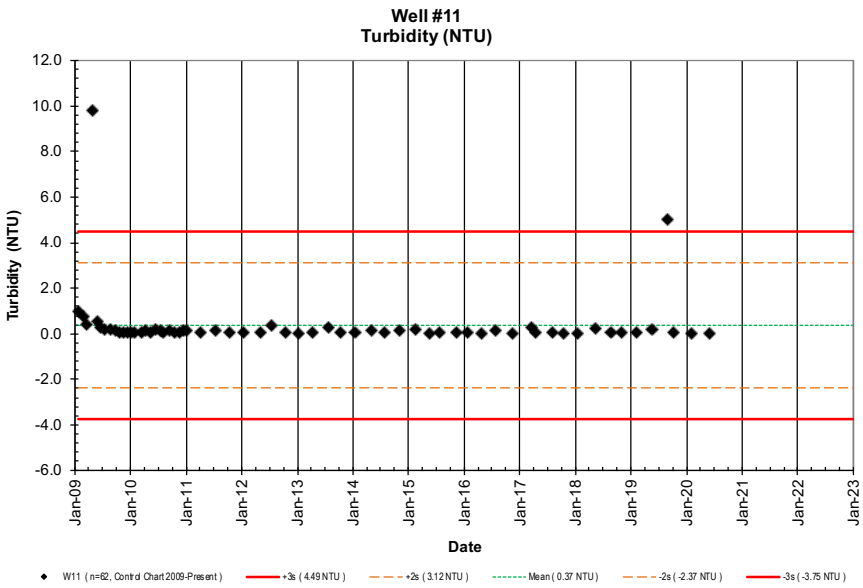
Well #11
Salinity (PSU)

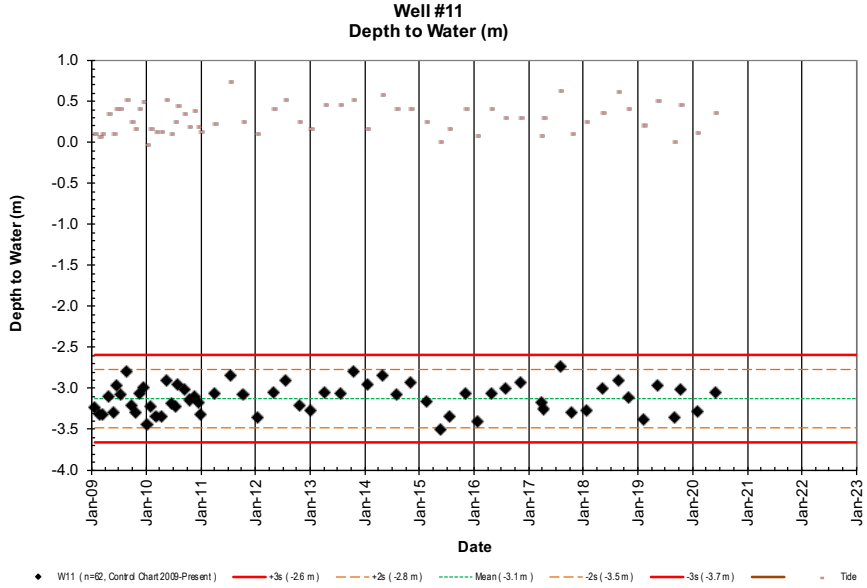


NELHA Water Quality Laboratory

Well 11 Charts

1/22/2009 - 7/21/20





NELHA Water Quality Laboratory

Well 11A Data Table

1/22/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W11A	-12.192	1/22/09	1026	-3.37	0.09	Low	3.44	107	74.9	1049	0.06	0.8	167	4690						24.3	7.83	27.00	14945	4.21	5.23		
W11A	-12.192	2/24/09	942	-3.43	0.06	Ebb	2.98	92	62.1	870	0.15	2.1	193	5432						23.1	7.71	26.81	14840	3.95	0.74		
W11A	-12.192	3/16/09	1031	-3.38	0.09	Ebb	2.67	83	39.0	547	0.13	1.8	151	4251						23.6	7.59	26.40	14613	4.48	2.52		
W11A	-12.192	4/22/09	1230	-3.21	0.34	Flood																	0				
W11A	-12.192	5/27/09	947	-3.38	0.09	Ebb	3.14	97	60.1	842	0.16	2.2	272	7636						22.2	7.64	27.77	15371	3.78	1.44		
W11A	-12.192	6/16/09	1346	-3.07	0.40	Ebb	3.00	93	53.7	752	0.49	6.8	163	4583						22.5	7.79	28.63	15847	3.97	1.25		
W11A	-12.192	7/14/09	1243	-3.17	0.40	Ebb	1.81	56	38.5	540	0.48	6.7	77	2168						23.3	7.72	29.09	16102	3.83	0.72		
W11A	-12.192	8/19/09	1319	-2.90	0.52	Flood	2.88	89	69.3	970	0.77	10.8	140	3940						23.7	7.80	29.98	16595	3.85	0.14		
W11A	-12.192	9/21/09	1455	-3.24	0.24	Flood	2.41	75	55.4	776	0.55	7.7	106	2987						24.6	8.45	30.05	16633	4.55	0.51		
W11A	-12.192	10/22/09	1536	-3.36	0.15	Low	2.28	71	50.0	700	0.74	10.4	86	2423						24.4	7.86	29.54	16351	3.80	0.44		
W11A	-12.192	11/17/09	800	-3.11	0.40	Ebb	3.42	106	65.6	920	0.83	11.6	186	5221						23.6	7.78	29.03	16069	4.04	0.29		
W11A	-12.192	12/8/09	832	-3.06	0.49	Flood	2.42	75	32.2	451	0.69	9.6	214	6018						22.7	7.75	28.47	15759	3.92	0.04		
W11A	-12.192	1/5/10	1451	-3.47	-0.03	Low	2.94	91	55.3	775	0.71	10.0	201	5649						23.3	7.76	27.53	15239	4.35	3.63		
W11A	-12.192	2/1/10	1540	-3.26	0.15	Flood	3.13	97	65.4	916	0.57	8.0	178	5013						23.2	7.85	27.64	15299	3.80	16.60		
W11A	-12.192	3/9/10	1529	-3.46	0.12	Ebb	3.97	123	56.5	791	0.29	4.0	224	6279						22.5	7.73	26.60	14724	4.15	0.26		
W11A	-12.192	4/6/10	1354	-3.41	0.12	Ebb	3.87	120	55.1	772	1.14	16.0	214	6014						22.3	7.83	27.30	15111	4.26	0.12		
W11A	-12.192	5/11/10	1420	-2.92	0.52	Flood	2.87	89	38.3	536	1.29	18.0	191	5351						22.3	7.91	28.35	15692	3.85	0.61		
W11A	-12.192	6/16/10	908	-3.24	0.09	Ebb	2.87	89	44.0	616	0.57	8.0	197	5533						22.6	7.84	28.72	15897	3.57	0.14		
W11A	-12.192	7/13/10	1409	-3.24	0.24	Flood	2.94	91	43.5	609	0.14	2.0	197	5529						23.0	7.87	29.07	16091	3.74	0.30		
W11A	-12.192	8/3/10	1420	-3.00	0.43	Ebb	3.26	101	51.0	715	0.21	3.0	197	5526						23.1	7.83	29.28	16207	3.90	0.07		
W11A	-12.192	9/14/10	1435	-3.10	0.34	Ebb	3.10	96	49.3	690	0.62	8.7	207	5815						23.2	7.80	29.10	16108	4.91	0.32		
W11A	-12.192	10/12/10	1454	-3.24	0.18	Low	3.03	94	44.1	618	0.21	3.0	192	5394						23.4	7.85	29.20	16163	3.91	0.40		
W11A	-12.192	11/16/10	1339	-3.00	0.37	Ebb	2.97	92	47.1	660	0.21	3.0	190	5326						23.6	7.84	29.34	16240	3.62	0.25		
W11A	-12.192	12/14/10	1410	-3.20	0.18	Ebb	3.13	97	51.3	719	0.16	2.3	202	5675						23.2	7.81	28.06	15532	3.53	0.33		
W11A	-12.192	1/4/11	1351	-3.34	0.12	Flood	3.16	98	42.3	592	0.14	2.0	194	5450						23.2	7.75	27.34	15133	3.45	0.18		
W11A	-12.192	4/5/11	1416	-3.17	0.21	Flood	3.33	103	36.1	505	0.05	0.7	193	5425						22.3	7.75	27.23	15073	2.94	0.12		
W11A	-12.192	7/12/11	1416	-2.86	0.73	Flood	2.91	90	34.2	479	0.09	1.3	203	5713						22.9	7.80	28.60	15831	2.89	0.26		
W11A	-12.192	10/11/11	1248	-3.16	0.24	Flood	2.58	80	29.8	417	0.21	2.9	204	5733						23.2	7.77	29.59	16379	2.62	0.49		
W11A	-12.192	1/10/12	1456	-3.34	0.09	Flood	2.42	75	59.4	832	0.09	1.3	207	5801						22.1	7.62	27.21	15061	2.05	0.29		
W11A	-12.192	5/1/12	1500	-3.06	0.40	Ebb	3.03	94	39.1	548	0.24	3.3	198	5566						21.9	7.65	29.04	16074	1.61	0.13		
W11A	-12.192	7/18/12	1413	-2.94	0.52	Flood	2.49	77	24.4	342	0.30	4.2	179	5036						22.9	7.80	30.48	16871	2.01	0.35		
W11A	-12.192	10/16/12	1351	-3.23	0.24	Flood	2.16	67	19.1	268	0.02	0.3	169	4751						23.5	7.73	30.39	16822	1.52	0.38		
W11A	-12.192	1/8/13	1456	-3.22	0.15	Ebb	2.58	80	25.8	362	0.30	4.2	193	5415						22.5	7.76	28.87	15980	1.18	4.75		
W11A	-12.192	4/9/13	1435	-3.05	0.46	Flood	3.52	109	26.4	370	0.58	8.1	180	5050						21.2	7.78	28.99	16047	4.63	1.32		
W11A	-12.192	7/17/13	1552	-3.07	0.46	Ebb	2.97	92	28.8	403	0.11	1.6	194	5438						22.5	7.63	29.88	16539	1.54	0.17		
W11A	-12.192	10/15/13	1431	-2.89	0.52	Ebb	2.42	75	30.5	427	0.19	2.7	172	4819						22.5	7.71	30.42	16838	1.92	1.16		
W11A	-12.192	1/15/14	1420	-3.24	0.15	Flood	3.16	98	33.9	475	0.31	4.4	183	5144						22.1	7.65	28.57	15814	2.17	0.08		
W11A	-12.192	4/29/14	1634	-2.87	0.58	High	2.84	88	53.0	743	0.22	3.1	178	4995						21.1	7.60	28.90	15997	2.38	0.81		
W11A	-12.192	7/29/14	1512	-3.06	0.40	Flood	3.07	95	53.5	749	0.36	5.0	167	4691						22.6	7.65	30.25	16744	2.36	0.21		
W11A	-12.192	11/5/14	1454	-2.92	0.40	High	2.91	90	50.3	704	0.16	2.3	175	4928						23.0	7.66	28.91	16002	1.58	0.10		
W11A	-12.192	2/10/15	1140	-3.16	0.24	High	4.45	138	56.6	793	0.51	7.2	242	6799						22.2	7.48	27.88	15432	1.60	0.52		
W11A	-12.192	5/19/15	1128	-3.45	0.00	Flood	4.10	127	62.3	873	0.35	4.9	176	4939						22.2	7.74	28.90	15997	2.87	0.16		
W11A	-12.192	7/21/15	1414	-3.34	0.15	Flood	4.13	128	67.7	948	0.11	1.6	183	5130						23.7	7.71	29.65	16412	2.44	0.08		
W11A	-12.192	11/9/15	1235	-3.05	0.40	Flood	3.45	107	58.1	814	0.16	2.2	194	5444						26.0	7.88	29.89	16545	3.36	0.06		
W11A	-12.192	1/26/16	1143	-3.37	0.08	Low	4.57	142	34.6	484	0.01	0.1	179	5032						24.4	7.61	28.90	15997	0.61	0.08		
W11A	-12.192	4/21/16	1352	-3.04	0.40	Flood	10.52	326	21.1	296	0.49	6.9	157	4418						23.3	7.69	30.58	16927	1.04	0.03		

NELHA Water Quality Laboratory

Well 11A Data Table

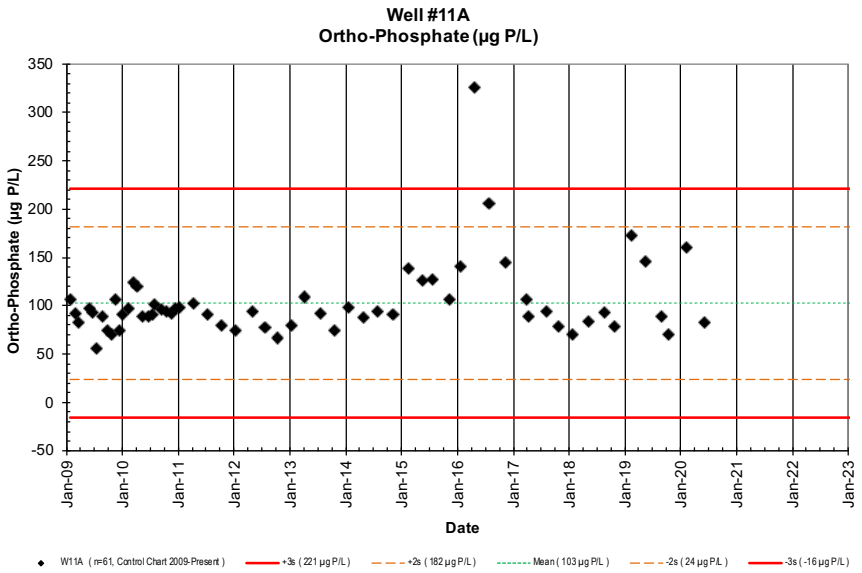
1/22/2009 - 7/21/20

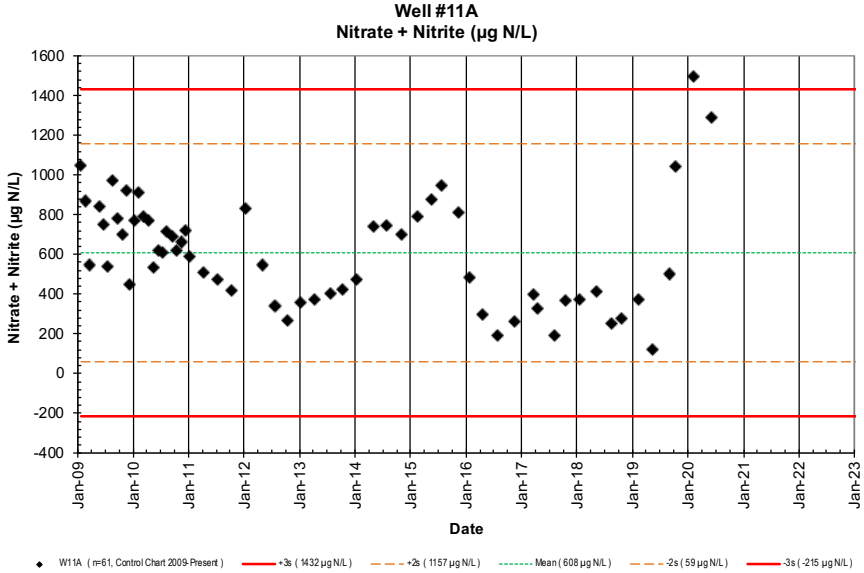
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W11A	-12.192	7/26/16	1012	-3.02	0.30	Flood	6.64	206	13.6	191	0.33	4.6	150	4214						24.8	7.99	30.76	17026	1.51	0.08		
W11A	-12.192	11/10/16	1316	-2.90	0.30	Ebb	4.69	145	18.9	265	0.54	7.5	151	4234						26.0	7.65	30.65	16966	2.00	0.12		
W11A	-12.192	3/21/17	1606	-3.17	0.07	Low	3.45	107	28.4	398	0.29	4.0	180	5063						23.4	7.86	29.64	16407	1.88	0.18		
W11A	-12.192	4/13/17	1405	-3.25	0.30	Flood	2.86	89	23.3	327	0.24	3.4	163	4564						23.9	7.92	30.26	16750	2.11	0.08		
W11A	-12.192	8/4/17	1350	-2.74	0.62	High	3.06	95	13.6	190	0.04	0.5	161	4531						23.2	7.86	30.99	17154	2.04	0.17		
W11A	-12.192	10/19/17	1021	-3.27	0.09	Low	2.53	79	25.9	363	0.38	5.3	159	4465						25.6	7.96	29.98	16595	4.56	0.23		
W11A	-12.192	1/17/18	1408	-3.28	0.25	Flood	2.30	71	26.4	370	0.09	1.2	167	4696						23.6	7.83	29.11	16113	1.77	0.06		
W11A	-12.192	5/10/18	1348	-3.05	0.35	Ebb	2.70	84	29.2	409	0.26	3.7	177	4984						22.2	7.72	32.16	17801	1.40	0.56		
W11A	-12.192	8/20/18	1229	-2.90	0.61	Flood	3.00	93	17.6	247	0.29	4.1	165	4620						24.6	7.79	29.72	16451	2.08	0.18		
W11A	-12.192	10/25/18	1417	-3.10	0.40	Flood	2.55	79	19.6	275	0.03	0.4	151	4229						25.7	7.95	30.73	17010	2.27	0.10		
W11A	-12.192	2/7/19	1427	-3.42	0.20	Flood	5.58	173	26.7	373	0.01	0.2	162	4542						22.8	7.78	29.60	16384	1.42	0.08		
W11A	-12.192	5/16/19	1351	-2.97	0.50	Flood	4.71	146	8.7	122	7.62	106.7	171	4798						22.1	7.76	30.26	16750	2.68	0.04		
W11A	-12.192	8/29/19	955	-3.35	0.00	Flood	2.86	89	35.8	501	0.18	2.5	165	4633						25.5	7.94	30.02	16617	3.91	0.06		
W11A	-12.192	10/10/19	1151	-3.02	0.45	Flood	2.27	70	74.4	1042	0.19	2.7	147	4127						26.6	8.02	30.79	17043	2.36	0.13		
W11A	-12.192	2/4/20	1452	-3.25	0.10	Ebb	5.20	161	106.8	1496	0.11	1.6	235	6613						24.7	7.78	29.08	16097	1.07	0.15		
W11A	-12.192	6/2/20	1057	-3.03	0.35	Flood	2.65	82	91.8	1286	0.34	4.7	166	4657						22.7	7.70	29.93	16567	1.07	0.07		
W11A	-12.192	7/1/20																									
W11A	-12.192	10/1/20																									
W11A	-12.192	1/1/21																									
W11A	-12.192	4/1/21																									
W11A	-12.192	7/1/21																									
W11A	-12.192	10/1/21																									
W11A	-12.192	1/1/22																									
W11A	-12.192	4/1/22																									
W11A	-12.192	7/1/22																									
W11A	-12.192	10/1/22																									
W11A	-12.192	1/1/23																									
W11A	-12.192	4/1/23																									
Mean				-3.16	0.29		3.32	103	43.44	608	0.44	6.2	179	5035						23.3	7.78	29.13	15866	2.87	0.83		
Std. Dev.				0.18	0.18		1.27	39	19.59	274	0.97	13.6	32	891						1.2	0.14	1.22	2155	1.16	2.29		
Maximum				-2.74	0.73		10.52	326	106.81	1496	7.62	106.7	272	7636						26.6	8.45	32.16	17801	4.91	16.60		
Minimum				-3.47	-0.03		1.81	56	8.72	122	0.01	0.1	77	2168						21.1	7.48	26.40	0	0.61	0.03		
n				62	62		61	61	61	61	61	61	61	61						61	61	61	62	61	61		

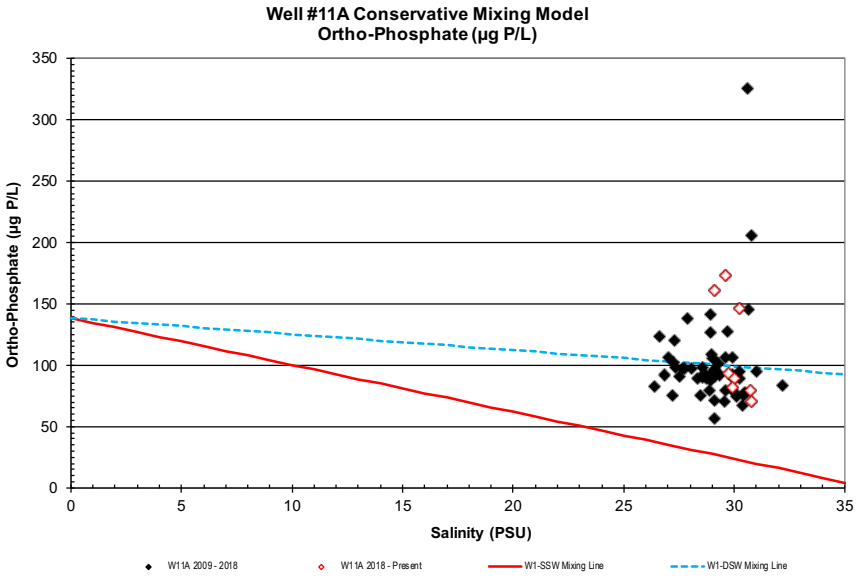
NELHA Water Quality Laboratory

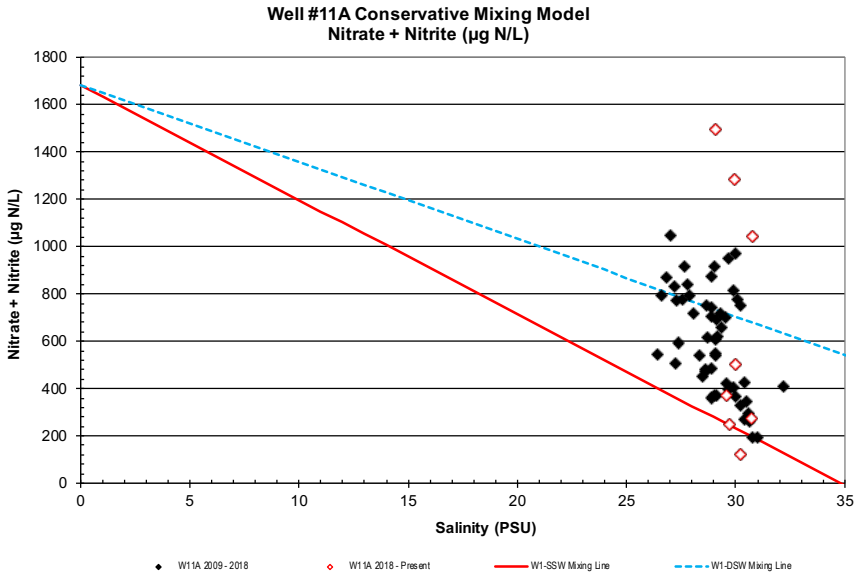
Well 11A Charts

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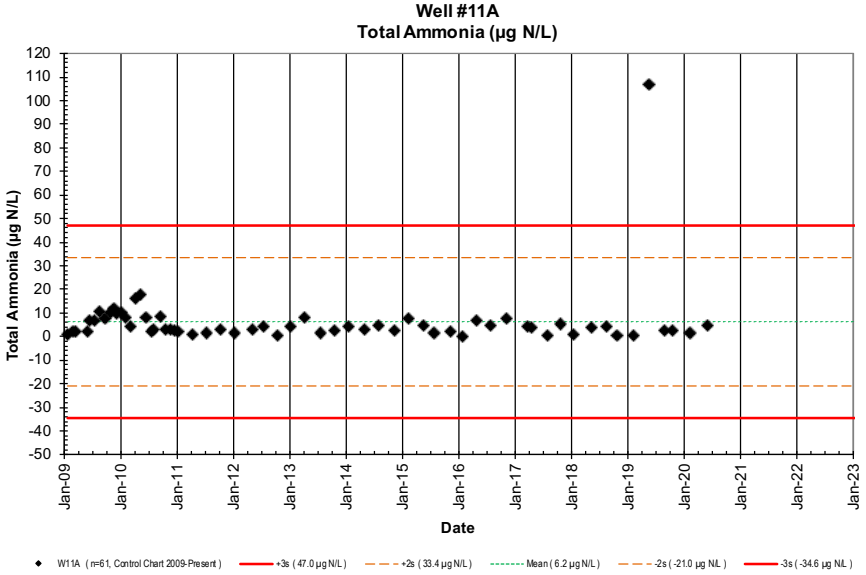


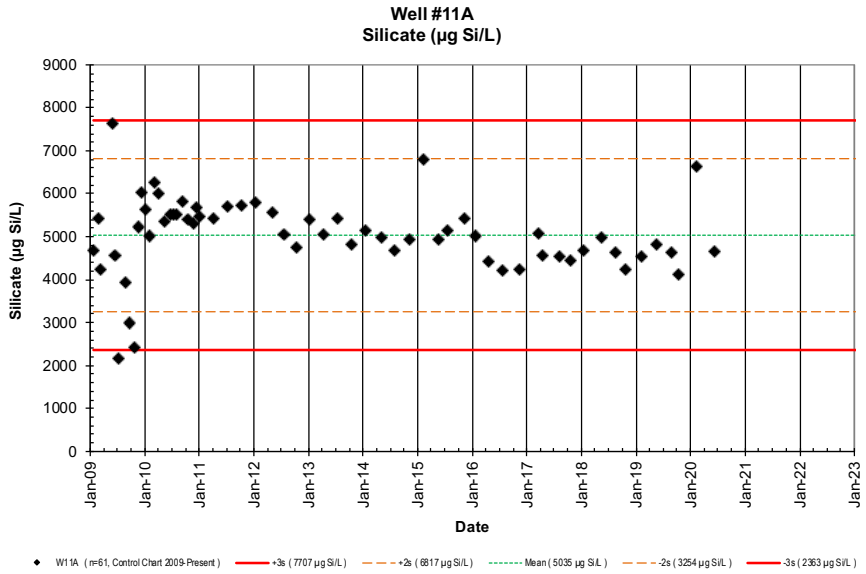


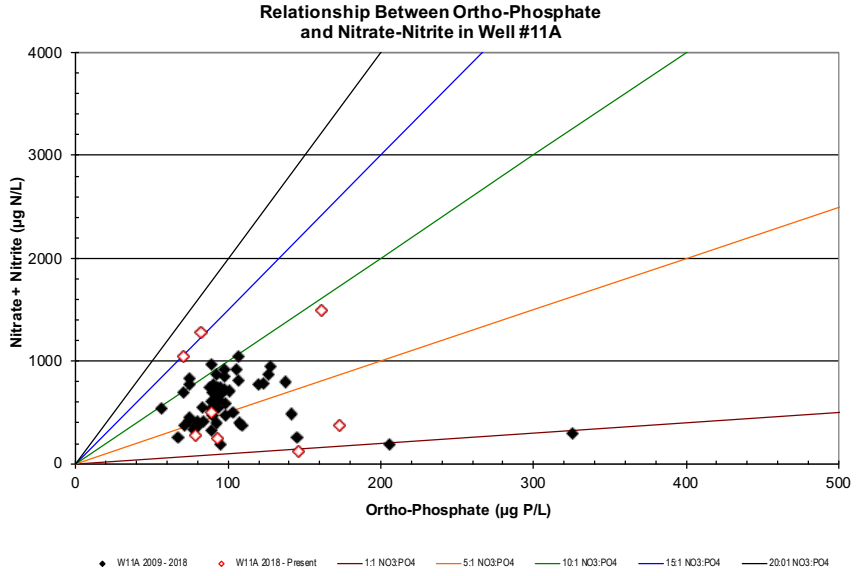
NELHA Water Quality Laboratory

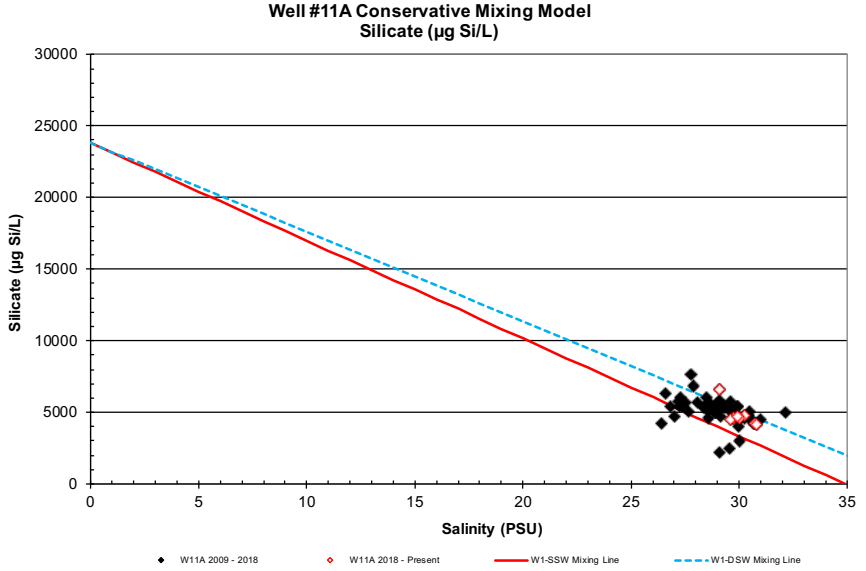
Well 11A Charts

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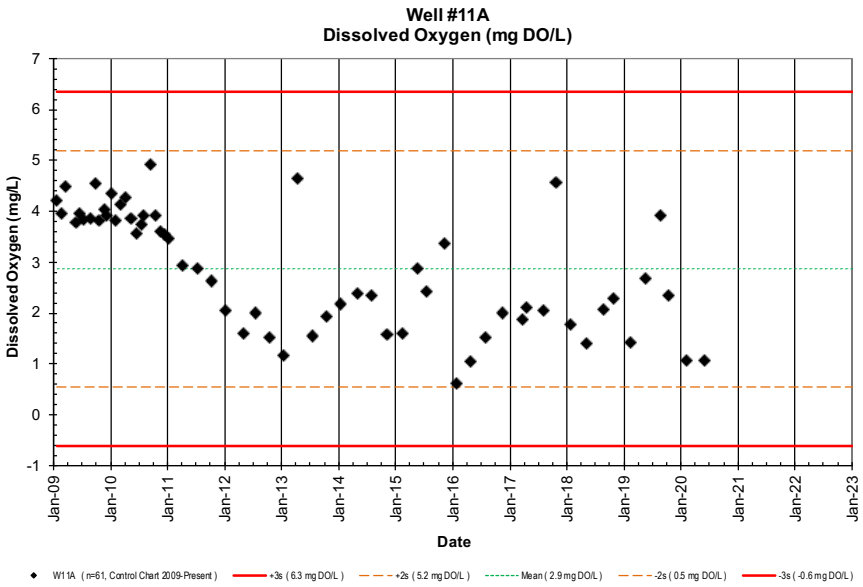


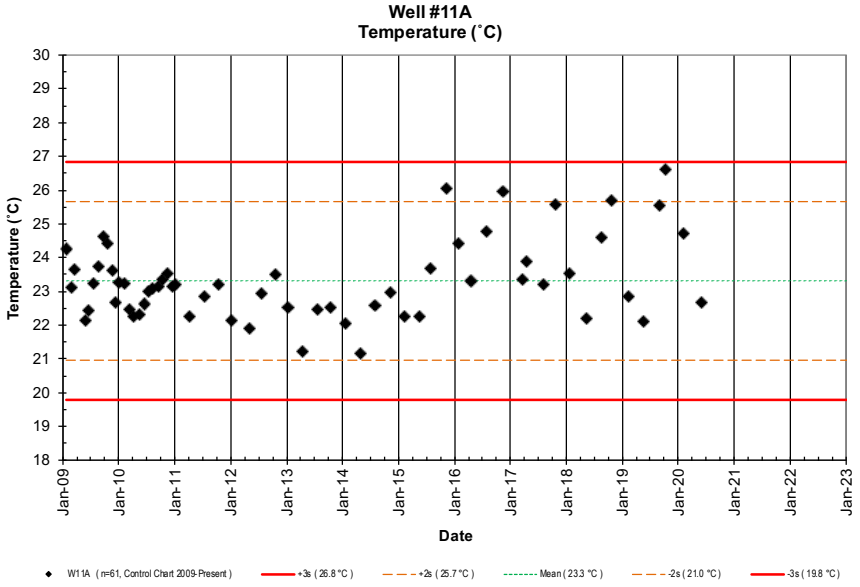


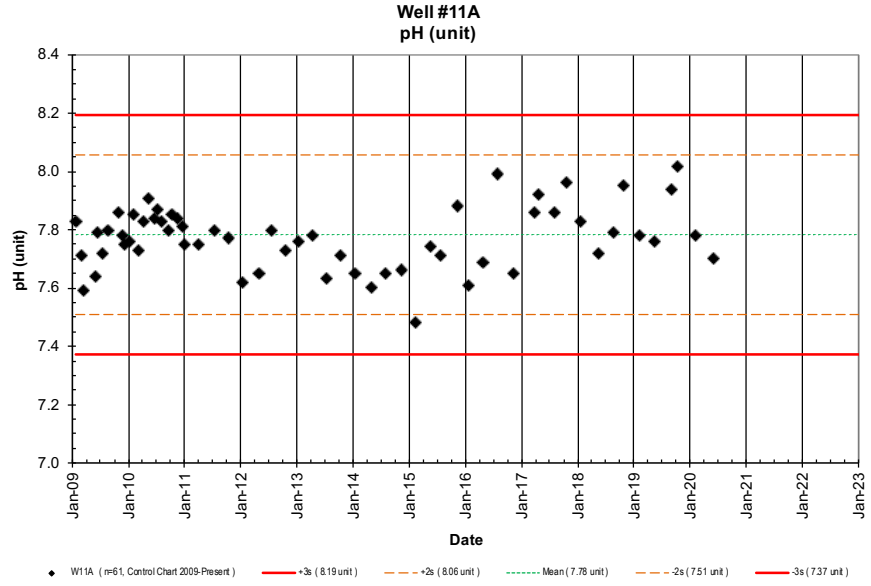
NELHA Water Quality Laboratory

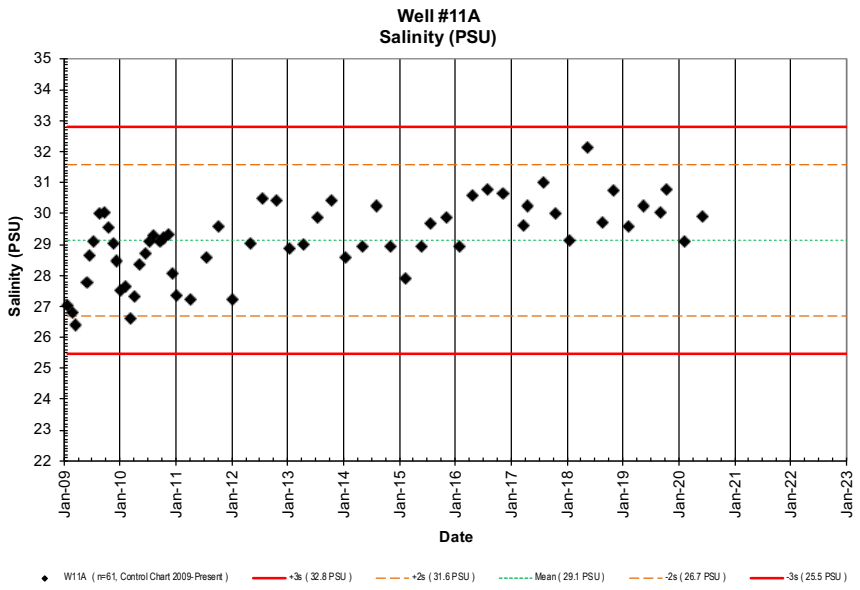
Well 11A Charts

1/22/2009 - 7/21/20





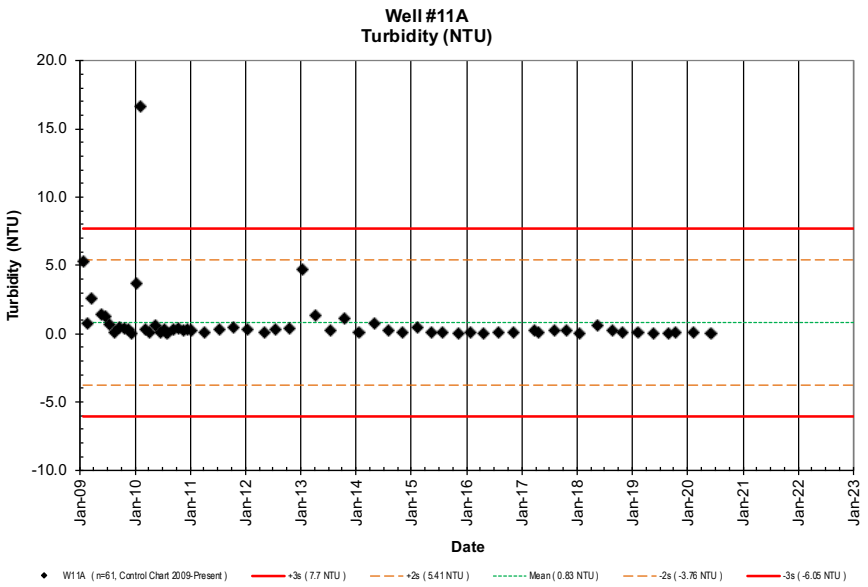


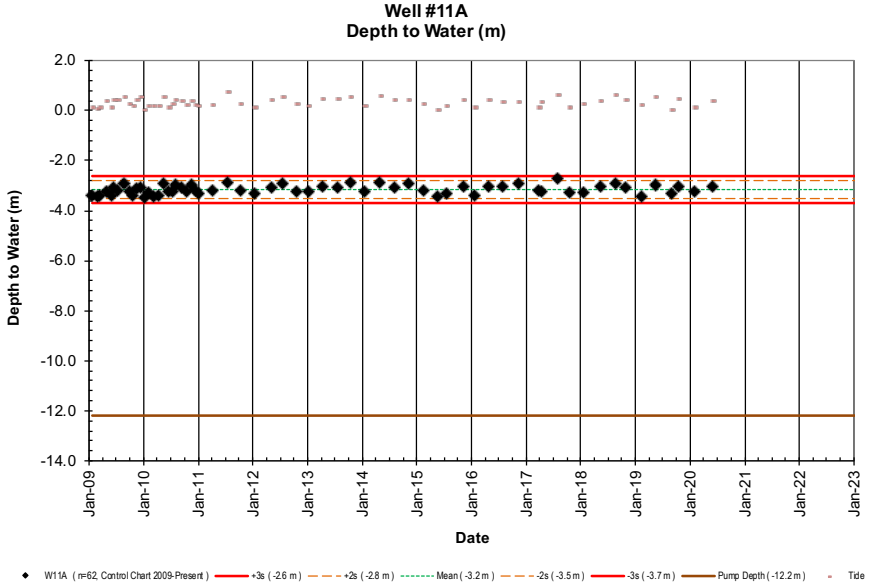


NELHA Water Quality Laboratory

Well 11A Charts

1/22/2009 - 7/21/20





NELHA Water Quality Laboratory

Well 11B Data Table

1/22/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W11B	-4.572	1/22/09	1014	-3.39	0.09	Low	4.88	151	126.0	1764	0.97	13.6	330	9255						25.8	7.60	17.94	9930	4.28	0.50		
W11B	-4.572	2/24/09	927	-3.44	0.06	Ebb	4.89	152	105.3	1475	0.15	2.1	391	10995						24.4	7.50	18.59	10290	4.11	0.29		
W11B	-4.572	3/16/09	1017	-3.39	0.09	Ebb	3.68	114	84.0	1177	0.13	1.8	260	7290						24.7	7.41	19.11	10578	4.64	0.25		
W11B	-4.572	4/22/09	1235	-3.25	0.34	Flood	5.56	172	111.2	1557	0.66	9.3	271	7613						24.6	7.51	18.90	10462	4.13	79.6		
W11B	-4.572	5/27/09	934	-3.40	0.09	Ebb	4.65	144	97.3	1363	0.27	3.8	444	12468						22.8	7.71	23.47	12991	3.79	4.98		
W11B	-4.572	6/16/09	1335	-3.03	0.40	Ebb	6.72	208	87.1	1220	0.36	5.0	205	5761						23.5	7.44	24.05	13312	3.79	0.11		
W11B	-4.572	7/14/09	1233	-3.18	0.40	Ebb	3.81	118	101.7	1425	0.60	8.4	128	3587						23.9	7.62	24.63	13633	3.93	0.98		
W11B	-4.572	8/19/09	1304	-2.90	0.52	Flood	4.25	132	133.8	1874	1.15	16.1	253	7104						25.2	7.58	24.45	13534	4.69	0.83		
W11B	-4.572	9/21/09	1441	-3.27	0.24	Flood	3.48	108	118.8	1665	0.47	6.6	164	4615						24.9	8.10	25.25	13977	4.74	0.06		
W11B	-4.572	10/22/09	1517	-3.35	0.15	Low	3.88	120	115.5	1618	0.77	10.8	128	3586						25.3	7.60	25.02	13849	4.77	0.15		
W11B	-4.572	11/17/09	744	-3.12	0.40	Ebb	4.36	135	127.6	1787	0.86	12.1	317	8896						25.1	7.59	24.28	13440	4.73	0.06		
W11B	-4.572	12/8/09	823	-3.06	0.49	Flood	4.75	147	123.5	1730	0.89	12.5	338	9488						25.4	7.61	22.38	12388	4.61	1.09		
W11B	-4.572	1/5/10	1444	-3.49	-0.03	Low	4.36	135	118.2	1655	0.71	10.0	315	8848						25.4	7.68	21.79	12061	5.07	1.28		
W11B	-4.572	2/1/10	1520	-3.31	0.15	Flood	4.49	139	126.4	1771	0.50	7.0	281	7890						24.2	7.70	22.01	12183	4.10	5.38		
W11B	-4.572	3/9/10	1512	-3.43	0.12	Ebb	5.46	169	99.4	1392	0.36	5.0	361	10146						23.6	7.64	20.80	11513	4.49	1.39		
W11B	-4.572	4/6/10	1342	-3.46	0.12	Ebb	4.94	153	100.8	1412	0.57	8.0	338	9490						23.0	7.65	21.60	11956	4.80	0.50		
W11B	-4.572	5/11/10	1407	-2.93	0.52	Flood	4.46	138	62.5	875	1.43	20.0	296	8307						23.1	7.70	23.38	12941	3.78	0.23		
W11B	-4.572	6/16/10	900	-3.25	0.09	Ebb	4.23	131	71.0	994	0.43	6.0	309	8691						23.2	7.63	24.32	13462	3.53	0.06		
W11B	-4.572	7/13/10	1417	-3.21	0.24	Flood	4.16	129	82.0	1149	0.14	2.0	332	9324						23.4	7.61	24.33	13467	4.23	0.17		
W11B	-4.572	8/3/10	1412	-3.00	0.43	Ebb	4.68	145	92.3	1293	0.43	6.0	321	9017						23.9	7.62	25.10	13894	3.98	0.04		
W11B	-4.572	9/14/10	1443	-3.06	0.34	Ebb	4.71	146	87.7	1229	0.49	6.9	343	9634						24.2	7.58	24.45	13534	4.56	0.37		
W11B	-4.572	10/12/10	1500	-3.28	0.18	Low	4.75	147	95.2	1333	0.32	4.5	330	9258						24.1	7.65	24.47	13545	4.61	0.14		
W11B	-4.572	11/16/10	1347	-3.01	0.37	Ebb	4.75	147	102.8	1440	0.11	1.6	327	9185						24.2	7.62	24.49	13556	3.95	0.24		
W11B	-4.572	12/14/10	1418	-3.21	0.18	Ebb	5.23	162	87.2	1221	0.21	3.0	385	10806						24.2	7.67	21.72	12023	4.26	0.10		
W11B	-4.572	1/4/11	1342	-3.33	0.12	Flood	4.84	150	67.5	945	0.17	2.4	361	10151						24.2	7.49	19.82	10971	3.85	0.09		
W11B	-4.572	4/5/11	1422	-3.17	0.21	Flood	5.75	178	53.3	747	0.13	1.8	372	10441						23.3	7.52	19.62	10860	2.16	0.28		
W11B	-4.572	7/12/11	1407	-2.88	0.73	Flood	4.23	131	53.3	747	0.14	1.9	341	9590						23.5	7.46	23.56	13041	2.79	0.50		
W11B	-4.572	10/11/11	1255	-3.18	0.24	Flood	4.10	127	66.0	924	0.08	1.1	334	9384						23.6	7.45	23.45	12980	3.76	0.17		
W11B	-4.572	1/10/12	1447	-3.37	0.09	Flood	4.62	143	108.7	1522	0.18	2.5	392	10998						23.2	7.40	20.25	11209	3.08	0.16		
W11B	-4.572	5/1/12	1506	-3.15	0.40	Ebb	5.26	163	115.5	1618	0.26	3.7	371	10424						22.6	7.41	23.79	13168	1.98	0.08		
W11B	-4.572	7/18/12	1418	-2.96	0.52	Flood	4.10	127	91.8	1286	1.18	16.5	340	9549						23.0	7.39	24.39	13500	2.43	0.15		
W11B	-4.572	10/16/12	1346	-3.25	0.24	Flood	3.78	117	75.7	1061	0.39	5.4	329	9248						23.9	7.30	24.93	13799	2.51	0.38		
W11B	-4.572	1/8/13	1504	-3.22	0.15	Ebb	4.68	145	72.7	1018	0.37	5.2	386	10834						23.6	7.32	21.35	11818	2.82	6.99		
W11B	-4.572	4/9/13	1442	-3.07	0.46	Flood	5.33	165	74.7	1046	0.50	7.0	350	9840						22.4	7.43	23.08	12775	1.91	2.87		
W11B	-4.572	7/17/13	1556	-3.09	0.46	Ebb	4.71	146	76.0	1064	0.44	6.2	345	9703						23.6	7.41	24.42	13517	3.96	0.10		
W11B	-4.572	10/15/13	1439	-2.91	0.52	Ebb	4.49	139	74.1	1038	0.36	5.0	325	9114						24.2	7.44	24.91	13788	3.62	2.07		
W11B	-4.572	1/15/14	1430	-3.30	0.15	Flood	5.46	169	129.7	1817	0.54	7.5	343	9637						24.0	7.54	21.65	11984	4.02	1.81		
W11B	-4.572	4/29/14	1626	-2.88	0.58	High	4.75	147	145.1	2032	0.36	5.0	319	8955						22.6	7.43	22.97	12714	3.34	1.77		
W11B	-4.572	7/29/14	1516	-3.07	0.40	Flood	5.23	162	125.0	1751	0.21	3.0	328	9219						22.8	7.75	24.69	13667	4.43	0.26		
W11B	-4.572	11/5/14	1500	-2.93	0.40	High	4.97	154	90.1	1262	0.29	4.1	296	8301						24.9	7.50	22.92	12687	3.59	1.38		
W11B	-4.572	2/10/15	1149	-3.19	0.24	High	4.64	144	147.3	2063	0.96	13.4	377	10589						24.3	7.40	21.61	11962	3.45	0.10		
W11B	-4.572	5/19/15	1116	-3.51	0.00	Flood	5.87	182	134.8	1888	0.25	3.5	334	9380						22.8	7.57	21.98	12167	3.88	0.23		
W11B	-4.572	7/21/15	1358	-3.35	0.15	Flood	6.26	194	118.9	1665	0.01	0.2	345	9700						23.8	7.48	22.16	12266	3.58	0.02		
W11B	-4.572	11/9/15	1225	-3.06	0.40	Flood	5.73	178	147.2	2062	0.11	1.5	311	8740						26.1	7.47	23.82	13185	3.02	0.05		
W11B	-4.572	1/26/16	1132	-3.41	0.08	Low	8.49	263	93.0	1303	0.51	7.2	320	8992						25.8	7.45	22.75	12593	3.29	0.12		
W11B	-4.572	4/21/16	1335	-3.08	0.40	Flood	11.27	349	48.4	677	0.46	6.4	293	8221						24.5	7.54	24.00	13285	2.33	0.04		

NELHA Water Quality Laboratory

Well 11B Data Table

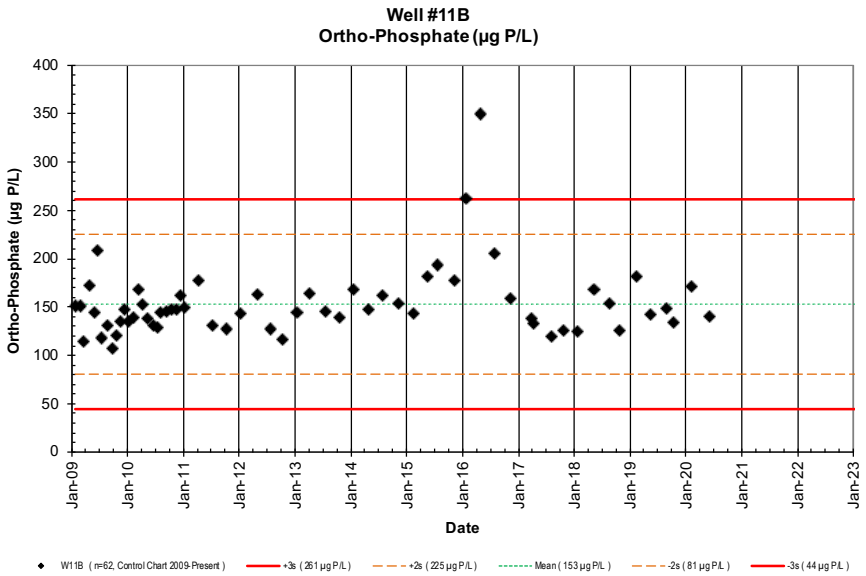
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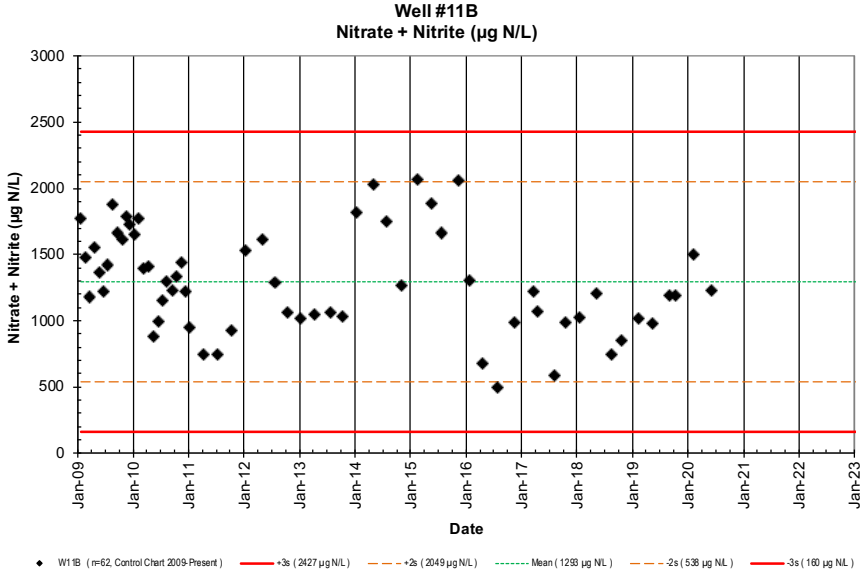
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W11B	-4.572	7/26/16	1022	-3.03	0.30	Flood	6.63	205	34.8	488	0.46	6.4	250	7012						24.6	7.74	23.34	12919	2.64	4.05		
W11B	-4.572	11/10/16	1306	-2.91	0.30	Ebb	5.12	159	70.5	987	1.39	19.4	315	8840						26.5	7.42	23.39	12947	2.90	0.02		
W11B	-4.572	3/21/17	1556	-3.18	0.07	Low	4.47	138	87.1	1220	0.34	4.8	323	9079						24.8	7.62	23.27	12881	2.61	0.05		
W11B	-4.572	4/13/17	1341	-3.26	0.30	Flood	4.29	133	76.2	1068	0.25	3.5	329	9238						24.9	7.64	23.20	12842	2.73	0.03		
W11B	-4.572	8/4/17	1324	-2.76	0.62	Flood	3.86	120	41.8	586	0.04	0.6	294	8255						25.0	7.72	25.64	14192	4.79	0.03		
W11B	-4.572	10/19/17	1006	-3.28	0.09	Low	4.06	126	70.2	983	0.41	5.7	322	9030						25.8	7.68	22.56	12488	3.78	0.03		
W11B	-4.572	1/17/18	1356	-3.29	0.25	Flood	4.02	124	72.8	1019	0.11	1.5	312	8751						25.5	7.61	24.16	13373	2.31	0.02		
W11B	-4.572	5/10/18	1336	-2.97	0.35	Ebb	5.42	168	86.0	1205	0.09	1.2	286	8032						24.1	7.99	25.19	13943	0.71	0.07		
W11B	-4.572	8/20/18	1204	-2.92	0.61	Flood	4.95	153	52.8	740	0.29	4.1	302	8489						25.1	7.70	23.31	12903	3.36	0.05		
W11B	-4.572	10/25/18	1403	-3.12	0.40	Flood	4.08	126	60.9	853	0.03	0.4	276	7740						26.2	7.77	24.39	13500	2.99	0.13		
W11B	-4.572	2/7/19	1416	-3.45	0.20	Flood	5.85	181	72.7	1018	0.04	0.5	289	8104						25.2	7.76	24.65	13644	3.69	0.04		
W11B	-4.572	5/16/19	1341	-2.97	0.50	Flood	4.59	142	69.9	979	0.16	2.2	270	7573						24.2	7.74	23.60	13063	4.63	0.05		
W11B	-4.572	8/29/19	945	-3.37	0.00	Flood	4.79	148	84.8	1188	0.17	2.4	322	9037						25.6	7.76	21.91	12128	4.58	0.55		
W11B	-4.572	10/10/19	1138	-3.03	0.45	Flood	4.34	134	84.7	1187	0.15	2.1	286	8037						26.0	7.82	24.02	13296	3.33	0.05		
W11B	-4.572	2/4/20	1440	-3.26	0.15	Ebb	5.51	171	106.8	1496	0.09	1.3	303	8515						26.0	7.77	21.38	11834	3.46	0.03		
W11B	-4.572	6/2/20	1047	-3.05	0.35	Flood	4.52	140	87.4	1225	0.21	3.0	290	8146						24.5	7.75	24.01	13290	2.99	0.02		
W11B	-4.572	7/1/20																									
W11B	-4.572	10/1/20																									
W11B	-4.572	1/1/21																									
W11B	-4.572	4/1/21																									
W11B	-4.572	7/1/21																									
W11B	-4.572	10/1/21																									
W11B	-4.572	1/1/22																									
W11B	-4.572	4/1/22																									
W11B	-4.572	7/1/22																									
W11B	-4.572	10/1/22																									
W11B	-4.572	1/1/23																									
W11B	-4.572	4/1/23																									
Mean				-3.17	0.29		4.94	153	92.35	1293	0.40	5.7	314	8809						24.3	7.59	23.01	12737	3.63	1.99		
Std. Dev.				0.18	0.18		1.17	36	26.97	378	0.33	4.6	56	1568						1.0	0.15	1.80	999	0.89	10.11		
Maximum				-2.76	0.73		11.27	349	147.29	2063	1.43	20.0	444	12468						26.5	8.10	25.64	14192	5.07	79.60		
Minimum				-3.51	-0.03		3.48	108	34.84	488	0.01	0.2	128	3586						22.4	7.30	17.94	9930	0.71	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	62	62	62		

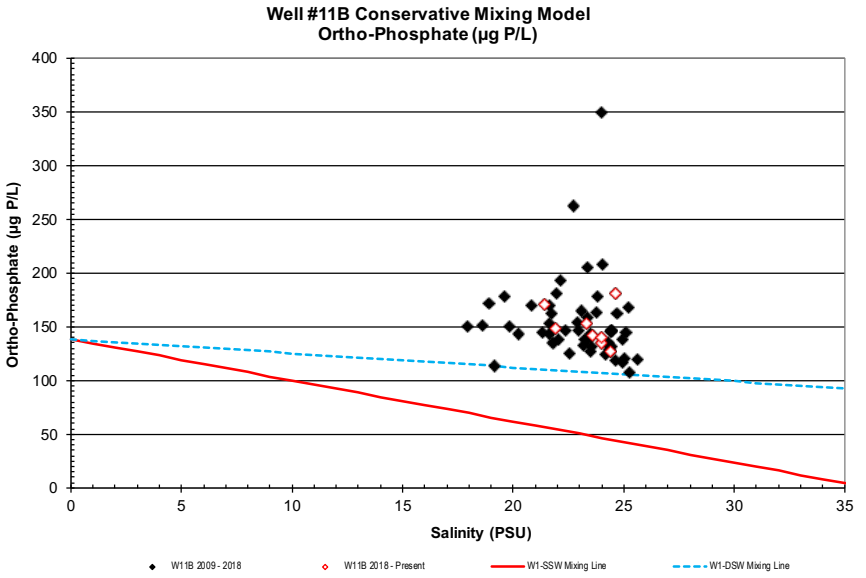
NELHA Water Quality Laboratory

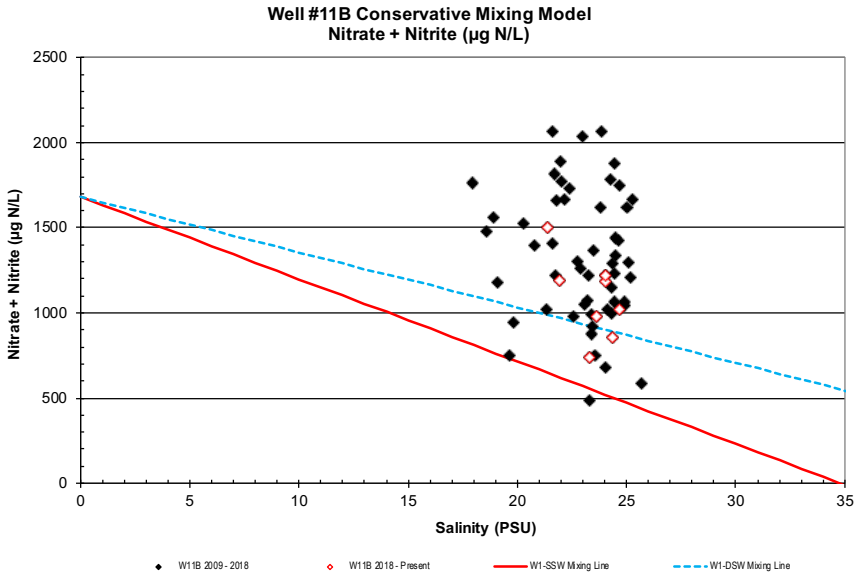
Well 11B Charts

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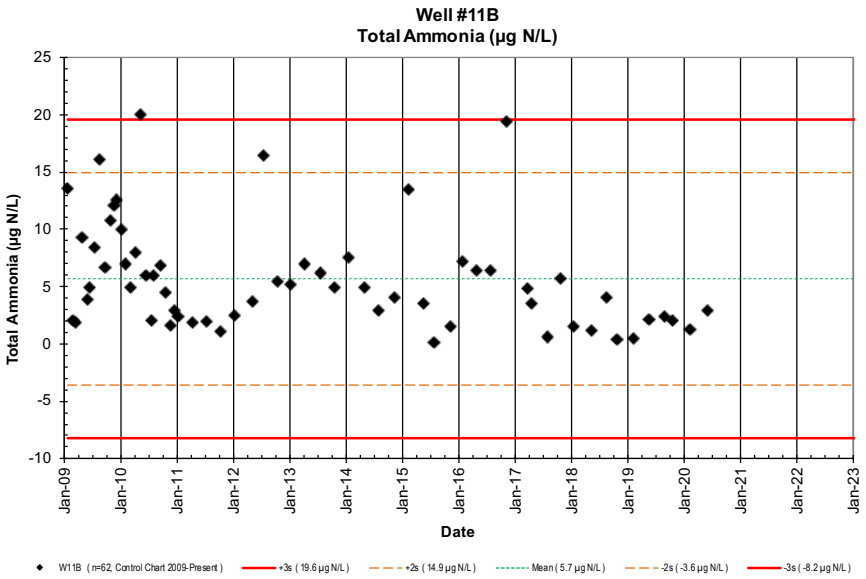


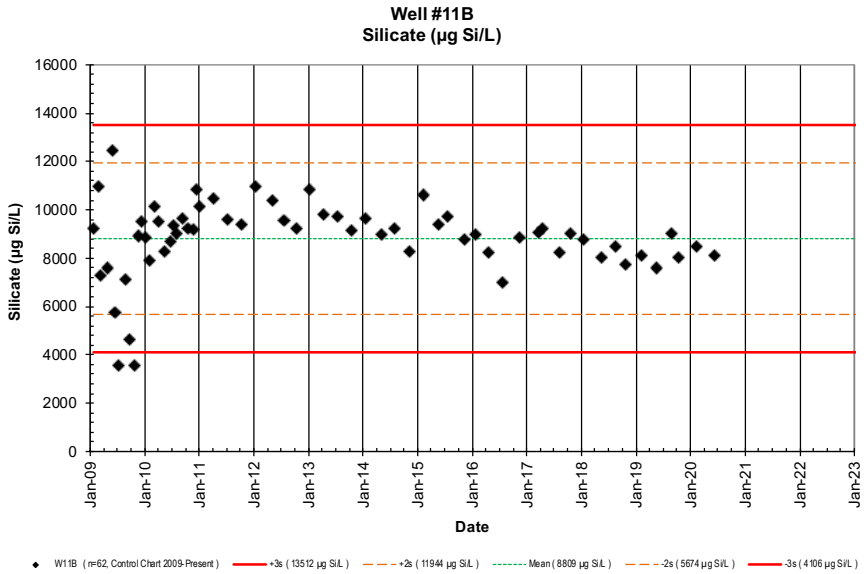


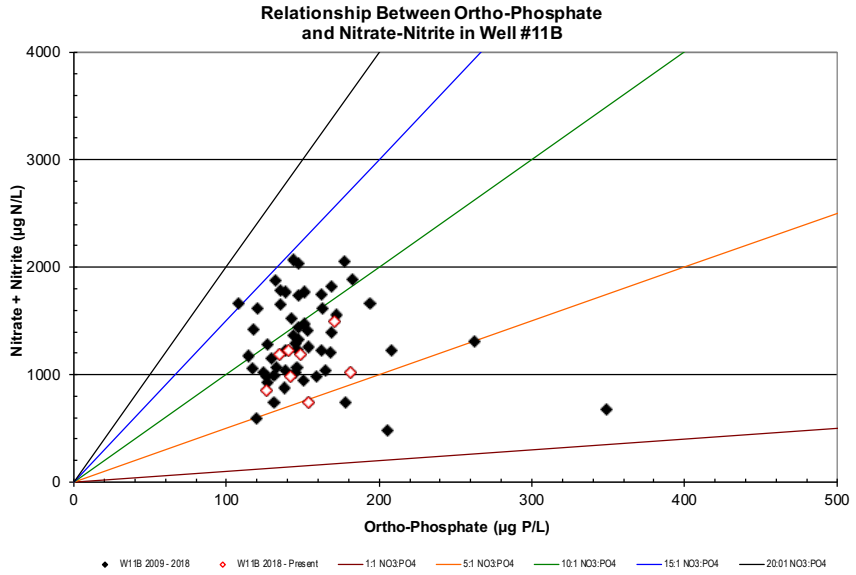
NELHA Water Quality Laboratory

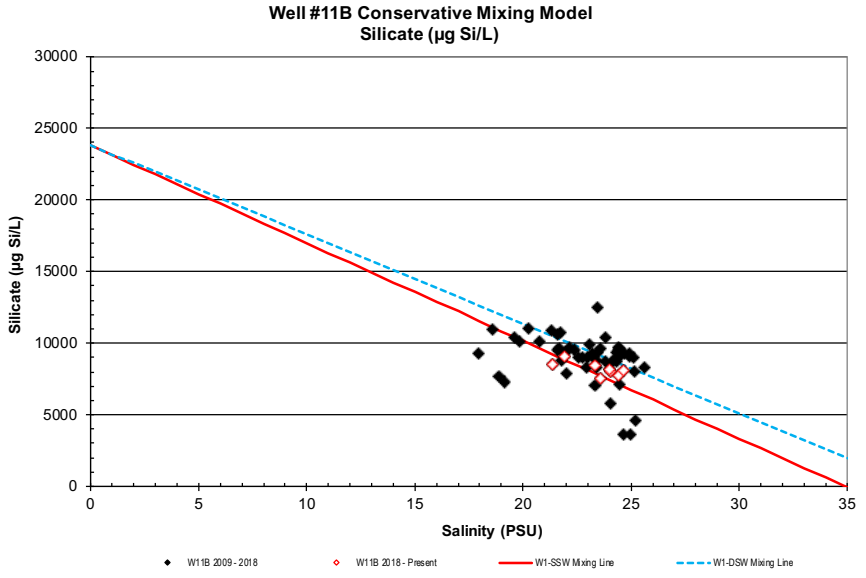
Well 11B Charts

1/22/2009 - 7/21/20





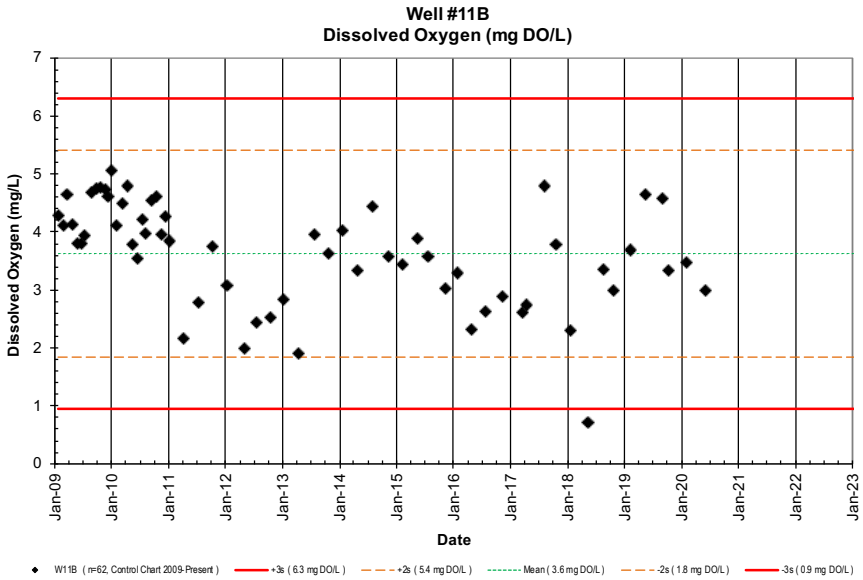


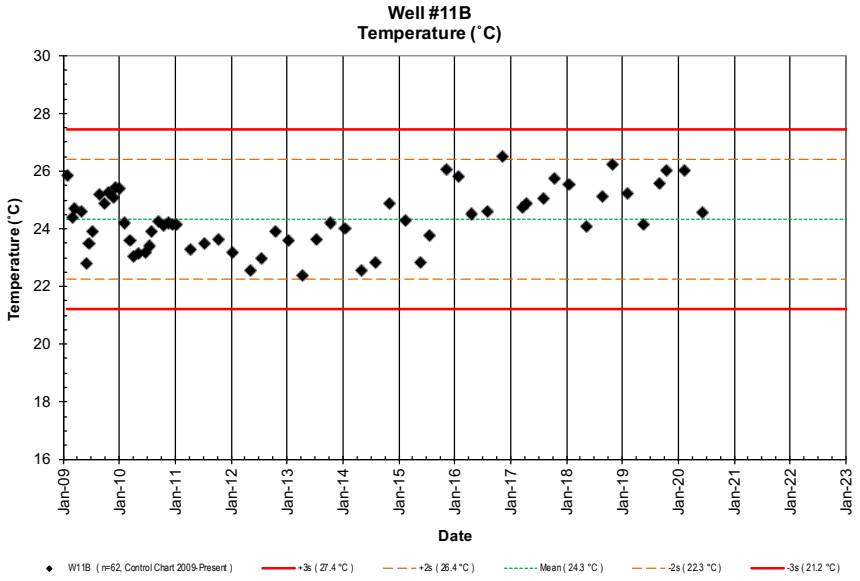


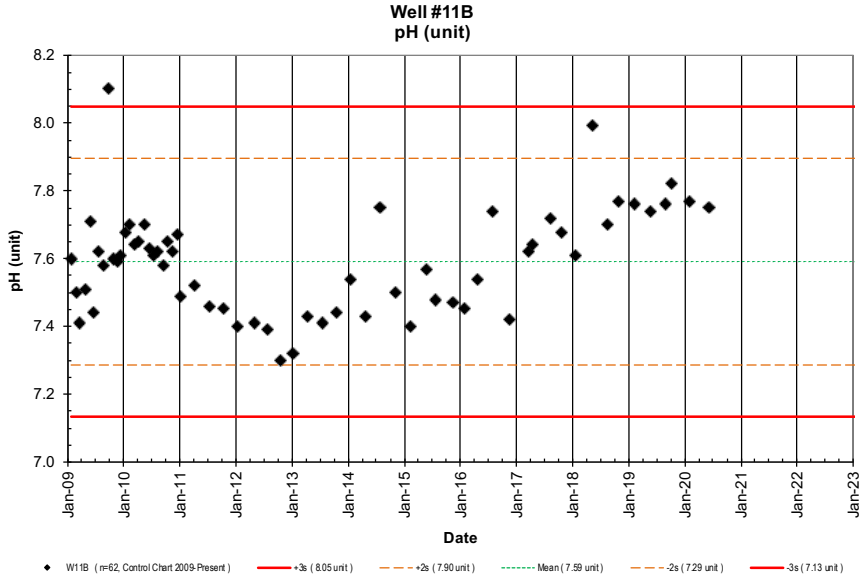
NELHA Water Quality Laboratory

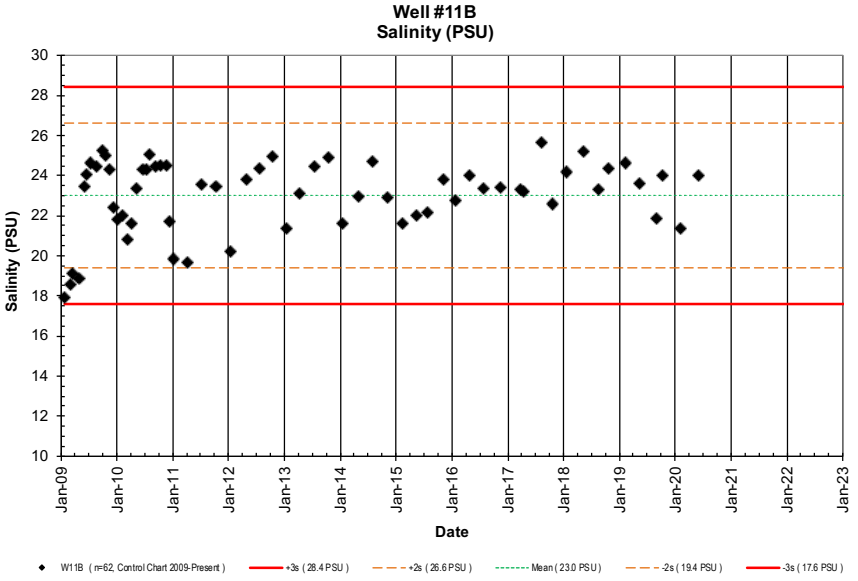
Well 11B Charts

1/22/2009 - 7/21/20





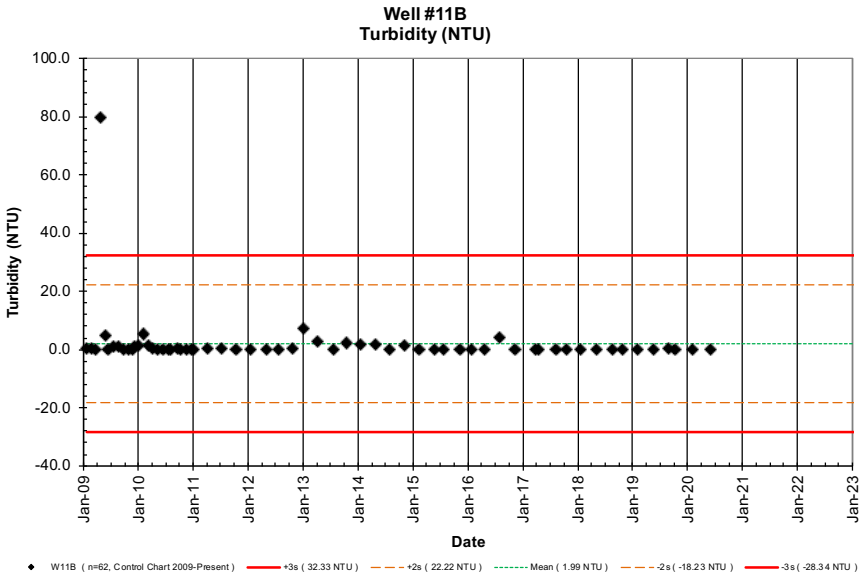


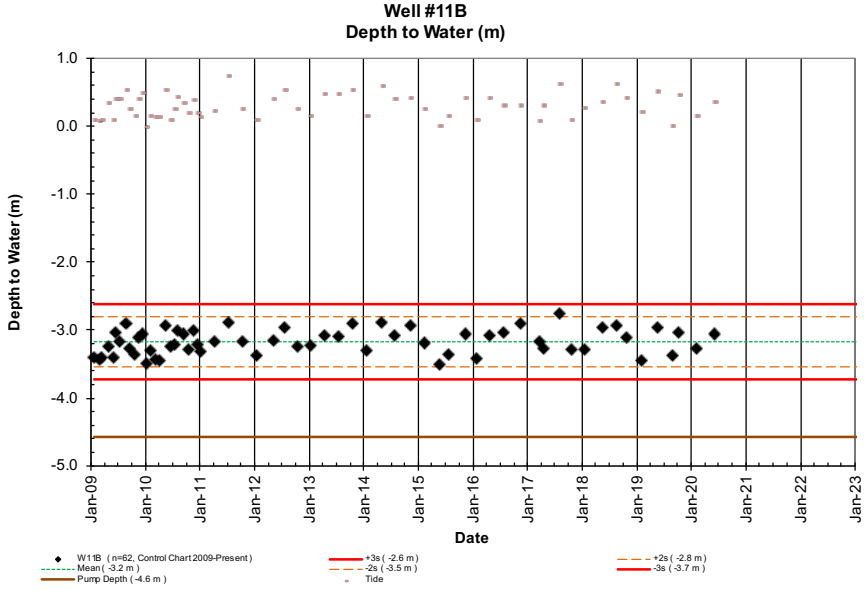


NELHA Water Quality Laboratory

Well 11B Charts

1/22/2009 - 7/21/20





NELHA Water Quality Laboratory

Well 12 Data Table

1/27/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W12	-18.288	01/27/09	1024	-5.37	0.09	Ebb	1.64	51	20.1	282	0.14	1.9	146	4094						24.0	7.90	26.78	14823	1.53	0.42		
W12	-18.288	02/24/09	1440	-5.32	0.24	Flood	1.40	43	20.4	286	0.15	2.1	319	8965						22.9	7.74	27.75	15360	1.49	0.10		
W12	-18.288	03/16/09	1440	-5.56	0.06	Flood	1.23	38	13.1	184	0.13	1.8	233	6549						24.0	7.68	21.57	11940	2.65	0.11		
W12	-18.288	04/22/09	922	-5.58	0.00	Flood	1.81	56	19.2	269	0.41	5.7	280	7867						24.6	7.64	26.68	14768	1.69	1.81		
W12	-18.288	05/29/09	1324	-5.49	0.12	Low	1.55	48	17.8	249	0.19	2.7	482	13529						21.7	7.73	27.47	15205	1.60	0.04		
W12	-18.288	06/19/09	1343	-4.89	0.70	High	1.78	55	17.9	251	0.45	6.3	218	6137						21.7	7.86	27.75	15360	1.52	0.07		
W12	-18.288	07/31/09	1355	-4.90	0.64	High	1.79	55	17.2	241	0.39	5.5	226	6349						21.8	7.80	27.50	15222	1.54	0.04		
W12	-18.288	08/20/09	1443	-4.91	0.61	Flood	1.82	56	17.3	242	1.12	15.7	287	8067						21.9	7.85	27.70	15333	1.45	0.02		
W12	-18.288	09/24/09	1413	-5.30	0.30	Ebb	1.99	62	17.5	245	1.01	14.1	242	6800						21.8	8.30	27.79	15382	1.57	0.05		
W12	-18.288	10/23/09	1606	-5.40	0.15	Low	1.88	58	17.2	241	0.74	10.4	169	4743						21.7	7.80	27.07	14984	1.80	0.03		
W12	-18.288	11/17/09	1537	-5.51	0.21	Flood	2.40	74	17.2	241	0.86	12.1	283	7951						21.7	7.80	26.91	14895	1.75	0.11		
W12	-18.288	12/08/09	1150	-5.23	0.37	Ebb	2.49	77	22.8	320	1.06	14.8	367	10317						22.1	7.75	26.40	14613	1.67	0.02		
W12	-18.288	01/06/10	1121	-5.22	0.21	Ebb	2.23	69	19.1	267	0.71	10.0	333	9363						22.3	7.80	26.50	14668	1.67	0.04		
W12	-18.288	02/01/10	1105	-5.33	0.00	Ebb	1.90	59	21.2	297	0.43	6.0	347	9736						22.2	7.87	27.02	14956	2.03	0.10		
W12	-18.288	03/09/10	1058	-5.58	0.15	Flood	1.26	39	14.5	203	0.29	4.0	364	10231						23.2	7.81	26.31	14563	1.91	0.09		
W12	-18.288	04/07/10	826	-5.50	0.09	Flood	2.20	68	20.4	286	1.36	19.0	341	9584						23.1	7.85	26.66	14757	1.73	0.08		
W12	-18.288	05/12/10	1028	-5.53	0.06	Flood	1.58	49	17.4	244	1.57	22.0	328	9226						22.9	7.88	26.76	14812	1.79	0.03		
W12	-18.288	06/15/10	1614	-5.24	0.46	Flood	1.42	44	14.5	203	0.57	8.0	298	8377						21.4	7.91	27.89	15438	1.48	0.03		
W12	-18.288	7/13/10	1528	-4.96	0.46	Flood	1.61	50	17.9	251	0.01	0.1	363	10183						21.3	7.87	26.97	14929	1.64	0.06		
W12	-18.288	8/3/10	1624	-5.15	0.30	Ebb	1.78	55	18.8	264	0.38	5.3	364	10236						21.4	7.86	26.71	14785	1.68	0.04		
W12	-18.288	9/14/10	1630	-5.31	0.24	Low	1.65	51	16.6	233	0.71	10.0	345	9692						21.4	7.86	27.80	15388	1.52	0.08		
W12	-18.288	10/12/10	1649	-5.27	0.18	Low	1.81	56	16.0	224	0.41	5.7	359	10095						21.4	7.86	27.33	15128	1.70	0.33		
W12	-18.288	11/16/10	1531	-5.20	0.24	Ebb	1.74	54	19.1	268	0.06	0.9	377	10576						21.4	7.84	26.84	14857	1.60	0.13		
W12	-18.288	12/14/10	1559	-5.39	0.06	Ebb	1.81	56	19.7	276	0.21	3.0	385	10806						21.4	7.84	26.46	14646	1.59	0.08		
W12	-18.288	1/4/11	1540	-5.32	0.21	Flood	1.78	55	19.3	271	0.62	8.7	363	10191						21.3	7.76	26.12	14458	1.68	0.09		
W12	-18.288	4/5/11	1552	-5.05	0.46	Flood	1.90	59	18.3	256	0.02	0.3	337	9473						21.3	7.70	26.41	14619	1.39	0.07		
W12	-18.288	7/12/11	1556	-4.94	0.73	Ebb	1.68	52	17.2	241	0.09	1.2	334	9381						21.5	7.82	27.29	15106	1.26	0.09		
W12	-18.288	10/11/11	1523	-5.10	0.43	High	1.65	51	17.2	241	0.22	3.1	339	9525						21.5	7.81	27.30	15111	1.47	0.03		
W12	-18.288	1/10/12	1646	-5.32	0.24	Flood	1.49	46	17.1	239	0.14	1.9	322	9031						21.5	7.79	26.73	14796	1.55	0.62		
W12	-18.288	5/1/12	1604	-5.18	0.30	Ebb	1.87	58	17.2	241	0.25	3.5	344	9675						21.4	7.80	27.87	15427	1.40	0.05		
W12	-18.288	7/18/12	1454	-4.95	0.64	Flood	1.68	52	16.0	224	0.51	7.1	330	9260						21.6	7.92	28.04	15521	1.49	0.07		
W12	-18.288	10/16/12	1446	-5.25	0.30	Flood	2.20	68	17.7	248	0.23	3.2	343	9630						21.4	7.82	27.29	15106	1.50	0.10		
W12	-18.288	1/8/13	1545	-5.39	-0.03	Ebb	1.78	55	17.8	250	0.24	3.4	366	10268						21.4	7.77	27.43	15183	1.48	2.25		
W12	-18.288	4/9/13	1525	-5.03	0.55	High	1.90	59	16.8	235	0.49	6.8	346	9721						21.4	7.82	27.19	15050	1.37	0.04		
W12	-18.288	7/17/13	1644	-5.24	0.30	Ebb	1.68	52	17.4	244	1.52	21.3	334	9393						21.9	7.78	27.74	15355	1.45	0.16		
W12	-18.288	10/15/13	1512	-5.08	0.49	Ebb	1.65	51	17.0	238	0.26	3.6	327	9187						21.5	7.78	27.91	15449	1.47	0.16		
W12	-18.288	1/15/14	1513	-5.34	0.15	Flood	1.90	59	17.6	247	0.33	4.6	336	9442						21.9	7.88	27.78	15377	1.71	0.03		
W12	-18.288	4/29/14	1739	-4.95	0.61	High	1.68	52	18.1	253	0.45	6.3	337	9474						21.5	7.76	27.23	15073	1.73	0.14		
W12	-18.288	7/29/14	1558	-5.09	0.46	Flood	1.81	56	15.8	222	0.14	2.0	331	9287						22.8	7.75	28.09	15549	1.96	0.06		
W12	-18.288	11/5/14	1541	-5.05	0.36	Ebb	1.90	59	16.6	232	0.09	1.3	317	8893						21.9	7.77	27.81	15394	1.40	0.10		
W12	-18.288	2/10/15	1533	-5.40	0.24	High	3.20	99	40.3	564	0.50	7.0	580	16283						21.5	7.73	26.75	14807	1.54	0.25		
W12	-18.288	5/20/15	1036	-5.56	0.00	Ebb	1.73	54	17.3	242	0.21	3.0	303	8507						21.8	7.85	27.74	15355	1.35	0.03		
W12	-18.288	8/6/15	1031	-5.18	0.43	Ebb	1.80	56	18.4	258	0.01	0.1	322	9057						21.9	7.74	26.90	14890	1.48	0.02		
W12	-18.288	11/13/15	1340	-5.15	0.30	Flood	1.86	58	17.4	244	0.26	3.7	362	10181						21.7	7.87	27.55	15250	1.35	0.06		
W12	-18.288	1/27/16	1505	-5.48	0.13	Flood	1.93	60	25.3	355	0.59	8.3	333	9343						21.6	7.76	26.47	14652	1.52	0.05		
W12	-18.288	4/22/16	1245	-5.38	0.20	Flood	2.18	68	22.6	317	0.64	9.0	322	9032						22.6	7.74	26.73	14796	1.66	0.10		

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Well 12 Data Table

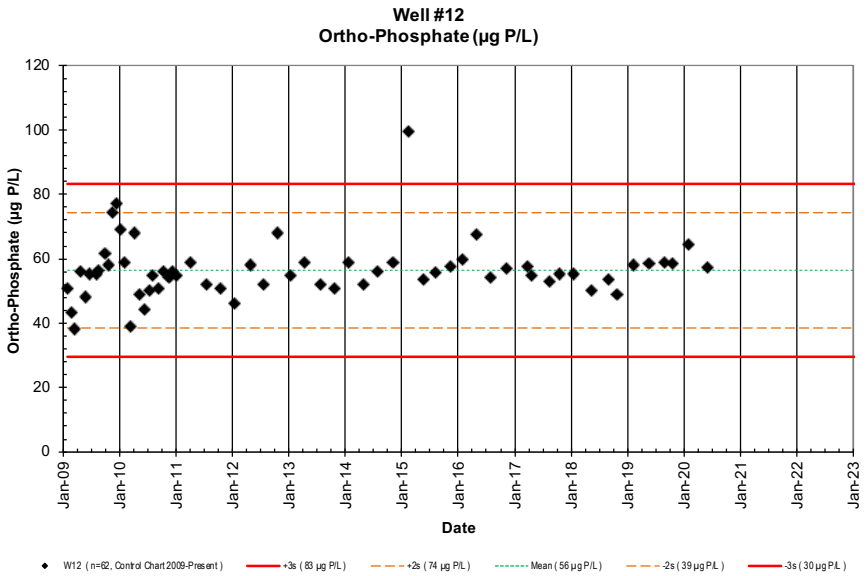
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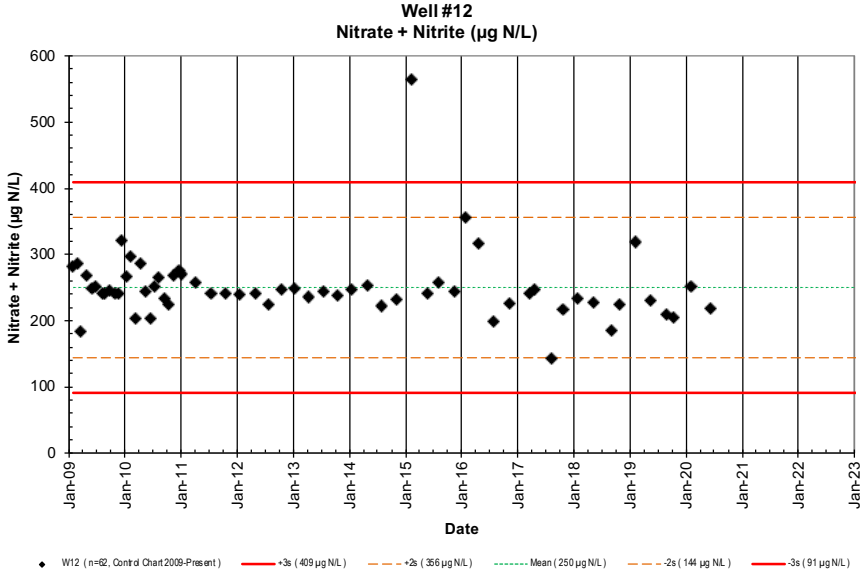
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W12	-18.288	7/26/16	1401	-5.25	0.50	Ebb	1.75	54	14.2	199	0.22	3.1	274	7704						21.8	7.87	27.61	15283	1.41	0.02		
W12	-18.288	11/7/16	1108	-4.95	0.50	Ebb	1.83	57	16.1	225	0.56	7.9	306	8605						21.6	7.70	27.47	15205	1.63	0.02		
W12	-18.288	3/22/17	1105	-5.25	0.23	Flood	1.87	58	17.2	241	0.73	10.2	346	9723						21.8	7.80	27.29	15106	1.36	0.05		
W12	-18.288	4/19/17	1016	-5.29	0.21	High	1.77	55	17.7	248	0.26	3.7	349	9794						21.6	7.75	27.29	15106	1.21	0.03		
W12	-18.288	8/9/17	1023	-5.36	-0.01	Low	1.71	53	10.2	143	0.04	0.5	309	8666						21.8	7.84	29.10	16108	1.45	0.08		
W12	-18.288	10/18/17	1026	-5.36	0.10	Low	1.79	55	15.5	217	0.35	4.9	312	8749						22.0	7.81	28.10	15554	1.90	0.03		
W12	-18.288	1/18/18	1127	-5.35	0.10	Low	1.78	55	16.6	233	0.15	2.1	341	9579						21.6	7.77	27.38	15156	1.42	0.05		
W12	-18.288	5/10/18	1704	-5.15	0.16	Ebb	1.61	50	16.3	229	0.15	2.1	324	9112						21.6	7.80	27.33	15128	1.33	0.04		
W12	-18.288	8/30/18	1104	-5.21	0.24	Ebb	1.73	54	13.2	185	0.29	4.1	344	9669						22.4	7.80	27.88	15432	1.50	0.03		
W12	-18.288	10/24/18	1554	-5.05	0.53	High	1.58	49	15.9	223	0.06	0.9	320	8988						22.2	7.81	27.37	15150	2.67	0.13		
W12	-18.288	2/8/19	1217	-5.50	0.06	Low	1.87	58	22.7	319	0.12	1.7	339	9524						21.6	7.65	26.61	14729	1.58	0.04		
W12	-18.288	5/15/19	1623	-5.08	0.40	Ebb	1.89	59	16.3	229	0.15	2.1	319	8953						21.7	7.69	28.18	15598	1.42	0.02		
W12	-18.288	8/28/19	1522	-4.73	0.70	High	1.90	59	14.9	208	0.40	5.6	313	8803						21.8	7.81	28.61	15836	1.51	0.06		
W12	-18.288	10/11/19	1416	-4.96	0.55	High	1.89	58	14.6	204	0.03	0.4	307	8612						21.9	7.80	27.77	15371	1.55	0.05		
W12	-18.288	1/31/20	1142	-5.28	0.17	Ebb	2.08	65	18.0	252	0.11	1.5	312	8770						22.5	7.86	29.95	16578	1.48	0.02		
W12	-18.288	6/3/20	1331	-4.80	0.50	Flood	1.85	57	15.6	219	0.19	2.7	316	8885						21.8	7.83	28.95	16025	1.37	0.05		
W12	-18.288	7/1/20																									
W12	-18.288	10/1/20																									
W12	-18.288	1/1/21																									
W12	-18.288	4/1/21																									
W12	-18.288	7/1/21																									
W12	-18.288	10/1/21																									
W12	-18.288	1/1/22																									
W12	-18.288	4/1/22																									
W12	-18.288	7/1/22																									
W12	-18.288	10/1/22																									
W12	-18.288	1/1/23																									
W12	-18.288	4/1/23																									
Mean				-5.23	0.30		1.82	56	17.85	250	0.40	5.6	326	9159						21.9	7.81	27.29	15105	1.59	0.15		
Std. Dev.				0.21	0.20		0.29	9	3.79	53	0.36	5.1	60	1672						0.7	0.09	1.02	566	0.26	0.36		
Maximum				-4.73	0.73		3.20	99	40.26	564	1.57	22.0	580	16283						24.6	8.30	29.95	16578	2.67	2.25		
Minimum				-5.58	-0.03		1.23	38	10.18	143	0.01	0.1	146	4094						21.3	7.64	21.57	11940	1.21	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	62	62	62		

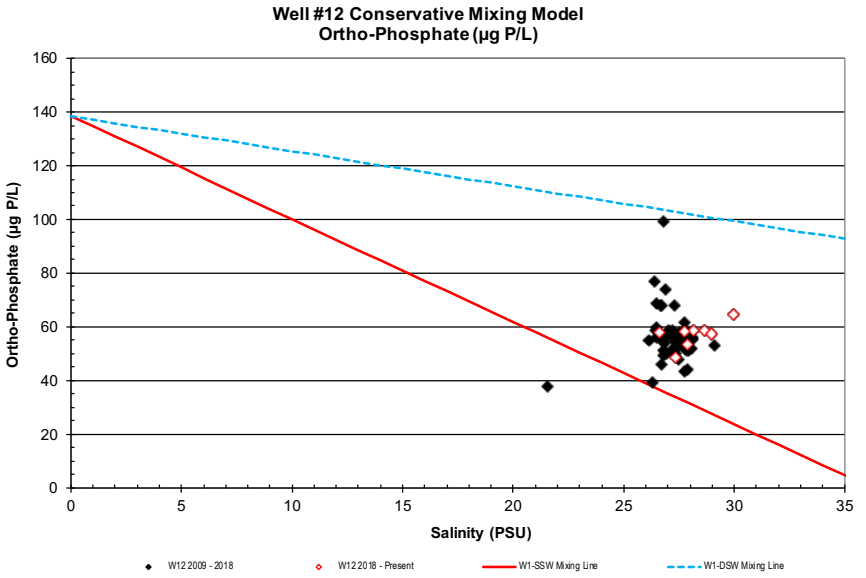
NELHA Water Quality Laboratory

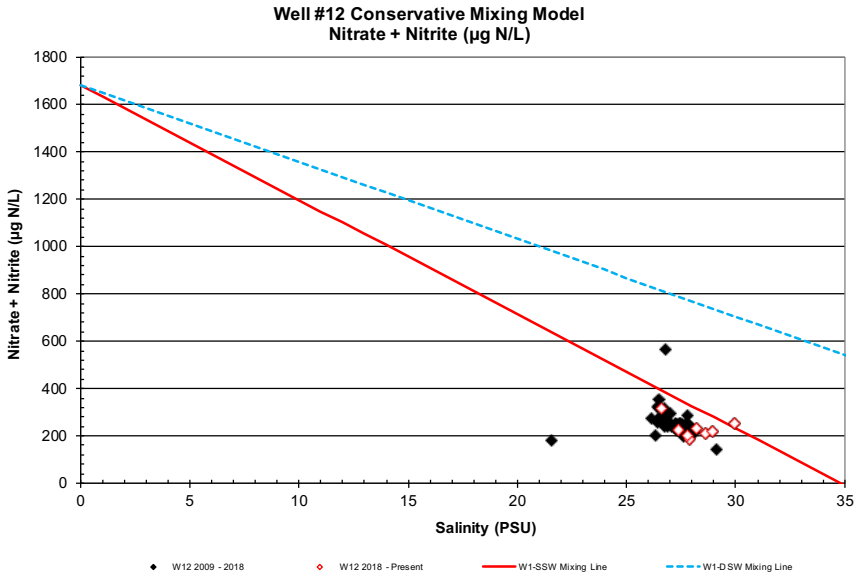
Well 12 Charts

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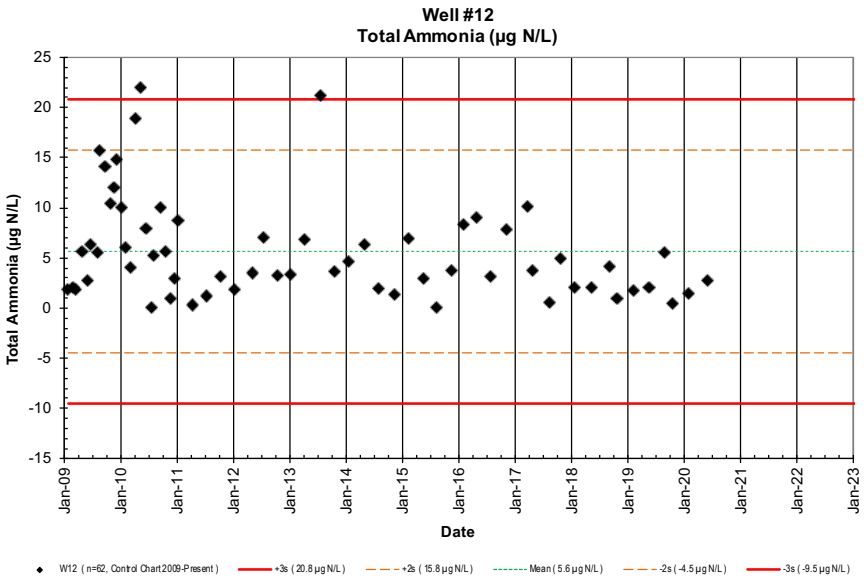


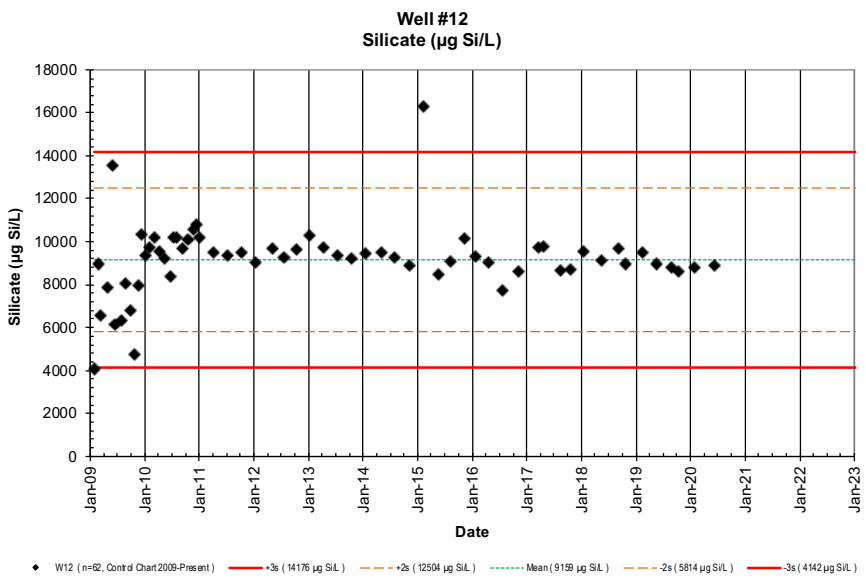


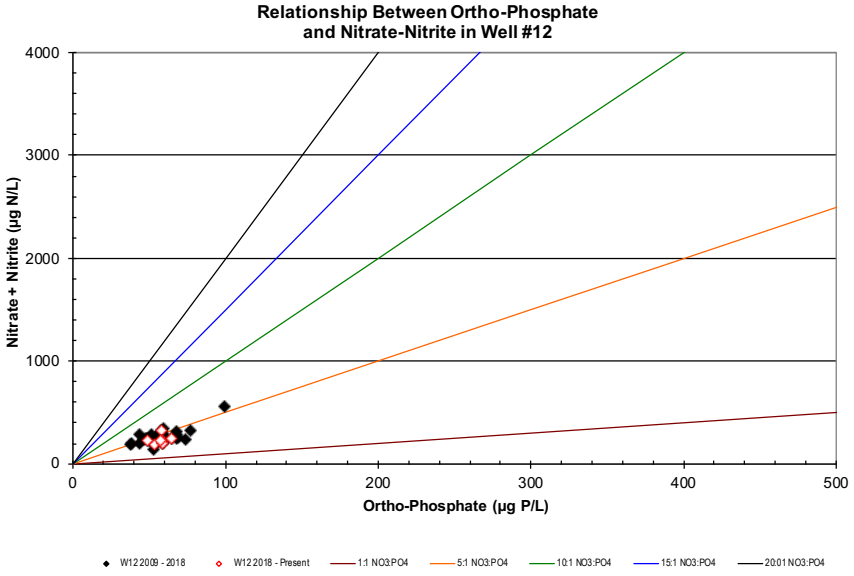
NELHA Water Quality Laboratory

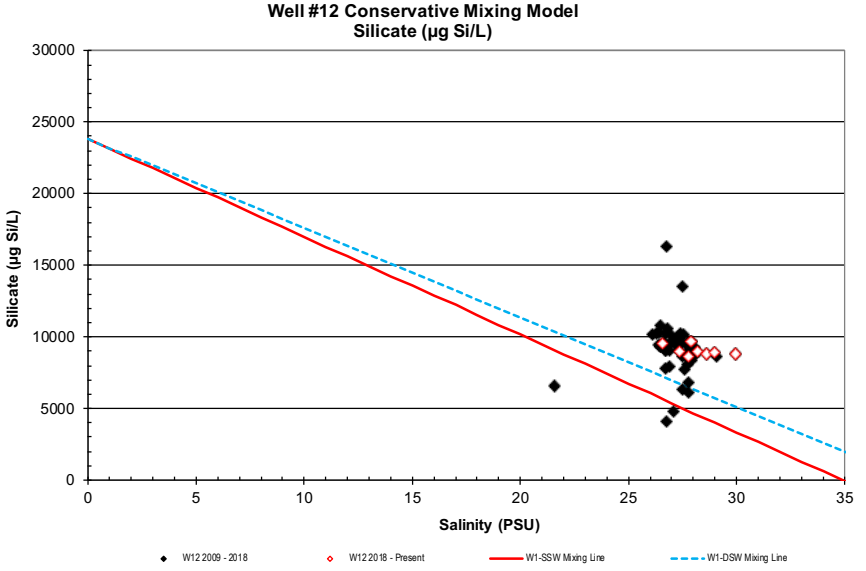
Well 12 Charts

1/27/2009 - 7/21/20





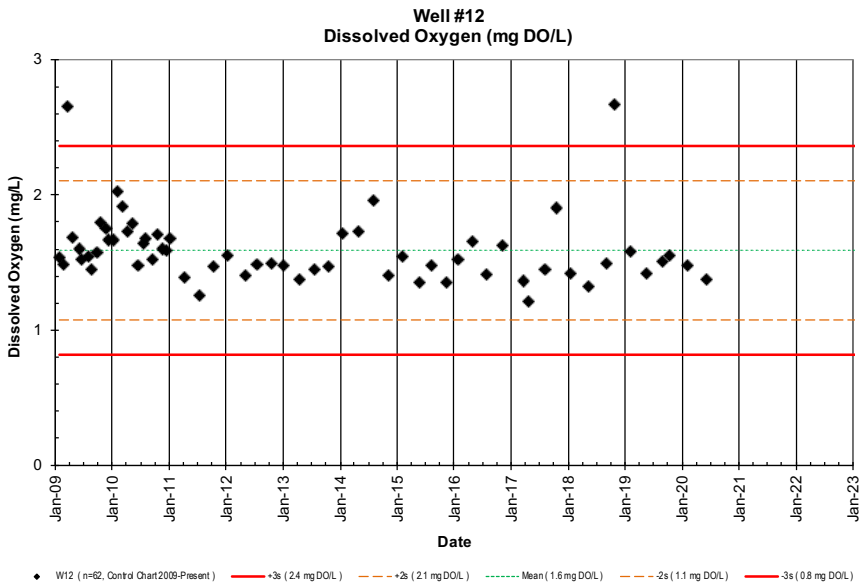


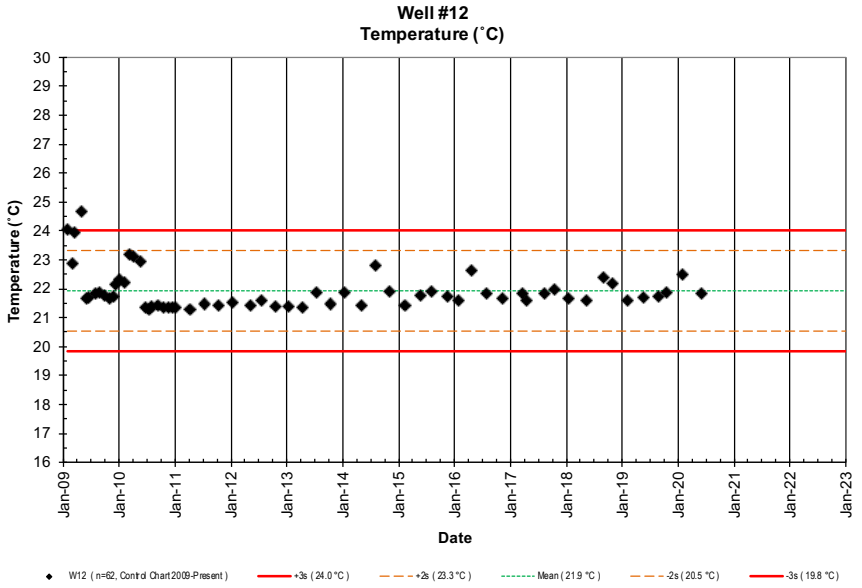


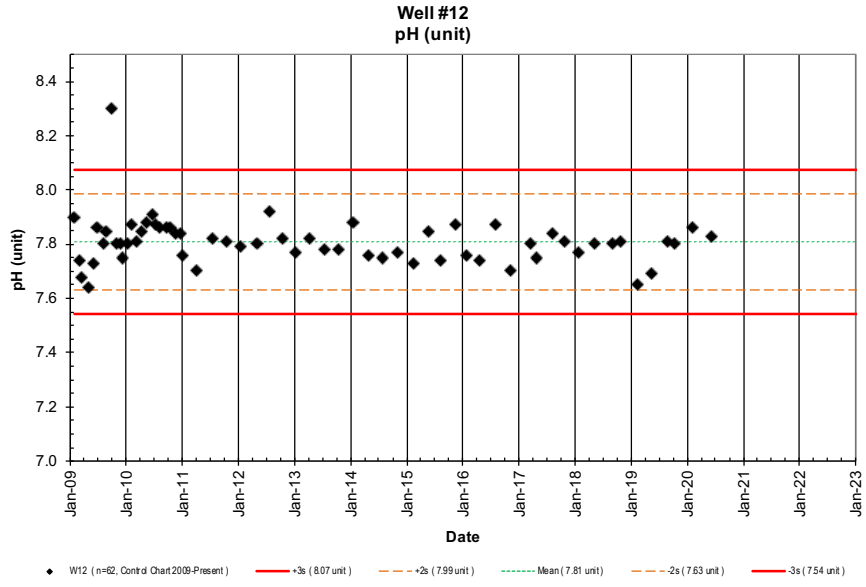
NELHA Water Quality Laboratory

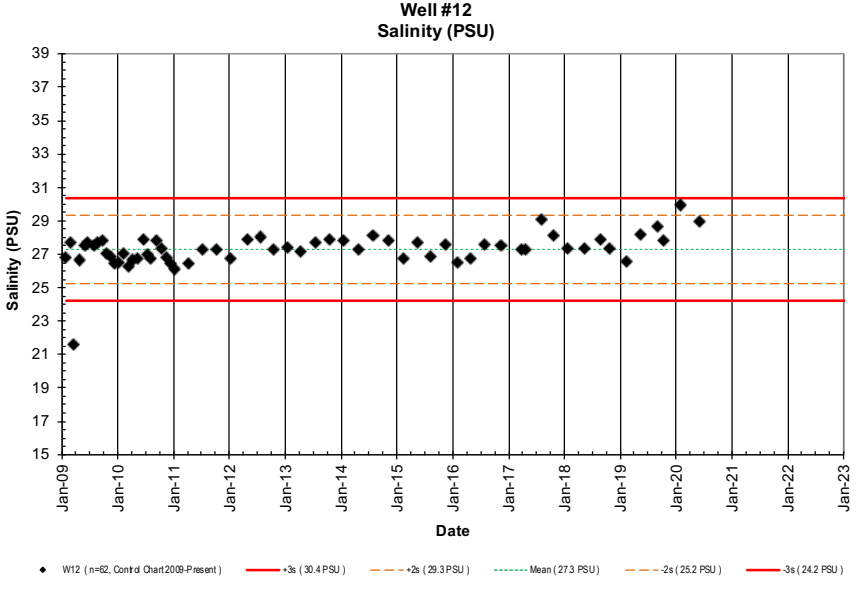
Well 12 Charts

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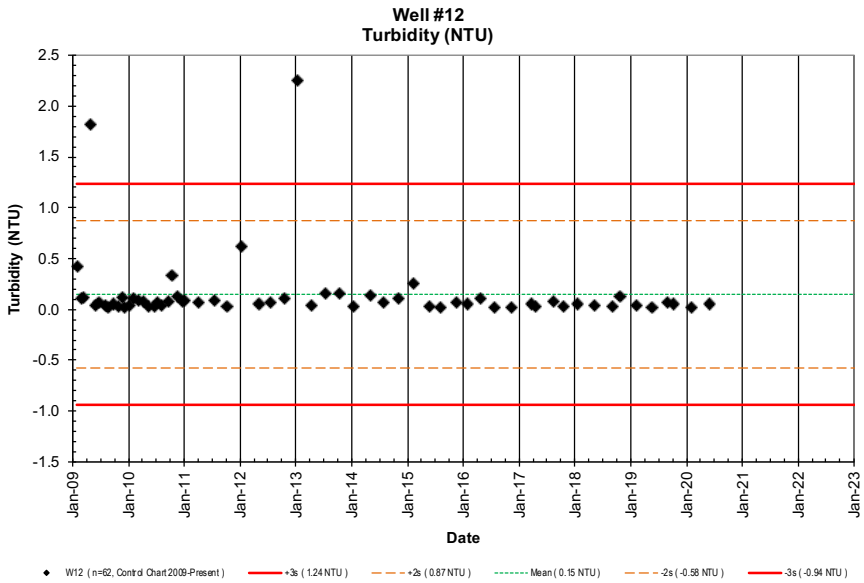


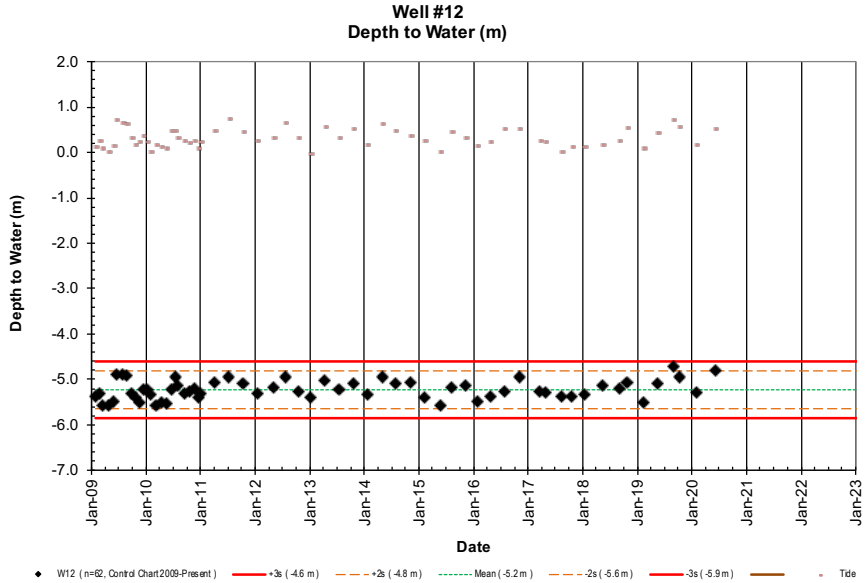


NELHA Water Quality Laboratory

Well 12 Charts

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NELHA Water Quality Laboratory

Well 12A Data Table

1/27/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W12A	-12.192	01/27/09	1004	-5.36	0.09	Ebb	2.63	82	40.1	562	0.20	2.8	504	14155						23.6	7.94	17.85	9880	3.72	0.16		
W12A	-12.192	02/24/09	1421	-5.34	0.24	Flood	1.74	54	28.8	403	0.15	2.1	423	11884						22.8	7.75	22.93	12692	2.30	0.18		
W12A	-12.192	03/16/09	1425	-5.56	0.06	Flood	2.19	68	25.8	362	0.13	1.8	379	10643						24.0	7.68	21.57	11940	2.65	0.11		
W12A	-12.192	04/22/09	941	-5.59	0.00	Flood	1.81	56	19.2	269	0.41	5.7	280	7867						25.7	7.74	21.33	11807	2.62	0.72		
W12A	-12.192	05/29/09	1308	-5.43	0.12	Low	2.01	62	27.9	391	0.23	3.2	541	15207						21.8	7.35	22.82	12631	2.47	0.10		
W12A	-12.192	06/19/09	1327	-4.89	0.70	High	1.94	60	20.8	292	0.37	5.2	239	6710						21.8	7.91	22.45	12427	2.46	0.04		
W12A	-12.192	07/31/09	1341	-4.92	0.64	High	2.29	71	27.4	384	0.48	6.7	315	8861						22.0	7.82	22.53	12471	2.51	0.02		
W12A	-12.192	08/20/09	1425	-4.93	0.61	Flood	2.38	74	30.6	429	0.77	10.8	491	13781						21.9	7.87	22.10	12233	2.41	0.03		
W12A	-12.192	09/24/09	1353	-5.30	0.30	Ebb	2.43	75	29.0	406	0.61	8.5	233	6539						22.0	7.95	21.95	12150	2.64	0.02		
W12A	-12.192	10/23/09	1531	-5.49	0.15	Low	2.29	71	26.0	365	0.60	8.4	200	5631						21.9	7.83	22.40	12399	2.64	0.05		
W12A	-12.192	11/17/09	1507	-5.47	0.21	Flood	2.59	80	26.7	375	0.89	12.5	436	12253						22.1	7.83	22.42	12410	2.60	0.02		
W12A	-12.192	12/08/09	1208	-5.23	0.37	Ebb	2.55	79	34.4	482	0.96	13.4	479	13439						22.3	7.80	21.33	11807	2.80	0.02		
W12A	-12.192	01/06/10	1130	-5.25	0.21	Ebb	2.65	82	34.1	477	0.93	13.0	473	13280						22.5	7.88	18.94	10484	3.55	0.12		
W12A	-12.192	02/01/10	1116	-5.34	0.00	Ebb	2.65	82	39.6	554	0.57	8.0	445	12500						22.5	7.92	19.35	10711	3.49	0.08		
W12A	-12.192	03/09/10	1044	-5.51	0.15	Flood	2.55	79	27.6	387	0.86	12.0	443	12454						21.7	7.83	22.62	12521	2.68	0.03		
W12A	-12.192	04/07/10	822	-5.56	0.09	Flood	2.87	89	29.5	413	1.36	19.0	460	12917						21.5	7.78	22.25	12316	2.63	0.11		
W12A	-12.192	05/12/10	1023	-5.55	0.06	Flood	2.16	67	26.5	371	2.00	28.0	419	11766						21.7	7.89	22.10	12233	2.67	0.05		
W12A	-12.192	06/15/10	1607	-5.25	0.46	Flood	1.84	57	23.5	329	2.14	30.0	421	11819						21.3	7.92	23.93	13246	2.14	0.04		
W12A	-12.192	7/13/10	1516	-4.97	0.46	Flood	2.13	66	27.0	378	0.71	10.0	476	13380						21.6	7.86	22.67	12548	2.48	0.11		
W12A	-12.192	8/3/10	1632	-5.16	0.30	Ebb	2.36	73	28.5	399	0.62	8.7	487	13669						21.7	7.93	21.90	12122	2.63	0.05		
W12A	-12.192	9/14/10	1636	-5.29	0.24	Low	2.20	68	28.3	397	1.17	16.4	495	13916						21.5	7.87	22.17	12272	2.71	0.14		
W12A	-12.192	10/12/10	1659	-5.25	0.18	Low	2.36	73	26.3	369	0.46	6.5	501	14063						21.5	7.88	22.33	12360	2.53	0.16		
W12A	-12.192	11/16/10	1538	-5.21	0.24	Ebb	2.36	73	30.6	428	0.15	2.1	510	14336						21.6	7.88	21.68	12000	2.64	0.08		
W12A	-12.192	12/14/10	1607	-5.38	0.06	Ebb	2.45	76	30.9	433	0.33	4.6	512	14392						21.6	7.86	21.50	11901	2.75	0.08		
W12A	-12.192	1/4/11	1547	-5.32	0.21	Flood	2.42	75	30.1	421	0.36	5.0	487	13683						21.6	7.78	21.43	11862	2.71	0.10		
W12A	-12.192	4/5/11	1558	-5.05	0.46	Flood	2.36	73	28.3	396	0.15	2.1	454	12756						21.6	7.83	21.49	11895	2.39	0.03		
W12A	-12.192	7/12/11	1548	-4.92	0.73	Ebb	2.20	68	28.4	398	0.16	2.3	470	13193						21.8	7.86	21.96	12155	2.39	0.02		
W12A	-12.192	10/11/11	1533	-5.11	0.43	High	2.36	73	27.8	390	0.34	4.7	480	13491						21.8	7.85	22.12	12244	2.67	0.05		
W12A	-12.192	1/10/12	1635	-5.32	0.24	Flood	2.10	65	27.6	386	0.16	2.2	458	12869						21.9	7.82	22.13	12250	2.57	0.16		
W12A	-12.192	5/1/12	1612	-5.17	0.30	Ebb	2.62	81	28.8	403	0.25	3.5	511	14350						21.7	7.82	22.41	12405	2.50	0.02		
W12A	-12.192	7/18/12	1459	-4.92	0.64	Flood	2.26	70	27.0	378	0.57	8.0	462	12977						21.6	7.92	22.99	12726	2.53	0.04		
W12A	-12.192	10/16/12	1439	-5.25	0.30	Flood	2.20	68	27.8	390	0.24	3.3	471	13227						21.8	7.85	22.66	12543	2.43	0.19		
W12A	-12.192	1/8/13	1545	-5.39	-0.03	Ebb	2.13	66	24.3	341	0.36	5.1	455	12766						21.4	7.79	24.62	13628	1.95	0.36		
W12A	-12.192	4/9/13	1534	-5.04	0.55	High	2.52	78	25.7	360	0.24	3.4	467	13125						21.7	7.84	22.74	12587	2.06	0.76		
W12A	-12.192	7/17/13	1651	-5.23	0.30	Ebb	2.20	68	24.1	338	0.32	4.5	479	13439						22.3	7.81	22.35	12371	2.58	0.19		
W12A	-12.192	10/15/13	1520	-5.06	0.49	Ebb	2.29	71	28.6	401	0.43	6.0	462	12973						21.8	7.81	22.49	12449	2.68	0.02		
W12A	-12.192	1/15/14	1521	-5.31	0.15	Flood	2.65	82	29.6	415	0.48	6.7	464	13035						22.1	7.88	22.30	12344	2.87	0.02		
W12A	-12.192	4/29/14	1729	-4.98	0.61	High	2.03	63	24.3	341	0.39	5.5	421	11812						21.5	7.80	23.97	13268	2.38	0.02		
W12A	-12.192	7/29/14	1605	-5.08	0.46	Flood	2.55	79	28.1	394	0.21	3.0	492	13817						22.2	7.77	22.45	12427	2.74	0.03		
W12A	-12.192	11/5/14	1549	-5.03	0.36	Ebb	2.58	80	29.7	416	0.17	2.4	460	12906						22.2	7.86	21.72	12023	2.81	0.05		
W12A	-12.192	2/10/15	1542	-5.41	0.24	High	5.43	168	71.3	999	0.59	8.2	898	25230						21.9	7.81	21.00	11624	3.04	0.18		
W12A	-12.192	5/20/15	1025	-5.49	0.00	Ebb	2.50	77	31.1	436	0.14	2.0	431	12116						22.1	7.91	21.78	12056	2.68	0.02		
W12A	-12.192	8/6/15	1016	-5.26	0.43	Ebb	2.47	77	29.0	407	0.07	1.0	435	12204						23.0	7.75	22.40	12399	2.65	0.02		
W12A	-12.192	11/13/15	1352	-5.26	0.40	Flood	2.90	90	33.3	466	0.21	3.0	488	13692						22.3	7.87	20.92	11580	2.78	0.04		
W12A	-12.192	1/27/16	1455	-5.46	0.13	Low	2.99	93	44.4	622	0.06	0.9	491	13795						22.1	7.80	19.61	10855	3.28	0.02		
W12A	-12.192	4/22/16	1227	-5.37	0.20	Flood	3.00	93	34.3	481	0.33	4.6	449	12605						22.9	7.77	21.15	11707	2.92	0.06		

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Well 12A Data Table

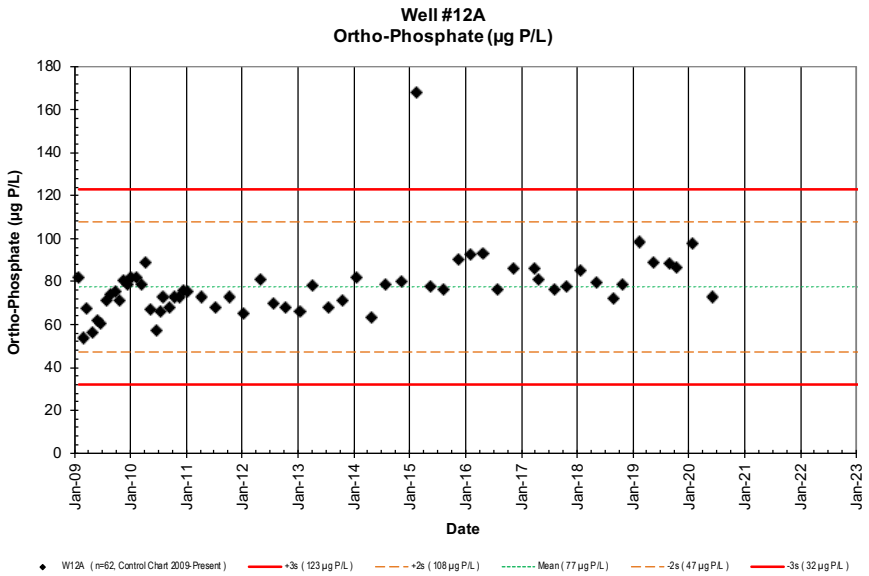
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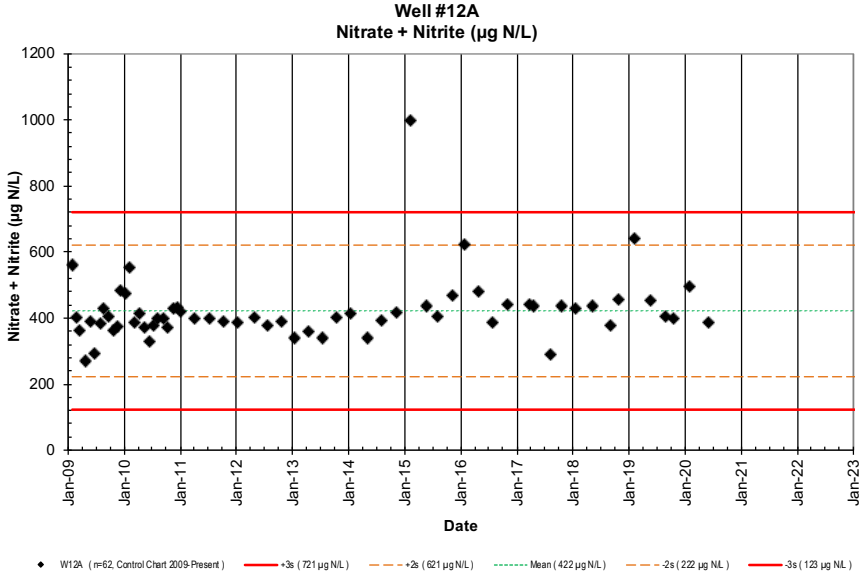
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W12A	-12.192	7/26/16	1417	-5.23	0.50	Ebb	2.46	76	27.6	386	0.10	1.4	393	11026						22.3	7.91	21.62	11967	2.71	0.02		
W12A	-12.192	11/7/16	1055	-4.94	0.50	Ebb	2.76	86	31.4	440	0.02	0.3	473	13293						22.0	7.73	20.55	11375	3.78	0.02		
W12A	-12.192	3/22/17	1041	-5.25	0.23	Flood	2.76	86	31.5	441	0.43	6.0	506	14221						23.6	7.80	20.85	11541	2.41	0.08		
W12A	-12.192	4/19/17	1004	-5.26	0.21	High	2.61	81	31.2	437	0.23	3.2	509	14295						22.0	7.80	21.02	11635	2.54	0.02		
W12A	-12.192	8/9/17	1006	-5.34	-0.01	Low	2.46	76	20.7	289	0.06	0.9	483	13566						22.1	7.84	22.37	12382	2.67	0.04		
W12A	-12.192	10/18/17	1009	-5.33	0.10	Low	2.51	78	31.1	436	0.38	5.3	469	13161						22.2	7.82	21.42	11857	3.39	0.04		
W12A	-12.192	1/18/18	1113	-5.34	0.10	Low	2.75	85	30.6	429	0.09	1.3	485	13617						22.0	7.75	21.52	11912	2.83	0.02		
W12A	-12.192	5/10/18	1648	-5.20	0.16	Ebb	2.57	80	31.2	438	0.19	2.7	480	13486						22.3	7.83	22.42	12410	2.39	0.05		
W12A	-12.192	8/30/18	1051	-5.20	0.24	Ebb	2.33	72	26.9	377	0.29	4.1	478	13432						22.5	7.82	21.90	12122	7.71	0.08		
W12A	-12.192	10/24/18	1543	-5.01	0.53	High	2.54	79	32.6	457	0.06	0.8	480	13485						22.6	7.82	20.65	11430	2.57	0.03		
W12A	-12.192	2/8/19	1207	-5.48	0.06	Low	3.18	98	45.8	641	0.12	1.7	537	15070						22.0	7.68	19.73	10921	3.80	0.05		
W12A	-12.192	5/15/19	1610	-5.07	0.40	Ebb	2.86	89	32.4	454	0.16	2.3	487	13682						22.1	7.70	21.60	11956	3.00	0.02		
W12A	-12.192	8/28/19	1459	-4.73	0.70	High	2.84	88	29.0	406	0.21	3.0	454	12742						22.2	7.86	22.17	12272	2.78	0.05		
W12A	-12.192	10/11/19	1401	-4.95	0.55	High	2.79	86	28.5	399	0.31	4.3	458	12866						22.4	7.87	22.09	12227	2.97	0.03		
W12A	-12.192	1/31/20	1129	-5.27	0.17	Ebb	3.16	98	35.3	495	-0.09	-1.2	471	13228						22.7	8.01	22.31	12349	3.30	0.02		
W12A	-12.192	6/3/20	1320	-4.82	0.50	Flood	2.35	73	27.7	388	0.16	2.2	437	12281						22.3	7.85	23.03	12748	2.61	0.02		
W12A	-12.192	7/1/20																									
W12A	-12.192	10/1/20																									
W12A	-12.192	1/1/21																									
W12A	-12.192	4/1/21																									
W12A	-12.192	7/1/21																									
W12A	-12.192	10/1/21																									
W12A	-12.192	1/1/22																									
W12A	-12.192	4/1/22																									
W12A	-12.192	7/1/22																									
W12A	-12.192	10/1/22																									
W12A	-12.192	1/1/23																									
W12A	-12.192	4/1/23																									
Mean				-5.23	0.30		2.50	77	30.11	422	0.42	5.9	459	12887						22.1	7.83	21.86	12098	2.80	0.09		
Std. Dev.				0.20	0.20		0.49	15	7.12	100	0.42	5.9	88	2475						0.7	0.09	1.13	625	0.74	0.14		
Maximum				-4.73	0.73		5.43	168	71.33	999	2.14	30.0	898	25230						25.7	8.01	24.62	13628	7.71	0.76		
Minimum				-5.59	-0.03		1.74	54	19.21	269	-0.09	-1.2	200	5631						21.3	7.35	17.85	9880	1.95	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	62	62	62		

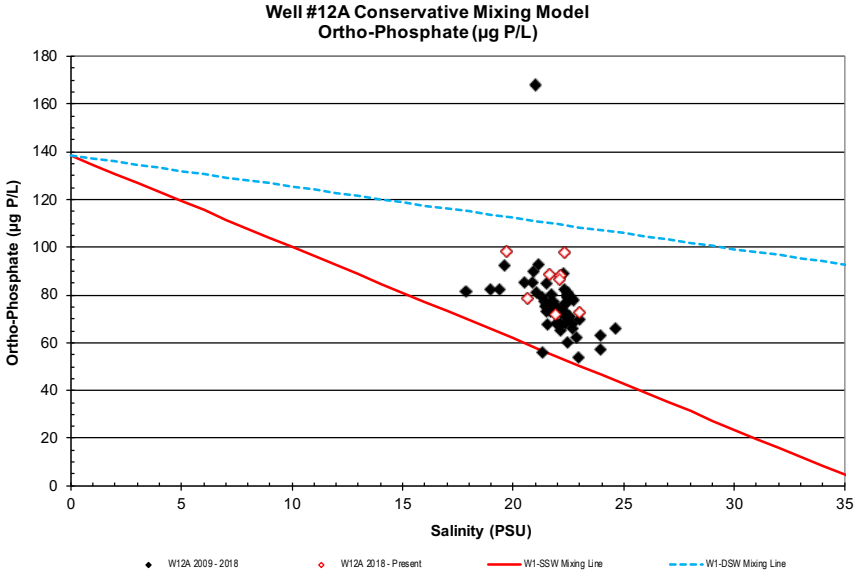
NELHA Water Quality Laboratory

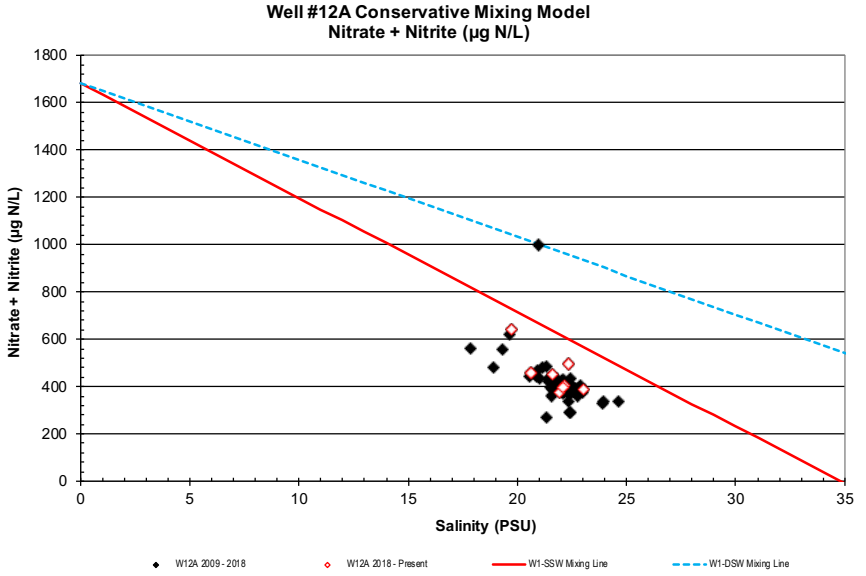
Well 12A Charts

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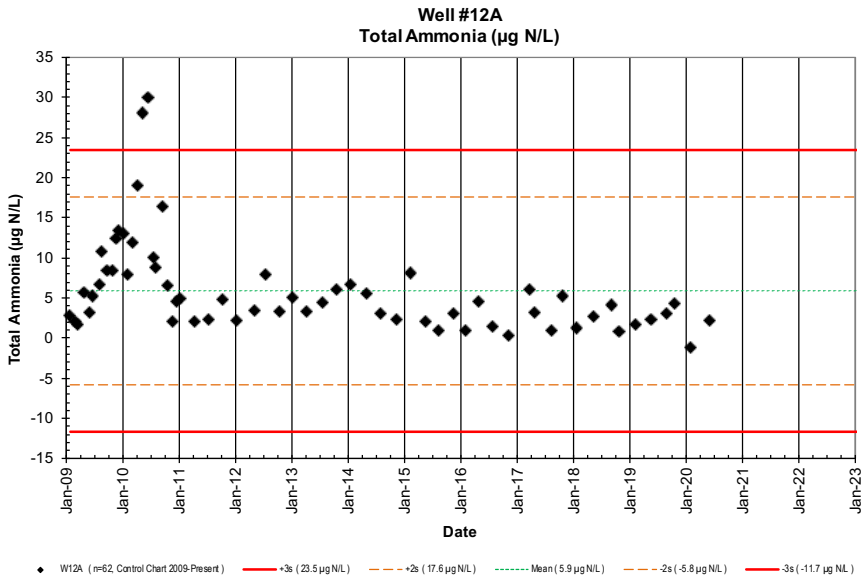


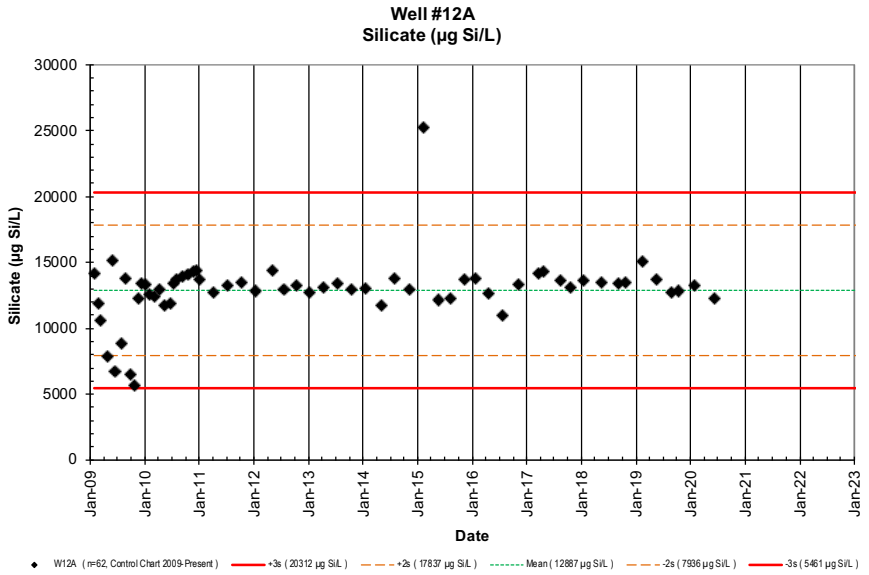


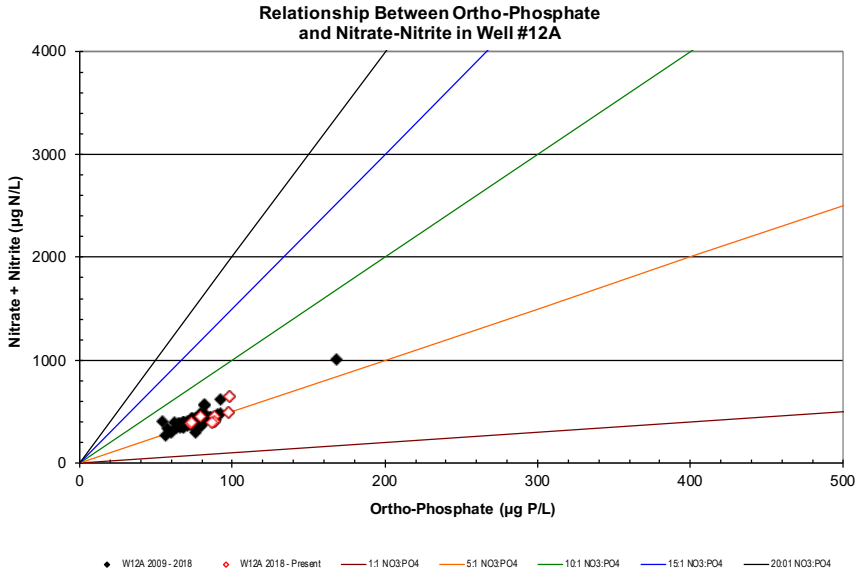
NELHA Water Quality Laboratory

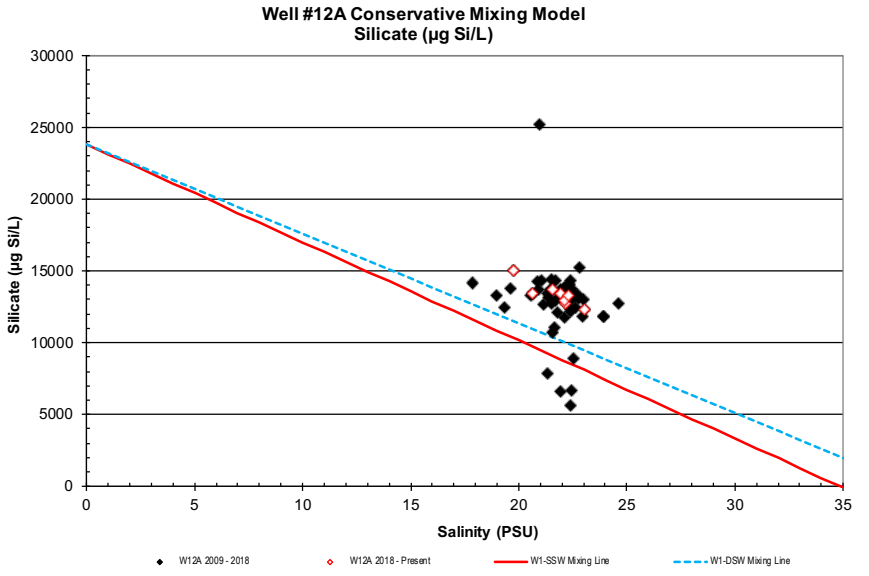
Well 12A Charts

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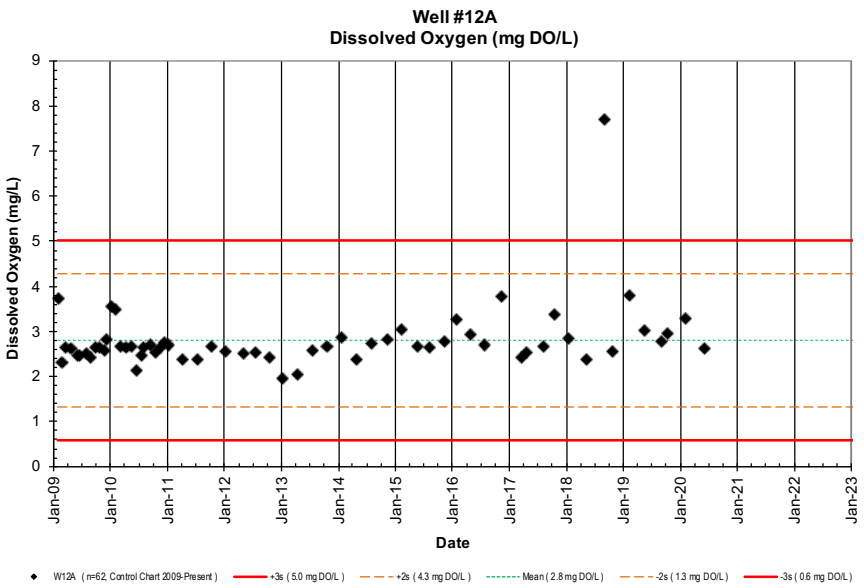


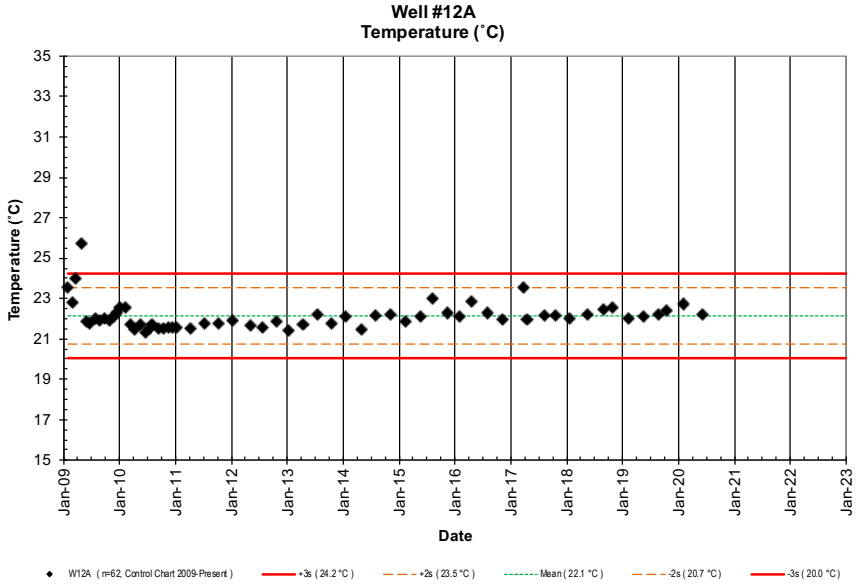


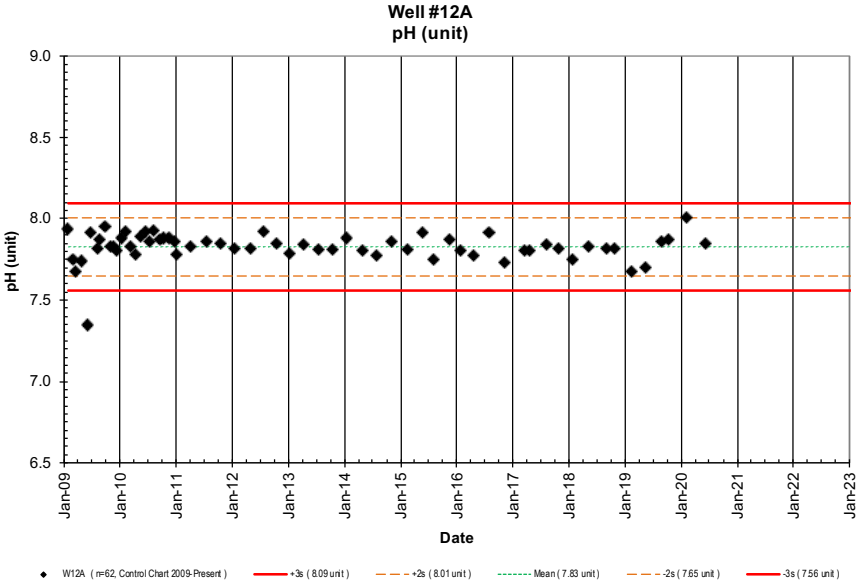
NELHA Water Quality Laboratory

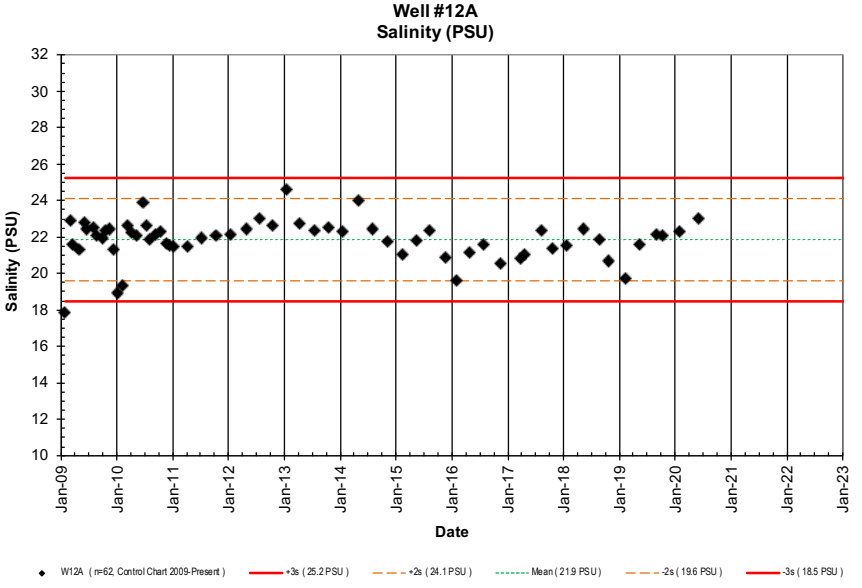
Well 12A Charts

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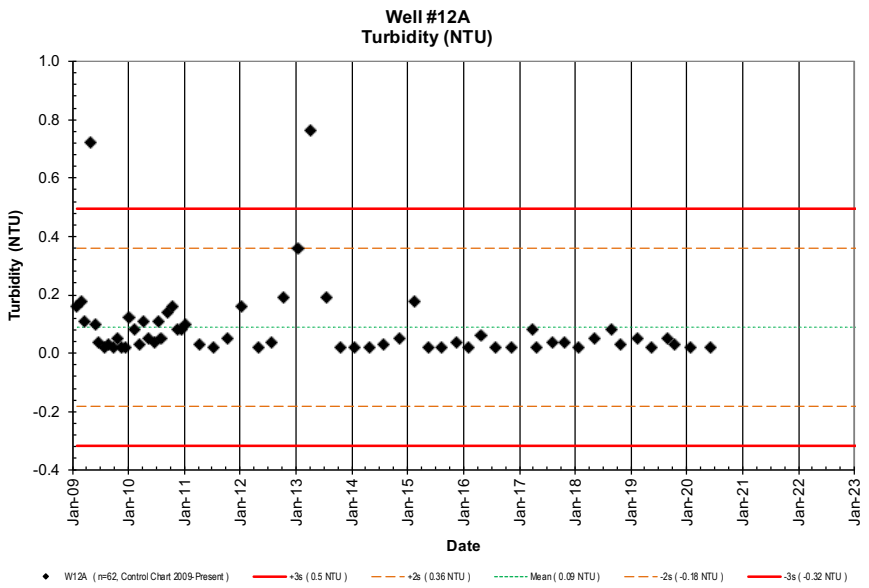


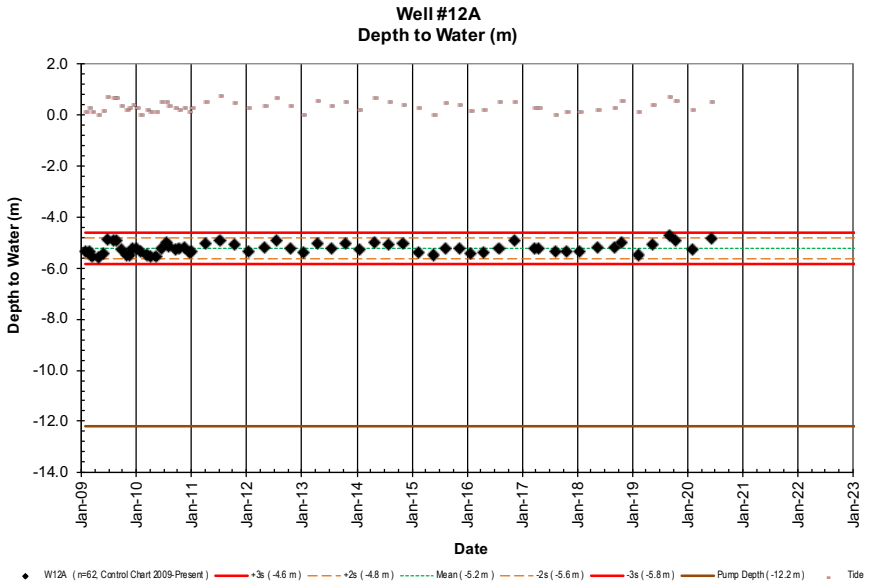


NELHA Water Quality Laboratory

Well 12A Charts

1/27/2009 - 7/21/20





NELHA Water Quality Laboratory

Well 12B Data Table

1/27/2009 - 7/21/20

Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W12B	-6.096	1/27/09	943	-5.42	0.09	Ebb	3.77	117	56.8	796	0.33	4.6	668	18752						24.1	8.09	9.28	5137	6.54	21.60		
W12B	-6.096	2/24/09	1408	-5.38	0.24	Flood	3.59	111	59.4	832	0.15	2.1	727	20425						23.6	7.92	9.51	5264	6.53	1.71		
W12B	-6.096	3/16/09	1410	-5.59	0.06	Flood	2.08	64	24.6	344	0.24	3.3	395	11107						25.4	7.81	10.27	5685	6.45	15.50		
W12B	-6.096	4/22/09	1010	-5.58	0.00	Flood	4.36	135	50.1	701	0.35	4.9	628	17634						23.7	7.89	9.40	5203	6.91	20.10		
W12B	-6.096	5/29/09	1255	-5.52	0.12	Low	4.06	126	51.2	717	0.27	3.8	756	21236						23.1	7.97	10.89	6028	6.84	3.83		
W12B	-6.096	6/19/09	1314	-4.96	0.70	High	3.41	106	42.1	590	0.16	2.2	323	9066						22.6	8.09	9.46	5236	6.96	0.17		
W12B	-6.096	7/31/09	1332	-4.98	0.64	High	3.81	118	53.9	756	0.31	4.3	385	10809						23.2	7.97	10.21	5652	6.62	0.10		
W12B	-6.096	8/20/09	1412	-4.98	0.61	Flood	3.78	117	59.9	839	0.52	7.3	498	13983						22.8	8.02	9.72	5380	6.39	0.24		
W12B	-6.096	9/24/09	1338	-5.34	0.30	Ebb	3.75	116	56.5	791	0.44	6.1	389	10928						23.1	7.92	10.16	5624	6.69	0.10		
W12B	-6.096	10/23/09	1513	-5.48	0.15	Low	3.71	115	51.1	715	0.27	3.8	307	8622						23.3	7.97	10.19	5640	7.14	0.27		
W12B	-6.096	11/17/09	1445	-5.52	0.21	Flood	3.15	98	37.7	528	0.72	10.1	722	20264						22.7	8.00	10.37	5740	7.19	0.04		
W12B	-6.096	12/8/09	1158	-5.27	0.37	Ebb	3.81	118	59.1	828	0.59	8.3	664	18642						22.8	7.94	10.55	5840	6.11	1.33		
W12B	-6.096	1/6/10	1115	-5.32	0.21	Ebb	3.71	115	52.1	730	0.43	6.0	605	17002						24.4	8.03	10.76	5956	5.70	0.23		
W12B	-6.096	2/1/10	1050	-5.41	0.00	Ebb	3.71	115	59.1	828	0.36	5.0	662	18594						25.2	8.04	10.39	5751	7.57	7.45		
W12B	-6.096	3/9/10	1033	-5.65	0.15	Flood	4.46	138	55.5	778	0.14	2.0	660	18535						22.7	7.96	10.12	5602	6.72	0.04		
W12B	-6.096	4/7/10	817	-5.59	0.09	Flood	4.00	124	54.7	766	0.86	12.0	572	16063						22.1	8.02	10.46	5790	6.93	0.23		
W12B	-6.096	5/12/10	1016	-5.60	0.06	Flood	3.97	123	50.4	706	2.21	31.0	730	20506						22.3	8.08	10.42	5768	7.16	0.15		
W12B	-6.096	6/15/10	1558	-5.31	0.46	Flood	3.33	103	47.8	670	0.79	11.0	603	16933						22.2	8.05	10.18	5635	7.46	0.15		
W12B	-6.096	7/13/10	1509	-5.02	0.46	Flood	3.94	122	52.5	736	0.93	13.0	720	20218						22.5	8.02	10.33	5718	6.79	0.25		
W12B	-6.096	8/3/10	1637	-5.23	0.30	Ebb	4.36	135	56.3	788	0.69	9.7	763	21425						22.5	8.05	9.96	5513	6.85	0.18		
W12B	-6.096	9/14/10	1642	-5.32	0.24	Low	4.07	126	56.4	790	0.86	12.0	768	21577						22.3	8.01	10.64	5890	7.04	0.30		
W12B	-6.096	10/12/10	1708	-5.34	0.18	Low	4.07	126	52.0	728	0.49	6.9	804	22592						22.3	8.03	10.60	5867	6.79	0.15		
W12B	-6.096	11/16/10	1547	-5.26	0.24	Ebb	4.07	126	56.6	793	0.25	3.5	795	22328						22.4	8.00	9.89	5474	6.92	0.32		
W12B	-6.096	12/14/10	1614	-5.43	0.06	Ebb	4.10	127	56.8	795	0.38	5.3	801	22486						22.4	8.00	9.95	5508	6.79	0.80		
W12B	-6.096	1/4/11	1554	-5.37	0.21	Flood	4.00	124	53.8	753	0.29	4.0	735	20638						22.3	7.93	9.92	5491	6.80	0.10		
W12B	-6.096	4/5/11	1604	-5.10	0.46	Flood	3.68	114	48.3	677	0.29	4.0	633	17766						22.2	7.98	9.65	5342	5.99	0.14		
W12B	-6.096	7/12/11	1540	-4.98	0.73	Ebb	4.04	125	53.3	746	0.29	4.0	718	20155						22.5	8.03	10.05	5563	6.66	0.07		
W12B	-6.096	10/11/11	1542	-5.16	0.43	High	4.13	128	54.0	756	0.23	3.2	733	20595						22.6	8.00	9.54	5281	7.20	0.04		
W12B	-6.096	1/10/12	1628	-5.37	0.24	Flood	3.81	118	52.5	735	0.39	5.4	687	19286						22.7	7.96	10.42	5768	6.68	0.27		
W12B	-6.096	5/1/12	1620	-5.22	0.30	Ebb	4.55	141	56.3	789	0.39	5.4	794	22296						22.3	8.02	10.23	5663	6.74	0.09		
W12B	-6.096	7/18/12	1504	-4.94	0.64	Flood	4.29	133	54.1	758	1.14	16.0	725	20374						22.4	8.03	10.48	5801	7.12	0.16		
W12B	-6.096	10/16/12	1431	-5.32	0.30	Flood	4.10	127	55.5	777	0.42	5.9	703	19738						22.6	8.04	10.15	5618	7.09	0.09		
W12B	-6.096	1/8/13	1552	-5.42	-0.03	Ebb	4.49	139	58.0	812	1.42	19.9	798	22410						22.4	7.92	10.47	5795	6.87	0.12		
W12B	-6.096	4/9/13	1542	-5.09	0.55	High	4.46	138	53.5	749	0.39	5.4	774	21733						22.4	7.99	10.30	5701	5.75	0.06		
W12B	-6.096	7/17/13	1701	-5.30	0.30	Ebb	3.87	120	52.0	728	2.96	41.4	720	20217						23.0	7.95	10.36	5735	6.67	0.58		
W12B	-6.096	10/15/13	1526	-5.14	0.49	Ebb	4.04	125	56.7	794	0.76	10.7	742	20848						22.7	7.90	10.51	5818	6.84	0.02		
W12B	-6.096	1/15/14	1529	-5.38	0.15	Flood	4.36	135	54.3	760	0.59	8.3	697	19569						22.9	8.00	10.20	5646	7.06	0.02		
W12B	-6.096	4/29/14	1720	-5.05	0.61	High	3.97	123	54.3	760	0.75	10.5	714	20055						22.4	7.98	10.10	5591	7.37	0.09		
W12B	-6.096	7/29/14	1614	-5.19	0.46	Flood	3.97	123	51.8	726	0.29	4.0	704	19770						23.0	7.93	10.52	5823	6.97	0.09		
W12B	-6.096	11/5/14	1558	-5.09	0.36	Ebb	4.52	140	57.7	808	0.41	5.8	729	20474						23.0	7.99	9.53	5275	7.33	0.11		
W12B	-6.096	2/10/15	1552	-5.43	0.24	High	4.57	142	109.9	1539	0.94	13.1	799	22441						22.5	7.96	10.07	5574	7.26	0.64		
W12B	-6.096	5/20/15	1015	-5.56	0.00	Ebb	4.28	133	58.0	812	0.19	2.7	667	18720						22.7	8.12	10.18	5635	7.04	0.02		
W12B	-6.096	8/6/15	1007	-5.15	0.43	Ebb	4.47	138	57.5	805	0.07	1.0	675	18948						23.3	7.95	10.49	5806	7.10	0.02		
W12B	-6.096	11/13/15	1400	-5.35	0.30	Flood	5.03	156	64.8	908	0.28	3.9	761	21372						23.2	8.08	8.66	4794	7.05	0.07		
W12B	-6.096	1/27/16	1444	-5.52	0.13	Flood	4.51	140	70.2	983	0.88	12.3	700	19671						22.7	8.02	9.85	5452	6.78	0.04		
W12B	-6.096	4/22/16	1210	-5.42	0.20	Flood	4.84	150	56.5	791	0.47	6.6	684	19217						23.2	7.99	9.22	5104	6.65	0.02		

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Well 12B Data Table

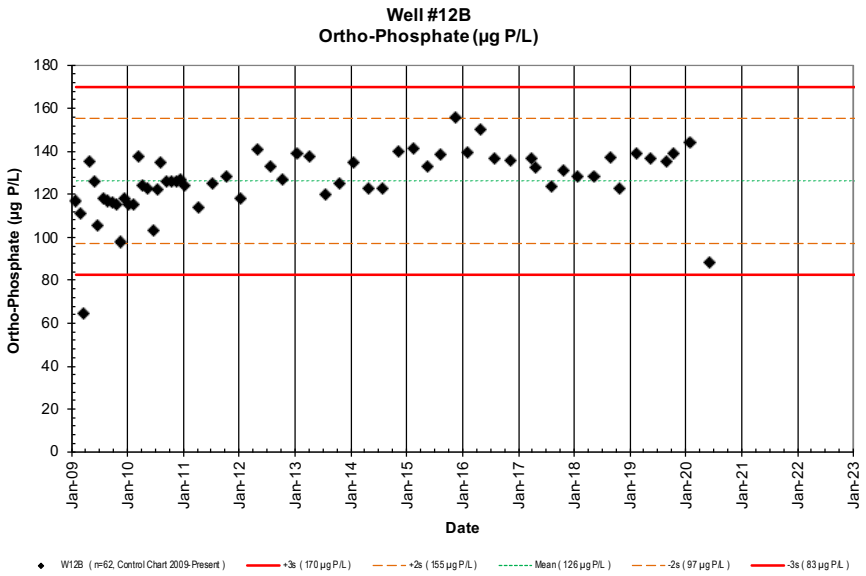
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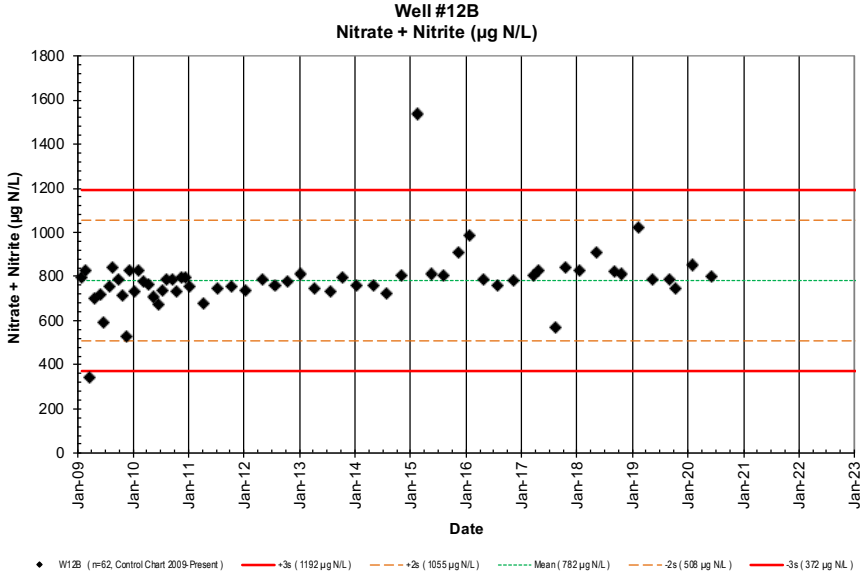
Site	Pump Depth (m)	Date (M/D/Y)	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (ppm)	Turbidity (NTU)	Fecal Col. (CFU/100ml)	Entero. (CFU/100ml)
W12B	-6.096	7/26/16	1429	-5.27	0.50	Ebb	4.41	137	54.3	761	0.08	1.1	526	14769						23.0	8.12	10.22	5657	6.30	0.02		
W12B	-6.096	11/7/16	1044	-5.02	0.50	Ebb	4.39	136	56.0	785	0.06	0.8	632	17743						22.9	7.86	9.47	5242	7.45	0.02		
W12B	-6.096	3/22/17	1027	-5.28	0.23	Flood	4.40	136	57.7	808	0.45	6.3	696	19546						23.8	7.96	9.22	5104	6.48	0.13		
W12B	-6.096	4/19/17	954	-5.32	0.21	High	4.28	133	59.3	831	0.27	3.8	756	21227						22.7	7.97	9.30	5148	5.73	0.02		
W12B	-6.096	8/9/17	948	-5.40	-0.01	Low	3.99	124	40.6	569	0.01	0.2	723	20319						23.0	8.01	9.81	5430	6.88	0.04		
W12B	-6.096	10/18/17	953	-5.39	0.10	Low	4.23	131	60.0	841	0.48	6.7	722	20284						23.0	8.01	9.22	5104	7.26	0.07		
W12B	-6.096	1/18/18	1103	-5.39	0.10	Low	4.13	128	59.2	829	0.13	1.8	743	20856						22.8	7.92	9.56	5292	6.79	0.02		
W12B	-6.096	5/10/18	1633	-5.25	0.16	Ebb	4.15	128	65.0	911	0.07	1.0	753	21138						23.0	8.01	11.24	6222	5.53	0.05		
W12B	-6.096	8/30/18	1042	-5.26	0.24	Ebb	4.42	137	58.6	820	0.29	4.1	800	22460						23.2	8.00	9.57	5297	6.87	0.04		
W12B	-6.096	10/24/18	1529	-5.06	0.53	High	3.96	123	57.8	810	0.01	0.2	711	19958						23.4	8.01	8.35	4622	6.36	0.07		
W12B	-6.096	2/8/19	1149	-5.53	0.06	Low	4.48	139	72.7	1019	0.05	0.7	749	21026						22.7	7.85	9.75	5397	7.32	0.05		
W12B	-6.096	5/15/19	1600	-5.12	0.40	Ebb	4.41	137	56.3	789	0.14	1.9	664	18635						22.9	7.88	9.06	5015	7.36	0.03		
W12B	-6.096	8/28/19	1446	-4.78	0.70	High	4.38	136	56.3	789	0.09	1.3	678	19031						23.0	8.01	9.51	5264	7.27	0.06		
W12B	-6.096	10/11/19	1349	-5.00	0.55	High	4.48	139	53.3	746	0.06	0.9	710	19932						23.3	8.04	9.68	5358	7.68	0.05		
W12B	-6.096	1/31/20	1113	-5.33	0.17	Ebb	4.67	145	60.9	853	-0.09	-1.2	676	18984						23.1	7.99	10.80	5978	7.42	0.02		
W12B	-6.096	6/3/20	1311	-4.86	0.50	Flood	2.84	88	57.0	798	0.07	1.0	687	19291						22.8	7.98	10.23	5663	7.11	0.03		
W12B	-6.096	7/1/20																									
W12B	-6.096	10/1/20																									
W12B	-6.096	1/1/21																									
W12B	-6.096	4/1/21																									
W12B	-6.096	7/1/21																									
W12B	-6.096	10/1/21																									
W12B	-6.096	1/1/22																									
W12B	-6.096	4/1/22																									
W12B	-6.096	7/1/22																									
W12B	-6.096	10/1/22																									
W12B	-6.096	1/1/23																									
W12B	-6.096	4/1/23																									
Mean				-5.28	0.30		4.08	126	55.81	782	0.46	6.5	678	19052						22.9	7.99	9.99	5532	6.84	1.27		
Std. Dev.				0.20	0.20		0.47	15	9.76	137	0.50	7.0	114	3209						0.6	0.06	0.55	304	0.46	4.22		
Maximum				-4.78	0.73		5.03	156	110	1539	2.96	41.4	804	22592						25.4	8.12	11.24	6222	7.68	21.60		
Minimum				-5.65	-0.03		2.08	64	25	344	-0.09	-1.2	307	8622						22.1	7.81	8.35	4622	5.53	0.02		
n				62	62		62	62	62	62	62	62	62	62						62	62	62	62	62	62		

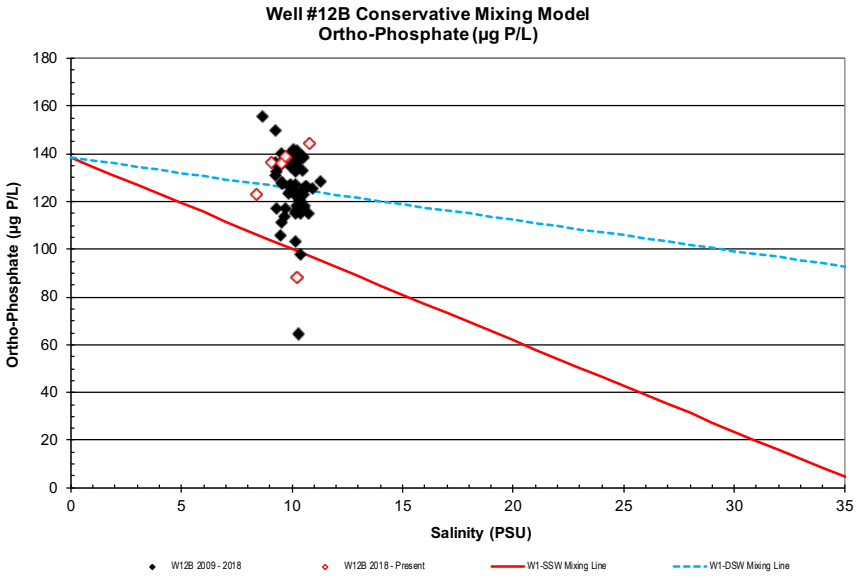
NELHA Water Quality Laboratory

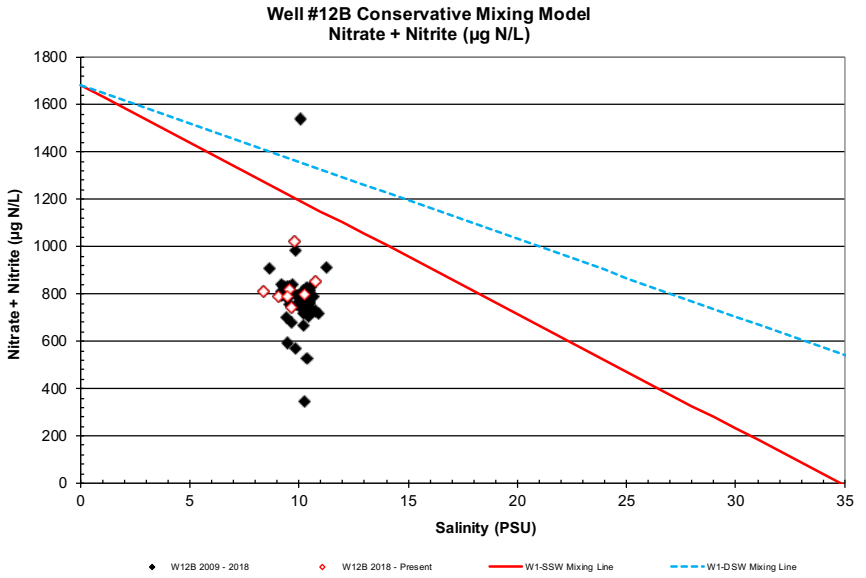
Well 12B Charts

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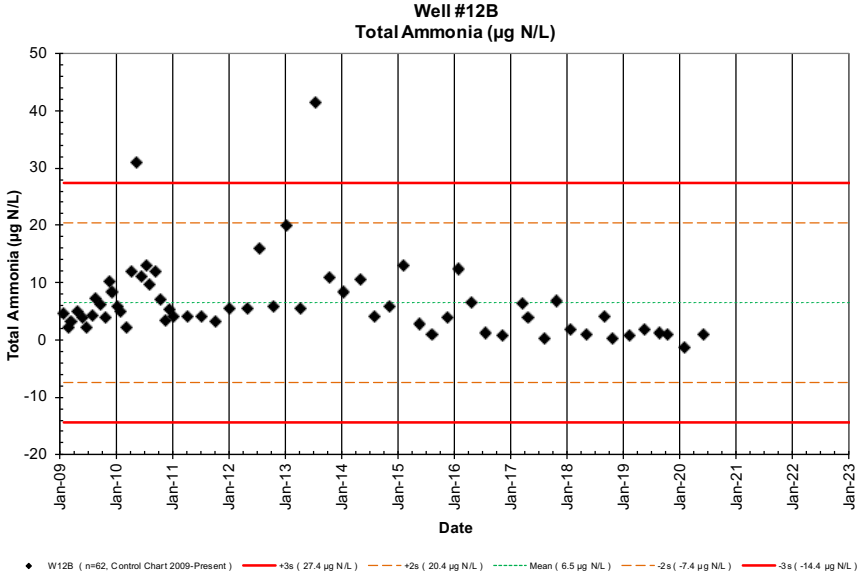


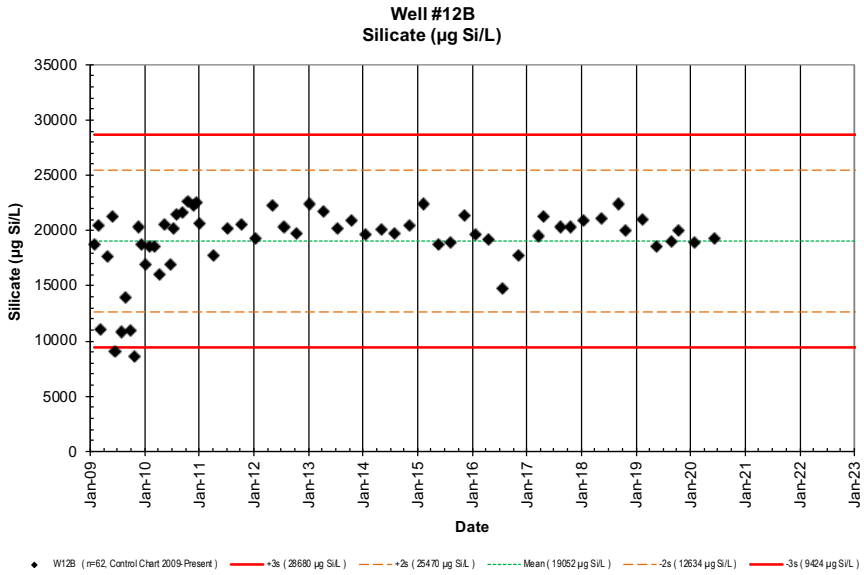


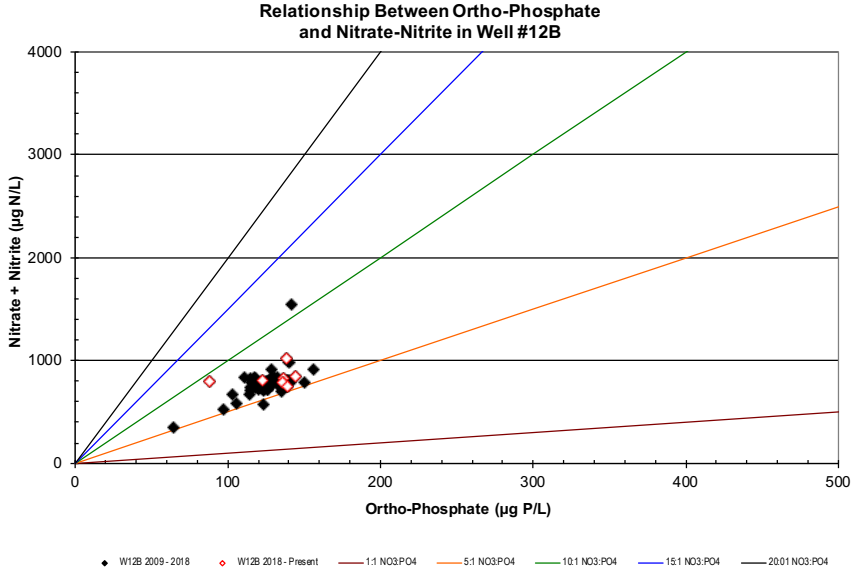
NELHA Water Quality Laboratory

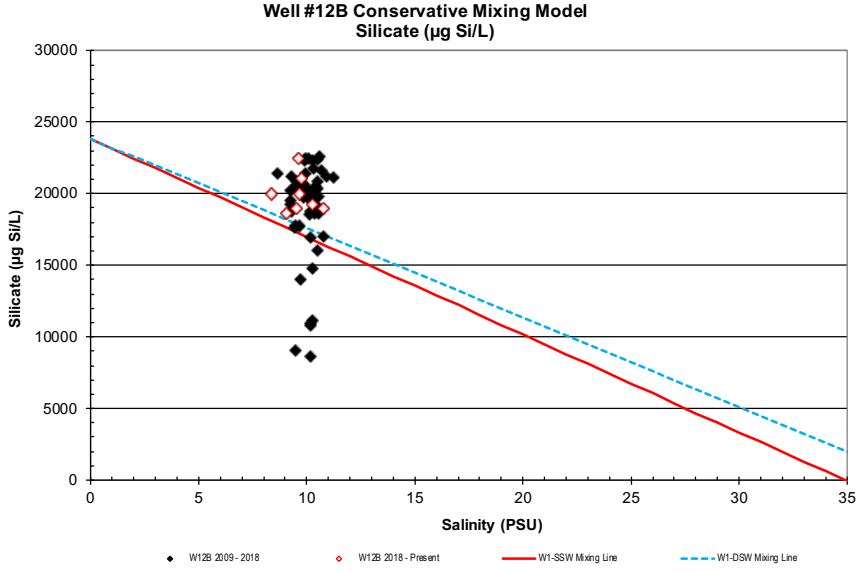
Well 12B Charts

1/27/2009 - 7/21/20





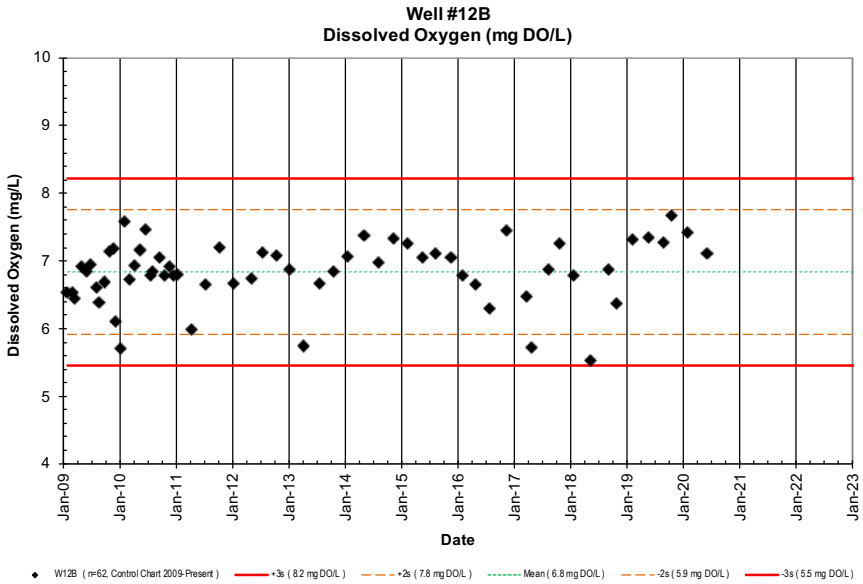


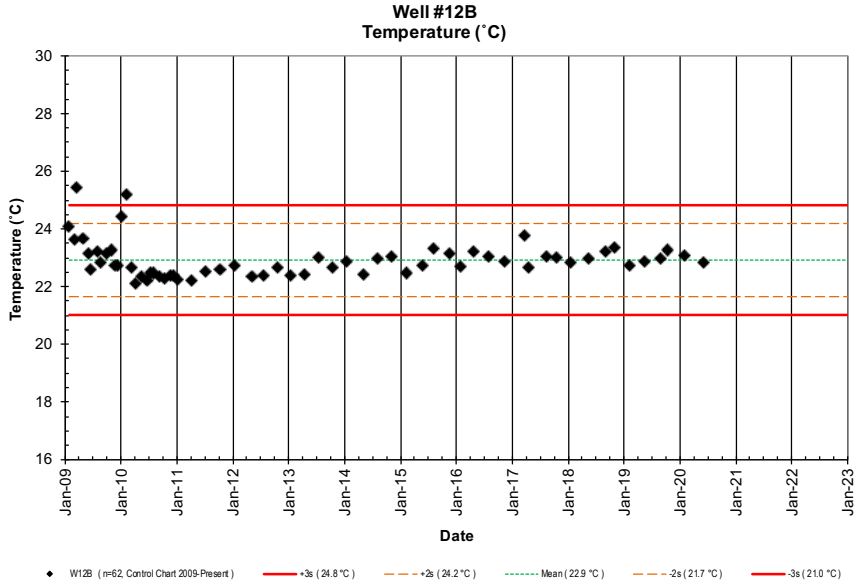


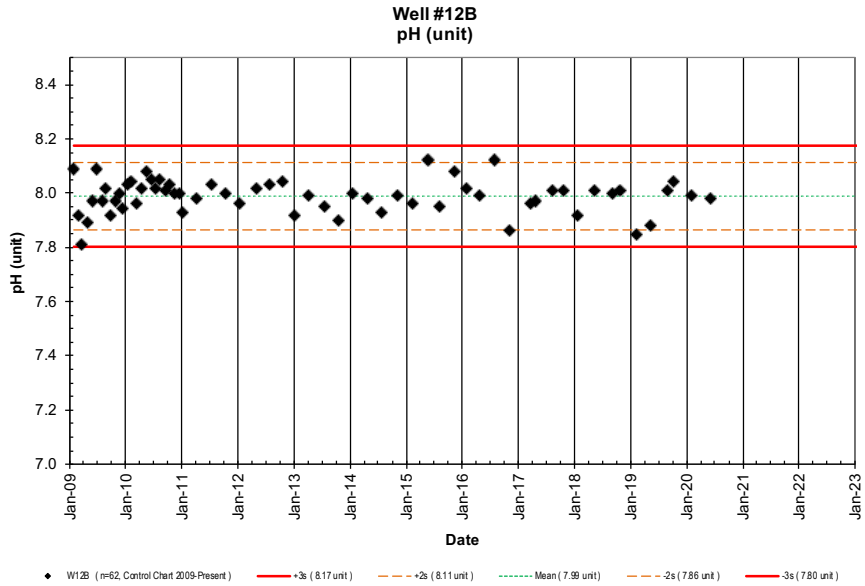
NELHA Water Quality Laboratory

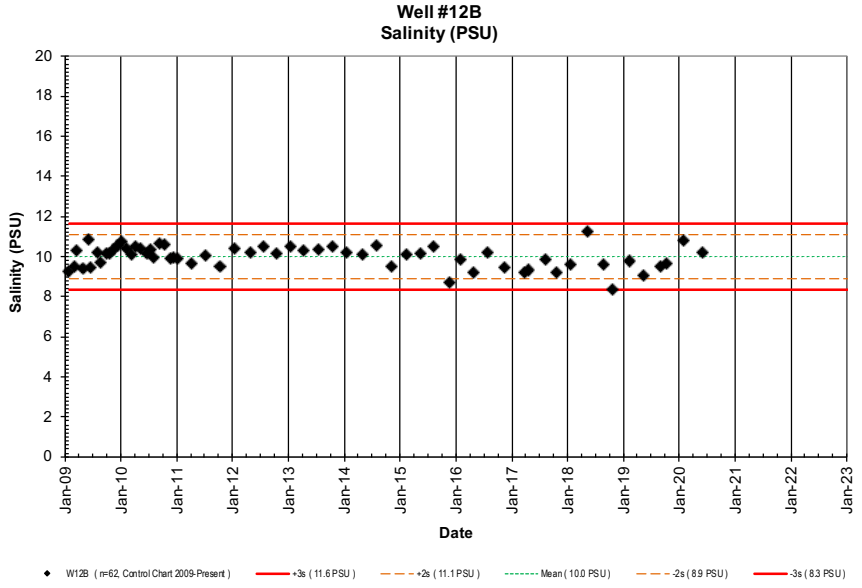
Well 12B Charts

1/27/2009 - 7/21/20





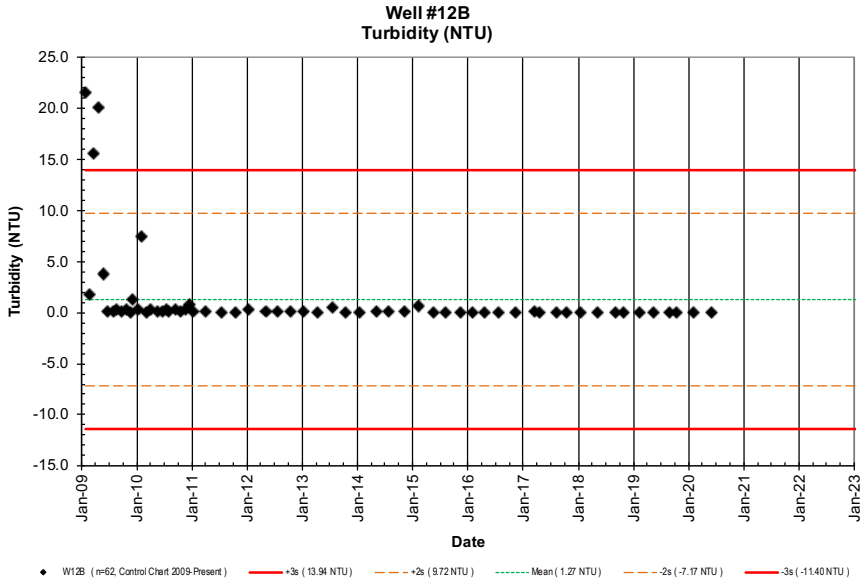


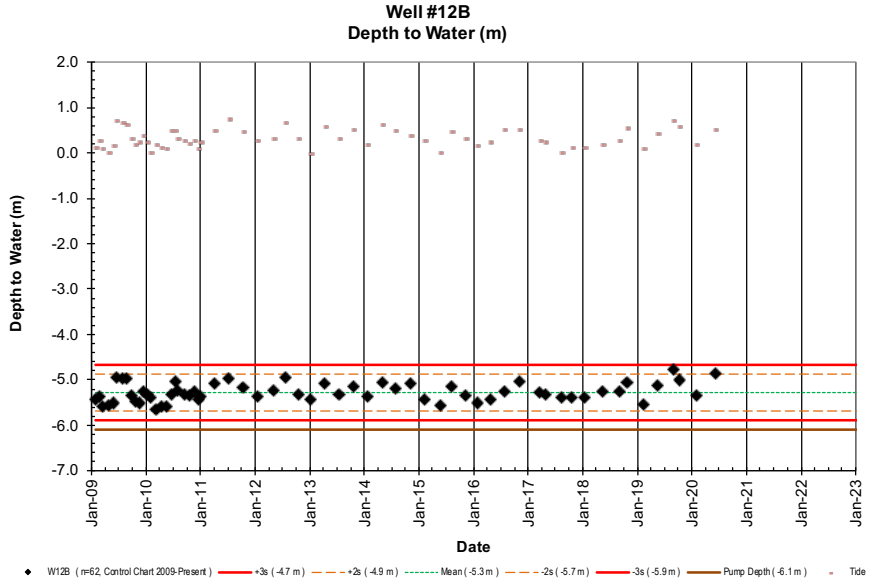


NELHA Water Quality Laboratory

Well 12B Charts

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NELHA Water Quality Laboratory

Well 13 Data Table

1/23/2009 - 7/21/20

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W13	-45.72	01/23/09	945	-39.2	0.12	Ebb	3.69	114	142.1	1990	0.61	8.5	651	18279						23.8	8.03	4.18	2314	7.95	6.62		
W13	-45.72	02/23/09	1110	-39.2	0.06	Low	3.44	107	131.3	1839	0.15	2.1	718	20169						23.2	7.86	5.20	2878	7.95	0.25		
W13	-45.72	03/13/09	1052	-39.3	-0.03	Ebb	2.77	86	78.9	1105	0.18	2.5	609	17106						22.6	7.86	4.45	2463	8.17	0.88		
W13	-45.72	04/20/09	942	-39.2	0.06	Flood	4.00	124	119.0	1666	0.19	2.6	570	16007						23.4	7.83	4.29	2375	8.07	3.51		
W13	-45.72	05/21/09	914	-39.3	0.00	Flood	3.98	123	132.9	1861	0.23	3.2	871	24466						25.6	8.07	4.27	2364	7.53	0.80		
W13	-45.72	06/16/09	847	-39.2	0.21	Flood	1.56	48	37.4	524	0.16	2.3	426	11973						25.8	7.90	4.36	2413	7.51	0.39		
W13	-45.72	07/13/09	1033	-39.0	0.37	Ebb	1.66	51	45.5	637	0.41	5.8	223	6252						24.0	8.00	4.54	2513	7.65	0.21		
W13	-45.72	08/18/09	829	-39.2	0.00	Low	2.50	77	81.1	1136	0.30	4.2	518	14537						23.2	7.99	4.40	2436	8.01	7.35		
W13	-45.72	09/21/09	938	-39.0	0.37	Ebb	3.40	105	133.1	1865	0.23	3.2	294	8256						25.7	8.01	4.17	2308	7.78	0.81		
W13	-45.72	10/19/09	931	-39.1	0.34	Ebb	3.68	114	133.0	1863	2.33	32.7	341	9568						22.5	8.25	4.14	2292	8.35	0.11		
W13	-45.72	11/16/09	907	-39.1	0.21	Ebb	3.54	110	116.2	1627	0.74	10.4	565	15882						22.8	8.07	4.09	2264	8.10	0.16		
W13	-45.72	12/07/09	1013	-39.0	0.52	Ebb	3.78	117	134.3	1881	0.36	5.1	683	19180						22.1	7.93	4.35	2408	7.48	0.10		
W13	-45.72	01/05/10	956	-39.0	0.40	Ebb	3.55	110	118.2	1656	0.36	5.0	615	17286						22.4	8.01	4.40	2436	7.87	0.16		
W13	-45.72	02/01/10	950	-38.9	0.15	Ebb	3.97	123	143.5	2010	0.36	5.0	646	18148						22.2	8.03	4.27	2364	8.19	0.18		
W13	-45.72	03/09/10	901	-39.2	0.09	Low	4.04	125	123.1	1724	0.14	2.0	642	18041						22.1	7.96	4.49	2485	7.84	0.17		
W13	-45.72	04/06/10	839	-39.2	0.24	Low	3.94	122	122.5	1716	0.50	7.0	635	17837						23.2	7.95	4.55	2519	8.17	0.09		
W13	-45.72	05/11/10	856	-39.3	-0.03	Low	3.87	120	106.1	1486	2.28	32.0	586	16471						22.2	8.07	4.44	2458	8.30	0.12		
W13	-45.72	06/15/10	940	-39.2	0.12	Ebb	3.39	105	102.8	1440	0.79	11.0	676	18994						22.9	8.04	4.64	2568	7.94	0.06		
W13	-45.72	7/13/10	910	-39.1	0.06	Ebb	4.00	124	137.1	1920	1.29	18.0	794	22312						23.3	8.06	4.20	2325	8.06	0.16		
W13	-45.72	8/3/10	907	-39.0	0.40	Flood	4.23	131	119.2	1670	0.40	5.6	806	22636						23.2	8.02	4.52	2502	8.01	0.28		
W13	-45.72	9/14/10	901	-39.0	0.55	Flood	3.91	121	113.0	1583	1.41	19.8	801	22503						23.3	7.98	4.56	2524	7.74	0.16		
W13	-45.72	10/12/10	908	-38.9	0.64	Ebb	4.07	126	127.2	1781	0.34	4.7	837	23508						23.3	8.02	4.32	2391	8.22	0.12		
W13	-45.72	11/16/10	841	-39.0	0.24	Flood	3.97	123	126.9	1778	0.33	4.6	816	22912						23.0	7.96	4.45	2463	7.63	0.11		
W13	-45.72	12/14/10	903	-39.0	0.34	Flood	4.07	126	126.9	1777	0.44	6.2	837	23495						22.9	7.97	4.45	2463	8.01	0.09		
W13	-45.72	1/4/11	905	-39.0	0.24	Ebb	4.04	125	128.3	1797	0.38	5.3	770	21635						22.9	7.93	4.19	2319	8.32	0.08		
W13	-45.72	4/5/11	945	-39.2	-0.03	Ebb	4.26	132	142.7	1999	0.48	6.7	719	20182						23.1	7.99	4.17	2308	7.19	0.06		
W13	-45.72	7/12/11	855	-39.4	0.00	Flood	4.07	126	122.7	1718	0.28	3.9	741	20821						22.7	7.98	4.51	2496	7.72	0.04		
W13	-45.72	10/11/11	917	-39.0	0.12	Low	4.00	124	126.2	1767	0.40	5.6	736	20674						22.9	7.97	4.25	2352	8.27	0.09		
W13	-45.72	1/10/12	916	-39.0	0.30	Ebb	4.00	124	127.5	1786	0.54	7.6	717	20126						22.9	7.96	4.25	2352	8.25	0.14		
W13	-45.72	5/1/12	926	-39.2	0.09	Flood	4.42	137	127.8	1790	0.56	7.9	810	22753						23.0	7.95	4.63	2563	7.92	0.16		
W13	-45.72	7/18/12	852	-39.3	0.00	Ebb	4.20	130	127.1	1780	0.83	11.6	698	19594						22.2	7.95	4.69	2596	8.38	0.18		
W13	-45.72	10/16/12	922	-39.0	0.24	Ebb	4.13	128	132.1	1850	0.77	10.8	730	20500						22.3	7.99	4.27	2364	8.35	0.07		
W13	-45.72	1/8/13	951	-38.9	0.09	Low	4.42	137	133.7	1873	1.89	26.5	801	22493						22.3	7.90	4.33	2397	8.30	0.10		
W13	-45.72	4/9/13	922	-39.2	-0.09	Low	4.16	129	120.1	1682	0.51	7.2	759	21327						22.5	7.96	4.66	2579	8.36	0.07		
W13	-45.72	7/17/13	943	-39.2	0.37	Flood	4.33	134	128.1	1794	0.50	7.0	732	20569						21.8	7.86	4.68	2591	7.76	0.13		
W13	-45.72	10/15/13	920	-38.9	0.21	Flood	3.91	121	129.1	1808	0.71	9.9	748	21010						22.2	7.82	4.61	2552	7.48	0.04		
W13	-45.72	1/15/14	854	-39.0	0.18	Ebb	4.42	137	122.1	1710	1.11	15.5	685	19225						21.7	8.00	4.33	2397	8.49	0.02		
W13	-45.72	4/29/14	1007	-39.3	-0.06	Low	3.94	122	119.1	1668	0.93	13.0	727	20407						21.7	7.88	4.69	2596	8.25	0.05		
W13	-45.72	7/29/14	946	-39.1	0.15	Ebb	4.16	129	130.9	1834	0.36	5.0	737	20690						22.2	7.93	4.31	2386	8.42	0.06		
W13	-45.72	11/5/14	939	-39.0	0.13	Low	4.52	140	138.7	1943	0.49	6.9	742	20828						22.2	8.05	4.22	2336	8.75	0.09		
W13	-45.72	2/9/15	1407	-39.1	0.03	Low	4.46	138	149.7	2097	0.37	5.2	553	15542						21.8	8.00	4.27	2364	8.86	0.16		
W13	-45.72	5/27/15	1119	-38.5	0.37	Flood	4.18	129	172.1	2411	2.11	29.6	693	19473						22.6	7.95	4.62	2557	7.22	0.46		
W13	-45.72	9/15/15	No Sample, equipment malfunction and construction on highway started																								
W13	-45.72	10/1/15	No Sample, highway construction																								
W13	-45.72	1/26/16	No Sample, highway construction																								
W13	-45.72	4/22/16	No Sample, highway construction																								

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Well 13 Data Table

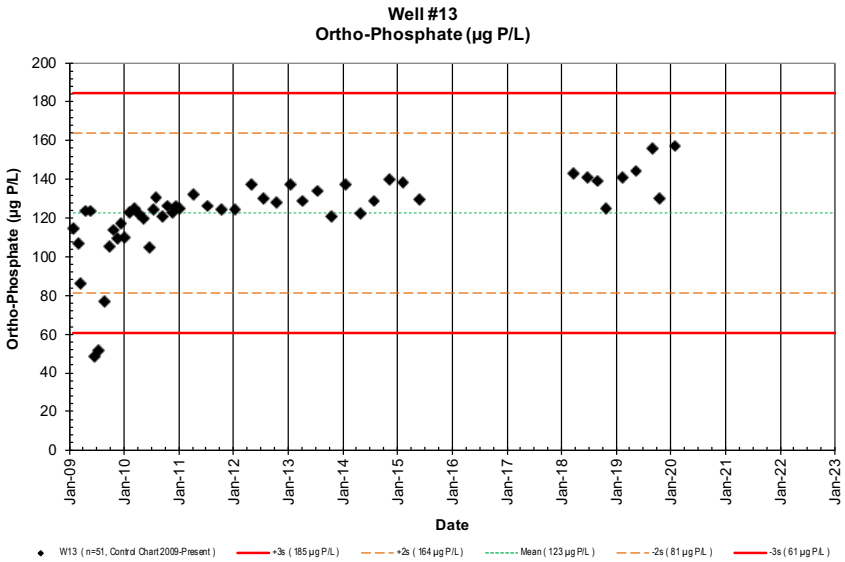
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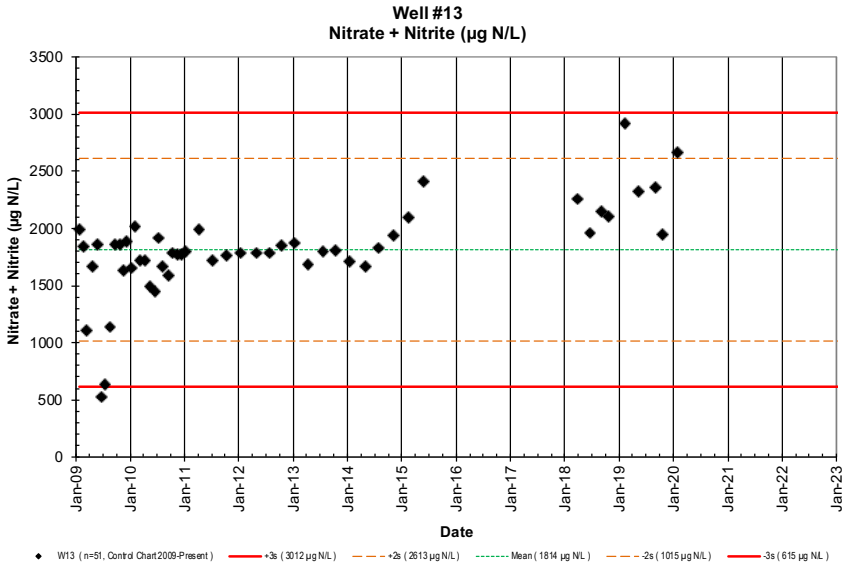
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	Chloride (mg/L)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W13	-45.72	7/26/16	No Sample, highway construction																								
W13	-45.72	10/1/16	No Sample, highway construction																								
W13	-45.72	3/22/17	No Sample, highway construction																								
W13	-45.72	4/19/17	No Sample, highway construction																								
W13	-45.72	9/19/17	No Sample, highway construction																								
W13	-45.72	10/1/17	No Sample, highway construction																								
W13	-45.72	3/23/18	1433	-39.2	0.01	Low	4.62	143	160.8	2252	0.08	1.1	731	20524						21.7	7.93	4.42	2447	8.01	1.89		
W13	-45.72	6/20/18	1302	-39.0	0.3	Ebb	4.56	141	140.0	1961	0.38	5.3	738	20731						21.8	7.82	4.43	2452	7.06	0.05		
W13	-45.72	8/29/18	1338	-39.1	0.2	Flood	4.49	139	153.3	2147	0.29	4.1	765	21483						21.7	7.95	4.64	2568	7.92	0.05		
W13	-45.72	10/24/18	1349	-39.0	0.4	Flood	4.03	125	150.0	2101	0.02	0.3	716	20096						21.6	7.80	4.66	2579	7.08	0.08		
W13	-45.72	2/8/19	1601	-39.2	0.3	Flood	4.56	141	207.8	2910	0.11	1.6	752	21119						22.1	7.85	4.78	2646	8.51	0.07		
W13	-45.72	5/10/19	1525	-39.2	0.1	Flood	4.67	145	165.6	2320	0.14	2.0	712	19991						22.2	7.74	4.86	2690	7.96	0.05		
W13	-45.72	8/29/19	1241	-39.1	0.4	Flood	5.03	156	168.4	2359	1.12	15.7	731	20528						27.4	7.96	5.09	2817	7.14	1.82		
W13	-45.72	10/16/19	1024	-38.9	0.2	Low	4.21	130	139.1	1948	0.04	0.6	660	18524						21.9	7.99	4.82	2668	8.65	0.10		
W13	-45.72	1/31/20	1001	-39.0	0.4	Ebb	5.07	157	189.8	2658	-0.25	-3.5	735	20656						22.1	8.02	5.00	2768	7.64	0.03		
W13	-45.72	6/3/20	No Sample - equipment malfunction																								
W13	-45.72	7/1/20																									
W13	-45.72	10/1/20																									
W13	-45.72	1/1/21																									
W13	-45.72	4/1/21																									
W13	-45.72	7/1/21																									
W13	-45.72	10/1/21																									
W13	-45.72	1/1/22																									
W13	-45.72	4/1/22																									
W13	-45.72	7/1/22																									
W13	-45.72	10/1/22																									
W13	-45.72	1/1/23																									
W13	-45.72	4/1/23																									
Mean				-39.09	0.20		3.96	123	129.48	1814	0.58	8.2	682	19163						22.8	7.96	4.47	2476	7.98	0.57		
Std. Dev.				0.15	0.17		0.67	21	28.52	399	0.57	7.9	133	3725						1.2	0.09	0.25	137	0.42	1.44		
Maximum				-38.48	0.64		5.07	157	208	2910	2.33	32.7	871	24466						27.4	8.25	5.20	2878	8.86	7.35		
Minimum				-39.40	-0.09		1.56	48	37	524	-0.25	-3.5	223	6252						21.6	7.74	4.09	2264	7.06	0.02		
n				51	51		51	51	51	51	51	51	51	51						51	51	51	51	51	51		

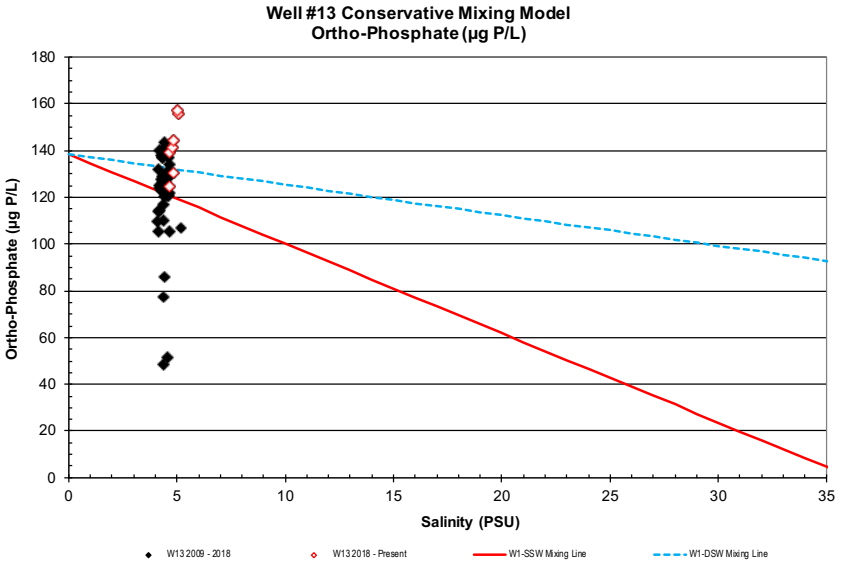
NELHA Water Quality Laboratory

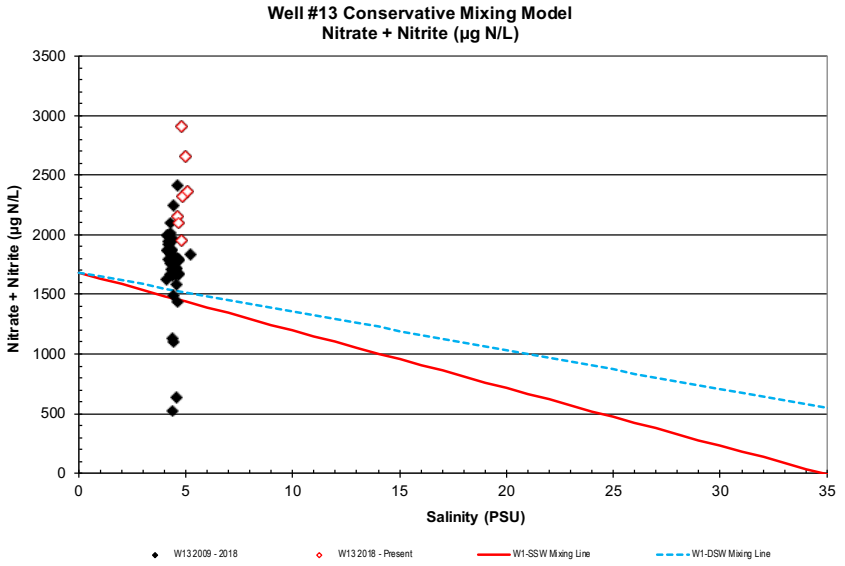
Well 13 Charts

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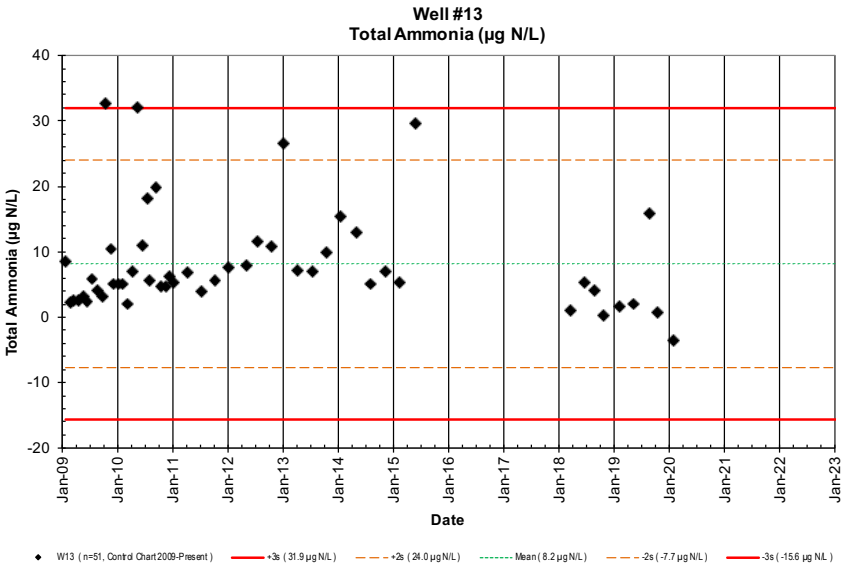


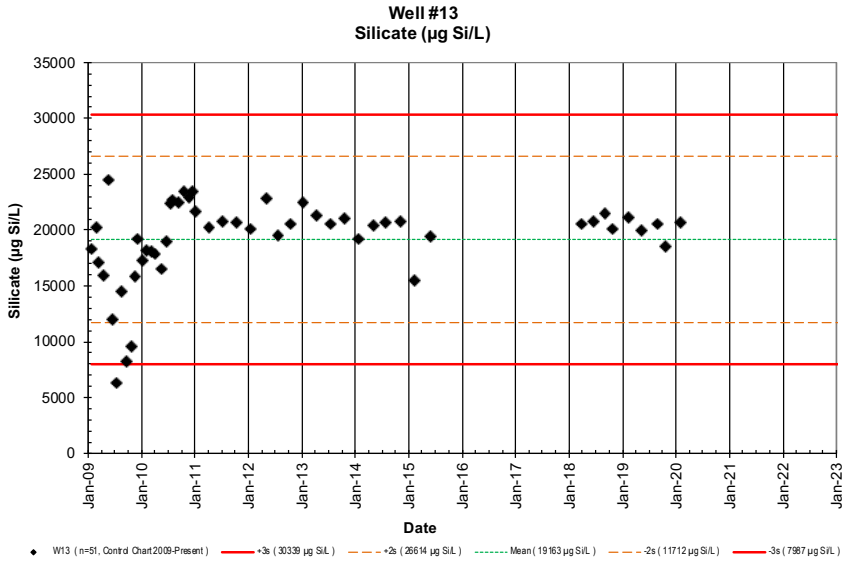


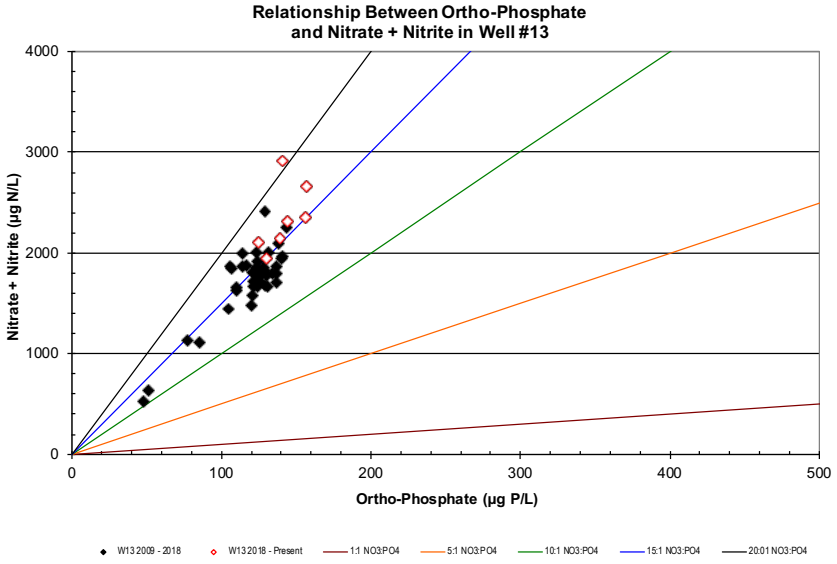
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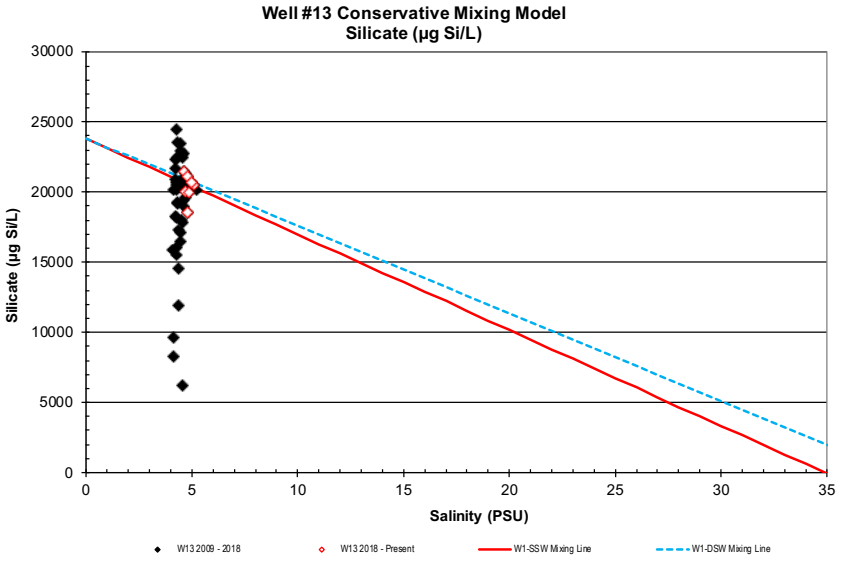
Well 13 Charts

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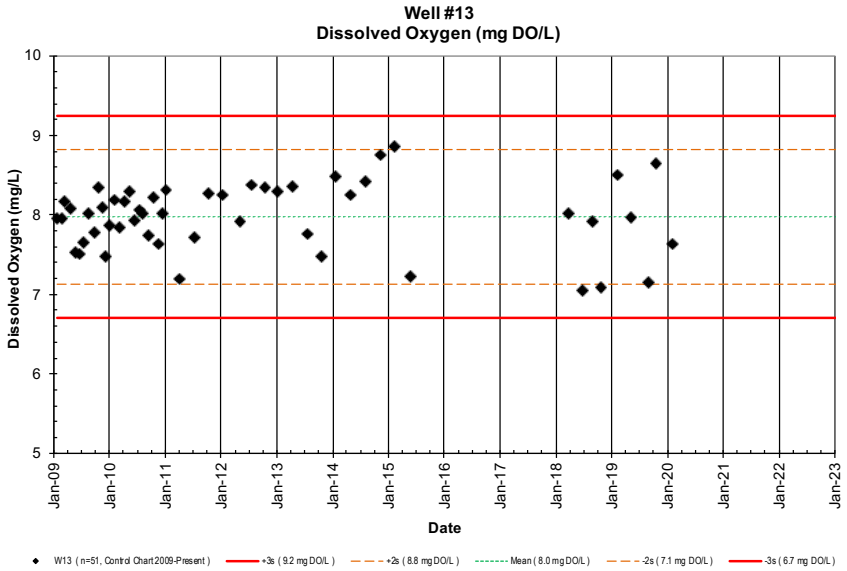


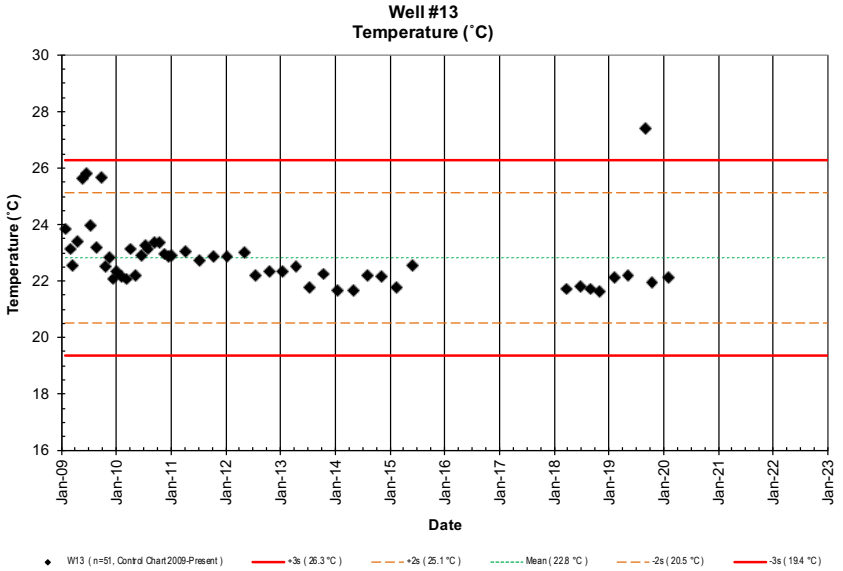


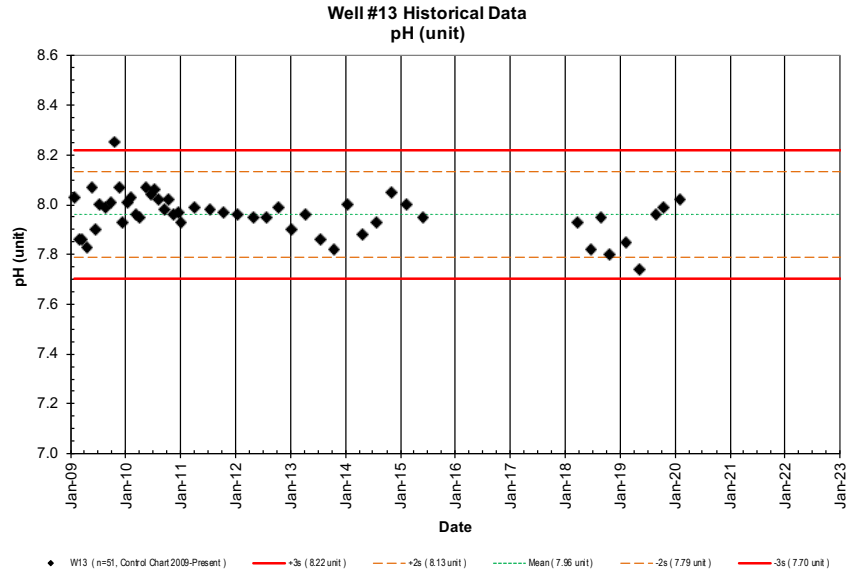
NELHA Water Quality Laboratory

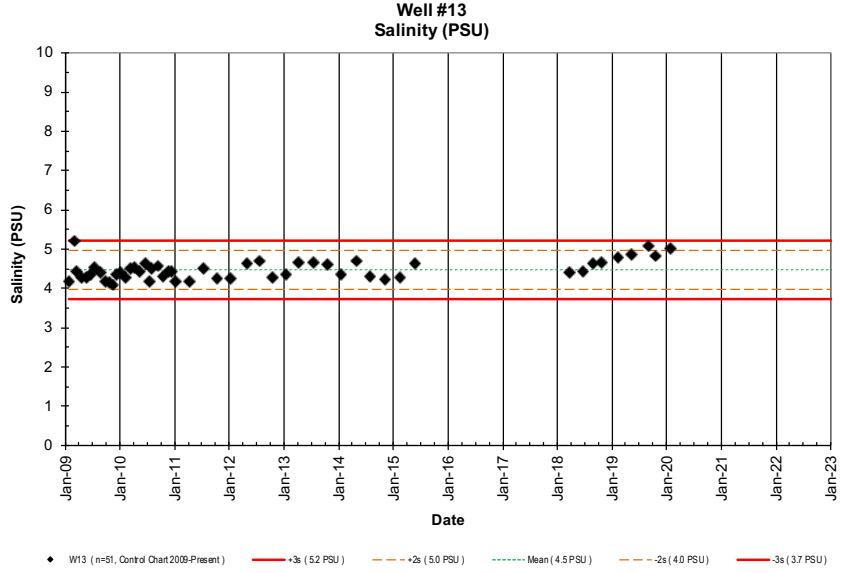
Well 13 Charts

1/27/2009 - 7/21/20





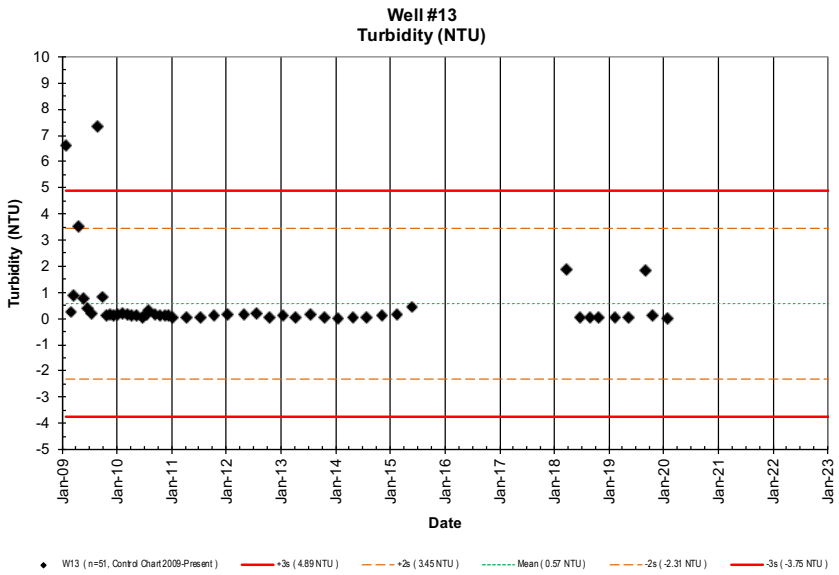


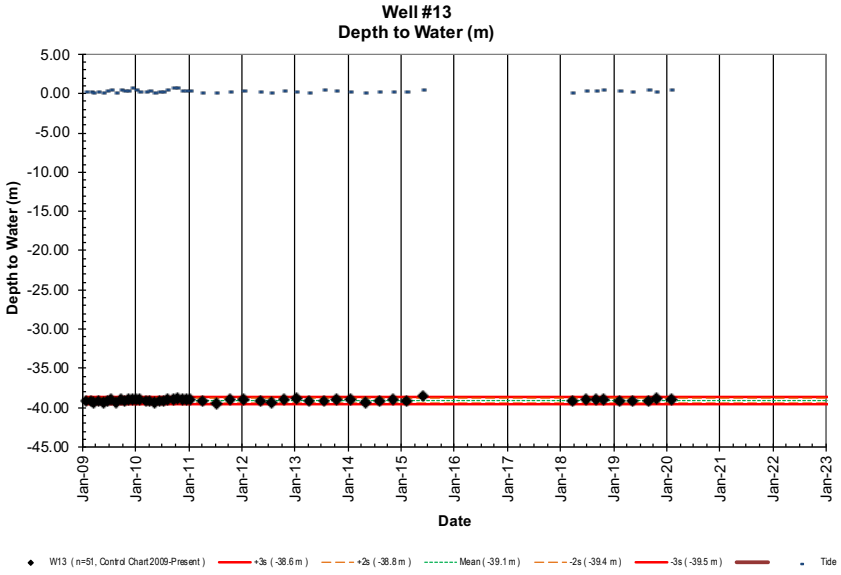


NELHA Water Quality Laboratory

Well 13 Charts

1/27/2009 - 7/21/20





NELHA Water Quality Laboratory

Seawater Return Trench 4

1/28/1992 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT 4s	1/28/92	705	0.6	Low	1.8	54	60.2	843	0.1	0.7	478	13425	1.9	59	63	880	1.07		15.51	8584	19.8	8.21		6.57	3	1
SRT 4s	4/20/92	1146	-0.1	Low	2.6	82	56.3	789	0.1	0.7	508	14267	2.9	91	61	853	1.01	SS 1.36 mg/l	14.86	8225	24.1	8.03		2.39	<1	<1
SRT 4s	5/20/92	1059	0.1	Low	0.6	20	31.6	443	0.3	4.6	601	16879	1.0	30	39	550	1.07	SS 5.31 mg/l	15.67	8672	25.5	8.50		30.0	<1	<1
SRT 4s	6/24/92	1053	1.3	Flood	2.1	64	50.3	705	0.5	7.3	586	16458	2.3	72	59	831	0.84	SS 0.57 mg/l	14.42	7981	24.9	8.06		3.50	<1	<1
SRT 4s	7/30/92	1000	-0.1	Low	2.0	62	50.4	706	1.3	18.8	525	14731	2.2	68	55	767	1.22	0.38*	16.31	9027	24.5	8.02	7.70	6.55	<1	<1
SRT 4s	8/31/92	1005	1.2	Ebb	2.0	62	44.0	616	1.1	14.9	570	16009	2.2	67	48	674	1.10	0.55	16.58		24.6	8.06	8.48	5.27	<1	<1
SRT 4s	9/23/92	1041	1.0	Flood	2.0	61	303	4243	46.5	651.3	585	16430	2.0	62	403	5639	1.65	1.64	15.57	8616	24.9	7.59	ND	1.13	<1	<1
SRT 4s	10/28/92	1059	0.8	Ebb													0.68	0.94	15.95	8829	24.1	8.10	8.19	3.84	<1	<1
SRT 4s	11/18/92	1121	1.6	High	2.0	63	61.0	855	0.2	2.2	577	16205	2.5	76	137	1919	0.93	0.75	15.23	8431	23.9	8.15	9.11	13.1	1	<1
SRT 4s	12/28/92	811	1.7	High	2.9	90	60.6	849	0.3	4.6	654	18368	3.5	107	75	1056	0.65	0.84	13.78	7627	20.5	8.02	7.71	0.21	<1	4
SRT 4s	1/27/93	1013	0.7	Ebb	2.5	78	69.6	975	0.4	5.7	637	17901	2.7	83	78	1093	1.09	1.08	11.46	6345	20.8	7.87	5.95	0.26	<1	<1
SRT 4s	2/24/93	945	0.4	Ebb	2.7	83	66.8	936	0.2	3.4	615	17284	2.8	85	69	968	0.49	0.37	13.53	7487	19.1	7.98	7.29	0.40	<1	<1
SRT 4s	3/17/93	1010	0.4	Flood	2.5	77	67.6	946	0.3	4.8	642	18028	2.5	79	72	1002	0.68	4.0	11.56	6399	21.9	8.06	7.78	1.68	<1	<1
SRT 4s	4/28/93	938	0.5	High	2.6	82	70.7	990	1.5	20.7	638	17919	2.8	87	77	1080	0.60	0.54	11.55	6391	22.3	8.05	7.74	0.28	<1	<1
SRT 4s	5/26/93	947	0.6	High	1.5	46	20.9	292	0.5	6.4	725	20362	1.7	51	26	365	0.75	0.14	34.43	19060	16.0	7.96	6.83	0.24	<1	<1
SRT 4s	6/29/93	949	0.8	Flood	2.7	84	71.3	998	1.5	21.3	655	18396	2.9	90	78	1095	0.78	0.77	11.58	6411	22.9	8.08	7.79	0.36	2	3
SRT 4s	9/1/93	952	0.3	Low	2.8	86	68.1	954	0.1	1.5	660	18536	2.9	90	90	1256	0.67	0.29	11.61	6425	23.9	8.08	7.31	0.10	2	0
SRT 4s	10/27/93	941	0.6	Low	2.8	88	73.2	1025	0.8	10.6	610	17132	2.9	90	76	1071	0.80	0.98	10.59	5860	22.5	8.00	6.73	0.08	0	6
SRT 4s	2/8/94	945	0.2	Low	3.0	93	68.9	965	0.5	7.3	580	16290	3.0	94	80	1116	0.61	0.15	12.70	7028	21.7	8.00	7.55	0.09	<1	<1
SRT 4s	6/22/94	939	-0.2	Low	2.4	75	63.8	894	0.8	10.8	568	15939	2.5	77	69	963	0.78	0.88	12.84	7105	23.5	8.09	8.21	7.72	<1	<1
SRT 4s	7/26/94	1043	0.7	Ebb	1.3	42	19.2	269	0.3	3.9	43	1202	1.6	49	25	347	0.74	0.07	34.48	19084	17.4	7.98	1.60	0.00	<1	<1
SRT 4s	10/26/94	857	1.8	High	2.9	91	75.4	1056	1.0	13.6	589	16537	3.1	96	80	1114	0.51	0.25	11.50	6366	22.7	8.05	7.30	1.26	2	3
SRT 4s	1/25/95	1048	0.8	High	3.4	105	76.8	1076	0.0	0.0	535	15017	3.4	105	56	786	0.44	0.06	13.65	7557	20.7	8.08	7.74	0.00	27	11
SRT 4s	5/10/95	630	-0.1	Low	3.3	102	99.0	1387	0.2	3.1	543	15259	3.3	102	88	1233	0.62	0.16	12.70	7027	19.6	8.07	7.08	0.14	<1	12
SRT 4s	9/13/95	710	1.8	High	3.3	103	74.6	1045	0.4	5.7	539	15124	3.4	106	78	1093	0.53	0.19	13.90	7696	20.8	7.99	6.72	0.04	1	15
SRT 4s	11/7/95	1131	0.5	Flood	1.2	36	16.5	231	0.6	8.0	48	1344	1.3	40	23	315	1.06	0.09	34.23	18948	19.3	8.09	2.56	0.03	<1	<1
SRT 4s	1/31/96	956	0.4	Flood	3.1	95	94.0	1317	0.9	11.9	473	13276	3.1	97	98	1379	0.93	1.83	12.68	7018	23.4	8.06	6.77	0.36	utc-spreaders	116
SRT 4s	6/18/96	1221	0.3	Flood	2.6	81	58.7	823	8.7	122.1	370	10386	2.8	85	65	911	0.73	0.16	31.38	17370	23.0	8.03	8.13	0.18	<1	1
SRT 4s	8/6/96	1226	1.6	Ebb	2.1	65	68.8	963	0.3	4.2	499	14019	2.5	77	72	1010	0.93	0.63	14.58	8073	29.3	8.32	9.89	2.63	<1	3
SRT 4s	10/7/96	903	1.1	Flood	2.9	91	88.5	1239	0.6	8.3	598	16809	3.1	95	93	1308	0.68	0.12	11.17	6181	23.5	7.96	6.97	0.00	1	<1
SRT 4s	1/15/97	1103	1.0	Ebb	3.8	116	179	2510	0.3	3.9	513	14411	3.8	116	182	2551	0.74	0.10	12.64	6996	22.4	7.99	7.05	0.13	2	<1
SRT 4s	4/30/97	912	0.5	Flood	1.5	46	17.7	248	0.4	5.9	42	1168	2.5	77	21	290	1.03	0.13	34.22	18943	17.8	8.05	3.39	0.08	<1	<1
SRT 4s	7/14/97	1047	1.4	Flood	1.0	31	87.2	1221	0.1	0.7	574	16132	1.7	53	97	1354	1.11	0.77	11.16	6175	25.5	8.43	10.86	13.7	<1	1
SRT 4s	10/14/97	1112	0.8	Flood	3.0	93	111	1551	0.1	1.0	597	16761	3.3	102	112	1564	0.91	0.65	10.39	5751	26.2	8.42	9.12	7.49	<1	<1
SRT 4s	3/11/98	1304	0.6	Flood	3.4	104	84.5	1184	0.1	2.0	576	16183	3.6	110	89	1243	0.56	0.25	12.25	6782	26.3	8.18	8.93	6.67	<1	<1
SRT 4s	4/15/98	1152	0.0	Low	2.8	85	77.2	1081	0.2	2.2	563	15812	3.0	93	82	1154	0.56	0.42	12.95	7167	24.8	8.23	9.44	7.47	<1	<1
SRT 4s	7/15/98	945	1.3	High	1.7	54	67.8	950	0.2	2.1	562	15781	2.0	61	71	1000	0.73	0.94	13.84	7658	24.5	8.40	10.25	11.2	2	5
SRT 4s	10/14/98	954	1.6	Flood	3.1	97	92.5	1296	0.1	0.7	571	16037	3.3	103	94	1310	0.84	0.27	12.54	6943	24.9	8.39	9.76	8.34	<1	1
SRT 4s	3/3/99	954	0.3	Ebb	3.4	105	77.1	1080	0.6	8.1	533	14970	3.5	107	85	1191	0.65	0.15	14.46	8003	22.3	8.00	8.74	1.04	<1	2
SRT 4s	4/14/99	947	-0.2	Flood	3.1	97	65.1	912	0.6	7.7	423	11869	3.3	101	68	954	0.69	0.10	19.24	10650	19.7	7.94	6.55	0.09	2	5
SRT 4s	8/24/99	950	0.7	Flood	2.6	81	68.9	965	0.2	2.4	645	18118	2.9	90	71	1001	0.74	0.45	12.93	7158	25.2	8.28	8.78	8.37	<1	<1
SRT 4s	10/12/99	1011	0.9	Ebb	3.4	106	77.5	1085	0.6	8.7	549	15422	3.6	112	81	1136	0.62	0.15	12.79	7081	24.3	8.10	7.67	0.29	1	5
SRT 4s	3/1/00	1015	0.4	Flood	3.6	113	81.5	1142	0.3	4.8	564	15837	3.6	112	85	1192	0.99	0.24	19.49	10787	23.1	8.22	7.78	0.46	<1	1
SRT 4s	4/24/00	1039	0.3	Ebb	3.0	94	78.1	1094	0.1	1.7	564	15835	3.1	96	79	1108	0.59	0.15	13.40	7419	24.0	8.15	8.14	3.39	1	1

NELHA Water Quality Laboratory

Seawater Return Trench 4

1/28/1992 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT 4s	8/1/00	1000	0.0	Low	2.9	90	76.3	1069	0.1	1.3	536	15043	3.1	96	80	1121	0.81	0.26	15.03	8321	26.1	8.16	8.21	4.41	1	<1
SRT 4s	12/20/00	935	0.9	Flood	3.8	116	104	1452	1.1	15.7	571	16048	4.0	122	111	1561	0.87	0.22	11.90	6584	22.7	8.11	7.17	0.38	1	1
SRT 4s	2/27/01	958	0.6	Ebb	2.9	90	85.6	1199	0.1	1.7	542	15211	3.1	96	87	1215	0.72	0.24	13.19	7303	23.4	8.17	8.35	1.16	<1	<1
SRT 4s	5/9/01	1006	-0.2	Low	2.9	90	82.7	1158	0.4	4.9	504	14152	3.2	99	85	1188	0.78	0.22	14.72	8146	24.3	8.12	8.12	4.81	<1	<1
SRT 4s	9/11/01	1050	2.1	High	2.9	91	87.8	1230	0.3	3.8	544	15284	3.0	92	93	1300	0.75	0.22	12.77	7070	26.7	8.14	7.99	3.25	<1	1
SRT 4s	10/31/01	1009	0.4	Low	3.3	103	89.3	1250	1.0	13.7	577	16205	3.5	107	87	1218	0.67	0.12	12.52	6932	24.9	8.07	7.84	1.24	1	2
SRT 4s	1/15/02	958	0.7	Ebb	3.6	113	105	1472	1.3	18.5	536	15054	3.7	113	107	1497	0.67	0.10	14.04	7773	21.9	8.06	7.39	0.99	<1	<1
SRT 4s	5/28/02	1022	-0.2	Low	4.3	133	57.9	810	0.8	11.8	406	11391	4.6	143	64	889	1.24	0.79	17.70	9796	26.3	8.37	11.38	7.21	<1	<1
SRT 4s	9/17/02	1025	1.2	Flood	4.5	138	108	1509	0.3	3.8	568	15961	4.8	147	98	1369	0.72	0.15	12.91	7148	25.5	8.08	7.68	1.72	<1	<1
SRT 4s	12/16/02	1105	0.6	Flood	4.7	145	99.9	1399	0.3	4.1	548	15396	5.3	163	109	1525	0.81	0.21	12.47	6901	24.3	8.14	7.47	1.28	<1	1
SRT 4s	1/30/03	1040	0.1	Flood	4.8	148	122	1709	0.7	9.1	516	14498	5.0	155	152	2133	0.75	0.17	14.57	8065	24.2	8.08	7.17	3.85	<1	1
SRT 4s	5/28/03	948	0.3	Flood	5.4	168	114	1591	0.2	3.2	524	14720	5.6	174	126	1758		0.30	13.50	7471	25.4	8.25	8.25	2.83	<1	<1
SRT 4s	9/18/03	1016	1.7	Flood	6.7	207	140	1965	0.7	9.9	522	14672	7.1	220	146	2041	4.27	0.10	12.41	6871	26.4	8.11	7.19	0.18	1	1
SRT 4s	11/6/03	936	0.6	Flood	7.3	225	134	1878	1.2	16.4	549	15405	7.5	232	172	2412	31.5	0.11	12.63	6993	24.4	8.23		1.24	<1	1
SRT 4s	11/14/03	1007	1.7	Ebb																	23.8		6.84			
SRT 4s	1/29/04	951	0.9	Ebb	12.5	387	465	6515	1.7	23.8	704	19758	12.2	378	477	6677	2.08	0.24	12.04	6664	22.4	8.40	6.87	0.47	1	<1
SRT 4s	6/1/04	822	-0.2	Flood	6.1	189	140	1965	0.1	0.8	534	15003	6.6	206	147	2065	2.65	0.51	11.42	6321	24.5	8.20	7.48	0.11	<1	<1
SRT 4s	9/29/04	906	0.7	Ebb	9.2	285	129	1807	0.5	7.1	508	14276	9.8	302	142	1986	1.04	0.26	12.85	7113	24.4	8.10	7.04	2.23	1	1
SRT 4s	12/2/04	929	1.9	Ebb	9.2	286	165	2308	0.4	5.9	534	15006	9.5	295	176	2465	1.10	0.58	11.82	6543	23.8	8.12	6.71	2.42	<1	<1
SRT 4s	1/19/05	920	0.5	Flood	10.3	318	247	3462	0.2	2.1	497	13970	10.7	330	275	3846	1.52	0.17	11.82	6544	22.9	8.40	6.56	1.89	1	1
SRT 4s	5/31/05	912	0.5	Flood	5.7	175	114	1594	0.2	3.2	507	14234	5.6	174	118	1646	0.87	0.25	12.45	6891	23.6	8.27	7.67	1.14	<1	2
SRT 4s	8/2/05	1013	0.6	Flood	11.4	353	159	2233	0.1	1.0	510	14324	11.8	366	163	2287	1.11	0.21	14.69	8129	24.9	8.27	7.29	1.49	<1	<1
SRT 4s	11/1/05	845	0.7	Ebb	4.8	149	105	1467	1.6	22	474	13321	5.1	158	112	1567	0.61	0.46	11.36	6290	25.2	8.15	6.71	0.38	<1	3
SRT 4s	1/30/06	850	0.9	Ebb	2.4	73	36	502	19.8	277	175	4926	2.7	84	53	743	0.96	0.41	27.93	15458	23.1	7.77	5.72	0.34	135	2
SRT 4s	5/25/06	1042	0.5	Flood	1.1	33	3	42	16.8	235	4	112	1.6	50	29	412	1.19	0.45	34.73	19224	26.8	7.95	7.22	0.96	41	33
SRT 4s	7/27/06	1010	0.2	Low	0.9	28	3	41	13.5	189	17	486	2.0	61	34	480	2.61	1.29	34.47	19082	26.8	8.29	10.23	3.37	<1	<1
SRT 4s	10/31/06	1041	1.8	Flood	2.0	62	9	124	36.5	511	3	88	2.9	89	63	879	1.65	0.47	34.86	19296	28.2	7.71	8.65	1.10	<1	41
SRT 4s	1/17/07	1017	0.2	Low	1.0	32	3	44	15.3	214	3	96	1.8	55	29	412	1.49	1.36	34.77	19247	25.7	8.04	7.73	4.90	<1	1
SRT 4s	6/26/07	942	0.8	Flood	1.3	40	7	99	15.1	212	6	158	2.3	72	32	453		0.33	34.65	19177	26.7	7.92	6.87	0.87	<1	21
SRT 4s	9/24/07	1348	2.0	Flood	3.2	98	51	718	7.3	103	441	12380	3.4	106	75	1056		1.01	33.58	18587	27.0	8.12	4.27	2.75		
SRT 4s	12/11/07	1048	0.8	Ebb	2.5	78	84	1182	1.2	16	299	8401	3.2	100	112	1563		0.84	13.71	7589	26.1	8.97	11.24	6.40		
SRT 4s	1/29/08	1101	0.6	Ebb	1.9	58	58	815	1.2	16	231	6479	2.7	85	80	1118		n/a	19.91	11021	26.7	8.36	13.67	21.89		
SRT 4s	2/28/08	951	0.4	Ebb	1.5	48	70	976	1.6	23	402	11286	2.0	61	76	1068		1.04	20.71	11464	26.7	8.36	11.84	38.44		
SRT 4s	2/28/08	2259	1.5	Ebb	2.4	74	85	1190	2.2	31	451	12673	2.4	73	88	1232		1.44	17.24	9543	26.1	8.48	15.07	39.93		
SRT 4s	4/2/08	1023	0.2	Flood	2.9	90	36	502	4.0	56	476	13380	2.0	61	94	1321		1.26	15.34	8491	24.6	8.28	8.40	20.13		
SRT 4s	4/16/08	1351	1.3	Flood	1.1	35	43	602	0.2	3	445	12493	2.7	83	64	893		0.99	15.45	8552	28.5	8.47	11.32	10.32		
SRT 4s	5/23/08	1012	0.0	Ebb	3.0	94	69	962	1.0	14	641	17990	3.1	95	80	1123		0.64	15.44	8546	25.1	8.37	7.92	0.11		
SRT 4s	6/12/08	1022	1.0	Flood	2.8	88	68	948	3.2	46	487	13688	2.9	89	77	1076		0.38	14.05	7777	24.5	7.91	7.22	5.45		
SRT 4s	7/18/08	935	-0.1	Low	3.1	97	69	967	1.1	15	494	13886	3.0	92	84	1182		0.52	17.32	9587	25.4	7.97	5.72	1.25		
SRT 4s	8/13/08	1039	0.7	Flood	3.6	111	73	1016	0.7	10	435	12231						1.68	14.74	8159	26.3	8.08	7.40	11.48		
SRT 4s	9/4/08	1045	1.3	Ebb	3.0	93	69	964	0.6	8	409	11501	5.1	157	103	1445		1.40	15.26	8447	25.8	8.15	6.42	1.53		
SRT 4s	10/20/08	1054	2.0	Ebb	4.2	129	85	1187	0.4	6	425	11927						0.87	16.85	9327	26.7	7.84	6.86	0.78		
SRT 4s	11/6/08	1039	1.8	High	5.8	180	135	1894	1.3	18	498	13990	9.3	288	287	4017		0.54	15.41	8530	25.7	8.28	8.06	0.69		

NELHA Water Quality Laboratory

Seawater Return Trench 4

1/28/1992 - 8/4/20

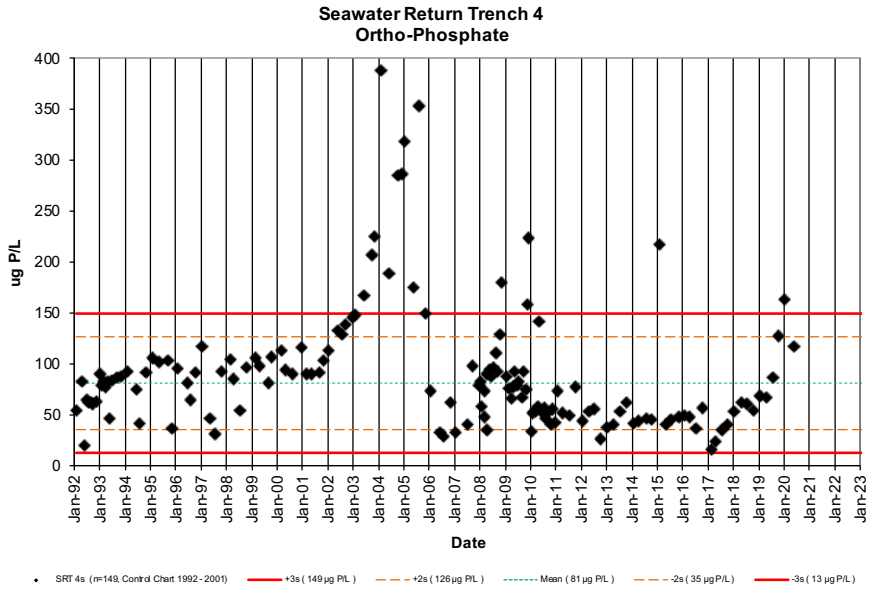
Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT 4s	1/2/08	1053	1.0	Ebb	2.7	83	40	566	0.1	2	72	2015	2.4	76	39	550		0.16	34.72	19218	11.7	7.85	9.51	0.98		
SRT 4s	1/12/09	1033	0.3	Ebb	2.8	87	40	557	0.1	2	71	1983	0.4	12	41	578		0.18	34.73	19224	11.3	7.84	9.03	0.06		
SRT 4s	2/20/09	941	0.3	Low	2.5	77	47	659	0.4	6	77	2162	2.3	72	41	575		0.15	34.62	19163	9.9	7.57	9.18	0.38		
SRT 4s	3/30/09	1440	0.3	Flood	2.1	65	41	571	0.5	8	75	2116	12.7	393	198	2775		0.24	34.49	19091	11.3	7.52	9.49	0.19		
SRT 4s	4/27/09	1109	-0.2	Flood	2.5	77	39	543	1.7	24	74	2076	3.3	102	53	736		0.07	34.37	19025	12.1	7.97	9.25	0.07		
SRT 4s	5/14/09	1432	0.5	Flood	3.0	93	40	554	1.9	26	67	1875	2.8	85	43	600		0.31	34.73	19224	11.9	7.40	8.81	0.08		
SRT 4s	6/10/09	840	0.2	Ebb	2.5	78	37	516	1.9	26	65	1830	3.1	96	47	657		0.09	34.45	19069	11.9	7.48	8.58	0.03		
SRT 4s	7/10/09	845	0.5	Ebb	2.7	83	39	541	1.9	26	72	2008	3.2	101	22	314		0.13	34.91	19324	10.1	7.68	9.58	0.17		
SRT 4s	8/27/09	909	1.8	Flood	2.2	67	30	419	1.3	19	52	1471	2.0	62	33	456		0.11	34.52	19108	11.0	7.66	6.70	0.10		
SRT 4s	9/17/09	1225	0.3	Flood	3.0	92	38	528	0.5	7	63	1758	2.9	90	42	591		0.54	34.59	19146	8.7	7.55	9.98	0.06		
SRT 4s	10/22/09	908	1.8	Ebb	2.4	75	42	588	1.0	15	184	5158	2.6	82	47	655		0.47	18.96	10495	25.8	7.65	3.09	5.91		
SRT 4s	11/19/09	856	1.7	Ebb	5.1	158	93	1309	4.6	64	356	9994	5.0	154	102	1431		0.50	16.47	9117	24.3	7.72	3.50	2.00		
SRT 4s	12/7/09	830	2.0	High	7.2	224	61	854	5.6	78	334	9367	7.0	218	71	996		0.52	23.33	12914	23.9	7.75	1.75	2.47		
SRT 4s	1/4/10	1416	0.0	Low	1.1	33	12	169	0.6	8	32	894	2.3	70	16	231		0.29	34.88	19307	19.4	8.16	9.61	0.60		
SRT 4s	2/2/10	1353	-0.2	Low	1.7	52	24	339	1.4	20	49	1388	2.0	61	27	384		0.33	34.65	19180	16.7	8.01	8.43	0.34		
SRT 4s	3/10/10	1308	0.7	High	1.7	53	25	344	0.2	3	51	1445	1.9	59	28	397		0.11	32.55	18017	16.8	7.96	7.84	0.89		
SRT 4s	4/5/10	958	0.4	High	1.9	58	24	340	2.2	31	74	2084	2.0	63	28	388		0.15	34.66	19185	15.5	8.08	7.94	0.15		
SRT 4s	5/12/10	1252	1.5	Flood	4.6	141	98	1372	1.5	21	454	12757	4.2	129	98	1371		0.30	17.55	9714	22.6	8.13	7.43	0.15		
SRT 4s	6/21/10	1018	1.3	Flood	1.7	52	24	334	0.7	10	55	1551	2.0	61	28	396		0.30	34.61	19158	16.0	7.92	7.45	1.07		
SRT 4s	7/12/10	1011	-0.1	Low	1.8	57	24	333	0.9	13	55	1554	2.0	62	27	384		0.90	34.81	19268	17.3	7.91	7.74	7.24		
SRT 4s	8/2/10	1219	1.3	Ebb	1.5	47	16	223	0.4	5.8	51	1434	1.5	47	20	281		0.13	34.53	19113	17.6	8.13	12.71	0.14		
SRT 4s	9/2/10	1143	1.9	Flood	1.7	52	22	313	0.4	6.2	44	1237	1.9	60	26	366		0.11	34.05	18848	17.3	7.99	8.39	0.24		
SRT 4s	10/19/10	1123	1.2	Flood	1.3	40	22	302	0.0	0.3	45	1250	1.4	45	24	341		0.21	34.69	19202	17.3	8.02	8.05	0.07		
SRT 4s	11/3/10	1001	0.6	Flood	1.8	56	21	300	1.1	15.5	48	1337	2.0	61	26	369		0.86	34.63	19169	17.4	7.98	7.52	5.50		
SRT 4s	12/6/10	937	0.7	Ebb	1.4	42	23	317	0.7	9.8	50	1392	1.8	57	27	381		0.13	34.47	19080	16.6	7.93	7.74	0.17		
SRT 4s	1/26/11	1014	0.8	Ebb	2.4	73	31	430	0.2	3.1	65	1833	2.6	82	37	515		0.16	34.54	19119	14.7	7.78	7.13	0.25		
SRT 4s	4/13/11	1014	0.4	Flood	1.7	52	24	331	0.4	5.0	53	1493	1.6	50	27	380		0.16	34.67	19191	16.3	7.93	7.26	0.14		
SRT 4s	7/18/11	935	0.6	Ebb	1.6	49	17	240	0.5	7.2	42	1185	1.7	52	23	327		25.6	34.45	19069	18.5	7.86	9.08	5.76		
SRT 4s	10/5/11	956	1.6	Flood	2.5	77	44	615	0.4	5.5	211	5925	3.1	96	52	723		1.25	27.78	15377	19.7	7.95	9.31	2.45		
SRT 4s	1/17/12	830	0.7	Flood	1.4	44	18	256	0.4	5.0	39	1088	1.7	54	23	315		0.29	34.54	19119	16.8	7.93	7.20	0.15		
SRT 4s	4/19/12	1043	0.3	Flood	1.7	53	22	310	0.7	9.7	45	1265	1.9	59	25	355		0.46	34.57	19135	15.5	7.94	8.22	0.08		
SRT 4s	7/9/12	1140	1.1	Ebb	1.8	55	28	386	0.3	3.7	59	1662	3.3	101	137	1915		1.50	35.29	19534	15.2	7.90	9.26	0.58		
SRT 4s	10/8/12	1047	1.8	High	0.8	26	11	148	0.2	3.2	33	918	1.2	39	18	257		0.26	35.05	19401	22.0	8.22	10.20	1.67		
SRT 4s	1/3/13	1020	1.2	Ebb	1.2	37	16	227	0.6	7.8	31	877	1.5	46	23	329		0.18	34.87	19301	17.5	8.25	11.23	0.85		
SRT 4s	4/1/13	1031	0.4	Ebb	1.3	40	17	240	0.4	5.4	37	1034	1.6	51	21	299		0.67	34.68	19196	19.1	8.06	7.90	0.65		
SRT 4s	7/8/13	1004	-0.1	Low	1.7	53	22	313	1.3	18.0	46	1285	1.9	58	35	486		0.48	34.87	19301	17.9	7.87	6.96	0.03		
SRT 4s	10/10/13	1119	1.7	Ebb	2.0	62	26	360	0.6	8.9	51	1432	2.2	67	30	420		0.72	34.77	19246	14.8	7.90	6.62	0.25		
SRT 4s	1/22/14	910	0.7	High	1.3	41	20	275	0.9	12.2	43	1211	1.6	50	30	417		0.61	34.95	19346	16.2	7.89	6.26	38.89		
SRT 4s	4/9/14	1057	0.7	Flood	1.4	44	22	306	1.3	18.1	49	1371	1.7	52	27	373		0.16	34.64	19174	16.4	7.85	6.20	0.15		
SRT 4s	7/16/14	1109	0.5	Ebb	1.5	47	24	337	1.8	24.6	39	1092	1.7	53	27	375		0.32	34.98	19362	17.4	7.92	7.25	0.08		
SRT 4s	10/15/14	1144	1.5	Ebb	1.5	46	32	450	1.9	26.1	40	1114	1.4	42	21	288		0.35	34.84	19285	18.0	7.93	6.24	0.12		
SRT 4s	2/3/15	812	0.5	Ebb	7.0	217	47	653	1.0	13.7	65	1832	6.0	187	23	326		8.22	34.88	19307	16.3	7.77	6.65	21.87		
SRT 4s	5/5/15	1709	2.0	High	1.3	41	19	270	1.9	27.0	32	906	1.7	52	30	418		0.61	34.57	19135	17.3	7.99	8.53	0.05		

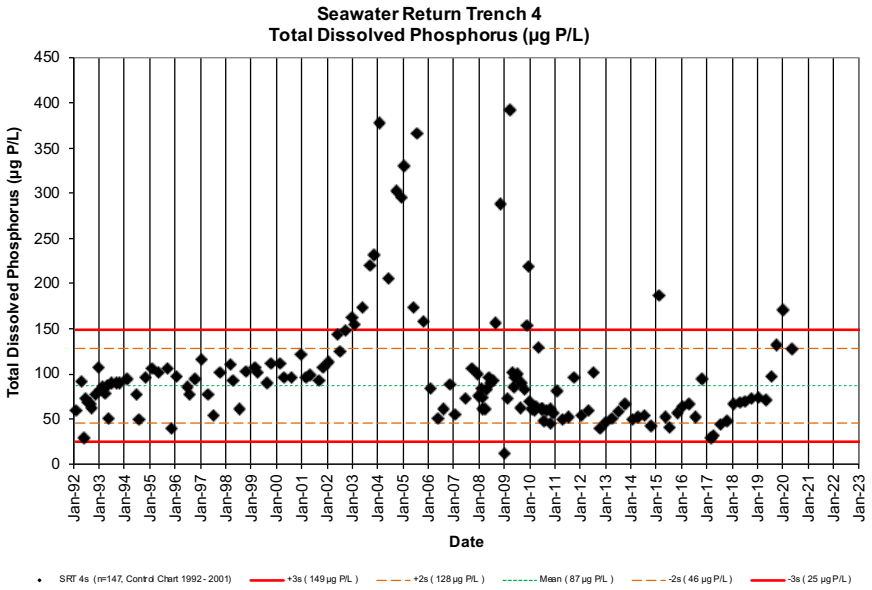
NELHA Water Quality Laboratory

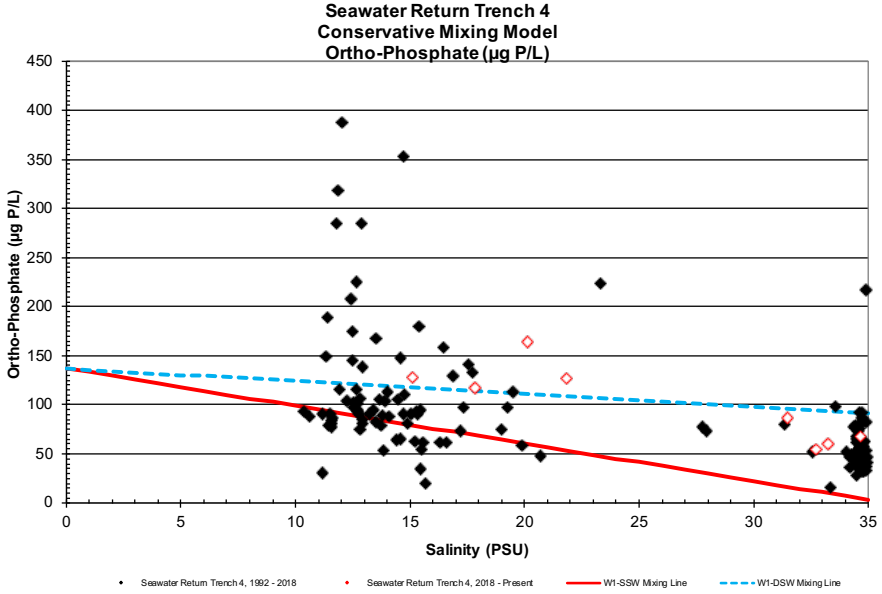
Seawater Return Trench 4

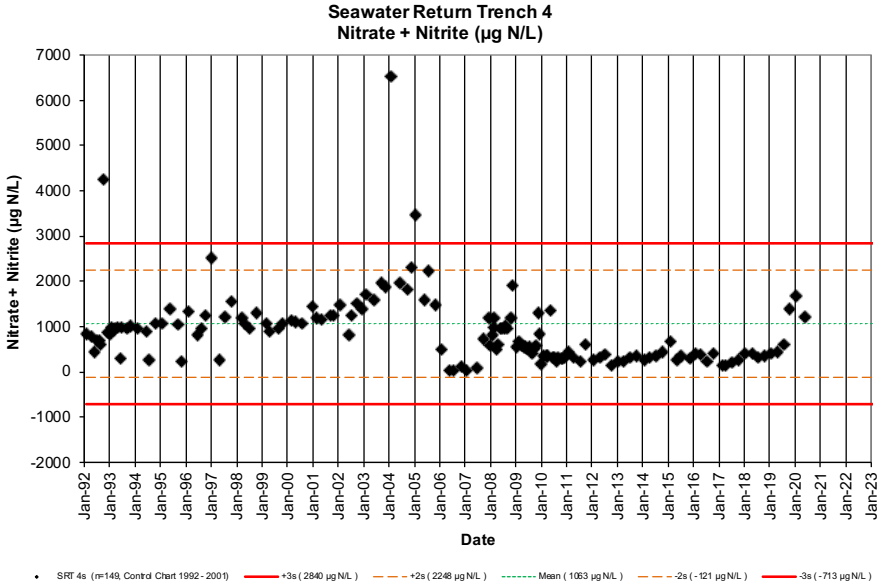
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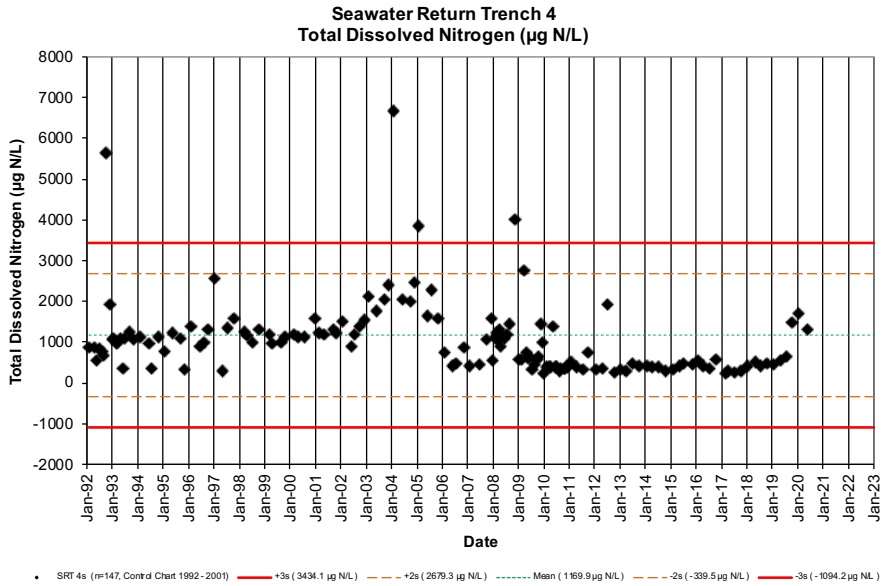
Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT 4s	7/10/15	1016	1.4	Flood	1.5	46	25	350	0.5	7.1	39	1083	1.3	41.3	35	485		0.32	34.52	19108	19.7	8.06	9.95	1.18		
SRT 4s	11/5/15	1049	1.6	Flood	1.5	47	22	302	0.9	12.9	36	1014	1.8	56	31	436		0.24	34.35	19014	19.3	7.92	7.53	0.85		
SRT 4s	1/19/16	849	-0.2	Low	1.6	49	28	393	0.4	5.7	49	1378	2.1	64	39	553		0.61	34.24	18953	16.3	7.89	6.40	1.55		
SRT 4s	4/12/16	1053	0.2	Ebb	1.6	48	27	376	0.8	10.6	38	1069	2.2	67	30	417		1.19	34.69	19202	16.9	8.07	7.57	10.81		
SRT 4s	7/14/16	1045	1.4	Flood	1.2	37	16	229	0.6	8.0	32	913	1.7	53	24	343		0.38	34.52	19108	21.5	8.17	8.95	0.75		
SRT 4s	10/20/16	943	1.7	Ebb	1.8	56	29	399	0.5	7.1	59	1668	3.0	94	42	587		5.07	34.61	19158	19.4	8.08	7.11	4.05		
SRT 4s	2/23/17	1110	0.6	Flood	0.5	16	10	134	0.0	0.6	35	983	0.9	29	17	238		1.84	33.33	18449	21.1	8.13	8.45	23.19		
SRT 4s	4/10/17	1114	0.2	Flood	0.8	24	11	147	0.2	2.2	29	809	1.0	32	21	288		1.35	35.02	19384	20.4	8.21	9.67	49.71		
SRT 4s	7/13/17	957	0.4	Ebb	1.1	35	14	196	0.1	2.1	33	937	1.4	44	18	254		0.99	34.81	19268	19.5	7.99	6.46	9.76		
SRT 4s	10/12/17	905	2.0	High	1.3	40	18	250	0.2	3.5	39	1082	1.5	48	20	283		0.43	34.50	19097	19.5	7.92	6.95	0.38		
SRT 4s	1/11/18	940	1.0	Flood	1.7	53	28	394	0.0	0.3	61	1710	2.2	67	30	424		0.80	34.54	19119	11.8	7.78	8.04	11.01		
SRT 4s	4/24/18	946	0.7	Flood	2.0	62	29	401	5.2	72.2	62	1731	2.2	68	36	507		0.31	34.52	19108	14.5	7.77	8.19	0.20		
SRT 4s	7/12/18	1125	0.5	Flood	2.0	61	22	306	0.0	0.1	61	1719	2.2	69	29	411		0.29	33.26	18410	18.9	8.08	9.94	1.05		
SRT 4s	10/11/18	1052	0.4	Low	1.8	54	25	344	2.2	31.2	71	2000	2.3	72	35	490		0.69	32.74	18122	18.4	8.00	6.29	0.94		
SRT 4s	1/15/19	1056	1.2	High	2.2	69	28	393	0.1	1.1	69	1936	2.4	74	31	437		0.45	34.67	19191	13.6	7.80	9.13	1.38		
SRT 4s	4/25/19	1021	0.4	Ebb	2.2	68	31	437	7.1	99.6	67	1879	2.3	71	40	554		0.43	35.54	19672	13.4	7.39	9.69	0.10		
SRT 4s	7/17/19	1059	0.2	Flood	2.8	86	44	623	0.0	0.5	144	4052	3.1	97	47	657		0.50	31.48	17425	18.4	7.97	11.25	1.52		
SRT 4s	10/8/19	1400	1.9	High	4.1	127	99	1389	0.6	8.0	308	8642	4.3	132	104	1463		0.36	21.82	12078	23.9	7.92	8.06	0.16		
SRT 4s	1/9/20	1058	0.5	Low	5.3	163	120	1682	-0.2	-2.4	389	10937	5.5	172	121	1700		0.48	20.12	11137	21.4	7.91	6.76	0.46		
SRT 4s	5/21/20	1200	0.7	Flood	3.8	117	86	1208	1.4	20.2	341	9564	4.1	127.6	94	1323		0.63	17.86	9886	26.1	8.20	9.37	1.76		
SRT 4s	7/14/02	1132	0.4	High		128		1235		7.6		12231		125		1178		0.70	15.10	8358	27.3	8.43	12.85	3.23		
SRT 4s	10/1/20																									
SRT 4s	1/1/21																									
SRT 4s	4/1/21																									
SRT 4s	7/1/21																									
SRT 4s	10/1/21																									
SRT 4s	1/1/22																									
SRT 4s	4/1/22																									
SRT 4s	7/1/22																									
SRT 4s	10/1/22																									
SRT 4s	1/1/23																									
SRT 4s	4/1/23																									
Mean			0.78		2.87	89	62.5	878	2.00	28	314	8845	3.20	99.4	73.6	1032	1.41	0.78	23.4	12977	21.1	8.04	7.96	4.01		
Std. Dev.			1		1.97	61	56.0	782	5.60	78	244	6835	2.15	66.3	63.9	893	3.69	2.27	10.1	5628	4.65	0.23	1.94	7.99		
Maximum			2.10		12.5	387	465	6515	46.5	651	725	20362	12.7	393	477	6677	31.5	25.6	35.5	19672	29.3	8.97	15.1	49.7		
Minimum			-0.20		0.52	16	2.90	41	-0.17	-2	3.12	87.6	0.4	11.9	16.49	231	0.44	0.06	10.4	5751	8.65	7.39	1.60	0.00		
n			150		148	149	148	149	148	149	148	149	146	147	146	147	70.0	144	150.0	149	151	150	145	150		

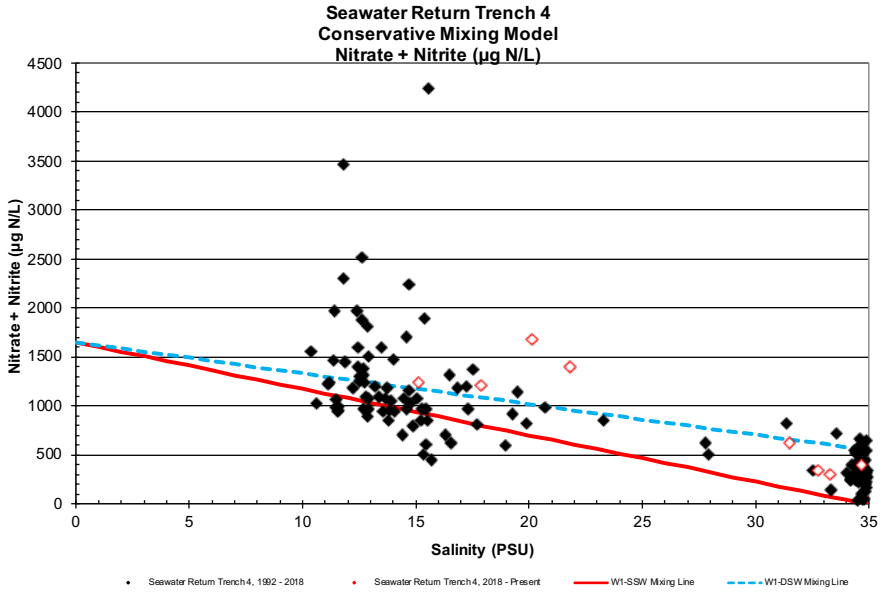

Seawater Return Trench 4
Ortho-Phosphate
ug P/L
Date
SRT 4s (n=149, Control Chart 1992 - 2001)
+3s (149 µg P/L)
+2s (126 µg P/L)
Mean (81 µg P/L)
-2s (35 µg P/L)
-3s (13 µg P/L)


Seawater Return Trench 4
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
Date
SRT 4s (n=147, Control Chart 1992 - 2001)
+3s (149 µg P/L)
+2s (128 µg P/L)
Mean (87 µg P/L)
-2s (46 µg P/L)
-3s (25 µg P/L)

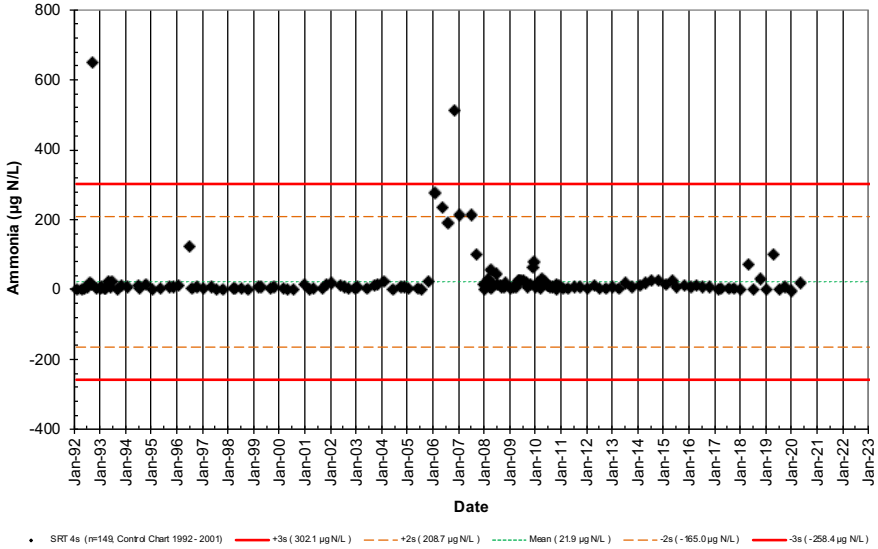

Seawater Return Trench 4
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
Seawater Return Trench 4, 1992 - 2018
Seawater Return Trench 4, 2018 - Present
W1-SSW Mixing Line
W1-DSW Mixing Line


Seawater Return Trench 4
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
SRT 4s (n=149, Control Chart 1992 - 2001)
+3s (2840 µg N/L)
+2s (2248 µg N/L)
Mean (1053 µg N/L)
-2s (-121 µg N/L)
-3s (-713 µg N/L)

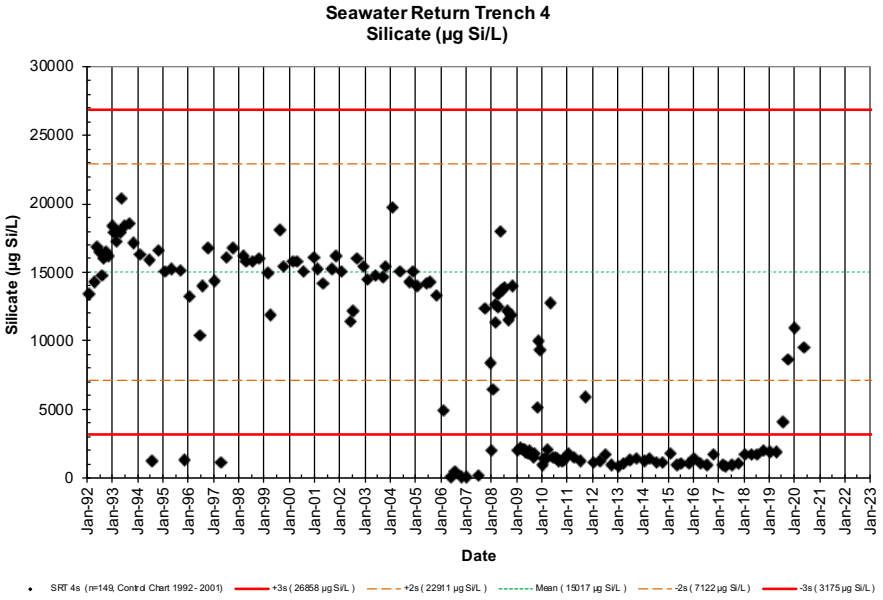

Seawater Return Trench 4
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
SRT 4s (n=147, Control Chart 1992 - 2001)
+3s (3434.1 µg N/L)
+2s (2679.3 µg N/L)
Mean (1169.9 µg N/L)
-2s (-339.5 µg N/L)
-3s (-1094.2 µg N/L)


Seawater Return Trench 4
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
Seawater Return Trench4, 1992 - 2018
Seawater Return Trench4, 2018 - Present
W1-SSW Mixing Line
W1-DSW Mixing Line

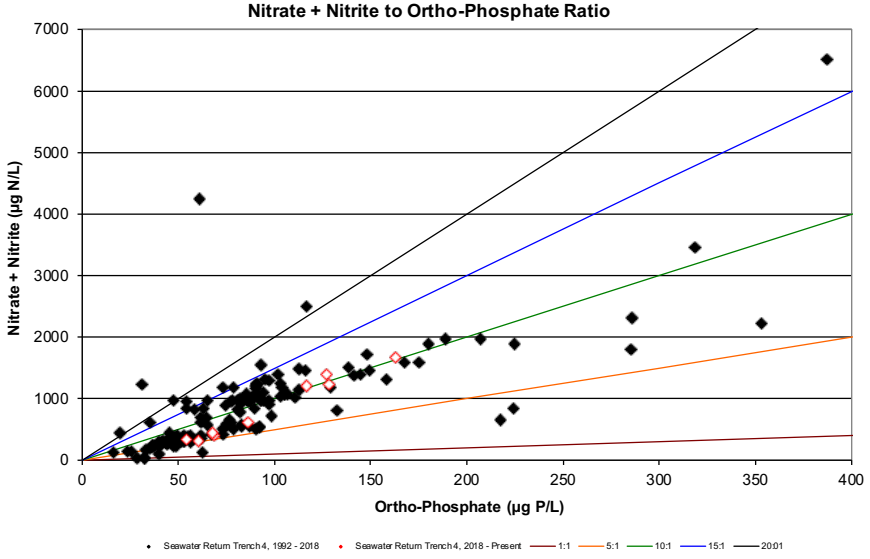
Seawater Return Trench 4
Total Ammonia (µg N/L)



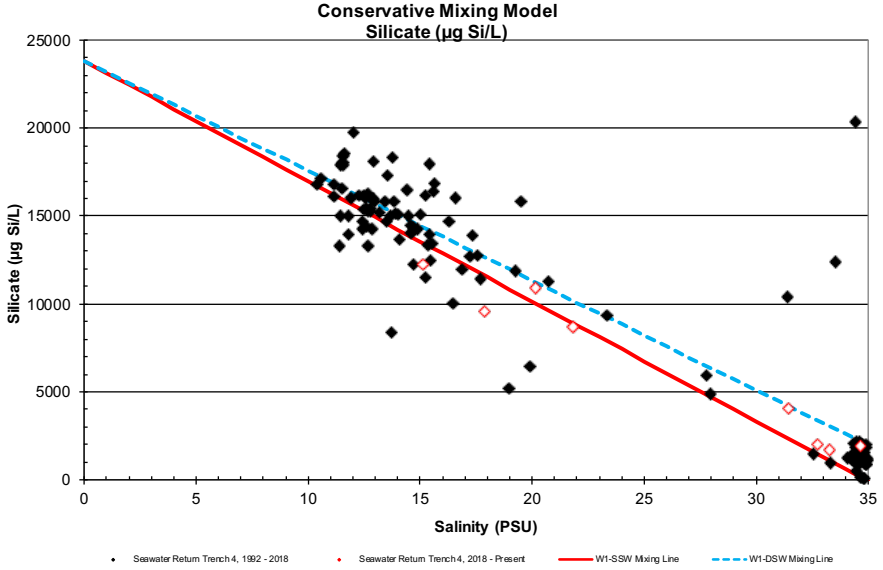
Seawater Return Trench 4
Silicate (µg Si/L)

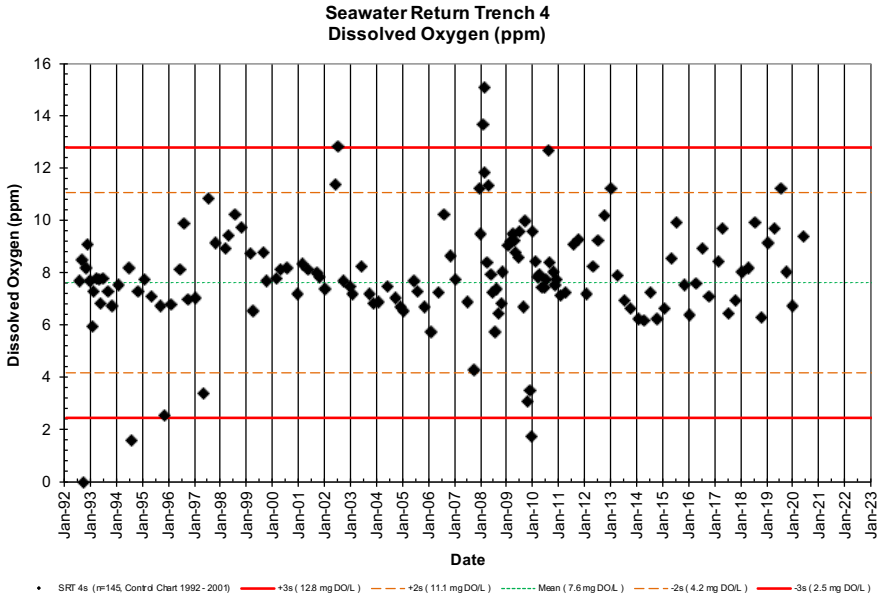


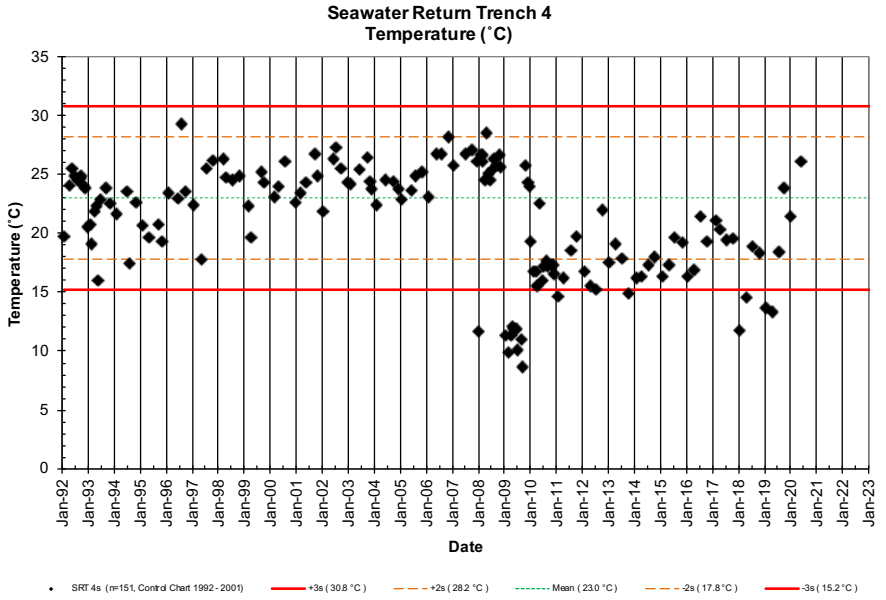
Seawater Return Trench 4
Nitrate + Nitrite to Ortho-Phosphate Ratio

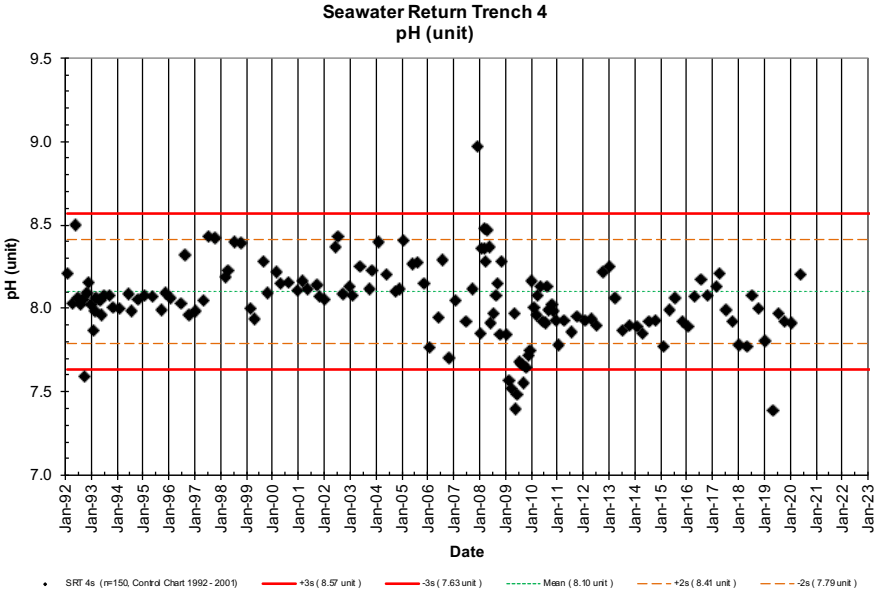


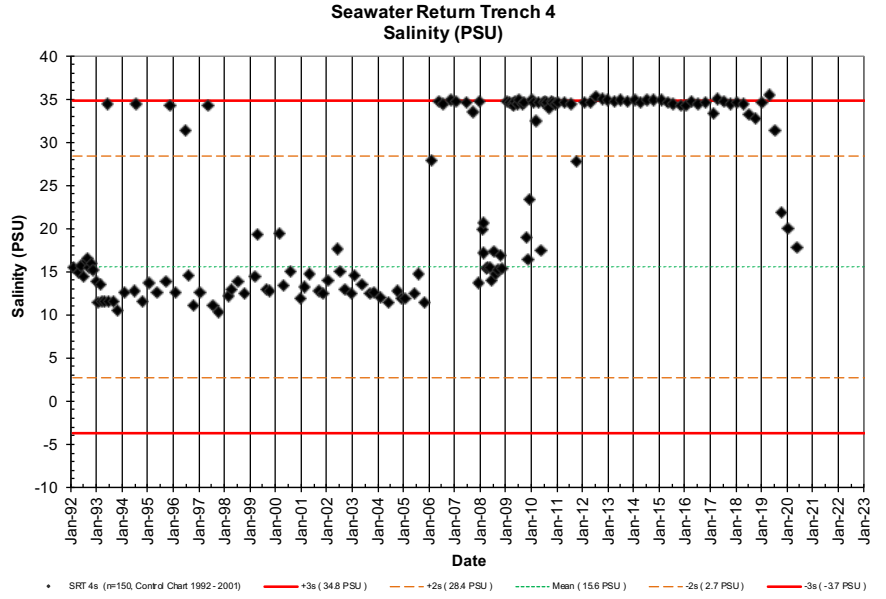
Seawater Return Trench 4
Conservative Mixing Model
Silicate (µg Si/L)




Seawater Return Trench 4
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
SRT 4s (n=145, Control Chart 1992 - 2001)
+3s (12.8 mg DO/L)
+2s (11.1 mg DO/L)
Mean (7.6 mg DO/L)
-2s (4.2 mg DO/L)
-3s (2.5 mg DO/L)


Seawater Return Trench 4
Temperature (˚C)
Temperature (˚C)
Date
SRT 4s (n=151, Control Chart 1992 - 2001)
+3s (30.8 °C)
+2s (28.2 °C)
Mean (23.0 °C)
-2s (17.8 °C)
-3s (15.2 °C)

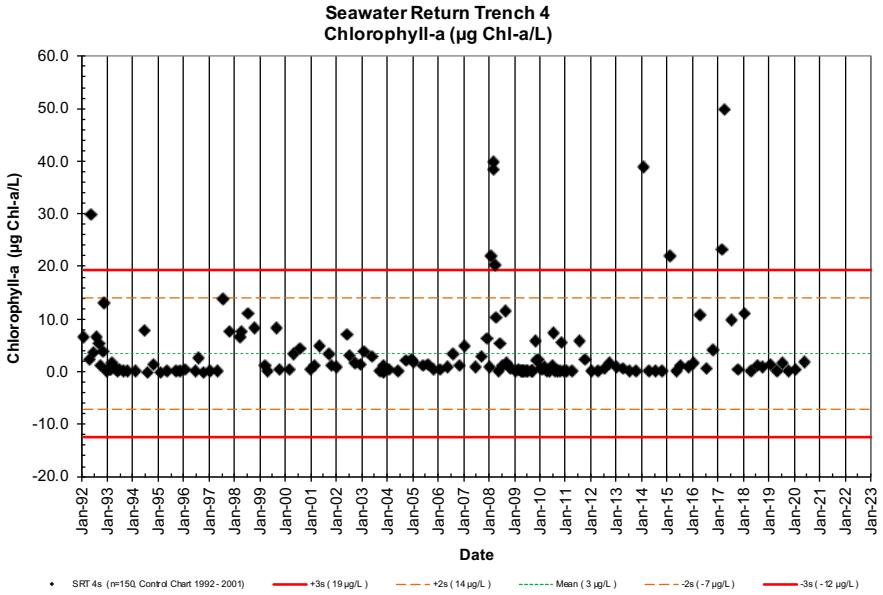

Seawater Return Trench 4
pH (unit)
pH (unit)
Date
SRT 4s (n=150, Control Chart 1992 - 2001)
+3s (8.57 unit)
-3s (7.63 unit)
Mean (8.10 unit)
+2s (8.41 unit)
-2s (7.79 unit)

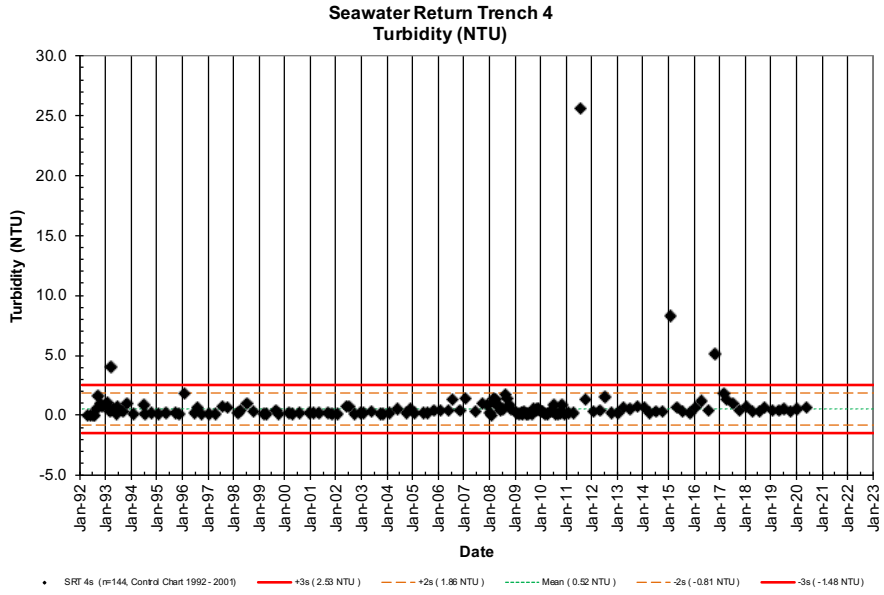

Seawater Return Trench 4
Salinity (PSU)
Salinity (PSU)
Date
SRT 4s (n=150, Control Chart 1992 - 2001)
+3s (34.8 PSU)
+2s (28.4 PSU)
Mean (15.6 PSU)
-2s (2.7 PSU)
-3s (-3.7 PSU)

NELHA Water Quality Laboratory

Seawater Return Trench 4 Charts

1/28/1992 - 8/4/20





NELHA Water Quality Laboratory

Seawater Return Trench 5

6/24/1992 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT-5s	6/24/92	1150	1.4	High	3.0	92	77.9	1091	0.4	6.2	729	20474	3.0	94	82	1151	0.71	0.91	8.36	4625	25.3	8.18		0.1	1	5
SRT-5s	7/31/92	918	0.4	Ebb	3.0	94	73.5	1029			680	19093	3.2	98	76	1067	1.05	0.17	10.09	5584	22.7	7.98	8.06	0.1	<1	<1
SRT-5s	8/31/92	1101	0.8	Ebb	3.7	115	12.7	177	35.2	493.4	79	2229	5.0	155	71	987	3.63	0.94	32.33	17898	27.0	7.97	6.54	12.8	<1	10
SRT-5s	9/23/92	1138	1.5	Flood	12.9	400	17.1	240	91.6	1283.0	79	2218	13.3	412	122	1704	4.81	4.30	34.12	18884	26.7	8.00	5.76	0.6	431	<1
SRT-5s	10/28/92	1156	0.6	Low														9.90	27.18	15045	25.8	7.76	1.40	0.6	11	TNTC
SRT-5s	11/18/92	1212	1.5	High	13.0	403	31.7	443	36.5	511.0	169	4746	16.3	505	155	2167	5.88	4.20	29.78	16485	26.8	8.24	9.98	22.6	<1	TNTC
SRT-5s	12/9/92	1047	0.4	Low	4.5	140	64	895	22.5	315.2	39	1104	6.3	196	62	866	3.65	7.30	34.80	19263	23.5	7.94	4.30	11.9	<1	141
SRT-5s	1/27/93	NO SAMPLES TAKEN, UNFILTERABLE																								
SRT-5s	2/24/93	NO SAMPLES TAKEN, UNFILTERABLE																								
SRT-5s	3/22/93	1312	0.8	Flood	1.9	59	3.2	45	5.2	73.0	53	1480	3.8	118	77	1083	6.46	4.10	34.62	19165	27.6	8.26	3.45	60.9		
SRT-5s	4/28/93	1027	0.5	High	3.7	113	11.4	159	10.6	147.8	59	1650	4.8	149	51	708	2.80	2.00	32.90	18210	24.3	8.30	7.25	22.0	<1	<1
SRT-5s	5/26/93	1041	0.9	Flood	TAKEN, UNFILTERABLE													3.00	34.08	18866	25.8	8.70	11.21	31.1	<1	<1
SRT-5s	6/29/93	1036	1.3	Flood	TAKEN, UNFILTERABLE													2.1	30.22	16725	24.2	8.39	9.70	83.2	<1	<1
SRT-5s	9/20/93	822	2.1	High	4.7	144	106.0	1485	36.0	504.0	54	1512	6.1	190	215	3011	4.44	3.20	33.83	18725	19.9	7.67	7.71	78.4	<1	<1
SRT-5s	10/27/93	1034	0.7	Flood	3.7	114	26.5	371	1.0	13.4	129	3623	4.6	142	63	884	2.42	2.50	30.09	16653	25.0	8.14	7.45	2.0	<1	<1
SRT-5s	2/8/94	1057	0.2	Low	3.6	112	68.7	962	12.6	176.5	151	4241	4.9	152	115	1610	2.52	16.90	29.25	16188	20.7	8.03	8.77	20.7	<1	<1
SRT-5s	6/22/94	1026	0.0	Flood	1.3	39	63.5	889	1.9	26.2	30	840	8.0	248	236	3311	NS	3.90	34.31	18993	22.9	8.38	10.69	126.3	<1	<1
SRT-5s	8/24/94	1009	0.8	Ebb	4.9	151	77.3	1082	12.5	175.6	101	2840	6.0	184	118	1649	2.37	1.22	30.37	16811	24.5	8.08	10.02	12.1	<1	1
SRT-5s	10/26/94	944	1.8	High	2.3	72	303.8	4255	34.3	480.3	86	2429	6.2	192	368	5158	4.90	3.90	33.06	18298	23.1	8.22	10.98	179.5	<1	1
SRT-5s	3/29/95	1124	0.2	Flood	15.0	465	454.8	6370	32.9	461.1	76	2126	16.2	502	494	6918	3.34	1.07	33.34	18457	21.9	7.88	8.59	42.6	<1	3
SRT-5s	5/10/95	724	-0.2	Low	4.7	146	68.5	959	44.7	625.8	23	652	8.0	248	161	2259	6.81	6.50	34.72	19218	22.4	7.82	3.05	152.5	<1	3
SRT-5s	9/13/95	732	1.8	High	1.0	32	10.9	152	26.5	371.2	45	1264	3.7	115	102	1427	5.41	8.10	34.35	19011	23.2	7.74	2.56	134.6	2	64
SRT-5s	11/6/95	1003	0.4	Low	5.8	181	166.0	2326	40.2	563.6	48	1361	8.6	265	250	3508	5.58	5.10	32.91	18214	23.2	7.94	7.74	147.0	<1	10
SRT-5s	1/31/96	1013	0.5	Flood	7.7	238	42.3	592	33.5	468.8	34	964	8.7	271	45	623	2.31	3.60	31.13	17233	20.8	7.83	6.73	26.9	14	10
SRT-5s	6/17/96	1330	1.0	Flood	3.0	92	46.0	645	5.1	70.9	150	4223	3.4	107	106	1490	2.17	1.56	24.91	13787	24.4	8.22	7.08	4.1	<1	102
SRT-5s	8/5/96	1253	1.2	Ebb	2.8	86	28.3	396	2.1	29.7	105	2953	3.2	100	34	477	1.24	1.20	30.88	17093	25.0	8.49	10.57	10.6	2	21
SRT-5s	10/7/96	1153	1.7	Flood	6.3	195	309.8	4339	4.4	62.0	44	1246	6.6	206	311	4357	1.64	1.64	34.50	19096	22.4	8.31	7.36	87.7	<1	<1
SRT-5s	1/15/97	940	1.3	High	15.5	480	361.7	5066	24.2	339.0	48	1348	17.0	527	405	5676	3.38	5.50	34.41	19047	21.9	8.03	7.26	207.0	2	14
SRT-5s	4/30/97	1008	0.7	Flood	0.5	15	0.3	5	0.4	5.6	68	1904	3.1	96	42	590	3.46	8.60	24.71	13677	26.5	8.59	10.06	216.0	2	70
SRT-5s	7/14/97	1120	1.6	Flood	0.0	1	0.3	4	0.7	9.1	12	333	0.9	28	23	326	2.26	4.10	34.45	19067	27.4	8.66	8.15	172.2	1	67
SRT-5s	10/13/97	1215	1.5	Flood	0.2	6	0	4	0.9	11.9	114	3202	1.3	40	38	535	4.22	4.70	34.72	19217	27.6	8.90	9.15	218.5	2	29
SRT-5s	NO SAMPLES TAKEN DUE TO SITE QUARANTINE																									
SRT-5s	4/15/98	1118	0.0	Low	1.1	33	5.6	79	6.2	86.1	49	1387	2.1	65	36	510	1.50	0.44	33.50	18544	24.6	8.14	6.29	0.8	2	22
SRT-5s	7/15/98	1128	1.2	High	5.0	154	19	268	4.8	67.5	89	2505	6.7	207	59	825	3.00	3.10	32.22	17833	25.0	8.39	7.54	24.4	<1	2
SRT-5s	10/14/98	1105	1.8	Flood	2.4	74	4.0	55	0.4	5.2	21	598	5.2	161	31	439	2.87	1.67	34.89	19313	26.4	8.35	8.41	22.7	<1	<1
SRT-5s	3/3/99	1045	0.1	Ebb	4.0	123	1.1	16	0.3	4.2	12	339	4.8	150	23	327	2.20	2.40	35.12	19440	23.3	8.30	10.99	84.2	<1	1
SRT-5s	4/14/99	1028	-0.1	Flood	6.6	204	32.8	459	0.7	9.1	262	7358	14.6	452	151	2114	11.35	4.30	24.10	13337	25.0	8.17	8.20	12.8	<1	<1
SRT-5s	8/24/99	1044	1.0	Flood	1.4	42	2.2	31	2.0	27.5	11	320	2.7	84	32	452	2.64	1.86	35.03	19391	27.9	8.31	8.35	10.1	24	<1
SRT-5s	10/12/99	1040	0.8	Ebb	1.4	44	0.1	1	0.4	4.9	21	594	5.9	182	33	457	3.13	2.10	35.16	19460	25.8	8.32	8.50	10.1	<1	6
SRT-5s	3/1/00	1040	0.4	Flood	0.3	8	0.1	1	0.4	5.6	52	1466	2.0	62	22	303	2.34	4.40	33.56	18574	23.1	8.29	8.30	10.4	<1	<1
SRT-5s	4/24/00	1109	0.3	Ebb	0.6	20	0.2	2	0.1	1.7	47	1306	1.7	51	19	262	1.92	4.70	33.52	18553	22.6	8.36	8.73	70.4	1	6
SRT-5s	8/1/00	1031	0.0	Low	3.7	116	4.7	66	1.1	15.1	44	1241	5.5	172	32	453	2.86	6.40	34.00	18818	25.3	8.08	5.71	107.0	89	2
SRT-5s	12/20/00	1005	1.0	Flood	3.7	114	9.3	130	4.5	63.3	42	1174	6.8	211	54	762	3.75	9.20	33.54	18565	22.0	7.89	3.78	201.0	3	105
SRT-5s	2/27/01	1037	0.4	Ebb	3.8	119	11.8	165	5.4	75.4	56	1570	5.9	183	44	622	2.82	2.60	33.21	18383	22.5	8.07	7.11	40.0	<1	5
SRT-5s	5/9/01	1038	-0.2	Low	3.7	115	8.3	117	0.4	6.0	75	2106	6.1	189	45	633	4.08	6.90	32.44	17954	23.5	8.14	8.45	135.9	1	12

NELHA Water Quality Laboratory

Seawater Return Trench 5

6/24/1992 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT-5s	9/11/01	1100	2.1	High	3.3	103	0	1	0.1	1.1	27	768	4.8	149	34	476	2.76	7.40	34.48	19088	26.0	8.37	6.53	76.5	<1	22
SRT-5s	10/31/01	1137	0.7	Flood	8.8	271	4.4	61	6.2	87.0	31	857	10.8	335	56	783	3.18	3.30	34.62	19164	27.3	8.10	7.13	59.2	<1	10
SRT-5s	1/15/02	1056	0.4	Ebb	4.0	125	1.9	27	32.0	448.2	33	913	7.7	238	45	626	3.01	3.60	34.23	18944	21.8	8.08	6.57	98.0	3	27
SRT-5s	5/28/02	1041	-0.2	Low	6.9	212	5.5	77	0.4	6.0	58	1632	9.1	282	50	698	4.01	13.20	33.26	18410	25.8	7.77	2.31	169.4	149	19
SRT-5s	9/17/02	1113	1.6	Flood	3.3	103	10.5	147	7.3	102.2	46	1292	4.7	144	44	610	2.32	5.70	33.66	18629	21.6	8.03	7.54	143.1	2	1
SRT-5s	12/16/02	1129	0.6	Flood	2.2	69	6	89	3.5	49.4	58	1623	4.0	123	42	588	2.84	6.10	33.59	18595	23.8	8.07	9.45	34.2	40	21
SRT-5s	1/30/03	1130	0.2	Flood	0.6	19	0.6	9	1.1	15.4	61	1713	1.5	45	20	281	2.21	7.60	33.61	18601	23.9	8.29	8.64	117.0	82	24
SRT-5s	5/28/03	1035	0.4	Flood	1.0	30	1	14	0.2	2.8	44	1230	3.7	115	33	463		10.50	34.02	18829	21.8	8.12	6.53	98.8	3	54
SRT-5s	9/18/03	1047	1.7	Ebb	4.8	149	13.9	195	7.4	102.9	32	899	6.2	191	41	576	3.61	1.01	34.49	19093	23.8	8.07	7.65	13.0	2	6
SRT-5s	11/6/03	1035	0.7	Flood	6.5	201	10	140	12.4	173.4	38	1061	8.3	258	53	741	3.80	2.20	34.03	18835	24.2	7.78		22.0	<1	2
SRT-5s	11/14/03	1355	0.6	Ebb																	24.2		9.42			
SRT-5s	1/29/04	1019	0.9	Ebb	0.1	2	0	1	0.2	2.8	38	1080	1.0	30	16	224	2.67	7.70	33.53	18559	22.6	8.23	7.18	128.2	UTC	33
SRT-5s	6/1/04	959	-0.1	Flood	8.5	263	25	344	3.7	51.1	80	2255	11.0	339	55	770	4.6	5.80	31.32	17336	26.2	7.85	5.43	7.5	<1	5
SRT-5s	9/29/04	958	0.5	Ebb	3.3	102	6.7	94	10.5	147.1	31	868	4.7	146	36	507	2.31	3.76	33.33	18449	24.9	8.13	6.12	45.3	4	4
SRT-5s	12/2/04	1045	1.6	Ebb	1.2	37	2	25	0.7	9.9	32	896	2.5	77	18	258	2.48	11.20	33.06	18300	22.7	8.12	4.71	68.1	2	5
SRT-5s	1/19/05	1020	0.6	Flood	7.4	230	17	242	9.1	127.5	55	1532	8.7	271	45	624	2.25	4.56	33.52	18552	20.6	7.92	5.63	22.6	2	9
SRT-5s	5/31/05	1015	0.9	Flood	2.9	90	15	207	9.8	136.7	97	2713	4.3	134	46	641	2.22	4.8+/-	31.51	17440	23.5	8.18		0.2	1	8
SRT-5s	6/16/05	1000	1.0	Flood	7.4	230	17	242	9.1	127.5	55	1532	8.7	271	44	616					24.2		6.97		25	35
SRT-5s	8/2/05	945	0.4	Flood	4.9	152	15	215	12.3	172.7	96	2688	6.7	209	52	731	2.94	4.54+/-	31.58	17479	25.2	8.08	7.12	26.3	25	35
SRT-5s	8/8/05	1010																			25.0				3	7
SRT-5s	11/1/05	939	0.9	Flood	5.1	159	6	88	38.6	540.2	23	652	8.1	251	72	1012	4.86	12.80	34.70	19205	24.0	7.42	2.45	40.3	5	25
SRT-5s	1/30/06	938	0.5	Ebb	1.4	43	12	170	1.9	27	28	772	1.8	56	18	248	0.93	1.33	34.78	19253	19.9	8.08	7.39	3.7	<1	3
SRT-5s	5/25/06	950	0.0	Flood	3.4	106	7	102	1.8	25	23	652	5.1	158	33	465	2.69	7.29	34.42	19054	25.2	8.07	5.71	110.0	4	17
SRT-5s	7/27/06	1104	0.2	Low	0.4	11	0	3	0.3	4	20	565	1.3	39	12	170	1.54	2.52	34.50	19098	25.7	8.29	8.55	27.0	2	46
SRT-5s	10/31/06	940	1.6	Flood	0.8	24	19	263	0.5	7	72	2011	2.1	64	39	549	2.21	6.00	32.86	18186	23.0	7.86	5.50	16.5	350	4
SRT-5s	1/17/07	1138	0.3	Flood	2.6	80	16	228	8.2	115	40	1118	3.6	110	36	504	2.12	3.10	34.12	18889	22.1	8.03	7.24	14.3	15	5
SRT-5s	6/26/07	1111	1.6	Flood	0.1	5	12	170	4.4	61	45	1261	0.7	23	n/a	n/a		5.76	34.17	18916	22.3	7.95	6.85	35.3	1	27
SRT-5s	9/24/07	1307	1.8	Flood	3.6	111	16	219	10.1	141	45	1275	4.6	141	50	704		4.53	34.71	19213	21.2	8.02	8.00	8.2		
SRT-5s	12/11/07	1105	0.8	Ebb	0.7	21	9	120	13.6	190	18	500	2.3	71	44	618		4.23	34.46	19075	21.2	8.04	5.62	35.5		
SRT-5s	1/29/08	1339	0.2	Ebb	0.7	22	5	64	3.6	50	17	466	2.5	78	41	573		3.37	34.75	19235	18.7	7.98	8.83	85.4		
SRT-5s	2/28/08	1023	0.4	Ebb	0.7	23	11	152	5.6	79	45	1255	1.8	57	40	562		3.12	34.88	19307	18.6	7.81	6.16	114.8		
SRT-5s	4/2/08	1345	1.1	High	1.7	52	10	143	0.2	3	41	1147	2.7	84	113	1588		1.59	34.86	19296	20.7	8.10	8.40	28.2		
SRT-5s	4/16/08	1415	1.3	Flood	1.7	53	20	273	0.2	3	46	1283	2.3	70	48	676		2.19	34.77	19246	18.2	7.97	9.15	34.9		
SRT-5s	5/23/08	1050	Trench Dry																							
SRT-5s	6/12/08	1100	Trench Dry																							
SRT-5s	7/18/08	958	Trench Dry																							
SRT-5s	8/13/08	1101	1.2	Flood	2.5	77	33	464	4.2	59	81	2274						1.09	34.85	19290	23.6	7.97	5.08	7.0		
SRT-5s	9/4/08	1151	1.0	Ebb	2.1	65	31	440	4.1	57	76	2138	1.6	51	22	314		1.22	34.67	19191	13.8	7.67	8.15	6.9		
SRT-5s	10/20/08	1144	1.8	Ebb	1.4	42	7	105	10.6	148	21	600						1.76	35.06	19407	24.9	7.83	7.10	38.0		
SRT-5s	11/6/08	1055	1.8	High	0.4	11	7	95	0.1	2	22	622	0.8	24	26	369		1.37	35.25	19512	22.6	8.27	7.21	6.8		

NELHA Water Quality Laboratory

Seawater Return Trench 5

6/24/1992 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT-5s	1/2/08	1115	0.7	Ebb	1.4	44	2	27	21.3	299	7	185	4.0	125	60	835		4.63	35.34	19562	25.7	8.12	4.75	89.3		
SRT-5s	1/12/09	1057	0.6	Ebb	0.3	9	1	13	13.5	189	2	67	0.3	8	42	584		2.13	34.82	19274	25.3	8.34	5.94	28.7		
SRT-5s	2/20/09	1005	0.3	Low	0.2	6	38	526	3.2	46	4	101	1.2	38	42	591		5.20	35.83	19833	22.3	8.17	6.86	17.7		
SRT-5s	3/30/09	1412	0.1	Flood	0.4	13	2	31	8.2	115	16	440	23.8	736	29	403		1.97	34.83	19279	25.0	8.12	6.26	19.9		
SRT-5s	4/27/09	1441	0.3	Flood	0.2	5	4	58	3.9	54	30	854	1.6	51	44	614		4.12	35.42	19606	28.0	8.61	5.92	20.9		
SRT-5s	5/14/09	1048	0.4	Flood	0.8	26	2	25	6.2	86	6	173	1.3	40	25	347		0.31	35.26	19517	26.2	8.15	4.82	2.1		
SRT-5s	6/10/09	912	0.2	Ebb	0.7	21	10	142	5.7	80	7	204	1.5	47	31	428		3.08	35.39	19589	27.5	9.09	4.33	4.6		
SRT-5s	7/10/09	845	0.5	Ebb	1.4	42	1	13	11.1	155	8	214	2.5	76	20	278		6.36	35.61	19711	26.4	8.16	5.33	2.3		
SRT-5s	8/27/09	1036	1.8	Flood	2.1	64	2	26	1.4	20	21	583	4.3	132	45	626		8.47	35.50	19650	28.1	8.32	7.50	3.9		
SRT-5s	9/17/09	1043	0.3	Flood	1.6	50	10	134	0.3	5	40	1128	2.9	90	42	591		5.98	35.45	19622	22.2	7.73	6.73	6.3		
SRT-5s	10/22/09	940	1.6	Ebb	1.0	32	24	332	1.6	22	47	1309	1.6	49	34	472		3.64	35.19	19479	17.5	7.75	7.48	33.7		
SRT-5s	11/19/09	918	1.7	Ebb	2.8	86	23	321	23.6	330	54	1529	3.0	93	59	824		5.72	34.98	19362	17.9	7.62	6.55	4.9		
SRT-5s	12/7/09	810	2.0	High	1.0	32	22	308	12.4	174	68	1923	1.8	55	48	666		2.92	34.88	19307	17.4	7.83	6.41	135.4		
SRT-5s	1/4/10	1353	0.0	Low	5.8	181	26	365	25.4	356	58	1637	6.7	207	66	923		19.90	34.70	19207	15.9	7.91	8.19	137.0		
SRT-5s	2/2/10	1310	-0.2	Low	1.1	35	27	375	9.4	132	51	1419	1.6	49	43	599		3.50	34.62	19163	20.3	7.92	9.31	134.6		
SRT-5s	3/10/10	1230	0.7	High	1.3	41	7	93	13.4	188	16	446	1.9	60	36	503		4.49	35.34	19562	24.7	8.16	6.95	89.8		
SRT-5s	4/5/10	930	0.4	High	0.7	21	9	125	9.7	136	43	1212	1.2	38	31	435		3.45	35.17	19468	22.1	8.10	4.95	92.8		
SRT-5s	5/12/10	1210	1.5	Flood	0.5	17	10	141	11.7	164	41	1143	2.1	66	45	632		6.63	34.63	19169	25.2	8.29	6.94	77.0		
SRT-5s	6/21/10	930	1.3	Flood	1.2	39	14	203	15.8	221	82	2315	2.6	80	49	686		6.42	32.75	18128	23.0	7.94	5.56	101.8		
SRT-5s	7/12/10	917	-0.1	Low	2.0	63	8	118	19.6	274	23	644	4.4	135	57	794		7.86	35.00	19373	23.8	7.53	3.72	114.4		
SRT-5s	8/2/10	1150	1.3	Ebb	1.0	32	10	146	26.6	372	39	1103	3.6	112	68	949		7.13	34.84	19285	24.5	7.74	6.94	132.9		
SRT-5s	9/2/10	1028	1.7	Flood	1.6	51	6	81	0.7	10	25	703	3.2	98	34	469		8.15	35.24	19506	25.6	7.99	3.81	93.0		
SRT-5s	10/19/10	1039	1.0	Flood	1.4	44	11	160	13.6	190.0	30	834	4.4	135	57	804		6.04	34.96	19351	23.0	7.81	7.07	40.1		
SRT-5s	11/3/10	919	0.5	Low	0.1	3	9	120	11.4	160.0	33	913	1.6	48	37	517		5.55	34.74	19229	21.2	7.78	6.56	93.1		
SRT-5s	12/6/10	907	0.9	Ebb	1.0	31	7	97	15.8	221.0	31	861	3.0	92	44	622		3.13	34.64	19174	21.4	8.05	6.89	63.0		
SRT-5s	1/26/11	931	0.9	High	2.8	86	13	183	27.3	383.0	31	858	3.3	101	56	778		4.10	34.96	19351	27.0	7.71	5.07	29.8		
SRT-5s	4/13/11	955	0.3	Flood	3.2	98	7	95	55.5	777.1	47	1308	4.6	143	80	1123		5.31	33.38	18477	26.4	7.59	0.53	18.8		
SRT-5s	7/18/11	842	0.8	Ebb	2.9	89	0	6	24.7	346.6	38	1078	7.2	222	66	921		6.81	34.74	19229	22.6	7.15	0.11	27.9		
SRT-5s	10/5/11	930	1.4	Flood	2.5	77	7	98	50.4	706.6	38	1059	4.5	139	82	1142		5.71	35.14	19451	22.6	7.14	1.01	46.2		
SRT-5s	1/17/12	803	0.7	Flood	3.2	100	9	122	55.8	781.8	25	712	5.0	154	89	1243		4.7	34.95	19346	23.2	7.52	0.05	49.0		
SRT-5s	4/19/12	1019	0.3	Flood	4.2	131	0	6	60.5	846.9	16	446	6.1	190	85	1189		6.32	35.21	19490	26.2	7.45	0.02	71.6		
SRT-5s	7/9/12	1140	1.1	Ebb	3.7	116	2	32	39.0	546.7	32	906	3.3	103	98	1376		9.67	35.34	19562	26.7	7.54	0.09	32.8		
SRT-5s	7/16/12	1354	2.1	Flood	3.7	115	14	197	46.7	654.0	42	1180	21.1	652	170	2388		36.20	34.48	19086	27.9	7.76	5.42	50.1		
SRT-5s	9/26/12	1103	1.2	Flood	3.8	118	3	38	47.0	658.6	17	485	17.8	551	148	2073		9.93	35.25	19512	25.2	7.47	5.32	53.0		
SRT-5s	10/8/12	1018	1.7	Flood	2.3	70	4	52	47.1	660.0	23	644	3.9	122	70	984		7.76	35.17	19468	25.0	7.55	7.98	98.1		
SRT-5s	1/3/13	1020	1.2	Ebb	13.2	408	0	7	136.6	1913.0	10	284	15.5	479	167	2337		14.40	35.89	19866	24.5	7.07	0.51	53.7		
SRT-5s	4/1/13	1002	0.4	Ebb	4.4	136	8	106	31.6	442.9	61	1716	5.8	181	69	966		12.90	33.74	18676	23.3	7.51	6.76	81.6		
SRT-5s	7/8/13	926	-0.1	Low	0.5	14	6	78	19.2	269.3	41	1165	2.2	68	73	1024		9.63	34.85	19290	23.9	7.60	7.06	52.7		
SRT-5s	10/10/13	1030	1.8	Ebb	3.0	92	14	191	39.3	550.6	42	1166	5.0	156	83	1165		6.06	34.90	19318	21.8	7.64	7.12	64.0		
SRT-5s	1/22/14	838	0.7	High	13.0	404	10	143	26.5	371.0	37	1028	14.5	449	52	724		1.36	35.03	19390	20.2	7.38	6.90	67.3		
SRT-5s	4/9/14	1031	0.7	Flood	3.2	99	16	227	33.0	462.2	34	960	5.1	158	62	875		7.01	34.99	19368	21.7	7.37	6.62	48.8		
SRT-5s	7/16/14	1035	0.5	Ebb	1.8	57	13	187	47.8	669.4	34	953	3.0	94	72	1008		2.83	34.87	19301	23.1	7.41	6.54	38.5		
SRT-5s	10/15/14	1203	1.5	Ebb	4.4	136	28	386	67.8	949.3	371	10430	5.7	176	110	1545		3.60	35.33	19556	24.5	7.40	5.93	41.2		
SRT-5s	2/3/15	845	0.5	Ebb	16.9	522	175	2446	9.4	132.0	50	1414	8.1	250	0	3		31.20	35.09	19423	22.2	7.25	0.09	30.2		
SRT-5s	5/5/15	1621	2.0	High	13.8	428	73	1023	66.2	927.0	44	1233	14.1	438	176	2462		3.38	34.45	19069	20.9	7.28	6.34	24.7		

NELHA Water Quality Laboratory

Seawater Return Trench 5

6/24/1992 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT-5s	7/10/15	1052	1.4	Flood	5.2	162	20	284	53.0	742.6	49	1362	13.1	404.5	137	1922		5.06	34.66	19185	21.3	7.35	7.01	42.9		
SRT-5s	11/5/15	958	1.4	Flood	6.8	212	22	307	48.6	681.0	55	1550	6.4	197	85	1186		4.34	33.75	18682	20.3	7.38	7.19	10.9		
SRT-5s	1/19/16	946	-0.2	Low	5.0	156	23	325	35.4	495.8	49	1375	5.7	177	90	1254		6.04	34.07	18859	19.7	7.43	6.82	41.6		
SRT-5s	4/12/16	1225	0.1	Low	3.1	95	19	259	41.1	575.8	44	1232	6.5	201	72	1013		9.31	34.88	19307	19.8	7.54	7.10	58.4		
SRT-5s	7/14/16	1105	1.4	Flood	3.3	103	26	361	37.7	527.8	51	1424	4.3	134	80	1125		8.18	34.62	19163	19.0	7.70	8.04	46.5		
SRT-5s	10/20/16	1025	1.3	Ebb	7.6	234	41	579	46.0	644.0	76	2132	8.4	259	121	1699		5.83	35.00	19373	19.5	7.71	7.46	41.6		
SRT-5s	2/23/17	1100	0.6	Flood	3.0	92	8	108	43.4	607.2	9	247	4.0	125	61	848		7.28	34.71	19213	24.3	7.52	5.94	86.7		
SRT-5s	4/10/17	1031	0.0	Flood	3.4	105	12	166	34.0	476.4	30	845	4.0	125	56	787		9.01	35.05	19401	21.2	7.47	6.66	23.5		
SRT-5s	7/13/17	1123	0.2	Low	4.2	130	13	180	65.8	922.2	34	954	8.6	266	108	1516		8.46	35.05	19401	22.6	7.63	5.19	47.4		
SRT-5s	10/12/17	1106	2.0	High	9.0	278	21	294	141.8	1986.0	44	1237	10.2	315	122	1716		10.20	34.51	19102	21.4	7.33	6.19	72.1		
SRT-5s	1/11/18	1141	1.2	High	6.5	202	52	722	71.1	995.3	41	1162	7.7	239	106	1482		6.96	34.12	18886	23.9	7.54	6.28	30.2		
SRT-5s	4/24/18	1109	0.9	Flood	3.0	93	5	67	47.9	671.4	37	1032	3.8	117	69	964		7.18	33.89	18759	24.8	7.55	6.06	40.0		
SRT-5s	7/12/18	1047	0.3	Flood	4.3	134	5	70	46.0	643.7	19	533	4.9	153	68	959		3.80	34.48	19086	25.5	7.63	6.51	68.1		
SRT-5s	10/11/18	1020	0.5	Low	4.2	131	5	73	51.1	715.8	20	564	5.6	172	75	1049		11.30	34.74	19229	26.6	7.43	4.80	82.9		
SRT-5s	1/15/19	1020	1.3	High	5.0	155	3	36	52.4	734.1	10	281	6.1	188	66	929		7.70	35.20	19484	24.2	7.59	6.22	68.6		
SRT-5s	4/25/19	917	0.6	High	4.3	133	3	45	44.5	623.0	25	689	5.3	164	61	857		8.78	34.99	19368	25.3	7.39	6.41	51.0		

NELHA Water Quality Laboratory

Seawater Return Trench 5

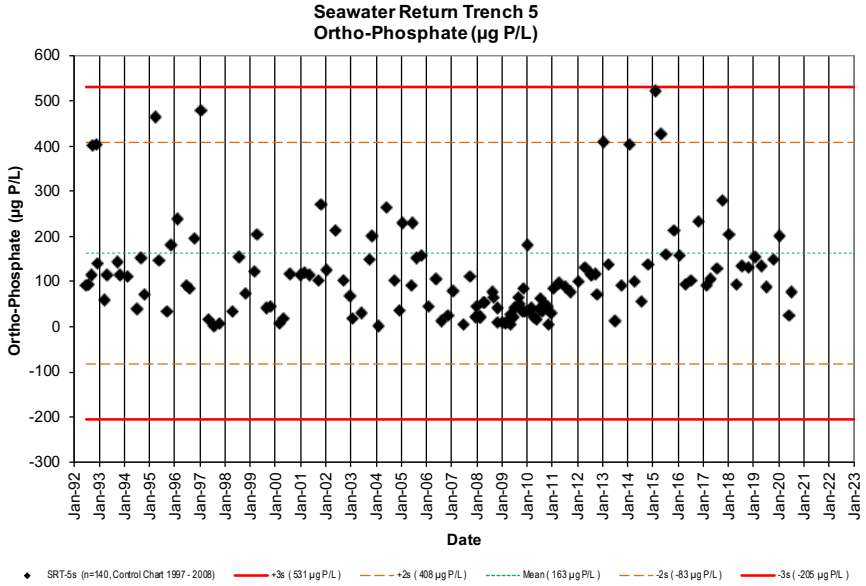
6/24/1992 - 8/4/20

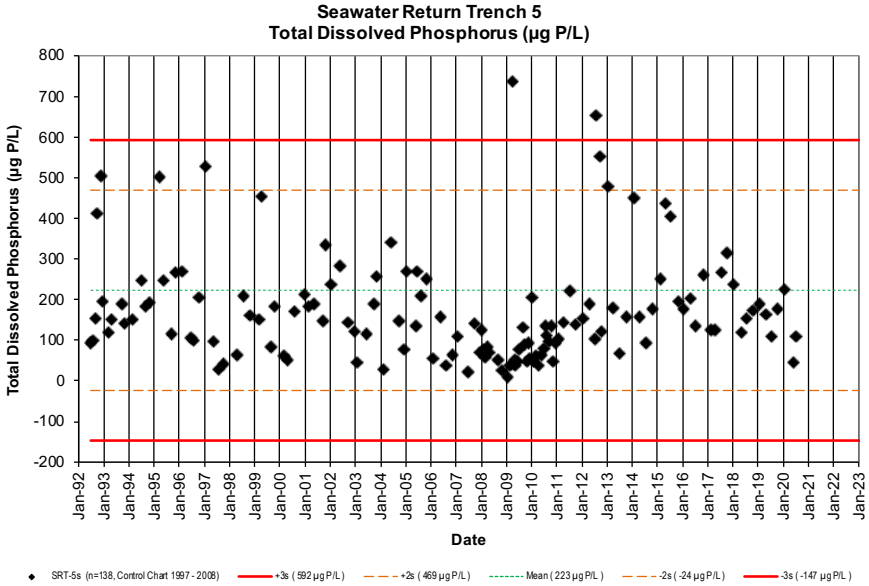
Site ID	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
SRT-5s	7/17/19	1006	0.0	Low	2.9	90	8	118	23.9	334.6	37	1028	3.5	110	37	517		4.04	35.74	19783	22.4	7.74	6.97	32.7		
SRT-5s	10/8/19	1041	1.6	Flood	4.8	148	29	410	38.8	543.6	28	800	5.7	177	81	1141		8.08	34.78	19252	25.9	7.71	7.21	56.5		
SRT-5s	1/9/20	1027	0.4	Low	6.5	200	37	522	45.0	630.0	20	570	7.2	224	95	1328		6.14	34.97	19357	23.0	7.56	6.55	19.6		
SRT-5s	5/21/20	1150	0.7	Flood	0.8	25	7	102	14.0	196.0	23	635	1.4	44.4	35	496		7.44	65.95	36505	25.5	7.81	6.30	148.8		
SRT-5s	7/14/20	1104	0.4	High	2.5	77	21	293	44.2	619.0	17	471	3.5	108	72	1005		7.94	34.20	18931	26.2	7.51	5.98	68.0		
SRT-5s	10/1/20																									
SRT-5s	1/1/21																									
SRT-5s	4/1/21																									
SRT-5s	7/1/21																									
SRT-5s	10/1/21																									
SRT-5s	1/1/22																									
SRT-5s	4/1/22																									
SRT-5s	7/1/22																									
SRT-5s	10/1/22																									
SRT-5s	1/1/23																									
SRT-5s	4/1/23																									
Mean			0.83		3.62	112	28.3	397	21.72	304	58	1623	5.50	170.5	75.3	1055	3.22	5.77	33.8	18721	23.5	7.92	6.50	57.8		
Std. Dev.			1		3.34	103	63.3	886	24.60	345	90	2517	4.19	129.8	71.3	998	1.69	4.77	4.4	2459	2.60	0.37	2.31	50.9		
Maximum			2.10		16.9	522	455	6370	141.8	1986	729	20474	23.8	736	494	6918	11.4	36.2	66.0	36505	28.1	9.09	11.2	218.5		
Minimum			-0.20		0.03	1	0.04	1	0.08	1.12	2.40	67.3	0.3	8.0	0.21	3	0.71	0.17	8.4	4625	13.84	7.07	0.02	0.1		
n			143		140	140	140	140	139	139	140	140	138	138	137	137	60.0	140	142.0	142	145	142	141	142		

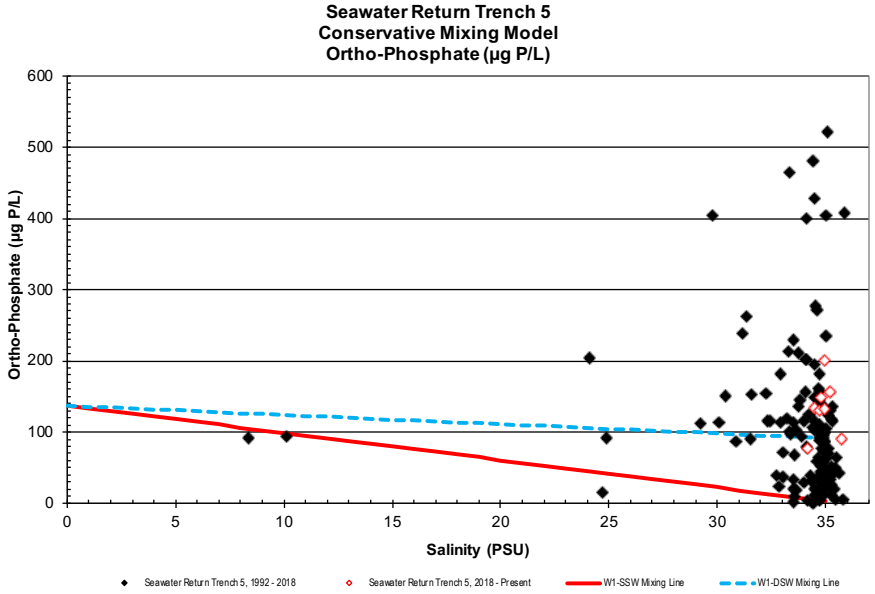
NELHA Water Quality Laboratory

Seawater Return Trench 5 Charts

6/24/1992 - 8/4/20



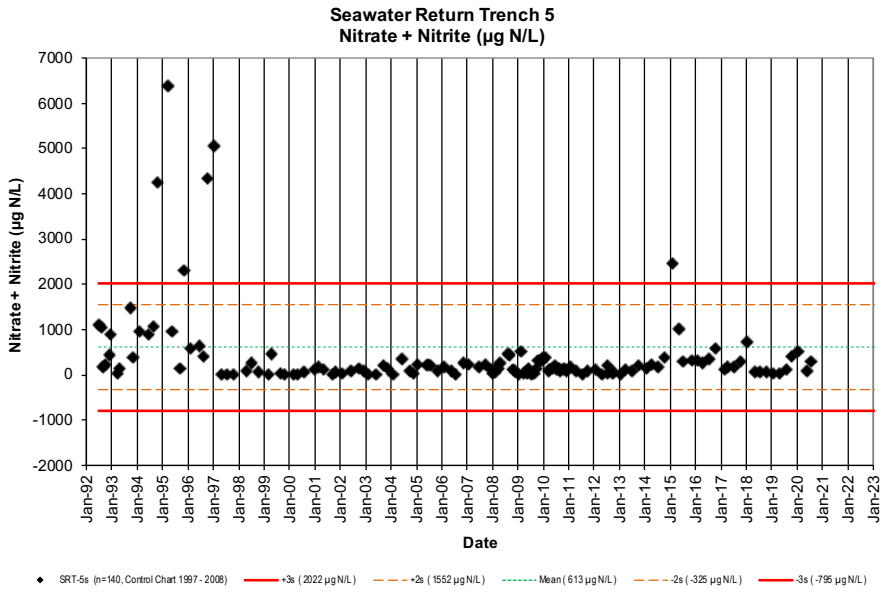


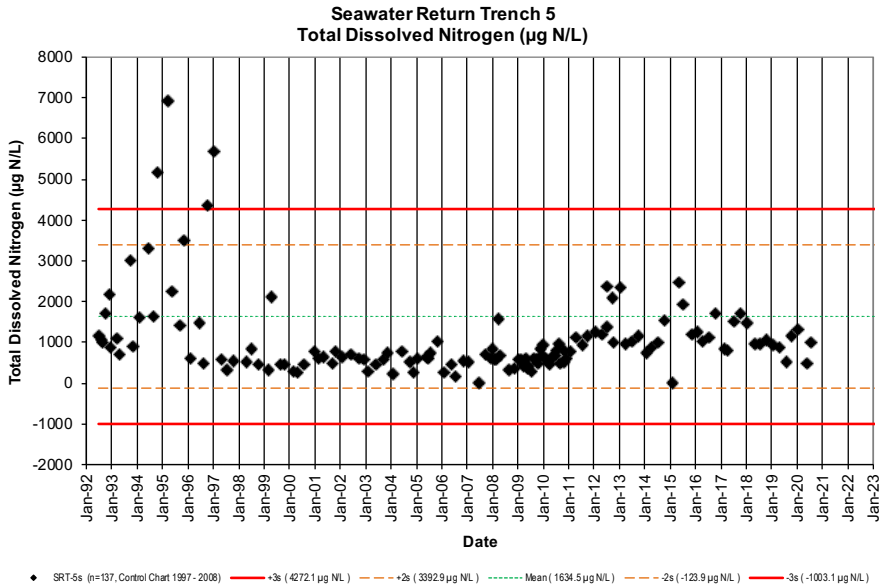


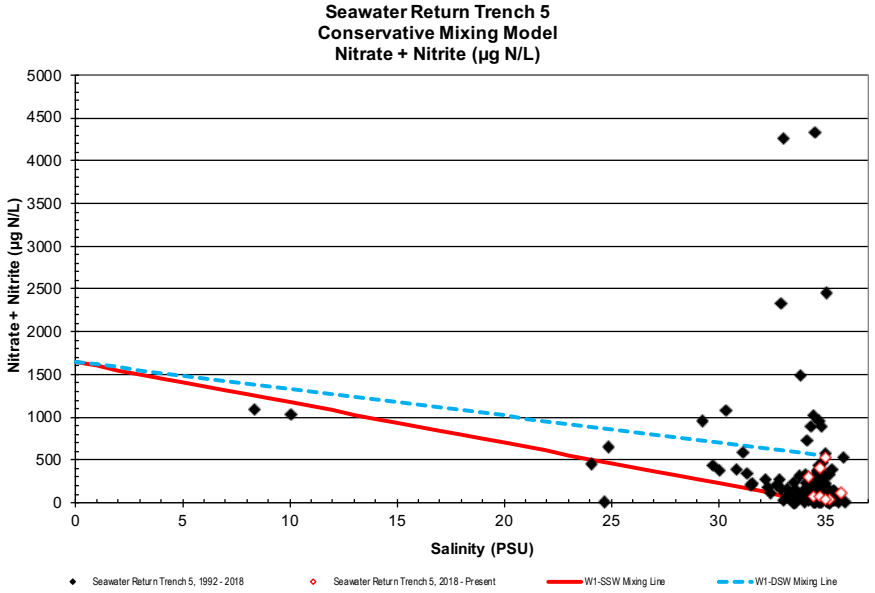
NELHA Water Quality Laboratory

Seawater Return Trench 5 Charts

6/24/1992 - 8/4/20





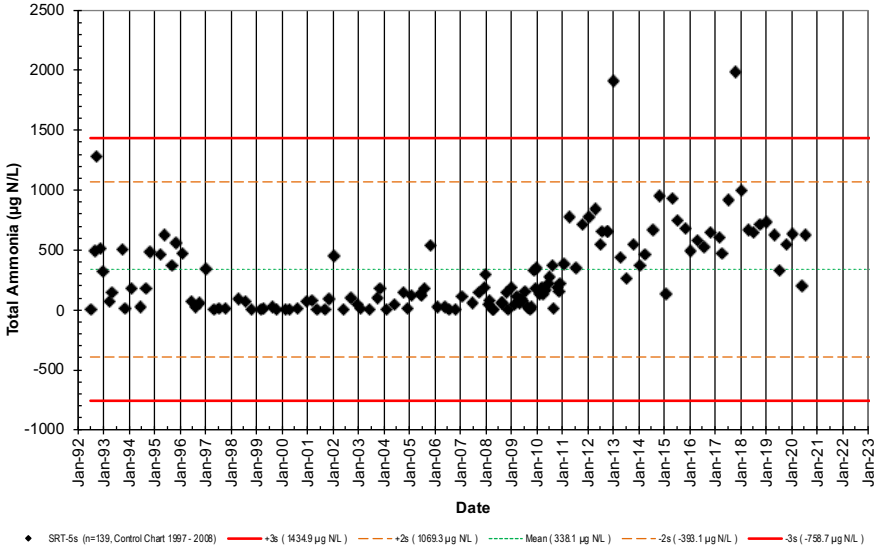


NELHA Water Quality Laboratory

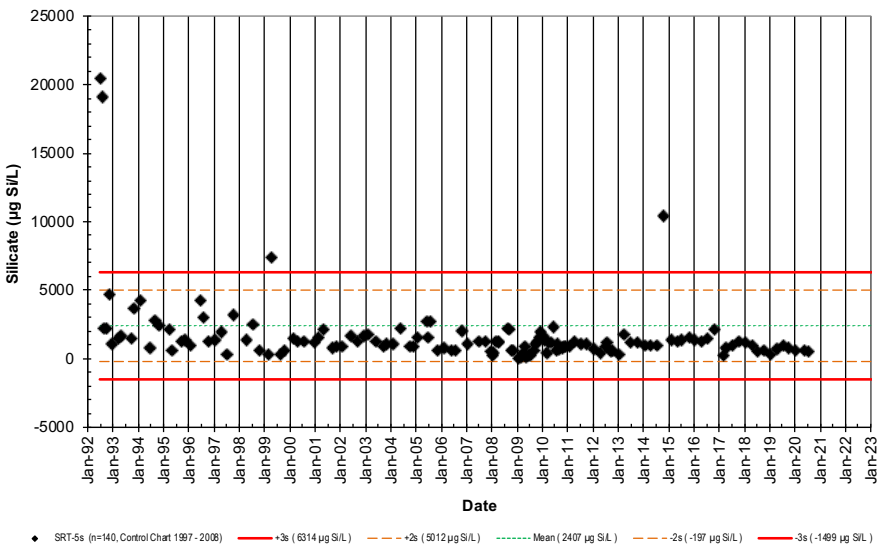
Seawater Return Trench 5 Charts

6/24/1992 - 8/4/20

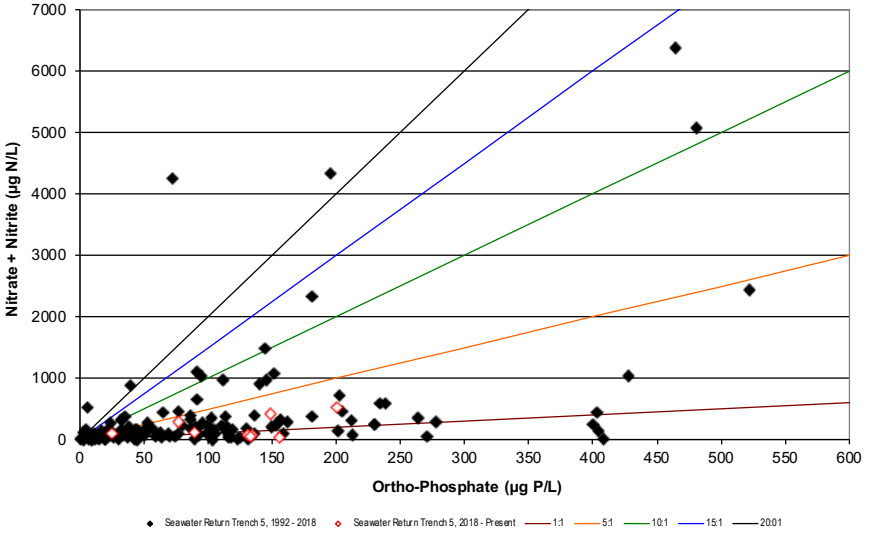
Seawater Return Trench 5
Total Ammonia (µg N/L)



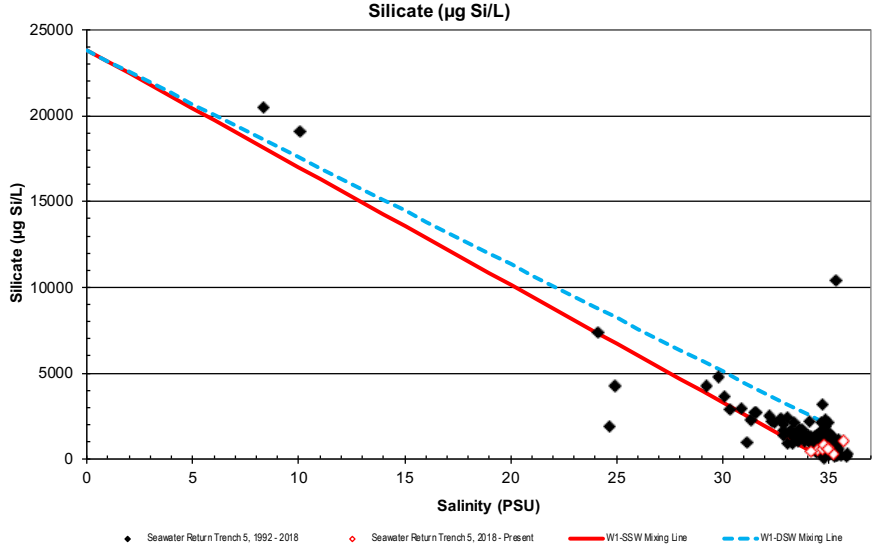
Seawater Return Trench 5
Silicate (µg Si/L)



Seawater Return Trench 5
Nitrate + Nitrite to Ortho-Phosphate Ratio



Seawater Return Trench 5
Conservative Mixing Model
Silicate (µg Si/L)

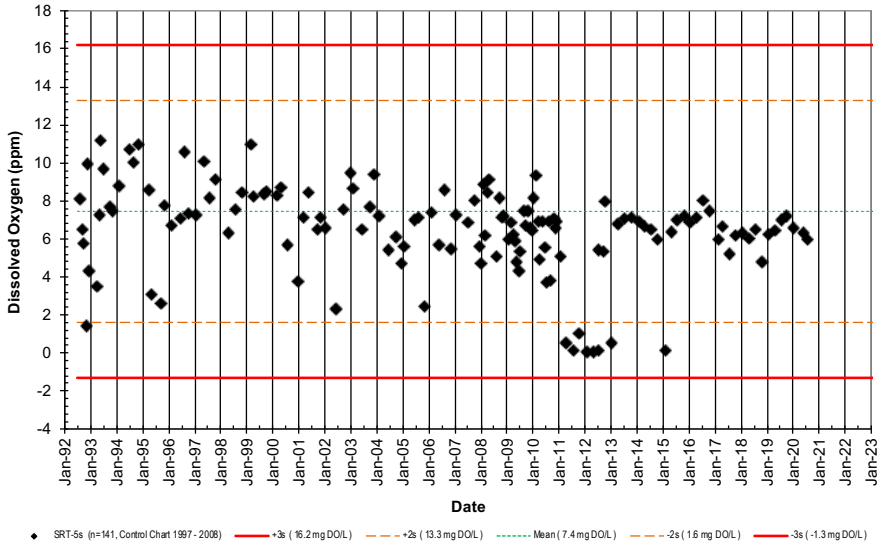


NELHA Water Quality Laboratory

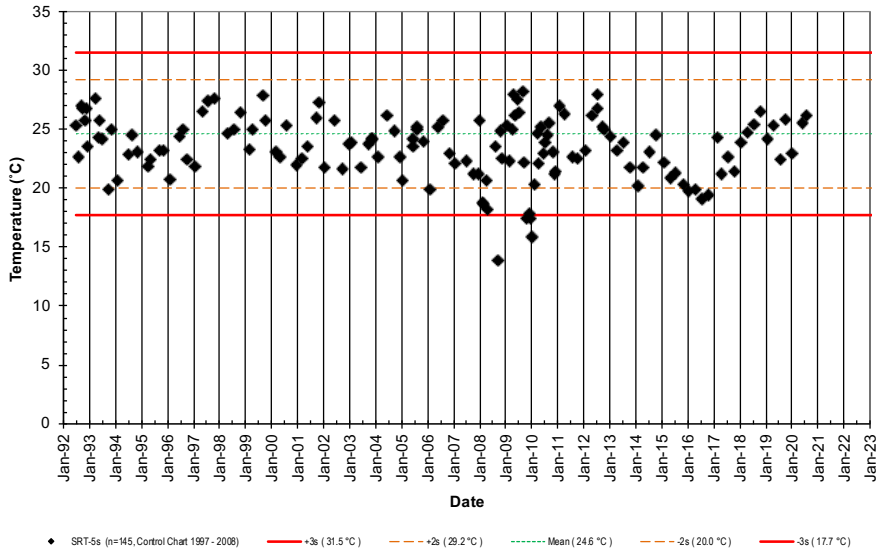
Seawater Return Trench 5 Charts

6/24/1992 - 8/4/20

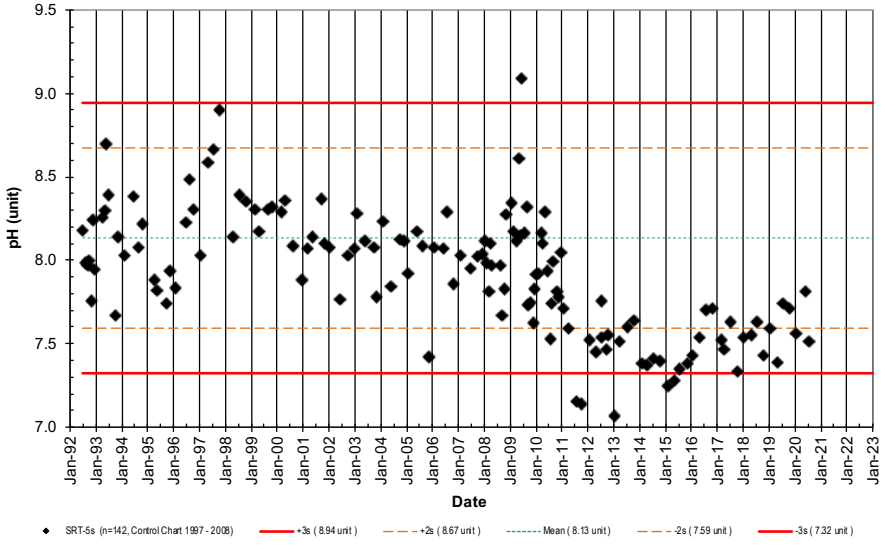
Seawater Return Trench 5
Dissolved Oxygen (ppm)



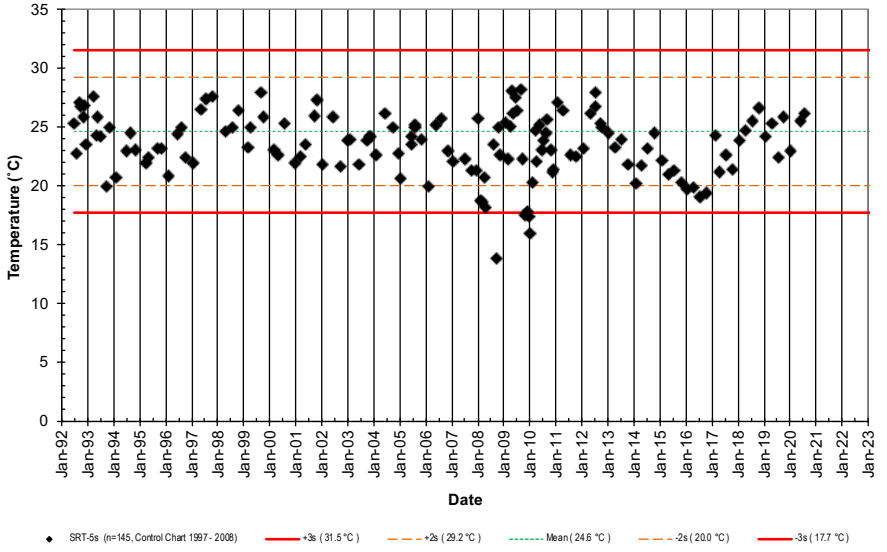
Seawater Return Trench 5
Temperature (˚C)



Seawater Return Trench 5
pH (unit)



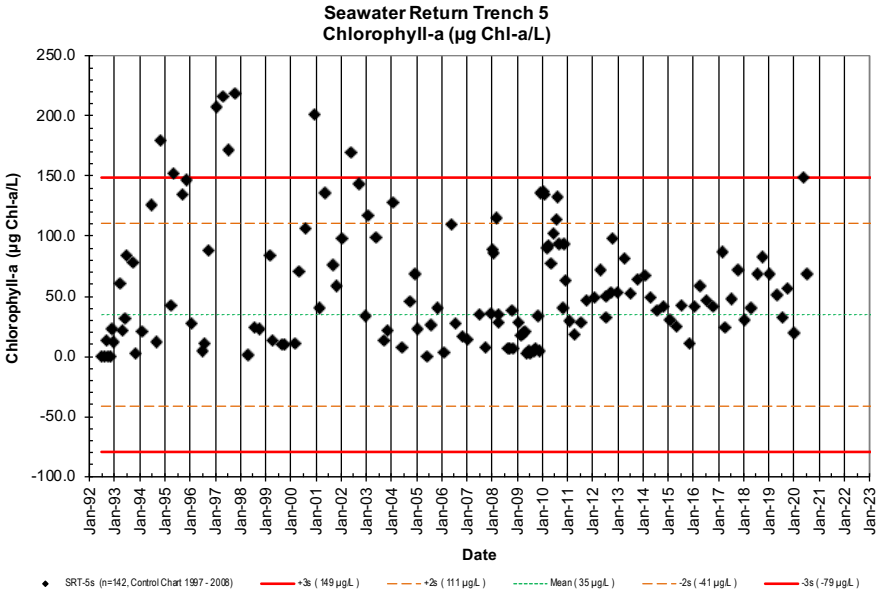
Seawater Return Trench 5
Temperature (˚C)

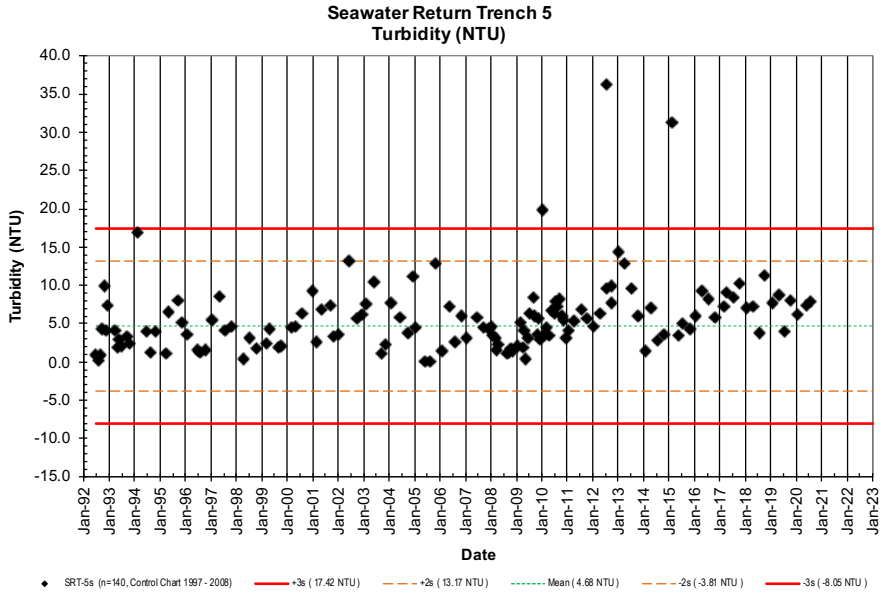


NELHA Water Quality Laboratory

Seawater Return Trench 5 Charts

6/24/1992 - 8/4/20





NELHA Water Quality Laboratory

Anchialine Pond A1

8/31/1993 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A1	8/31/93	1017	0.4	Low	1.7	53	28.5	399	9.6	134	717	20137	2.8	86	2.9	90	63	888	1.84	0.77	12.74	7051	23.9	7.41	2.11	1.93	18	13
A1	10/26/93	1013	0.8	Flood	3.2	98	107.9	1511	1.9	27	666	18705	3.5	107	3.4	105	132	1843	2.93	0.31	10.29	5698	22.7	7.55	6.13	0.11	246	211
A1	2/8/94	919	0.2	Low	1.9	57	24.1	338	4.3	60	533	14970	2.0	61	2.1	64	47	653	2.04	0.28	15.70	8688	22.0	8.07	10.94	1.07	54	164
A1	6/27/94	844	0.8	High	2.6	80	52.6	737	2.2	31	666	18705	2.6	80	2.6	81	62	874	0.71	0.42	11.42	6323	23.2	7.65	7.53	0.63	39	44
A1	7/26/94	1017	0.7	Ebb	2.3	72	52.7	738	1.1	15	569	15982	2.5	78	2.6	80	61	856	0.71	0.21	12.51	6926	23.9	7.68	7.35	0.34	14	9
A1	10/17/94	1101	0.7	Ebb	2.6	79	50.4	706	2.0	28	634	17817	2.7	82	2.8	86	57	797	0.74	0.34	10.95	6063	23.0	7.51	6.85	0.89	<1	9
A1	3/29/95	1019	0.0	Low	2.7	83	51.1	716	2.1	30	618	17354	2.7	85	2.9	90	55	766	0.87	2.70	11.49	6361	22.5	7.46	5.58	21.8	1	169
A1	4/26/95	1155	0.7	Flood	2.5	77	83.9	1175	2.0	28	619	17371	2.7	83	2.8	87	95	1337	2.05	0.74	10.46	5790	26.6	7.92	10.25	1.39	128	34
A1	8/23/95	1129	1.1	Flood	2.4	75	47.1	660	2.2	31	629	17655	2.7	84	2.7	84	54	763	0.84	0.56	11.37	6292	25.4	7.82	10.17	1.36	3	<1
A1	10/17/95	1128	1.7	High	2.7	83	60.9	853	2.5	35	645	18126	2.7	84	2.8	85	58	809	1.08	0.59	10.13	5609	24.2	7.90	6.23	2.06	22	8
A1	2/27/96	1144	0.8	High	3.4	106	82.9	1161	3.4	48	610	17121	3.4	106	3.5	107	79	1103	1.35	0.69	10.68	5910	24.3	7.65	6.80	1.89	7	14
A1	5/8/96	1040	0.4	Ebb	3.3	102	52.8	740	11.8	165	575	16160	3.6	111	4.3	132	71	998	1.67	1.94	11.02	6097	26.8	7.73	9.30	8.57	15	<1
A1	7/17/96	1212	0.5	Flood	2.8	86	30.3	424	1.0	14	582	16342	3.3	103	3.5	108	49	693	2.15	1.62	12.41	6866	31.6	8.17	13.72	2.71	14	5
A1	10/9/96	1111	1.2	Flood	2.8	86	33.3	467	1.2	16	619	17391	3.4	106	3.9	122	53	737	1.62	1.96	11.09	6140	26.5	8.19	13.26	9.97	108	66
A1	1/15/97	1030	1.2	Ebb	2.6	80	80.7	1130	1.6	22	578	16233	2.6	81	2.7	83	90	1266	1.02	0.35	10.42	5766	24.2	8.22	11.77	1.41	9	120
A1	4/30/97	854	0.4	Flood	5.6	172	100.7	1410	4.5	63	502	14098	5.7	178	5.8	178	104	1459	1.25	0.90	10.44	5777	23.0	7.57	5.78	0.57	6	82
A1	7/14/97	1022	1.2	Flood	2.9	88	89.7	1256	2.0	28	590	16570	3.2	99	3.2	100	95	1328	0.52	1.30	10.26	5680	25.4	7.91	9.02	0.44	54	1
A1	10/13/97	1238	1.7	Flood	2.9	89	94.0	1317	2.5	35	594	16694	3.0	94	3.1	96	98	1374	1.23	0.38	10.64	5888	26.0	7.97	8.54	0.49	10	15
A1	3/11/98	1246	0.8	Flood	3.0	94	72.3	1013	2.6	37	597	16775	3.2	100	3.4	104	79	1102	0.77	0.40	11.81	6534	25.4	7.63	7.36	0.63	7	66
A1	6/3/98	1120	1.0	Flood	2.8	86	58.3	817	3.3	46	607	17042	2.9	90	3.0	92	67	944	0.86	0.32	11.26	6231	24.8	7.94	10.55	1.70	33	54
A1	7/15/98	926	1.2	High	3.0	93	58.8	824	2.1	30	594	16682	3.1	97	3.2	99	65	909	0.80	0.56	13.03	7210	23.6	7.87	9.54	0.79	2	9
A1	10/14/98	1006	1.7	Flood	3.3	103	62.0	868	0.1	1	611	17160	3.7	114	3.8	119	75	1044	0.91	0.50	12.43	6881	23.7	7.57	6.18	1.03	6	7
A1	3/3/99	925	0.4	Ebb	2.8	86	34.7	486	7.8	109	510	14324	3.1	95	3.1	97	52	733	1.21	0.55	15.75	8720	22.9	7.76	7.77	0.74	6	11
A1	4/14/99	1138	0.5	Flood	2.8	86	49.9	699	0.8	11	585	16430	2.8	86	2.8	88	52	729	0.84	0.21	13.16	7286	23.1	7.87	9.43	1.32	<1	1
A1	8/24/99	1004	0.7	Flood	2.6	79	42.2	591	19.0	265	732	20556	2.8	87	3.0	94	59	829	0.96	1.36	12.18	6744	23.2	7.37	3.00	2.00	13	5
A1	10/12/99	945	1.0	Ebb	2.7	83	51.6	723	3.0	42	565	15868	2.9	90	2.9	91	58	806	0.80	0.20	13.27	7348	23.0	7.78	7.18	0.27	9	25
A1	3/1/00	948	0.4	Flood	3.6	112	20.1	282	6.2	86	615	17267	4.4	137	4.4	135	37	513	2.00	0.56	13.14	7275	23.0	7.44	3.70	0.21	16	164
A1	4/24/00	1020	0.3	Ebb	3.3	103	23.4	328	8.4	118	584	16413	3.5	109	3.8	116	41	570	1.47	0.96	13.24	7329	26.4	8.06	14.59	0.88	34	1
A1	9/6/00	953	1.7	Flood	2.7	83	57.4	804	1.5	21	610	17124	3.0	92	3.0	93	60	840	0.87	0.20	12.46	6895	24.0	7.77	7.82	0.37	2	11
A1	12/20/00	924	0.8	Flood	3.0	93	61.9	867	2.6	37	622	17466	3.2	99	3.2	98	66	929	1.13	0.20	11.21	6203	22.0	7.59	6.05	0.23	14	10
A1	2/27/01	935	0.7	Ebb	2.7	84	60.6	849	1.6	23	588	16526	2.8	88	2.8	87	64	897	0.90	0.18	12.65	6999	22.1	7.58	5.52	0.13	183	417
A1	5/14/01	1107	0.5	High	3.7	114	37.8	529	3.0	42	599	16823	3.9	119	3.9	119	46	642	1.35	0.61	12.16	6729	27.2	8.03	13.35	2.58	47	12
A1	9/11/01	1025	2.1	High	2.6	81	63.5	889	0.7	9	596	16731	2.8	87	2.9	90	72	1013	0.92	0.24	12.42	6875	23.9	7.73	6.21	0.27	9	11
A1	10/31/01	930	0.4	Low	3.2	99	43.2	605	5.4	76	565	15857	3.5	110	3.7	115	54	763	1.59	0.34	13.86	7672	23.1	7.62	4.93	0.87	27	26
A1	1/15/02	935	0.9	Ebb	2.6	81	62.5	875	1.9	27	538	15096	2.8	86	2.8	85	68	955	1.62	0.22	14.28	7907	22.0	7.65	5.41	0.37	132	74
A1	5/28/02	1355	0.8	Flood	2.8	88	57.5	805	3.7	52	604	16964	3.1	97	3.1	97	63	889	1.26	0.85	12.26	6785	25.3	7.76	8.62	1.15	1	8
A1	9/17/02	1040	1.3	Flood	2.7	84	64.4	903	2.2	30	626	17567	3.0	93	3.0	94	64	892	1.10	0.52	11.29	6251	23.8	7.77	8.71	0.52	1	5
A1	12/16/02	1040	0.6	Flood	2.9	90	47.8	670	0.1	1	582	16349	3.0	94	3.1	95	57	793	0.97	0.28	13.27	7347	23.3	7.68	7.73	0.35	13	10
A1	1/30/03	1350	0.5	Flood	2.7	84	72.5	1015	6.4	90	571	16042	3.0	94	3.0	94	99	1381	1.57	0.54	13.96	7727	25.6	7.74	6.66	1.83	35	158
A1	5/28/03	1105	0.6	Flood	3.2	100	60.7	850	1.9	26	598	16784	3.5	108	3.5	108	76	1062		0.22	11.66	6451	24.2	7.59	6.82	0.68	<100 spreader	609
A1	6/4/03																										22	175
A1	9/18/03	949	1.7	Flood	2.8	87	65.9	923	1.3	18	611	17157	3.2	98	3.2	98	71	1000	2.15	0.17	11.91	6590	23.7	7.73	7.26	1.51	26	18
A1	11/6/03	1008	0.6	Flood	3.7	113	46.2	647	4.9	69	619	17379	3.9	122	4.1	126	59	832	1.59	0.22	12.23	6771	22.9	7.55		0.58	142	119
A1	11/14/03	1026	1.6	Ebb																			23.9		6.10			
A1	1/29/04	945	0.9	Ebb	3.0	93	80.7	1131	3.3	47	591	16584	3.2	98	3.2	98	84	1181	1.38	0.21	11.52	6376	22.0	7.66	5.69	0.53	2	197
A1	6/1/04	1021	0.2	Flood	3.3	103	74.5	1043	2.0	29	595	16697	3.6	110	3.9	120	83	1158	1.92	0.50	11.20	6199	24.0	7.66	6.45	0.17	6	7

NELHA Water Quality Laboratory

Anchialine Pond A1

8/31/1993 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A1	9/29/04	849	0.7	Ebb	2.9	90	57.4	803	1.7	23	563	15804	3.2	100	3.3	103	60	833	0.95	0.21	12.95	7168	23.2	7.76	7.68	0.73	7	237
A1	12/2/04	850	1.9	Ebb	3.2	99	101.4	1420	1.0	15	593	16643	3.3	103	3.3	103	135	1888	0.83	0.20	11.91	6592	22.4	7.86	6.23	0.10	2	87
A1	1/19/05	900	0.5	Low	3.5	107	106.5	1492	2.4	33	585	16424	3.7	113	3.6	112	118	1647	1.34	0.18	12.63	6993	23.0	7.69	5.54	0.26	15	139
A1	5/31/05	854	0.5	Flood	3.4	107	69.6	975	2.8	39	602	16902	3.6	112	3.7	115	75	1046	1.22	0.25	11.18	6187	22.0	7.73	6.70	0.45	1	143
A1	8/2/05	1029	0.7	Flood	4.7	144	1.7	24	69.1	968	430	12071	5.6	174	5.8	180	88	1238	4.66	1.27	10.86	6010	23.9	8.60	3.86	4.39	6	54
A1	8/8/05	854																					23.5				3	53
A1	11/1/05	817	0.8	Ebb	6.8	209	56.2	787	4.7	65	538	15116	7.2	222	7.3	227	67	944	1.49	0.34	12.72	7042	22.9	7.87	3.17	0.93	76	350
A1	1/30/06	832	1.0	Ebb	4.5	139	64.5	903	1.0	14	479	13453	4.7	145	4.7	147	72	1014	1.13	0.37	15.82	8756	22.2	7.84	4.65	0.08	27	256
A1	5/25/06	1107	0.5	Flood	4.3	134	70.3	985	3.6	51	591	16599	4.6	143	4.7	146	68	949	0.81	1.09	11.84	6555	22.5	7.70	3.97	1.51	4	3
A1	7/27/06	949	0.3	Ebb	4.1	126	36.8	515	3.3	46	567	15924	4.4	136	4.4	136	41	572	1.32	0.38	13.39	7414	23.0	7.82	5.58	0.42	21	19
A1	10/31/06	1015	1.7	Flood	6.5	201	97.3	1363	0.5	8	531	14913	6.8	209	7.0	218	103	1445	0.94	0.25	11.86	6567	23.2	7.86	3.59	0.30	3	15
A1	1/17/07	957	0.2	Low	5.2	162	81.3	1139	4.5	64	515	14464	5.6	173	5.6	173	84	1170	1.45	0.41	13.84	7662	21.8	7.74	4.12	0.57	13	69
A1	6/26/07	1004	0.8	Flood	4.1	126	78.2	1096	1.1	15	364	10236	4.9	152			86	1210		0.20	12.46	6897	23.1	7.62	7.81	0.15	2	21
A1	9/24/07	1403	2.0	Flood	4.2	131	84.8	1188	1.5	21	657	18466	4.1	127			90	1261		0.11	16.27	9006	24.6	8.25	6.91	0.15		
A1	12/11/07	1038	0.8	Ebb	39.2	1215	611.4	8563	73.9	1035	361	10151	42.1	1305			942	13199		2.27	8.57	4744	22.8	9.25	2.46	7.56		
A1	1/29/08	1049	0.6	Ebb	6.4	197	48.2	676	3.0	42	329	9246	7.3	227			63	889		n/a	11.52	6377	20.4	8.01	8.30	3.26		
A1	2/28/08	1005	0.4	Ebb	3.1	98	42.5	596	3.0	42	298	8377	4.9	152			80	1120		3.81	11.31	6260	21.6	8.08	4.76	4.69		
A1	2/28/08	2312	1.6	High	5.7	177	102.5	1436	1.4	20	559	15711	5.2	161			104	1451		0.31	10.83	5995	21.7	7.97	4.21	0.85		
A1	4/2/08	1010	0.2	Flood	4.3	133	58.0	812	2.3	32	577	16201	2.6	80			125	1752		0.98	11.93	6604	22.0	6.75	3.91	1.61		
A1	4/16/08	1340	1.3	Flood	4.1	127	73.8	1033	0.2	3	565	15867	3.5	110			80	1118		0.33	12.95	7168	22.5	7.75	5.86	1.97		
A1	5/23/08	1012	No Water																									
A1	6/12/08	1009	0.9	Flood	2.8	87	83.4	1168	0.7	10	762	21400	2.8	86			87	1224			11.07	6128	22.5	7.41	6.22	0.67		
A1	7/18/08	1002	-0.1	Low	3.0	93	68.6	961	2.8	40	606	17024	3.6	112			97	1357			11.67	6460	22.1	7.36	2.15			
A1	8/13/08	1039	0.8	Flood	2.9	90	64.4	902	1.8	26	531	14903								0.80	11.46	6343	23.0	7.48	6.06	2.48		
A1	9/4/08	1119	1.1	Ebb	2.4	76	61.1	856	1.7	24	499	14013	3.2	99			91	1277		2.59	12.89	7135	23.7	7.69	4.56	3.69		
A1	10/20/08	955	2.2	High	4.3	132	124.6	1746	0.3	4	496	13934								0.21	13.36	7395	22.7	7.58		10.71		
A1	11/6/08	1022	1.8	High	4.5	139	120.7	1690	1.8	25	523	14696	4.8	149			132	1852		0.74	11.38	6299	22.4	7.86	4.16	1.13		
A1	1/2/08	1032	1.0	Ebb	3.9	120	119.2	1669	2.9	40	524	14718	4.4	135			108	1518		0.21	12.91	7146	22.9	7.94	6.85	2.38		
A1	1/12/09	1013	0.6	Ebb	4.3	134	158.8	2224	2.5	35	566	15896	0.6	18			160	2245		2.17	12.59	6969	21.7	7.80	4.07	1.99		
A1	2/20/09	921	0.3	Low	3.9	122	79.9	1120	5.5	76	539	15127	2.9	90			95	1330		2.95	12.29	6803	21.4	7.35	2.64	1.28		
A1	3/30/09	1428	0.3	Flood	2.8	86	92.4	1294	0.4	6	424	11910	4.0	123			102	1424		0.49	11.7	6476	22.7	7.78	6.13	0.48		
A1	4/27/09	1504	1.0	Flood	3.4	107	95.7	1340	1.0	14	539	15127	4.3	134			92	1295		0.54	13.58	7517	23.0	7.87	5.96	0.05		
A1	5/14/09	1401	0.6	Flood	3.8	117	70.6	989	4.1	58	538	15120	4.0	125			71	997		2.19	12.02	6653	27.8	8.30	9.03	1.10		
A1	6/10/09	808	0.3	Ebb	2.6	81	31.5	441	6.2	87	471	13238	2.8	87			51	719		3.3	13.28	7351	23.3	7.50	7.48	0.31		
A1	7/10/09	749	0.6	Ebb	1.2	39	21.6	303	3.8	54	266	7477	2.3	71			31	431		3.93	12.69	7024	22.6	7.41	8.84	0.64		
A1	8/27/09	923	1.7	Flood	2.3	73	52.4	734	0.9	13	282	7913	3.0	93			52	731		0.10	12.94	7163	22.9	7.88	5.20	0.29		
A1	9/17/09	1102	1.0	Flood	3.7	113	95.5	1338	1.3	18	370	10393	3.4	107			101	1415		0.46	11.94	6609	22.8	7.35	5.25	1.05		
A1	10/22/09	840	2.0	Ebb	2.9	89	55.3	775	0.7	10	106	2975	2.7	83			58	807		5.1	13.25	7334	22.8	7.76	5.37	1.04		
A1	11/19/09	829	1.7	Ebb	4.0	125	92.2	1292	1.7	24	406	11407	3.8	118			97	1362		0.96	14.2	7860	22.3	7.54	5.25	0.72		
A1	12/7/09	842	2.0	High	4.0	123	104.0	1456	0.9	12	435	12210	3.8	118			107	1502		0.14	13.13	7268	22.1	7.95	6.31	0.60		
A1	1/4/10	1451	0.0	Low	4.7	147	107.9	1512	0.8	12	525	14745	4.3	134			114	1590		0.24	14.27	7899	22.8	8.20	8.21	0.15		
A1	2/2/10	1407	-0.2	Low	4.4	136	129.5	1814	1.5	21	469	13172	4.7	147			131	1828		0.27	15.83	8762	22.3	8.29	5.53	0.28		
A1	3/10/10	1325	0.7	High	4.1	126	100.3	1405	0.6	9	375	10534	4.0	124			104	1461		0.26	12.41	6869	22.6	8.11	8.10	0.48		
A1	4/5/10	1010	0.4	High	4.5	139	99.4	1393	0.9	13	598	16807	4.2	129			102	1423		0.13	12.42	6875	23.1	8.24	7.10	0.11		
A1	5/12/10	1309	1.5	Flood	4.1	128	95.7	1340	0.4	5	578	16222	3.7	116			93	1307		0.24	14.22	7871	26.5	8.44	7.40	0.04		
A1	6/21/10	1032	1.3	Flood	3.7	114	97.4	1365	1.5	21	605	16988	4.0	123			104	1459		0.18	12.36	6842	24.9	8.23	7.50	0.23		

NELHA Water Quality Laboratory

Anchialine Pond A1

8/31/1993 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A1	7/12/10	1023	-0.1	Low	4.0	124	111.6	1563	0.9	13	575	16147	3.9	122			117	1636		0.31	15.57	8618	24.2	8.01	5.93	0.22		
A1	8/2/10	1231	1.3	Ebb	3.8	117	105.7	1481	2.0	27	605	16985	3.7	116			113	1579		0.54	12.78	7074	26.5	8.17	7.50	0.21		
A1	9/2/10	1158	1.9	Flood	3.7	116	108.0	1512	1.7	23	574	16126	3.6	111			114	1598		0.25	12.69	7024	27.0	8.30	7.28	0.12		
A1	10/19/10	1132	1.2	Flood	3.8	118	119.9	1679	1.1	15	593	16661	3.8	119			121	1693		0.27	12.56	6952	25.3	8.31	7.01	0.10		
A1	11/3/10	1011	0.7	Flood	4.0	123	118.0	1653	1.2	18	555	15577	4.0	124			127	1778		0.39	13.66	7561	24.1	8.36	6.97	0.34		
A1	12/6/10	953	0.3	Ebb	4.1	126	100.9	1413	1.2	18	563	15806	3.8	119			107	1503		0.18	15.79	8740	22.3	8.01	5.48	0.17		
A1	1/26/11	1028	0.8	Ebb	5.1	157	137.3	1923	1.5	21	551	15462	4.8	149			140	1955		0.14	12.33	6825	22.4	8.15	6.11	0.25		
A1	4/13/11	1030	0.4	Flood	3.7	116	104.0	1457	1.0	14	612	17177	3.7	115			106	1488		0.43	12.43	6880	24.4	8.45	7.55	0.27		
A1	7/18/11	952	0.5	Ebb	4.2	129	94.7	1327	0.7	10	584	16413	4.5	141			99	1387		0.11	13.85	7666	22.7	7.76	6.69	0.02		
A1	10/5/11	1003	1.6	Flood	3.6	112	89.7	1256	1.0	15	585	16429	3.7	115			92	1289		0.09	12.31	6814	23.6	8.04	6.70	0.10		
A1	1/17/12	838	0.7	Flood	3.9	120	97.0	1359	0.8	11	602	16905	3.7	114			100	1404		0.20	12.84	7107	22.4	7.95	6.88	0.10		
A1	4/19/12	1053	0.3	Flood	3.6	110	81.9	1147	1.1	16	605	16994	3.7	115			89	1249		0.13	13.3	7362	23.6	8.20	7.51	0.10		
A1	7/9/12	1128	1.1	Ebb	4.0	123	97.1	1360	0.7	10	575	16152	3.8	119			99	1392		0.05	13.71	7589	23.2	7.91	7.84	0.01		
A1	10/8/12	1055	1.8	High	3.9	122	94.9	1329	1.0	14	600	16841	4.0	123			100	1402		0.18	11.99	6637	24.6	8.00	7.60	0.14		
A1	1/3/13	1051	1.0	Ebb	4.2	130	97.0	1358	1.5	22	576	16173	4.2	131			104	1461		0.13	13.33	7379	22.4	8.07	6.05	0.06		
A1	4/1/13	1039	0.4	Ebb	3.8	118	85.4	1196	1.0	14	557	15649	3.8	117			89	1241		0.27	12.28	6797	22.8	8.12	7.65	0.05		
A1	7/8/13	1004	-0.1	low	3.5	108	88.2	1236	2.5	36	579	16255	3.5	109			103	1441		0.17	13.67	7567	23.7	8.25	9.05	0.03		
A1	10/10/13	1126	1.6	Ebb	3.5	108	77.8	1090	1.0	15	559	15695	3.2	99			74	1035		0.12	13.2	7307	25.2	8.15	9.61	0.10		
A1	1/22/14	916	0.7	High	3.8	117	95.3	1335	1.4	20	596	16746	3.6	113			99	1380		0.02	12.02	6653	22.0	8.01	6.23	0.62		
A1	4/9/14	1126	0.7	Flood	3.2	100	86.7	1214	2.3	32	511	14352	3.3	103			99	1390		0.47	11.24	6222	24.5	8.59	9.92	0.90		
A1	7/16/14	1118	0.5	Ebb	3.4	104	80.6	1129	0.9	13	504	14160	3.3	102			83	1158		0.53	13.72	7594	23.7	8.10	7.75	0.41		
A1	10/15/14	1134	1.5	Ebb	3.3	101	84.7	1187	0.9	13	529	14856	2.1	64			94	1311		0.3	12.96	7174	25.3	8.04	6.85	0.12		
A1	2/3/15	826	0.5	Ebb	4.6	144	116.9	1638	1.4	20	593	16661	5.2	160			117	1641		0.33	13.86	7672	22.5	8.06	5.68	0.18		
A1	5/5/15	1646	2.0	High	4.0	123	97.0	1358	0.8	11	429	12052	2.4	76			96	1352		0.37	14.81	8198	23.9	8.25	8.26	0.19		
A1	7/10/15	1007	1.4	Flood	3.2	100	72.6	1017	0.7	9.4	520	14605	1.8	54.6			80	1124		0.32	12.68	7019	23.6	8.10	8.19	0.23		
A1	11/5/15	1100	1.6	High	4.3	133	134.5	1884	1.1	16	521	14633	4.5	139			111	1551		0.51	12.07	6681	23.9	8.44	10.72	0.20		
A1	1/19/16	900	-0.2	Low	4.8	148	114.8	1608	0.8	11	511	14363	4.5	139			108	1517		0.26	12.04	6664	22.4	8.03	6.35	0.30		
A1	4/12/16	1039	0.4	Ebb	4.7	146	89.0	1247	0.6	8	511	14344	5.0	154			80	1127		0.1	13.57	7511	23.9	8.22	8.61	0.12		
A1	7/14/16	1034	1.4	Flood	3.7	113	78.0	1093	1.4	20	523	14690	3.8	117			95	1333		0.56	12.07	6681	24.3	8.42	10.10	0.36		
A1	10/20/16	924	1.5	Ebb	7.3	225	162.1	2271	1.6	22	899	25256	7.7	239			171	2391		0.32	14.07	7788	23.5	8.05	4.63	0.24		
A1	2/23/17	1118	0.6	Flood	4.6	142	104.5	1463	1.0	14	528	14824	4.7	146			107	1495		0.31	13.70	7583	24.6	8.09	13.16	0.31		
A1	4/10/17	1123	0.2	Flood	3.9	122	93.7	1312	0.6	9	549	15431	4.1	128			97	1365		0.32	12.67	7013	26.3	8.21	7.45	0.44		
A1	7/13/17	945	0.4	Ebb	3.9	119	89.5	1254	0.4	6	551	15470	3.7	115			92	1286		0.09	13.46	7450	23.7	7.99	6.45	0.02		
A1	10/12/17	932	2.0	High	4.2	129	104.3	1461	1.0	15	558	15670	4.0	125			107	1505		0.17	16.12	8923	23.5	7.97	7.24	0.01		
A1	1/11/18	950	1.0	Flood	4.0	123	102.7	1438	0.7	9	530	14875	4.3	132			104	1461		0.12	13.18	7295	22.5	8.16	6.21	0.02		
A1	4/24/18	955	0.7	Flood	4.5	139	119.6	1676	0.9	13	541	15195	4.6	142			122	1715		0.21	12.52	6930	23.8	8.45	9.30	0.24		
A1	7/12/18	1133	0.5	Flood	5.4	166	112.6	1578	1.0	13	450	12646	5.7	178			124	1732		0.13	14.44	7993	24.2	8.27	8.93	1.90		
A1	10/11/18	1100	0.4	Low	3.9	119	92.7	1299	0.4	6	477	13402	4.0	123			97	1357		0.1	15.46	8558	23.9	8.00	5.90	0.10		
A1	1/15/19	1107	1.2	High	4.3	132	96.7	1354	0.8	12	538	15097	4.3	134			96	1347		0.13	12.47	6902	22.9	8.15	7.69	0.15		
A1	4/25/19	1030	0.3	Ebb	4.7	145	117.6	1648	0.1	2	557	15632	4.4	137			110	1547		0.09	14.23	7877	24.0	8.06	7.24	0.05		
A1	7/17/19	1107	0.1	Flood	4.6	142	95.1	1332	0.4	6	518	14553	4.2	131			96	1350		0.14	15.9	8801	25.0	8.40	11.90	0.14		
A1	10/8/19	1409	1.9	High	4.4	136	130.9	1833	1.1	15	562	15782	4.1	127			138	1928		0.34	16.19	8962	22.9	8.39	8.67	0.09		
A1	1/9/20	1115	0.5	Low	4.3	133	106.8	1496	1.3	18	488	13716	4.2	130.9			111	1552		0.16	18.87	10445	23.8	7.99	8.82	0.04		
A1	5/21/20	1209	0.7	Flood	3.9	121	91.6	1283	0.48	7	525	14750	4.00	124			97.8	1369		0.17	13.99	7744	23.9	8.06	8.87	0.08		

NELHA Water Quality Laboratory

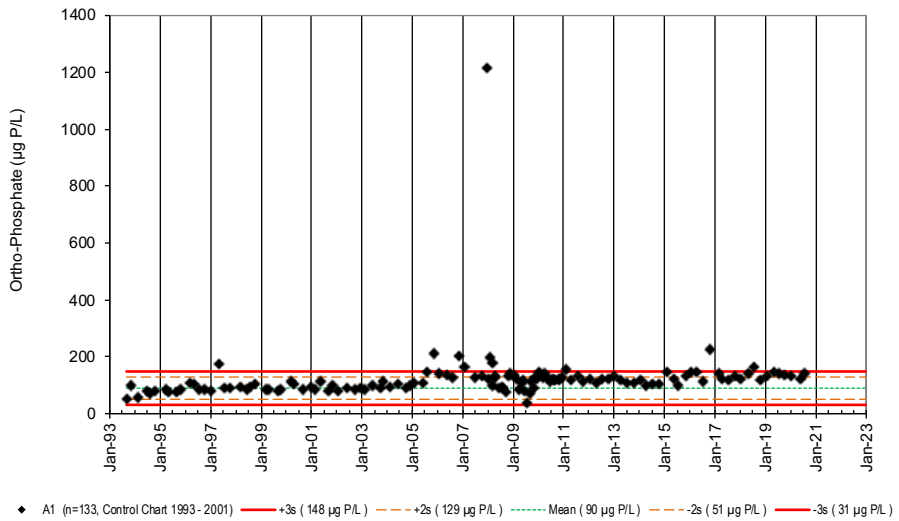
Anchialine Pond A1

8/31/1993 - 8/4/20

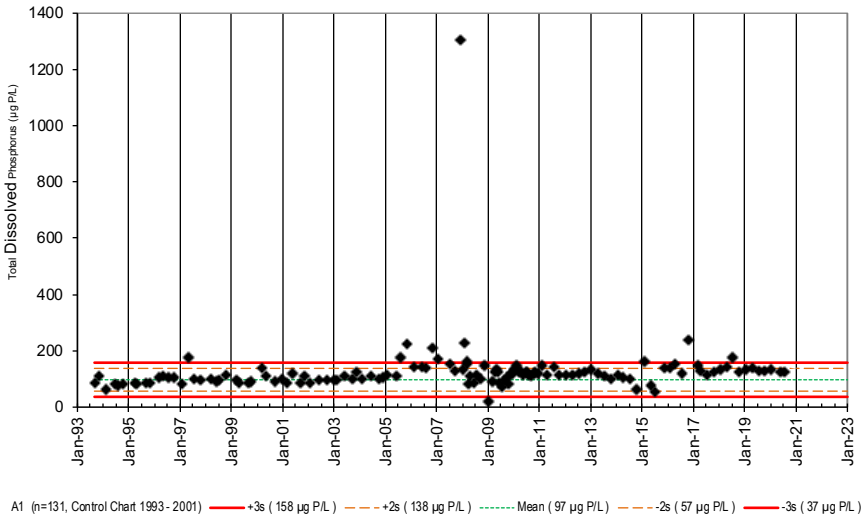
Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	(2400)	(ft)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A1	7/14/20	1140	0.4	High	4.6	142	102.9	1441	0.9	13	546	15340	4.0	124			102	1427		0.22	13	7196	24.8	8.11	10.95	0.13		
A1	10/1/20																											
A1	1/1/21																											
A1	4/1/21																											
A1	7/1/21																											
A1	10/1/21																											
A1	1/1/22																											
A1	4/1/22																											
A1	7/1/22																											
A1	10/1/22																											
A1	1/1/23																											
A1	4/1/23																											
Mean			0.87		3.92	122	84.2	1180	3.22	45	550	15460	4.04	125.1	3.6	111	94.6	1324	1.33	0.61	12.75	7058	23.6	7.92	7.12	1.15		
Std. Dev.			1		3.23	100	54.6	765	8.80	123	93	2625	3.51	108.7	1.1	33	79.0	1107	0.66	0.84	1.52	842	1.51	0.33	2.35	2.49		
Maximum			2.20		39.2	1215	611	8563	73.9	1035	899	25256	42.1	1305	7	227	942	13199	4.7	5.1	18.87	10445	31.6	9.25	14.6	21.8		
Minimum			-0.20		1.25	39	1.68	24	0.05	0.7	106	2975	0.6	18.4	2.07	64.1	31	431	0.52	0.02	8.57	4744	20.40	6.75	2.11	0.01		
n			134		133	133	133	133	133	133	133	133	131	131	55	55	131	131	54.0	130	133	133	135	133	132	132		

NELHA Water Quality Laboratory
Anchialine Pond A1 Charts
8/31/1993 - 8/4/20

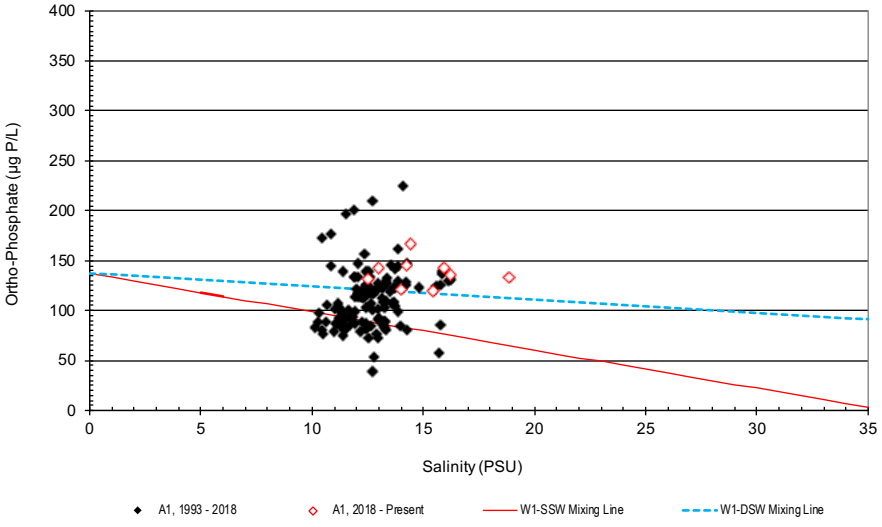
Anchialine Pond A1
Ortho-Phosphate



Anchialine Pond A1
Total Dissolved Phosphorus (µg P/L)

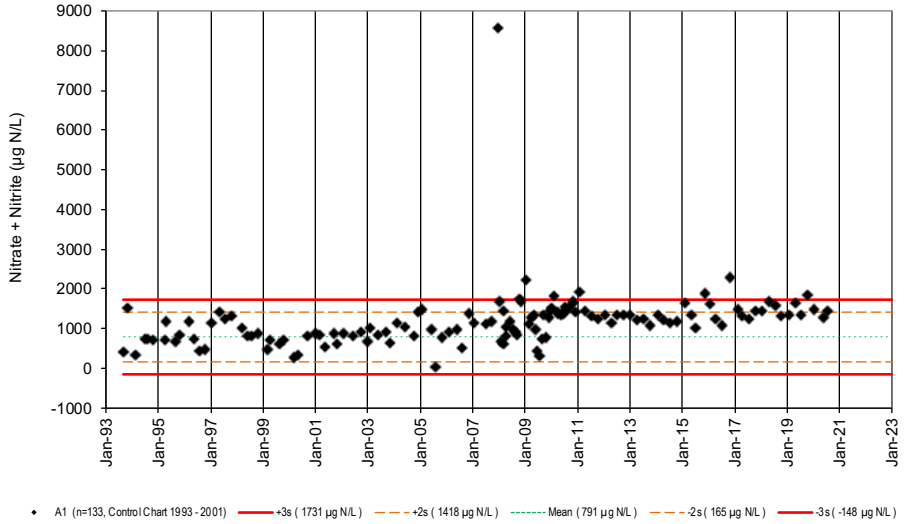


Anchialine Pond A1
Conservative Mixing Model
Ortho-Phosphate (µg P/L)

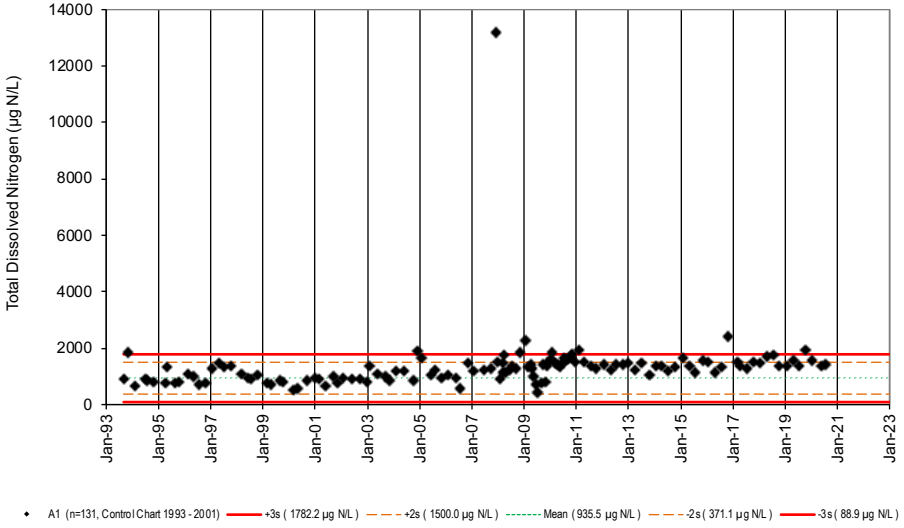


NELHA Water Quality Laboratory
Anchialine Pond A1 Charts
8/31/1993 - 8/4/20

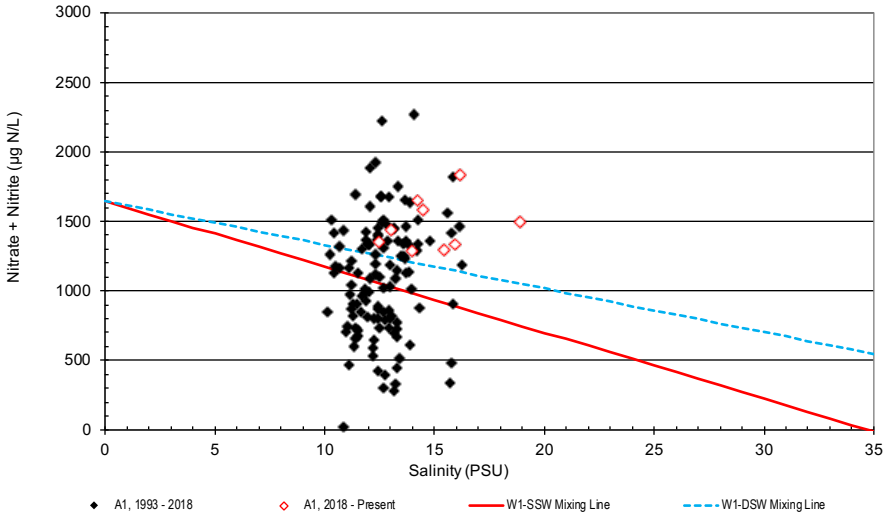
Anchialine Pond A1
Nitrate + Nitrite (µg N/L)



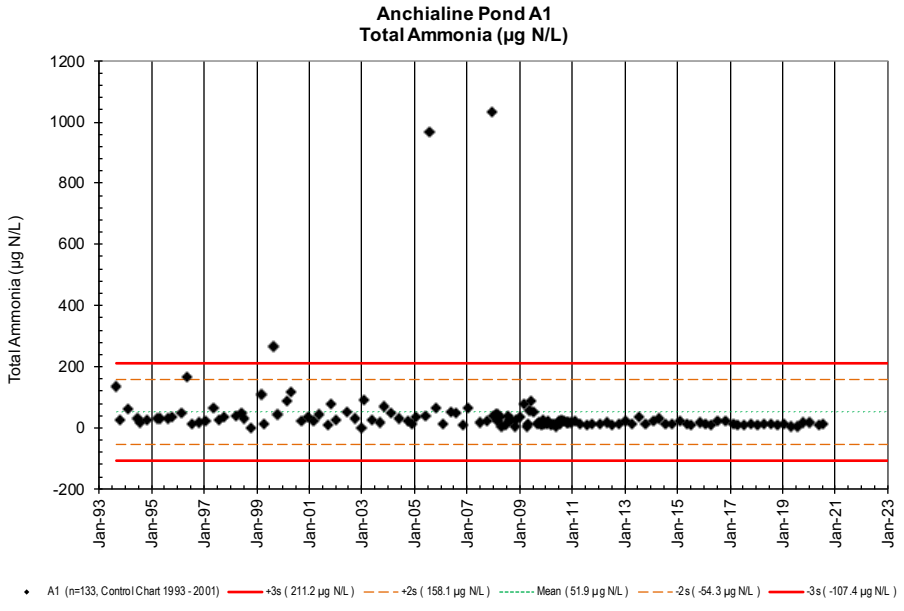
Anchialine Pond A1
Total Dissolved Nitrogen (µg N/L)

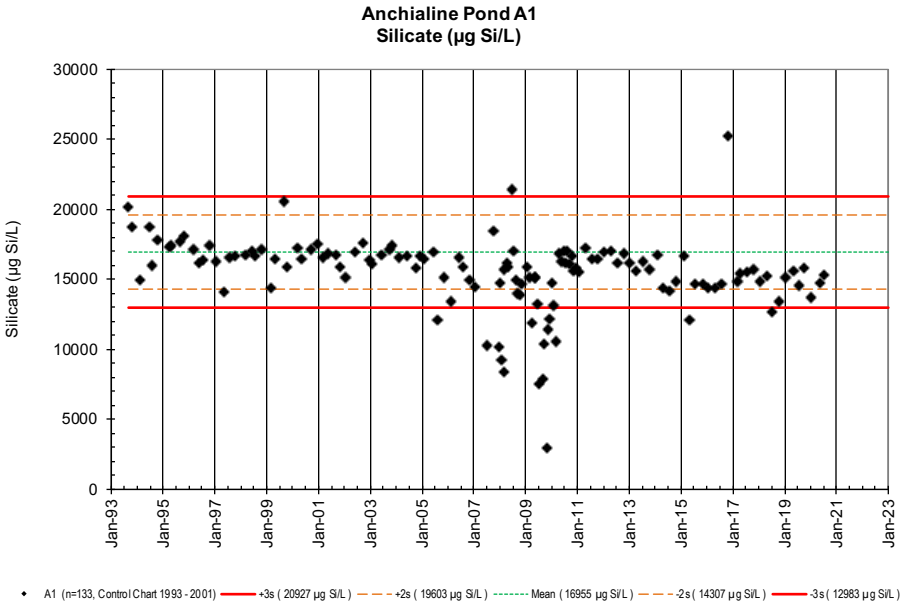


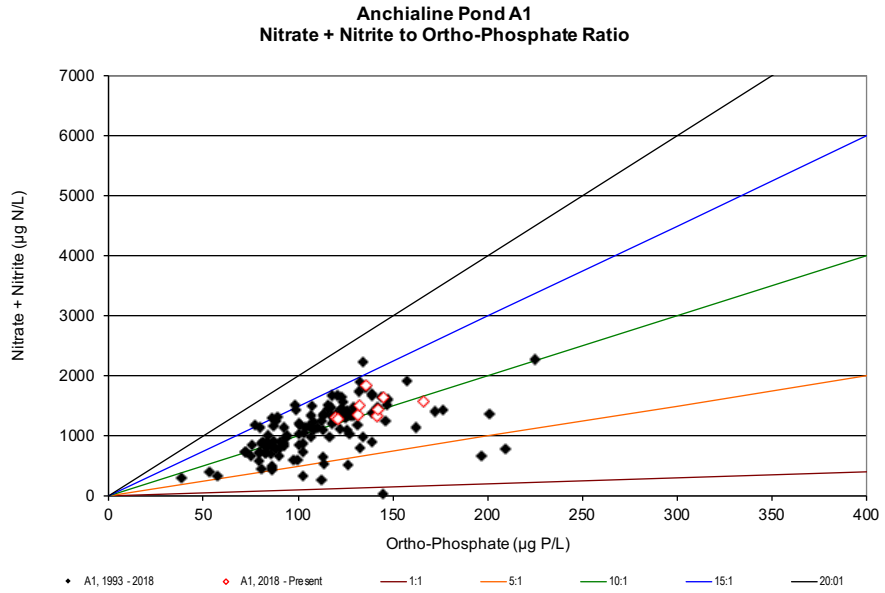
Anchialine Pond A1
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)

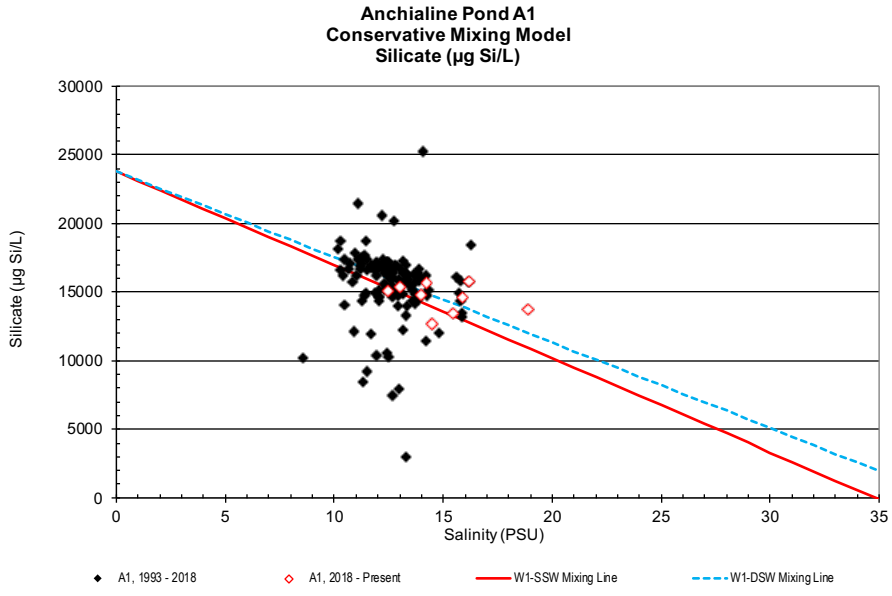


NELHA Water Quality Laboratory
Anchialine Pond A1 Charts
8/31/1993 - 8/4/20

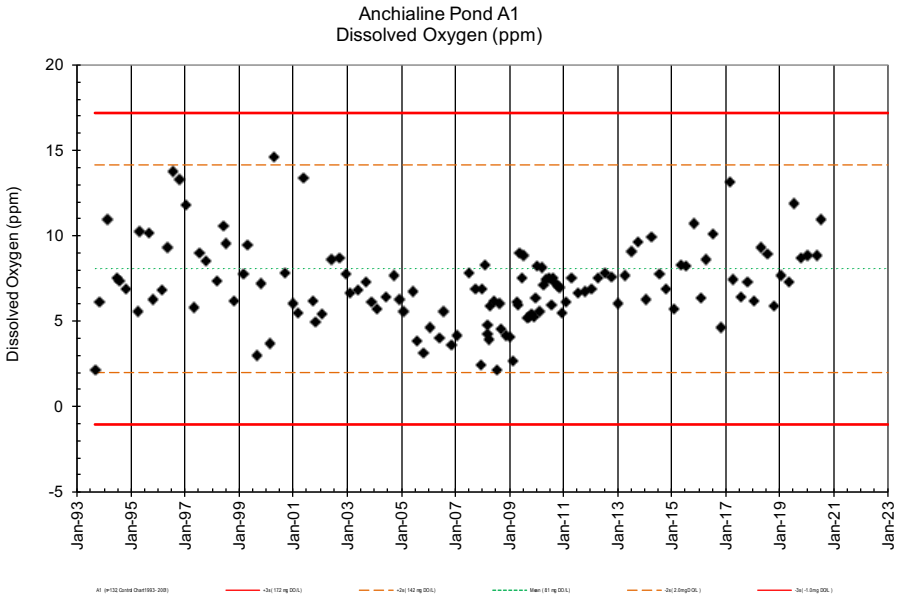


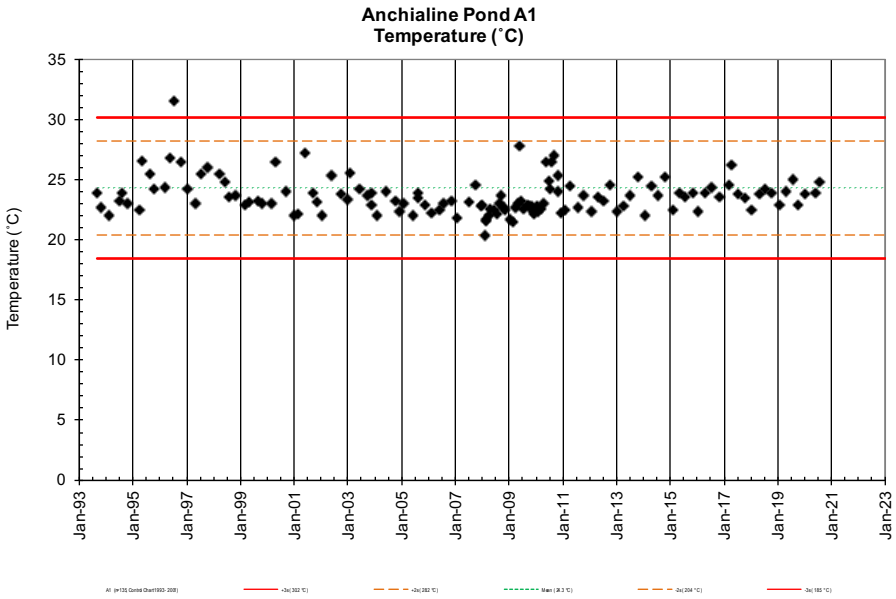


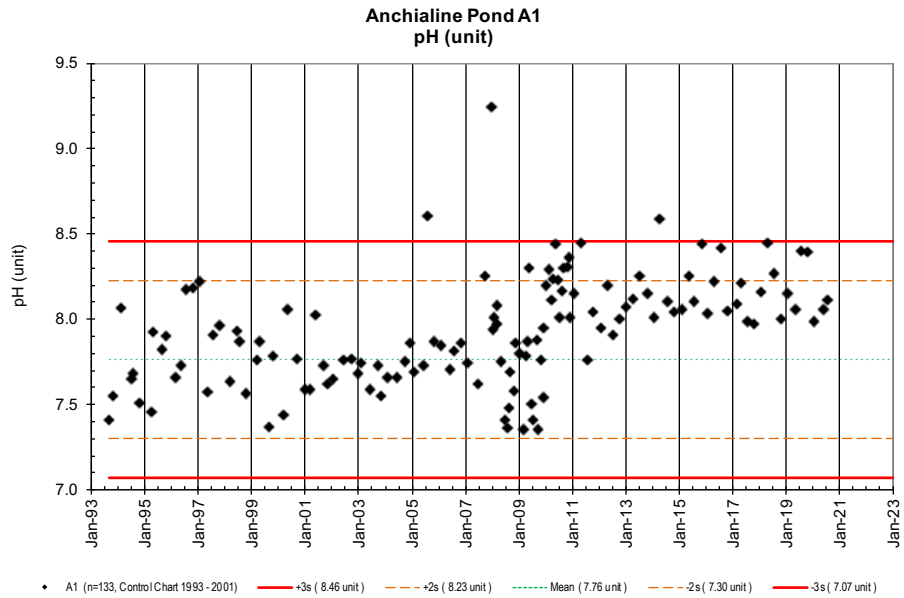


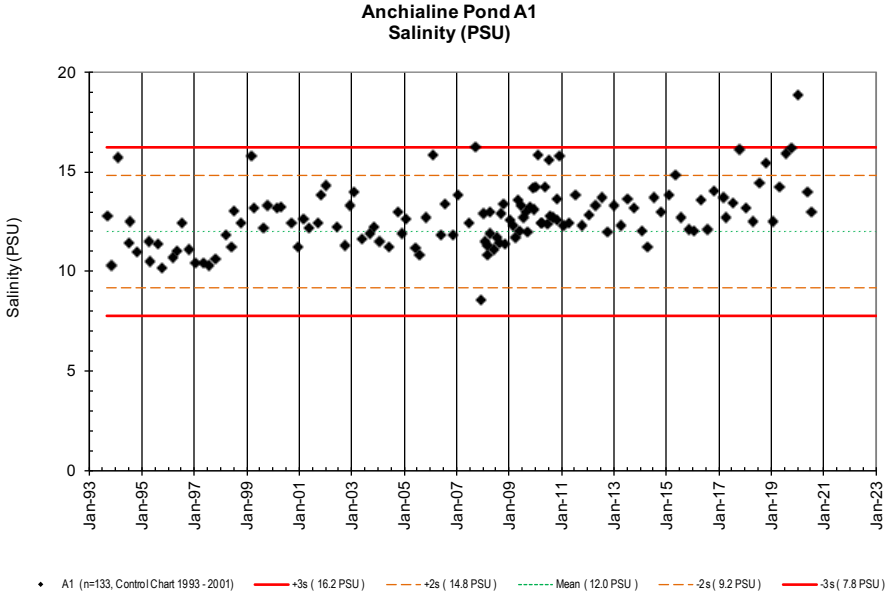


NELHA Water Quality Laboratory
Anchialine Pond A1 Charts
8/31/1993 - 8/4/20

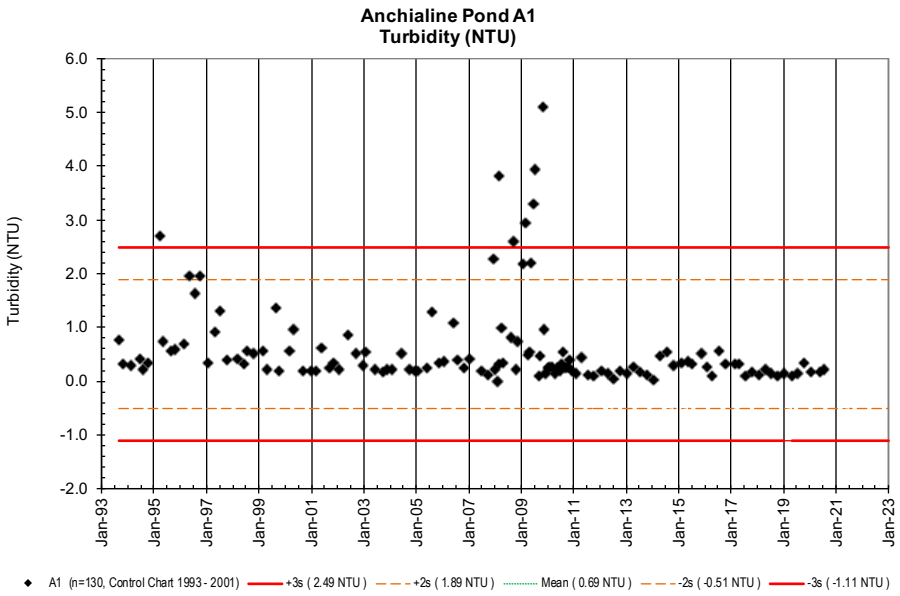


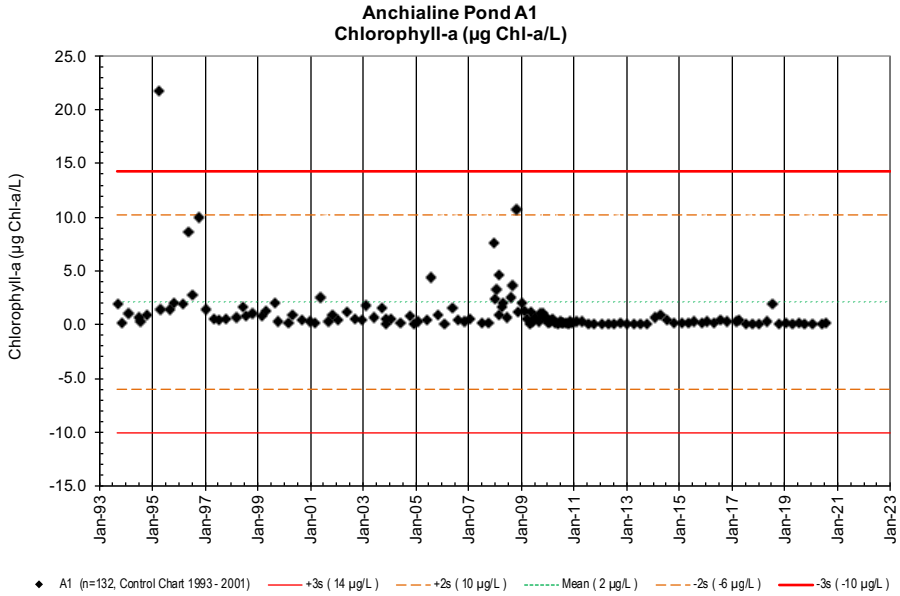






NELHA Water Quality Laboratory
Anchialine Pond A1 Charts
8/31/1993 - 8/4/20





NELHA Water Quality Laboratory

Anchialine Pond A2

8/31/1993 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)		(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A2	8/31/93	950	0.3	Low	3.4	105	10.0	140	0.05	0.7	731	20519	3.4	105	3.43	106	137	1919	0.63	0.04	7.453	4125	21.4	8.01	8.06	0.00	10	21
A2	10/26/93	939	0.7	Flood	3.8	118	113	1579	0.31	4.3	663	18621	3.8	118	3.91	121	126	1769	2.55	0.37	6.742	3732	21.5	8.02	7.98	0.01	361	370
A2	2/8/94	818	0.4	Ebb	3.4	106	101	1417	0.01	0.1	658	18480	3.4	107	3.46	107	112	1575	0.70	0.06	7.712	4269	20.6	8.01	8.24	0.00	1	7
A2	6/27/94	816	0.8	High	3.4	105	103	1439	0.22	3.1	704	19772	3.4	105	3.40	105	110	1534	0.64	0.09	7.773	4303	21.0	8.01	8.20	0.00	<1	<1
A2	7/26/94	938	0.8	Ebb	3.4	105	106	1484	0.10	1.4	618	17357	3.4	106	3.42	106	116	1631	0.74	0.05	7.667	4244	21.3	7.99	8.25	0.00	3	6
A2	10/17/94	1021	0.6	Low	3.4	106	110	1546	0.25	3.5	664	18643	3.5	107	3.48	108	64.0	897	0.46	0.08	7.306	4044	21.4	8.03	8.42	0.03	<1	<1
A2	2/15/95	1023	0.1	Low	3.4	104	116	1621	0.07	1.0	664	18643	3.4	104	3.47	107	106	1489	0.68	0.06	7.826	4332	20.8	8.06	8.27	0.01	5	1
A2	4/26/95	1117	0.5	Flood	3.5	109	108	1514	0.27	3.8	659	18511	3.5	109	3.59	111	117	1640	1.53	0.05	6.917	3829	22.6	8.05	8.40	0.01	<1	<1
A2	8/23/95	1100	1.0	Flood	3.3	101	103	1448	0.38	5.3	674	18941	3.3	103	3.33	103	110	1548	0.51	0.06	7.407	4100	21.9	8.03	8.46	0.02	<1	<1
A2	10/16/95	1002	1.8	High	3.4	106	104	1457	0.38	5.3	669	18795	3.5	107	3.45	107	98.9	1385	0.68	0.03	7.808	4322	21.7	8.05	5.03	0.00	<1	9
A2	2/26/96	1102	0.7	Ebb	3.4	104	100	1407	0.21	2.9	655	18403	3.4	104	3.37	104	105	1468	0.66	0.09	7.522	4164	21.1	8.00	8.15	0.00	<1	<1
A2	4/1/96	1040	0.3	Flood	3.4	106	106	1483	0.33	4.6	659	18494	3.4	106	3.45	107	106	1485	0.58	0.04	7.301	4041	21.7	7.99	8.37	0.00	<1	<1
A2	7/16/96	1010	0.2	Low	3.4	106	110	1537	0.26	3.6	697	19571	3.5	108	3.52	109	116	1630	0.61	0.07	7.102	3931	21.8	8.03	8.28	0.00	28	1
A2	10/8/96	1054	1.3	Flood	3.5	107	112	1562	0.38	5.3	657	18451	3.5	109	3.53	109	89.9	1260	0.61	0.06	7.102	3931	22.1	8.01	7.81	0.75	10	31
A2	1/15/97	919	1.3	High	3.4	104	95.2	1333	0.12	1.7	650	18264	3.4	104	3.36	104	112	1567	0.79	0.06	6.351	3515	21.2	8.02	8.21	0.00	<1	<1
A2	4/30/97	947	0.6	Flood	5.7	176	107	1497	0.20	2.8	528	14835	5.7	177	5.88	182	111	1550	0.88	0.09	6.904	3822	21.4	8.03	8.03	0.00	<1	<1
A2	7/14/97	1155	1.6	Flood	3.5	107	112	1569	0.19	2.7	660	18548	3.6	111	3.61	112	120	1680	0.67	0.07	6.735	3728	21.6	8.05	8.48	0.00	7	212
A2	10/13/97	1159	1.5	Flood	3.5	108	117	1632	0.18	2.5	666	18716	3.5	108	3.50	108	124	1731	0.73	0.06	6.594	3650	22.7	8.16	8.52	0.00	<1	3
A2	3/11/98	920	0.2	Low	3.6	111	116	1628	0.15	2.1	668	18761	3.7	115	3.70	115	119	1665	0.46	0.06	7.584	4198	21.0	8.01	8.28	0.00	17	63
A2	4/15/98	1101	0.1	Low	3.6	110	121	1691	0.21	2.9	666	18699	3.6	112	3.68	114	123	1718	0.53	0.06	7.419	4107	21.5	8.04	8.43	0.00	<1	<1
A2	7/15/98	751	1.0	Flood	3.6	110	118	1658	0.10	1.4	670	18806	3.6	110	3.69	114	123	1729	0.59	0.07	7.638	4228	20.8	8.00	8.24	0.00	<1	2
A2	10/14/98	1038	1.8	Flood	3.6	111	127	1776	0.04	0.6	684	19213	3.6	112	3.60	112	134	1883	0.60	0.07	7.132	3948	22.5	8.01	8.92	0.03	1	2
A2	3/3/99	905	0.6	Ebb	3.4	104	113	1583	0.17	2.4	651	18284	3.4	104	3.38	105	123	1729	0.56	0.08	8.498	4704	20.9	7.98	8.80	0.05	<1	3
A2	4/14/99	903	-0.3	Low	3.5	108	129	1804	0.15	2.1	665	18677	3.5	109	3.52	109	131	1828	0.74	0.07	7.456	4127	21.2	8.01	8.34	0.03	1	5
A2	8/24/99	917	0.5	Flood	3.4	105	114	1590	0.26	3.6	771	21657	3.4	105	3.44	107	117	1642	0.57	0.09	7.716	4271	21.4	8.03	8.27	0.06	<1	1
A2	10/12/99	921	1.2	Ebb	3.3	102	113	1587	0.25	3.5	639	17941	3.4	105	3.35	104	120	1686	0.65	0.07	7.809	4322	22.1	8.06	8.14	0.03	3	6
A2	3/1/00	925	0.3	Low	3.4	107	112	1569	0.17	2.4	670	18809	3.0	94	3.11	96	114	1597	0.63	0.05	7.926	4387	21.0	8.03	8.08	0.02	<1	<1
A2	4/24/00	955	0.3	Ebb	3.4	106	119	1660	0.16	2.2	662	18595	3.3	102	3.31	103	118	1659	0.62	0.04	8.044	4453	21.4	8.04	8.10	0.02	1	1
A2	8/1/00	933	0.1	Ebb	3.3	102	109	1527	0.16	2.2	662	18593	3.4	105	3.36	104	113	1577	0.65	0.05	8.565	4741	21.4	7.98	8.02	0.01	62	13
A2	12/20/00	900	0.8	Flood	3.5	108	114	1597	0.19	2.7	675	18958	3.5	108	3.48	108	115	1611	0.74	0.06	7.979	4417	21.1	8.02	7.71	0.05	<1	1
A2	2/27/01	915	0.8	Ebb	3.4	104	112	1566	0.09	1.3	667	18733	3.4	105	3.33	103	113	1589	0.70	0.07	8.240	4561	21.1	7.96	7.57	0.03	<1	1
A2	5/9/01	917	-0.1	Ebb	3.2	100	110	1542	0.18	2.5	641	17994	3.4	105	3.34	103	111	1556	0.64	0.04	8.235	4558	21.4	8.00	8.22	0.02	<1	1
A2	9/11/01	1000	2.0	Flood	3.3	103	122	1705	0.26	3.6	647	18166	3.2	99	3.12	97	129	1803	0.78	0.09	7.613	4214	22.5	8.01	8.21	0.15	928	34
A2	10/31/01	1054	0.5	Flood	3.6	112	119	1665	0.38	5.3	667	18719	3.6	112	3.60	112	116	1624	0.61	0.06	7.827	4332	21.7	7.98	8.19	0.09	2	2
A2	1/15/02	910	1.0	Ebb	3.4	105	116	1629	0.13	1.8	668	18761	3.3	102	3.42	106	115	1609	0.62	0.04	8.157	4515	21.0	7.98	7.65	0.02	1	7
A2	5/28/02	927	0.9	Ebb	3.4	105	118	1646	0.12	1.7	673	18887	3.4	105	3.42	106	113	1576	0.61	0.05	8.386	4642	21.3	7.99	8.22	0.03	<1	<1
A2	9/17/02	940	0.9	Flood	3.5	109	130	1814	0.11	1.5	675	18958	3.3	103	3.45	107	117	1640	0.67	0.05	7.836	4337	21.9	8.02	8.14	0.06	<1	1
A2	12/16/02	955	0.6	Flood	3.3	102	126	1768	0.19	2.7	675	18966	3.6	110	3.53	109	113	1576	0.59	0.06	7.994	4425	21.3	7.97	8.35	0.06	2	9
A2	1/30/03	950	0.2	Ebb	3.3	102	134	1881	0.73	10.2	687	19298	3.5	109	3.48	108	167	2336	0.57	0.05	8.143	4507	21.1	8.00	8.16	0.04	1	8
A2	5/28/03	907	0.0	Flood	3.6	112	127	1784	0.23	3.2	653	18343	3.7	115	3.72	115	148	2067		0.07	8.099	4483	21.4	8.04	8.47	0.11	<1	<1
A2	9/18/03	915	1.6	Flood	3.4	104	126	1762	0.40	5.6	666	18705	3.6	112	3.66	113	129	1805	1.35	0.05	8.152	4512	22.7	7.97	8.26	0.01	4	11
A2	11/6/03	856	0.5	Ebb	3.7	113	127	1776	0.80	11.2	664	18649	3.7	113	3.64	113	153	2147	1.80	0.04	8.294	4591	21.2	7.99		0.05	<1	2
A2	11/14/03	1407	0.6	Ebb																			21.4		8.12			
A2	1/29/04	853	0.9	Ebb	3.3	102	115	1607	1.71	24.0	704	19758	3.3	102	3.32	103	128	1787	1.20	0.07	8.927	4941	20.8	7.96	7.70	0.05	<1	<1
A2	6/1/04	927	-0.1	Flood	3.4	104	125	1748	0.39	5.5	655	18399	3.5	108	4.02	125	129	1808	1.87	0.37	8.37	4633	22.1	8.00	8.28	0.01	<1	1

NELHA Water Quality Laboratory

Anchialine Pond A2

8/31/1993 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(°C)		(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A2	9/29/04	936	0.5	Ebb	3.3	102	127	1776	0.29	4.1	637	17885	3.3	103	3.34	103	131	1835	0.69	0.04	8.71	4821	21.9	7.99	8.07	0.04	<1	2
A2	12/2/04	1010	1.7	Ebb	3.3	102	127	1784	0.45	6.3	642	18022	3.3	103	3.32	103	135	1888	0.73	0.13	9.16	5070	22.2	8.12	8.92	0.12	9	48
A2	1/19/05	955	0.6	Flood	3.4	107	128	1793	0.34	4.8	680	19098	3.6	112	3.62	112	142	1989	0.74	0.55	8.382	4640	21.2	8.05	8.24	0.10	<1	1
A2	5/31/05	948	0.8	Flood	3.2	99	129	1812	0.25	3.5	631	17719	3.2	100	3.23	100	133	1861	0.68	0.06	9.781	5414	20.6	7.99	8.65	0.02	<1	<1
A2	8/2/05	920	0.3	Flood	3.3	103	128	1791	2.97	41.6	637	17888	3.5	108	3.50	108	136	1909	0.65	0.05	8.982	4972	25.2	8.08	8.06	0.02	60	5
A2	8/8/05	933	0.6	Ebb																			22.0				12	62
A2	11/1/05	912	0.5	Ebb	3.2	100	126	1759	0.27	3.8	630	17694	3.4	104	3.34	103	127	1779	0.56	0.06	10.225	5660	21.8	7.99	7.89	0.12	18	9
A2	1/30/06	919	1.0	Ebb	3.5	108	122	1710	3.14	44.0	613	17222	3.6	110	3.78	117	125	1754	0.55	0.12	10.619	5878	21.5	7.98	7.86	0.04	56	26
A2	5/25/06	930	-0.2	Flood	3.7	113	129	1807	0.28	3.9	607	17048	3.8	119	3.83	119	125	1753	0.68	0.14	10.835	5997	21.9	7.99	8.20	0.12	884	<1
A2	7/27/06	1047	0.2	Low	3.2	100	126	1765	0.38	5.3	606	17020	3.4	105	3.31	103	111	1561	0.66	0.10	11.103	6146	22.2	7.96	8.33	0.11	42	<1
A2	10/31/06	920	0.4	Flood	3.2	99	135	1891	0.23	3.2	627	17610	3.3	101	3.30	102	140	1965	0.65	0.07	9.333	5166	21.6	7.96	7.95	0.06	6	33
A2	1/17/07	1120	0.3	Flood	3.3	102	146	2045	0.29	4.1	618	17357	3.3	102	3.25	101	127	1781	0.61	0.04	10.608	5872	21.4	7.99	8.47	0.03	4	2
A2	6/26/07	910	0.6	Flood	3.4	106	116	1631	0.78	11.0	371	10421	3.4	106			119	1672		0.08	10.301	5702	21.7	8.03	9.55	0.05	4	1
A2	9/24/07	1333	2.0	Flood	3.1	96	125	1757	1.51	21.1	680	19102	3.1	95			131	1838		0.10	9.78	5413	22.4	8.16	9.00	0.37		
A2	12/11/07	1116	0.5	Ebb	2.4	76	86	1206	0.47	6.6	317	8899	3.1	95			98	1369		0.30	6.84	3786	21.4	8.33	6.67	0.19		
A2	1/31/08	1314	0.4	Ebb	1.9	58	89	1244	0.98	13.7	230	6450	2.8	87			120	1678		0.20	9.73	5386	21.1	7.64	6.49	0.30		
A2	2/28/08	1055	0.3	Ebb	3.2	100	132	1855	0.43	6.0	577	16207	2.9	89			130	1815		0.09	10.17	5629	21.0	7.94	6.31	0.10		
A2	4/2/08	1357	1.2	High	1.3	42	59	821	0.73	10.2	309	8677	2.7	84			124	1733		0.13	9.71	5375	21.3	8.08	7.03	0.18		
A2	4/16/08	1428	1.3	Flood	3.1	96	128	1796	0.18	2.5	601	16878	2.6	80			125	1753		0.09	9.88	5469	21.5	8.02	7.95	0.17		
A2	5/23/08	1137	-0.1	Low	2.8	86	130	1820	0.69	9.7	962	27017	2.4	74			139	1951		0.56	10.44	5779	22.4	8.05	7.17			
A2	6/12/08	1009	0.9	Flood	2.4	73	127	1783	0.26	3.6	630	17689	2.4	73			127	1783		0.08	10.43	5773	21.1	8.14	6.43	0.13		
A2	7/18/08	958	-0.1	Low	2.9	89	129.0	1807	0.5	7	623	17503	2.4	74			89	1240		0.03	10.07	5574	21.1	8.07	6.29	0.09		
A2	8/13/08	1129	1.2	Flood	2.8	87	132.2	1852	0.3	4	579	16264								0.22	9.86	5458	22.1	7.96	9.90	0.11		
A2	9/4/08	1151	1.0	Ebb	2.4	73	125.5	1757	0.1	2	545	15294	2.8	88			136	1903		0.06	10.55	5840	21.7	7.90	6.46	0.28		
A2	10/20/08	1144	1.8	Ebb	3.1	95	136.9	1918	0.1	2	569	15974								0.07	10.16	5624	23.3	7.86	7.84	0.15		
A2	11/6/08	1106	1.8	High	3.1	97	130.4	1827	0.2	3	587	16479	2.9	90			136	1909		0.10	10.00	5535	21.3	8.44	7.05	0.59		
A2	1/2/08	1133	0.7	Ebb	4.8	148	155.0	2172	0.1	1	583	16362	3.4	107			133	1858		0.42	10.31	5707	22.3	8.08	7.45	0.04		
A2	1/12/09	1113	0.6	Ebb	3.3	104	146.9	2057	0.1	2	603	16931	0.4	13			132	1852		0.11	9.72	5380	21.9	8.13	7.46	0.35		
A2	2/20/09	1031	0.3	Low	3.0	93	47.0	659	0.2	2	552	15514	2.3	72			144	2022		0.67	10.28	5690	21.5	7.85	7.38	0.25		
A2	3/30/09	1355	0.1	Flood	2.5	77	110.8	1552	0.3	5	387	10877	2.8	86			112	1571		0.12	10.91	6039	22.2	7.81	7.69	0.11		
A2	4/27/09	1340	0.3	Flood	2.9	90	135.6	1900	0.7	10	566	15889	3.6	111			134	1870		0.27	10.69	5917	21.4	8.16	7.57	0.25		
A2	5/14/09	1031	0.4	Flood	3.8	116	131.4	1840	1.0	14	576	16186	3.5	108			128	1788		0.16	10.19	5640	21.4	8.01	7.03	0.02		
A2	6/10/09	931	0.2	Ebb	3.0	92	126.7	1774	0.2	3	527	14808	2.9	89			164	2303		0.06	10.20	5646	22.6	8.70	6.93	0.04		
A2	7/10/09	1020	0.3	Ebb	1.4	43	60.5	847	0.7	11	246	6915	2.1	65			62	871		0.08	10.67	5906	21.6	8.02	7.11	0.03		
A2	8/27/09	1113	1.8	High	1.9	60	74.0	1036	0.6	9	424	11904	2.1	64			77	1080		0.23	9.83	5441	22.3	7.96	7.28	0.24		
A2	9/17/09	1015	0.2	Flood	3.5	108	139.2	1950	0.4	6	387	10872	3.1	97			153	2140		0.37	10.19	5640	22.2	7.62	7.05	0.09		
A2	10/22/09	956	1.9	Ebb	2.5	77	99.1	1389	0.2	3	78	2180	2.4	74			100	1398		0.16	11.26	6233	22.5	7.82	7.40	0.06		
A2	11/19/09	950	1.7	Ebb	3.6	110	79.0	1107	3.2	45	439	12331	3.4	106			87	1216		0.13	11.17	6183	22.3	7.89	6.37	0.02		
A2	12/7/09	758	2.0	High	3.2	99	120.2	1683	0.7	10	452	12692	3.0	93			124	1735		0.02	11.91	6592	21.3	7.84	6.60	0.07		
A2	1/4/10	1338	0.0	Low	3.3	103	116.2	1627	0.5	7	489	13723	3.0	93			118	1652		0.07	11.3	6255	22.0	8.01	7.03	0.20		
A2	2/2/10	1335	-0.2	Low	3.0	92	112.7	1579	0.8	11	556	15620	2.9	89			115	1610		0.08	10.97	6072	22.0	8.00	7.26	0.24		
A2	3/10/10	1251	0.7	High	3.1	97	117.3	1643	0.3	4	353	9906	2.8	88			117	1634		0.11	11.06	6122	22.4	8.08	7.72	0.53		
A2	4/5/10	942	0.4	High	3.4	105	113.2	1586	0.6	9	608	17082	3.2	100			114	1599		0.05	11.53	6382	21.5	8.03	7.99	0.06		
A2	5/12/10	1234	1.5	Flood	3.2	100	120.4	1686	0.5	7	606	17019	3.1	96			121	1691		0.07	10.45	5784	21.5	7.99	8.10	0.02		
A2	6/21/10	950	1.3	Flood	3.3	101	129.7	1817	1.3	19	651	18279	3.3	102			135	1897		0.08	10.65	5895	21.9	7.96	6.36	0.08		

NELHA Water Quality Laboratory

Anchialine Pond A2

8/31/1993 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(°C)		(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A2	7/12/10	936	-0.1	Low	3.4	104	125.2	1754	1.1	16	623	17488	3.3	103			137	1918		0.23	11.28	6244	23.1	7.82	7.22	0.07		
A2	8/2/10	1231	1.3	Ebb	3.6	113	141.6	1983	0.6	8	651	18272	3.3	101			141	1979		0.13	10.18	5635	22.2	8.02	7.23	0.06		
A2	9/2/10	1044	1.8	Flood	3.4	105	143.7	2013	0.5	7	622	17458	3.3	102			145	2038		0.05	10.58	5856	22.0	7.98	6.40	0.04		
A2	10/19/10	1055	1.1	Flood	3.4	107	140.7	1970	0.8	12	647	18166	3.2	98			137	1913		0.25	10.43	5773	22.5	7.96	6.94	0.08		
A2	11/3/10	944	0.4	Low	3.4	105	130.6	1829	0.4	6	624	17523	3.3	104			135	1896		0.19	10.44	5779	22.2	8.00	6.22	0.09		
A2	12/6/10	923	0.8	Ebb	3.5	108	131.9	1847	0.6	9	668	18766	3.2	98			133	1869		0.07	10.74	5945	21.7	7.91	7.23	0.09		
A2	1/26/11	957	0.8	Ebb	3.6	110	131.1	1836	1.0	14	583	16365	3.3	101			132	1844		0.11	10.90	6033	21.4	7.88	6.64	0.09		
A2	4/13/11	941	0.3	Flood	3.5	108	143.2	2006	0.5	7	666	18707	3.1	95			139	1943		0.12	10.48	5801	22.0	7.94	6.74	0.14		
A2	7/18/11	908	0.7	Ebb	3.6	111	123.6	1731	0.5	7	612	17178	3.4	106			128	1789		0.14	11.34	6277	21.6	7.93	6.22	0.01		
A2	10/5/11	940	1.5	Flood	3.4	105	120.6	1689	1.1	16	594	16673	3.4	105			125	1746		0.02	11.20	6199	22.1	7.84	6.72	0.02		
A2	1/17/12	814	0.7	Flood	3.2	100	119.9	1679	0.5	7	598	16799	3.0	94			125	1745		0.08	11.89	6581	21.3	7.85	7.03	0.00		
A2	4/19/12	1032	0.3	Flood	3.5	108	128.9	1805	0.7	10	614	17241	3.5	108			133	1865		0.03	11.34	6277	21.7	7.90	6.35	0.01		
A2	7/9/12	1103	1.2	Ebb	3.5	109	132.9	1861	1.0	14	607	17043	3.3	101			137	1915		0.02	11.21	6205	22.0	7.94	8.67	0.02		
A2	10/8/12	1030	1.8	High	3.6	110	135.6	1899	0.9	12	624	17520	3.4	105			141	1982		0.07	10.98	6078	22.8	7.91	7.48	0.12		
A2	1/3/13	1033	1.2	Ebb	3.7	114	130.4	1826	0.6	9	590	16561	3.8	117			136	1898		0.02	11.13	6161	21.9	7.98	7.19	0.01		
A2	4/1/13	1013	0.4	Ebb	3.7	114	119.2	1669	1.0	14	587	16480	3.5	109			117	1641		0.03	11.38	6299	21.7	7.86	6.67	0.02		
A2	7/8/13	943	-0.1	Low	3.5	108	123.6	1731	1.4	20	572	16068	3.5	109			143	2002		0.10	11.82	6543	23.2	7.78	7.10	0.00		
A2	10/10/13	1040	1.7	Ebb	3.8	119	126.5	1772	0.8	11	590	16561	3.6	111			126	1769		0.02	11.56	6399	22.7	7.89	6.78	0.08		
A2	1/22/14	849	0.7	High	3.6	111	129.1	1808	0.8	11	591	16597	3.5	108			133	1864		0.02	11.62	6432	21.7	7.91	6.62	0.00		
A2	4/9/14	1025	0.7	Flood	3.2	99	113.6	1591	2.4	34	539	15143	3.0	93			125	1745		0.08	10.69	5917	22.7	7.83	7.19	0.12		
A2	7/16/14	1052	0.5	Ebb	3.8	118	126.0	1765	0.7	10	550	15451	3.5	109			124	1731		0.07	11.18	6188	22.5	7.90	6.94	0.03		
A2	10/1/14	1209	1.5	Ebb	3.5	108	127.9	1791	1.2	17	553	15542	3.5	109			131	1842		0.13	10.58	5856	23.0	7.99	6.83	0.03		
A2	2/3/15	853	0.5	Ebb	4.1	126	139.0	1947	1.3	18	637	17886	4.7	146			149	2085		0.28	11.11	6150	21.8	7.84	7.16	0.01		
A2	5/5/15	1559	2.0	High	4.1	126	139.0	1947	0.1	2	482	13545	2.7	84			140	1958		0.07	10.58	5856	22.2	7.96	6.75	0.05		
A2	7/10/15	1031	1.4	Flood	3.6	111	120.0	1681	0.2	3.2	524	14730	2.8	88			121	1701		0.09	11.40	6310	23.1	7.81	6.82	0.04		
A2	11/5/15	941	1.2	Flood	4.2	129	137.2	1922	0.6	8	559	15695	3.8	117			146	2046		0.09	9.87	5463	23.1	7.89	6.88	0.08		
A2	1/19/16	1000	-0.2	Low	4.3	134	139.9	1960	0.6	8	530	14879	4.2	129			146	2040		0.30	11.09	6139	22.3	7.79	7.31	0.11		
A2	4/12/16	1142	0.2	Ebb	4.3	133	126.5	1772	0.1	2	544	15289	4.4	136			128	1799		0.09	10.42	5768	22.4	8.09	7.07	0.06		
A2	7/14/16	1113	1.4	Flood	4.0	123	137.3	1923	0.2	2	538	15118	3.6	112			132	1845		0.10	11.15	6172	22.8	7.96	7.85	0.07		
A2	10/20/16	1041	1.1	Ebb	6.8	212	236.7	3316	0.2	3	948	26615	6.7	209			240	3356		0.04	11.05	6116	22.7	8.14	6.72	0.01		
A2	2/23/17	1041	0.5	Flood	3.9	121	134.2	1880	0.0	0	595	16704	3.8	116			138	1938		0.07	10.16	5624	21.8	8.00	6.92	0.03		
A2	4/10/17	1019	-0.1	Flood	3.9	122	130.9	1833	1.1	15	575	16158	3.6	113			136	1908		0.05	11.05	6116	22.3	7.94	6.48	0.08		
A2	7/13/17	1044	0.3	Low	3.5	110	137.2	1922	0.2	2.9	590	16567	3.5	107			133	1856		0.07	11.19	6194	22.4	7.95	5.47	0.04		
A2	10/12/17	1021	2.0	High	3.5	109	131.4	1841	0.3	4.2	610	17130	3.6	111			136	1902		0.09	10.26	5679	22.9	8.20	6.57	0.02		
A2	1/11/18	1012	1.0	Flood	2.9	91	118.7	1662	0.0	0.7	481	13502	3.5	108			135	1894		0.06	11.17	6183	21.7	8.01	7.06	0.06		
A2	4/24/18	1021	0.7	Flood	3.5	109	134.5	1884	0.3	4.7	577	16200	3.7	114			137	1922		0.08	11.35	6283	22.3	7.93	7.06	0.09		
A2	7/12/18	948	-0.3	Low	4.0	125	130.9	1833	0.1	1.0	563	15817	4.6	144			136	1901		0.05	10.82	5989	23.0	7.85	6.99	0.08		
A2	10/11/18	944	0.6	Ebb	3.6	111	134.5	1884	0.1	1.9	555	15583	3.5	108			137	1913		0.05	10.70	5923	22.9	7.91	5.22	0.04		
A2	1/15/19	942	1.3	High	3.7	114	128.8	1804	0.0	0.5	519	14583	3.6	113			138	1935		0.05	11.46	6343	21.8	7.96	7.04	0.04		
A2	4/25/19	928	0.5	Ebb	4.0	123	148.0	2074	0.0	0.0	594	16687	3.8	117			151	2121		0.09	10.66	5901	22.4	7.86	6.90	0.06		

NELHA Water Quality Laboratory

Anchialine Pond A2

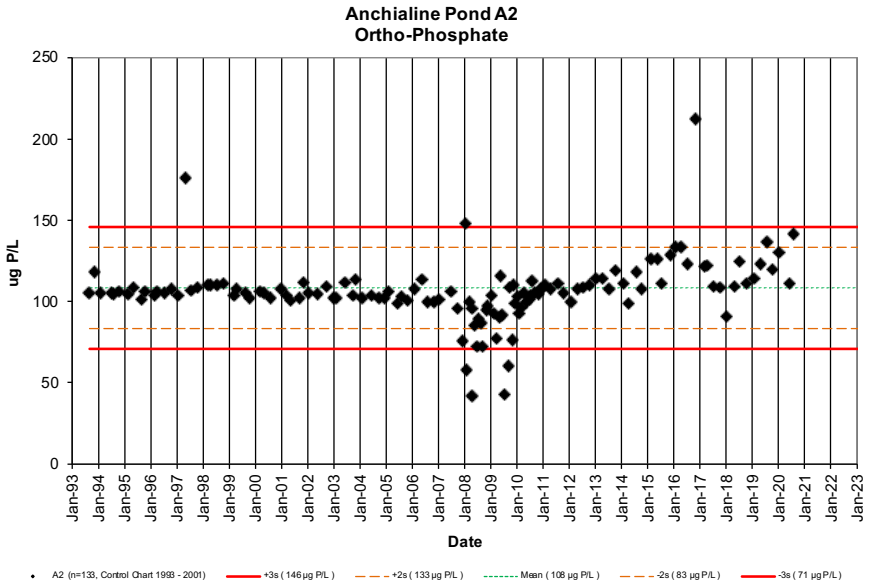
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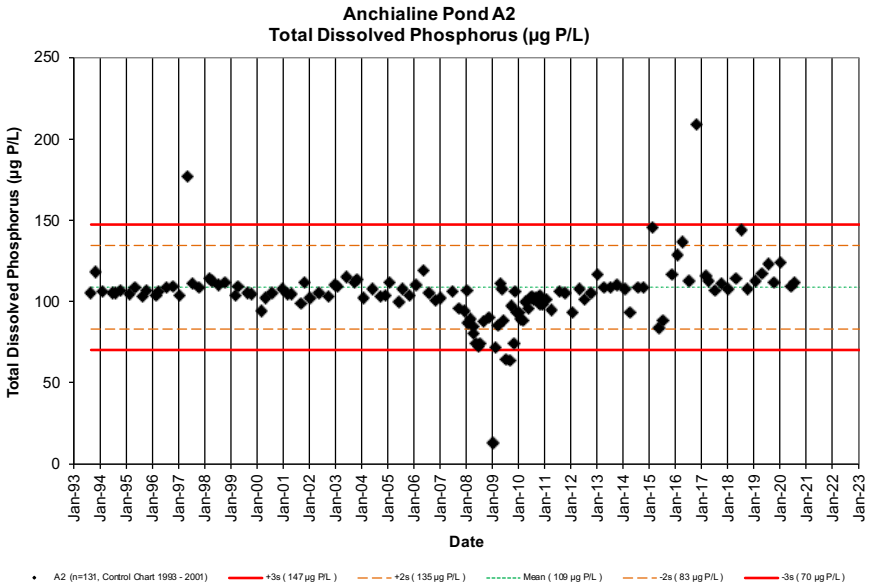
Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)		(ppm)	(µg/L)	(CFU/100ml)	(CFU/100ml)
A2	7/17/19	925	-0.1	Low	4.4	137	146.1	2047	0.0	0.0	598	16783	4.0	123			138	1936		0.07	10.86	6011	22.8	7.95	6.95	0.06		
A2	10/8/19	1009	1.2	Flood	3.9	120	187.8	2630	0.1	1.7	572	16053	3.6	112			194	2721		0.06	11.03	6105	23.1	8.00	7.61	0.03		
A2	1/9/20	952	0.4	Low	4.2	130	165.4	2317	0.5	7.5	593	16667	4.0	124			166	2329		0.08	12.16	6731	22.3	7.94	6.15	0.01		
A2	5/21/20	1110	0.5	Flood	3.6	111	139.6	1955	0.2	2.7	548	15396	3.5	109			155	2175		0.06	10.85	6006	23.3	7.93	7.05	0.08		
A2	7/14/20	1017	0.4	High	4.6	142	156.0	2185	0.5	6	582	16337	3.6	112			156	2186		0.07	10.20	5645.96	22.9	7.97	7.16	0.06		
A2	10/1/20																											
A2	1/1/21																											
A2	4/1/21																											
A2	7/1/21																											
A2	10/1/21																											
A2	1/1/22																											
A2	4/1/22																											
A2	7/1/22																											
A2	10/1/22																											
A2	1/1/23																											
A2	4/1/23																											
Mean			0.75		3.43	106	122.5	1716	0.50	7	598	16789	3.37	104.3	3.5	109	127.5	1786	0.76	0.11	9.63	5330	21.9	7.99	7.52	0.08		
Std. Dev.			1		0.61	19	23.0	323	0.55	8	111	3105	0.61	18.8	0.4	11	20.6	289	0.38	0.11	1.56	861	0.70	0.12	0.84	0.11		
Maximum			2.00		6.8	212	237	3316	3.2	45	962	27017	6.7	209	6	182	240	3356	2.6	0.7	12.16	6731	25.2	8.70	9.9	0.8		
Minimum			-0.30		1.35	42	10.0	140	0.00	0	77.6	2180	0.4	12.8	3.1	96	62	871	0.46	0.02	6.35	3515	20.60	7.62	5.03	0.00		
n			135		133	133	133	133	133	133	133	133	131	131	55	55	131	131	54.0	133	133	133	135	133	133	132		

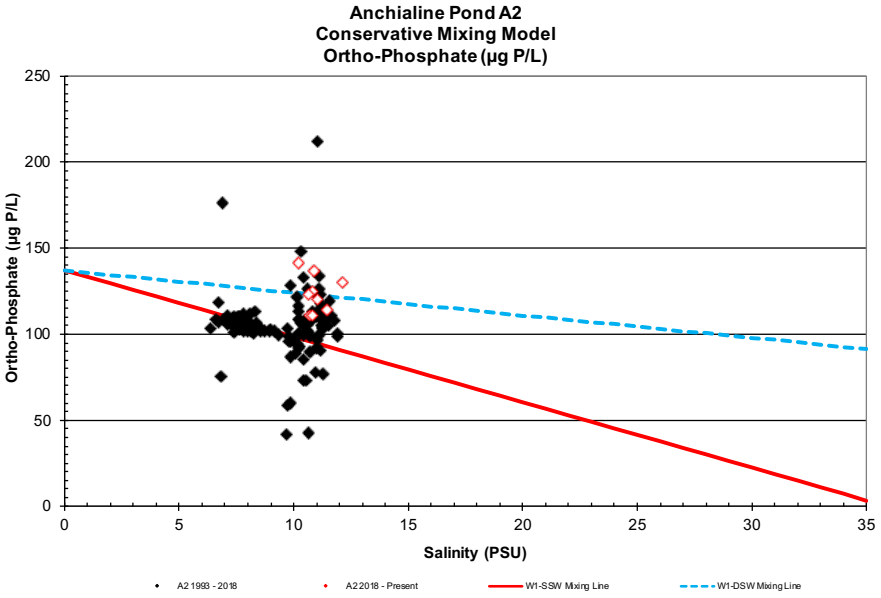
NELHA Water Quality Laboratory

Anchialine Pond A2

8/31/1993 - 8/4/20



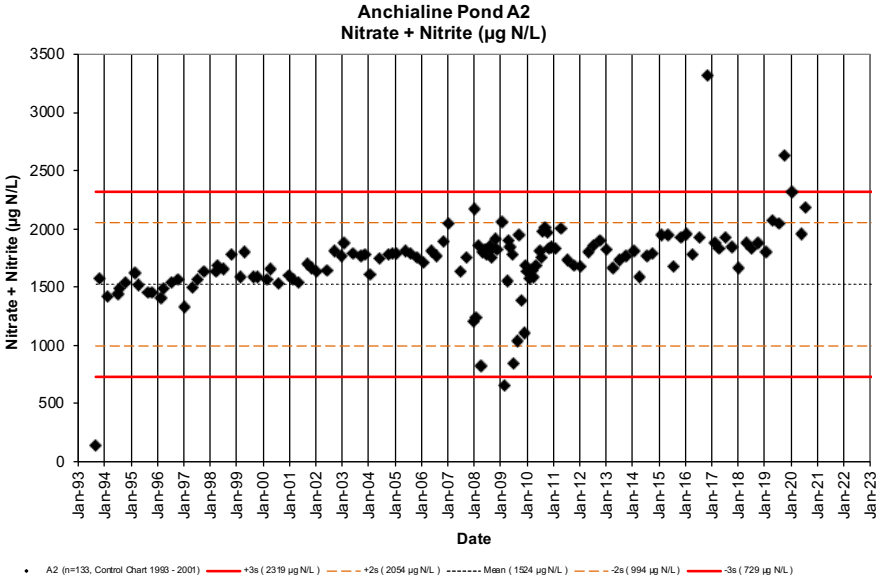


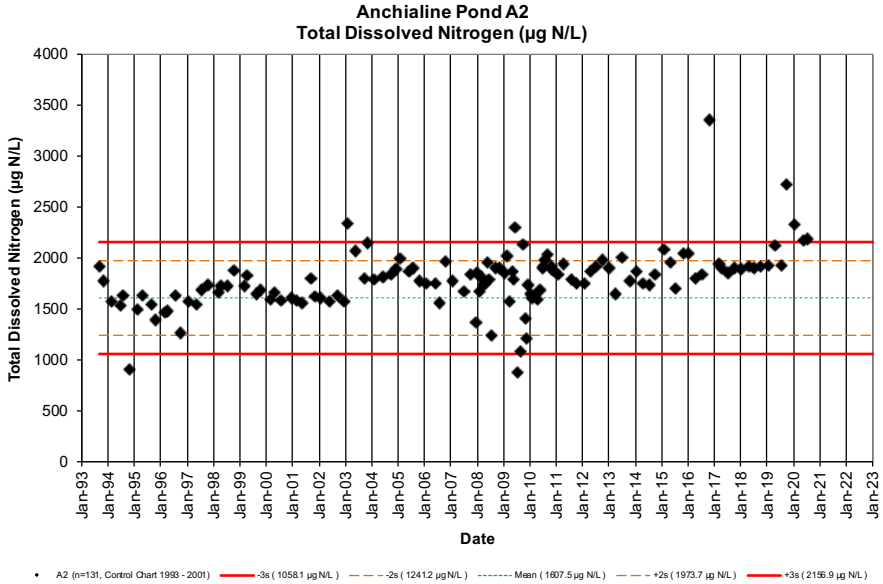


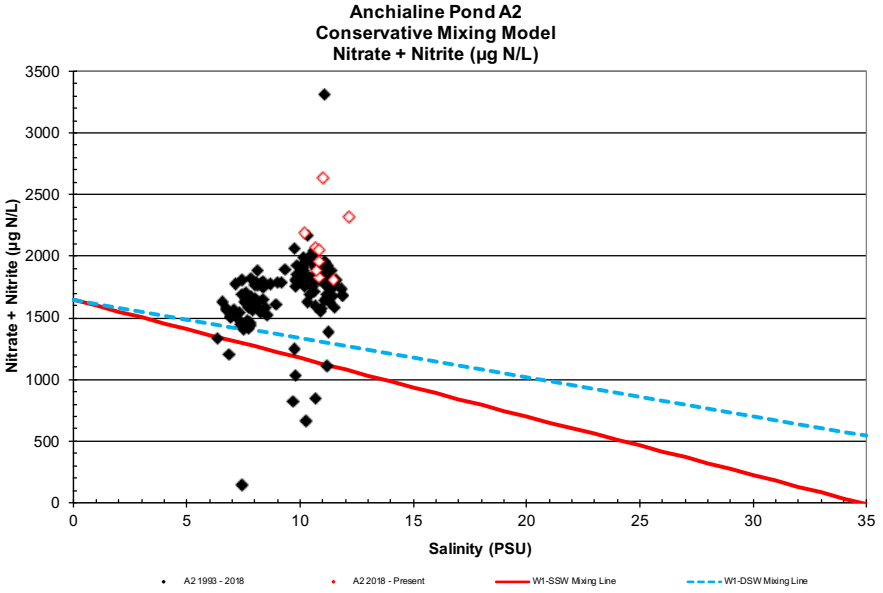
NELHA Water Quality Laboratory

Anchialine Pond A2

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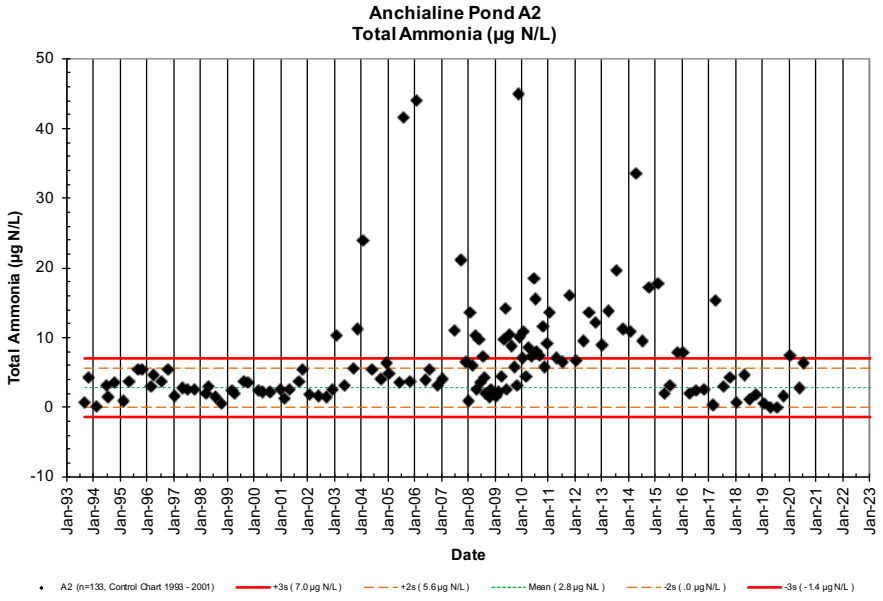


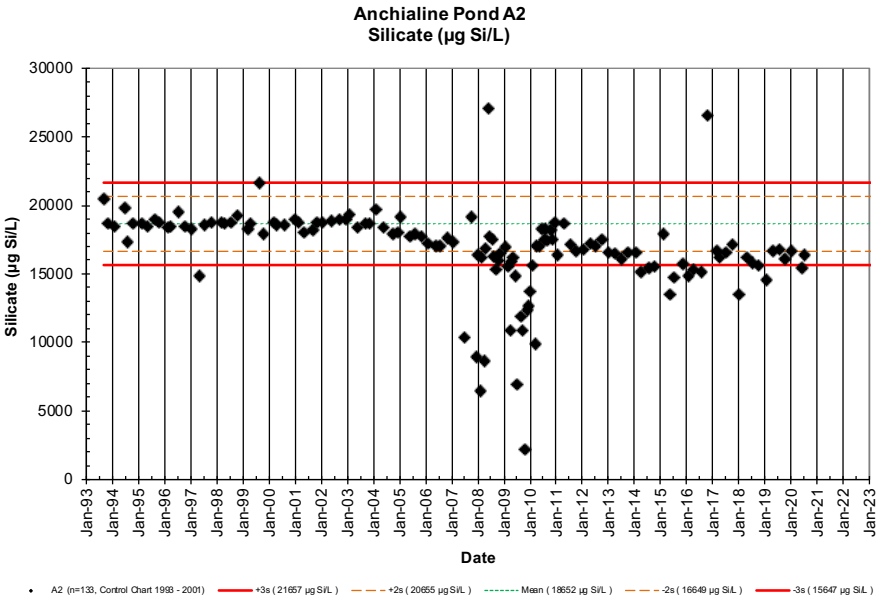


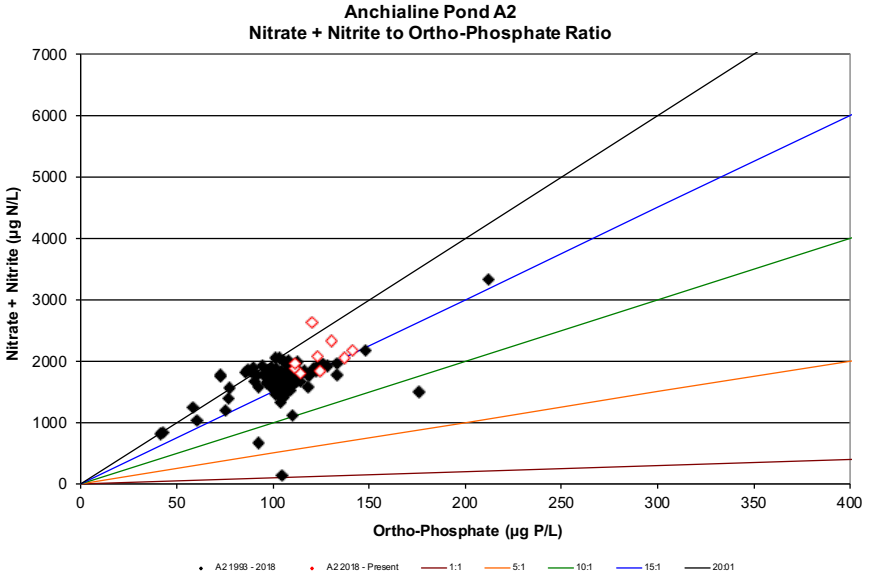
NELHA Water Quality Laboratory

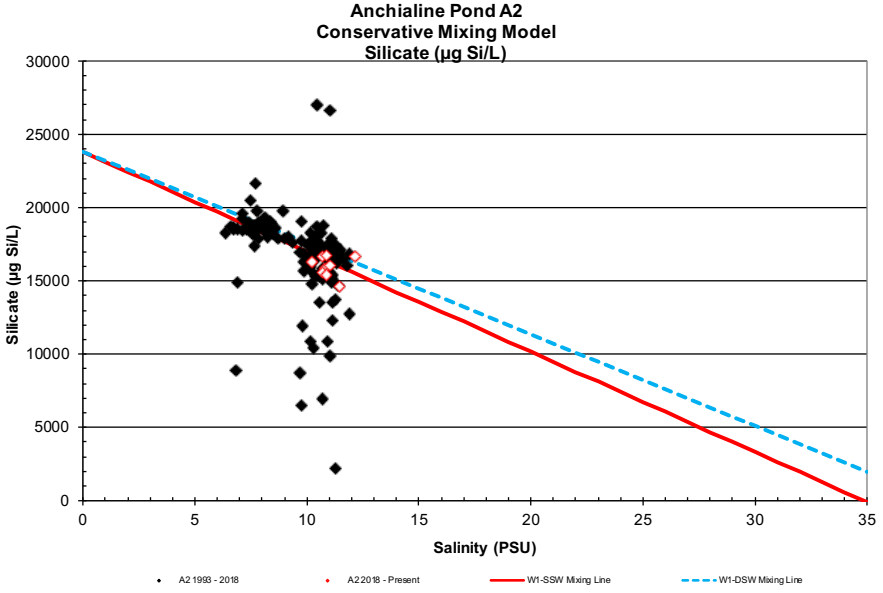
Anchialine Pond A2

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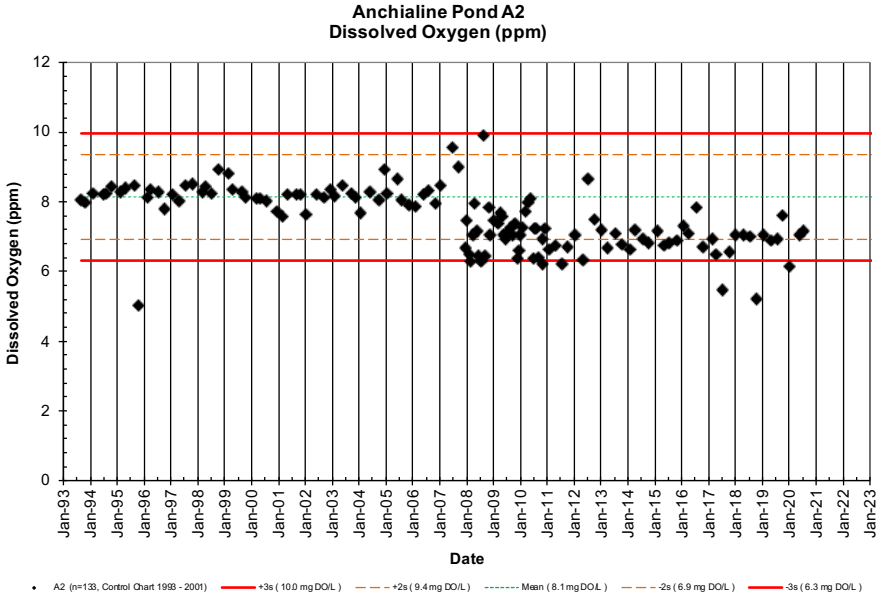


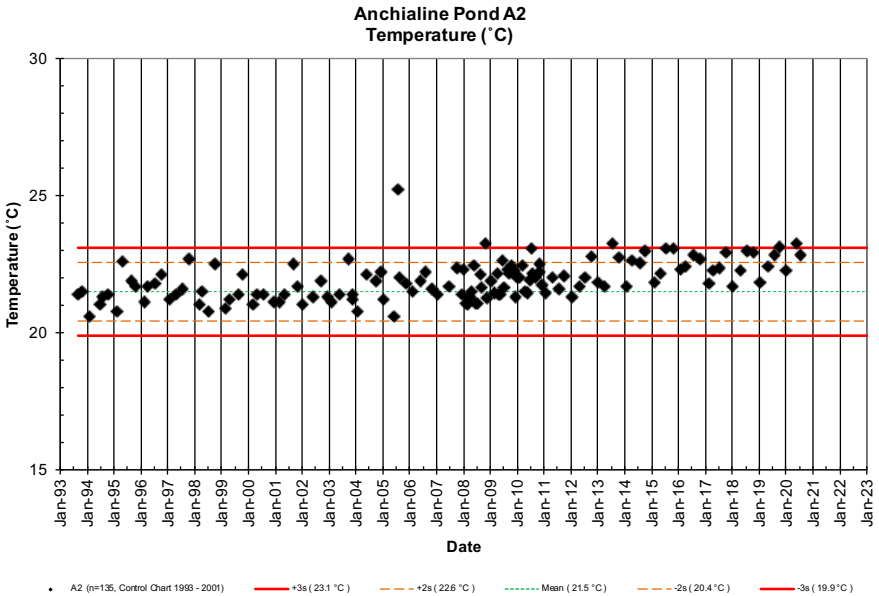


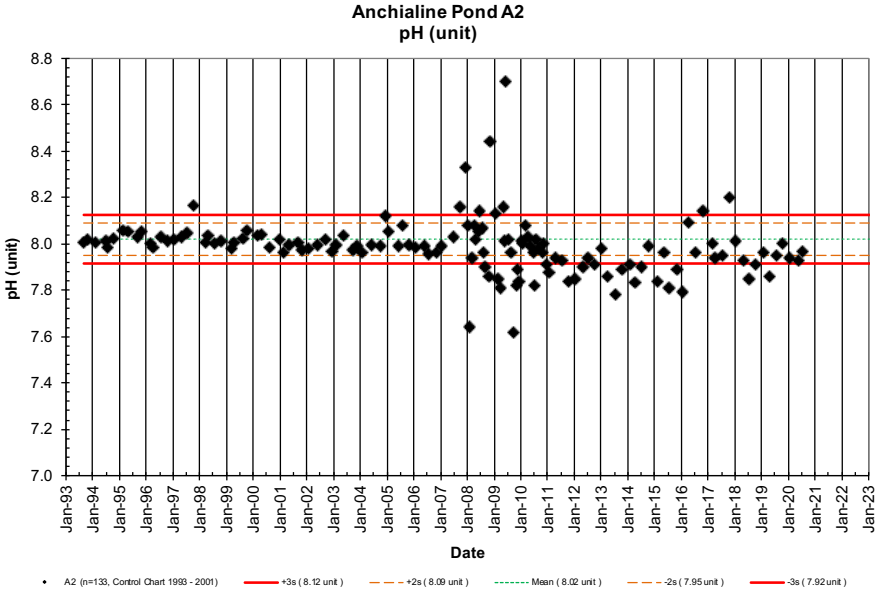
NELHA Water Quality Laboratory

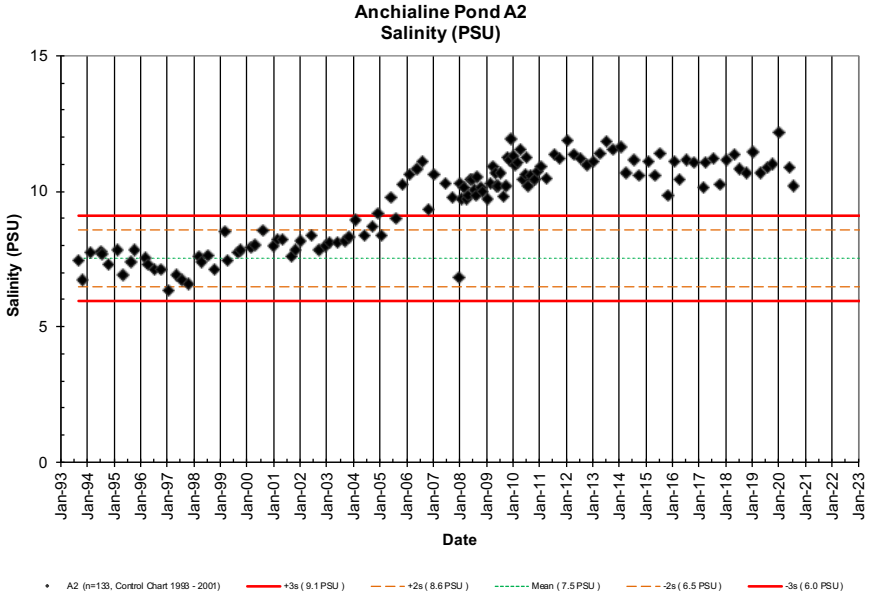
Anchialine Pond A2

8/31/1993 - 8/4/20





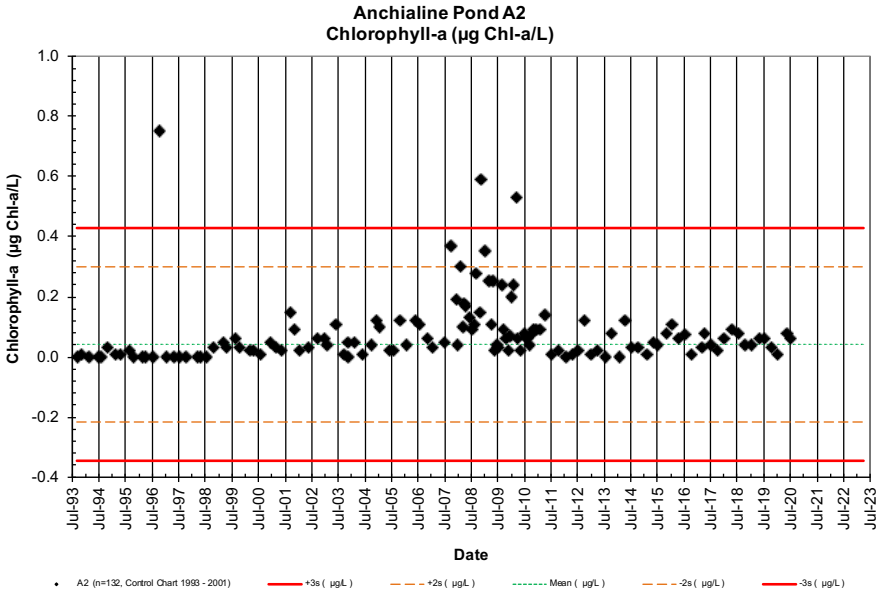


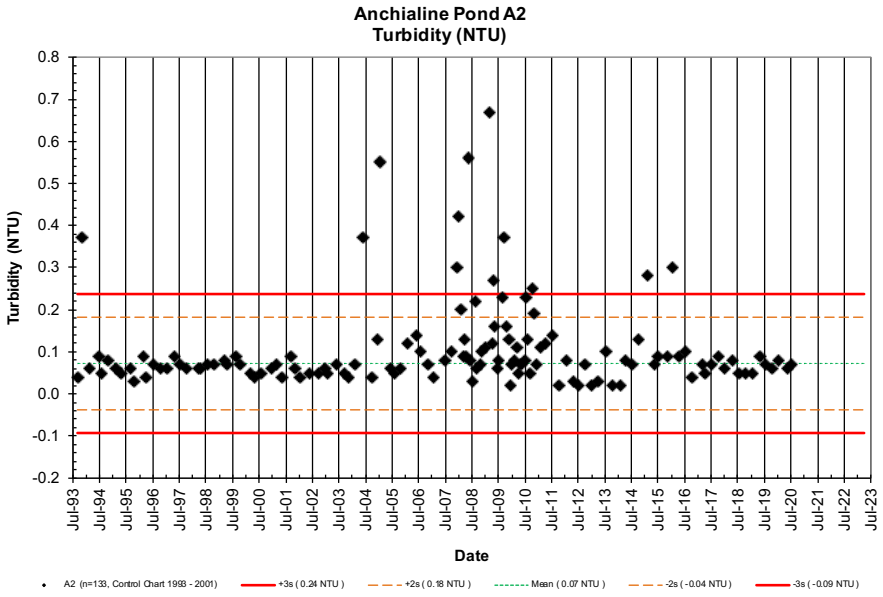


NELHA Water Quality Laboratory

Anchialine Pond A2

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NELHA Water Quality Laboratory

Anchialine Pond A3

7/9/2012 - 8/4/20

Site ID	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)
A3	7/9/12	1111	1.2	Ebb	3.3	102	92.9	1301	0.8	10.7	562	15780	3.1	97	98.2	1376	0.39	13.76	7617	22.0	7.97	7.83	0.07
A3	10/8/12	1035	1.8	High	3.4	106	97.5	1366	2.4	34.3	589	16537	3.4	106	103.7	1453	0.6	11.82	6543	22.0	7.94	7.30	0.32
A3	1/3/13	1039	1.2	Ebb	3.5	107	94.1	1318	1.3	17.7	553	15523	3.5	108	100.2	1403	0.1	12.56	6952	20.9	7.99	7.90	0.04
A3	4/1/13	1019	0.4	Ebb	3.6	110	95.7	1341	1.2	17.1	549	15431	3.4	104	96.0	1345	2.79	12.91	7146	20.9	7.84	6.90	0.12
A3	7/8/13	950	-0.1	Low	3.3	102	92.6	1297	1.61	22.5	565	15859	3.26	101	103	1441	5.62	13.08	7240	22.6	7.68	7.44	1.21
A3	10/10/13	1047	1.7	Ebb	3.2	100	92.5	1295	1.20	16.8	529	14871	3.06	95	92	1287	0.31	12.89	7135	23.6	7.94	7.85	0.19
A3	1/22/14	855	0.7	High	3.3	102	104.0	1457	0.9	12	552	15512	3.3	101	107	1501	0.02	12.85	7113	21.0	7.97	7.04	0.03
A3	4/9/14	1014	0.7	Flood	3.1	97	99.5	1393	2.3	32	513	14415	2.9	89	108	1511	0.05	12.84	7107	21.0	7.85	7.30	0.02
A3	7/16/14	1058	0.5	Ebb	3.4	104	98.6	1381	1.58	22.1	503	14121	3.32	103	97	1353	0.18	13.59	7522	21.9	7.86	7.59	0.07
A3	10/15/14	1218	1.5	Ebb	2.9	90	93.2	1306	0.79	11.1	494	13861	3.12	97	102	1428	0.41	14.60	8081	25.4	7.87	6.61	0.09
A3	2/3/15	909	0.5	Ebb	3.9	122	120.2	1683	1.5	21	594	16682	4.2	129	118	1659	0.24	12.38	6853	20.3	7.73	7.21	0.04
A3	5/5/15	1608	2.0	High	3.7	115	110.4	1547	1.1	16	430	12082	3.2	99	115	1616	0.58	12.94	7163	22.8	7.96	7.97	0.13
A3	7/10/15	1044	1.4	Flood	3.5	109	105.0	1471	0.8	12	477	13411	3.7	116	109	1527	0.23	12.54	6941	21.5	7.77	8.01	0.04
A3	11/5/15	935	1.2	Flood	3.7	115	115.4	1616	0.91	12.7	506	14218	3.61	112	123	1729	0.3	11.77	6515	21.7	7.72	7.03	0.13
A3	1/19/16	1014	-0.2	Low	4.0	124	127.1	1781	0.6	9	486	13639	4.0	123	133	1858	0.61	12.31	6814	20.7	7.83	7.68	0.18
A3	4/12/16	1154	0.2	Ebb	4.1	126	103.5	1450	0.7	10	479	13443	6.2	191	119	1673	2.33	12.72	7041	20.8	7.97	7.67	0.25
A3	7/14/16	1126	1.4	Flood	3.4	107	101.2	1417	0.3	5	458	12876	3.2	100	102	1434	0.31	15.51	8585	22.7	7.97	6.88	0.19
A3	10/20/16	1047	1.0	Ebb	6.3	196	174.4	2444	1.8	26	833	23391	7.2	222	182	2556	0.32	13.42	7428	24.3	8.04	6.80	0.26
A3	2/23/17	1034	0.5	Flood	3.5	109	103.1	1444	0.3	4	528	14834	3.6	112	109	1531	0.26	12.00	6642	20.0	7.90	7.25	0.02
A3	4/10/17	1013	-0.1	Flood	3.4	104	107.3	1503	0.8	12	527	14800	3.4	106	110	1545	0.29	13.44	7439	20.7	7.87	6.79	0.01
A3	7/13/17	1056	0.3	Low	3.2	98	102.1	1430	0.5	7	515	14466	3.0	93	98	1377	0.14	13.65	7556	21.1	7.87	5.22	0.01
A3	10/12/17	1032	2.0	High	3.2	98	101.7	1424	0.8	11	533	14961	3.2	98	105	1474	0.2	12.22	6764	21.9	7.77	6.45	0.01
A3	1/11/18	1023	1.0	Flood	2.5	77	94.4	1322	0.7	10	442	12411	3.1	95	105	1474	0.11	12.31	6814	19.9	7.89	7.04	0.02
A3	4/24/18	1033	0.8	Flood	3.3	101	104.0	1457	0.4	6	513	14412	3.4	107	107	1495	0.15	13.23	7323	20.0	7.84	7.20	0.01
A3	7/12/18	1005	-0.3	Low	3.5	109	100.7	1411	0.5	7	493	13850	3.6	112	102	1432	0.18	13.07	7235	21.1	7.74	6.91	0.06
A3	10/11/18	956	0.6	Ebb	3.3	102	101.2	1417	0.6	9	503	14139	3.2	101	103	1444	0.18	13.49	7467	21.5	7.72	4.90	0.05
A3	1/15/19	1013	1.3	High	3.4	106	106.2	1488	0.4	5	473	13292	3.3	103	113	1580	0.21	12.86	7118	20.4	7.88	7.00	0.02
A3	4/25/19	934	0.5	Ebb	3.5	110	103.1	1444	0.4	6	498	13977	3.5	109	111	1562	0.22	12.40	6864	20.7	7.67	7.03	0.09
A3	7/17/19	959	0.0	Flood	3.9	120	100.6	1409	0.3	4	528	14833	3.6	113	100	1398	0.64	13.53	7489	21.5	7.90	7.49	0.17
A3	10/8/19	1020	1.3	Flood	3.6	112	134.5	1884	1.0	15	530	14887	3.5	107	143	2001	0.42	12.45	6891	21.7	7.89	7.22	0.10
A3	1/9/20	1005	0.4	Low	3.8	119	121.9	1708	0.7	11	541	15181	3.7	115	122	1713	0.27	13.59	7522	20.7	7.89	6.75	0.02
A3	5/21/20	1121	0.5	Flood	3.3	102	103.6	1451	0.8	11	505	14193	3.3	103	118	1653	1.73	11.73	6493	21.6	7.91	7.92	0.85
A3	7/14/20	1054	0.4	High	4.0	122	106.0	1484	0.3	4	457	12846	3.4	105	115	1608	0.44	10.70	5923	21.7	7.86	7.18	0.17
A3	10/1/20																						
A3	1/1/21																						
A3	4/1/21																						
A3	7/1/21																						
A3	10/1/21																						
A3	1/1/22																						
A3	4/1/22																						

NELHA Water Quality Laboratory

Anchialine Pond A3

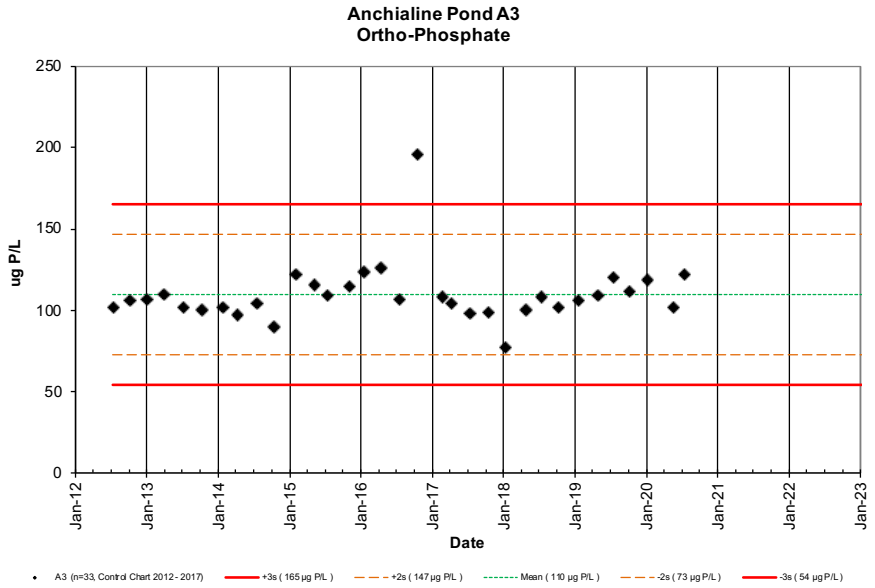
7/9/2012 - 8/4/20

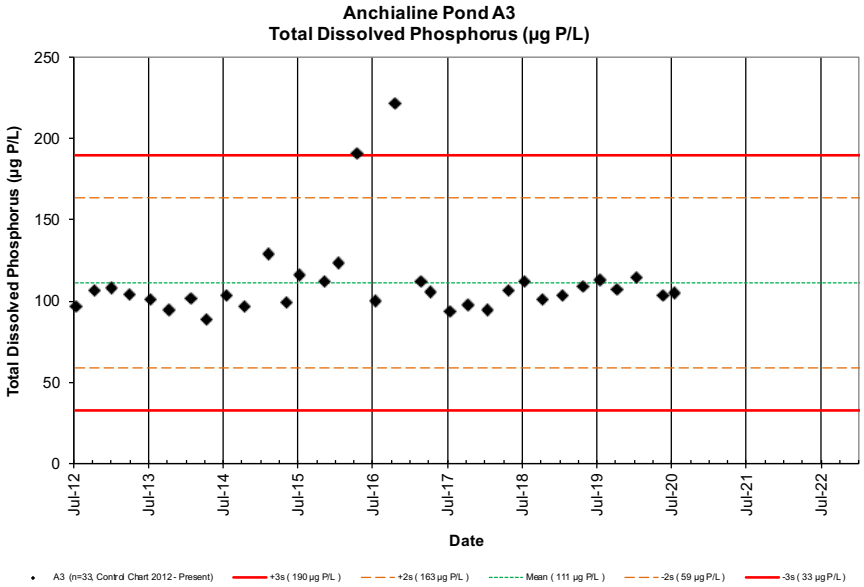
Site ID	Date M/D/Y	Time (2400)	Tide (ft)	cycle	PO_4^{3-} (µM)	(µg P/L)	NO_3^- & NO_2^- (µM)	(µg N/L)	NH_4^+ & NH_3 (µM)	(µg Si/L)	Si (µM)	(µg Si/L)	TDP (µM)	(µg P/L)	TDN (µM)	(µg N/L)	Turbidity (NTU)	Salinity (PSU)	Chloride (mg/L)	Temp. (˚C)	pH (unit)	DO (ppm)	Chl a (µg/L)
A3	7/1/22																						
A3	10/1/22																						
A3	1/1/23																						
A3	4/1/23																						
Mean			0.80		3.54	110	106.3	1489	0.92	13	523	14689	3.59	111.2	111.3	1559	0.6	13	7131	21.53	7.86	7	0.2
Std. Dev.			1		0.60	19	15.7	220	0.55	8	68	1905	0.84	26.2	16.8	235	1.1	1	490	1.21	0.09	1	0.25
Maximum			2.00		6.3	196	174	2444	2.4	34	833	23391	7.2	222	182	2556	6	16	8585	25.4	8.04	8	1.2
Minimum			-0.30		2.49	77	92.45	1295	0.26	4	430	12082	3	88.6	92	1287	0.02	11	5923	19.93	7.67	5	0.01
n			33		33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33

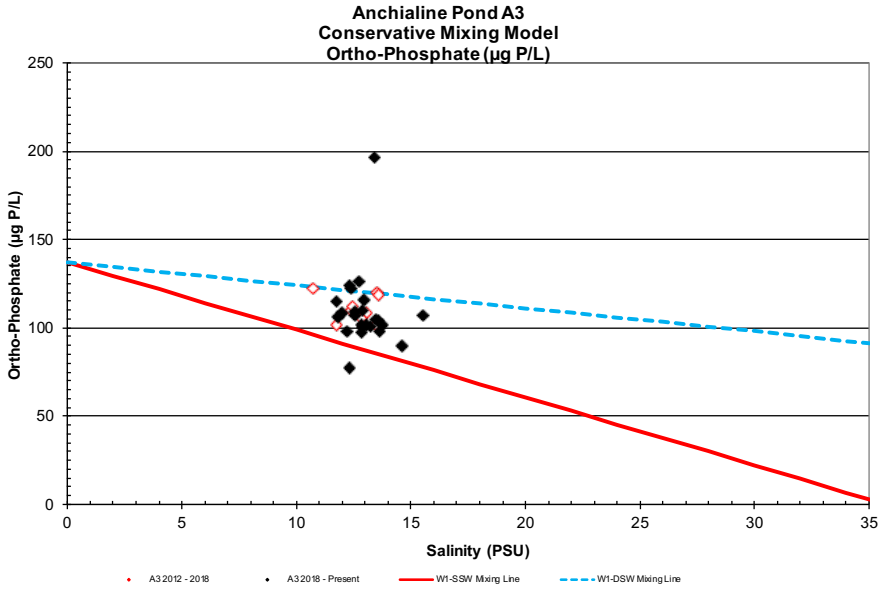
NELHA Water Quality Laboratory

Anchialine Pond A3 Charts

7/9/2012 - 8/4/20



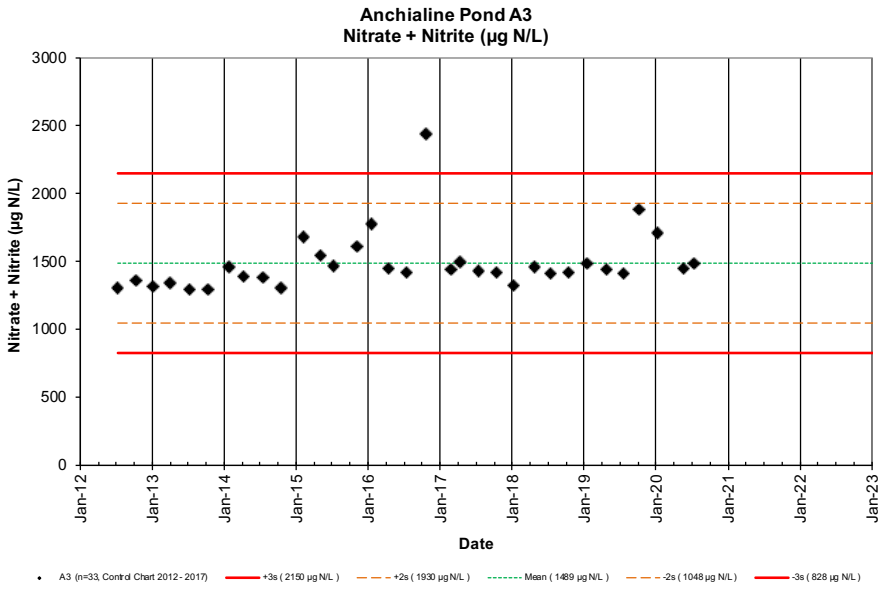


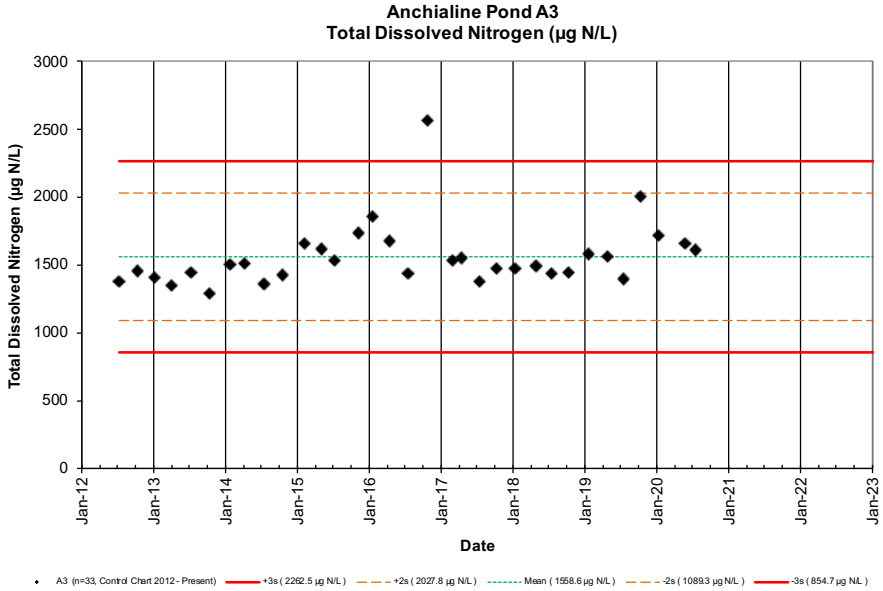


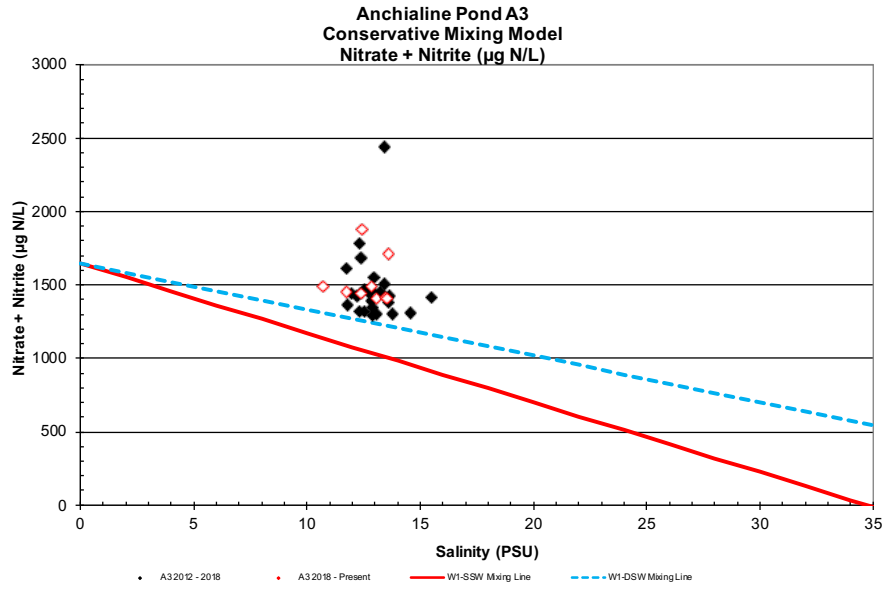
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Anchialine Pond A3 Charts

7/9/2012 - 8/4/20



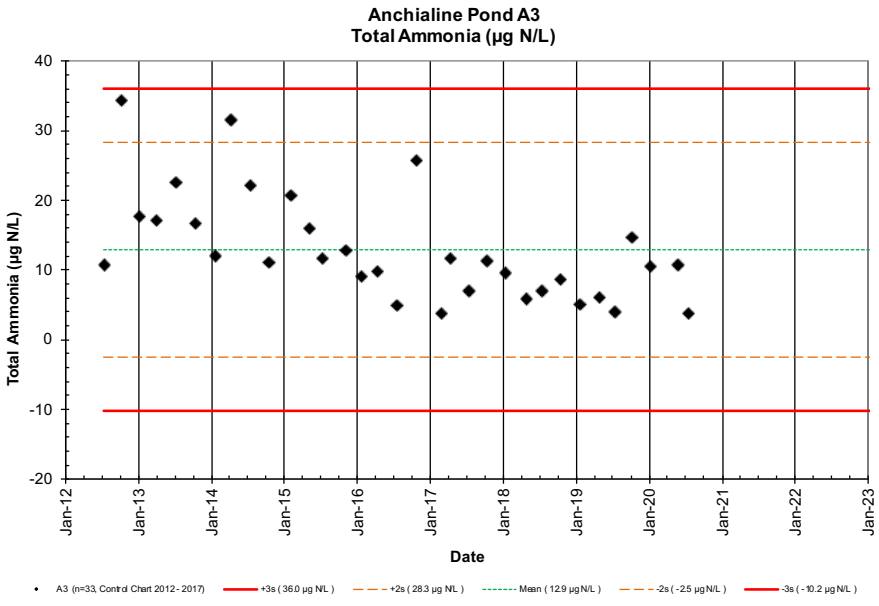


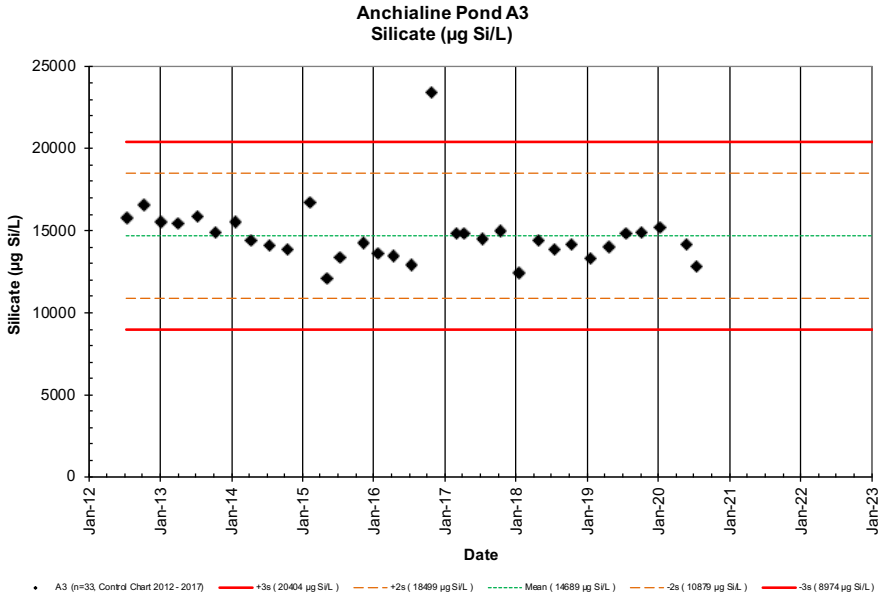


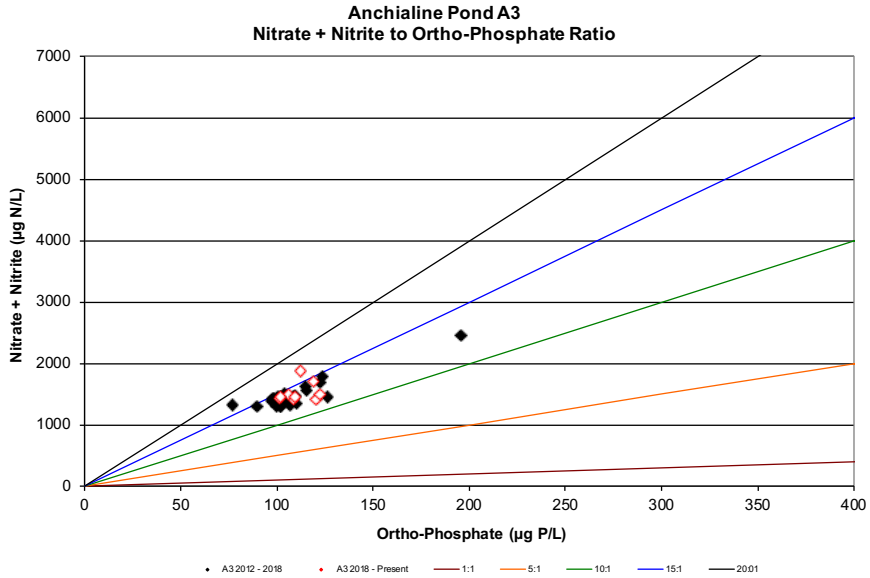
NELHA Water Quality Laboratory

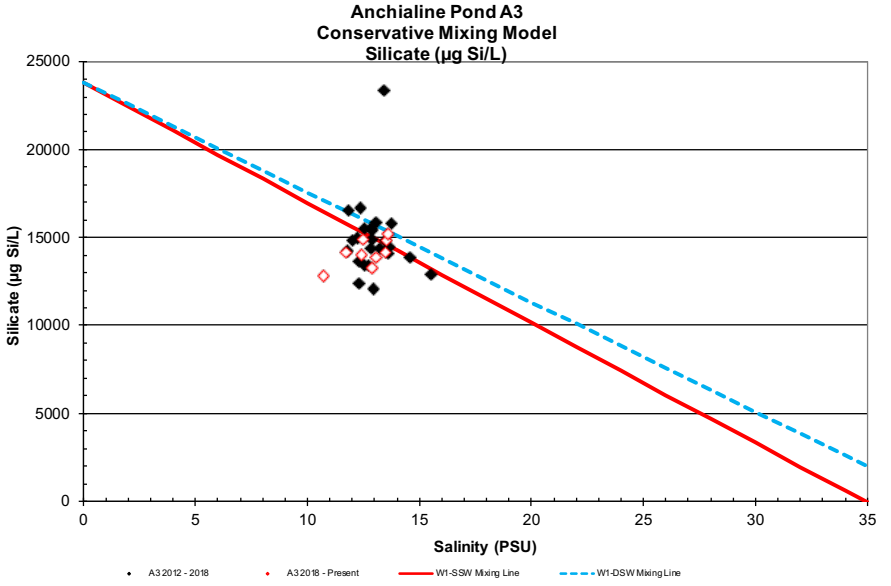
Anchialine Pond A3 Charts

7/9/2012 - 8/4/20





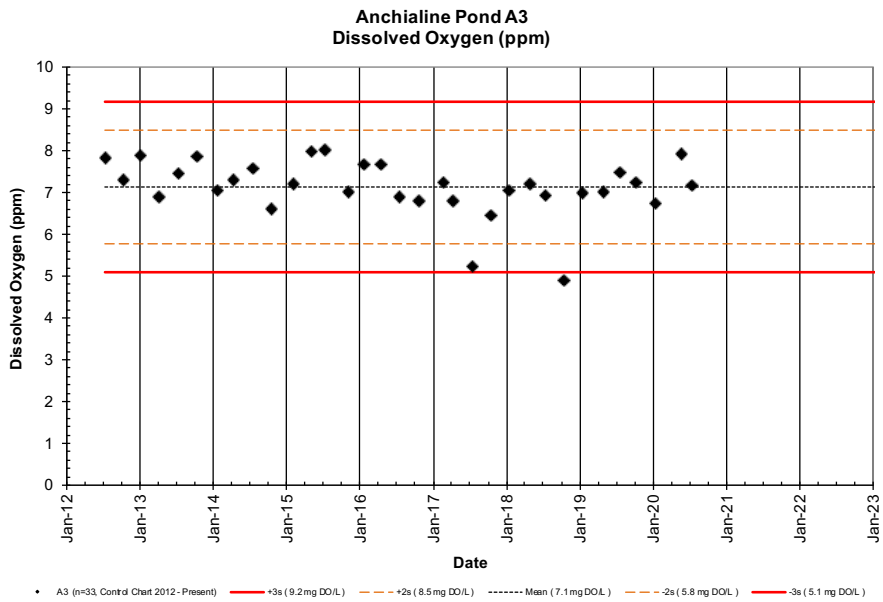


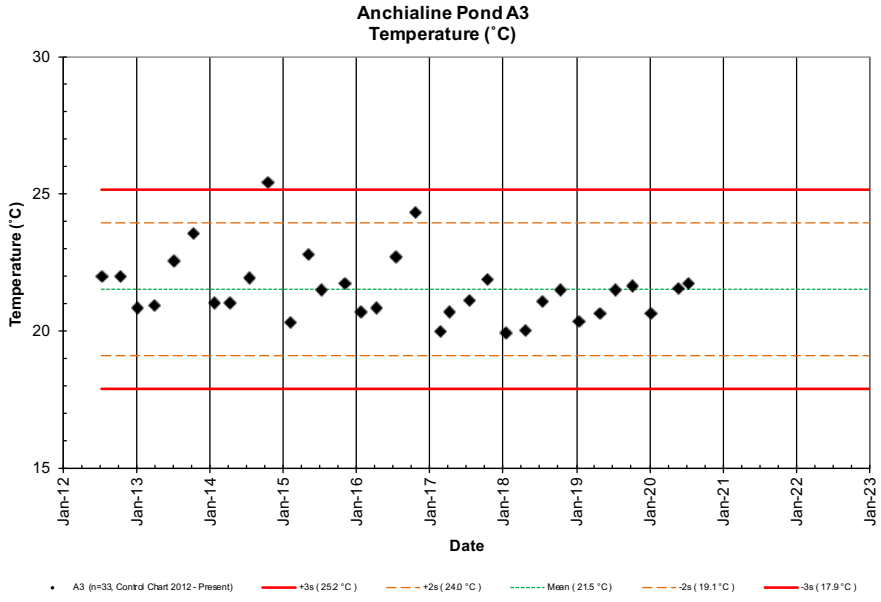


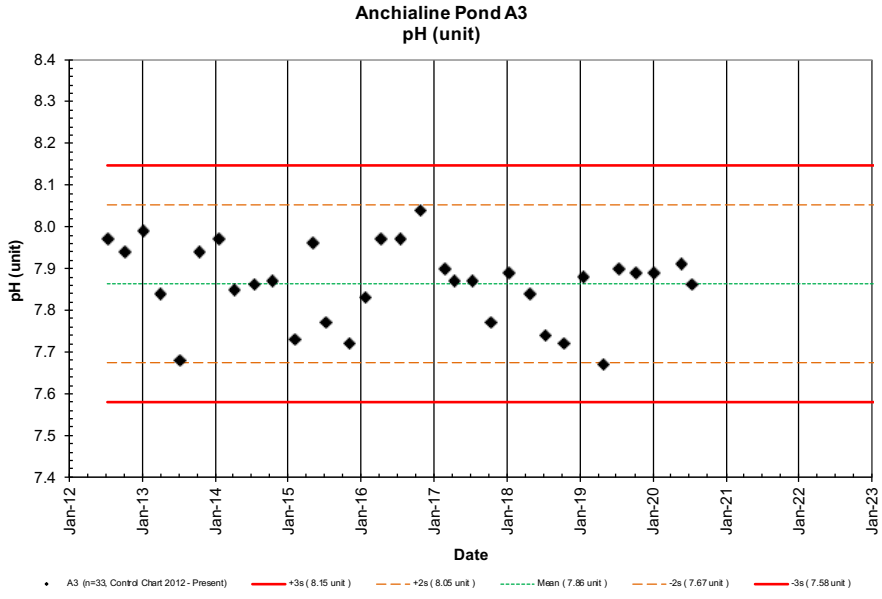
NELHA Water Quality Laboratory

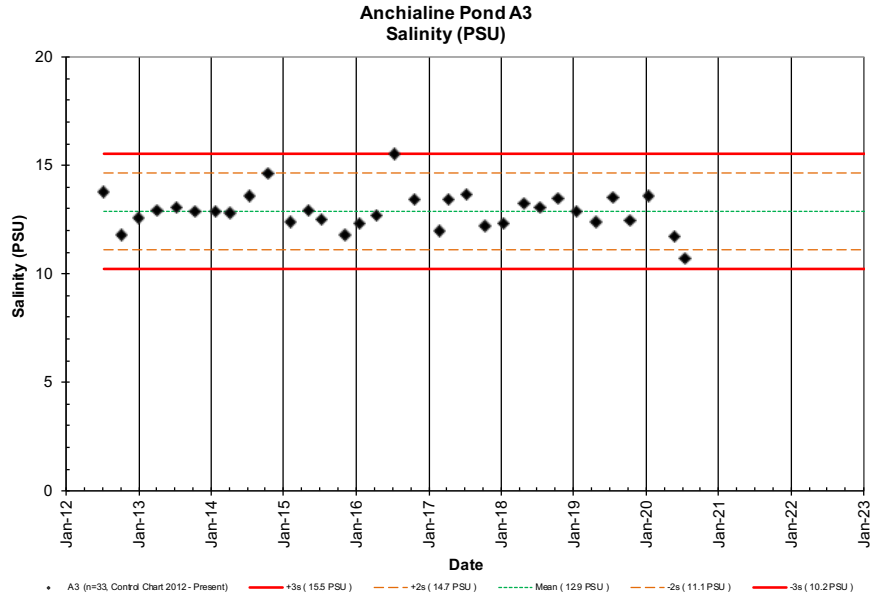
Anchialine Pond A3 Charts

7/9/2012 - 8/4/20





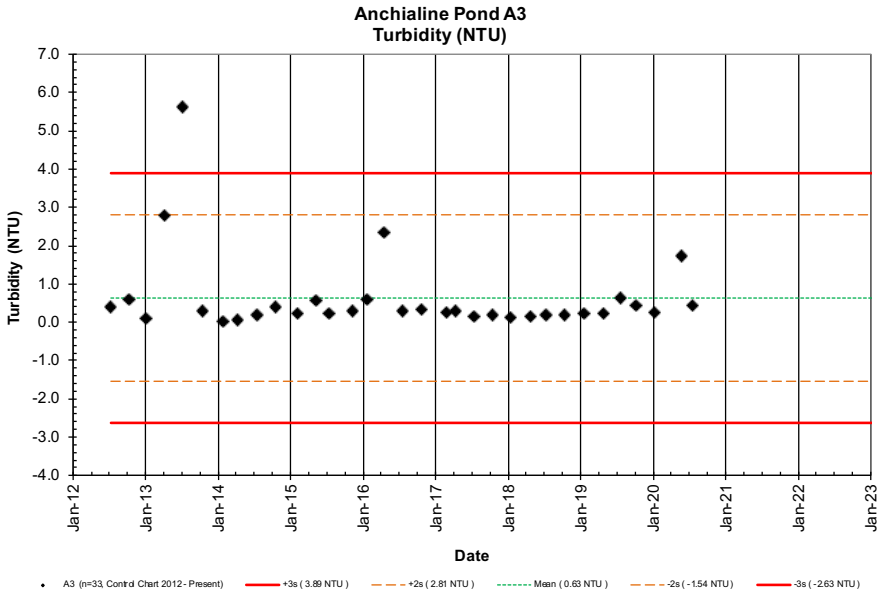


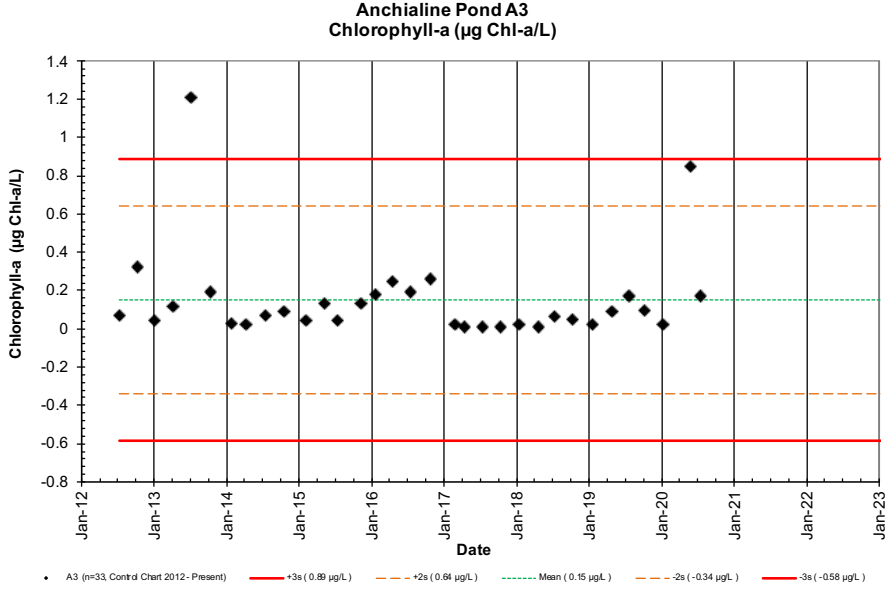


NELHA Water Quality Laboratory

Anchialine Pond A3 Charts

7/9/2012 - 8/4/20





NELHA Water Quality Laboratory

Coastal Site C24

10/6/1989 - 8/4/20

Site	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	-2400	(m)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(°C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	10/6/89	825	1.7	Ebb	1.87	58	4.43	62	0.28	3.9	327	9184							22.80	12623	26.1	8.20	7.10		NA	7
C24	11/7/89	1330	0.8	Ebb	3.68	114	88.8	1244	0.16	2.2	651	18284	3.75	116	92.4	1294	0.83		11.92	6599	22.5	8.15	6.89		NA	35
C24	12/4/89	1057	0.9	Ebb	3.30	102	89.3	1251	0.07	1.0	663	18621	3.49	108	22.2	311	0.93	0.56	9.75	5396	22.4	8.11	7.97		NA	3
C24	1/29/90	1115	0.3	Ebb	3.40	105	76.3	1069	0.16	2.2	687	19295	3.50	108	79.3	1111	1.35	12.57	9.97	5519	21.2	8.09	7.40		NA	23
C24	2/7/90	1305	0.4	Flood	3.40	105	80.8	1132	1.55	21.7	519	14576	3.55	110	83.1	1165	0.96	0.00	10.33	5717	21.1	8.12	7.39		NA	13
C24	3/12/90	1350	0.5	Flood	2.18	68	54.8	768	0.07	1.0	187	5244	2.39	74	57.1	800	0.67	1.33	17.48	9676	22.0	8.18	7.75		NA	4
C24	4/3/90	1115	0.5	Flood	3.45	107	93.8	1314	0.07	1.0	660	18536	3.53	109	100	1401	0.50	1.06	8.58	4751	21.0	8.01	7.52		NA	10
C24	5/8/90	1045	0.3	Flood	2.82	87	86.7	1214	0.07	1.0	629	17666	3.03	94	94.7	1326	2.33	1.00	10.13	5607	22.3	8.02	7.29		NA	15
C24	5/30/90	1415	0.7	Low	2.89	90	84.2	1179	0.07	1.0	635	17834	3.12	97	92.9	1301	1.52	0.02	10.46	5791	21.1	8.01	7.12		NA	2
C24	7/9/90	930	0.6	Ebb	2.88	89	76.0	1065	0.07	1.0	365	10251	4.44	138	96.0	1345	2.12	0.11	10.03	5554	21.4	8.03	7.27		NA	<1
C24	8/1/90	1045	1.4	Flood	2.49	77	59.5	833	0.07	1.0	512	14380	2.49	77	63.3	887	1.98	0.62	16.87	9339	24.2	8.29	7.80		NA	<1
C24	9/11/90	1045	2.0	High	0.27	8	1.06	15	0.37	5.2	16.2	455	0.93	29	6.35	89	1.63	1.96	34.25	18960	27.9	8.34	6.89		NA	9
C24	10/2/90	1120	0.8	Flood	2.30	71	58.5	819	0.07	1.0	620	17415	2.76	85	66.0	925	0.95	0.82	16.55	9161	24.1	8.28	7.23		NA	7
C24	11/7/90	935	1.8	Ebb	0.72	22	30.9	433	0.20	2.8	242	6805	1.38	43	41.5	581	0.68	1.14	25.02	13851	25.5	8.24	6.61		NA	<1
C24	12/4/90	1130	0.6	Ebb	2.47	77	70.5	987	0.22	3.1	924	25951	2.85	88	72.7	1018	0.49	0.61	14.11	7808	21.3	8.02	6.60		NA	<1
C24	1/8/91	1015	0.9	Ebb	2.91	90	95.1	1332	0.05	0.7	631	17722	3.16	98	99.2	1389	0.65	1.26	8.81	4874	21.0	8.04	7.50		NA	6
C24	2/12/91	1045	0.2	Low	2.00	62	82.0	1149	0.07	1.0	367	10293	2.05	63	84.5	1184	0.82	0.97	9.48	5245	21.6	8.16	7.44		NA	8
C24	3/12/91	1049	0.4	Flood	0.77	24	13.7	192	0.33	4.6	124	3485	0.96	30	17.3	242	0.92	0.73	30.21	16722	24.5	8.28	7.69	0.08	NA	<1
C24	4/9/91	1114	0.6	Flood	3.09	96	77.8	1090	0.07	1.0	765	21485	3.13	97	82.4	1154	0.67	0.00	10.63	5881	20.9	7.97	7.02		NA	<1
C24	5/14/91	1023	-0.4	Low	2.63	81	74.6	1045	0.07	1.0	534	14998	3.09	96	83.8	1174	0.70	0.20	10.10	5591	21.1	8.03	7.45	0.04	NA	10
C24	6/3/91	1252	0.4	Low	2.79	86	81.6	1143	0.07	1.0	641	18008	3.18	98	90.1	1262	0.97	0.27	9.13	5053	21.5	8.07	7.39	0.03	107	4
C24	7/8/91	1059	1.2	Flood	0.80	25	23.3	326	0.40	5.6	98.0	2752	1.01	31	26.0	364	0.86	0.40	27.28	15100	25.6	8.36	8.53	0.03	1	<1
C24	8/7/91	919	0.2	Flood	2.40	74	49.0	686	0.07	1.0	440	12358	2.48	77	54.7	766	0.68	0.11	9.90	5481	21.3	7.99	6.92	0.06	91	68
C24	9/4/91	1046	1.5	Flood	0.92	28	24.7	346	0.93	13.0	233	6544	1.13	35	29.3	410	0.92	0.22	26.73	14798	26.0	8.32	8.55	0.09	64	<1
C24	10/7/91	1151	0.5	Low	2.80	87	89.2	1249	0.02	0.3	579	16262	2.84	88	91.7	1284	0.59	0.14	11.77	6517	21.4	7.95	7.15	0.06	3	2
C24	11/5/91	1006	0.5	Low	2.12	66	83.6	1171	0.07	1.0	535	15026	2.14	66	84.7	1186	1.10	0.71	13.26	7341	22.4	8.12	7.39	0.03	1	3
C24	12/2/91	1020	0.6	Low	1.82	56	77.1	1080	0.07	1.0	481	13509	1.95	60	80.4	1126	0.70	0.71	14.81	8196	22.7	8.16	7.54	0.29	22	16
C24	1/6/92	1017	0.6	Ebb	2.39	74	95.1	1332	0.07	1.0	451	12667	2.39	74	99.2	1389	0.80	0.28	12.62	6987	21.2	8.04	7.12	0.07	4	2
C24	2/24/92	1232	0.3	Ebb	0.53	16	34.7	486	0.17	2.4	216	6066	0.68	21	38.1	534	0.96	1.01	25.61	14174	24.4	8.32	7.49	0.19	<1	1
C24	3/23/92	1100	0.2	Ebb	3.12	97	73.4	1028	0.04	0.6	742	20839	3.31	103	97.7	1369	0.67	0.23	9.69	5365	21.1	8.05	7.68	0.20	<1	2
C24	4/20/92	1022	-0.1	Low	2.69	83	45.8	642	0.11	1.5	864	24266	2.79	86	101	1421	0.62	0.42	10.04	5556	21.3	8.05	7.66	0.07	27	1
C24	5/18/92	1206	0.2	Flood	2.74	85	87.5	1225	0.23	3.2	779	21879	2.78	86	88.5	1240	1.31	0.50	12.21	6759	22.4	8.11	8.09	0.19	5	2
C24	6/16/92	1231	0.4	Flood	2.68	83	93.5	1310	0.02	0.3	648	18199	2.78	86	94.0	1316	0.81	0.22	10.74	5945	22.0	8.08	7.93	0.16	3	2
C24	7/22/92	1102	1.5	High	1.55	48	48.6	680	0.84	11.8	393	11038	1.72	53	53.5	749	0.81	2.47	21.99	12174	25.4	8.28	8.05	0.13	5	2
C24	8/17/92	940	1.1	Ebb	3.09	96	44.8	628	0.07	1.0	190	5336	3.09	96	76.3	1068	0.90	0.20	10.74	5944	21.8	8.00	7.66	0.03	1	<1
C24	9/8/92	1059	1.0	Flood	0.66	20	1.08	15	0.66	9.2	11.0	309	0.75	23	7.49	105	1.03	0.24	18.51	10246	24.3	8.25	8.44	0.21	36	1
C24	10/19/92	1057	2.0	High	1.98	61	63.3	886	0.62	8.7	73.7	2070	2.35	73	63.6	891	1.33	2.60	34.32	18995	28.8	8.31	7.47	0.08	67	1
C24	11/23/92	1124	0.4	Low	1.88	58	22.2	312	0.38	5.3	35.4	995	2.56	79	65.9	923	0.95	0.94	18.37	10166	23.7	8.24	7.86	0.06	2	2
C24	12/21/92	1055	0.4	Low	2.17	67	63.2	885	0.34	4.8	649	18227	3.28	102	72.0	1008	0.77	1.02	15.89	8793	22.5	8.23	8.02	0.10	<1	1

NELHA Water Quality Laboratory

Coastal Site C24

10/6/1989 - 8/4/20

Site	Date	Time	Tide		PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	-2400	(m)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(°C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	1/19/93	1016	0.3	Low	2.47	77	94.7	1327	0.54	7.6	221	6204	2.61	81	105	1466	0.66	1.02	11.16	6175	21.4	8.13	7.73	0.00	8	10
C24	2/17/93	1041	0.3	Low	0.63	20	39.4	552	0.33	4.6	435	12217	0.63	20	41.0	575	0.97	0.19	24.36	13486	23.5	8.33	7.89	0.08	1	<1
C24	3/22/93	952	0.0	Low	2.16	67	96.8	1356	0.03	0.4	631	17719	2.17	67	217	3044	0.64	0.50	10.36	5733	21.3	8.16	7.81	0.13	<1	<1
C24	4/19/93	1040	0.3	Flood	1.62	50	71.1	995	0.25	3.5	566	15888	1.86	58	72.7	1019	0.64	0.33	16.10	8913	22.7	8.30	8.70	0.20	<1	<1
C24	5/17/93	939	0.3	Flood	1.83	57	74.5	1043	0.31	4.3	593	16649	2.13	66	81.4	1141	0.68	0.22	14.75	8164	22.0	8.22	8.22	0.08	3	<1
C24	6/14/93	1013	1.0	Flood	0.69	21	15.6	219	0.60	8.4	109	3050	0.81	25	18.7	262	1.19		30.09	16656	25.9	8.33	7.97	0.36	2	2
C24	8/17/93	1040	0.2	Flood	2.78	86	92.2	1291	0.15	2.1	237	6659	2.78	86	98.4	1379	0.65	0.54	11.37	6296	22.0	8.10	7.76	0.15	2	6
C24	12/21/93	1102	1.0	Ebb	0.46	14	33.7	471	0.44	6.2	204	5734	0.62	19	39.6	554	0.94	0.12	25.96	14367	24.0	8.24	7.70	0.11	<1	<1
C24	2/23/94	1117	0.3	Flood	1.73	54	55.4	776	0.33	4.6	389	10925	1.93	60	85.9	1204	0.75	0.51	18.72	10361	22.9	8.26	7.88	0.09	1	<1
C24	5/24/94	1028	-0.2	Flood	2.02	63	69.7	976	0.33	4.6	460	12917	2.05	63	73.9	1035	0.65	0.29	17.08	9453	23.1	8.26	8.64	0.27	24	35
C24	7/25/94	1120	0.3	Low	2.74	85	51.4	719	0.43	6.0	105	2939	2.66	82	103	1439	0.68	0.29	11.74	6500	22.5	8.11	7.92	0.00	1	1
C24	10/18/94	1116	0.6	Low	2.78	86	90.2	1264	0.09	1.3	593	16649	2.75	85	88.9	1245	0.76	0.50	11.86	6567	22.3	8.13	8.29	0.18	1	1
C24	2/21/95	1137	0.5	Ebb	2.68	83	91.7	1284	0.20	2.8	712	19988	2.68	83	97.7	1369	0.62	0.10	10.97	6069	21.5	8.13	7.96	0.11	<1	13
C24	4/19/95	1125	0.1	Low	2.67	83	93.3	1307	0.49	6.9	707	19856	2.66	82	100	1403	0.77	0.24	10.93	6052	22.0	8.15	8.02	0.13	1	1
C24	8/8/95	1146	1.1	Flood	0.42	13	4.60	64	0.92	12.9	53.7	1507	0.63	20	11.6	162	0.89	0.66	32.63	18059	27.4	8.35	8.04	0.22	1	<1
C24	10/23/95	1027	0.3	Low	2.86	89	90.0	1260	0.64	9.0	58.6	1646	2.87	89	99.6	1395	0.82	0.19	11.81	6534	21.9	8.08	7.80	0.29	1	<1
C24	3/6/96	1115	0.0	Low	1.84	57	95.1	1332	0.36	5.0	600	16851	2.00	62	93.3	1307	0.87	0.20	10.13	5605	22.0	8.17	7.61	0.05	5	1
C24	5/7/96	1129	0.0	Low	3.13	97	95.9	1343	0.23	3.2	614	17250	3.10	96	102	1426	0.70	0.64	10.52	5821	22.4	8.01	7.56	0.05	3	3
C24	8/21/96	1110	1.6	Ebb	1.03	32	36.5	511	1.27	17.8	225	6313	1.18	37	39.7	556	0.90	0.34	25.56	14150	27.6	8.30	7.93	0.17	1	1
C24	10/7/96	1116	1.6	Flood	0.15	5	0.80	11	1.00	14.0	22.5	633	0.37	11	7.29	102	1.20	0.22	34.24	18955	29.0	8.34	7.43	0.24	<1	1
C24	1/8/97	1045	0.1	Low	2.15	67	70.0	980	0.22	3.1	469	13178	2.19	68	76.0	1064	0.77	0.54	13.40	7416	22.6	8.21	7.78	0.42	<1	1
C24	4/29/97	1051	0.6	High	2.55	79	42.1	590	0.78	10.9	307	8619	2.70	84	39.9	559	0.85	0.22	23.62	13076	24.8	8.35	7.90	0.10	5	<1
C24	8/20/97	1147	0.2	Low	2.67	83	93.7	1313	0.75	10.5	552	15503	2.70	84	104	1460	0.73	1.21	11.78	6518	22.5	8.29	7.82	0.16	5	2
C24	10/8/97	1028	1.8	Ebb	0.92	28	30.4	426	0.72	10.1	193	5421	1.11	34	33.3	466	0.94	0.15	27.08	14992	26.9	8.50	7.54	0.26	<1	1
C24	3/2/98	1131	0.3	Ebb	2.84	88	103	1447	0.29	4.1	643	18051	3.02	94	110	1535	0.58	0.27	10.40	5756	21.5	8.26	7.75	0.00	1	1
C24	5/6/98	1118	0.6	Flood	2.52	78	83.6	1171	0.51	7.1	489	13742	2.59	80	87.7	1228	0.60	0.14	14.95	8274	21.7	8.21	8.30	0.10	<1	<1
C24	7/8/98	1141	0.9	Flood	2.21	68	69.8	978	0.82	11.5	442	12411	2.22	69	78.6	1101	0.72	0.25	17.49	9682	23.7	8.28	8.91	0.14	2	<1
C24	10/7/98	1045	0.4	Ebb	2.81	87	99.7	1397	0.42	5.9	559	15711	2.92	90	104	1453	0.71	0.15	12.88	7127	22.8	8.04	7.87	0.11	9	<1
C24	1/20/99	1110	0.6	Ebb	1.80	56	86.9	1217	0.26	3.6	462	12978	1.89	59	87.4	1224	0.79	0.31	15.98	8844	22.5	8.16	7.80	0.12	1	<1
C24	4/7/99	1142	0.4	Ebb	1.36	42	75.8	1062	0.31	4.3	378	10628	1.46	45	78.3	1097	0.72	0.29	18.26	10110	23.1	8.30	8.54	0.24	<1	1
C24	7/12/99	1035	0.2	Flood	2.94	91	105	1476	0.46	6.4	598	16781	3.01	93	110	1534	0.65	0.31	11.15	6172	21.9	8.05	7.83	0.24	6	9
C24	10/11/99	1103	0.5	Low	2.28	71	96.6	1353	0.43	6.0	557	15644	2.46	76	103	1443	0.72	0.27	12.32	6817	22.2	8.17	8.02	0.20	1	5
C24	3/20/00	1130	0.0	Flood	2.54	79	22.0	308	0.33	4.6	547	15368	2.30	71	112	1572	0.59	0.27	11.29	6252	21.5	8.13	7.97	0.30	<1	<1
C24	4/18/00	1127	0.2	Flood	2.86	89	98.6	1381	0.43	6.0	559	15694	2.30	71	105	1466	0.65	0.23	12.44	6888	23.4	8.17	8.22	0.20	2	2
C24	8/2/00	1048	0.2	Low	2.83	88	81.8	1146	0.24	3.4	560	15731	2.95	91	90.8	1272	0.53	0.27	13.00	7197	21.6	7.97	7.08	0.13	2	15
C24	10/23/00	1126	1.7	Flood	0.21	7	0.77	11	0.52	7.3	37.6	1056	0.48	15	7.04	99	1.06	0.20	34.54	19119	26.9	8.36	7.54	0.26	<1	<1
C24	1/23/01	1118	0.3	Low	2.43	75	95.7	1340	0.32	4.5	572	16073	2.45	76	101	1408	0.66	0.26	12.39	6858	25.2	8.13	7.47	0.13	<1	5
C24	4/16/01	1105	0.5	Flood	2.25	70	50.3	705	0.33	4.6	503	14119	2.48	77	89.1	1248	0.76	0.09	14.97	8286	22.9	8.20	8.54	0.18	<1	<1
C24	9/12/01	1125	2.1	Flood	0.14	4	0.38	5	0.35	4.9	14.6	411	0.30	9	6.25	88	1.11	0.25	34.76	19240	28.2	8.30	7.65	0.42	1	1
C24	10/23/01	1135	1.7	Ebb	1.53	47	56.6	793	0.58	8.1	334	9383	1.63	50	58.3	817	0.80	0.11	22.07	12216	25.0	8.23	8.08	0.32	1	1
C24	1/14/02	1153	0.2	Low	2.46	76	96.7	1354	0.20	2.8	587	16492	2.28	71	88.2	1236	0.61	0.23	11.97	6626	21.8	8.05	6.40	0.06	10	5
C24	5/20/02	1150	0.9	High	1.74	54	67.3	943	0.70	9.8	412	11580	1.88	58	60.2	843	0.69	0.13	18.95	10489	24.1	8.25	8.66	0.16	1	1

NELHA Water Quality Laboratory

Coastal Site C24

10/6/1989 - 8/4/20

Site	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	-2400	(m)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(°C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	8/19/02	1153	1.7	Flood	0.28	9	2.63	37	0.47	6.6	29.2	820	0.52	16	8.68	122	1.09	0.14	33.75	18679	27.9	8.32	7.76	0.10	<1	<1
C24	10/10/02	1134	1.1	Ebb	2.20	68	77.9	1091	0.77	10.8	475	13327	2.39	74	78.0	1093	0.81	0.36	16.24	8989	23.8	8.15	7.52	0.13	34	9
C24	3/17/03	1112	-0.1	Flood	2.12	66	93.6	1311	0.60	8.4	562	15778	2.24	69	109	1527	0.47	0.60	12.34	6831	22.6	8.18	8.17	0.50	11	1
C24	4/24/03	1142	0.5	Flood	2.16	67	92.6	1297	0.75	10.5	517	14520	2.28	71	99.7	1396	0.95	0.18	14.61	8089	23.2	8.30	8.54	0.09	1	1
C24	8/25/03	1050	0.9	Flood	2.05	63	78.3	1097	0.75	10.5	467	13102	2.15	67	107	1496	1.23	0.20	17.02	9420	24.0	8.25	8.77	0.41	1	2
C24	10/27/03	1208	0.4	Ebb	2.41	75	50.4	706	0.54	7.6	278	7819	2.71	84	72.7	1018	2.10	0.23	13.68	7571	23.3	8.10		0.14	1	1
C24	12/5/03	1052	0.8	Flood																			8.12			
C24	2/9/04	1155	0.0	Ebb	2.52	78	108	1511	0.24	3.4	584	16405	2.49	77	115	1611	1.52	0.52	12.08	6686	22.1	8.05	7.84	0.13	14	1
C24	6/3/04	1145	0.1	Flood	1.67	52	65.6	919	0.94	13.2	367	10296	1.77	55	81.7	1145	1.42	0.54	19.45	10766	25.1	8.31	8.64	0.02	5	1
C24	8/31/04	1106	0.2	Low	1.88	58	79.9	1119	0.58	8.1	423	11891	1.82	56	80.6	1129		0.19	17.30	9576	24.3	8.26	8.00	0.16	4	1
C24	12/1/04	1032	1.6	Ebb	0.86	27	36.3	508	0.68	9.5	180	5044	1.08	33	43.7	612	1.06	0.26	26.98	14934	25.6	8.32	7.40	0.21	<1	<1
C24	3/17/05	1112	0.3	Ebb	2.11	65	105	1468	0.53	7.4	566	15899	2.24	69	111	1548		0.14	11.33	6270	24.7	8.35	8.82	0.18	1	<1
C24	4/14/05	1154	0.2	Ebb	0.88	27	27.6	386	0.78	10.9	162	4553	1.08	33	33.1	463	1.10	0.31	28.20	15609	25.7	8.42	8.18	0.25	1	2
C24	7/26/05	1132	1.1	Ebb	1.51	47	60.6	849	0.50	7.0	298	8375	1.59	49	76.4	1070	1.02	0.22	22.89	12669	25.6	8.34	7.93	0.06	2	<1
C24	8/8/05	926	0.7	Ebb															16.13	8927	22.7				1	2
C24	10/31/05	1043	0.6	Flood	2.31	72	98.2	1375	0.93	13.0	454	12742	2.42	75	105	1471	0.69	0.25	13.37	7400	23.5	8.25	8.14	0.27	10	1
C24	1/25/06	1126	0.4	Flood	2.51	78	115	1615	0.52	7.3	545	15307	2.53	78	110	1539	0.59	0.22			22.4	8.23	8.44	0.27	2	1
C24	4/17/06	1115	-0.2	Low	2.73	85	124	1737	0.33	4.6	561	15756	2.94	91	121	1688	0.63	0.35	12.59	6969	24.9	8.13	8.37	0.30	3	2
C24	7/26/06	1233	0.6	Flood	2.35	73	78.7	1102	0.88	12.3	430	12077	2.40	74	72.6	1016	0.83	0.97	18.43	10199	23.8	8.24	9.17	0.22	5	2
C24	11/21/06	1123	0.4	Low	2.94	91	122	1709	0.44	6.2	543	15250	2.95	91	108	1517	0.58	0.22	13.48	7462	22.4	8.06	7.82	0.27	3	2
C24	1/18/07	1201	0.2	Flood	1.56	48	80.0	1121	0.78	10.9	368	10335	1.64	51	81.6	1143	0.87	0.39	20.12	11136	23.8	8.32	8.64	0.26	1	<1
C24	6/25/07	1127	1.5	Flood	0.93	29	29.45	413	0.92	12.9	140	3931	1.95	60	31.01	434		0.29	28.73	15901	26.7	8.44	9.71	0.31	4	<1
C24	2/1/08	1334	0.5	High	3.0	93	107	1497	0.48	6.7	605	16989	2.5	77	102	1425		0.41	10.76	5956	21.7	7.99	8.30			
C24	2/20/09	1105	0.3	Flood	2.1	66	55.3	775	0.45	6.3	222	6239	2.4	74	131	1832		0.19	14.96	8281	22.5	8.00	7.63	0.02		
C24	3/30/09	1000	0.3	Ebb	2.0	63	93	1297	1.22	17.1	321	9028	3.4	104	97	1353		0.65	13.79	7633	22.4	7.78	6.62	0.05		
C24	4/27/09	1356	0.3	Flood	1.3	41	55	777	3.15	44.1	221	6199	1.9	58	80	1117		0.48	25.09	13888	25.0	8.42	6.21	0.05		
C24	5/14/09	946	0.4	Ebb	3.4	106	125	1747	1.02	14.3	504	14154	3.2	100	119	1671		0.34	13.45	7445	22.7	7.94	6.75	0.13		
C24	6/12/09	816	0.6	High	1.7	53	108	1513	0.99	13.9	408	11447	2.1	66	122	1705		0.34	15.76	8724	23.3	8.06	6.48	0.18		
C24	7/10/09	901	0.3	Ebb	2.5	76	84	1182	0.72	10.1	375	10536	6.3	196	87	1222		1.35	12.61	6980	22.3	8.01	6.54	0.09		
C24	8/27/09	822	1.8	High	3.2	100	139	1951	0.48	6.7	493	13854	3.2	98	140	1966		0.22	11.06	6122	22.3	8.16	6.11	0.08		
C24	9/17/09	906	0.2	Flood	3.0	92	111	1559	0.49	6.8	384	10788	2.8	86	115	1615		0.29	12.24	6775	22.5	8.32	6.03	0.23		
C24	10/22/09	908	1.9	Ebb	1.6	50	63	885	2.41	33.7	120	3368	1.8	56	66	924		0.54	23.48	12997	23.8	7.96	6.42	1.57		
C24	11/19/09	1010	1.7	Ebb	3.0	94	115	1608	0.79	11.0	410	11515	2.9	91	116	1630		0.21	15.01	8308	22.4	7.89	5.62	0.51		
C24	12/7/09	754	2.0	High	0.3	8	1	10	1.07	15.0	24	688	0.5	15	9	133		0.24	34.89	19313	24.8	8.19	6.52	0.76		
C24	1/4/10	1343	0.0	Low	2.9	90	126	1768	0.49	6.9	505	14189	2.8	87	127	1784		0.50	13.38	7406	21.9	7.70	7.18	1.26		
C24	2/2/10	1329	-0.2	Low	2.5	78	130	1814	1.39	19.4	524	14707	2.4	75	130	1827		0.55	12.75	7057	21.9	7.79	6.91	0.55		
C24	3/10/10	1245	0.7	High	3.4	105	124	1736	0.19	2.7	417	11703	3.2	98	124	1740		0.44	12.51	6925	21.8	7.99	6.50	0.64		
C24	4/5/10	947	0.4	High	3.4	105	112.0	1568	0.69	9.6	564	15850	3.2	98	113	1578		0.11	13.18	7295	21.8	8.10	7.53	0.06		
C24	5/12/10	1224	1.5	Flood	1.1	34	37.7	528	2.82	39.5	200	5605	1.3	40	39	553		0.17	28.18	15598	26.1	8.20	6.40	0.07		
C24	6/21/10	959	1.3	Flood	0.6	18	13.0	182	0.89	12.4	84	2369	1.0	30	19	268		0.25	32.37	17918	25.7	8.29	7.58	0.45		

NELHA Water Quality Laboratory

Coastal Site C24

10/6/1989 - 8/4/20

Site	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	-2400	(m)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	7/12/10	951	-0.1	Low	3.9	119	157.2	2201	2.13	29.8	622	17471	3.6	113	158	2207		0.42	12.34	6831	22.6	7.94	6.07	0.08		
C24	8/2/10	1205	1.3	Ebb	1.7	53	69.1	967	0.84	11.7	326	9160	1.8	57	74	1041		0.91	22.24	12310	26.3	8.20	7.40	0.26		
C24	9/1/10	1038	1.8	Flood	0.4	12	8.4	117	0.88	12.3	68	1910	0.7	21	19	272		0.16	32.51	17995	27.2	8.31	8.25	0.18		
C24	10/19/10	1100	1.1	Flood	1.4	44	61.4	860	0.91	12.7	303	8510	1.6	49	64	896		0.20	22.71	12571	24.6	8.28	8.22	0.18		
C24	11/3/10	935	0.5	Low	2.2	69	100.7	1411	0.76	10.6	472	13259	2.3	71	107	1497		0.64	18.27	10113	23.4	8.16	7.45	0.12		
C24	12/6/10	918	0.8	Ebb	3.1	95	122.9	1722	0.64	8.9	587	16477	3.0	92	125	1758		0.06	13.57	7511	21.9	7.94	6.68	0.09		
C24	1/26/11	953	0.8	Ebb	0.2	6	0.9	13	0.31	4.3	11	313	0.6	19	7	99		0.46	34.53	19113	25.3	8.23	6.36	0.17		
C24	4/13/11	936	0.3	Flood	3.1	97	127.2	1781	0.40	5.6	587	16493	3.2	101	128	1791		0.48	12.30	6808	22.1	8.07	7.60	0.17		
C24	7/18/11	900	0.7	Ebb	3.2	99	116.2	1627	0.57	8.0	545	15293	3.2	99	120	1686		0.27	14.21	7866	21.9	7.89	7.23	0.12		
C24	10/5/11	936	1.4	Flood	0.1	4	0.6	9	1.57	22.0	9	248	0.5	15	5	68		0.07	35.02	19384	27.0	8.17	6.82	0.21		
C24	1/17/12	810	0.7	Flood	2.4	74	102.3	1433	0.49	6.9	455	12771	2.4	74	107	1494		0.23	18.18	10063	21.8	7.94	7.09	0.06		
C24	4/19/12	1028	0.3	Flood	3.2	100	133.2	1866	0.69	9.7	587	16487	3.2	99	136	1900		0.07	12.59	6969	21.7	7.97	7.23	0.02		
C24	7/1/12	1058	1.2	Ebb	2.9	88	122.6	1718	0.78	10.9	516	14484	2.8	87	122	1706		0.10	14.41	7976	22.4	8.03	8.01	0.03		
C24	10/8/12	1026	1.8	High	0.9	27	32.4	454	1.35	18.9	139	3917	1.3	39	39	542		0.20	30.33	16788	26.7	8.24	7.64	0.10		
C24	1/1/13	1028	1.2	Ebb	0.6	18	34.8	488	1.66	23.2	125	3498	0.9	28	40	563		0.09	29.65	16412	24.8	8.24	6.63	0.17		
C24	4/1/13	1008	0.4	Ebb	2.7	83	107.1	1500	0.69	9.6	421	11837	2.7	83	107	1501		1.26	16.97	9393	22.4	8.11	8.12	0.11		
C24	7/8/13	937	-0.1	Low	4.0	123	156.3	2189	1.27	17.8	575	16139	3.8	116	158	2212		0.84	12.82	7096	21.9	7.83	6.63	0.02		
C24	10/10/13	1036	1.8	Ebb	3.1	95	99.0	1386	0.74	10.4	433	12161	3.1	95	101	1411		0.13	19.78	10949	23.8	8.08	7.47	0.07		
C24	1/22/14	845	0.7	High	0.9	28	39.1	548	0.71	10.0	142	3989	1.1	35	45	624		0.02	29.72	16451	23.9	8.02	6.35	0.12		
C24	4/9/14	1024	0.7	Flood	3.1	96	133.9	1876	1.02	14.3	534	15012	2.9	91	142	1985		0.40	11.58	6410	22.6	7.92	7.25	0.06		
C24	7/16/14	1042	0.5	Ebb	2.2	69	107.1	1501	1.50	21.0	388	10899	2.2	68	105	1466		0.17	18.44	10207	24.5	8.05	7.29	0.25		
C24	10/15/14	1213	1.5	Ebb	2.1	66	86.6	1213	0.93	13.0	371	10431	2.2	68	91	1271		0.10	17.09	9460	25.0	8.17	7.49	0.06		
C24	2/3/15	900	0.5	Ebb	2.7	83	138.5	1940	1.01	14.2	549	15422	3.3	102	148	2079		0.35	12.29	6803	22.2	8.13	7.30	0.09		
C24	5/5/15	1552	2.0	High	0.3	10	0.7	10	1.78	24.9	6	177	1.0	32	10	134		0.35	34.37	19025	26.5	8.16	7.10	0.26		
C24	7/10/15	1035	1.4	Flood	0.8	24	7.8	109	1.41	19.8	60	1695	1.2	37	28	397		0.36	32.19	17818	27.8	8.16	8.00	0.18		
C24	11/5/15	946	1.3	Flood	0.6	20	25.1	351	0.48	6.7	99	2784	1.1	34	37	520		0.16	29.97	16589	27.3	8.24	7.55	0.37		
C24	1/19/16	1007	-0.2	Low	1.9	58	101.7	1424	0.49	6.9	335	9395	2.0	61	100	1400		0.28	20.07	11109	23.8	8.19	7.17	0.14		
C24	4/12/16	1147	0.2	Ebb	3.4	104	112.6	1577	0.22	3.1	427	12001	3.3	103	111	1549		0.49	13.97	7733	22.7	8.06	6.94	0.25		
C24	7/14/16	1118	1.5	Flood	0.5	15	8.8	123	1.76	24.7	40	1110	0.7	21	17	234		0.41	32.98	18255	27.6	8.43	8.60	0.70		
C24	10/20/16	1037	1.1	Ebb	4.3	132	141.4	1981	1.01	14.1	575	16140	4.4	137	145	2033		0.16	21.92	12133	25.1	8.29	7.05	0.44		
C24	2/23/17	1045	0.5	Flood	2.8	86	108.5	1520	0.17	2.4	478	13420	2.9	89	120	1681		0.46	16.10	8912	22.6	8.00	7.50	0.01		
C24	4/10/17	1023	0.0	Flood	3.6	113	140.3	1966	0.24	3.4	558	15684	3.7	115	140	1963		0.18	12.04	6664	22.2	7.90	6.82	0.07		
C24	7/13/17	1049	0.2	Low	3.5	109	124.2	1740	0.31	4.3	534	14991	3.3	103	111	1557		0.69	13.80	7639	22.1	7.96	5.61	0.11		
C24	10/12/17	1026	2.0	High	0.2	7	0.5	7	1.03	14.4	7	203	0.5	14	3	49		0.29	34.75	19235	28.6	8.23	6.39	0.38		
C24	1/11/18	1016	1.0	Flood	0.1	3	1.9	26	0.46	6.4	15	433	0.4	12	5	70		0.18	34.27	18969	25.1	8.21	6.89	0.20		
C24	4/24/18	1027	0.8	Flood	1.1	34	36.7	513	2.33	32.7	175	4926	1.4	44	42	591		0.39	27.66	15311	24.7	8.22	7.34	0.32		
C24	7/12/18	954	-0.3	Low	2.6	80	100.7	1411	0.39	5.4	382	10739	2.7	83	106	1478		0.15	24.86	13761	24.7	8.20	7.73	0.34		
C24	10/11/18	948	0.6	Ebb	1.1	34	50.9	714	1.43	20.0	200	5604	1.3	39	54	750		0.37	26.30	14558	26.4	8.16	5.04	0.42		
C24	1/15/19	946	1.3	High	0.2	5	0.9	13	0.43	6.0	11	319	0.3	11	5	71		0.47	34.48	19086	24.3	8.15	6.18	0.39		
C24	4/25/19	924	0.5	Ebb	1.8	57	70.8	991	0.27	3.8	274	7699	1.9	60	75	1045		0.20	25.54	14137	24.8	8.15	7.89	0.42		

NELHA Water Quality Laboratory

Coastal Site C24

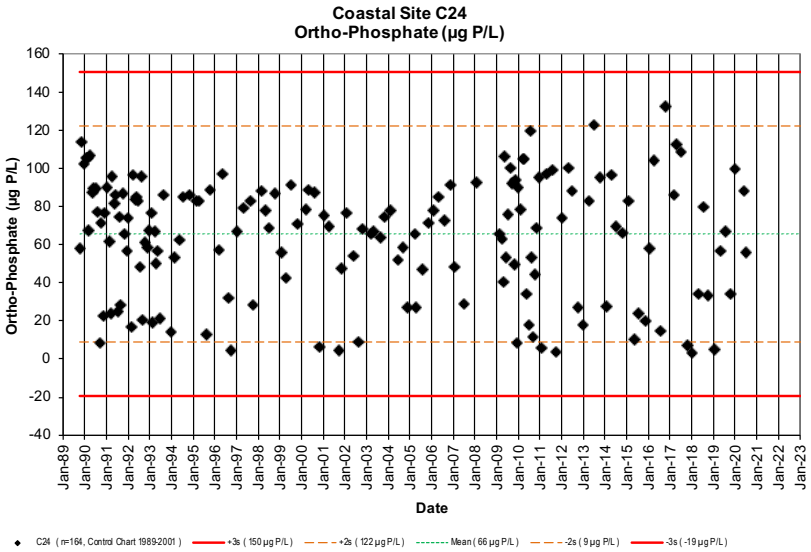
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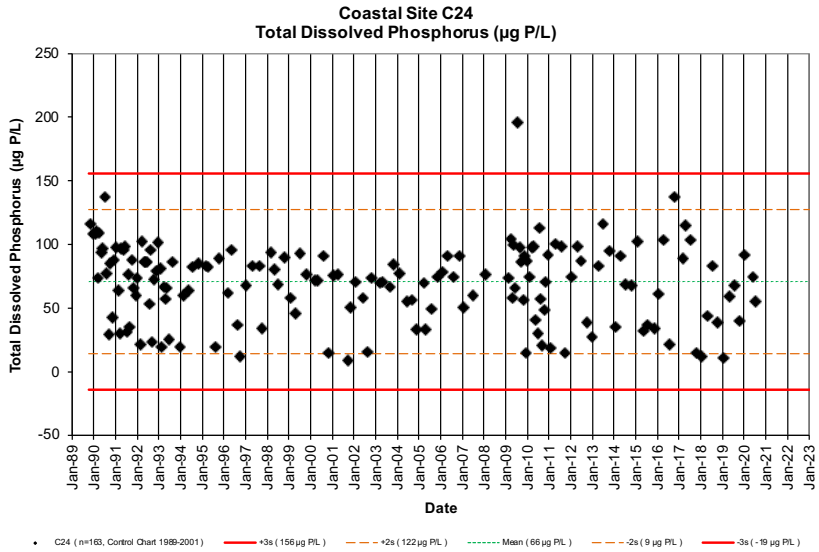
Site	Date	Time	Tide		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	Chloride	Temp.	pH	DO	Chl a	Fecal Col.	Entero.
	(M/D/Y)	-2400	(m)	(cycle)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(mg/L)	(°C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	7/17/19	937	-0.1	Low	2.2	67	97.9	1372	0.66	9.3	351	9869	2.2	68	95	1331		0.21	19.84	10982	25.1	8.16	6.61	0.31		
C24	10/8/19	1014	1.2	Flood	1.1	34	54.4	762	0.76	10.6	179	5035	1.3	40	57	792		0.28	27.91	15449	27.0	8.18	8.58	0.42		
C24	1/9/20	957	0.4	Low	3.2	100	132.3	1853	0.45	6.3	459	12884	3.0	92	132	1856		0.30	19.50	10794	23.0	7.98	6.55	0.13		
C24	5/21/20	1114	0.5	Flood	2.8	88	109.2	1530	0.57	8.0	423	11882	2.4	75	114	1594		0.28	18.64	10318	23.8	8.14	8.68	0.64		
C24	7/14/20	1022	0.4	Flood	1.8	56	52.7	738	0.56	7.9	219	6139	1.8	55	54	753		0.25	24.80	13727	25.5	8.19	9.29	0.55		
C24	10/1/20																									
C24	1/1/21																									
C24	4/1/21																									
C24	7/1/21																									
C24	10/1/21																									
C24	1/1/22																									
C24	4/1/22																									
C24	7/1/22																									
C24	10/1/22																									
C24	1/1/23																									
C24	4/1/23																									
Mean					2.07	64	72.5	1015	0.61	8.5	392	11017	2.2	69	80	1121	0.9	0.49	18.47	10223	23.6	8.15	7.55	0.21		
Std. Dev.					0.99	31	39.3	550	0.53	7.4	215	6037	1.0	30	39	550	0.4	1.04	7.87	4357	2.0	0.14	0.76	0.21		
Maximum					4.27	132	157.2	2201	3.15	44.1	924	25951	6.3	196	217	3044	2.3	12.57	35.02	19384	29.0	8.50	9.71	1.57		
Minimum					0.10	3	0.38	5	0.02	0.3	6	177	0.3	9	3	48.5	0.5	0.00	8.58	4751	20.9	7.70	5.04	0.00		
n					164	164	164	164	164	164	164	164	163	163	163	163	97	161	164	164	165	164	164	145		

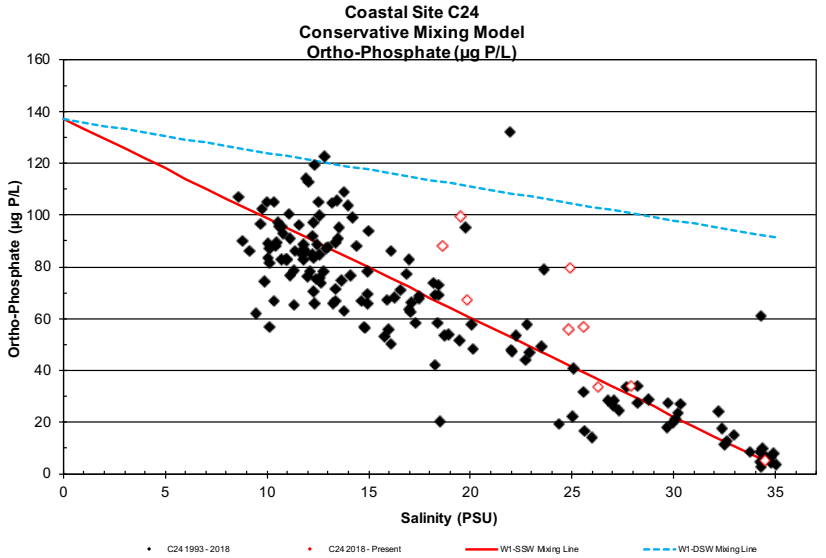
NELHA Water Quality Laboratory

Coastal Site C24 Charts

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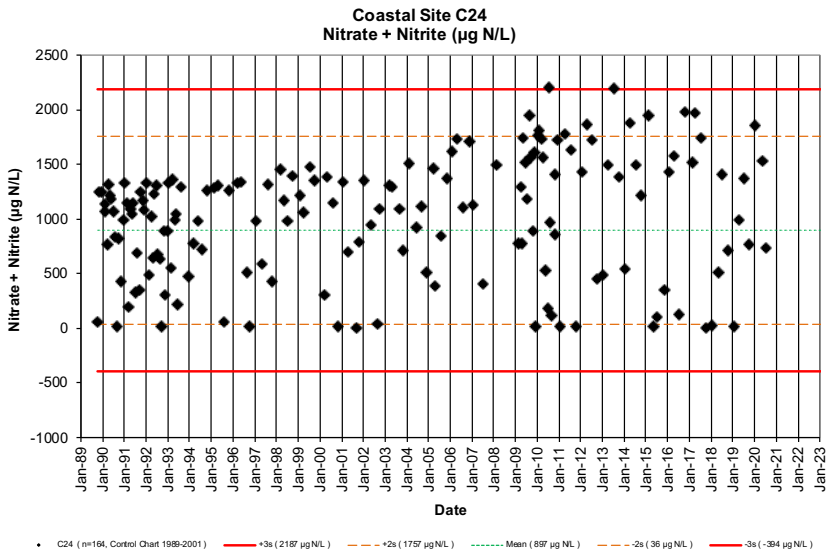


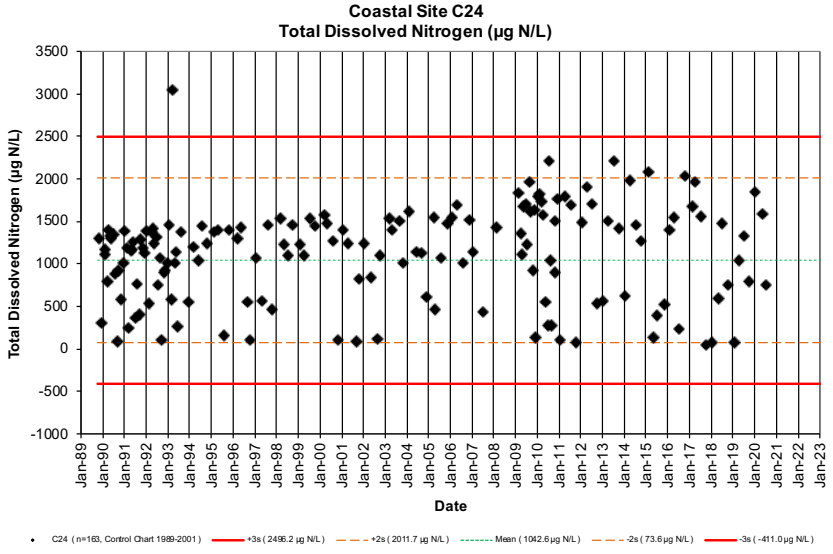


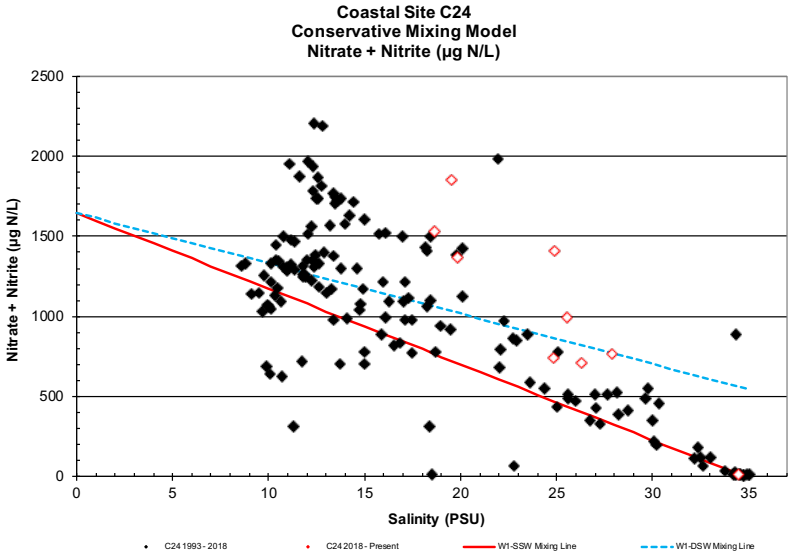
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Coastal Site C24 Charts

10/6/1989 - 8/4/20



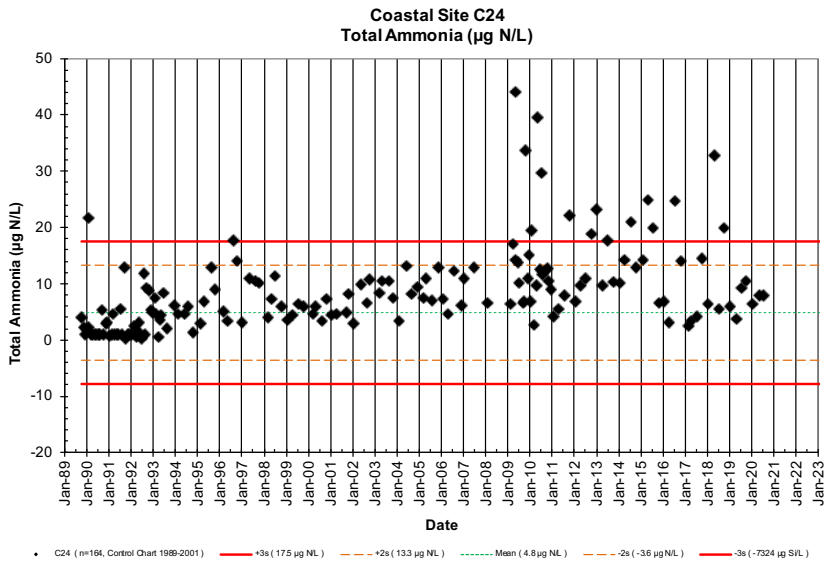


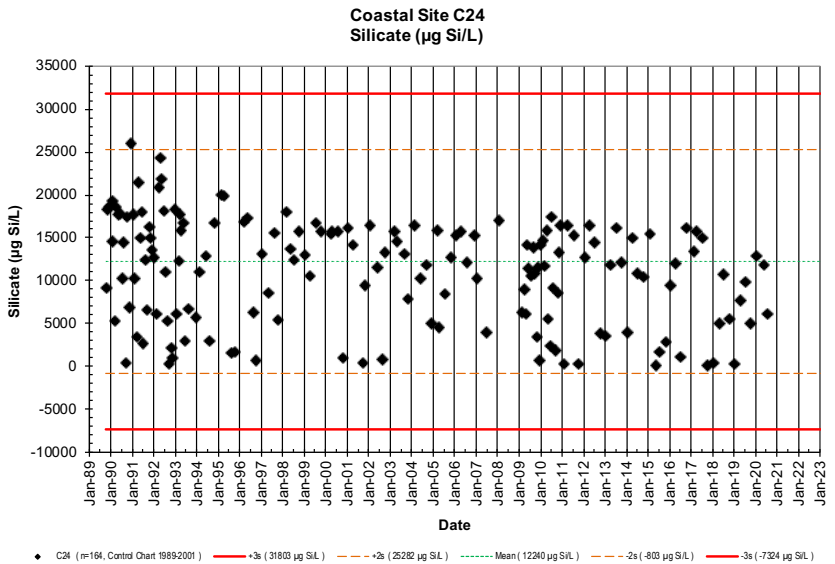


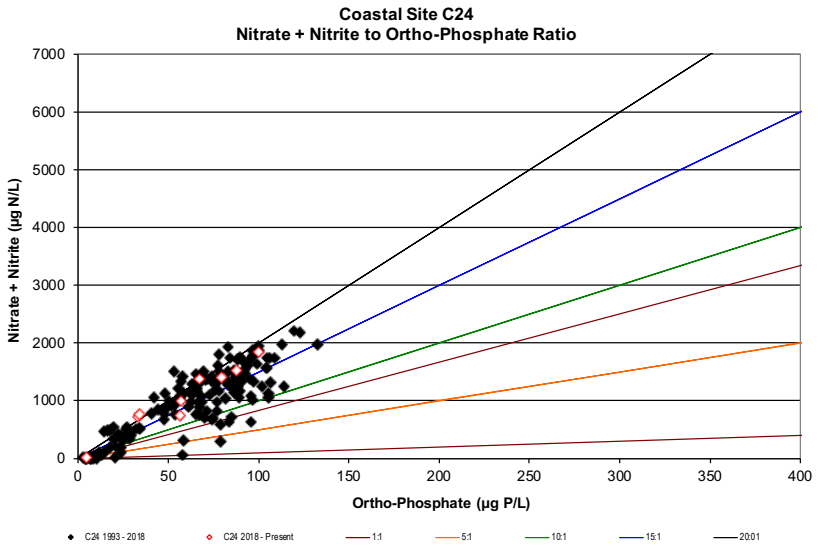
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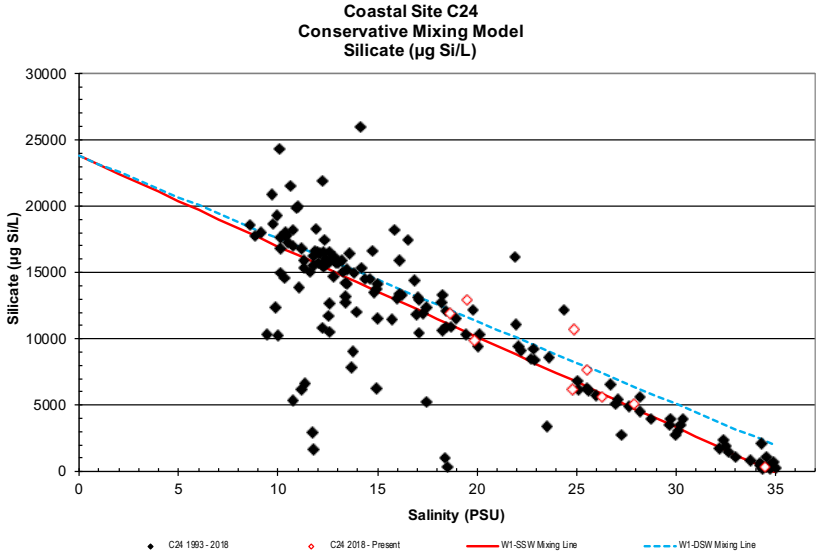
Coastal Site C24 Charts

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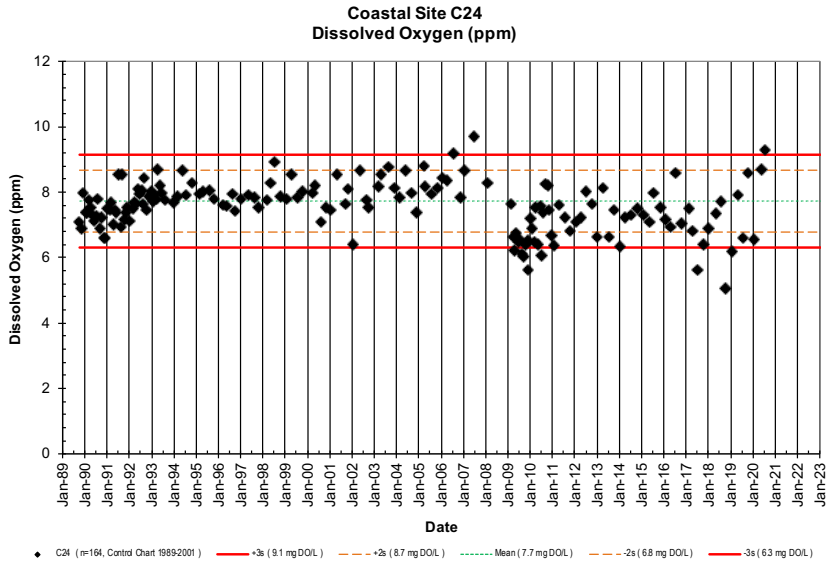


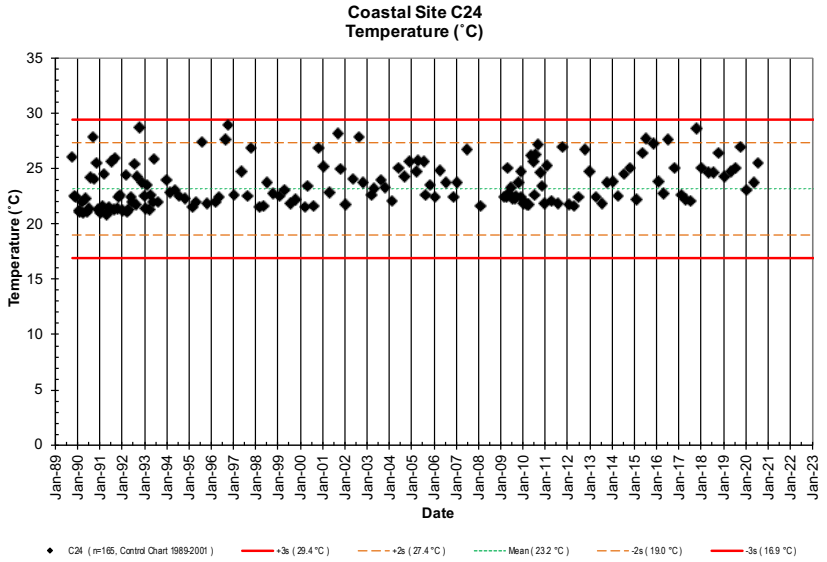


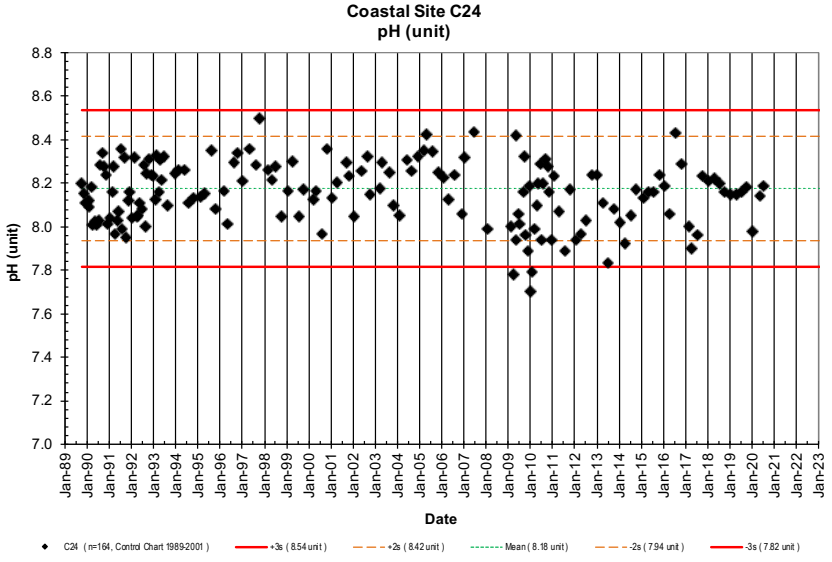
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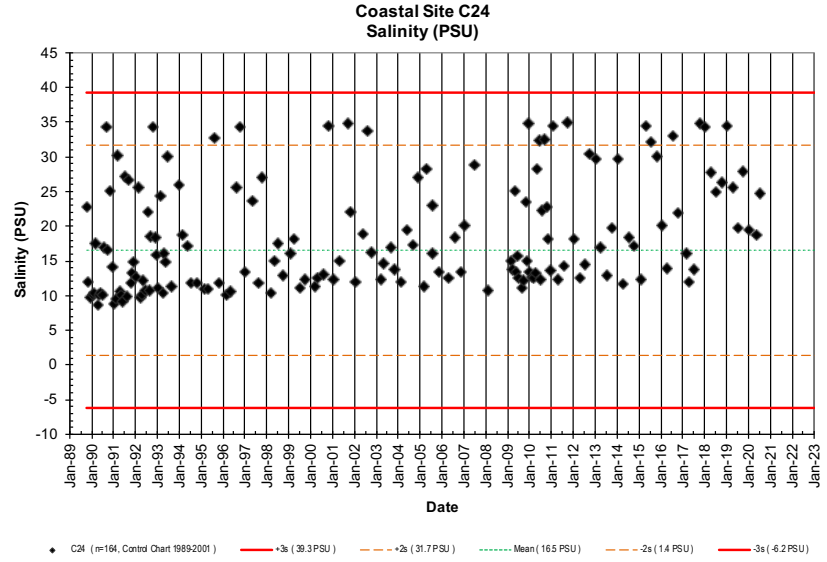
Coastal Site C24 Charts

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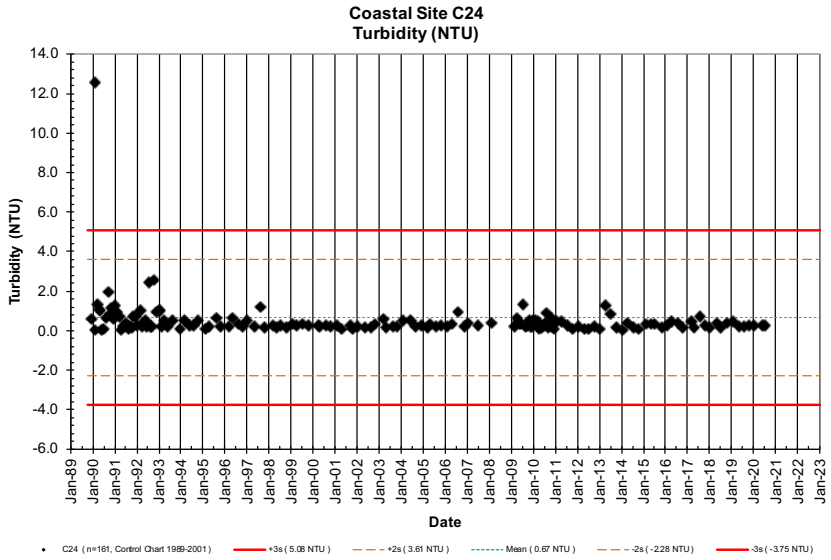


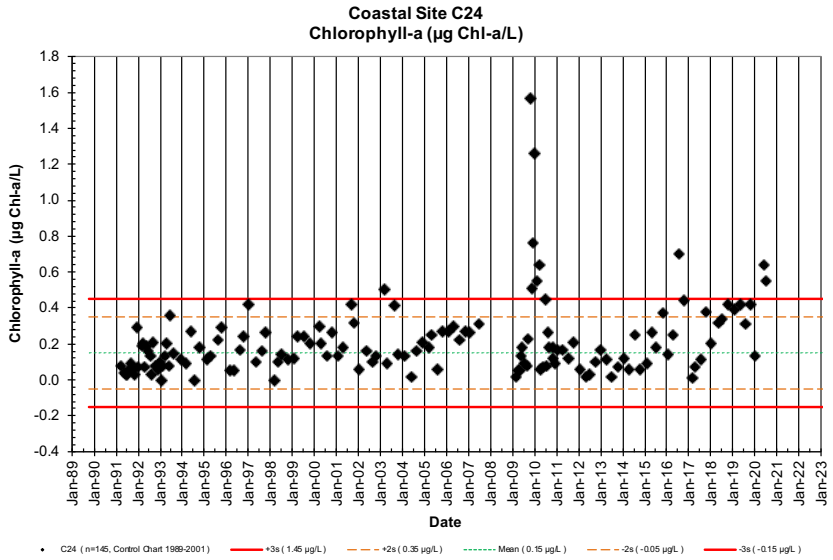


NELHA Water Quality Laboratory

Coastal Site C24 Charts

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APPENDIX C - NELHA Pipeline Data Tables and Graphs

Surface Seawater 28” Pipeline ……. Appendix C-SSW28-1
Surface Seawater 24” Pipeline…….. Appendix C-SSW24-1
Surface Seawater 55” Pipeline…… Appendix C-SSW55-1
Deep Seawater 40” Pipeline…… Appendix C-DSW40-1
Deep Seawater 18” Pipeline ……..…. Appendix C-DSW18-1
Deep Seawater 55” Pipeline…… Appendix C-DSW55-1

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/24/82		0.11	3.4	0.14	2.0			2.3	66									34.466	27.0				
SSW28"	8/3/82		0.17	5.3	0.19	2.7			2.9	82									34.482	27.8				
SSW28"	8/10/82		0.08	2.5	0.28	3.9			3.7	104									34.458	27.6				
SSW28"	8/17/82		0.10	3.1	0.34	4.8			3.9	110									34.446	27.4				
SSW28"	8/23/82		0.10	3.1	0.43	6.0			6.0	170									34.537	27.6				
SSW28"	9/1/82		0.12	3.7	0.09	1.3			1.8	51									34.544	27.6				
SSW28"	9/10/82		0.12	3.7	0.18	2.5			3.8	106									34.540	27.9				
SSW28"	9/17/82		0.11	3.4	0.47	6.6			11.5	324									34.442	27.6				
SSW28"	9/20/82		0.08	2.5	0.18	2.5			3.6	101									34.395	27.6				
SSW28"	9/29/82		0.12	3.7	0.23	3.2			6.2	173									34.329	27.5				
SSW28"	10/6/82		0.21	6.5	0.17	2.4			4.6	130									34.403	27.5				
SSW28"	10/14/82		0.17	5.3	0.12	1.7			3.5	99									34.438	27.3				
SSW28"	10/18/82		0.15	4.6	0.14	2.0			3.0	83									34.572	27.6				
SSW28"	10/28/82		0.13	4.0	0.14	2.0			2.1	58									34.595	27.4				
SSW28"	11/4/82		0.11	3.4	0.14	2.0			2.3	65									34.595	27.6				
SSW28"	11/10/82		0.12	3.7	0.17	2.4			2.3	65									34.607	27.4				
SSW28"	11/17/82		0.11	3.4	0.19	2.7			2.1	60									34.670	27.2				
SSW28"	11/22/82		0.12	3.7	0.17	2.4			2.3	65									34.709	26.7				
SSW28"	12/7/82		0.13	4.0	0.11	1.5			3.0	85									34.627	26.2				
SSW28"	12/20/82		0.16	5.0	0.08	1.1			2.1	58									34.682	25.8				
SSW28"	12/23/82		0.20	6.2	0.19	2.7			7.2	201									34.694	25.2				
SSW28"	12/27/82		0.17	5.3	0.14	2.0			1.9	53									34.737	25.1				
SSW28"	1/5/83		0.16	5.0	0.11	1.5			3.0	85									34.635	25.3				
SSW28"	1/10/83		0.18	5.6	0.11	1.5			3.4	95									34.658	25.3				
SSW28"	1/19/83		0.16	5.0	0.08	1.1			2.9	80									34.760	25.4				
SSW28"	1/27/83		0.16	5.0	0.08	1.1			2.9	80									34.756	24.8				
SSW28"	2/4/83		0.16	5.0	0.11	1.5			2.9	80									34.776	24.9				
SSW28"	2/10/83		0.15	4.6	0.05	0.7			3.7	105									34.772	24.3				
SSW28"	2/18/83		0.18	5.6	0.14	2.0			3.4	95									34.792	24.7				
SSW28"	2/22/83		0.14	4.3	0.14	2.0			2.9	80									34.858	24.9				
SSW28"	3/1/83		0.04	1.2	0.10	1.4			3.0	83									34.874	25.1				
SSW28"	3/11/83		0.06	1.9	0.25	3.5			4.1	116									34.837	25.4				
SSW28"	3/18/83		0.06	1.9	0.21	2.9			3.0	83									34.855	24.9				
SSW28"	3/24/83		0.09	2.8	0.12	1.7			2.8	78									34.846	24.9				
SSW28"	3/31/83		0.10	3.1	0.12	1.7			2.0	55									34.753	24.9				
SSW28"	4/6/83		0.09	2.8	0.21	2.9			2.8	78									34.770	25.3				
SSW28"	4/16/83		0.12	3.7	0.21	2.9			3.4	94									34.730	25.2				
SSW28"	4/21/83		0.14	4.3	0.16	2.2			6.5	183									34.721	25.7				
SSW28"	4/25/83		0.10	3.1	0.12	1.7			3.5	99									34.780	25.2				
SSW28"	5/7/83		0.16	5.0	0.14	2.0			2.7	76									34.700	25.1				
SSW28"	5/10/83		0.15	4.6	0.03	0.4			3.4	96									34.701	25.2				
SSW28"	5/19/83		0.17	5.3	0.24	3.4			5.4	152									34.538	25.4				
SSW28"	5/26/83		0.18	5.6	0.07	1.0			3.4	96									34.710	25.2				
SSW28"	6/2/83		0.16	5.0	0.10	1.4			3.2	91									34.629	25.9				
SSW28"	6/7/83		0.17	5.3	0.14	2.0			3.4	96									34.795	25.6				
SSW28"	6/16/83		0.15	4.6	0.10	1.4			2.9	81									34.840	26.1				
SSW28"	6/23/83		0.15	4.6	0.07	1.0			2.3	66									34.844	26.2				
SSW28"	6/29/83		0.17	5.3	0.17	2.4			3.6	101									34.784	26.1				

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/7/83		0.17	5.3	0.24	3.4			4.7	131									34.764	25.9				
SSW28"	7/14/83		0.17	5.3	0.18	2.5			4.9	138									34.713	25.6				
SSW28"	7/21/83		0.16	5.0	0.15	2.1			2.1	59									34.774	26.2				
SSW28"	7/28/83		0.17	5.3	0.17	2.4			3.9	110									34.752	26.1				
SSW28"	8/3/83		0.18	5.6	0.36	5.0			4.1	114									34.775	25.9				
SSW28"	8/11/83		0.15	4.6	0.15	2.1			2.7	76									34.794	26.5				
SSW28"	8/20/83		0.15	4.6	0.12	1.7			3.1	86									34.766	26.5				
SSW28"	8/26/83		0.16	5.0	0.18	2.5			4.1	114									34.787	26.7				
SSW28"	8/29/83		0.15	4.6	0.18	2.5			3.7	105									34.795	26.6				
SSW28"	9/8/83		0.16	5.0	0.17	2.4			4.0	112									34.768	26.5				
SSW28"	9/14/83		0.17	5.3	0.17	2.4			2.8	78									34.837	27.0				
SSW28"	9/22/83		0.16	5.0	0.23	3.2			5.0	142									34.866	26.8				
SSW28"	9/29/83		0.17	5.3	0.16	2.2			2.9	82									34.890	26.3				
SSW28"	10/8/83		0.15	4.6	0.22	3.1			4.1	115									34.886	26.8				
SSW28"	10/15/83		0.15	4.6	0.19	2.7			4.1	115									34.927	26.6				
SSW28"	10/21/83		0.15	4.6	0.16	2.2			5.0	139									34.929	26.7				
SSW28"	10/24/83		0.15	4.6	0.09	1.3			4.4	125									34.924	27.5				
SSW28"	11/3/83		0.16	5.0	0.18	2.5			2.5	71									34.890	26.5				
SSW28"	11/10/83		0.13	4.0	0.14	2.0			2.5	71									35.003	26.1				
SSW28"	11/18/83		0.11	3.4	0.11	1.5			2.7	76									35.002	26.4				
SSW28"	11/21/83		0.13	4.0	0.18	2.5			2.9	80									35.003	26.6				
SSW28"	11/30/83		0.17	5.3	0.07	1.0			2.6	73									35.003	26.4				
SSW28"	12/8/83		0.17	5.3	0.17	2.4			2.2	63									35.047	26.5				
SSW28"	12/13/83		0.21	6.5	0.10	1.4			2.4	68									34.961	26.4				
SSW28"	12/21/83		0.18	5.6	0.07	1.0			2.6	73									34.995	25.7				
SSW28"	12/28/83		0.18	5.6	0.12	1.7			1.9	53									34.894	25.9				
SSW28"	1/6/84		0.13	4.0	0.15	2.1			2.2	62									34.972	25.6				
SSW28"	1/13/84		0.15	4.6	0.24	3.4			2.3	64									34.965	25.7				
SSW28"	1/20/84		0.12	3.7	0.12	1.7			1.8	51									35.016	25.3				
SSW28"	1/25/84		0.15	4.6	0.18	2.5			2.8	79									34.886	25.6				
SSW28"	2/3/84		0.13	4.0	0.12	1.7			2.0	56									35.047	25.1				
SSW28"	2/10/84		0.14	4.3	0.21	2.9			3.2	89									34.980	24.8				
SSW28"	2/15/84		0.14	4.3	0.09	1.3			2.2	61									34.972	25.2				
SSW28"	2/24/84		0.14	4.3	0.12	1.7			2.8	79									34.932	25.2				
SSW28"	2/29/84		0.17	5.3	0.12	1.7			3.0	84									34.933	25.2				
SSW28"	3/9/84		0.18	5.6	0.10	1.4			2.8	78									34.893	25.5				
SSW28"	3/16/84		0.19	5.9	0.21	2.9			4.5	126									34.801	26.0				
SSW28"	3/23/84		0.18	5.6	0.14	2.0			3.6	102									34.796	26.0				
SSW28"	3/27/84		0.19	5.9	0.17	2.4			3.8	106									34.739	25.5				
SSW28"	4/13/84		0.18	5.6	0.05	0.7			2.3	65									34.850	25.1				
SSW28"	4/19/84		0.18	5.6	0.22	3.1			3.3	94									34.864	25.4				
SSW28"	4/25/84		0.17	5.3	0.22	3.1			2.3	65									34.931	25.3				
SSW28"	5/4/84		0.16	5.0	0.27	3.8			2.9	82									34.899	25.7				
SSW28"	5/10/84		0.18	5.6	0.19	2.7			2.4	67									34.880	25.6				
SSW28"	5/18/84		0.17	5.3	0.27	3.8			3.8	106									34.811	25.3				
SSW28"	5/25/84		0.14	4.3	0.25	3.5			4.3	120									34.794	25.9				
SSW28"	5/29/84		0.21	6.5	0.25	3.5			2.6	72									34.820	25.5				
SSW28"	6/8/84		0.18	5.6	0.14	2.0			2.3	65									34.971	26.1				
SSW28"	6/16/84		0.16	5.0	0.14	2.0			2.4	67									34.842	26.1				
SSW28"	6/22/84		0.16	5.0	0.22	3.1			2.8	79									34.921	26.4				
SSW28"	6/29/84		0.18	5.6	0.39	5.5			5.1	144									34.938	26.5				

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/6/84		0.15	4.6	0.22	3.1			3.6	102									34.976	26.5				
SSW28"	7/13/84		0.13	4.0	0.22	3.1			4.0	112									34.933	26.7				
SSW28"	7/19/84		0.11	3.4	0.24	3.4			3.3	92									34.882	26.7				
SSW28"	7/27/84		0.12	3.7	0.19	2.7			3.1	88									34.961	26.9				
SSW28"	8/3/84		0.21	6.5	0.19	2.7			2.0	55									35.004	27.0				
SSW28"	8/10/84		0.15	4.6	0.11	1.5			2.5	70									35.000	25.9				
SSW28"	8/16/84		0.16	5.0	0.11	1.5			1.4	40									34.992	26.3				
SSW28"	8/25/84		0.20	6.2	0.24	3.4			3.2	90									35.012	26.6				
SSW28"	9/8/84		0.20	6.2	0.12	1.7			2.0	55									35.018	26.4				
SSW28"	9/13/84		0.25	7.7	0.24	3.4			3.0	85									34.893	26.7				
SSW28"	9/21/84		0.18	5.6	0.15	2.1			1.4	40									34.961	27.0				
SSW28"	9/28/84		0.19	5.9	0.21	2.9			3.2	91									35.059	27.5				
SSW28"	10/5/84		0.21	6.5	0.25	3.5			4.0	111									35.064	27.4				
SSW28"	10/12/84		0.14	4.3	0.14	2.0			2.3	65									35.112	27.2				
SSW28"	10/19/84		0.14	4.3	0.20	2.8			2.0	55									35.147	27.7				
SSW28"	10/29/84		0.16	5.0	0.19	2.7			1.1	30									35.053	27.1				
SSW28"	11/2/84		0.15	4.6	0.20	2.8			1.8	50									35.094	27.6				
SSW28"	11/9/84		0.16	5.0	0.13	1.8			1.4	40									35.083	26.7				
SSW28"	11/16/84		0.16	5.0	0.10	1.4			1.4	40									35.167	26.3				
SSW28"	11/23/84		0.12	3.7	0.20	2.8			1.6	45									35.196	26.3				
SSW28"	11/30/84		0.14	4.3	0.23	3.2			2.0	55									35.183	26.2				
SSW28"	12/7/84		0.18	5.6	0.19	2.7			1.9	54									35.181	26.1				
SSW28"	12/14/84		0.19	5.9	0.25	3.5			1.5	43									34.751	25.3				
SSW28"	12/21/84		0.19	5.9	0.36	5.0			5.0	140									35.006	25.7				
SSW28"	12/27/84		0.18	5.6	0.24	3.4			1.5	43									34.554	24.9				
SSW28"	1/4/85		0.19	5.9	0.35	4.9			3.0	84									34.504	24.9				
SSW28"	1/11/85		0.18	5.6	0.25	3.5			2.2	63									34.642	24.9				
SSW28"	1/18/85		0.15	4.6	0.25	3.5			1.9	53									34.835	24.5				
SSW28"	1/25/85		0.15	4.6	0.18	2.5			2.4	68									34.882	25.1				
SSW28"	2/1/85		0.15	4.6	0.35	4.9			3.6	100									34.916	24.5				
SSW28"	2/8/85		0.14	4.3	0.32	4.5			2.1	58									34.914	24.8				
SSW28"	2/15/85		0.14	4.3	0.23	3.2			1.4	40									34.965	24.7				
SSW28"	2/21/85		0.18	5.6	0.25	3.5			3.0	84									34.784	25.0				
SSW28"	3/1/85		0.18	5.6	0.24	3.4			2.5	69									34.544	24.7				
SSW28"	3/9/85		0.14	4.3	0.21	2.9			1.7	48									34.756	24.4				
SSW28"	3/15/85		0.17	5.3	0.18	2.5			1.7	48									34.690	24.4				
SSW28"	3/22/85		0.20	6.2	0.60	8.4			16.0	449									34.914	24.0				
SSW28"	3/30/85		0.16	5.0	0.24	3.4			2.4	68									34.803	24.5				
SSW28"	4/5/85		0.15	4.6	0.22	3.1			2.1	58									34.933	23.9				
SSW28"	4/12/85		0.18	5.6	0.22	3.1			1.7	47									35.028	23.9				
SSW28"	4/19/85		0.20	6.2	0.22	3.1			2.1	58									34.729	23.7				
SSW28"	4/26/85		0.19	5.9	0.27	3.8			2.9	82									34.823	24.2				
SSW28"	5/3/85		0.19	5.9	0.18	2.5			2.6	74									34.776	24.9				
SSW28"	5/10/85		0.24	7.4	0.28	3.9			3.0	85									34.607	24.8				
SSW28"	5/17/85		0.22	6.8	0.30	4.2			1.6	45									34.489	24.9				
SSW28"	5/29/85		0.23	7.1	0.18	2.5			2.4	68									34.552	25.6				
SSW28"	6/9/85		0.23	7.1	0.29	4.1			2.8	78									34.580	25.8				
SSW28"	6/14/85		0.22	6.8	0.26	3.6			4.1	115									34.540	25.8				
SSW28"	6/23/85		0.22	6.8	0.24	3.4			3.2	89									34.580	26.1				

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/3/85		0.21	6.5	0.26	3.6			3.6	102									34.629	26.0				
SSW28"	7/12/85		0.20	6.2	0.26	3.6			2.6	72									34.743	26.9				
SSW28"	7/19/85		0.20	6.2	0.23	3.2			2.7	77									34.760	26.9				
SSW28"	7/26/85		0.18	5.6	0.29	4.1			2.2	61									34.783	26.8				
SSW28"	8/1/85		0.18	5.6	0.24	3.4			2.9	80									34.711	26.5				
SSW28"	8/9/85		0.17	5.3	0.16	2.2			2.4	66									34.825	26.2				
SSW28"	8/16/85		0.18	5.6	0.19	2.7			2.9	83									34.812	26.4				
SSW28"	8/21/85		0.23	7.1	0.19	2.7			4.1	116									34.779	27.2				
SSW28"	8/29/85		0.21	6.5	0.17	2.4			2.6	72									34.800	27.3				
SSW28"	9/7/85		0.18	5.6	0.20	2.8			2.5	69									34.948	26.5				
SSW28"	9/15/85		0.18	5.6	0.22	3.1			2.7	74									34.938	27.0				
SSW28"	9/20/85		0.19	5.9	0.27	3.8			3.8	106									34.848	27.4				
SSW28"	9/27/85		0.21	6.5	0.27	3.8			1.9	53									34.854	27.2				
SSW28"	10/4/85		0.21	6.5	0.22	3.1			2.7	74									34.815	27.5				
SSW28"	10/11/85		0.18	5.6	0.20	2.8			2.3	64									34.896	26.9				
SSW28"	10/18/85		0.19	5.9	0.30	4.2			2.3	64									34.885	26.7				
SSW28"	10/25/85		0.18	5.6	0.20	2.8			1.9	53									34.891	26.4				
SSW28"	11/1/85		0.19	5.9	0.22	3.1			2.7	74									34.892	26.6				
SSW28"	11/7/85		0.16	5.0	0.23	3.2			1.7	47									34.896	26.9				
SSW28"	11/14/85		0.14	4.3	0.24	3.4			1.5	42									34.915	27.0				
SSW28"	11/21/85		0.14	4.3	0.27	3.8			1.9	52									34.823	26.8				
SSW28"	11/27/85		0.15	4.6	0.34	4.8			1.7	47									34.923	26.2				
SSW28"	12/5/85		0.12	3.7	0.32	4.5			2.0	57									34.937	26.3				
SSW28"	12/13/85		0.11	3.4	0.24	3.4			2.0	57									34.997	26.4				
SSW28"	12/20/85		0.12	3.7	0.32	4.5			2.0	57									34.989	25.4				
SSW28"	12/27/85		0.11	3.4	0.22	3.1			1.5	42									35.027	25.7				
SSW28"	1/3/86		0.20	6.2	0.25	3.5	0.15	2.1	2.3	64	0.5	15.5	6.0	84	0.45	0.34			35.044	25.5				
SSW28"	1/7/86		0.15	4.6	0.22	3.1	0.15	2.1	2.5	69	0.5	14.6	6.2	86	0.52	0.20			35.047	25.4				
SSW28"	1/17/86		0.18	5.6	0.22	3.1	0.18	2.5	3.0	85	0.5	13.9	5.1	71	0.44	0.11			34.969	25.6				
SSW28"	1/24/86		0.20	6.2	0.19	2.7	0.20	2.8	1.9	53	0.5	15.5	5.6	79	0.48	0.53			34.844	25.2				
SSW28"	1/31/86		0.18	5.6	0.22	3.1	0.18	2.5	2.5	69	0.5	15.5	5.6	78	0.42	0.37			34.889	25.0				
SSW28"	2/8/86		0.19	5.9	0.19	2.7	0.15	2.1	1.7	48	0.5	15.2	5.2	73	0.45	0.37			34.770	25.6				
SSW28"	2/12/86		0.20	6.2	0.16	2.2	0.20	2.8	2.7	75	0.5	16.7	5.6	78	0.53	0.32			34.627	25.6				
SSW28"	2/21/86		0.24	7.4	0.34	4.8	0.28	3.9	3.0	85	0.6	17.0	5.6	78	1.27	0.41			34.724	25.6				
SSW28"	3/1/86		0.22	6.8	0.22	3.1	0.43	6.0	1.7	48	0.5	16.4	5.5	77	0.45				34.745	25.6				
SSW28"	3/7/86		0.13	4.0	0.21	2.9	0.23	3.2	2.4	67	0.5	13.9	5.1	71	0.97	0.65			34.823	25.6				
SSW28"	3/13/86		0.16	5.0	0.26	3.6	0.26	3.6	3.5	98	0.6	17.0	6.3	88	0.85	0.70			34.725	26.4				
SSW28"	3/20/86		0.14	4.3	0.22	3.1	0.21	2.9	2.6	72	0.4	13.6	5.1	71	0.65	0.70			34.713	26.8				
SSW28"	3/27/86		0.11	3.4	0.16	2.2	0.13	1.8	2.6	72	0.4	13.6	5.2	73	0.40	0.80			34.815	25.5				
SSW28"	4/14/86		0.14	4.3	0.19	2.7	0.19	2.7	1.8	51	0.5	16.1	5.8	81	0.38	0.85			34.612	26.2				
SSW28"	4/19/86		0.12	3.7	0.36	5.0	0.21	2.9	4.8	134	0.5	15.5	4.9	69	0.61	0.80			34.634	25.6				
SSW28"	4/26/86		0.12	3.7	0.16	2.2	0.21	2.9	2.2	62	0.5	15.8	5.2	72	0.57	0.65			34.712	26.3				
SSW28"	4/30/86		0.16	5.0	0.38	5.3	0.30	4.2	5.5	153	0.4	13.0	5.8	81	0.40	0.65			34.648					
SSW28"	5/9/86		0.15	4.6	0.16	2.2	0.24	3.4	2.0	56	0.4	13.3	5.2	72	0.43	0.70			34.658					
SSW28"	5/16/86		0.15	4.6	0.25	3.5	0.31	4.3	2.7	77	0.5	13.9	5.4	76	0.40	1.35			34.691					
SSW28"	5/25/86		0.14	4.3	0.28	3.9	0.26	3.6	3.3	92	0.5	13.9	5.3	74	0.39	0.65			34.655					
SSW28"	5/30/86		0.15	4.6	0.28	3.9	0.29	4.1	3.6	102	0.5	14.2	5.0	69	0.41	0.40			34.648					
SSW28"	6/4/86		0.15	4.6	0.22	3.1	0.29	4.1	2.2	61	0.5	14.2	5.0	71	0.41	0.60			34.677					
SSW28"	6/13/86		0.15	4.6	0.43	6.0	0.30	4.2	4.9	138	0.5	16.1	5.9	83	0.36	0.85			34.614					
SSW28"	6/20/86		0.23	7.1	0.25	3.5	0.09	1.3	2.5	71	0.5	15.8	10.3	145	0.43	0.80			34.719					
SSW28"	6/27/86		0.23	7.1	0.15	2.1	0.12	1.7	5.1	142	0.5	15.5	9.0	126	0.41	0.60			34.685					

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/3/86		0.16	5.0	0.20	2.8	0.14	2.0	1.9	53	0.5	14.9	5.7	80	0.42	1.05			34.899					
SSW28"	7/12/86		0.17	5.3	0.20	2.8	0.24	3.4	0.2	5	0.5	15.8	5.2	73	0.38	0.85			34.790					
SSW28"	7/18/86		0.22	6.8	0.20	2.8	0.24	3.4	2.1	58	0.5	15.5	9.7	136	0.50	0.90			34.749					
SSW28"	7/25/86		0.16	5.0	0.22	3.1	0.17	2.4	2.1	58	0.5	14.2	5.6	78	0.53	0.70			34.805					
SSW28"	7/31/86		0.17	5.3	0.20	2.8	0.23	3.2	2.2	63	0.5	14.6	5.5	76	0.57	1.10			34.695					
SSW28"	8/7/86		0.19	5.9	0.20	2.8	0.33	4.6	1.9	53	0.5	16.1	5.2	72	0.38	0.55			34.733					
SSW28"	8/18/86		0.14	4.3	0.10	1.4	0.17	2.4	2.0	57	0.5	14.2	5.0	70	0.44	1.25			34.753					
SSW28"	8/28/86		0.15	4.6	0.21	2.9	0.29	4.1	2.2	62	0.5	15.5	5.7	79	0.43	1.45			34.749					
SSW28"	9/4/86		0.11	3.4	0.10	1.4	0.22	3.1	1.5	42	0.5	15.5	6.7	93	0.42	0.50			34.875					
SSW28"	9/11/86		0.15	4.6	0.21	2.9	0.22	3.1	2.8	78	0.5	14.6	5.7	80	0.41	0.40			34.720					
SSW28"	9/17/86		0.14	4.3	0.36	5.0	0.19	2.7	3.2	88	0.4	12.4	5.7	80	0.47	0.40			34.716					
SSW28"	9/24/86		0.12	3.7	0.26	3.6	0.19	2.7	1.9	52	0.4	13.3	5.4	75	0.46	0.65			34.828					
SSW28"	9/30/86		0.12	3.7	0.10	1.4	0.22	3.1	1.5	42	0.5	14.2	6.7	93	0.47	0.65			34.784					
SSW28"	10/9/86		0.11	3.4	0.18	2.5	0.24	3.4	2.0	57	0.4	11.8	5.9	83	0.38	1.60			34.730					
SSW28"	10/16/86		0.09	2.8	0.18	2.5	0.23	3.2	1.7	47	0.4	12.1	6.6	92	0.41	0.85			34.796					
SSW28"	10/23/86		0.09	2.8	0.13	1.8	0.23	3.2	1.7	47	0.4	13.0	6.2	87	0.39	1.65			34.798					
SSW28"	10/30/86		0.11	3.4	0.21	2.9	0.23	3.2	2.0	57	0.4	13.0	6.3	88	0.38	1.00			34.840					
SSW28"	11/6/86		0.11	3.4	0.16	2.2	0.25	3.5	1.9	52	0.4	13.0	6.4	89	0.39	0.45			34.841					
SSW28"	11/13/86		0.09	2.8	0.13	1.8	0.23	3.2	2.2	62	0.4	13.0	6.0	84	0.39	2.55			34.754					
SSW28"	11/20/86		0.11	3.4	0.12	1.7	0.22	3.1	1.9	52	0.4	13.3	6.6	92	0.39	0.70			34.792					
SSW28"	11/28/86		0.11	3.4	0.21	2.9	0.23	3.2	2.2	62	0.5	15.5	6.1	85	0.39	0.65			34.825					
SSW28"	12/4/86		0.15	4.6	0.21	2.9	0.10	1.4	3.0	83	0.4	13.0	6.6	92	0.47	1.05			34.761					
SSW28"	12/11/86		0.09	2.8	0.19	2.7	0.11	1.5	2.6	73	0.4	12.1	5.8	81	0.58	1.00			34.930					
SSW28"	12/19/86		0.12	3.7	0.22	3.1	0.11	1.5	2.4	68	0.5	14.2	6.2	87	0.42	0.90			34.833					
SSW28"	12/23/86		0.14	4.3	0.30	4.2	0.18	2.5	3.9	109	0.5	14.6	6.2	87	0.42	0.65			34.723					
SSW28"	12/30/86		0.15	4.6	0.14	2.0	0.12	1.7	2.2	62	0.5	14.6	5.3	75	0.41	0.80			34.678					
SSW28"	1/8/87		0.14	4.3	0.22	3.1	0.15	2.1	2.4	68	0.5	14.2	5.9	83	0.42	0.90			34.854	26.0	8.26	6.50		
SSW28"	1/14/87		0.14	4.3	0.25	3.5	0.24	3.4	2.2	62	0.5	15.8	7.3	102	0.43	0.85			34.805	25.7	8.22	6.45		
SSW28"	1/21/87		0.14	4.3	0.14	2.0	0.22	3.1	2.0	57	0.5	14.6	6.2	86	0.48	0.65			34.797	25.3	8.18	6.51		
SSW28"	1/28/87		0.16	5.0	0.27	3.8	0.22	3.1	2.6	73	0.5	14.9	6.8	96	0.46	1.50			34.711	25.6	8.26	7.13		
SSW28"	2/6/87		0.13	4.0	0.15	2.1	0.09	1.3	3.0	83	0.4	12.1	5.5	77	0.54	0.80				24.8	8.27	6.90		
SSW28"	2/12/87		0.15	4.6	0.15	2.1	0.12	1.7	1.9	52	0.4	13.3	5.8	81	0.47	0.55				24.8	8.21	7.01		
SSW28"	2/19/87		0.15	4.6	0.19	2.7	0.17	2.4	2.4	68	0.5	13.9	5.6	79	0.43	0.90				24.7	8.19	6.60		
SSW28"	2/26/87		0.17	5.3	0.28	3.9	0.24	3.4	2.8	78	0.5	14.2	5.9	82	0.43	0.80				24.6	8.22	6.68		
SSW28"	3/3/87		0.15	4.6	0.15	2.1	0.21	2.9	2.0	57	0.5	14.6	5.7	79	0.46	0.75				24.5	8.19	7.02		
SSW28"	3/10/87		0.13	4.0	0.25	3.5	0.28	3.9	1.9	52	0.5	15.2	5.7	80	0.41	0.75				24.5	8.17	6.75		
SSW28"	3/17/87		0.15	4.6	0.25	3.5	0.28	3.9	1.7	47	0.5	16.4	5.8	82	0.41	0.75				25.1	8.22	7.07		
SSW28"	3/24/87		0.15	4.6	0.25	3.5	0.33	4.6	1.9	52	0.5	16.7	9.3	130	0.54	0.60				25.0	8.16	6.89		
SSW28"	4/3/87		0.23	7.1	0.18	2.5	0.33	4.6	2.5	69	0.6	17.0	5.4	75	0.69	0.90			34.581	25.0	8.25	6.64		
SSW28"	4/9/87		0.17	5.3	0.15	2.1	0.23	3.2	3.0	85	0.5	16.4	6.6	92	0.46	0.35			34.546	25.1	8.23	6.63		
SSW28"	4/16/87		0.15	4.6	0.21	2.9	0.23	3.2	4.2	117	0.5	14.9	5.5	77	0.45	0.85			34.577	25.1	8.24	6.40		
SSW28"	4/21/87		0.13	4.0	0.06	0.8	0.28	3.9	1.3	37	0.5	15.2	6.0	84	0.41	0.70			34.748	24.7	8.25	7.05		
SSW28"	4/28/87		0.15	4.6	0.15	2.1	0.28	3.9	2.9	80	0.5	15.8	5.0	70	0.54	0.85			34.652	25.2	8.23	7.00		
SSW28"	5/5/87		0.14	4.3	0.14	2.0	0.30	4.2	1.9	53	0.5	15.2	6.0	84	0.42	0.85			34.694	24.9	8.22	6.84		
SSW28"	5/12/87		0.16	5.0	0.21	2.9	0.33	4.6	3.2	91	0.5	16.4	5.9	83	0.41	0.60			34.623	24.9	8.23	7.16		
SSW28"	5/21/87		0.13	4.0	0.27	3.8	0.30	4.2	3.4	96	0.5	16.4	5.5	77	0.41	0.80			34.641	25.5	8.23	6.98		
SSW28"	5/26/87		0.13	4.0	0.15	2.1	0.28	3.9	2.9	80	0.5	14.9	5.1	71	0.41	0.60			34.692	25.6	8.24	7.27		
SSW28"	6/2/87		0.13	4.0	0.15	2.1	0.29	4.1	1.3	37	0.5	14.9	5.3	74	0.60	0.70			34.553	25.6	8.18	7.07		
SSW28"	6/9/87		0.15	4.6	0.30	4.2	0.17	2.4	4.3	120	0.5	16.1	8.9	125	0.49	0.75		2.32	34.542	25.9	8.18	7.26		
SSW28"	6/17/87		0.13	4.0	0.22	3.1	0.21	2.9	3.2	90	0.6	17.3	8.7	122	0.41	0.60		2.32	34.736	26.3	8.20	6.59		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/2/87		0.13	4.0	0.16	2.2	0.23	3.2	2.3	64	0.5	16.1	9.0	125	0.40	0.60		2.31	34.644	26.2	8.23	6.44		
SSW28"	7/11/87		0.13	4.0	0.16	2.2	0.23	3.2	2.1	58	0.5	16.7	7.6	107	0.39	0.50		2.31	34.612	26.7	8.23	8.06		
SSW28"	7/18/87		0.13	4.0	0.19	2.7	0.23	3.2	1.6	45	0.5	16.7	7.4	104	0.37	0.85		2.31	34.585	26.8	8.23	6.89		
SSW28"	7/28/87		0.12	3.7	0.16	2.2	0.21	2.9	1.9	53	0.5	15.2	7.6	107	0.38	0.45		2.31	34.673	26.8	8.16	7.08		
SSW28"	7/28/87		0.12	3.7	0.24	3.4	0.21	2.9	2.7	74	0.5	13.9	6.8	95	0.40	0.40		2.31	34.649	26.8	8.17	7.80		
SSW28"	8/8/87		0.12	3.7	0.19	2.7	0.21	2.9	2.5	69	0.5	15.8	7.2	101	0.40	0.40		2.31	34.690	28.2	8.21	6.68		
SSW28"	8/15/87		0.12	3.7	0.18	2.5	0.22	3.1	3.5	99	0.5	15.2	5.3	74	0.46	0.60		2.32	34.772	28.1	8.22	6.64		
SSW28"	8/21/87		0.11	3.4	0.15	2.1	0.24	3.4	2.1	58	0.5	16.1	6.4	89	0.53	0.70		2.32	34.751	27.6	8.20	6.70		
SSW28"	8/27/87		0.14	4.3	0.21	2.9	0.56	7.8	2.1	58	0.5	16.7	7.2	101	0.53	0.55		2.32	34.767	28.1	8.21	6.65		
SSW28"	9/4/87		0.14	4.3	0.21	2.9	0.24	3.4	2.6	73	0.5	16.7	5.7	80	0.55	0.65		2.32	34.764	28.5	8.23	6.85		
SSW28"	9/11/87		0.12	3.7	0.32	4.5	0.22	3.1	3.2	89	0.5	16.1	5.9	82	0.52	0.45		2.31	34.704	28.1	8.21	6.85		
SSW28"	9/18/87		0.10	3.1	0.12	1.7	0.24	3.4	1.5	42	0.4	13.0	5.4	76	0.52	0.65		2.33	34.887	27.4	8.23	6.74		
SSW28"	9/26/87		0.15	4.6	0.26	3.6	0.35	4.9	2.6	73	0.5	15.5	6.6	92	0.52	0.60		2.32	34.725	28.1	8.25	6.96		
SSW28"	10/3/87		0.11	3.4	0.21	2.9	0.27	3.8	2.6	73	0.5	14.9	5.4	76	0.51	0.65		2.33	34.902	28.2	8.28	6.80		
SSW28"	10/9/87		0.11	3.4	0.23	3.2	0.27	3.8	2.6	73	0.4	13.3	5.9	82	0.51	0.45		2.32	34.842	27.7	8.22	6.64		
SSW28"	10/16/87		0.12	3.7	0.26	3.6	0.18	2.5	1.7	47	0.5	15.2	5.0	70	0.53	0.50		2.32	34.799	27.9	8.28	6.79		
SSW28"	10/22/87		0.13	4.0	0.24	3.4	0.20	2.8	2.0	57	0.5	14.9	5.5	77	0.53	0.50		2.31	34.747	27.5	8.25	6.72		
SSW28"	10/29/87		0.15	4.6	0.35	4.9	0.32	4.5	2.4	68	0.5	14.9	5.6	79	0.50	0.50		2.32	34.817	27.7	8.24	6.92		
SSW28"	11/6/87		0.12	3.7	0.16	2.2	0.18	2.5	2.4	68	0.5	15.2	4.8	67	0.47	1.10		2.32	34.824	27.5	8.21	7.01		
SSW28"	11/13/87		0.13	4.0	0.27	3.8	0.18	2.5	3.2	88	0.5	16.4	5.9	83	0.51	1.15		2.32	34.766	27.4	8.24	6.59		
SSW28"	11/21/87		0.17	5.3	0.27	3.8	0.20	2.8	2.6	73	0.6	18.6	5.1	71	0.48	0.85		2.32	34.779	26.8	8.23	6.73		
SSW28"	11/26/87		0.15	4.6	0.30	4.2	0.23	3.2	2.2	62	0.6	18.3	4.9	69	0.47	4.50		2.31	34.765	27.2	8.25	7.28		
SSW28"	12/3/87		0.15	4.6	0.27	3.8	0.23	3.2	3.7	104	0.5	15.2	5.0	70	0.50	1.00		2.30	34.752	26.6	8.27	6.98		
SSW28"	12/12/87		0.12	3.7	0.24	3.4	0.23	3.2	2.2	62	0.5	14.2	4.8	67	0.54	1.00		2.31	34.799	27.7	8.25	7.08		
SSW28"	12/20/87		0.11	3.4	0.35	4.9	0.25	3.5	2.4	68	0.4	13.0	4.9	69	0.52	2.00		2.33	34.833	25.4	8.28	7.08		
SSW28"	12/24/87		0.13	4.0	0.57	8.0	0.32	4.5	4.3	120	0.5	14.2	5.2	73	0.52	0.10		2.23	34.774	25.3	8.27	7.17		
SSW28"	12/31/87		0.12	3.7	0.43	6.0	0.31	4.3	3.8	107	0.5	13.9	4.9	69	0.53	0.40		2.32	34.806	25.6	8.24	7.13		
SSW28"	1/13/88		0.13	4.0	0.22	3.1	0.17	2.4	1.7	47	0.5	14.9	4.8	67	0.56	0.35		2.31	34.762	25.9	8.24	6.97		
SSW28"	1/22/88		0.16	5.0	0.27	3.8	0.20	2.8	2.1	58	0.5	14.9	5.2	72	0.56	0.30		2.32	34.796	25.2	8.25	7.10		
SSW28"	1/29/88		0.13	4.0	0.27	3.8	0.17	2.4	1.7	47	0.5	16.4	4.9	69	0.56	0.55		2.32	34.820	25.2	8.28	7.07		
SSW28"	2/5/88		0.15	4.6	0.32	4.5	0.19	2.7	2.4	68	0.5	16.7	4.8	67	0.54	0.45		2.32	34.806	25.3	8.25	7.07		
SSW28"	2/12/88		0.15	4.6	0.30	4.2	0.22	3.1	2.6	73	0.5	16.7	4.6	64	0.54	0.60		2.32	34.747	25.8	8.22	7.09		
SSW28"	2/21/88		0.13	4.0	0.25	3.5	0.17	2.4	1.5	42	0.5	16.4	4.7	66	0.55	0.65		2.32	34.831	25.7	8.27	7.05		
SSW28"	2/26/88		0.19	5.9	0.35	4.9	0.20	2.8	2.8	78	0.6	17.7	4.8	68	0.54	0.95		2.30	34.577	25.6	8.27	7.17		
SSW28"	3/6/88		0.19	5.9	0.31	4.3	0.15	2.1	2.2	63	0.5	16.1	4.7	65	0.53	0.60		2.30	34.509	25.3	8.18	7.33		
SSW28"	3/11/88		0.19	5.9	0.34	4.8	0.07	1.0	3.8	106	0.4	11.2	4.9	68	0.53	0.55		2.32	34.473	25.6	8.25	7.10		
SSW28"	3/18/88		0.16	5.0	0.26	3.6	0.07	1.0	6.8	190	0.3	10.5	4.8	68	0.59	0.70		2.31	34.618	25.8	8.27	7.02		
SSW28"	3/25/88		0.18	5.6	0.34	4.8	0.07	1.0	3.6	101	0.4	10.8	6.2	87	0.55	4.70		2.32	34.642	25.5	8.26	7.35		
SSW28"	3/31/88		0.14	4.3	0.23	3.2	0.07	1.0	3.0	84	0.3	9.6	4.7	66	0.58	0.80		2.32	34.736	25.7	8.27	8.88		
SSW28"	4/8/88		0.15	4.6	0.26	3.6	0.07	1.0	2.2	62	0.3	9.9	4.8	67	0.58	0.55		2.33	34.807	25.6	8.24	7.16		
SSW28"	4/18/88		0.18	5.6	0.23	3.2	0.09	1.3	1.6	45	0.4	10.8	4.9	69	0.52	0.55		2.32	34.650	25.7	8.25	7.27		
SSW28"	4/22/88		0.19	5.9	0.18	2.5	0.14	2.0	0.8	22	0.3	9.9	4.8	67	0.53	0.60		2.33	34.627	25.6	8.29	7.38		
SSW28"	4/29/88		0.18	5.6	0.21	2.9	0.12	1.7	1.6	45	0.4	10.8	5.1	71	0.53	0.45		2.32	34.644	25.2	8.26	7.00		
SSW28"	5/6/88		0.18	5.6	0.31	4.3	0.07	1.0	1.2	34	0.4	10.8	5.2	73	0.53	1.40				25.5	8.24	7.08		
SSW28"	5/23/88		0.37	11.5	0.03	0.4	0.19	2.7			0.5	14.6	7.2	101	0.46	2.15		2.32	34.662	26.1	8.43	7.23		
SSW28"	5/28/88		0.13	4.0	0.03	0.4	0.13	1.8	2.2	62	0.3	9.9	5.4	76	0.40	2.00		2.31	34.684	25.7	8.16	7.18		
SSW28"	6/5/88		0.13	4.0	0.12	1.7	0.15	2.1	3.2	90	0.3	10.5	6.0	84	0.41	3.95		2.31	34.606	26.1	8.13	7.01		
SSW28"	6/9/88		0.12	3.7	0.29	4.1	0.32	4.5	3.8	108	0.3	9.6	5.9	83	0.41	1.20		2.31	34.602	26.4	8.12	7.20		
SSW28"	6/19/88		0.13	4.0	0.06	0.8	0.21	2.9	2.2	62	0.3	9.6	5.1	72	0.34	5.05		2.32	34.673	26.1	8.12	7.26		
SSW28"	6/24/88		0.13	4.0	0.17	2.4	0.34	4.8	1.6	45	0.3	9.6	5.6	78	0.36	1.50		2.33	34.730	25.8	8.13	7.08		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/5/88		0.19	5.9	0.23	3.2	0.34	4.8	1.8	51	0.4	11.5	6.9	97	0.33	11.30		2.32	34.711	26.1	8.26	6.99		
SSW28"	7/28/88		0.12	3.7	0.17	2.4	0.14	2.0	2.8	80	0.4	11.2	5.0	70	0.43	1.25		2.32	34.694	26.3	8.25	6.82		
SSW28"	8/6/88		0.14	4.3	0.23	3.2	0.16	2.2	2.6	74	0.4	11.5	5.6	78	0.39	0.90		2.31	34.692	26.4	8.21	5.91		
SSW28"	8/16/88		0.14	4.3	0.42	5.9	0.11	1.5	4.3	119	0.4	11.2	5.2	73	0.36	0.75		2.31	34.621	26.7	8.22	7.31		
SSW28"	8/31/88		0.16	5.0	0.37	5.2	0.17	2.4	3.9	108	0.4	13.6	6.3	88	0.40			2.32	34.765	27.2	8.27	6.82		
SSW28"	9/2/88		0.12	3.7	0.42	5.9	0.18	2.5	1.8	51	0.3	10.2	5.4	75	0.42									
SSW28"	9/2/88		0.12	3.7	0.30	4.2	0.20	2.8	1.4	40	0.3	10.2	5.3	74	0.34									
SSW28"	9/9/88		0.20	6.2	0.38	5.3	0.23	3.2	2.3	64	0.4	12.1	5.8	82	0.48	0.65		2.32	34.802	27.3	8.24			
SSW28"	9/10/88		0.18	5.6	0.43	6.0	0.14	2.0	2.1	59	0.4	10.8	5.1	71	0.40	1.00		2.32	34.799	27.0	8.26			
SSW28"	9/15/88		0.15	4.6	0.41	5.7	0.14	2.0	2.7	76	0.3	10.2	5.0	70	0.38	1.25		2.33	34.797	27.4	7.97	7.31		
SSW28"	9/23/88		0.14	4.3	0.14	2.0	0.08	1.1	1.7	47	0.4	10.8	5.4	76	0.37	1.25		2.34	34.870	27.2	8.10	6.77		
SSW28"	9/30/88		0.16	5.0	0.57	8.0	0.21	2.9	2.3	64	0.4	11.5	6.2	86	0.32	1.45		2.33	34.843	27.4	8.14	6.77		
SSW28"	10/7/88		0.16	5.0	0.48	6.7	0.21	2.9	2.7	76	0.4	11.2	5.2	73	0.33	0.55		2.33	34.767	27.2	8.35	6.79		
SSW28"	10/14/88		0.15	4.6	0.37	5.2	0.21	2.9	1.9	53	0.4	11.2	5.1	71	0.35	0.80		2.33	34.823	27.9	8.30	6.67		
SSW28"	10/21/88		0.20	6.2	0.28	3.9	0.24	3.4	1.5	42	0.4	12.1	5.5	78	0.34	1.40		2.31	34.539	27.5	8.23	6.75		
SSW28"	10/28/88		0.21	6.5	0.24	3.4	0.27	3.8	1.1	31	0.4	12.1	5.0	69	0.35	2.55		2.31	34.447	27.8	8.22	6.67		
SSW28"	11/4/88		0.25	7.7	0.35	4.9	0.08	1.1	2.2	62	0.4	12.4	6.0	84	0.56	0.95		2.31	34.451	26.9	8.18	6.72		
SSW28"	11/9/88		0.19	5.9	0.37	5.2	0.06	0.8	1.8	50	0.4	11.2	5.1	72	0.49	0.75		2.33	34.595	27.4	8.20	6.71		
SSW28"	11/18/88		0.15	4.6	0.37	5.2	0.11	1.5	1.6	45	0.3	10.2	5.3	75	0.46	0.70		2.33	34.797	26.9	8.22	6.83		
SSW28"	11/25/88		0.20	6.2	0.41	5.7	0.03	0.4	1.8	50	0.4	11.5	5.0	70	0.41	0.70		2.32	34.588	26.5	8.22	6.85		
SSW28"	12/2/88		0.16	5.0	0.41	5.7	0.03	0.4	2.4	67	0.4	12.7	4.7	66	0.39	0.50		2.33	34.699	26.6	8.24	6.89		
SSW28"	12/9/88		0.12	3.7	0.35	4.9	0.11	1.5	1.6	45	0.3	9.0	4.2	58	0.42	0.75		2.33	34.871	26.3	8.28	6.56		
SSW28"	12/16/88		0.14	4.3	0.59	8.3	0.11	1.5	2.4	67	0.3	9.9	5.0	70	0.40	0.85		2.33	34.830	27.0	8.25	6.97		
SSW28"	12/23/88		0.15	4.6	0.43	6.0	0.06	0.8	2.2	62	0.3	9.3	4.2	59	0.37	1.05		2.32	34.734	26.2	8.26	6.97		
SSW28"	1/4/89		0.15	4.6	0.07	1.0	0.04	0.6	1.2	35	0.3	10.2	5.8	82	0.49	0.90		2.33	34.645	25.5	8.25	6.96		
SSW28"	1/12/89		0.16	5.0	0.16	2.2	0.07	1.0	1.6	46	0.3	10.5	6.1	85	0.45	0.70		2.30	34.551	25.2	8.23	6.97		
SSW28"	1/20/89		0.16	5.0	0.16	2.2	0.09	1.3	2.0	57	0.3	10.5	6.5	91	0.45	1.05		2.30	34.456	24.5	8.22	6.82		
SSW28"	1/27/89		0.18	5.6	0.25	3.5	0.09	1.3	2.6	74	0.4	11.2	6.8	95	0.46	1.05		2.30	34.398	24.5	8.24	6.90		
SSW28"	2/1/89		0.18	5.6	0.12	1.7	0.11	1.5	1.4	40	0.4	11.5	5.6	79	0.50	0.75		2.29	34.214	25.2	8.25	6.39		
SSW28"	2/7/89		0.18	5.6	0.18	2.5	0.11	1.5	2.0	57	0.4	11.5	6.2	87	0.47	0.70		2.30	34.280	25.6	8.23	6.87		
SSW28"	2/15/89		0.18	5.6	0.21	2.9	0.09	1.3	2.2	62	0.4	11.2	5.9	83	0.45	0.90		2.30	34.283	25.0	8.24	6.89		
SSW28"	2/21/89		0.18	5.6	0.14	2.0	0.09	1.3	2.2	62	0.4	11.2	6.0	84	0.48	0.75		2.31	34.308	25.2	8.26	6.73		
SSW28"	2/27/89		0.19	5.9	0.30	4.2	0.11	1.5	2.8	79	0.4	11.5	5.4	75	0.46	0.85		2.31	34.271	24.9	8.24	6.77		
SSW28"	3/6/89		0.19	5.9	0.52	7.3	0.16	2.2	2.8	79	0.3	10.5	5.8	82	0.51	0.60		2.33	34.349	25.2	8.25	7.22		
SSW28"	3/13/89		0.20	6.2	0.47	6.6	0.41	5.7	2.4	67	0.4	11.5	5.8	81	0.49	1.05		2.33	34.281	25.2	8.20	7.12		
SSW28"	3/20/89		0.19	5.9	0.28	3.9	0.09	1.3	2.0	56	0.4	10.8	5.3	74	0.47	1.55		2.33	34.397	25.5	8.24	7.03		
SSW28"	3/28/89		0.16	5.0	0.40	5.6	0.11	1.5	3.0	84	0.3	10.5	5.0	70	0.44	0.80		2.34	34.343	25.3	8.25	7.06		
SSW28"	4/4/89		0.20	6.2	0.80	11.2	0.16	2.2	3.4	95	0.4	11.5	5.9	82	0.50	0.65		2.32	34.163	25.8	8.19	6.85		
SSW28"	4/10/89		0.19	5.9	0.59	8.3	0.20	2.8	3.2	90	0.4	11.5	5.7	80	0.49	0.95		2.33	34.217	25.5	8.23	6.93		
SSW28"	4/18/89		0.19	5.9	0.42	5.9	0.20	2.8	3.4	95	0.4	11.8	6.2	87	0.43	0.75		2.33	34.238	25.2	8.24	6.96		
SSW28"	4/24/89		0.23	7.1	0.35	4.9	0.08	1.1	1.6	44	0.4	11.8	4.8	67	0.40	0.70		2.31	34.228	25.8	8.24	6.94		
SSW28"	5/1/89		0.20	6.2	0.33	4.6	0.13	1.8	2.6	72	0.3	10.5	5.4	76	0.39	0.47		2.31	34.377	25.5	8.23	7.23		
SSW28"	5/8/89		0.22	6.8	0.26	3.6	0.16	2.2	2.6	72	0.4	11.8	5.8	81	0.38	0.75		2.31	34.391	25.5	8.25	6.76		
SSW28"	5/15/89		0.19	5.9	0.28	3.9	0.08	1.1	1.6	44	0.4	11.5	6.0	84	0.40			2.32	34.426	25.7	8.25	7.00		
SSW28"	5/22/89		0.19	5.9	0.24	3.4	0.11	1.5	1.6	44	0.4	12.1	7.7	108	0.38			2.32	34.384	25.9	8.23	7.09		
SSW28"	5/30/89		0.20	6.2	0.28	3.9	0.11	1.5	2.2	61	0.4	11.8	6.6	92	0.37			2.30	34.350	26.2	8.26	7.07		
SSW28"	6/5/89		0.23	7.1	0.28	3.9	0.08	1.1	2.0	55	0.4	12.1	5.3	75	0.36			2.31	34.386	26.2	8.22	7.00		
SSW28"	6/13/89		0.22	6.8	0.33	4.6	0.05	0.7	1.8	50	0.4	11.8	4.8	67	0.37			2.32	34.405	26.2	8.23	6.94		
SSW28"	6/19/89		0.22	6.8	0.31	4.3	0.11	1.5	2.8	78	0.4	12.1	5.9	82	0.36			2.32	34.401	26.4		6.94		
SSW28"	6/26/89		0.19	5.9	0.28	3.9	0.13	1.8	2.2	61	0.4	12.7	6.4	90	0.35			2.32	34.445	26.6		7.03		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/3/89		0.20	6.2	0.17	2.4	0.10	1.4	1.9	54	0.4	12.1	4.9	69	0.37			2.32	34.500	26.4		6.96		
SSW28"	7/10/89		0.22	6.8	0.22	3.1	0.12	1.7	2.7	76	0.4	12.1	4.8	67	0.40			2.31	34.458	26.6		6.92		
SSW28"	7/17/89		0.20	6.2	0.24	3.4	0.15	2.1	2.7	76	0.4	12.4	4.8	67	0.42			2.32	34.545	26.7		7.10		
SSW28"	7/24/89		0.21	6.5	0.28	3.9	0.15	2.1	2.9	81	0.4	11.7	5.0	69	0.41			2.32	34.531	26.9	8.24	6.89		
SSW28"	8/1/89		0.21	6.5	0.54	7.6	0.19	2.7	4.6	129	0.4	12.1	5.8	81	0.40			2.31	34.418	27.5	8.25	6.83		
SSW28"	8/7/89		0.22	6.8	0.32	4.5	0.19	2.7	4.0	113	0.4	13.0	7.9	111	0.42			2.31	34.502	27.1	8.26	5.86		
SSW28"	8/14/89		0.22	6.8	0.40	5.6	0.19	2.7	2.8	78	0.4	13.3	5.4	75	0.42			2.32	34.557	27.0	8.23	5.64		
SSW28"	8/21/89		0.21	6.5	0.26	3.6	0.12	1.7	1.6	44	0.4	13.0	4.9	69	0.40			2.33	34.670		8.25	5.90		
SSW28"	8/31/89		0.18	5.6	0.44	6.2	0.10	1.4	2.9	80	0.4	11.8	5.1	72	0.49			2.30	34.636		8.25	5.93		
SSW28"	9/5/89		0.19	5.9	0.46	6.4	0.08	1.1	2.6	74	0.4	10.8	6.3	88	0.39			2.30	34.620	27.5	8.25	5.86		
SSW28"	9/11/89		0.18	5.6	0.30	4.2	0.08	1.1	2.2	63	0.4	11.8	5.8	82	0.51			2.31	34.667	26.8	8.26	5.90		
SSW28"	9/19/89		0.18	5.6	0.33	4.6	0.08	1.1	2.0	57	0.4	10.8	6.1	86	0.44			2.31	34.706	26.9	8.26	6.76		
SSW28"	9/27/89		0.18	5.6	0.30	4.2	0.08	1.1	1.8	51	0.4	11.8	5.8	82	0.48			2.34	34.700	27.2	8.25	6.86		
SSW28"	10/3/89		0.15	4.6	0.41	5.7	0.10	1.4	1.8	51	0.3	10.5	4.4	61	0.46			2.34	34.738	27.3	8.24	7.23		
SSW28"	10/9/89		0.14	4.3	0.28	3.9	0.08	1.1	2.0	57	0.3	10.2	4.3	60	0.45			2.34	34.704	27.6	8.22	7.32		
SSW28"	10/16/89		0.12	3.7	0.22	3.1	0.10	1.4	1.0	29	0.3	9.6	3.9	54	0.39			2.31	34.649	27.5	8.56	6.84		
SSW28"	10/23/89		0.14	4.3	0.37	5.2	0.10	1.4	1.6	46	0.3	10.2	4.9	69	0.49			2.33	34.682	27.3	8.25	6.80		
SSW28"	11/1/89		0.14	4.3	0.22	3.1	0.08	1.1	1.4	40	0.3	10.5	4.0	56	0.50			2.33	34.749	26.9	8.21	7.12		
SSW28"	11/9/89		0.14	4.3	0.17	2.4	0.06	0.8	1.6	46	0.3	9.3	4.4	61	0.47			2.33	34.812	26.7	8.25	6.77		
SSW28"	11/13/89		0.15	4.6	0.31	4.3	0.09	1.3	2.7	74	0.3	9.3	4.5	63	0.43			2.34	34.885	26.6	8.26	6.67		
SSW28"	11/20/89		0.14	4.3	0.21	2.9	0.13	1.8	2.2	63	0.3	9.3	5.2	72	0.43			2.33	34.541	26.9	8.26	6.99		
SSW28"	11/27/89		0.14	4.3	0.24	3.4	0.21	2.9	2.5	69	0.3	9.0	5.2	72	0.65			2.33	34.833	24.5	8.23	6.76		
SSW28"	12/7/89		0.15	4.6	0.26	3.6	0.17	2.4	2.2	63	0.3	9.3	4.9	69	0.45	0.61		2.34	34.895	26.5	8.24	6.94		
SSW28"	12/14/89		0.15	4.6	0.24	3.4	0.19	2.7	3.3	92	0.3	9.3	6.0	84	0.45	1.22		2.34	34.926	24.8	8.23	7.40		
SSW28"	12/18/98		0.14	4.3	0.21	2.9	0.21	2.9	2.5	69	0.3	9.0	4.7	65	0.44	0.10		2.33	34.921	25.5	8.24	7.62		
SSW28"	12/26/89		0.14	4.3	0.19	2.7	0.17	2.4	2.9	80	0.3	9.0	4.9	69	0.44	0.92		2.33	34.930	25.6	8.25	8.09		
SSW28"	1/4/90		0.14	4.3	0.24	3.4	0.15	2.1	2.2	63	0.3	9.0	4.6	65	0.42	0.60		2.27	34.933	25.9	8.23	7.73		
SSW28"	1/12/90		0.23	7.1	0.49	6.9	0.08	1.1	2.7	77	0.3	8.7	4.0	56	0.93	1.01		2.27	34.960	25.3	8.25	7.73		
SSW28"	1/18/90		0.23	7.1	1.88	26.3	0.23	3.2	14.7	413	0.3	8.7	5.6	78	1.12	1.01		2.26	34.881	25.7	8.23	7.63		
SSW28"	1/22/90		0.20	6.2	0.50	7.0	0.05	0.7	2.7	75	0.2	7.1	2.9	41	0.91	0.59		2.28	34.848	24.9	8.23	7.69		
SSW28"	2/1/90		0.18	5.6	0.36	5.0	0.05	0.7	2.2	61	0.2	7.4	2.7	37	1.08	0.85		2.28	34.385	25.7	8.23	7.13		
SSW28"	2/8/90		0.18	5.6	0.46	6.4	0.05	0.7	2.8	79	0.3	8.7	3.0	42	1.09	0.48		2.28	34.579	25.2	8.24	7.09		
SSW28"	2/15/90		0.20	6.2	0.45	6.3	0.05	0.7	3.2	89	0.4	12.1	3.0	42	0.97	1.01		2.28	34.561	25.6	8.24	7.17		
SSW28"	2/20/90		0.22	6.8	0.52	7.3	0.05	0.7	3.1	86	0.4	11.2	4.0	55	0.85	0.41		2.31	34.852	24.8	8.24	7.29		
SSW28"	2/26/90		0.21	6.5	0.52	7.3	0.05	0.7	3.3	93	0.3	8.7	3.8	53	1.03	0.44		2.31	34.744	24.5	8.23	7.17		
SSW28"	3/8/90		0.20	6.2	2.77	38.8	0.05	0.7	26.0	730	0.4	11.5	7.1	99	1.35	0.15		2.30	34.598	24.2	8.24	7.09		
SSW28"	3/13/90		0.21	6.5	0.52	7.3	0.05	0.7	2.9	82	0.3	9.3	3.9	55	0.94	0.30		2.30	34.628	24.8	8.23	7.12		
SSW28"	3/21/90		0.20	6.2	0.52	7.3	0.05	0.7	2.9	82	0.4	11.2	4.0	56	0.86	0.23		2.30	34.641	24.6	8.26	7.09		
SSW28"	3/27/90		0.20	6.2	0.47	6.6	0.05	0.7	2.9	82	0.5	14.2	3.4	47	0.96	0.30		2.30	34.729	24.5	8.25	7.19		
SSW28"	4/2/90		0.03	0.9	0.12	1.7	0.26	3.6	3.3	91	0.3	10.2	4.0	56	0.90	0.34		2.30	34.512	25.1	8.25	7.03		
SSW28"	4/9/90		0.05	1.5	0.17	2.4	0.23	3.2	3.1	87	0.3	9.3	4.4	61	0.94	0.19		2.30	34.549	25.1	8.24	7.01		
SSW28"	4/16/90		0.01	0.3	0.02	0.2	0.15	2.1	2.4	68	0.4	11.2	4.2	58	1.07	0.42		2.28	34.665	25.5	8.28	6.97		
SSW28"	4/23/90		0.17	5.3	0.20	2.8	0.01	0.1	1.5	41	0.5	15.5	5.8	81	2.31	0.33		2.27	34.480	25.8	8.25	6.32		
SSW28"	4/30/90		0.16	5.0	0.23	3.2	0.01	0.1	1.5	41	0.5	14.6	6.8	96	1.21	0.19		2.29	34.749	25.8	8.23	6.44		
SSW28"	5/7/90		0.16	5.0	0.24	3.4	0.09	1.3	2.4	68	0.5	13.9	5.9	83	0.96	0.52		2.28	34.679	26.1	8.28	6.39		
SSW28"	5/14/90		0.16	5.0	0.29	4.1	0.09	1.3	1.9	54	0.5	14.6	6.8	96	0.93	0.70		2.29	34.769	25.8	8.26	6.47		
SSW28"	5/21/90		0.16	5.0	0.26	3.6	0.18	2.5	2.6	72	0.5	14.6	6.5	90	0.96	0.54		2.29	34.759	25.2	8.32	6.82		
SSW28"	5/29/90		0.16	5.0	0.25	3.5	0.18	2.5	2.0	56	0.5	16.1	6.3	89		1.06		2.29	34.649	26.3	8.30	6.85		
SSW28"	6/4/90		0.16	5.0	0.29	4.1	0.27	3.8	2.1	60	0.5	14.6	7.0	98	2.90	0.69		2.29	34.706	25.9	8.30	6.76		
SSW28"	6/11/90		0.03	0.9	0.14	2.0	0.37	5.2	1.9	53	0.1	1.9	9.8	138	3.41	1.40		2.27	34.659	26.1	8.32	6.64		
SSW28"	6/18/90		0.08	2.5	0.24	3.4	0.37	5.2	3.0	83	0.1	3.4	2.6	36	7.54	0.12		2.28	34.627	26.2	8.31	6.44		
SSW28"	6/25/90		0.05	1.5	0.22	3.1	0.44	6.2	2.3	63	0.1	3.4	3.1	43	1.00	0.89		2.29	34.688	26.4	8.31	6.57		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/2/90		0.08	2.5	0.17	2.4	0.37	5.2	1.9	53	0.1	3.4	3.3	46	2.66	0.37		2.29	34.734	26.3	8.29	6.60		
SSW28"	7/6/90		0.08	2.5	0.20	2.8	0.40	5.6	2.6	73	0.1	4.0	3.3	46	1.06	0.53		2.30	34.744	26.0	8.30	6.60		
SSW28"	7/13/90		0.10	3.1	0.14	2.0	0.44	6.2	2.0	57	0.1	3.4	2.9	41	1.18	0.51		2.30	34.714	26.4	8.29	6.76		
SSW28"	7/23/90		0.08	2.5	0.11	1.5	0.37	5.2	2.3	63	0.1	3.4	3.7	52	3.27	0.53		2.31	34.727	26.8	8.30	6.44		
SSW28"	7/30/90		0.05	1.5	0.14	2.0	0.37	5.2	1.8	52	0.1	4.0	5.7	80	1.95	0.32		2.30	34.700	27.5	8.27	6.39		
SSW28"	8/6/90		0.10	3.1	0.20	2.8	0.59	8.3	1.8	50	0.4	13.6	3.4	47	3.62	0.32		2.31	34.686	27.7	8.29	6.33		
SSW28"	8/13/90		0.14	4.3	0.20	2.8	0.43	6.0	2.0	55	0.4	13.0	3.1	43	1.04	0.49		2.31	34.751	27.4	8.28	6.43		
SSW28"	8/20/90		0.09	2.8	0.15	2.1	0.51	7.1	1.8	50	0.4	13.0	3.4	48	1.42	0.58		2.30	34.735	27.6	8.29	6.55		
SSW28"	8/27/90		0.09	2.8	0.20	2.8	0.43	6.0	2.1	60	0.4	11.8	2.7	38	2.57	0.61		2.31	34.735	27.9	8.28	6.40		
SSW28"	9/4/90		0.13	4.0	0.33	4.6	0.51	7.1	3.1	87	0.4	13.0	2.8	39	2.13	0.72		2.32	34.764	28.1	8.27	6.71		
SSW28"	9/10/90		0.14	4.3	0.20	2.8	0.59	8.3	4.0	113	0.4	13.0	2.7	38	0.85	0.69		2.31	34.789	27.9	8.29	7.39		
SSW28"	9/17/90		0.14	4.3	0.25	3.5	0.51	7.1	2.2	63	0.4	13.6	4.0	56	1.20	0.62		2.32	34.756	28.4	8.26	6.64		
SSW28"	9/24/90		0.13	4.0	0.23	3.2	0.51	7.1	2.4	66	0.4	12.1	3.7	51	1.36	0.74		2.32	34.770	28.3	8.28	6.46		
SSW28"	10/1/90		0.13	4.0	0.23	3.2	0.51	7.1	1.8	50	0.5	13.9	3.9	55	1.07	0.81		2.26	34.790	27.9	8.28	6.57		
SSW28"	10/10/90		0.14	4.3	0.25	3.5	0.75	10.5	2.5	69	0.4	11.8	3.7	51	0.94	0.58		2.26	34.786	27.9	8.29	6.40		
SSW28"	10/15/90		0.18	5.6	0.67	9.4	1.23	17.2	2.5	69	0.5	13.9	4.0	56	1.04	0.69		2.26	34.779	28.0	8.24	6.16		
SSW28"	10/22/90		0.09	2.8	0.20	2.8	0.43	6.0	2.7	77	0.4	13.0	3.3	47	3.03	0.65		2.25	34.846	27.4	8.27	6.54		
SSW28"	10/29/90		0.10	3.1	0.42	5.9	0.15	2.2	3.6	100	0.2	5.0	5.0	70	2.60	0.77		2.25	34.899	27.2	8.27	6.23		
SSW28"	11/5/90		0.08	2.5	0.17	2.4	0.08	1.1	2.1	58	0.1	3.4	3.8	54	1.02	0.75		2.26	34.882	27.4	8.27	6.36		
SSW28"	11/13/90		0.05	1.5	0.12	1.7	0.26	3.6	2.5	70	0.3	9.3	3.4	47	1.18	0.67		2.26	34.990	26.4	8.25	6.23		
SSW28"	11/20/90		0.05	1.5	0.12	1.7	0.26	3.6	2.8	78	0.3	10.2	3.4	47	1.21	1.11		2.26	34.968	25.9	8.28	6.36		
SSW28"	11/28/90		0.05	1.5	0.26	3.6	0.26	3.6	3.6	101	0.3	10.2	3.3	47	0.94	2.90		2.27	34.861	26.2	8.30	6.28		
SSW28"	12/3/90		0.07	2.2	0.12	1.7	0.20	2.8	4.4	124	0.4	11.2	2.9	40	0.98	0.91		2.28	34.657	26.5	8.29	6.34		
SSW28"	12/11/90		0.09	2.8	0.12	1.7	0.26	3.6	5.9	165	0.4	11.2	3.0	42	1.02	0.44		2.28	34.631	26.4	8.26	6.41		
SSW28"	12/17/90		0.09	2.8	0.16	2.2	0.26	3.6	3.6	101	0.4	11.2	3.0	42	0.82	1.05		2.29	34.782	26.4	8.28	6.56		
SSW28"	12/28/90		0.11	3.4	0.14	2.0	0.13	1.8	2.7	76	0.4	12.4	4.8	67	0.91	1.08		2.29	34.666	25.4	8.29	6.41		
SSW28"	1/2/91		0.08	2.5	0.09	1.3	0.16	2.2	2.2	62	0.4	12.4	3.2	45	1.05	0.76		2.28	34.740	25.6	8.31	6.57		
SSW28"	1/7/91		0.14	4.3	0.20	2.8	0.18	2.5	2.3	64	0.4	11.2	3.1	43	0.95	0.90		2.28	34.707	25.5	8.31	6.59		
SSW28"	1/14/91		0.11	3.4	0.09	1.3	0.16	2.2	2.1	58	0.5	14.2	3.3	46	0.97	0.97		2.28	34.710	25.1	8.29	6.62		
SSW28"	1/24/91		0.06	2.0	0.23	3.2	0.35	4.9	2.4	68	0.3	8.4	2.9	41	1.45	1.12		2.28	34.741	25.1	8.31	6.60		
SSW28"	1/28/91		0.08	2.5	0.23	3.2	0.38	5.3	2.0	56	0.2	7.1	2.9	41	0.90	0.83		2.25	34.794	24.9	8.30	6.86		
SSW28"	2/4/91		0.06	1.9	0.10	1.4	0.38	5.3	2.3	64	0.3	9.9	3.1	44	0.96	0.89		2.25	34.744	25.1	8.30	6.77		
SSW28"	2/11/91		0.10	3.0	0.26	3.6	0.38	5.3	3.0	83	0.3	9.9	3.7	52	1.56	0.15		2.24	34.748	25.2	8.30	6.83		
SSW28"	2/19/91		0.10	3.1	0.21	2.9	0.38	5.3	2.6	74	0.2	7.4	3.5	49	1.11	0.56		2.25	34.801	25.2	8.31	6.76		
SSW28"	2/25/91		0.14	4.3	0.33	4.6	0.45	6.3	3.4	96	0.2	7.4	3.1	43	0.97	0.29		2.25	34.774	25.0	8.29	6.73		
SSW28"	3/4/91		0.14	4.3	0.33	4.6	0.38	5.3	3.3	91	0.2	7.4	3.3	46	0.96	1.51		2.26	34.820	24.9	8.29	6.86		
SSW28"	3/11/91		0.12	3.7	0.36	5.0	0.40	5.6	2.9	81	0.3	8.7	3.4	47	0.98	0.43		2.26	34.837	24.8	8.28	6.69		
SSW28"	3/18/91		0.12	3.7	0.39	5.5	0.38	5.3	2.6	74	1.4	43.1	3.5	48	0.87	0.25		2.25	34.801	23.6	8.27	9.68		
SSW28"	3/27/91		0.14	4.3	0.39	5.5	0.35	4.9	2.6	72	0.2	7.1	2.9	41	0.89	0.04		2.24	34.738	24.7	8.28	11.10		
SSW28"	4/1/91		0.12	3.7	0.33	4.6	0.35	4.9	2.3	64	0.3	8.7	4.0	56	1.21	0.04		2.24	34.769	24.5	8.27	10.91		
SSW28"	4/8/91		0.09	2.8	0.19	2.7	0.45	6.3	3.1	88	0.2	6.8	2.8	39	1.18	0.19		2.38	34.729	24.8	8.28	6.62		
SSW28"	4/15/91		0.09	2.8	0.19	2.7	0.45	6.3	3.4	96	0.3	8.4	3.1	43	0.99	0.37		2.38	34.645	25.3	8.27	21.72		
SSW28"	4/23/91		0.09	2.8	0.14	2.0	0.48	6.7	2.7	76	0.3	9.3	3.0	43	0.93	0.19		2.37	34.589	24.9	8.27	12.43		
SSW28"	4/29/91		0.09	2.8	0.19	2.7	0.43	6.0	2.1	59	0.3	8.4	2.6	36	0.93	0.13		2.38	34.642	25.1	8.29	14.23		
SSW28"	5/6/91		0.09	2.8	0.19	2.7	0.40	5.6	3.0	84	0.3	8.7	3.0	43	1.02	0.32		2.37	34.630	25.4	8.30	6.61		
SSW28"	5/8/91																					6.45		
SSW28"	5/13/91		0.09	2.8	0.19	2.7	0.39	5.5	2.4	67	0.3	8.7	2.7	38	1.20	0.32		2.38	34.661	25.3	8.30	6.77		
SSW28"	5/20/91		0.09	2.8	0.06	0.8	0.50	7.0	1.7	48	0.4	11.2	3.3	46	1.18	0.49		2.37	34.508	26.0	8.30	6.75		
SSW28"	5/28/91		0.07	2.2	0.17	2.4	0.21	2.9	2.3	65	0.3	10.5	4.3	60	1.04	0.30		2.38	34.590	25.5	8.30	6.64		
SSW28"	6/4/91		0.07	2.2	0.17	2.4	0.24	3.4	3.1	87	0.3	10.5	4.3	60	1.15	0.31		2.37	34.578	26.1	8.30	6.64		
SSW28"	6/10/91		0.06	1.9	0.19	2.7	0.18	2.5	10.8	303	0.3	10.5	3.6	50	0.98	0.47		2.39	34.619	25.9	8.28	6.69		
SSW28"	6/17/91		0.06	1.9	0.21	2.9	0.26	3.6	2.9	82	0.3	9.6	3.6	50	0.94	0.76		2.31	34.633	26.1	8.27	6.58		
SSW28"	6/24/91		0.07	2.2	0.21	2.9	0.21	2.9	3.7	104	0.3	10.5	2.6	37	1.05	0.22		2.32	34.674	25.9	8.27	6.81		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/1/91		0.11	3.4	1.57	22.0	0.40	5.6	18.3	514	0.4	13.6	3.0	41	1.05	0.23		2.31	34.666	26.1	8.27	6.77		
SSW28"	7/9/91		0.07	2.2	0.29	4.1	0.26	3.6	3.5	99	0.4	11.2	5.1	72	0.98	0.50		2.33	34.643	26.8	8.27	6.65		
SSW28"	7/16/91		0.05	1.5	0.16	2.2	0.22	3.1	2.5	69	0.2	7.4	2.3	32	1.05	0.74		2.34	34.706	26.4	8.28	6.70		
SSW28"	7/22/91		0.08	2.5	0.12	1.7	0.22	3.1	4.1	115	0.3	9.0	2.4	34	1.10	0.64		2.33	34.690	26.4	8.28	6.68		
SSW28"	7/26/91		0.08	2.5	0.09	1.3	0.22	3.1	2.0	56	0.3	9.3	2.6	36	0.96	0.50		2.33	34.646	26.3	8.27	6.74		
SSW28"	8/5/91		0.08	2.5	0.09	1.3	0.25	3.5	1.9	52	0.3	9.0	2.2	30	0.85	0.26		2.33	34.650	26.4	8.25	6.75		
SSW28"	8/15/91		0.12	3.7	0.21	2.9	0.34	4.8	2.3	65	0.3	10.5	3.9	55	1.11	0.42		2.33	34.654	26.5	8.28	6.69		
SSW28"	8/21/91		0.06	1.9	0.07	1.0	0.33	4.6	3.5	97	0.2	5.9	5.9	83	0.87	0.04		2.33	34.606	27.1	8.29	6.55		
SSW28"	8/27/91		0.05	1.5	0.54	7.6	0.15	2.1	4.0	113	0.2	7.1	5.6	79	1.06	0.18		2.33	34.628	27.0	8.28	6.57		
SSW28"	9/6/91		0.08	2.5	0.27	3.8	0.68	9.5	2.5	69	0.2	5.3	4.0	56	0.99	0.13		2.33	34.678	26.8	8.26	6.55		
SSW28"	9/13/91		0.03	0.9	0.27	3.8	0.28	3.9	2.9	81	0.2	7.1	2.8	39	0.93	0.28		2.34	34.813	26.7	8.27	6.34		
SSW28"	9/18/91		0.05	1.5	0.27	3.8	0.42	5.9	3.2	89	0.2	5.3	3.2	44	0.95	0.54		2.34	34.832	26.9	8.29	6.39		
SSW28"	9/25/91		0.02	0.6	0.20	2.8	0.19	2.7	2.3	65	0.2	5.9	3.0	41	1.07	0.45		2.35	34.839	27.1	8.24	6.75		
SSW28"	10/1/91		0.05	1.5	0.27	3.8	0.37	5.2	3.5	97	0.2	7.1	3.5	49	0.95	0.31		2.34	34.725	26.8	8.25	6.40		
SSW28"	10/9/91		0.11	3.4	0.23	3.2	0.14	2.0	2.2	60	0.3	9.0	4.1	58	1.39	0.34		2.35	34.737	26.9	8.23	7.44		
SSW28"	10/25/91		0.05	1.5	0.18	2.5	0.10	1.4	2.8	79	0.3	9.6	3.1	44	1.74	0.47		2.34	34.773	27.2	8.25	6.46		
SSW28"	11/4/91		0.03	0.9	0.32	4.5	0.18	2.5	2.5	69	0.3	8.7	4.4	62	1.29	0.13		2.34	34.777	27.4	8.25	6.55		
SSW28"	11/8/91		0.03	0.9	0.26	3.6	0.20	2.8	2.6	73	0.3	10.5	3.7	52	1.40	0.58		2.34	34.736	27.1	8.27	6.50		
SSW28"	11/14/91		0.07	2.2	0.21	2.9	0.19	2.7	2.0	55	0.3	9.3	3.3	47	0.95	0.33		2.34	34.815	26.8	8.26	6.47		
SSW28"	11/22/91		0.07	2.2	0.34	4.8	0.21	2.9	5.3	148	0.3	10.2	3.2	44	1.01	0.20		2.35	34.854	26.7	8.26	6.52		
SSW28"	11/29/91		0.09	2.8	0.39	5.5	0.25	3.5	12.3	345	0.3	10.2	3.1	43	0.96	0.28		2.29	34.795	26.6	8.27	6.45		
SSW28"	12/6/91		0.07	2.2	0.17	2.4	0.29	4.1	2.2	60	0.4	10.8	3.0	42	0.96	0.25		2.30	34.852	26.4	8.26	6.61		
SSW28"	12/12/91		0.14	4.3	3.94	55.2	0.29	4.1	37.4	1050	0.4	12.1	6.9	96	1.02	0.25		2.30	34.851	26.1	8.26	6.56		
SSW28"	12/19/91		0.09	2.8	0.26	3.6	0.27	3.8	2.4	66	0.3	10.2	4.1	57	0.99	0.06		2.29	34.784	25.9	8.26	6.70		
SSW28"	12/23/91		0.11	3.4	0.63	8.8	0.43	6.0	4.0	112	0.3	9.6	7.6	106	0.97	0.11		2.29	34.666	25.9	8.25	6.57		
SSW28"	1/3/92		0.10	3.1	0.63	8.8	0.38	5.3	1.8	49	0.3	9.6	6.7	94	1.67	0.19		2.29	34.691	25.3	8.28	6.65		
SSW28"	1/10/92		0.08	2.5	0.63	8.8	0.38	5.3	2.3	66	0.3	9.6	6.7	94	1.08	0.89		2.29	34.740	24.9	8.30	6.71		
SSW28"	1/16/92		0.11	3.4	0.85	11.9	0.38	5.3	2.9	82	0.3	9.6	6.6	92	0.99	0.17		2.29	34.793	24.6	8.29	7.02		
SSW28"	1/22/92		0.12	3.7	0.15	2.1	0.23	3.2	2.6	74	0.3	9.9	3.3	46	1.04	0.23		2.29	34.809	24.4	8.32	6.79		
SSW28"	1/30/92		0.15	4.6	0.44	6.2	0.23	3.2	3.5	98	0.3	9.9	4.1	58	1.60	0.02		2.29	34.508	24.6	8.27	6.94		
SSW28"	2/6/92		0.14	4.3	0.20	2.8	0.21	2.9	2.3	65	0.3	9.6	3.3	46	1.29	0.44		2.30	34.701	24.2	8.29	6.87		
SSW28"	2/14/92		0.11	3.4	0.24	3.4	0.36	5.0	4.3	121	0.4	12.1	3.5	48	0.96	0.33		2.30	34.692	24.4	8.27	6.76		
SSW28"	2/20/92		0.14	4.3	0.24	3.4	0.31	4.3	4.1	116	0.4	12.4	3.5	49	0.87	0.30		2.30	34.674	24.5	8.26	6.84		
SSW28"	2/27/92		0.14	4.3	0.24	3.4	0.36	5.0	2.6	74	0.3	10.2	3.2	44	0.94	0.07		2.30	34.609	24.1	8.26	6.84		
SSW28"	3/5/92		0.08	2.5	0.09	1.3	0.35	4.9	3.7	104	0.3	9.9	5.1	71	1.12	0.23		2.30	34.659	24.8	8.27	6.95		
SSW28"	3/12/92		0.15	4.6	0.09	1.3	0.31	4.3	2.2	63	0.3	9.9	4.0	56	1.08	0.12		2.27	34.185	24.9	8.26	6.85		
SSW28"	3/20/92		0.12	3.7	0.09	1.3	0.31	4.3	2.6	72	0.3	10.2	4.8	67	1.14	0.08		2.28	34.399	24.2	8.25	6.73		
SSW28"	3/25/92		0.15	4.6	0.09	1.3	0.40	5.6	2.6	72	0.3	10.2	3.6	50	0.99	0.14		2.29	34.591	24.4	8.27	6.79		
SSW28"	4/2/92		0.12	3.7	0.06	0.8	0.31	4.3	2.1	58	0.4	10.8	4.3	61	1.25	0.49		2.29	34.571	24.7	8.27	6.80		
SSW28"	4/9/92		0.15	4.6	0.34	4.8	0.33	4.6	2.6	72	0.3	9.9	4.7	65	1.22	0.29		2.27	34.603	24.5	8.26	6.73		
SSW28"	4/21/92		0.08	2.5	0.24	3.4	0.44	6.2	2.7	76	0.3	9.3	5.4	75	1.39	0.30		2.26	34.481	25.3	8.25	6.52		
SSW28"	4/24/92		0.07	2.2	0.16	2.2	0.42	5.9	1.7	49	0.3	9.3	5.4	75	1.24	0.17		2.26	34.452	25.2	8.26	6.60		
SSW28"	5/1/92		0.08	2.5	0.24	3.4	0.49	6.9	2.7	76	0.3	9.3	5.7	80	1.50	1.05		2.26	34.497	25.5	8.25	6.84		
SSW28"	5/7/92		0.08	2.5	0.24	3.4	0.44	6.2	3.0	84	0.3	9.3	6.4	90	1.69	0.68		2.25	34.527	25.5	8.26	6.81		
SSW28"	5/15/92		0.08	2.5	0.41	5.7	0.64	9.0	4.1	116	0.3	9.9	8.1	113	1.51	0.35		2.26	34.514	25.6	8.23	6.71		
SSW28"	5/21/92		0.08	2.5	0.24	3.4	0.44	6.2	2.2	61	0.3	9.3	7.0	98	1.44	0.12		2.26	34.563	26.4	8.23	6.73		
SSW28"	5/29/92		0.04	1.1	0.24	3.4	0.53	7.4	2.3	65	0.4	10.8	6.4	90	1.63	0.18		2.26	34.585	25.5	8.26	6.81		
SSW28"	6/4/92		0.05	1.5	0.33	4.6	0.42	5.9	1.9	53	0.4	12.7	9.1	127	1.61	0.26		2.26	34.625	26.2	8.24	6.81		
SSW28"	6/9/92		0.08	2.5	0.03	0.4	0.43	6.0	2.3	65	0.5	16.4	4.8	67	1.46	0.12		2.26	34.585	26.0	8.25	6.87		
SSW28"	6/19/92		0.13	4.0	0.15	2.1	0.67	9.4	2.0	57	0.4	11.2	4.8	67	1.44	0.40		2.28	34.555	26.6	8.25	6.70		
SSW28"	6/25/92		0.19	5.9	0.31	4.3	1.56	21.9	2.4	67	0.2	7.4	3.9	55	1.34	0.41		2.29	34.656	26.2	8.25	6.83		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/2/92		0.20	6.2	0.39	5.5	0.66	9.3	2.9	80	0.3	9.6	7.0	98	1.20	0.29		2.28	34.558	27.1	8.25	6.64		
SSW28"	7/9/92		0.23	7.2	0.27	3.7	0.57	8.0	1.4	40	0.2	7.5	4.3	60	1.16	0.12		2.30	34.643	26.9	8.26	6.69		
SSW28"	7/16/92		0.13	4.1	0.27	3.7	0.48	6.7	1.3	36	0.4	11.1	5.3	74	1.10	0.20		2.31	34.633	27.5	8.26	6.52		
SSW28"	7/23/92		0.13	4.1	0.27	3.7	0.44	6.1	1.3	36	0.4	11.6	4.3	60	1.11	0.06		2.31	34.624	27.8	8.26	6.54		
SSW28"	7/31/92		0.08	2.5	0.20	2.9	0.25	3.5	1.5	42	0.4	12.1	4.7	66	1.15	0.04		2.30	34.630	27.4	8.21	6.59		
SSW28"	8/6/92		0.08	2.5	0.38	5.3	0.25	3.5	2.2	61	0.3	9.9	4.3	60	1.11	0.23		2.31	34.661	27.5	8.27	6.45		
SSW28"	8/14/92		0.08	2.5	0.27	3.8	0.25	3.5	1.5	42	0.3	9.6	4.0	55	1.27	0.18		2.31	34.616	27.0	8.27	6.60		
SSW28"	8/20/92		0.08	2.5	0.34	4.8	0.23	3.2	2.7	76	0.3	9.6	4.1	57	1.34	0.47		2.31	34.667	27.2	8.27	6.57		
SSW28"	8/27/92		0.08	2.5	0.31	4.3	0.25	3.5	2.0	56	0.3	9.0	4.4	61	1.21	0.16		2.33	34.707	27.3	8.24	6.60		
SSW28"	9/3/92		0.08	2.5	0.24	3.3	0.25	3.5	3.6	100	0.3	9.6	5.2	73	1.45	0.25		2.31	34.696	27.2	8.27	6.51		
SSW28"	9/10/92		0.08	2.5	0.24	3.3	0.30	4.2	1.8	50	0.4	12.1	5.9	82	1.17	0.26		2.31	34.663	27.8	8.26	6.46		
SSW28"	9/17/92		0.13	4.0	0.33	4.6	0.49	6.9	3.2	90	0.4	13.0	6.3	89	1.25	0.14		2.30	34.608	27.5	8.27	6.28		
SSW28"	9/25/92		0.20	6.2	0.25	3.5	0.44	6.2	3.0	85	0.4	13.0	7.5	105	1.36	0.22		2.30	34.589	27.8	8.26	6.26		
SSW28"	10/1/92		0.17	5.3	0.18	2.5	0.46	6.4	1.7	48	0.4	12.7	5.9	82	1.38	0.18		2.30	34.644	27.6	8.28	6.43		
SSW28"	10/8/92		0.17	5.3	0.22	3.1	0.44	6.2	2.1	58	0.4	12.7	7.5	105	1.02	0.03		2.30	34.642	27.7	8.28	6.28		
SSW28"	10/16/92		0.17	5.3	0.18	2.5	0.51	7.1	2.4	67	0.4	12.7	7.2	101	0.96	0.30		2.30	34.665	27.8	8.28	6.48		
SSW28"	10/22/92		0.15	4.6	1.46	20.4	0.82	11.5	1.5	42	0.4	13.6	6.5	91	1.12	0.51		2.30	34.558	27.2	8.27	6.02		
SSW28"	10/29/92		0.08	2.5	0.13	1.8	0.53	7.4	1.7	49	0.4	11.8	4.6	64	1.08	0.21		2.30	34.653	27.8	8.26	6.53		
SSW28"	11/5/92		0.10	3.1	0.25	3.5	0.55	7.7	1.8	51	0.4	11.8	5.2	73	1.11	0.18		2.30	34.682	26.9	8.29	6.55		
SSW28"	11/12/92		0.10	3.1	0.23	3.2	0.50	7.0	2.2	61	0.5	15.2	4.4	62	1.06	0.15		2.31	34.680	27.2	8.28	6.55		
SSW28"	11/19/92		0.13	4.0	0.24	3.4	0.65	9.1	3.2	90	0.3	9.9	4.2	59	1.21	0.19		2.31	34.701	26.8	8.26	6.50		
SSW28"	11/25/92		0.14	4.3	0.25	3.5	0.67	9.4	3.1	87	0.4	11.5	4.9	69	1.23	0.10		2.31	34.725	26.1	8.27	6.56		
SSW28"	12/3/92		0.10	3.1	0.23	3.2	0.44	6.2	2.3	63	0.4	11.8	5.0	69	1.12	0.03		2.30	34.689	26.7	8.26	6.09		
SSW28"	12/10/92		0.09	2.8	0.22	3.1	0.41	5.7	2.7	76	0.3	10.5	5.3	74	1.07	0.74		2.30	34.726	26.5	8.28	6.82		
SSW28"	12/17/92		0.10	3.1	0.22	3.1	0.47	6.6	2.5	71	0.4	11.5	5.5	77	1.09	0.26		2.30	34.691	26.2	8.26	6.72		
SSW28"	12/23/92		0.09	2.8	0.24	3.4	0.50	7.0	2.8	79	0.4	12.1	5.2	72	1.22	0.22		2.30	34.708	25.9	8.29	6.69		
SSW28"	12/30/92		0.11	3.4	0.14	2.0	0.69	9.7			0.5	16.1	5.3	74	1.21	0.15		2.30	34.729	25.7	8.29	6.75		
SSW28"	1/7/93		0.12	3.7	0.23	3.2	0.43	6.0	3.9	108	0.3	9.9	4.5	62	1.11	0.12		2.30	34.685	25.1	8.29	6.95		
SSW28"	1/14/93		0.08	2.5	0.19	2.7	0.41	5.7	2.4	68	0.3	8.1	4.7	66	1.11	0.20		2.31	34.744	24.6	8.26	7.10		
SSW28"	1/21/93		0.08	2.5	0.19	2.7	0.53	7.4	1.9	54	0.3	8.1	4.2	59	1.19	0.24		2.30	34.749	24.9	8.28	6.92		
SSW28"	1/28/93		0.06	1.9	0.12	1.7	0.43	6.0	2.8	78	0.2	6.2	4.4	61	1.14	0.34		2.31	34.764	24.6	8.29	7.04		
SSW28"	2/3/93		0.08	2.5	0.17	2.4	0.33	4.6	1.7	46	0.2	6.2	4.3	60	1.02	0.17		2.31	34.738	24.7	8.28	7.09		
SSW28"	2/11/93		0.11	3.4	0.23	3.2	0.21	2.9	2.6	74	0.3	7.7	4.9	68	0.97	0.24		2.31	34.735	24.3	8.28	6.94		
SSW28"	2/16/93		0.15	4.6	0.27	3.8	0.37	5.2	2.8	79	0.2	6.2	4.0	55	1.07	0.18		2.31	34.766	24.3	8.30	7.02		
SSW28"	2/25/93		0.08	2.5	0.23	3.2	0.11	1.5	3.6	102	0.2	6.2	5.4	76	1.17	0.46		2.31	34.725	24.2	8.29	7.12		
SSW28"	3/3/93		0.08	2.5	0.30	4.2	0.18	2.5	3.0	85	0.2	5.6	3.9	55	1.28	1.12		2.31	34.738	24.1	8.28	7.03		
SSW28"	3/11/93		0.12	3.7	0.12	1.7	0.28	3.9	2.5	70	0.2	6.8	4.7	66	1.07	0.47		2.31	34.761	24.3	8.29	6.81		
SSW28"	3/18/93		0.15	4.6	0.22	3.1	0.43	6.0	3.2	89	0.2	4.6	4.4	61	1.03	0.04		2.32	34.779	24.4	8.29	7.28		
SSW28"	3/24/93		0.14	4.3	0.11	1.5	0.35	4.9	2.3	64	0.2	7.1	5.3	75	1.04	0.08		2.32	34.764	25.1	8.28	6.97		
SSW28"	4/1/93		0.09	2.8	0.13	1.8	0.16	2.2	2.0	55	0.2	7.1	5.2	72	1.03	0.07		2.30	34.605	24.5	8.28	6.73		
SSW28"	4/7/93		0.12	3.7	0.15	2.1	0.12	1.7	1.9	54	0.3	9.0	4.8	67	1.03	0.59		2.30	34.555	24.9	8.31	7.45		
SSW28"	4/15/93		0.09	2.8	0.10	1.4	0.14	2.0	1.8	50	0.3	8.4	4.0	56	1.00	0.17		2.31	34.698	25.0	8.29	6.94		
SSW28"	4/22/93		0.11	3.4	0.09	1.3	0.16	2.2	2.8	78	0.3	9.0	4.3	60	1.00	0.26		2.30	34.598	25.1	8.28	6.94		
SSW28"	4/29/93		0.11	3.4	0.10	1.4	0.20	2.8	2.9	82	0.3	8.4	3.8	54	1.12	0.01		2.30	34.440	25.6	8.27	6.80		
SSW28"	5/6/93		0.10	3.1	0.09	1.3	0.28	3.9	2.4	68	0.3	9.0	4.5	64	1.07	0.12		2.31	34.661	25.3	8.29	6.93		
SSW28"	5/13/93		0.13	4.0	0.19	2.7	0.28	3.9	4.8	133	0.3	8.1	5.0	70	0.94	0.30		2.30	34.559	25.4	8.26	6.82		
SSW28"	5/18/93		0.16	5.0	0.15	2.1	0.28	3.9	2.6	74	0.3	10.5	4.1	57	0.93	0.18		2.29	34.396	25.4	8.28	6.80		
SSW28"	5/27/93		0.14	4.3	0.12	1.7	0.25	3.5	2.4	67	0.4	11.2	4.3	60	0.98	0.22		2.30	34.448	25.6	8.27	7.12		
SSW28"	6/1/93		0.11	3.4	0.10	1.4	0.29	4.1	2.3	64	0.2	6.8	5.2	73	1.00	0.24		2.30	34.481	25.6	8.28	6.87		
SSW28"	6/8/93		0.10	3.1	0.23	3.2	0.38	5.3	4.0	113	0.3	8.1	4.6	64	0.98	0.28		2.30	34.540	26.4	8.27	6.71		
SSW28"	6/16/93		0.10	3.1	0.12	1.7	0.31	4.3	2.1	58	0.3	8.4	3.6	51	1.00	0.19		2.30	34.585	26.3	8.26	6.72		
SSW28"	6/24/93		0.09	2.8	0.10	1.4	0.31	4.3	1.5	43	0.3	8.4	4.9	68	1.05	0.22		2.31	34.643	25.8	8.28	6.74		
SSW28"	6/30/93		0.11	3.4	0.46	6.4	0.37	5.2	5.8	163	0.3	9.9	4.5	64	1.11	0.29		2.30	34.490	26.2	8.25	6.58		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/6/93		0.13	4.0	0.46	6.4	0.36	5.0	2.5	70	0.3	8.7	6.0	83	0.95	0.19		2.31	34.495	26.5	8.27	6.64		
SSW28"	7/12/93		0.12	3.7	0.19	2.7	0.48	6.7	2.1	59	0.3	8.1	4.7	66	1.01	0.19		2.31	34.643	26.1	8.28	6.70		
SSW28"	7/19/93		0.09	2.8	0.22	3.1	0.30	4.2	2.4	68	0.3	8.7	4.6	64	1.05	0.23		2.31	34.603	26.8	8.28	6.68		
SSW28"	7/30/93		0.12	3.7	0.12	1.7	0.41	5.7	2.2	62	0.3	10.5	1.7	24	0.95	0.22		2.32	34.595	26.3	8.28	7.08		
SSW28"	8/4/93		0.06	1.9	0.17	2.4	0.28	3.9	2.9	81	0.2	6.5	3.9	54	1.06	1.28		2.32	34.619	26.1	8.25	6.55		
SSW28"	8/10/93		0.09	2.8	0.17	2.4	0.25	3.5	2.6	73	0.3	8.7	3.9	55	1.04	0.47		2.32	34.571	26.7	8.26	7.00		
SSW28"	8/18/93		0.12	3.7	0.23	3.2	0.44	6.2	2.2	62	0.3	10.2	3.8	53	1.05	0.21		2.31	34.565	26.7	8.26	6.81		
SSW28"	8/25/93		0.08	2.5	0.16	2.2	0.27	3.8	2.8	79	0.3	8.4	4.8	67	1.08	0.17		2.32	34.574	27.4	8.27	6.51		
SSW28"	9/2/93		0.12	3.7	0.16	2.2	0.41	5.7	1.9	53	0.3	9.3	5.2	72	1.09	0.08		2.32	34.555	27.5	8.26	6.47		
SSW28"	9/9/93		0.11	3.4	0.24	3.4	0.34	4.8	3.1	87	0.3	9.6	5.4	76	1.07	0.01		2.32	34.546	27.5	8.26	6.48		
SSW28"	9/14/93		0.14	4.3	0.20	2.8	0.25	3.5	2.9	82	0.3	9.9	5.4	75	1.08	0.07		2.32	34.636	27.1	8.26	6.43		
SSW28"	9/21/93		0.07	2.2	0.27	3.8	0.30	4.2	3.0	85	0.3	8.7	4.8	67	1.07	0.05		2.32	34.634	27.1	8.25	6.38		
SSW28"	9/28/93		0.07	2.2	0.27	3.8	0.26	3.6	2.2	62	0.2	6.8	5.1	71	1.06	0.15		2.33	34.725	27.0	8.26	6.39		
SSW28"	10/7/93		0.08	2.5	0.29	4.1	0.33	4.6	2.7	76	0.2	7.1	6.5	90	1.15	0.14		2.27	34.691	27.4	8.26	6.32		
SSW28"	10/12/93		0.12	3.7	0.20	2.8	0.35	4.9	2.7	76	0.3	9.0	6.1	85	1.09	0.24		2.27	34.624	27.8	8.28	6.27		
SSW28"	10/19/93		0.11	3.4	0.16	2.2	0.24	3.4	2.4	67	0.2	7.1	5.6	79	1.21	0.06		2.27	34.657	26.7	8.28	6.40		
SSW28"	10/28/93		0.08	2.5	0.14	2.0	0.40	5.6	1.5	43	0.3	8.4	5.1	71	1.21	0.00		2.28	34.750	26.1	8.28	6.30		
SSW28"	11/2/93		0.12	3.7	0.10	1.4	0.24	3.4	4.4	122	0.3	8.1	5.1	71	1.21	0.14		2.28	34.699	27.0	8.27	6.37		
SSW28"	11/9/93		0.08	2.5	0.10	1.4	0.41	5.7	1.9	53	0.3	8.1	5.5	77	1.14	0.38		2.28	34.751	26.5	8.28	6.34		
SSW28"	11/16/93		0.10	3.1	0.15	2.1	0.21	2.9	2.2	62	0.3	7.7	5.2	73	1.12	0.18		2.28	34.756	26.1	8.29	6.43		
SSW28"	11/23/93		0.08	2.5	0.10	1.4	0.18	2.5	1.9	53	0.3	8.7	5.0	70	1.18	0.01		2.28	34.765	26.2	8.28	6.36		
SSW28"	12/1/93		0.13	4.0	0.20	2.8	0.25	3.5	2.4	68	0.3	7.7	5.4	76	1.02	0.10		2.28	34.798	25.5	8.28	6.40		
SSW28"	12/9/93		0.10	3.1	0.24	3.4	0.10	1.4	2.7	77	0.3	7.7	5.4	76	1.12	0.07		2.28	34.800	23.7	8.27	6.43		
SSW28"	12/14/93		0.11	3.4	0.24	3.4	0.03	0.4	1.9	54	0.3	9.0	5.2	73	1.15	0.00		2.28	34.833	24.3	8.29	6.47		
SSW28"	12/20/93		0.11	3.4	0.29	4.1	0.26	3.6	2.1	60	0.3	8.7	6.0	83	1.20	0.01		2.28	34.857	24.9	8.26	6.54		
SSW28"	12/28/93		0.09	2.8	0.30	4.2	0.52	7.3	2.3	63	0.3	8.7	6.1	86	1.26	0.13		2.29	34.948	23.3	8.28	6.80		
SSW28"	1/6/94		0.14	4.3	0.44	6.2	0.46	6.4	2.3	65	0.4	11.2	5.8	81	1.02	0.26		2.33	34.949	23.4	8.28	6.42		
SSW28"	1/12/94		0.12	3.7	0.29	4.1	0.33	4.6	2.9	83	0.3	9.9	6.8	95	1.47	0.04		2.33	34.926	24.6	8.29	6.58		
SSW28"	1/18/94		0.11	3.4	0.21	2.9	0.08	1.1	2.9	80	0.3	9.9	5.7	80	0.99	0.01		2.33	34.911	24.3	8.28	6.64		
SSW28"	1/26/94		0.16	5.0	0.32	4.5	0.37	5.2	2.4	67	0.3	9.9	5.6	78	0.97	0.17		2.33	34.855	23.9	8.27	6.54		
SSW28"	2/2/94		0.15	4.6	0.36	5.0	0.30	4.2	2.6	73	0.3	10.5	6.6	92	0.91	0.04		2.31	34.461	23.3	8.30	6.66		
SSW28"	2/9/94		0.21	6.5	0.29	4.1	0.28	3.9	2.2	62	0.4	11.2	6.4	90	0.92	0.05		2.29	34.264	23.2	8.30	6.64		
SSW28"	2/15/94		0.21	6.5	0.25	3.5	0.33	4.6	1.6	45	0.4	11.2	6.3	88	0.88	0.03		2.27	33.835	23.9	8.28	6.66		
SSW28"	2/24/94		0.15	4.6	0.31	4.3	0.23	3.2	3.3	92	0.3	8.7	5.7	80	0.91	0.06		2.30	34.355	23.9	8.29	6.70		
SSW28"	3/2/94		0.20	6.2	0.28	3.9	0.15	2.1	0.2	4	0.3	9.9	6.4	90	0.93	0.02		2.30	34.366	23.1	8.28	6.70		
SSW28"	3/9/94		0.27	8.4	0.38	5.3	0.26	3.6	0.3	7	0.3	10.2	7.1	99	0.96	0.10		2.29	34.251	26.5	8.23	7.14		
SSW28"	3/17/94		0.21	6.5	0.37	5.2	0.18	2.5	0.2	5	0.4	12.1	5.7	79	0.89	0.04		2.30	34.408	23.0	8.26	6.66		
SSW28"	3/22/94		0.15	4.6	0.29	4.1	0.12	1.7	0.1	3	0.3	9.3	6.4	90	0.92	0.04		2.30	34.430	23.2	8.28	6.58		
SSW28"	3/29/94		0.17	5.3	0.13	1.8	0.07	1.0	4.7	133	0.3	9.9	6.3	88	0.93	0.03		2.30	34.435	24.3	8.24	6.66		
SSW28"	4/5/94		0.15	4.6	0.31	4.3	0.17	2.4	3.4	96	0.4	11.2	6.4	90	0.83	0.05		2.30	34.373	25.1	8.26	6.84		
SSW28"	4/14/94		0.20	6.2	0.17	2.4	0.17	2.4	10.2	286	0.4	11.5	5.8	81	1.04	0.01		2.29	34.425	24.6	8.28	6.75		
SSW28"	5/12/94		0.16	5.0	0.30	4.2	0.10	1.4	2.6	74	0.3	10.2	5.7	80	1.01	0.05		2.30	34.569	26.3	8.30	6.66		
SSW28"	5/17/94		0.14	4.3	0.21	2.9	0.19	2.7	2.3	65	0.4	10.8	6.1	86	0.98	0.03		2.30	34.530	26.1	8.27	6.50		
SSW28"	5/25/94		0.19	5.9	0.24	3.4	0.19	2.7	3.1	86	0.4	11.8	6.4	90	1.09	0.24		2.31	34.596	25.4	8.27	6.51		
SSW28"	6/1/94		0.17	5.3	0.42	5.9	0.15	2.1	2.1	60	0.3	9.0	6.6	92	0.97	0.13		2.31	34.590	25.2	8.25	6.49		
SSW28"	6/7/94		0.17	5.3	0.53	7.4	0.18	2.5	3.3	92	0.4	11.2	6.5	92	0.92	0.10		2.32	34.588	25.7	8.25	6.38		
SSW28"	6/16/94		0.16	5.0	0.37	5.2	0.09	1.3	2.8	77	0.3	9.9	6.5	91	1.09	0.23		2.32	34.559	25.8	8.26	6.43		
SSW28"	6/23/94		0.25	7.7	0.26	3.6	0.22	3.1	3.2	89	0.3	10.2	5.8	82	1.28	0.01		2.32	34.580	26.4	8.25	6.44		
SSW28"	6/29/94		0.15	4.6	0.25	3.5	0.31	4.3	2.4	68	0.3	9.3	6.4	89	0.98	0.01		2.32	34.645	25.9	8.24	6.40		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/5/94		0.16	5.0	0.47	6.6	0.20	2.8	3.3	93	0.3	9.9	6.2	87	1.13	0.01		2.32	34.669	26.2	8.24	6.51		
SSW28"	7/12/94		0.12	3.7	0.43	6.0	0.39	5.5	2.9	81	0.4	12.4	4.9	69	1.11	0.07		2.32	34.689	26.4	8.24	6.49		
SSW28"	7/19/94		0.10	3.1	0.31	4.3	0.27	3.8	1.0	28	0.3	9.0	6.0	84	1.09	0.01		2.31	34.563	27.1	8.27	6.52		
SSW28"	7/27/94		0.17	5.3	0.27	3.8	0.53	7.4	9.0	251	0.4	13.0	7.0	98	1.12	0.20		2.31	34.542	26.3	8.24	6.33		
SSW28"	8/1/94		0.16	5.0	0.66	9.2	0.05	0.7	2.7	75	0.3	9.9	6.6	92	1.05	0.13		2.31	34.496	25.4	8.25	6.37		
SSW28"	8/10/94		0.17	5.3	0.37	5.2	0.45	6.3	2.4	66	0.4	10.8	6.6	92	1.10	0.17		2.31	34.554	27.0	8.26	6.32		
SSW28"	8/16/94		0.16	5.0	0.44	6.2	0.14	2.0	3.0	85	0.3	10.2	6.4	89	1.04	0.14		2.31	34.507	27.1	8.26	6.23		
SSW28"	8/25/94		0.16	5.0	0.29	4.1	0.08	1.1	2.2	62	0.3	10.2	6.0	85	1.06	0.12		2.31	34.528	26.5	8.26	6.33		
SSW28"	8/30/94		0.17	5.3	0.26	3.6	0.09	1.3	1.8	50	0.3	9.3	5.2	72	1.02	0.00		2.31	34.511	27.2	8.26	6.27		
SSW28"	9/7/94		0.17	5.3	0.25	3.5	0.25	3.5	2.5	69	0.4	11.5	5.3	74	1.05	0.04		2.32	34.629	27.6	8.27	6.24		
SSW28"	9/12/94		0.12	3.7	0.44	6.2	0.25	3.5	1.7	49	0.3	9.3	6.0	83	1.04	0.01		2.32	34.694	27.3	8.26	6.16		
SSW28"	9/20/94		0.13	4.0	0.35	4.9	0.14	2.0	4.8	134	0.3	8.7	5.8	82	1.04	0.63		2.32	34.660	26.8	8.28	6.16		
SSW28"	9/26/94		0.14	4.3	0.45	6.3	0.11	1.5	3.1	88	0.3	10.5	6.2	87	0.85	0.38		2.31	34.568	26.9	8.26	6.17		
SSW28"	10/3/94		0.13	4.0	0.36	5.0	0.19	2.7	2.4	69	0.3	9.6	4.9	68	0.97	0.07		2.31	34.634	27.7	8.27	6.17		
SSW28"	10/11/94		0.15	4.6	0.43	6.0	0.09	1.3	2.0	56	0.3	10.2	4.1	58	0.77	0.06		2.32	34.597	26.2	8.26	6.15		
SSW28"	10/20/94		0.14	4.3	0.46	6.4	0.09	1.3	1.7	48	0.3	9.9	4.6	64	0.83	0.02		2.32	34.669	25.8	8.27	6.30		
SSW28"	10/27/94		0.21	6.5	0.55	7.7	0.92	12.9	5.6	158	0.4	13.0	5.5	77	0.93	0.01		2.33	34.772	25.4	8.24	6.27		
SSW28"	11/3/94		0.17	5.3	0.55	7.7	0.59	8.3	2.3	65	0.4	10.8	6.4	90	0.93	0.00		2.32	34.709	25.6	8.26	6.16		
SSW28"	11/9/94		0.17	5.3	0.70	9.8	0.66	9.2	2.9	81	0.3	10.2	5.2	73	0.91	0.02		2.32	34.776	25.1	8.28	6.14		
SSW28"	11/17/94		0.19	5.9	0.33	4.6	0.62	8.7	3.1	87	0.4	11.2	5.9	83	0.92	0.22		2.31	34.618	25.7	8.25	6.21		
SSW28"	11/23/94		0.17	5.3	0.52	7.3	0.68	9.5	1.8	50	0.4	11.5	6.6	92	0.98	0.04		2.32	34.661	24.3	8.28	6.46		
SSW28"	11/29/94		0.21	6.5	0.41	5.7	0.68	9.5	2.0	55	0.4	11.5	5.7	79	0.94	0.17		2.29	34.448	24.4	8.28	6.71		
SSW28"	12/7/94		0.19	5.9	0.39	5.5	0.68	9.5	2.0	56	0.4	12.1	4.8	68	0.90	0.01		2.28	34.249	24.1	8.25	6.80		
SSW28"	12/12/94		0.20	6.2	0.50	7.0	0.22	3.1	3.3	94	0.4	12.1	5.8	81	0.91	0.08		2.29	34.331	24.4	8.27	6.77		
SSW28"	12/20/94		0.20	6.2	0.37	5.2	0.16	2.2	2.6	72	0.4	10.8	5.5	77	0.93	0.02		2.31	34.610	23.9	8.29	6.59		
SSW28"	12/27/94		0.11	3.4	0.36	5.0	0.13	1.8	2.3	65	0.3	9.6	5.4	75	0.91	0.02		2.32	34.704	23.9	8.29	6.50		
SSW28"	1/3/95		0.18	5.6	0.31	4.3	0.12	1.7	1.8	51	0.4	10.8	4.9	69	0.92	0.00		2.25	34.422	23.0	8.29	6.42		
SSW28"	1/10/95		0.17	5.3	0.37	5.2	0.15	2.1	2.0	56	0.4	11.5	4.8	67	0.90	0.28		2.25	34.493	22.6	8.28	6.73		
SSW28"	1/19/95		0.19	5.9	0.43	6.0	0.30	4.2	3.2	90	0.4	11.8	4.8	67	0.90	0.54		2.24	34.309	22.2	8.28	7.00		
SSW28"	1/26/95		0.24	7.4	0.44	6.2	0.04	0.6	1.9	53	0.4	13.6	5.1	71	0.95	0.01		2.26	34.392	23.6	8.26	6.78		
SSW28"	1/31/95		0.19	5.9	0.64	9.0	0.26	3.6	2.9	81	0.4	11.8	5.9	83	0.93	0.02		2.25	34.444	23.9	8.25	6.91		
SSW28"	2/10/95		0.19	5.9	0.58	8.1	0.20	2.8	1.9	54	0.4	11.8	4.1	57	0.82	2.18		2.24	34.208	21.6	8.25	6.61		
SSW28"	2/16/95		0.22	6.8	0.48	6.7	0.24	3.4	2.4	68	0.4	12.4	5.3	74	0.82	0.16		2.23	34.133	22.7	8.27	6.40		
SSW28"	2/24/95		0.24	7.4	0.57	8.0	0.20	2.8	2.5	71	0.4	11.8	5.2	72	0.89	0.02		2.23	34.168	22.7	8.26	6.44		
SSW28"	3/1/95		0.21	6.5	0.32	4.5	0.35	4.9	2.1	60	0.4	11.8	5.6	79	0.97	0.01		2.24	34.230	24.8	8.28	6.51		
SSW28"	3/7/95		0.23	7.1	0.20	2.8	0.39	5.5	2.1	60	0.4	13.0	5.3	74	0.95	0.57		2.23	34.159	23.4	8.27	6.78		
SSW28"	3/16/95		0.22	6.8	0.31	4.3	0.16	2.2	2.1	59	0.4	12.1	4.8	68	1.19	0.02		2.24	34.268	24.3	8.26	6.48		
SSW28"	3/23/95		0.22	6.8	0.25	3.5	0.37	5.2	10.5	294	0.4	13.0	5.9	83	1.03	0.48		2.23	34.226	24.9	8.25	6.54		
SSW28"	3/28/95		0.20	6.2	0.43	6.0	0.48	6.7	5.7	161	0.4	12.1	5.2	73	0.93	0.02		2.23	34.186	25.4	8.25	6.35		
SSW28"	4/6/95		0.22	6.8	0.75	10.5	0.47	6.6	3.5	99	0.4	12.1	5.9	83	0.93	0.19		2.23	34.205	24.9	8.23	6.21		
SSW28"	4/13/95		0.22	6.8	0.98	13.7	0.39	5.5	2.8	78	0.4	11.5	4.9	68	0.81	0.00		2.24	34.325	25.8	8.22	6.22		
SSW28"	4/20/95		0.19	5.9	0.56	7.8	0.33	4.6	1.9	53	0.4	10.8	5.2	73	0.89	0.06		2.35	34.430	26.3	8.22	6.34		
SSW28"	4/27/95		0.15	4.6	0.32	4.5	0.27	3.8	2.1	58	0.3	9.6	4.9	69	1.05	0.00		2.36	34.421	24.9	8.26	6.40		
SSW28"	5/4/95		0.16	5.0	0.96	13.4	0.21	2.9	2.7	76	0.3	10.5	5.4	76	0.99	0.02		2.35	34.383	26.9	8.21	6.36		
SSW28"	5/12/95		0.17	5.3	0.43	6.0	0.34	4.8	2.0	55	0.3	9.3	5.1	71	0.99	0.14		2.36	34.425	27.2	8.19	6.57		
SSW28"	5/16/95		0.14	4.3	0.48	6.7	0.35	4.9	1.1	32	0.3	10.2	5.1	72	0.95	0.11		2.36	34.472	27.0	8.22	6.48		
SSW28"	5/25/95		0.17	5.3	1.01	14.1	0.18	2.5	3.3	91	0.3	9.6	6.0	84	0.97	0.10		2.37	34.519	24.6	8.23	6.53		
SSW28"	6/1/95		0.16	5.0	0.50	7.0	0.11	1.5	2.3	65	0.3	8.7	4.8	67	0.87	0.08		2.36	34.439	24.9	8.23	6.62		
SSW28"	6/8/95		0.18	5.6	0.94	13.2	0.20	2.8	2.9	82	0.3	8.7	5.4	76	0.88	0.42		2.37	34.502	25.4	8.25	6.36		
SSW28"	6/15/95		0.18	5.6	1.08	15.1	0.18	2.5	3.6	100	0.3	8.4	5.5	77	0.86	0.05		2.36	34.487	25.8	8.23	6.38		
SSW28"	6/22/95		0.16	5.0	0.77	10.8	0.42	5.9	1.9	54	0.3	9.0	5.4	75	0.86	0.01		2.36	34.482	25.9	8.22	6.50		
SSW28"	6/30/95		0.13	4.0	0.16	2.2	0.46	6.4	2.6	72	0.2	6.8	5.1	72	0.88	0.22		2.36	34.540	27.1	8.27	6.25		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/5/95		0.14	4.3	0.16	2.2	0.10	1.4	3.0	85	0.3	10.5	4.5	63	0.90	0.10		2.36	34.520	26.8	8.26	6.35		
SSW28"	7/12/95		0.12	3.7	0.27	3.8	0.15	2.1	1.8	51	0.3	8.4	4.7	66	0.80	0.57		2.35	34.489	27.4	8.27	6.22		
SSW28"	7/19/95		0.16	5.0	0.48	6.7	0.14	2.0	3.6	101	0.3	10.5	4.4	62	0.89	0.14		2.35	34.393	26.8	8.28	6.03		
SSW28"	7/27/95		0.16	5.0	0.75	10.5	0.43	6.0	1.5	42	0.3	9.9	4.6	64	0.85	0.12		2.38	34.458	26.9	8.26	5.99		
SSW28"	8/2/95		0.16	5.0	0.33	4.6	0.42	5.9	2.6	72	0.3	9.3	4.3	60	0.87	0.48		2.38	34.479	26.6	8.28	6.16		
SSW28"	8/10/95		0.15	4.6	0.13	1.8	0.39	5.5	1.8	50	0.3	8.1	5.0	69	0.98	0.26		2.39	34.470	27.1	8.27	6.17		
SSW28"	8/16/95		0.15	4.6	0.44	6.2	0.44	6.2	2.5	70	0.3	9.6	4.7	66	0.89	0.34		2.39	34.445	27.7	8.27	6.07		
SSW28"	8/24/95		0.15	4.6	0.28	3.9	0.37	5.2	1.1	30	0.3	10.2	4.7	65	0.88	0.40		2.39	34.508	27.0	8.30	6.03		
SSW28"	8/31/95		0.14	4.3	0.39	5.5	0.31	4.3	1.8	51	0.3	7.7	4.9	69	0.87	0.00		2.39	34.574	27.4	8.28	5.99		
SSW28"	9/6/95		0.14	4.3	0.35	4.9	0.34	4.8	1.8	50	0.3	8.4	4.7	66	0.84	0.55		2.39	34.544	27.8	8.28	6.20		
SSW28"	9/14/95		0.12	3.7	0.68	9.5	0.43	6.0	3.0	83	0.3	9.3	5.7	79	0.82	0.09		2.39	34.561	27.3	8.28	5.99		
SSW28"	9/20/95		0.15	4.6	0.51	7.1	0.41	5.7	3.6	101	0.3	9.0	5.8	81	0.87	0.55		2.39	34.556	27.4	8.29	6.18		
SSW28"	9/27/95		0.15	4.6	0.53	7.4	0.50	7.0	1.4	39	0.3	9.0	5.5	76	0.78	1.12		2.39	34.582	27.5	8.27	6.18		
SSW28"	10/5/95		0.07	2.2	0.19	2.7	0.77	10.8	1.8	51	0.3	7.7	4.1	57	0.96	0.11		2.40	34.664	27.2	8.34	6.39		
SSW28"	10/10/95		0.06	1.9	0.17	2.4	0.63	8.8	1.7	49	0.3	8.1	4.3	60	0.93	0.42		2.40	34.683	27.5	8.30	6.38		
SSW28"	10/19/95		0.09	2.8	0.28	3.9	0.68	9.5	2.1	59	0.3	9.0	4.5	63	0.94	0.65		2.37	34.638	26.7	8.31	6.37		
SSW28"	10/25/95		0.11	3.4	0.16	2.2	0.61	8.5	1.3	37	0.2	7.1	5.2	73	0.84	0.57		2.37	34.664	25.2	8.33	6.38		
SSW28"	11/1/95		0.09	2.8	0.24	3.4	0.43	6.0	1.5	43	0.2	7.4	6.2	86	1.05	0.42		2.37	34.662	26.5	8.31	6.33		
SSW28"	11/8/95		0.11	3.4	0.33	4.6	0.52	7.3	2.6	73	0.2	7.4	5.1	72	0.89	0.60		2.37	34.592	26.6	8.26	6.17		
SSW28"	11/16/95		0.11	3.4	0.28	3.9	0.50	7.0	11.4	320	0.3	9.6	5.2	73	1.03	0.70		2.35	34.359	26.8	8.31	6.34		
SSW28"	11/21/95		0.12	3.7	0.07	1.0	0.51	7.1	2.0	55	0.3	9.3	5.7	80	1.13	0.45		2.36	34.550	27.0	8.25	6.52		
SSW28"	11/27/95		0.11	3.4	0.17	2.4	0.47	6.6	1.7	47	0.3	10.2	4.5	64	1.00	0.57		2.47	34.561	27.0	8.25	6.56		
SSW28"	12/5/95		0.05	1.5	0.06	0.8	0.41	5.7	2.8	77	0.2	6.5	7.8	110	1.18	0.44		2.54	34.655	26.1	8.28	6.82		
SSW28"	12/11/95		0.10	3.1	0.44	6.2	0.50	7.0	2.5	71	0.2	6.8	4.7	65	1.03	0.06		2.57	34.589	26.0	8.18	6.41		
SSW28"	12/21/95		0.09	2.8	0.11	1.5	0.28	3.9	1.7	49	0.3	10.5	3.6	51	0.97	0.59		2.60	34.637	25.6	8.27	6.65		
SSW28"	12/27/95		0.07	2.2	0.04	0.6	0.16	2.2	2.5	70	0.3	9.9	4.9	69	1.01	0.15		2.58	34.616	25.9	8.30	6.44		
SSW28"	1/3/96		0.12	3.7	0.03	0.4	0.15	2.1	2.2	61	0.3	8.7	5.2	72	0.99	0.30		2.59	34.514	25.0	8.33	6.50		
SSW28"	1/10/96		0.10	3.1	0.31	4.3	0.09	1.3	3.8	107	0.3	9.0	4.5	62	0.98	0.43		2.59	34.584	25.7	8.29	6.46		
SSW28"	1/17/96		0.08	2.5	0.02	0.3	0.04	0.6	2.1	59	0.3	8.1	6.2	86	0.97	0.36		2.60	34.658	25.0	8.28	6.58		
SSW28"	1/23/96		0.11	3.4	0.17	2.4	0.20	2.8	2.6	73	0.3	8.7	4.3	60	0.85	0.66		2.60	34.674	25.4	8.28	6.49		
SSW28"	1/31/96		0.08	2.5	0.11	1.5	0.36	5.0	2.1	60	0.3	7.7	5.4	75	1.03	2.75		2.58	34.588	24.4	8.25	6.55		
SSW28"	2/7/96		0.09	2.8	0.41	5.7	0.43	6.0	4.5	125	0.3	8.4	4.9	69	1.00	2.60		2.35	34.616	25.0	8.21	6.42		
SSW28"	2/16/96		0.10	3.1	0.07	1.0	0.43	6.0	5.8	163	0.3	8.1	5.1	71	0.99	1.75		2.32	34.420	24.4	8.24	6.52		
SSW28"	2/22/96		0.08	2.5	0.16	2.2	0.68	9.5	1.9	54	0.3	7.7	5.4	75	1.12	3.40		2.32	34.660	24.4	8.22	6.57		
SSW28"	2/28/96		0.08	2.5	0.22	3.1	0.42	5.9	5.3	148	0.2	6.2	5.9	83	1.08	6.95		2.31	34.543	24.4	8.25	6.43		
SSW28"	3/7/96		0.11	3.4	0.07	1.0	0.41	5.7	1.7	48	0.3	9.6	4.8	67	1.01	2.55		2.30	34.324	24.9	8.24	6.56		
SSW28"	3/14/96		0.09	2.8	0.13	1.8	0.54	7.6	2.7	77	0.3	9.3	4.6	65	0.94	9.05		2.30	34.166	24.6	8.24	6.78		
SSW28"	3/21/96		0.11	3.4	0.15	2.1	0.53	7.4	1.9	54	0.3	9.0	5.6	79	1.03	1.60		2.29	34.233	24.5	8.25	6.80		
SSW28"	3/28/96		0.10	3.1	0.16	2.2	0.35	4.9	3.4	96	0.3	9.3	4.9	68	0.95	2.70		2.29	34.242	24.2	8.27	6.69		
SSW28"	4/3/96		0.10	3.1	0.20	2.8	0.35	4.9	2.6	72	0.3	9.6	4.7	65	1.03	2.80		2.30	34.305	25.5	8.23	6.78		
SSW28"	4/10/96		0.12	3.7	0.07	1.0	0.48	6.7	2.9	82	0.3	8.7	5.0	70	0.99	1.95		2.28	34.208	25.6	8.25	6.37		
SSW28"	4/17/96		0.11	3.4	0.11	1.5	0.23	3.2	1.8	50	0.3	8.4	6.2	87	1.06	2.45		2.29	34.309	25.1	8.26	6.45		
SSW28"	4/24/96		0.12	3.7	0.11	1.5	0.21	2.9	4.3	122	0.3	9.0	5.4	75	1.01	3.45		2.36	34.444	25.2	8.25	6.63		
SSW28"	4/30/96		0.10	3.1	0.01	0.1	0.09	1.3	1.2	33	0.3	9.6	6.1	85	1.08	3.50		2.36	34.268	25.4	8.23	6.98		
SSW28"	5/9/96		0.07	2.2	0.14	2.0	0.16	2.2	3.1	88	0.3	8.4	4.2	59	0.89	2.70		2.36	34.390	26.2	8.21	6.54		
SSW28"	5/17/96		0.08	2.5	0.14	2.0	0.29	4.1	2.1	59	0.3	8.7	9.2	128	1.47	2.45		2.46	34.294	28.3	8.24	6.63		
SSW28"	5/22/96		0.12	3.7	0.16	2.2	0.25	3.5	1.7	47	0.2	7.4	5.6	79	1.05	2.75		2.32	34.292	26.6	8.25	7.61		
SSW28"	5/29/96		0.12	3.7	0.21	2.9	0.36	5.0	1.6	44	0.3	8.7	5.9	82	1.04	2.90		2.36	34.396	26.6	8.24	6.43		
SSW28"	6/5/96		0.10	3.1	0.15	2.1	0.17	2.4	1.2	35	0.3	7.7	5.5	76	0.95	2.40		2.35	34.408	27.7	8.25	6.49		
SSW28"	6/10/96		0.10	3.1	0.29	4.1	0.14	2.0	1.5	42	0.3	8.7	5.1	72	0.96	2.30		2.33	34.370	27.4	8.23	6.36		
SSW28"	6/19/96		0.09	2.8	0.23	3.2	0.30	4.2	1.4	39	0.3	8.4	5.5	77	0.98	2.60		2.35	34.394	25.9	8.23	6.23		
SSW28"	6/28/96		0.10	3.1	0.19	2.7	0.48	6.7	1.8	50	0.3	8.7	5.2	73	1.21	3.10		2.35	34.422	27.9	8.24	6.65		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/5/96		0.10	3.1	0.17	2.4	0.42	5.9	2.0	57	0.3	9.9	4.4	62	1.06	2.55		2.37	34.372	27.1	8.22	6.46		
SSW28"	7/10/96		0.09	2.8	0.11	1.5	0.31	4.3	1.4	38	0.3	10.2	4.4	61	1.00	2.50		2.37	34.462	28.2	8.25	6.28		
SSW28"	7/18/96		0.07	2.2	0.10	1.4	0.31	4.3	8.7	244	0.3	9.0	4.2	59	1.06	1.70		2.36	34.333	26.7	8.21	6.45		
SSW28"	7/25/96		0.07	2.2	0.09	1.3	0.17	2.4	1.2	33	0.3	8.1	4.0	57	0.98	2.55		2.17	34.434	27.9	8.26	7.10		
SSW28"	8/2/96		0.05	1.5	0.11	1.5	0.44	6.2	5.4	152	0.3	9.0	4.3	60	0.89	3.15		2.21	34.480	27.6	8.27	6.50		
SSW28"	8/8/96		0.04	1.2	0.13	1.8	0.72	10.1	3.4	95	0.3	9.6	4.3	60	1.06	2.65		2.23	34.474	27.1	8.25	6.75		
SSW28"	8/14/96		0.06	1.9	0.07	1.0	0.63	8.8	2.6	74	0.3	7.7	4.4	61	0.98	2.85		2.15	34.482	27.7	8.26	6.32		
SSW28"	8/19/96		0.05	1.5	0.17	2.4	0.48	6.7	1.4	40	0.2	6.8	4.7	65	1.03	2.50		2.22	34.501	28.1	8.25	6.46		
SSW28"	8/29/96		0.07	2.2	0.19	2.7	0.41	5.7	2.1	58	0.3	9.0	4.4	61	1.01	2.80		2.22	34.509	27.8	8.23	6.14		
SSW28"	9/5/96		0.07	2.2	0.15	2.1	0.84	11.8	2.4	68	0.2	7.4	4.7	66	1.06	2.30		2.23	34.478	27.8	8.25	6.95		
SSW28"	9/12/96		0.07	2.2	0.18	2.5	0.17	2.4	1.6	45	0.2	7.4	5.0	70	1.06	2.65		2.23	34.605	27.5	8.26	7.10		
SSW28"	9/17/96		0.08	2.5	0.13	1.8	0.08	1.1	2.2	61	0.3	8.7	4.2	59	0.91	3.15		2.24	34.630	27.7	8.22	7.00		
SSW28"	9/25/96		0.08	2.5	0.12	1.7	0.38	5.3	1.5	43	0.3	8.1	8.3	116	1.23	2.05		2.21	34.632	27.2	8.24	7.21		
SSW28"	9/30/96		0.06	1.9	0.16	2.2	0.20	2.8	2.0	57	0.3	9.0	4.5	64	1.05	2.00		2.23	34.705	26.8	8.24	7.19		
SSW28"	10/10/96		0.06	1.9	0.14	2.0	0.53	7.4	9.8	276	0.3	7.7	4.6	65	1.03	2.15		2.23	34.653	26.7	8.24	6.49		
SSW28"	10/14/96		0.06	1.9	0.11	1.5	0.57	8.0	2.4	67	0.2	7.4	4.6	65	1.10	0.40		2.22	34.686	27.5	8.26	6.58		
SSW28"	10/24/96		0.05	1.5	0.04	0.6	0.46	6.4	8.1	226	0.3	9.0	4.8	67	1.05	2.50		2.21	34.724	27.2	8.23	6.68		
SSW28"	10/31/96		0.07	2.2	0.17	2.4	0.26	3.6	1.7	47	0.3	7.7	4.7	66	1.01	2.45		2.38	34.735	26.7	8.21	6.65		
SSW28"	11/8/96		0.06	1.9	0.27	3.8	0.47	6.6	2.4	68	0.2	6.5	4.5	63	0.99	1.80		2.33	34.713	26.8	8.23	6.54		
SSW28"	11/13/96		0.07	2.2	0.22	3.1	0.36	5.0	2.7	76	0.3	8.7	4.2	59	1.10	2.35		2.33	34.736	27.0	8.26	6.89		
SSW28"	11/20/96		0.06	1.9	0.18	2.5	0.38	5.3	3.6	100	0.3	8.4	3.5	49	1.11	1.70		2.32	34.744	25.7	8.25	6.53		
SSW28"	11/27/96		0.05	1.5	0.15	2.1	0.37	5.2	1.1	32	0.2	7.4	4.7	65	0.94	1.35		2.32	34.632	25.6	8.27	6.44		
SSW28"	12/4/96		0.08	2.5	0.12	1.7	0.43	6.0	3.8	108	0.3	8.1	4.3	61	0.95	2.20		2.33	34.643	25.2	8.25	7.46		
SSW28"	12/11/96		0.09	2.8	0.05	0.7	0.48	6.7	2.1	59	0.3	9.3	5.0	70	1.11	2.35		2.32	34.787	24.0	8.27	7.49		
SSW28"	12/18/96		0.07	2.2	0.01	0.1	0.25	3.5	1.4	38	0.3	9.3	3.7	51	0.92	2.25		2.32	34.808	24.8	8.26	6.59		
SSW28"	12/23/96		0.07	2.2	0.21	2.9	0.40	5.6	5.1	143	0.3	9.0	4.6	65	0.88	2.10		2.32	34.759	24.6	8.27	6.89		
SSW28"	1/2/97		0.06	1.9	0.21	2.9	0.30	4.2	1.6	45	0.2	6.2	3.9	55	0.85	2.85		2.30	34.719	24.3	8.28	6.71		
SSW28"	1/9/97		0.05	1.5	0.08	1.1	0.29	4.1	1.4	40	0.3	8.7	4.2	59	1.04	1.15		2.32	34.735	23.6	8.27	6.75		
SSW28"	1/16/97		0.07	2.2	0.26	3.6	0.12	1.7	2.6	73	0.4	11.5	4.7	66	0.91	3.15		2.31	34.664	23.6	8.26	6.97		
SSW28"	1/21/97		0.08	2.5	0.18	2.5	0.01	0.1	2.5	70	0.3	9.9	4.2	59	0.98	1.20		2.16	34.586	24.1	8.27	6.71		
SSW28"	1/28/97		0.03	0.9	0.12	1.7	0.01	0.1	2.3	65	0.2	7.1	4.5	63	1.07	2.30		2.10	34.748	24.5	8.28	6.65		
SSW28"	2/7/97		0.02	0.6	0.14	2.0	0.01	0.1	1.7	46	0.3	9.3	4.8	67	1.09	1.90		2.11	34.763	25.0	8.28	6.67		
SSW28"	2/12/97		0.04	1.2	0.12	1.7	0.13	1.8	1.3	37	0.3	9.0	4.7	66	1.03	1.75		2.12	34.794	23.3	8.30	6.72		
SSW28"	2/19/97		0.06	1.9	0.08	1.1	0.07	1.0	1.5	42	0.2	7.4	4.9	69	1.03	2.50		2.08	34.674	24.2	8.30	7.14		
SSW28"	2/25/97		0.06	1.9	0.13	1.8	0.15	2.1	1.5	43	0.2	5.0	4.5	63	1.05	3.00		2.10	34.793	23.6	8.32	7.04		
SSW28"	3/4/97		0.04	1.2	0.16	2.2	0.10	1.4	1.6	44	0.2	6.2	4.8	68	1.08	2.05		2.12	34.713	23.7	8.30	6.92		
SSW28"	3/12/97		0.06	1.9	0.07	1.0	0.24	3.4	2.0	56	0.2	5.6	6.3	88	1.21	2.90		2.10	34.585	24.0	8.25	7.03		
SSW28"	3/20/97		0.11	3.4	0.13	1.8	0.11	1.5	2.0	57	0.4	10.8	4.6	65	1.03	1.75		2.09	34.595	23.3	8.26	6.87		
SSW28"	3/25/97		0.14	4.3	0.09	1.3	0.21	2.9	1.8	51	0.3	9.9	4.7	65	1.06	3.90		2.09	34.585	23.6	8.25	7.01		
SSW28"	3/31/97		0.13	4.0	0.19	2.7	0.11	1.5	10.0	281	0.4	12.1	4.8	68	1.04	1.40		2.07	34.500	24.7	8.26	7.03		
SSW28"	4/7/97		0.06	1.9	0.09	1.3	0.51	7.1	10.7	300	0.3	9.9	5.7	80	1.07	1.85		2.09	34.749	24.1	8.26	6.52		
SSW28"	4/14/97		0.07	2.2	0.21	2.9	0.24	3.4	8.3	233	0.3	10.5	5.0	70	1.13	1.55		2.52	34.622	24.9	8.28	6.56		
SSW28"	4/24/97		0.13	4.0	0.16	2.2	0.40	5.6	2.5	70	0.6	18.3	4.7	66	1.03	1.45		2.64	34.373	25.5	8.27	6.76		
SSW28"	5/2/97		0.12	3.7	0.10	1.4	0.38	5.3	1.7	47	0.6	19.5	8.2	115	1.24	2.55		2.66	34.434	25.1	8.28	6.70		
SSW28"	5/8/97		0.11	3.4	0.15	2.1	0.30	4.2	2.0	55	0.6	18.9	4.6	65	0.99	2.10		2.70	34.394	24.6	8.30	6.76		
SSW28"	5/13/97		0.11	3.4	0.13	1.8	0.32	4.5	2.3	64	0.6	19.5	5.5	77	1.07	2.05		2.43	34.495	25.4	8.29	6.71		
SSW28"	5/19/97		0.10	3.1	0.08	1.1	0.33	4.6	1.0	29	0.5	16.7	4.5	63	1.03	2.70		2.54	24.517	24.7	8.32	6.58		
SSW28"	5/29/97		0.10	3.1	0.18	2.5	0.26	3.6	5.9	165	0.4	11.8	4.9	69	1.02	1.70		2.60	34.484	25.7	8.27	6.98		
SSW28"	6/3/97		0.08	2.5	0.14	2.0	0.42	5.9	1.6	46	0.3	9.6	4.9	69	1.06	1.60		2.58	34.476	26.8	8.31	6.91		
SSW28"	6/10/97		0.10	3.1	0.15	2.1	0.45	6.3	1.9	52	0.3	10.5	5.9	82	1.12	1.60		2.46	34.492	25.8	8.39	6.79		
SSW28"	6/18/97		0.10	3.1	0.02	0.3	0.42	5.9	2.0	57	0.4	11.2	4.0	56	1.03	2.65		2.62	34.512	25.2	8.28	8.51		
SSW28"	6/23/97		0.09	2.8	0.06	0.8	0.12	1.7	1.4	38	0.4	11.8	4.6	65	1.02	1.40		2.57	34.412	24.4	8.31	6.93		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/3/97		0.12	3.7	0.19	2.7	0.02	0.3	12.4	348	0.3	10.5	4.5	64	0.98	2.55		2.61	34.542	23.5	8.31	7.18		
SSW28"	7/9/97		0.07	2.2	0.10	1.4	0.28	3.9	11.1	311	0.3	9.6	4.5	63	1.00	2.00		2.62	34.635	25.9	8.32	6.92		
SSW28"	7/17/97		0.07	2.2	0.04	0.6	0.15	2.1	1.4	40	0.3	10.2	4.3	60	1.07	3.75		2.62	34.636	25.8	8.30	6.73		
SSW28"	7/25/97		0.06	1.9	0.04	0.6	0.31	4.3	2.0	57	0.3	10.2	5.1	71	1.08	2.30		2.60	34.679	26.2	8.38	6.52		
SSW28"	7/31/97		0.06	1.9	0.05	0.7	0.19	2.7	1.0	28	0.3	8.7	5.5	77	1.11	1.90		2.57	34.657	25.8	8.37	6.68		
SSW28"	8/7/97		0.06	1.9	0.01	0.1	0.16	2.2	1.0	28	0.3	10.2	5.0	70	1.09	2.45		2.49	34.651	26.0	8.41	6.60		
SSW28"	8/13/97		0.06	1.9	0.01	0.1	0.04	0.6	2.0	56	0.3	9.0	4.8	67	1.04	1.85		2.48	34.631	25.7	8.39	6.52		
SSW28"	8/22/97		0.06	1.9	0.04	0.6	0.28	3.9	1.6	44	0.3	9.9	5.7	80	1.03	1.55		2.48	34.654	26.2	8.40	6.56		
SSW28"	8/27/97		0.12	3.7	0.02	0.3	0.33	4.6	1.8	49	0.4	10.8	5.0	70	1.06	1.75		2.48	34.649	26.3	8.38	6.54		
SSW28"	9/3/97		0.05	1.5	0.11	1.5	0.31	4.3	2.6	72	0.3	8.1	5.1	71	1.06	2.45		2.48	34.687	27.4	8.43	6.52		
SSW28"	9/11/97		0.06	1.9	0.02	0.3	0.30	4.2	3.0	83	0.4	10.8	4.8	68	1.00	1.55		2.48	34.699	26.6	8.44	6.35		
SSW28"	9/18/97		0.08	2.5	0.02	0.3	0.17	2.4	2.9	80	0.3	9.3	4.7	66	1.08	1.75		2.49	34.751	26.0	8.43	6.05		
SSW28"	9/25/97		0.08	2.5	0.12	1.7	0.54	7.6	2.7	76	0.3	10.2	4.9	68	1.03	0.50		2.49	34.788	27.3	8.41	6.32		
SSW28"	9/30/97		0.06	1.9	0.12	1.7	0.40	5.6	1.7	49	0.3	9.9	4.8	67	1.04	1.70		2.49	34.785	26.1	8.44	6.35		
SSW28"	10/9/97		0.10	3.1	0.03	0.4	0.34	4.8	4.1	116	0.4	12.1	4.9	68	1.00	1.30		2.48	34.790	27.5	8.43	6.14		
SSW28"	10/16/97		0.06	1.9	0.04	0.6	0.42	5.9	1.3	37	0.4	11.8	4.7	66	1.06	1.55		2.48	34.820	26.9	8.44	6.31		
SSW28"	10/23/97		0.06	1.9	0.10	1.4	0.29	4.1	1.8	51	0.4	10.8	4.8	68	1.04	1.65		2.47	34.825	26.9	8.48	6.45		
SSW28"	10/30/97		0.04	1.2	0.01	0.1	0.24	3.4	1.4	39	0.3	9.9	4.4	61	1.07	1.45		2.48	34.914	26.4	8.45	6.84		
SSW28"	11/6/97		0.05	1.5	0.01	0.1	0.41	5.7	0.7	21	0.3	9.3	4.4	62	1.07	1.15		2.48	34.946	25.9	8.42	6.69		
SSW28"	11/10/97		0.05	1.5	0.05	0.7	0.37	5.2	1.5	42	0.2	7.4	4.6	64	1.05	0.95		2.49	34.959	25.9	8.45	6.65		
SSW28"	11/20/97		0.06	1.9	0.09	1.3	0.44	6.2	2.4	68	0.3	10.5	4.8	67	1.08	1.50		2.48	34.874	25.9	8.40	6.46		
SSW28"	11/25/97		0.05	1.5	0.14	2.0	0.43	6.0	1.7	49	0.3	8.1	5.0	70	1.05	0.35		2.48	34.852	25.3	8.41	6.37		
SSW28"	12/1/97		0.08	2.5	0.07	1.0	0.41	5.7	6.7	188	0.3	9.9	4.8	68	1.03	1.50		2.48	34.889	24.8	8.40	6.38		
SSW28"	12/11/97		0.07	2.2	0.01	0.1	0.15	2.1	13.6	383	0.3	10.2	3.6	51	0.99	1.30		2.49	34.965	24.4	8.43	6.65		
SSW28"	12/18/97		0.09	2.8	0.14	2.0	0.39	5.5	2.3	65	0.3	9.3	3.9	54	1.01	2.10		2.49	34.977	23.5	8.42	6.55		
SSW28"	12/24/97		0.08	2.5	0.12	1.7	0.30	4.2	8.3	234	0.4	10.8	3.7	52	0.98	1.55		2.49	34.963	23.7	8.42	6.67		
SSW28"	12/29/97		0.09	2.8	0.06	0.8	0.31	4.3	1.1	32	0.4	11.2	4.5	63	1.02	1.20		2.49	34.963	23.1	8.44	6.69		
SSW28"	1/6/98		0.03	0.9	0.05	0.7	0.11	1.5	1.2	35	0.3	8.1	4.1	57	0.97	1.70		2.48	34.965	22.5	8.44	6.65		
SSW28"	1/14/98		0.06	1.9	0.02	0.3	0.12	1.7	1.6	46	0.3	10.5	4.3	60	2.68	2.00		2.49	34.996	25.0	8.42	7.38		
SSW28"	1/22/98		0.10	3.1	0.03	0.4	0.09	1.3	2.0	55	0.4	11.5	3.9	55	0.93	1.05		2.49	35.007	23.9	8.42	6.92		
SSW28"	1/29/98		0.06	1.9	0.05	0.7	0.13	1.8	2.5	69	0.3	9.9	4.1	58	0.94	1.85		2.24	35.009	23.8	8.42	7.00		
SSW28"	2/5/98		0.08	2.5	0.07	1.0	0.18	2.5	2.6	73	0.2	7.4	4.3	60	0.99	2.05		2.25	35.016	23.6	8.45	6.87		
SSW28"	2/9/98		0.06	1.9	0.08	1.1	0.21	2.9	1.4	39	0.3	10.2	4.3	61	0.96	0.70		2.25	35.043	23.0	8.45	6.92		
SSW28"	2/17/98		0.03	0.9	0.07	1.0	0.28	3.9	1.4	39	0.3	9.3	4.3	60	1.03	1.10		2.25	35.046	23.5	8.47	6.89		
SSW28"	2/23/98		0.09	2.8	0.15	2.1	0.29	4.1	2.4	68	0.3	10.2	4.4	62	0.96	1.50		2.25	35.044	22.8	8.47	6.96		
SSW28"	3/5/98		0.09	2.8	0.19	2.7	0.21	2.9	2.2	62	0.2	6.5	4.4	62	0.93	0.25		2.25	35.033	23.8	8.25	6.77		
SSW28"	3/12/98		0.10	3.1	0.07	1.0	0.28	3.9	1.7	49	0.3	9.0	4.3	60	0.98	0.70		2.25	35.013	23.8	8.23	6.80		
SSW28"	3/19/98		0.11	3.4	0.08	1.1	0.30	4.2	2.2	62	0.4	10.8	4.5	63	0.99	0.55		2.24	34.905	24.3	8.21	6.79		
SSW28"	3/25/98		0.09	2.8	0.08	1.1	0.37	5.2	2.7	77	0.3	9.9	4.3	60	0.93	0.70		2.25	35.053	22.2	8.22	6.91		
SSW28"	4/2/98		0.06	1.9	0.02	0.3	0.32	4.5	1.6	45	0.3	9.3	4.1	58	0.96	1.00		2.31	35.078	23.4	8.23	6.72		
SSW28"	4/9/98		0.08	2.5	0.02	0.3	0.22	3.1	1.7	48	0.4	10.8	4.3	60	0.97	0.90		2.32	35.112	23.9	8.28	6.76		
SSW28"	4/16/98		0.08	2.5	0.06	0.8	0.12	1.7	1.6	45	0.4	11.8	4.2	59	1.09	1.15		2.32	35.060	22.7	8.24	6.85		
SSW28"	4/20/98		0.05	1.5	0.12	1.7	0.29	4.1	3.5	99	0.3	9.6	4.5	63	1.03	1.15		2.32	34.988	23.7	8.22	6.83		
SSW28"	4/30/98		0.08	2.5	0.01	0.1	0.33	4.6	4.1	114	0.4	11.8	4.1	57	1.07	2.00		2.32	35.059	23.2	8.23	6.81		
SSW28"	5/7/98		0.06	1.9	0.08	1.1	0.16	2.2	5.1	142	0.3	10.5	4.3	60	1.04	1.90		2.32	35.102	23.6	8.23	6.81		
SSW28"	5/15/98		0.09	2.8	0.10	1.4	0.28	3.9	2.0	56	0.3	10.5	5.6	79	1.07	1.95		2.32	35.122	23.9	8.23	6.73		
SSW28"	5/21/98		0.07	2.2	0.11	1.5	0.10	1.4	1.9	54	0.4	11.2	5.2	72	1.03	1.75		2.31	35.112	22.6	8.24	6.72		
SSW28"	5/28/98		0.07	2.2	0.06	0.8	0.16	2.2	1.9	53	0.3	9.9	4.8	67	0.96	0.65		2.32	35.154	23.0	8.24	6.84		
SSW28"	6/4/98		0.06	1.9	0.10	1.4	0.09	1.3	2.2	62	0.4	10.8	4.8	68	0.99	1.10		2.31	35.138	24.2	8.24	6.86		
SSW28"	6/9/98		0.08	2.5	0.12	1.7	0.32	4.5	2.6	72	0.4	10.8	5.0	70	0.98	1.05		2.31	35.127	24.3	8.22	6.80		
SSW28"	6/17/98		0.12	3.7	0.09	1.3	0.32	4.5	3.2	89	0.4	12.4	5.3	74	1.00	2.35		2.31	35.075	24.7	8.22	6.72		
SSW28"	6/23/98		0.09	2.8	0.05	0.7	0.51	7.1	3.1	86	0.4	11.2	4.9	68	0.96	1.50		2.31	35.054	25.0	8.21	6.72		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/1/98		0.11	3.4	0.09	1.3	0.02	0.3	2.8	79	0.4	12.7	5.1	71	0.96	1.15		2.35	35.032	24.8	8.22	6.77		
SSW28"	7/9/98		0.07	2.2	0.04	0.6	0.11	1.5	2.1	58	0.4	12.1	4.7	66	0.94	1.30		2.32	35.048	25.1	8.22	6.65		
SSW28"	7/16/98		0.08	2.5	0.09	1.3	0.27	3.8	4.3	120	0.4	11.2	5.0	70	1.00	0.05		2.33	35.016	26.6	8.24	6.72		
SSW28"	7/23/98		0.08	2.5	0.04	0.6	0.34	4.8	1.6	44	0.3	10.5	5.0	70	1.11	1.80		2.32	35.015	25.7	8.23	6.68		
SSW28"	7/29/98		0.07	2.2	0.04	0.6	0.18	2.5	1.7	47	0.3	9.3	5.0	70	1.05	0.90		2.36	35.105	24.8	8.23	6.73		
SSW28"	8/4/98		0.10	3.1	0.08	1.1	0.12	1.7	2.4	68	0.4	13.0	5.3	74	1.06	1.00		2.35	35.040	25.1	8.21	6.64		
SSW28"	8/13/98		0.08	2.5	0.03	0.4	0.14	2.0	2.2	62	0.4	11.8	5.4	76	1.08	0.45		2.32	35.053	25.8	8.20	6.73		
SSW28"	8/19/98		0.06	1.9	0.06	0.8	0.15	2.1	2.4	67	0.4	11.2	5.3	74	1.10	2.05		2.32	35.073	26.0	8.20	6.57		
SSW28"	8/26/98		0.09	2.8	0.03	0.4	0.15	2.1	1.5	43	0.4	12.4	5.2	73	1.08	1.00		2.31	35.018	25.3	8.22	6.59		
SSW28"	9/3/98		0.09	2.8	0.07	1.0	0.12	1.7	2.3	64	0.4	12.1	5.5	77	1.03	3.35		2.34	35.025	26.5	8.21	6.44		
SSW28"	9/10/98		0.10	3.1	0.02	0.3	0.07	1.0	1.9	54	0.4	13.6	5.6	78	1.12	1.45		2.34	35.033	26.8	8.22	6.49		
SSW28"	9/17/98		0.07	2.2	0.09	1.3	0.09	1.3	3.4	96	0.4	10.8	5.0	70	1.09	1.25		2.33	35.055	26.9	8.22	6.54		
SSW28"	9/21/98		0.06	1.9	0.04	0.6	0.07	1.0	4.6	130	0.4	11.5	5.0	71	1.08	1.95		2.34	35.017	26.8	8.23	6.54		
SSW28"	10/1/98		0.06	1.9	0.02	0.3	0.06	0.8	2.2	62	0.4	11.5	4.8	68	1.25	1.50		2.38	35.130	26.7	8.23	7.01		
SSW28"	10/8/98		0.10	3.1	0.11	1.5	0.27	3.8	4.1	115	0.3	10.5	4.6	65	1.15	2.60		2.36	35.097	25.6	8.22	6.88		
SSW28"	10/14/98		0.04	1.2	0.04	0.6	0.17	2.4	2.0	57	0.3	9.9	4.9	68	1.13	2.60		2.32	35.130	25.6	8.23	6.88		
SSW28"	10/21/98		0.10	3.1	0.01	0.1	0.16	2.2	2.5	69	0.4	10.8	4.8	67	1.14	4.05		2.32	35.127	26.1	8.24	6.96		
SSW28"	10/27/98		0.09	2.8	0.02	0.3	0.09	1.3	2.2	63	0.4	11.2	5.6	78	1.21	2.70		2.31	35.163	25.2	8.26	6.94		
SSW28"	11/6/98		0.08	2.5	0.01	0.1	0.11	1.5	3.5	98	0.3	10.5	4.3	61	1.18	2.70		2.27	34.998	26.4	8.24	6.59		
SSW28"	11/9/98		0.10	3.1	0.09	1.3	0.05	0.7	2.3	65	0.4	11.5	5.1	71	1.17	2.80		2.27	34.832	26.3	8.26	8.57		
SSW28"	11/18/98		0.07	2.2	0.04	0.6	0.15	2.1	14.3	402	0.3	9.3	5.8	81	1.20	2.40		2.27	35.111	25.8	8.25	6.57		
SSW28"	11/23/98		0.07	2.2	0.02	0.3	0.09	1.3	2.0	56	0.3	9.3	5.2	73	1.22	2.80		2.27	35.177	25.8	8.24	6.56		
SSW28"	11/30/98		0.07	2.2	0.02	0.3	0.10	1.4	2.8	78	0.3	9.0	4.9	68	1.15	2.00		2.28	35.127	25.2	8.26	7.71		
SSW28"	12/8/98		0.07	2.2	0.05	0.7	0.12	1.7	18.5	520	0.3	9.6	5.8	81	1.17	2.65		2.23	35.156	24.2	8.24	6.59		
SSW28"	12/17/98		0.05	1.5	0.01	0.1	0.04	0.6	1.9	53	0.3	10.2	4.5	63	1.13	1.90		2.22	35.102	25.1	8.24	6.68		
SSW28"	12/21/98		0.06	1.9	0.11	1.5	0.11	1.5	2.3	65	0.4	10.8	5.0	70	1.18	2.90		2.21	35.070	24.9	8.25	6.60		
SSW28"	12/29/98		0.09	2.8	0.18	2.5	0.18	2.5	2.2	63	0.4	10.8	6.3	88	1.23	2.25		2.22	35.079	24.8	8.22	6.77		
SSW28"	1/5/99		0.07	2.2	0.01	0.1	0.15	2.1	2.4	67	0.4	11.2	4.6	64	1.13	2.75		2.21	35.086	24.7	8.24	6.74		
SSW28"	1/14/99		0.07	2.2	0.04	0.6	0.03	0.4	2.1	59	0.3	9.3	4.5	64	1.12	1.85		2.23	35.104	24.8	8.23	6.80		
SSW28"	1/21/99		0.06	1.9	0.02	0.3	0.10	1.4	2.1	60	0.4	11.2	4.4	62	1.12	2.15		2.20	35.170	24.4	8.22	8.14		
SSW28"	1/26/99		0.07	2.2	0.01	0.1	0.07	1.0	1.7	49	0.3	9.6	4.6	64	1.13	3.00		2.19	35.117	24.5	8.26	6.92		
SSW28"	2/4/99		0.09	2.8	0.01	0.1	0.20	2.8	2.4	68	0.3	9.0	4.4	62	1.10	3.45		2.18	35.118	23.8	8.22	6.75		
SSW28"	2/11/99		0.11	3.4	0.08	1.1	0.23	3.2	1.9	53	0.4	10.8	3.9	55	0.97	2.40		2.18	35.038	23.9	8.23	7.55		
SSW28"	2/18/99		0.12	3.7	0.03	0.4	0.01	0.1	2.2	60	0.3	10.2	4.1	57	0.93	2.45		2.16	34.990	23.9	8.23	7.54		
SSW28"	2/23/99		0.09	2.8	0.06	0.8	0.02	0.3	2.3	65	0.3	9.9	4.2	59	0.96	2.90		2.17	35.039	23.4	8.23	7.47		
SSW28"	3/3/99		0.04	1.2	0.07	1.0	0.16	2.2	2.2	62	0.2	7.1	6.0	83	1.17	3.20		2.17	35.035	23.7	8.22	7.44		
SSW28"	3/9/99		0.08	2.5	0.04	0.6	0.13	1.8	2.8	77	0.3	9.3	4.7	66	1.04	1.90		2.15	35.038	24.4	8.22	6.88		
SSW28"	3/18/99		0.11	3.4	0.02	0.3	0.05	0.7	4.6	130	0.3	9.9	4.0	55	0.96	2.45		2.14	34.846	24.0	8.24	6.87		
SSW28"	3/24/99		0.13	4.0	0.02	0.3	0.14	2.0	6.9	194	0.4	11.8	4.3	61	1.06	1.65		2.13	34.732	23.9	8.23	6.91		
SSW28"	3/30/99		0.14	4.3	0.07	1.0	0.18	2.5	4.1	115	0.3	10.2	5.4	76	1.06	1.80		2.14	34.778	23.6	8.23	6.97		
SSW28"	4/7/99		0.12	3.7	0.02	0.3	0.04	0.6	3.5	98	0.4	10.8	4.5	63	0.95	2.35		2.16	34.689	24.2	8.21	6.86		
SSW28"	4/14/99		0.08	2.5	0.02	0.3	0.05	0.7	1.8	50	0.4	10.8	3.9	55	0.96	2.35		2.16	34.755	23.9	8.22	6.90		
SSW28"	4/21/99		0.13	4.0	0.18	2.5	0.18	2.5	2.4	68	0.3	10.2	4.3	61	0.97	1.65		2.16	34.889	23.8	8.22	7.70		
SSW28"	4/29/99		0.12	3.7	0.19	2.7	0.13	1.8	3.9	108	0.3	10.2	4.7	66	1.08	2.60		2.14	34.366	24.1	8.21	6.80		
SSW28"	5/5/99		0.08	2.5	0.07	1.0	0.43	6.0	2.4	66	0.3	10.5	5.1	71	1.03	1.20		2.14	34.396	24.6	8.20	6.86		
SSW28"	5/12/99		0.10	3.1	0.15	2.1	0.09	1.3	2.8	78	0.3	9.3	4.3	61	0.97	1.90		2.17	34.393	24.8	8.20	6.81		
SSW28"	5/20/99		0.13	4.0	0.22	3.1	0.09	1.3	2.4	66	0.4	10.8	4.4	62	0.98	3.60		2.18	34.384	25.1	8.20	6.86		
SSW28"	5/24/99		0.17	5.3	0.35	4.9	0.11	1.5	2.3	65	0.3	10.2	6.0	84	1.16	2.00		2.16	34.408	25.4	8.22	6.86		
SSW28"	6/3/99		0.16	5.0	0.19	2.7	0.13	1.8	1.9	52	0.4	11.5	5.0	70	1.01	2.20		2.15	34.383	24.4	8.21	6.74		
SSW28"	6/9/99		0.18	5.6	0.33	4.6	0.26	3.6	1.9	53	0.4	13.6	4.9	69	1.00	3.15		2.14	34.378	26.1	8.22	7.01		
SSW28"	6/16/99		0.12	3.7	0.17	2.4	0.13	1.8	3.2	90	0.4	11.5	4.7	66	0.95	2.05		2.15	34.405	25.4	8.22	6.74		
SSW28"	6/24/99		0.13	4.0	0.23	3.2	0.06	0.8	2.5	70	0.3	10.5	5.0	70	0.97	2.15		2.19	34.399	25.4	8.22	6.68		
SSW28"	6/29/99		0.13	4.0	0.07	1.0	0.10	1.4	1.9	52	0.4	13.0	5.6	78	1.01	1.75		2.17	34.398	25.9	8.22	6.58		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/8/99		0.12	3.7	0.18	2.5	0.05	0.7	2.4	66	0.4	12.1	5.4	75	1.03	1.80		2.40	34.041	26.2	8.20	6.58		
SSW28"	7/12/99		0.11	3.4	0.14	2.0	0.08	1.1	1.8	51	0.4	12.4	6.0	84	1.07	2.25		2.27	34.965	26.0	8.22	6.63		
SSW28"	7/20/99		0.12	3.7	0.22	3.1	0.33	4.6	2.3	63	0.4	12.1	5.2	73	0.98	2.05		2.37	34.917	27.8	8.22	6.63		
SSW28"	7/27/99		0.11	3.4	0.08	1.1	0.23	3.2	1.7	48	0.4	11.2	4.8	68	1.09	2.45		2.30	34.872	26.2	8.25	6.86		
SSW28"	8/5/99		0.14	4.3	0.10	1.4	0.25	3.5	2.6	74	0.4	12.4	5.1	71	1.03	1.80		2.17	34.882	26.5	8.24	6.65		
SSW28"	8/11/99		0.11	3.4	0.17	2.4	0.28	3.9	3.4	94	0.4	11.5	3.7	52	0.98	2.80		2.29	34.927	26.2	8.44	6.55		
SSW28"	8/18/99		0.16	5.0	0.14	2.0	0.28	3.9	2.0	56	0.4	11.8	4.8	68	1.08	3.35		2.24	34.892	25.5	8.29	6.61		
SSW28"	8/24/99		0.09	2.8	0.06	0.8	0.02	0.3	2.3	66	0.3	10.2	4.5	63	1.02	1.75		2.38	34.910	26.4	8.26	6.56		
SSW28"	8/31/99		0.12	3.7	0.05	0.7	0.20	2.8	2.9	81	0.3	9.6	5.0	70	1.08	2.25		2.42	34.926	26.2	8.31	6.50		
SSW28"	9/8/99		0.16	5.0	0.15	2.1	0.02	0.3	2.3	63	0.4	11.2	5.5	76	1.06	2.60		2.45	35.033	26.3	8.29	6.57		
SSW28"	9/15/99		0.16	5.0	0.13	1.8	0.05	0.7	1.6	44	0.4	13.0	4.6	65	1.03	1.85		2.35	34.495	26.1	8.27	6.59		
SSW28"	9/20/99		0.13	4.0	0.08	1.1	0.11	1.5	2.4	67	0.4	11.5	5.5	77	1.13	2.75		2.34	35.005	27.2	8.29	6.63		
SSW28"	9/30/99		0.11	3.4	0.09	1.3	0.12	1.7	1.9	53	0.3	10.2	4.8	68	1.03	5.05		2.40	35.003	26.0	8.29	6.76		
SSW28"	10/12/99		0.07	2.2	0.05	0.7	0.23	3.2	2.9	82	0.2	7.4	5.1	71	1.06	1.75		2.23	35.038	25.9	8.27	6.74		
SSW28"	11/3/99		0.10	3.1	0.06	0.8	0.23	3.2	2.0	56	0.3	9.6	5.0	70	1.01	2.80		2.23	35.085	26.1	8.28	6.46		
SSW28"	12/15/99		0.09	2.8	0.07	1.0	0.08	1.1	3.1	88	0.3	8.7	5.5	77	0.98	2.75		2.22	35.128	24.7	8.21	6.29		
SSW28"	1/10/00		0.07	2.2	0.19	2.7	0.16	2.2	3.4	95	0.3	9.0	5.2	73	0.94	1.15		2.38	35.126	25.1	8.23	6.79		
SSW28"	2/7/00		0.11	3.4	0.06	0.8	0.34	4.8	2.3	65	0.4	10.8	5.0	69	0.99	2.20		2.32	35.129	23.4	8.26	6.74		
SSW28"	3/1/00		0.21	6.5	0.35	4.9	0.27	3.8	5.8	163	0.4	12.4	4.9	69	1.08	2.35		2.28	34.822	23.9	8.26	6.69		
SSW28"	4/10/00		0.16	5.0	0.17	2.4	0.06	0.8	7.6	215	0.3	9.6	5.2	73	1.03	2.55		2.25	34.932	23.8	8.26	6.66		
SSW28"	5/15/00		0.08	2.5	0.08	1.1	0.10	1.4	1.7	47	0.3	9.9	5.0	70	1.01	2.35		2.23	34.721	25.0	8.27	6.71		
SSW28"	6/6/00		0.13	4.0	0.03	0.4	0.01	0.1	2.0	56	0.2	6.8	5.2	72	1.01	2.15		2.24	34.725	25.5	8.25	6.67		
SSW28"	7/26/00		0.11	3.4	0.16	2.2	0.09	1.3	3.1	88	0.4	12.1	5.1	71	0.97	2.30		2.27	34.899	26.2	8.27	6.50		
SSW28"	8/30/00		0.09	2.8	0.08	1.1	0.09	1.3	2.3	63	0.3	9.3	5.4	75	0.98	2.20		2.38	34.958	26.4	8.22	6.32		
SSW28"	9/6/00		0.11	3.4	0.03	0.4	0.08	1.1	1.7	48	0.3	9.6	5.3	74	0.98	3.30		2.42	34.955	25.5	8.23	6.50		
SSW28"	10/20/00		0.15	4.6	0.41	5.7	0.11	1.5	3.9	110	0.4	11.5	5.3	75	0.97	3.00		2.40	34.912	26.4	8.26	6.35		
SSW28"	11/14/00		0.13	4.0	0.09	1.3	0.32	4.5	2.8	78	0.3	8.7	4.9	68	1.32	2.65		2.38	35.054	27.1	8.24	6.31		
SSW28"	12/20/00		0.13	4.0	0.28	3.9	0.30	4.2	4.0	112	0.3	10.5	5.6	79	1.19	2.70		2.27	34.785	24.0	8.26	6.43		
SSW28"	1/23/01		0.14	4.3	0.03	0.4	0.13	1.8	3.2	89	0.3	10.5	5.2	73	1.12	2.65		2.28	34.789	24.5	8.23	6.27		
SSW28"	2/5/01		0.13	4.0	0.04	0.6	0.11	1.5	2.6	72	0.3	9.6	5.1	71	1.03	2.65		2.30	34.957	23.6	8.22	6.25		
SSW28"	3/5/01		0.15	4.6	0.15	2.1	0.17	2.4	5.1	142	0.4	13.3	5.1	72	1.02	1.85		2.27	34.734	24.1	8.19	6.18		
SSW28"	4/16/01		0.09	2.8	0.12	1.7	0.04	0.6	11.8	333	0.3	10.5	4.5	63	1.03	2.45		2.28	34.778	24.2	8.21	6.93		
SSW28"	5/9/01		0.14	4.3	0.14	2.0	0.42	5.9	5.2	146	0.5	14.2	5.5	77	1.02	2.00		2.26	34.761	24.8	8.20	6.67		
SSW28"	6/8/01		0.14	4.3	0.15	2.1	0.18	2.5	2.8	78	0.3	10.5	6.0	84	1.11	2.65		2.28	34.794	25.9	8.22	6.54		
SSW28"	7/24/01		0.17	5.3	0.15	2.1	0.05	0.7	1.9	52	0.4	11.8	4.7	65	0.91	2.20		2.26	34.766	25.6	8.20	6.52		
SSW28"	8/22/01		0.19	5.9	0.21	2.9	0.05	0.7	3.7	104	0.4	12.7	4.7	66	0.93	2.80		2.25	34.852	26.1	8.17	6.32		
SSW28"	9/18/01		0.17	5.3	0.22	3.1	0.11	1.5	1.6	45	0.4	11.5	5.5	76	0.99	2.15		2.31	34.940	26.4	8.21	6.33		
SSW28"	10/9/01		0.17	5.3	0.35	4.9	0.11	1.5	1.6	45	0.4	11.5	5.8	81	0.99	2.95		2.28	34.941	26.3	8.19	6.97		
SSW28"	11/6/01		0.23	7.1	0.25	3.5	0.02	0.3	2.9	81	0.4	13.6	5.7	80	1.02	2.95		2.30	34.951	25.9	8.22	6.40		
SSW28"	12/18/01		0.11	3.4	0.22	3.1	0.22	3.1	1.6	44	0.3	9.3	5.4	76	0.98	2.45		2.28	34.988	25.0	8.21	6.54		
SSW28"	1/8/02		0.20	6.2	0.26	3.6	0.29	4.1	4.7	131	0.4	12.4	5.2	72	1.05	2.80		2.27	34.832	25.1	8.22	6.29		
SSW28"	2/27/02		0.17	5.3	0.15	2.1	0.09	1.3	8.8	247	0.4	11.8	6.3	88	1.09	2.35		2.34	34.913	23.5	8.22	6.24		
SSW28"	3/19/02		0.12	3.7	0.20	2.8	0.16	2.2	1.6	44	0.4	11.8	5.4	75	0.89	1.35		2.32	34.601	23.9	8.23	6.30		
SSW28"	4/9/02		0.19	5.9	0.28	3.9	0.11	1.5	5.1	143	0.4	11.8	5.3	75	0.87	2.20		2.31	34.577	24.7	8.19	6.18		
SSW28"	5/21/02		0.15	4.6	0.08	1.1	0.10	1.4	1.2	33	0.4	11.5	6.3	88	1.02	2.05		2.35	34.731	25.6	8.22	6.74		
SSW28"	6/18/02		0.16	5.0	0.30	4.2	0.12	1.7	2.6	72	0.4	11.2	5.7	80	0.86	0.65		2.31	34.574	26.2	8.21	6.38		
SSW28"	7/17/02		0.11	3.4	0.15	2.1	0.13	1.8	2.1	59	0.3	9.6	6.9	97	1.04	2.25		2.32	34.875	25.9	8.23	6.48		
SSW28"	8/22/02		0.12	3.7	0.14	2.0	0.18	2.5	4.2	117	0.3	10.5	6.3	88	0.91	2.30		2.35	34.792	26.9	8.22	6.44		
SSW28"	9/24/02		0.11	3.4	0.11	1.5	0.23	3.2	1.7	47	0.3	9.6	4.7	66	0.97	1.90		2.35	34.930	26.0	8.25	6.58		
SSW28"	10/16/02		0.08	2.5	0.16	2.2	0.32	4.5	1.6	45	0.4	12.1	5.5	77	0.96	1.60		2.35	34.920	26.5	8.24	6.43		
SSW28"	11/6/02		0.17	5.3	0.27	3.8	0.24	3.4	1.9	54	0.4	11.2	5.7	79	0.92	1.15		2.35	34.889	24.2	8.23	6.33		
SSW28"	12/19/02		0.17	5.3	0.30	4.2	0.05	0.7	1.0	29	0.3	10.5	5.5	78	0.89	2.50		2.36	35.017	23.7	8.24	6.53		
SSW28"	1/29/03		0.18	5.6	0.40	5.6	0.10	1.4	11.2	315	0.3	10.5	4.8	67	0.88	1.85		2.36	35.084	23.3	8.24	7.34		
SSW28"	2/10/03		0.10	3.1	0.12	1.7	0.02	0.3	7.8	219	0.4	10.8	5.3	75	0.78	1.90		2.33	34.617	23.1	8.25	6.66		
SSW28"	3/18/03		0.15	4.6	0.10	1.4	0.05	0.7	2.1	58	0.4	11.2	2.6	37	0.84	1.95		2.29	34.802	26.1	8.24	6.69		
SSW28"	4/29/03		0.18	5.6	0.20	2.8	0.12	1.7	5.0	140	0.5	13.9	3.3	46	1.05	1.75		2.30	34.778	24.7	8.27	7.09		
SSW28"	5/13/03		0.16	5.0	0.31	4.3	0.05	0.7	15.0	422	0.4	11.8	5.3	74	1.03	1.65		2.26	34.659	24.9	8.27	6.62		
SSW28"	6/5/03		0.15	4.6	0.04	0.6	0.07	1.0	5.4	152	0.4	11.5	4.8	67	1.10	1.90		2.27	34.625	26.7	8.27	6.74		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/31/03		0.14	4.3	0.37	5.2	0.10	1.4	4.1	114	0.4	11.5	5.3	75		2.15		2.27	34.826	27.0	8.23	6.76		
SSW28"	8/27/03		0.11	3.4	0.33	4.6	0.05	0.7	2.2	61	0.4	11.2	6.1	85		2.30		2.24	34.820	27.3	8.25	6.43		
SSW28"	9/17/03		0.11	3.4	0.42	5.9	0.03	0.4	2.0	55	0.5	13.9	6.3	88		3.30		2.29	34.692	26.9	8.23	6.42		
SSW28"	10/7/03		0.14	4.3	0.33	4.6	0.23	3.2	1.8	50	0.4	12.1	7.1	99		2.35		2.32	34.766	26.6	8.23	NA		
SSW28"	11/4/03		0.14	4.3	0.26	3.6	0.05	0.7	3.6	100	0.4	12.4	6.1	86		2.60		2.29	34.706	26.1	8.24	NA		
SSW28"	11/14/03																			26.3		6.35		
SSW28"	12/16/03		0.12	3.7	0.44	6.2	0.05	0.7	1.8	51	0.4	12.1	5.6	79		2.20		2.18	34.825	24.4	8.24	6.45		
SSW28"	1/27/04		0.16	5.0	0.32	4.5	0.31	4.3	5.6	156	0.4	12.1	4.5	63		0.65		2.16	34.459	22.6	8.24	6.30		
SSW28"	2/10/04		0.16	5.0	0.31	4.3	0.07	1.0	3.7	105	0.4	12.4	5.8	81		1.20		2.14	34.406	24.6	8.24	6.56		
SSW28"	3/15/04		0.21	6.5	0.29	4.1	0.20	2.8	2.2	61	0.5	14.2	4.9	68		0.65		2.18	34.417	25.0	8.24	6.17		
SSW28"	4/21/04		0.18	5.6	0.10	1.4	0.34	4.8	3.9	109	0.5	15.5	5.2	73		0.35		2.24	34.266	24.3	8.24	6.67		
SSW28"	5/12/04		0.18	5.6	0.19	2.7	0.30	4.2	2.5	69	0.4	13.0	6.2	86		0.20		2.25	33.510	26.0	8.26	6.79		
SSW28"	6/7/04		0.16	5.0	0.34	4.8	0.17	2.4	4.9	139	0.4	13.6	7.9	110		0.85		2.27	33.460	25.6	8.21	6.51		
SSW28"	7/8/04		0.12	3.7	0.37	5.2	0.20	2.8	4.0	111	0.4	12.7	5.6	79	0.86	0.85		2.32	33.610	25.9	8.24	6.40		
SSW28"	8/24/04		0.14	4.3	0.40	5.6	0.34	4.8	3.1	86	0.4	12.1	5.2	73		0.90		2.34	33.670	26.0	8.24	6.19		
SSW28"	9/2/04		0.11	3.4	0.36	5.0	0.19	2.7	1.7	49	0.4	10.8	5.9	83		3.00		2.34	33.740	26.7	8.25	6.24		
SSW28"	10/1/04		0.10	3.1	0.28	3.9	0.22	3.1	2.1	60	0.4	10.8	5.5	77		1.25		2.31	33.740	27.3	8.26	7.93		
SSW28"	11/8/04		0.13	4.0	0.48	6.7	0.18	2.5	2.7	76	0.4	11.2	5.4	76		0.40		2.32	33.680	26.1	8.24	6.24		
SSW28"	12/7/04		0.11	3.4	0.39	5.5	0.26	3.6	1.6	45	0.3	10.2	5.5	77		1.95		2.31	33.770	23.8	8.27	6.36		
SSW28"	1/11/05		0.11	3.4	0.24	3.4	0.07	1.0	4.2	118	0.3	10.2	4.8	67		0.55		2.37	34.792	22.8	8.32	6.49		
SSW28"	2/8/05		0.11	3.4	0.26	3.6	0.06	0.8	2.9	80	0.3	10.2	5.4	76		1.90		2.35	34.794	22.6	8.32	6.65		
SSW28"	3/23/05		0.11	3.4	0.03	0.4	0.19	2.7	1.9	52	0.4	11.5	3.4	47	1.05	1.40		2.36	34.771	23.7	8.30	6.58	348	4208
SSW28"	4/21/05		0.18	5.6	0.15	2.1	0.27	3.8	2.0	56	0.4	11.8	5.4	76		0.85		2.30	34.560	24.3	8.30	6.33	297	2627
SSW28"	5/26/05	905	0.14	4.3	0.09	1.3	0.26	3.6	2.4	66	0.4	13.0	4.9	68		5.30		2.30	34.516	24.4	8.25	6.63	14800	5000
SSW28"	6/16/05	840	0.12	3.7	0.10	1.4	0.41	5.7	2.4	68	0.4	11.5	4.7	66		1.35		2.31	34.657	25.6	8.24	6.35	517	2127
SSW28"	7/27/05	825	0.11	3.4	0.37	5.2	0.05	0.7	2.3	65	0.4	10.8	4.4	61	0.95	0.70		2.33	34.692	22.5	8.29	6.11	280	4700
SSW28"	8/11/05	740	0.12	3.7	0.66	9.2	0.34	4.8	1.9	52	0.4	10.8	4.9	69	0.86	3.25		2.30	34.733	26.3	8.30	6.10	1081	4333
SSW28"	9/14/05	808	0.13	4.0	0.47	6.6	0.31	4.3	1.8	49	0.4	11.5	3.5	50	1.31	4.35		2.31	34.796	26.1	8.28	6.15	1119	4533
SSW28"	10/10/05	912	0.11	3.4	0.26	3.6	0.30	4.2	3.5	97	0.4	11.5	5.0	70	1.14	2.35		2.33	34.833	27.1	8.32	6.26	913	12133
SSW28"	11/2/05	802	0.10	3.1	0.26	3.6	0.40	5.6	7.3	205	0.4	10.8	4.3	60	0.69	2.30		2.37	34.948	25.3	8.28	6.41	1600	13400
SSW28"	12/20/05	809	0.09	2.8	0.14	2.0	0.40	5.6	1.3	37	0.3	9.9	5.0	69	0.86	2.25		2.51	34.936	25.0	8.31	6.50	1800	6233
SSW28"	1/26/06	811	0.11	3.4	0.33	4.6	0.27	3.8	2.6	73	0.3	9.6	5.3	74		1.70		2.15	35.052	23.1	8.26	6.45	1100	6188
SSW28"	2/28/06	820	0.12	3.7	0.32	4.5	0.43	6.0	6.7	189	0.9	27.9	6.4	89		2.85		2.13	34.925	24.0	8.26	6.59	1944	20100
SSW28"	3/23/06	820	0.12	3.7	0.21	2.9	0.48	6.7	4.2	118	0.4	12.7	5.4	75		1.00		2.11	34.754	23.5	8.26	6.66	1367	9675
SSW28"	4/18/06	857	0.16	5.0	0.33	4.6	0.28	3.9	2.1	59	0.3	10.5	6.0	83	1.17	2.70		2.24	34.726	24.9	8.27	6.64	1617	13225
SSW28"	5/18/06	905	0.13	4.0	0.16	2.2	0.15	2.1	2.0	56	0.4	12.7	4.7	66	0.86	2.15		2.23	34.721	24.9	8.25	6.50	1613	8288
SSW28"	6/29/06	1045	0.14	4.3	0.47	6.6	0.29	4.1	2.8	78	0.3	9.9	5.3	74	0.89	1.00		2.25	34.759	28.0	8.23	6.25	1319	22000
SSW28"	7/25/06	850	0.13	4.0	0.33	4.6	0.33	4.6	2.0	55	0.3	10.5	6.2	87	0.93	1.35		2.28	34.802	25.8	8.24	6.92	2767	15100
SSW28"	8/10/06	925	0.14	4.3	0.39	5.5	0.30	4.2	1.5	41	0.4	11.8	6.0	84	0.85	2.40		2.27	34.695	26.8	8.23	6.48	3075	51900
SSW28"	9/21/06	900	0.14	4.3	0.39	5.5	0.22	3.1	3.0	83	0.3	9.9	4.7	65	0.82	1.05		2.25	34.752	25.5	8.23	6.49	1075	2888
SSW28"	10/26/06	850	0.15	4.6	0.57	8.0	0.35	4.9	3.5	97	0.3	10.5	5.6	78	0.91	1.70		2.24	34.803	26.7	8.27	7.03	1976	8125
SSW28"	11/30/06	925	0.16	5.0	0.48	6.7	0.22	3.1	1.1	32	0.4	11.5	5.6	79	0.94	2.55		2.48	34.876	25.1	8.25	6.36	2013	36600
SSW28"	12/14/06	935	0.17	5.3	0.34	4.8	0.37	5.2	1.7	47	0.4	12.1	5.8	81	0.88	1.80		2.30	34.803	25.7	8.24	6.56	2213	20000
SSW28"	1/11/07	930	0.17	5.3	0.46	6.4	0.33	4.6	0.4	11	0.4	11.2	5.1	71	0.88	2.10		2.41	34.911	24.1	8.25	6.16	1625	5575
SSW28"	2/15/07	930	0.20	6.2	0.20	2.8	0.49	6.9	2.0	57	0.4	13.6	5.8	81	0.97	1.90		2.31	34.489	23.3	8.23	6.37	1800	9763
SSW28"	3/8/07	950	0.18	5.6	0.30	4.2	0.37	5.2	4.3	121	0.5	14.6	6.3	88	0.86	1.80		1.94	34.538	24.7	8.25	6.34	825	7688
SSW28"	4/12/07	930	0.20	6.2	**1.42**	19.9	0.47	6.6	2.8	79	0.4	13.3	5.6	79	0.81	1.35		1.83	34.679	25.5	8.26	6.13	3288	12288
SSW28"	5/9/07	945	0.19	5.9	0.38	5.3	0.44	6.2	1.5	43	0.4	13.3	6.5	91	0.98	1.80		1.97	34.751	25.8	8.26	6.44	2200	21300
SSW28"	6/27/07	900	0.17	5.3	0.56	7.9	0.07	1.0	2.9	81	0.0		0.0			2.15		2.56	34.790	26.7	8.28	6.55	1838	12633
SSW28"	7/30/07	1012	0.20	6.1	0.05	0.7	0.32	4.5	3.9	109	0.35	10.8	7.0	98		2.80		2.45	35.000	26.6	8.12	6.3		
SSW28"	8/30/07	1215	0.15	4.8	0.16	2.3	0.54	7.5	1.4	40	0.24	7.3	5.2	72		2.55		2.47	34.879	26.8	8.21	6.2		
SSW28"	9/21/07	1132	0.18	5.5	0.16	2.2	0.34	4.8	1.8	52	0.39	12.2	11.7	**163**		1.95		2.43	34.937	27.2	8.23	6.3		
SSW28"	10/30/07	1131	0.19	5.8	0.19	2.6	0.45	6.3	18.2	512	0.24	7.5	5.7	80		1.10		2.51	35.080	26.8	8.25	6.2		
SSW28"	11/27/07	1255	0.19	5.9	0.01	0.2	0.42	5.9	1.8	52	0.30	9.2	6.6	93		1.10		2.40	34.955	26.3	8.24	6.1		
SSW28"	12/28/07	1531	0.07	2.1	0.13	1.8	0.03	0.4	2.4	69	0.00		0.0			0.80		2.58	34.833	25.3	8.20	6.0		
SSW28"	1/30/08	924	0.08	2.5	0.16	2.3	0.18	2.5	28.2	792	0.00		0.0			1.55		2.41	34.940	24.2	8.13	6.1		
SSW28"	2/28/08	1419	0.04	1.2	0.19	2.7	0.05	0.7	5.2	146	0.29	9.1	7.6	106		2.40		2.42	34.950	24.5	8.13	6.5		
SSW28"	3/31/08	1146	0.04	1.2	0.06	0.9	0.05	0.7	8.8	247	0.36	11.0	7.1	99		2.60		2.40	34.900	24.5	8.15	6.5		
SSW28"	4/25/08	916	0.15	4.6	0.33	4.6	0.15	2.1	2.0	57	0.33	10.2	5.0	70		0.90		2.55	34.622	25.0	8.18	6.6		
SSW28"	5/23/08	933	0.14	4.4	0.17	2.4	0.16	2.3	NA	NA	0.22	6.9	5.2	73		6.30		2.34	34.805	25.3	8.29	6.4		
SSW28"	6/15/08	945	0.11	3.3	0.12	1.7	0.18	2.5	3.0	84	0.25	7.6	10.5	147		0.55		NA	34.648	25.3	8.25	6.1		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/18/08	1400	0.14	4.4	0.17	2.4	0.09	1.3	1.8	51	0.05	1.5	9.8	137		0.25			34.719	26.2	8.11	6.2		
SSW28"	8/13/08	1209	0.58	18.1	0.34	4.7	0.58	8.1	8.5	238	0.20	6.1	7.9	110		0.31			34.408	26.4	8.03			
SSW28"	9/8/08	1041	0.05	1.7	0.36	5.0	4.61	64.6	2.3	65	0.15	4.6	7.1	99		1.06			34.88	26.1	8.06			
SSW28"	10/23/08	1112	0.22	6.9	0.40	5.6	0.80	11.2	1.3	37	0.81	25.1	10.0	139		0.29			35.09	26.2	8.19	4.9		
SSW28"	11/28/08	1047	0.09	2.8	0.49	6.8	0.18	2.5	2.0	55	0.41	12.7	5.3	74		2.30			35.15	25.3	8.28	5.9		
SSW28"	12/30/08	948	0.13	3.9	0.21	2.9	0.44	6.1	1.7	48	0.37	11.4	7.0	98		1.07			35.24	25.3	8.24	5.8		
SSW28"	1/12/09	1152	0.20	6.3	0.46	6.4	0.12	1.7	2.4	67	0.49	15.3	10.5	147		0.61			35.008	25.2	8.30	6.2		
SSW28"	2/20/09	1320	0.12	3.6	0.27	3.8	1.06	14.9	2.5	71	0.70	21.7	10.7	150		2.01	0.11		35.16	24.1	8.23	6.6		
SSW28"	3/30/09	1315	0.21	6.4	0.99	13.8	0.37	5.2	3.0	83	0.44	13.7	4.6	65		N/A			35.136	24.0	8.28	6.7		
SSW28"	4/30/09	1025	0.36	11.3	0.25	3.5	1.26	17.6	2.2	62	0.53	16.4	7.5	105		0.66			35.000	23.6	8.19	6.7		
SSW28"	5/15/09	1400	0.24	7.3	0.47	6.6	0.19	2.7	1.6	45	0.87	27.1	7.1	99		0.85			35.15	25.4	NA	6.3		
SSW28"	6/10/09	1053	0.52	16.1	0.26	3.7	0.29	4.1	2.0	57	0.66	20.3	6.2	87		0.67			34.617	27.0	8.29	5.8		
SSW28"	7/10/09	1045	0.41	12.8	0.67	9.4	0.59	8.3	7.4	209	0.33	10.3	6.8	95		0.98			35.21	26.2	8.47	6.3		
SSW28"	8/27/09	1009	0.15	4.8	0.22	3.1	0.19	2.7	3.4	95	0.28	8.8	6.7	93		0.64	0.04		34.97	26.6	8.20	6.0		
SSW28"	9/17/09	1144	0.11	3.4	1.01	14.2	0.74	10.4	15.1	424	0.34	10.4	4.2	59		0.37	0.02		35.37	26.5	8.06	5.9		
SSW28"	10/26/09	1047	0.07	2.1	0.26	3.6	0.25	3.5	3.7	103	0.32	9.8	5.2	74		0.58			35.40	26.6	8.47	5.8		
SSW28"	11/19/09	1431	0.16	5.1	0.25	3.5	0.55	7.7	1.7	48	0.47	14.5	8.6	121		0.84			35.47	25.9	8.30	6.1		
SSW28"	12/3/09	935	0.15	4.6	0.20	2.8	0.49	6.9	4.4	123	0.39	12.2	4.1	58		0.80			35.33	24.7	8.18	6.2		
SSW28"	1/14/10	940	0.20	6.2	0.31	4.4	0.13	1.8	1.4	39	0.45	13.8	6.1	85		0.15			35.29	25.5	8.20	6.7		
SSW28"	2/16/10	1109	0.18	5.6	0.36	5.0	0.35	4.9	1.0	28	0.44	13.6	4.6	64		0.90			34.86	25.4	8.22	6.1		
SSW28"	3/15/10	903	0.12	3.7	0.06	0.9	0.06	0.8	9.2	259	0.36	11.1	3.7	52		1.20			34.91	24.6	8.20	6.7		
SSW28"	4/1/10	842	0.12	3.8	0.04	0.5	0.37	5.2	2.5	69	0.31	9.7	7.0	99		0.80	0.04		35.13	24.3	8.20	6.7		
SSW28"	5/10/10	846	0.08	2.5	0.64	8.9	0.28	3.9	16.0	450	0.49	15.2	6.7	93		1.65	0.06		35.01	25.3	8.22	6.4		
SSW28"	6/23/10	920	0.04	1.1	0.44	6.2	0.19	2.6	1.2	35	0.36	11.2	6.2	86		1.5	0.09		35.05	25.5	8.22	6.1		
SSW28"	7/1/10	1020	0.04	1.2	0.35	4.9	0.40	5.6	7.7	217	0.4	11.7	7.3	102		0.95	0.06		34.99	25.5	8.21	6.31		
SSW28"	8/5/10	925	0.10	3.1	0.54	7.5	0.16	2.2	2.5	71	0.3	9.9	5.7	80		1.30	0.05		34.85	25.8	8.15	6.37		
SSW28"	9/2/10	939	0.04	1.1	0.28	3.9	0.10	1.4	0.9	26	0.3	10.1	5.2	73		1.35	0.04		34.83	25.9	8.25	6.28		
SSW28"	10/18/10	932	0.11	3.5	0.19	2.7	0.18	2.5	4.7	132	0.6	17.8	7.9	111		1.20	0.05		34.87	26.1	8.19	6.68		
SSW28"	11/4/10	955	0.05	1.7	0.46	6.4	0.19	2.7	3.2	91	0.4	11.0	5.5	77		0.95	0.12		35.00	26.4	8.23	6.15		
SSW28"	12/1/10	953	0.09	2.8	0.26	3.7	0.13	1.8	3.8	106	0.9	27.4	9.5	134		1.90	0.08		34.94	25.9	8.23	6.13		
SSW28"	1/25/11	948	0.18	5.6	0.30	4.2	0.23	3.2	2.2	62	0.6	18.1	6.7	94		0.95	0.02		34.92	25.2	8.21	6.22		
SSW28"	2/8/11	1001	0.14	4.3	0.32	4.5	0.46	6.5	1.3	37	0.5	14.4	5.0	70		1.10	0.07		35.16	25.1	8.25	6.36		
SSW28"	3/7/11	1049	0.22	6.7	0.28	3.9	0.31	4.4	2.2	63	0.6	18.5	4.0	56		0.95	0.09		34.57	25.2	8.23	6.25		
SSW28"	4/11/11	1100	0.16	4.9	0.30	4.2	0.15	2.1	0.7	19	0.4	12.7	4.3	60		1.17	0.09		35.12	25.1	8.17	5.72		
SSW28"	5/25/11	1150	0.10	3.2	0.48	6.7	0.31	4.3	0.7	19	0.4	12.1	4.5	64		1.03	0.06		34.76	25.4	8.24	5.86		
SSW28"	6/13/11	940	0.19	5.8	0.39	5.4	0.56	7.8	0.4	13	0.5	15.1	9.1	127		1.05	0.06		34.79	25.0	8.21	6.99		
SSW28"	7/21/11	840	0.21	6.4	0.45	6.3	0.29	4.1	0.5	15	0.4	12.5	4.7	66		0.90	0.02		34.81	25.5	8.18	6.50		
SSW28"	8/22/11	1008	0.10	3.2	0.36	5.1	0.16	2.3	0.5	14	0.3	9.1	5.0	70		1.03	0.04		34.91	25.6	8.22	6.52		
SSW28"	9/15/11	833	0.09	2.8	0.77	10.8	0.21	3.0	0.6	17	0.4	13.8	5.9	82		0.32	0.05		34.91	26.7	8.19	6.21		
SSW28"	10/4/11	1149	0.11	3.3	0.55	7.7	0.18	2.5	1.5	42	0.4	12.4	3.7	52		0.46	0.02		34.88	26.4	8.19	6.38		
SSW28"	11/21/11	1134	0.09	2.7	0.14	2.0	0.06	0.9	0.7	18	0.4	12.3	4.1	58		1.18	0.08		35.10	25.6	8.18	6.31		
SSW28"	12/27/11	1033	0.01	0.3	0.42	5.9	0.14	1.9	0.5	15	0.3	9.5	6.3	88		2.65	0.02		35.05	24.6	8.22	6.02		
SSW28"	1/30/12	1017	0.07	2.1	0.30	4.2	0.07	1.0	4.1	116	0.4	11.7	6.2	87		0.39	0.02		35.00	24.5	8.21	6.35		
SSW28"	2/27/12	1025	0.08	2.6	0.60	8.4	0.11	1.6	1.8	51	0.4	11.6	7.3	102		0.94	0.02		35.15	24.0	8.21	6.40		
SSW28"	3/28/12	952	0.17	5.2	0.21	2.9	0.58	8.1	0.6	17	0.4	13.8	5.2	73		0.87	0.09		35.04	23.9	8.21	6.39		
SSW28"	4/16/12	952	0.16	5.0	0.46	6.4	0.14	2.0	0.1	4	0.5	14.1	6.1	85		1.01	0.02		34.94	24.6	8.24	6.26		
SSW28"	5/24/12	958	0.15	4.8	0.37	5.2	0.24	3.3	1.9	54	0.5	14.7	5.3	74		0.88	0.05		35.04	24.6	8.22	6.53		
SSW28"	6/19/12	1007	0.14	4.3	0.47	6.6	0.37	5.2	2.8	79	0.4	12.5	10.5	147		0.93	0.09		35.21	24.9	8.22	6.64		
SSW28"	7/3/12	934	0.02	0.6	0.44	6.1	0.29	4.1	2.1	59	0.3	9.9	4.6	64		1.22	0.06		35.24	25.5	8.20	6.94		
SSW28"	8/27/12	1036	0.05	1.4	0.70	9.8	0.45	6.3	2.5	71	0.4	12.4	7.0	99		1.08	0.05		35.30	26.0	8.20	6.30		
SSW28"	9/26/12	1011	0.07	2.2	0.46	6.4	0.14	1.9	1.7	48	0.5	14.5	10.0	141		1.27	0.02		35.27	26.6	8.20	6.02		
SSW28"	10/10/12	936	0.04	1.3	0.54	7.6	0.24	3.4	2.2	62	0.4	12.7	7.1	100		0.97	2.85		35.29	26.5	8.21	5.99		
SSW28"	11/19/12	1309	0.12	3.8	0.79	11.0	0.29	4.1	4.9	137	0.4	12.8	7.1	100		0.72	0.03		35.24	26.0	8.26	6.57		
SSW28"	12/19/12	924	0.17	5.4	0.60	8.4	0.54	7.6	6.2	175	0.5	14.9	6.8	96		2.11	0.03		35.27	25.1	8.24	6.34		
SSW28"	1/4/13	950	0.11	3.5	0.50	7.0	0.19	2.7	0.4	10	0.4	13.3	4.6	64		1.07	0.04		35.28	25.1	8.20	6.28		
SSW28"	2/13/13	1003	0.17	5.4	0.36	5.0	0.14	2.0	1.7	48	0.4	13.7	4.7	65		1.09	0.08		35.19	24.5	8.21	6.03		
SSW28"	3/1/13	1110	0.13	4.0	0.54	7.6	0.47	6.6	1.8	51	0.4	12.9	4.5	62		2.33	0.02		34.97	24.3	8.22	6.36		
SSW28"	4/3/13	1204	0.09	2.7	0.15	2.1	0.14	1.9	2.4	67	0.4	12.3	4.9	68		1.06	0.02		35.30	24.5	8.20	6.33		
SSW28"	5/29/13	1033	0.27	8.4	0.21	3.0	0.36	5.1	1.2	33	0.7	20.8	7.3	103		1.31	0.02		34.97	26.4	8.20	6.09		
SSW28"	6/13/13	1015	0.27	8.5	0.51	7.1	0.50	7.0	1.8	51	0.6	17.8	5.3	74		1.03	0.06		35.09	25.8	8.17	5.96		

NELHA Water Quality Laboratory

SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/1/13	926	0.22	6.9	0.49	6.8	0.26	3.7	1.7	47	0.6	17.5	6.8	96		0.90	0.11		34.91	26.3	8.23	6.39		
SSW28"	8/14/13	949	0.13	4.1	0.36	5.1	0.17	2.4	1.8	51	0.4	13.6	5.0	70		1.15	0.03		35.27	26.6	8.23	6.14		
SSW28"	9/18/13	946	0.19	6.0	0.01	0.1	0.38	5.3	1.7	49	0.5	15.5	5.4	76		1.05	0.02		35.03	27.1	8.20	5.92		
SSW28"	10/10/13	922	0.22	6.7	0.52	7.3	0.29	4.0	2.2	63	0.6	18.9	6.1	86		0.86	0.07		35.10	26.0	8.20	6.30		
SSW28"	11/21/13	936	0.19	5.9	0.19	2.7	0.35	4.9	1.8	51	0.5	14.5	4.5	63		1.15	0.02		35.22	26.4	8.21	6.32		
SSW28"	12/23/13	918	0.16	5.1	0.14	2.0	0.34	4.7	1.4	38	0.5	16.4	5.6	78		1.13	0.02		35.24	26.0	8.23	6.08		
SSW28"	1/23/14	1144	0.16	5.0	0.24	3.3	0.30	4.2	1.7	49	0.5	15.2	7.4	104		1.93	0.02		35.27	25.0	8.21	6.46		
SSW28"	2/12/14	1033	0.17	5.2	0.32	4.5	0.61	8.5	2.0	55	0.4	13.7	5.7	80		1.13			34.93	25.6	8.21	6.98		
SSW28"	3/17/14	1007	0.26	7.9	0.39	5.4	0.21	2.9	2.2	61	0.7	20.3	7.5	105		1.40	0.04		34.73	25.5	8.20	6.69		
SSW28"	4/10/14	1101	0.22	6.7	0.24	3.3	0.21	3.0	1.6	44	0.5	15.8	6.6	92		1.51	0.02		34.92	25.6	8.21	6.18		
SSW28"	5/13/14	1426	0.19	5.9	0.27	3.8	0.39	5.4	2.1	58	0.5	14.0	6.6	93		1.20	0.04		34.92	25.8	8.23	6.28		
SSW28"	6/24/14	1229	0.28	8.6	0.39	5.4	0.49	6.8	2.8	78	0.8	24.8	7.3	102		1.32	0.02		34.89	25.9	8.20	6.36		
SSW28"	7/23/14	1155	0.24	7.5	0.50	7.0	0.34	4.7	1.6	44	0.5	15.6	7.6	106		1.47	0.07		35.01	26.5	8.21	6.21		
SSW28"	8/11/14	1118	0.16	5.0	0.80	11.2	0.45	6.3	0.6	17	0.4	11.3	7.9	111		1.80	0.05		34.96	26.0	8.20	5.98		
SSW28"	9/28/14	1123	0.19	5.8	1.11	15.6	0.21	3.0	9.3	260	0.5	15.9	10.3	144		1.64	0.08		35.01	28.0	8.21	5.71		
SSW28"	10/15/14	1252	0.20	6.2	0.76	10.7	0.31	4.3	0.8	22	0.6	17.8	11.0	154		1.51	0.10		35.05	27.8	8.22	5.94		
SSW28"	11/25/14	1212	0.18	5.6	0.44	6.2	0.10	1.4	0.2	6	0.5	14.4	7.5	105		2.35	0.02		34.98	27.1	8.23	6.40		
SSW28"	12/30/14	1022	0.16	5.1	0.44	6.1	0.33	4.6	0.1	3	0.4	13.8	5.4	75		1.12	0.03		35.29	25.2	8.21	6.14		
SSW28"	1/21/15	1106	0.21	6.6	0.16	2.3	0.35	4.9	0.8	22	0.5	15.5	6.0	84		7.72	0.02		35.34	25.2	8.24	6.59		
SSW28"	2/18/15	1002	0.26	8.0	0.51	7.1	0.49	6.8	3.2	91	0.6	17.3	8.4	118		5.06	0.07		35.28	25.0	8.05	6.36		
SSW28"	3/9/15	1323	0.22	6.8	1.26	17.6	0.56	7.8	2.8	78	0.4	13.8	10.6	148		1.85	0.05		34.55	25.2	8.23	6.50		
SSW28"	4/28/15	849	0.18	5.7	0.38	5.3	0.41	5.8	2.2	61	0.4	13.6	6.7	95		5.10	0.08		34.85	25.7	8.18	6.00		
SSW28"	5/14/15	1017	0.18	5.7	0.03	0.4	0.24	3.3	0.4	11	0.6	17.2	5.6	78		1.06	0.03		34.98	24.9	8.19	6.48		
SSW28"	6/2/15	917	0.37	11.4	0.35	4.9	0.16	2.2	1.9	52	0.4	13.8	8.6	121		1.65	0.03		34.51	25.9	8.15	5.81		
SSW28"	7/7/15	833	0.05	1.7	0.11	1.5	0.14	2.0	1.1	31	0.1	1.7	8.8	123		1.80	0.08		34.89	25.2	8.11	6.53		
SSW28"	8/14/15	1017	0.21	6.6	1.41	19.8	0.17	2.4	1.7	47	0.4	11.9	10.5	148		1.70	0.02		34.88	27.9	8.15	6.17		
SSW28"	9/16/15	943	0.17	5.2	1.09	15.2	0.23	3.2	2.2	63	0.4	13.4	10.5	147		1.75	0.09		34.36	29.8	8.07	5.73		
SSW28"	10/28/15	1439	0.20	6.2	1.09	15.3	0.34	4.8	6.0	169	0.5	14.6	6.4	89		1.80	0.07		34.58	28.2	8.20	6.26		
SSW28"	11/5/15	1024	0.16	4.9	1.19	16.7	0.05	0.7	0.8	21	0.4	11.1	6.0	85		1.80	0.09		34.41	34.4	8.15	4.90		
SSW28"	12/9/15	1106	0.20	6.3	1.17	16.4	0.41	5.8	2.6	72	0.6	17.9	6.1	85		1.65	0.06		34.28	33.5	8.19	4.96		
SSW28"	1/15/16	1052	0.14	4.3	2.19	30.7	0.37	5.2	2.2	62	0.4	12.2	8.1	114		1.40	0.05		34.42	25.3	8.18	5.95		
SSW28"	2/11/16	908	0.10	3.0	0.99	13.8	0.12	1.7	1.2	35	0.4	13.6	6.8	95		1.65	0.04		34.68	26.0	8.15	6.03		
SSW28"	3/3/16	1052	0.11	3.3	0.68	9.5	0.14	2.0	0.3	9	0.5	14.3	5.8	82		1.80	0.06		34.78	25.3	8.18	6.29		
SSW28"	4/12/16	1110	0.12	3.7	1.05	14.7	0.38	5.3	0.2	7	0.3	10.8	6.9	97		1.85	0.04		34.81	25.5	8.12	5.70		
SSW28"	5/10/16	1034	0.13	4.1	0.57	8.0	0.14	1.9	0.1	4	0.5	14.4	4.5	63		1.55	0.02		34.72	26.1	8.16	5.77		
SSW28"	6/15/16	922	0.08	2.6	1.60	22.4	0.14	1.9	0.3	10	0.4	11.2	6.1	86		1.80	0.08		34.64	26.3	8.35	6.29		
SSW28"	7/1/16	924	0.10	3.0	0.59	8.2	0.35	4.9	0.0	1	0.3	9.5	4.5	63		1.80	0.07		34.81	26.3	8.26	6.34		
SSW28"	8/25/16	912	0.03	1.0	0.34	4.8	0.53	7.4	1.1	30	0.5	14.7	6.4	89		1.85	0.07		34.82	27.8	8.40	5.76		
SSW28"	9/15/16	936	0.01	0.4	0.33	4.6	0.12	1.7	0.6	16	0.3	10.3	4.3	61		1.60	0.03		34.87	27.5	8.25	6.33		
SSW28"	10/20/16	858	0.30	9.4	0.59	8.2	1.10	15.4	1.8	50	0.6	17.9	7.6	107		1.85	0.07		34.89	27.7	8.22	6.13		
SSW28"	11/4/16	926	0.00	0.1	0.67	9.4	0.14	1.9	0.7	19	0.5	16.7	5.4	76		1.95	0.06		34.98	26.7	8.18	6.09		
SSW28"	12/29/16	926	0.03	1.0	0.31	4.4	0.10	1.4	1.0	27	0.3	10.1	4.4	61		1.65	0.04		34.97	26.9	8.15	5.46		
SSW28"	1/27/17	1033	0.00	0.1	0.30	4.2	0.29	4.1	3.5	97	0.3	10.3	4.1	58		1.45	0.06		34.97	25.1	8.17	6.23		
SSW28"	2/23/17	925	0.09	2.7	0.24	3.3	0.23	3.2	0.5	15	0.3	7.8	3.2	44		5.45	0.05		34.58	24.9	8.26	6.38		
SSW28"	3/17/17	916	0.11	3.3	0.09	1.2	0.37	5.2	1.1	31	0.4	12.4	2.5	35		6.30	0.08		34.68	25.0	8.20	6.24		
SSW28"	4/10/17	1052	0.11	3.3	0.08	1.1	0.39	5.5	1.1	31	0.3	10.5	3.1	43		1.95	0.06		35.09	25.2	8.16	6.15		
SSW28"	5/17/17	854	0.08	2.5	0.32	4.5	0.23	3.2	0.7	20	0.4	11.5	4.0	56		1.80	0.06		34.50	25.7	8.17	5.98		
SSW28"	6/13/17	839	0.05	1.6	0.06	0.8	0.20	2.8	1.7	49	0.3	10.7	3.3	46		1.70	0.07		34.68	25.8	8.21	6.40		
SSW28"	7/13/17	1008	0.04	1.2	0.34	4.7	0.29	4.0	0.9	26	0.3	10.3	3.3	46		2.10	0.08		34.99	27.9	8.20	5.10		
SSW28"	8/2/17	902	0.16	4.9	0.09	1.3	0.30	4.2	0.6	16	0.4	13.0	5.0	71		1.75	0.07		34.97	27.1	8.16	6.31		
SSW28"	9/12/17	905	0.07	2.1	0.06	0.8	0.81	11.3	0.5	14	0.4	12.0	3.4	48		1.50	0.08		34.70	27.4	8.17	6.51		
SSW28"	10/12/17	951	0.15	4.6	0.04	0.6	0.50	7.0	1.6	46	0.4	13.7	4.8	68		2.15	0.04		34.96	28.0	8.14	5.61		
SSW28"	11/29/17	858	0.10	3.1	0.06	0.9	0.62	8.7	1.6	46	0.4	11.8	3.2	45		1.10	0.06		35.04	26.2	8.18	5.82		
SSW28"	12/27/17	1023	0.10	3.0	0.15	2.1	0.47	6.6	1.0	27	0.4	11.7	2.6	36		1.70	0.05		35.29	25.3	8.15	6.04		
SSW28"	1/11/18	931	0.03	1.0	0.26	3.7	0.20	2.8	0.5	13	0.3	8.7	2.6	36		5.50	0.07		34.91	25.2	8.20	6.33		
SSW28"	2/14/18	916	0.12	3.7	0.07	1.0	0.28	3.9	4.7	133	0.4	11.6	3.2	44		2.10	0.08		34.89	24.8	8.19	6.84		
SSW28"	3/23/18	959	0.12	3.6	0.13	1.8	0.22	3.1	1.5	41	0.4	12.5	3.5	49		1.55	0.07		34.62	24.6	8.19	6.39		
SSW28"	4/24/18	937	0.08	2.4	0.38	5.3	0.28	3.9	5.0	142	0.3	10.1	1.6	22		1.85	0.05		34.49	25.6	8.23	6.09		
SSW28"	5/8/18	850	0.09	2.7	0.25	3.5	0.68	9.5	0.6	16	0.4	11.7	2.1	30		1.25	0.04		34.60	25.5	8.17	6.07		
SSW28"	6/20/18	921	0.12	3.7	0.34	4.8	0.65	9.1	1.3	36	0.4	12.3	3.4	47		5.30	0.07		35.30	26.8	8.15	5.21		

NELHA Water Quality Laboratory

SSW 28"

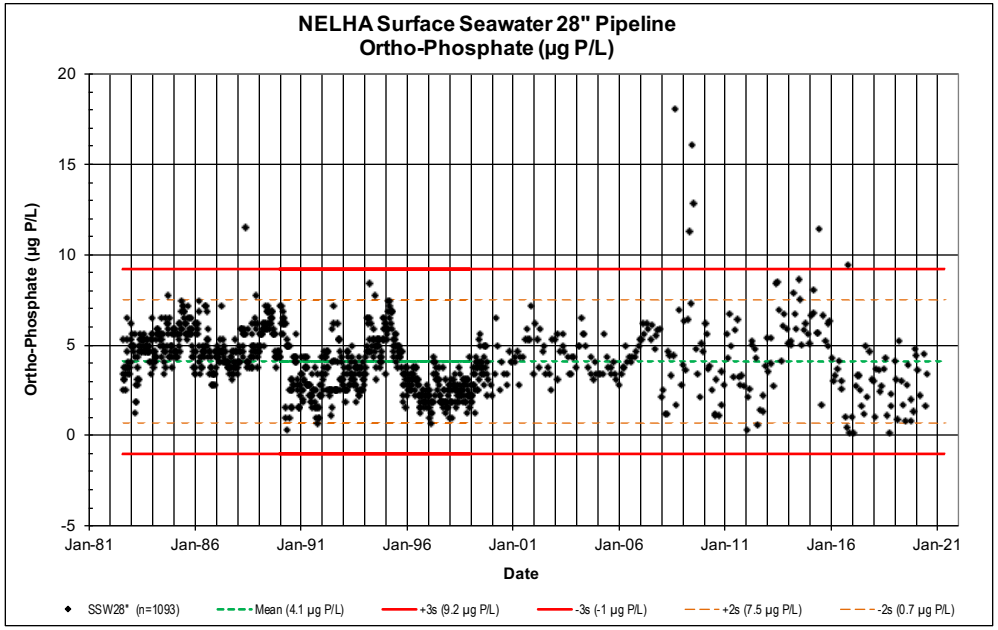
Intake Depth: 21 m, Offshore Pipe Length: 163 m

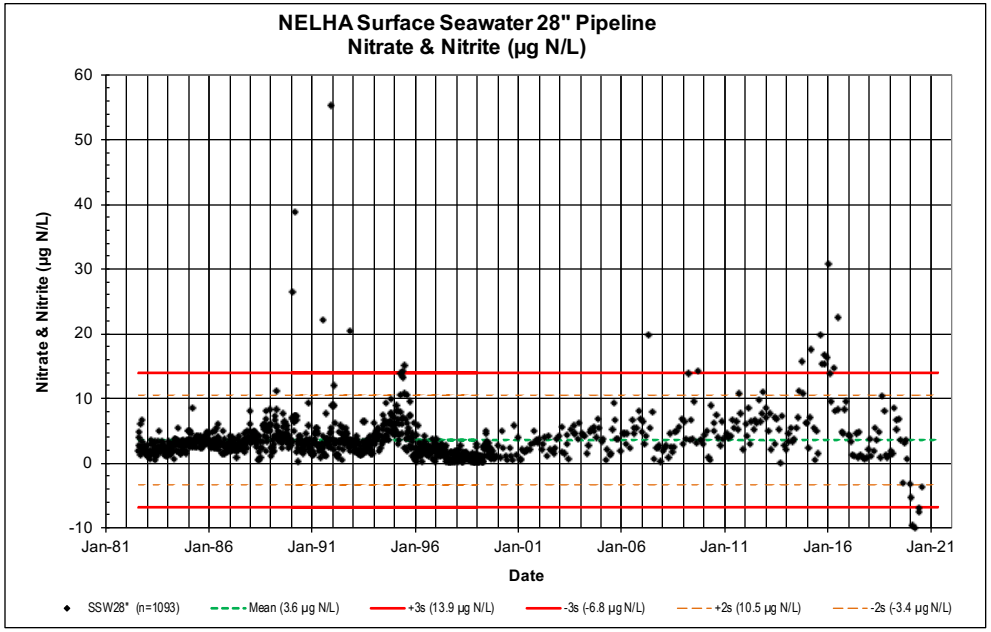
SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW28"	7/12/18	1116	0.14	4.3	0.06	0.9	0.25	3.5	1.7	49	0.4	13.8	2.4	34		1.40	0.07		34.57	26.7	8.18	6.24		
SSW28"	8/13/18	1030	0.04	1.1	0.74	10.4	0.31	4.4	0.0	0	0.3	7.8	4.7	66		1.80	0.06		34.58	27.2	8.22	5.66		
SSW28"	9/18/18	1457	0.00	0.1	0.57	8.0	0.49	6.8	0.1	3	0.3	9.8	3.4	47		1.70	0.08		34.69	27.9	8.22	6.01		
SSW28"	10/11/18	1046	0.07	2.3	0.09	1.2	0.27	3.8	0.2	7	0.3	10.5	3.4	47		5.65	0.06		34.96	27.4	8.17	4.50		
SSW28"	11/2/18	945	0.05	1.6	0.06	0.8	0.24	3.3	0.8	23	0.4	11.2	5.6	78		5.45	0.07		34.69	27.8	8.17	5.91		
SSW28"	12/21/18	1047	0.13	4.1	0.09	1.3	0.41	5.8	0.6	17	0.4	12.4	3.2	45		6.20	0.07		34.81	25.5	8.21	3.74		
SSW28"	1/15/19	1044	0.10	3.1	0.13	1.8	0.11	1.6	1.4	40	0.4	11.4	5.1	71		5.55	0.08		34.94	24.7	8.17	6.21		
SSW28"	2/13/19	858	0.03	0.9	0.10	1.4	0.49	6.9	0.9	26	0.3	9.3	2.6	37		1.55	0.11		34.58	24.3	8.14	6.49		
SSW28"	3/7/19	1455	0.17	5.2	0.61	8.5	0.27	3.8	0.0	1	0.4	12.8	2.0	28		4.95	0.06		35.15	24.7	8.12	6.79		
SSW28"	4/25/19	1006	0.10	3.0	0.47	6.6	0.03	0.4	0.6	18	0.4	11.3	1.8	26		6.15	0.04		35.22	25.8	8.10	6.57		
SSW28"	5/7/19	1044	0.05	1.7	0.37	5.2	0.51	7.2	0.7	20	0.3	9.5	3.1	44		2.00	0.05		35.52	25.7	8.18	6.36		
SSW28"	6/20/19	1151	0.03	0.8	0.49	6.9	0.50	7.0	0.5	13	0.2	7.1	1.9	27		1.45	0.06		36.03	26.1	8.20	6.36		
SSW28"	7/17/19	1053	0.09	2.8	0.25	3.5	0.11	1.5	0.5	13	0.3	9.8	2.1	29		1.10	0.06		35.72	27.2	8.20	6.52		
SSW28"	8/23/19	1507	0.13	3.9	-0.22	-3.1	0.14	2.0	1.7	47	0.4	11.0	2.3	32		0.80	0.06		35.05	28.4	8.18	5.97		
SSW28"	9/26/19	1110	0.06	2.0	0.23	3.2	0.07	1.0	1.5	41	0.3	9.7	2.5	35		4.65	0.07		34.75	28.3	8.18	7.20		
SSW28"	10/8/19	1058	0.03	0.8	0.25	3.5	0.33	4.6	0.6	17	0.3	7.9	3.1	44		0.55	0.06		35.34	28.5	8.21	6.69		
SSW28"	11/14/19	1029	0.04	1.3	0.04	0.6	0.01	0.1	1.0	29	0.2	7.3	2.9	41		0.85	0.05		34.79	27.5	8.14	6.33		
SSW28"	12/17/19	955	0.15	4.8	-0.24	-3.3	0.31	4.3	1.1	31	0.4	12.3	5.6	78		2.10	0.07		34.96	26.6	8.21	6.13		
SSW28"	1/9/20	1125	0.14	4.4	-0.38	-5.3	0.10	1.4	-0.6	-18	0.4	12.3	2.3	33		5.45	0.05		34.94	26.0	8.14	6.50		
SSW28"	2/4/20	1339	0.12	3.6	-0.69	-9.6	-0.25	-3.5	-0.4	-13	0.4	11.6	2.0	29		1.35	0.03		35.32	25.3	8.15	6.68		
SSW28"	3/17/20	1535	0.07	2.2	-0.71	-10.0	0.06	0.8	-0.4	-10	0.3	9.6	6.2	87		1.90	0.02		35.26	25.1	8.22	6.60		
SSW28"	4/1/20	COVID 19																						
SSW28"	5/21/20	1221	0.15	4.5	-0.54	-7.6	0.41	5.8	0.1	3	0.3	9.3	2.4	33		1.45	0.02		36.08	25.9	8.12	6.45		
SSW28"	6/9/20	947	0.05	1.6	-0.49	-6.9	0.46	6.4	-0.3	-9	0.4	10.9	3.0	42		1.15	0.03		36.44	25.8	8.19	6.19		
SSW28"	7/14/20	1123	0.11	3.4	-0.27	-3.8	0.24	3.4	0.9	26	0.3	10.1	1.7	24		0.95	0.06		34.20	26.1	8.13	6.14		
SSW28"	8/1/20																							
SSW28"	9/1/20																							
SSW28"	10/1/20																							
SSW28"	11/1/20																							
SSW28"	12/1/20																							
SSW28"	1/1/21																							
SSW28"	2/1/21																							
SSW28"	3/1/21																							
SSW28"	4/1/21																							
SSW28"	5/1/21																							
SSW28"	6/1/21																							
Mean (Jul. '82 - present)			0.13	4.09	0.25	3.56	0.27	3.76	2.82	79.16	0.36	11.24	5.18	72.79	0.92	1.23	0.08	2.31	34.73	25.80	8.25	6.65		
STD DEV			0.06	1.71	0.25	3.46	0.22	3.12	2.48	69.8	0.11	3.2	1.37	18.7	0.44	1.13	0.30	0.09	0.40	1.3	0.06	0.76		
Range																								
UWL	+2s		0.2	7.5	1	10.5	0.71	10.0	8	219	0.6	18	8	110	1.81	3.49	0.67	2.49	35.52	28.3	8.36	8.17		
LWL	-2s		0.0	0.7	0	-3.4	-0.18	-2.5	-2	-60	0.1	5	2	35	0.04	-1.03	-0.52	2.14	33.94	23.3	8.14	5.13		
UCL	+3s		0.3	9.2	1	13.9	0.94	13.1	10	288	0.7	21	9	129	2.25	4.62	0.97	2.58	35.92	29.6	8.42	8.93		
LCL	-3s		0.0	-1.0	0	-6.8	-0.40	-5.6	-5	-130	0.0	2	1	17	-0.40	-2.16	-0.82	2.05	33.55	22.0	8.08	4.37		
Data																								
Max. Value			0.58	18.1	3.94	55.2	4.61	64.6	37.4	1050	1.4	43.1	11.7	163	7.54	11.30	2.85	2.70	35.47	34.4	8.56	21.72		
Min. Value			0.00	0.1	0.01	0.1	0.01	0.1	0.0	1	0.0	1.5	0.0	24	0.32	0.00	0.02	1.83	24.52	21.6	7.97	4.90		

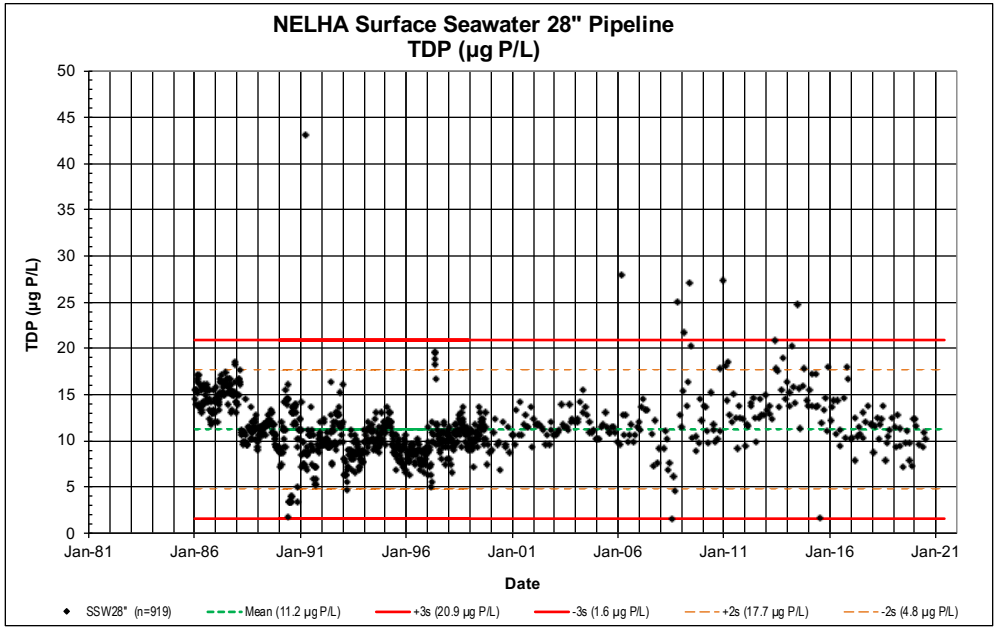
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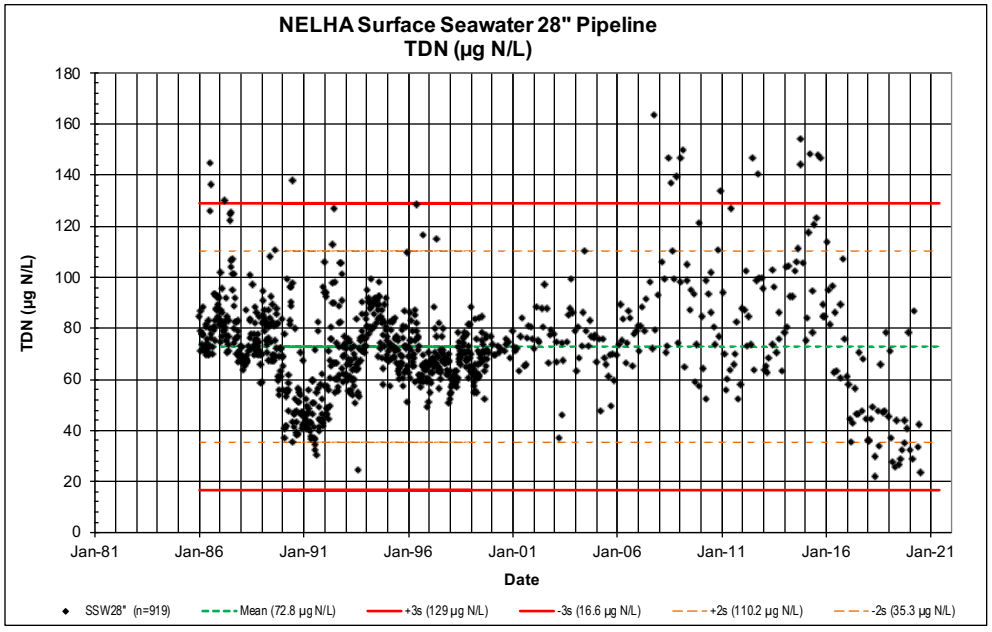
SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m





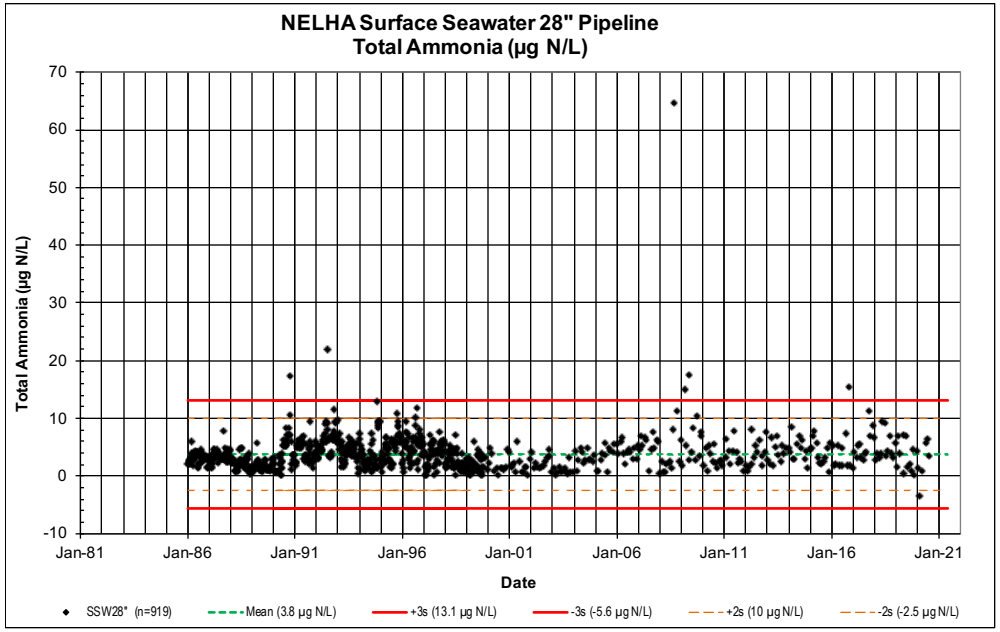


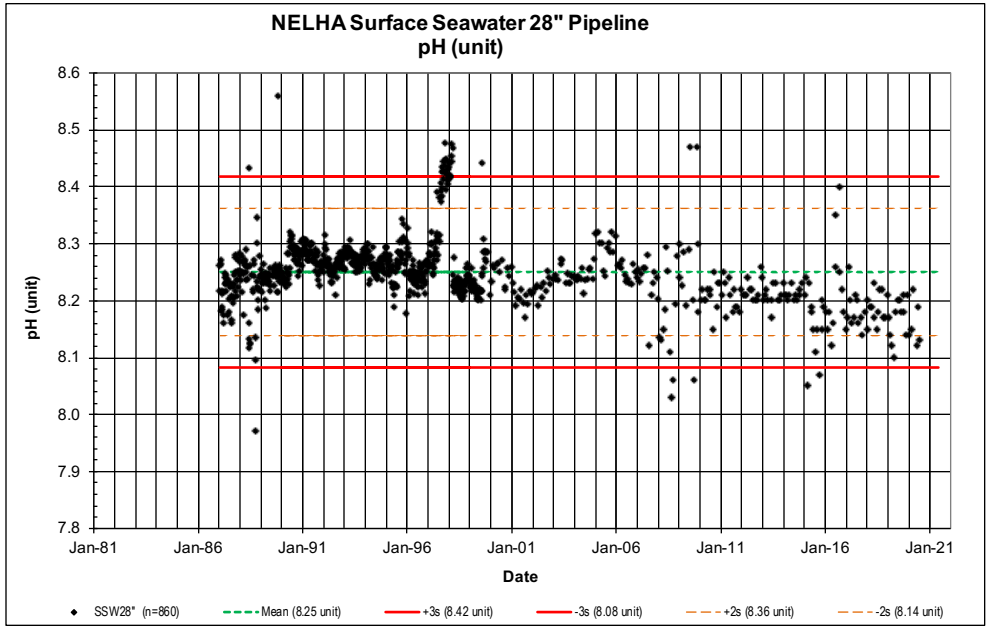


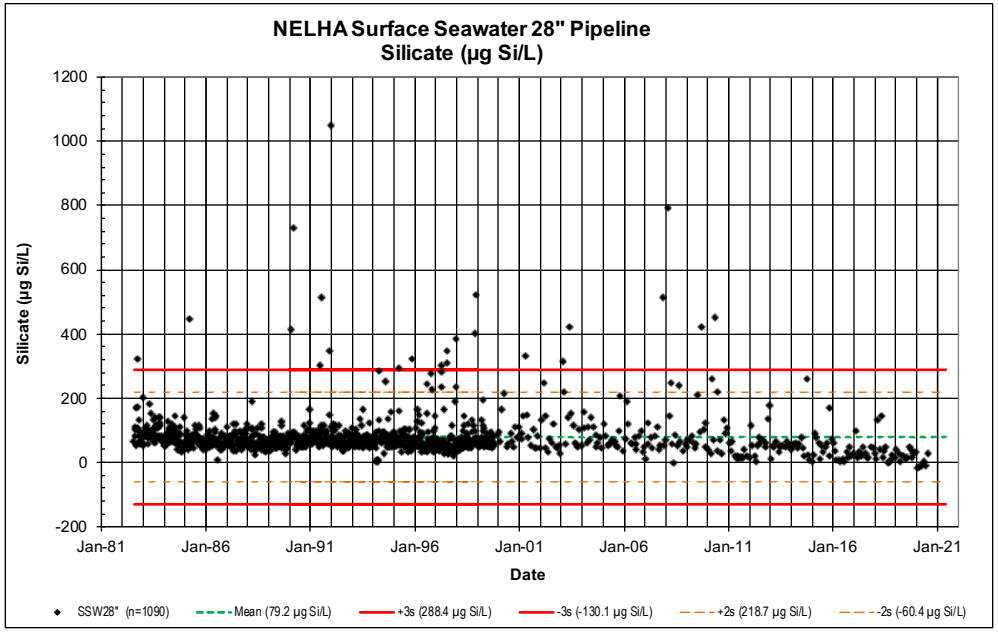
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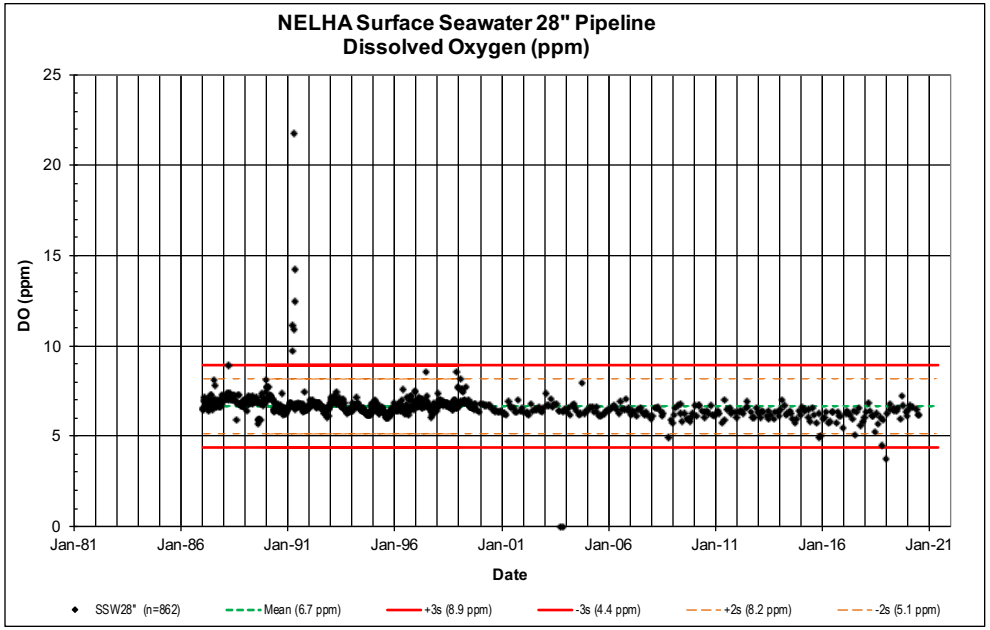
SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m





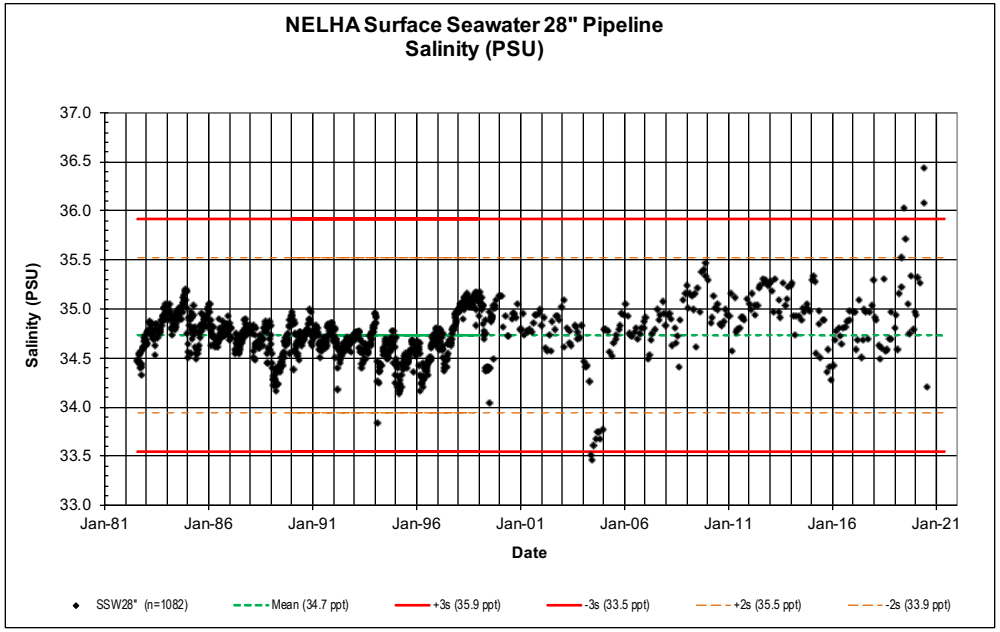


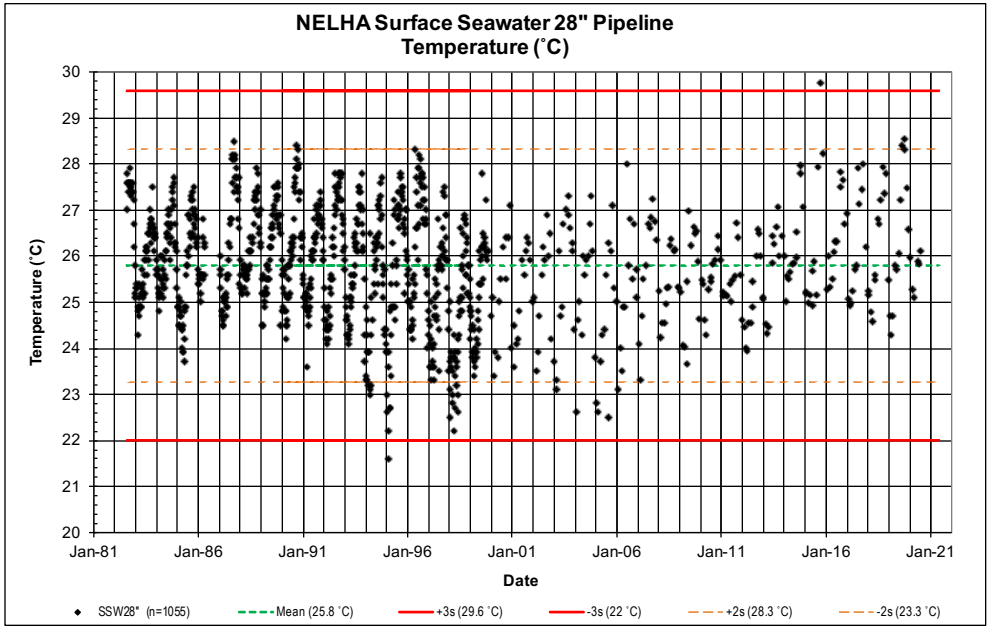


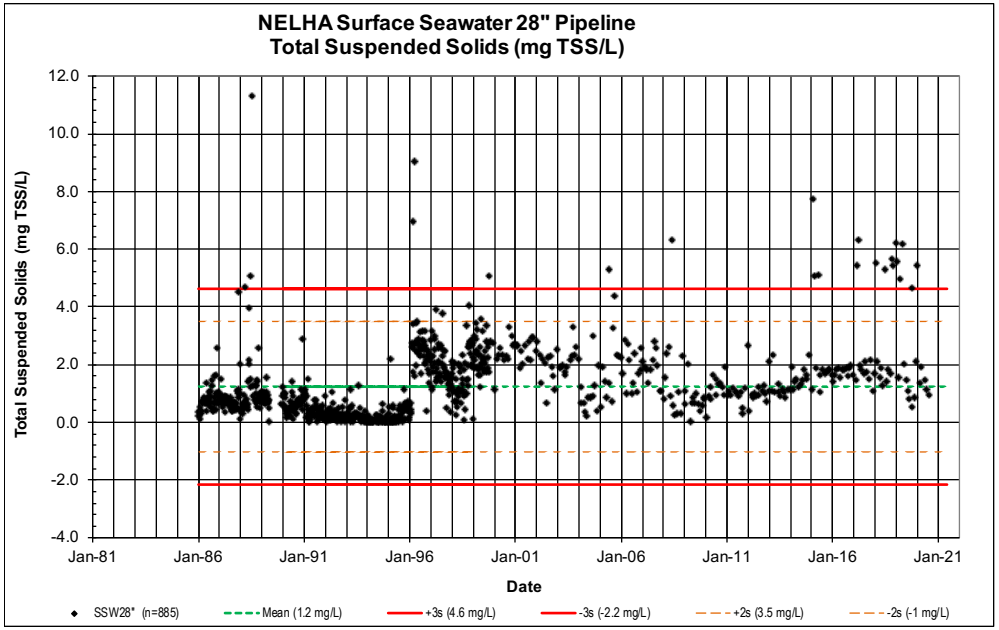
NELHA Water Quality Laboratory

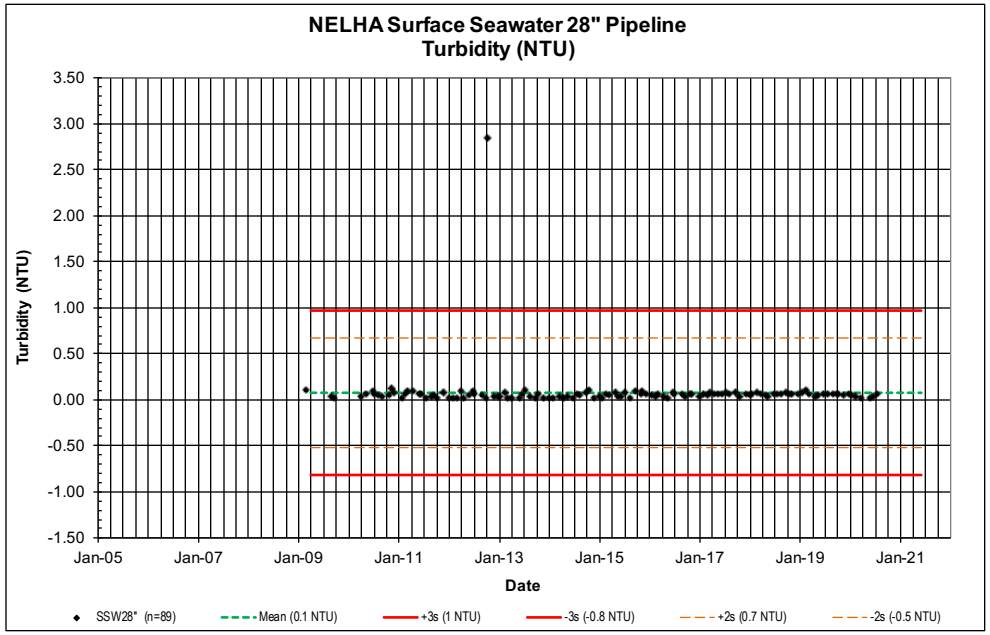
SSW 28"

Intake Depth: 21 m, Offshore Pipe Length: 163 m









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SSW 24"

Intake Depth: 10 m, Offshore Pipe Length: 81 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW 24"	3/23/05		0.09	2.8	0.0	0.4	0.28	3.9	3.7	105	0.40	12.4	4.1	58	1.05	0.90		2.34	34.721	24.9	8.31	6.84	808	2832
SSW 24"	4/21/05		0.14	4.3	0.0	0.1	0.27	3.8	2.3	65	0.38	11.8	4.4	62		1.95		2.29	34.530	25.1	8.31	6.89	556	4200
SSW 24"	5/26/05	1000	0.13	4.0	0.1	0.8	0.32	4.5	2.6	74	0.43	13.3	3.8	53		3.25		2.31	34.499	24.8	8.26	6.78	2773	9300
SSW 24"	6/16/05	942	0.09	2.8	0.0	0.1	0.47	6.6	1.4	40	0.35	10.8	4.6	64		0.85		2.31	34.686	26.6	8.27	6.55	618	5700
SSW 24"	7/27/05	933	0.09	2.8	0.0	0.6	0.12	1.7	2.5	70	0.31	9.6	3.0	42	1.09	1.20		2.29	34.712	27.7	8.31	6.45	1245	9500
SSW 24"	8/11/05	848	0.10	3.1	0.2	2.4	0.41	5.7	3.2	90	0.34	10.5	2.8	40	0.89	5.50		2.31	34.726	27.6	8.32	6.48	2736	8200
SSW 24"	9/14/05	920	0.08	2.5	0.0	0.3	0.41	5.7	4.1	116	0.31	9.6	4.0	56	1.25	1.65		2.33	34.777	27.8	8.30	6.53	4200	8133
SSW 24"	10/10/05	1000	0.08	2.5	0.0	0.4	0.31	4.3	1.8	51	0.34	10.5	5.0	69	1.11	3.85		2.32	34.830	27.6	8.33	6.55	2933	9100
SSW 24"	11/2/05	903	0.07	2.2	0.1	0.8	0.42	5.9	2.1	60	0.34	10.5	3.6	50	1.16	4.90		2.39	34.947	26.1	8.30	6.70	3050	8600
SSW 24"	12/20/05	859	0.08	2.5	0.2	2.2	0.42	5.9	1.6	46	0.32	9.9	5.2	73	0.89	2.85		2.54	34.934	25.9	8.32	6.79	3500	6800
SSW 24"	1/26/06	916	0.10	3.1	0.1	1.8	0.32	4.5	2.0	56	0.29	9.0	4.2	59		3.80		2.07	35.032	25.0	8.27	6.73	4217	49433
SSW 24"	2/28/06	1005	0.09	2.8	0.1	1.8	0.36	5.0	5.7	160	0.35	10.8	4.4	62		2.05		2.08	34.918	25.0	8.28	6.71	2163	14000
SSW 24"	3/23/06	935	0.10	3.1	0.1	1.0	0.52	7.3	3.1	88	0.33	10.2	4.4	61		1.20		2.24	34.600	24.4	8.27	6.93	2633	9833
SSW 24"	4/18/06	1018	0.09	2.8	0.1	1.5	0.29	4.1	3.8	106	0.32	9.9	6.1	85	0.94	2.95		2.32	34.742	24.8	8.29	6.79	2583	7738
SSW 24"	5/18/06	1010	0.10	3.1	0.1	1.0	0.23	3.2	2.0	56	0.37	11.5	5.2	72	0.92	2.35		2.47	34.661	25.4	8.26	6.66	3600	10600
SSW 24"	6/29/06	944	0.14	4.3	0.2	2.8	0.37	5.2	3.0	85	0.37	11.5	5.6	78	0.97	2.70		2.25	34.699	26.4	8.25	6.66	3883	16000
SSW 24"	7/25/06	1010	0.12	3.7	0.2	2.7	0.32	4.5	2.4	68	0.35	10.8	5.5	77	1.03	2.35		2.26	34.781	26.3	8.25	7.25	3900	10467
SSW 24"	8/10/06	1035	0.13	4.0	0.1	1.0	0.35	4.9	2.0	56	0.38	11.8	5.2	73	0.92	1.65		2.20	34.703	26.9	8.26	7.26	3717	9889
SSW 24"	9/21/06	1035	0.12	3.7	0.2	2.2	0.25	3.5	2.1	60	0.36	11.2	4.6	65	0.94	1.75		2.26	34.752	26.7	8.24	6.66	3438	5950
SSW 24"	10/26/06	1015	0.11	3.4	0.3	4.1	0.44	6.2	2.1	60	0.33	10.2	5.4	75	1.06	1.15		2.38	34.783	27.5	8.30	6.70	3550	8100
SSW 24"	11/30/06	1040	0.14	4.3	0.2	2.5	0.36	5.0	2.2	60	0.39	12.1	5.4	76	1.00	2.70		2.11	34.851	26.5	8.28	6.69	2463	8900
SSW 24"	12/14/06	1024	0.14	4.3	0.1	1.0	0.29	4.1	0.9	26	0.39	12.1	5.6	78	1.00	1.30		2.48	34.780	25.9	8.27	6.72	1963	3813
SSW 24"	1/11/07	910	0.15	4.6	0.2	3.2	0.49	6.9	1.2	33	0.36	11.2	6.1	85	1.01	3.20		2.15	34.885	25.4	8.26	6.44	2638	6967
SSW 24"	2/15/07	900	0.17	5.3	0.1	1.0	0.53	7.4	1.2	34	0.42	13.0	6.4	90	1.03	2.40		2.12	34.379	24.4	8.26	6.60	3188	9100
SSW 24"	3/8/07	830	0.14	4.3	0.1	1.0	0.32	4.5	2.8	79	0.42	13.0	6.4	89	0.96	2.75		1.94	34.578	24.5	8.28	6.65	3100	9088
SSW 24"	4/12/07	830	0.15	4.6	0.1	1.0	0.35	4.9	2.1	58	0.36	11.2	5.4	76	0.92	2.45		1.85	34.701	25.4	8.27	6.57	2775	9778
SSW 24"	5/9/07	900	0.16	5.0	0.1	1.4	0.52	7.3	4.1	115	0.38	11.8	6.9	97	1.23	1.30		2.18	34.751	25.0	8.27	6.38	2450	8863
SSW 24"	6/27/07	820	0.19	5.9	0.4	5.2	0.25	3.5	0.8	22	0.32	9.8	6.6	92		1.90		2.46	34.796	26.3	8.29	6.90	3125	9900
SSW 24"	7/30/07	1305	0.20	6.1	0.0	0.7	0.32	4.5	3.9	109	0.35	10.8	7.0	98		1.25		2.39	34.804	27.0	8.14	6.57		
SSW 24"	8/30/07	840	0.19	5.8	0.2	2.8	0.29	4.0	2.2	62	0.26	7.9	6.4	89		2.20		2.39	34.907	26.9	8.15	7.20		
SSW 24"	9/24/07	936	0.21	6.6	0.2	2.9	0.54	7.5	15.0	420	0.32	9.8	5.4	76		2.65		2.05	35.366	26.8	8.12	6.28		
SSW 24"	10/30/07	1411	0.20	6.3	0.0	0.2	0.36	5.1	8.6	243	0.20	6.2	6.6	92		1.40		2.48	35.074	26.8	8.23	6.53		
SSW 24"	11/27/07	1402	0.22	6.7	0.1	1.3	0.41	5.8	24.6	691	0.20	6.1	4.8	67		1.55		2.78	34.947	26.4	8.22	6.86		
SSW 24"	12/31/07	1027	0.00		0.0	0.7	0.18	2.5	5.0	142	0.00		0.0			1.20		2.50	34.856	25.1	8.15	6.56		
SSW 24"	1/30/08	847	0.08	2.6	0.1	1.2	0.18	2.5	25.7	723	0.00		0.0			1.60		2.40	34.925	24.1	8.12	6.87		
SSW 24"	2/28/08	1122	0.04	1.2	0.2	2.5	0.05	0.7	5.6	157	0.32	9.8	6.2	87		1.00		2.42	34.911	24.4	8.20	6.24		
SSW 24"	3/31/08	1449	0.04	1.2	0.3	4.3	0.05	0.7	3.6	102	0.34	10.5	5.7	79		1.80		2.36	34.730	25.0	8.14	7.10		
SSW 24"	4/25/08	932	0.14	4.2	0.2	2.2	0.15	2.1	5.8	162	0.35	10.8	3.9	55		0.45		2.48	34.649	24.8	8.21	6.57		
SSW 24"	5/23/08	1035	0.09	2.9	0.1	1.6	0.09	1.3	NA	NA	0.23	7.2	4.0	56		1.25		2.52	34.764	25.4	8.31	6.63		
SSW 24"	6/10/08	1049	0.10	3.1	0.0	0.3	0.18	2.5	2.7	77	0.28	8.6	5.0	70		0.56		NA	34.631	25.2	8.24	6.06		
SSW 24"	7/18/08	1031	0.09	2.9	0.1	1.6	0.09	1.3	3.1	88	0.21	6.4	8.7	122		0.77			34.710	26.6	8.10	6.18		
SSW 24"	8/13/08	1051	0.62	**19.2**	0.2	2.3	0.54	7.5	2.9	81	0.36	11.0	8.9	125		0.59			34.674	26.5	7.99	5.16		
SSW 24"	9/8/08	858	0.07	2.1	0.2	2.3	0.35	4.9	1.9	52	0.29	9.1	8.1	113		1.51			34.77	26.1	7.98	5.68		
SSW 24"	10/23/08	1003	0.09	2.7	0.3	3.7	1.59	22.3	1.8	52	0.48	14.9	8.4	118		0.71			34.88	26.6	8.19	6.28		
SSW 24"	11/28/08	1035	0.15	4.5	0.2	2.3	0.07	1.0	2.2	62	0.38	11.9	5.7	80		1.26			34.81	25.5	8.28	5.88		
SSW 24"	12/30/08	907	0.21	6.4	0.2	3.1	0.36	5.0	1.9	52	0.35	10.7	6.3	88		0.91			34.68	25.3	8.29	6.25		
SSW 24"	1/12/09	1048	0.12	3.6	0.2	2.8	0.12	1.7	2.6	72	0.32	9.9	5.0	70		1.40			35.001	25.0	8.25	6.26		
SSW 24"	2/20/09	1125	0.07	2.2	0.2	3.2	0.19	2.6	1.7	46	0.61	18.9	7.1	99		0.27	0.07		35.250	24.1	8.21	6.81		
SSW 24"	3/30/09	1108	0.20	6.3	1.2	17.1	2.93	41.1	3.3	92	0.44	13.5	8.9	125		0.71			35.189	24.3	8.33	6.27		
SSW 24"	4/30/09	1010	0.25	7.6	0.2	2.5	0.50	7.0	2.3	64	0.48	14.9	5.7	80		0.48			34.963	23.8	8.19	6.72		
SSW 24"	5/15/09	1354	0.16	4.9	0.5	6.6	0.19	2.7	2.3	64	0.86	26.7	8.9	125		0.72			35.07	25.6	8.18	6.02		
SSW 24"	6/10/09	901	0.49	15.3	0.4	5.2	0.26	3.6	3.5	98	0.55	17.0	5.4	75		0.72			34.579	26.6	8.34	5.46		
SSW 24"	7/10/09	835	0.41	12.6	0.7	9.9	0.71	9.9	6.3	178	0.32	9.8	7.6	106		1.44			34.91	26.0	8.29	6.00		
SSW 24"	8/27/09	1024	0.15	4.8	0.2	3.1	0.26	3.7	2.7	77	0.21	6.6	4.1	57		0.74	0.04		35.00	27.3	8.19	5.59		
SSW 24"	9/17/09	1034	0.10	3.0	1.0	13.6	0.36	5.1	9.5	266	0.24	7.4	3.8	53		1.30	0.04		34.24	26.3	7.96	6.86		
SSW 24"	10/26/09	1038	0.08	2.6	0.1	2.0	0.49	6.9	7.0	196	0.23	7.0	4.4	62		1.08			35.45	26.6	8.18	6.02		
SSW 24"	11/19/09	1402	0.14	4.4	0.2	2.7	0.48	6.7	5.2	145	0.35	10.7	5.9	82		0.39			35.35	26.2	8.17	6.40		
SSW 24"	12/3/09	959	0.17	5.2	0.2	2.3	0.49	6.8	3.0	83	0.46	14.1	4.7	66		0.40			35.15	24.9	8.25	6.70		
SSW 24"	1/14/10	1013	0.17	5.2	0.2	3.3	0.23	3.2	1.5	41	0.44	13.7	8.7	122		0.28			35.11	25.4	8.18	6.97		
SSW 24"	2/16/10	1145	0.17	5.2	0.1	2.0	0.34	4.7	14.3	402	0.36	11.3	3.5	49		0.65			34.81	25.3	8.23	5.99		
SSW 24"	3/15/10	1001	0.12	3.6	0.1	0.9	0.11	1.5	9.4	265	0.30	9.2	3.8	53		1.30			34.95	24.5	8.19	6.57		
SSW 24"	4/1/10	902	0.10	3.1	0.2	2.8	0.25	3.5	5.8	164	0.28	8.6	4.5	63		0.60	0.06		35.05	23.8	8.21	6.90		
SSW 24"	5/10/10	913	0.06	1.9	0.2	2.8	0.50	7.0	9.0	252	0.46	14.4	7.2	101		1.20	0.14		34.90	25.3	8.26	6.31		
SSW 24"	6/23/10	941	0.01	0.4	0.4	5.0	0.36	5.0	2.2	63	0.27	8.3	4.4	62		1.50	0.07		34.81	25.5	8.21	6.15		

NELHA Water Quality Laboratory

SSW 24"

Intake Depth: 10 m, Offshore Pipe Length: 81 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW 24"	7/1/10	1057	0.02	0.6	0.29	4.0	0.30	4.2	3.6	101	0.3	10.1	8.0	112		1.00	0.05		34.99	25.9	8.22	5.04		
SSW 24"	8/5/10	953	0.04	1.3	0.20	2.8	0.09	1.2	3.6	100	0.3	8.7	5.4	76		0.85	0.05		34.79	26.0	8.20	6.28		
SSW 24"	9/2/10	1013	0.03	1.0	0.20	2.8	0.09	1.3	2.3	65	0.3	9.1	4.6	65		1.35	0.04		34.72	26.3	8.21	6.19		
SSW 24"	10/18/10	943	0.10	3.0	0.20	2.8	0.20	2.8	3.1	87	0.4	12.9	5.4	76		0.85	0.10		34.92	26.3	8.20	6.02		
SSW 24"	11/4/10	1005	0.05	1.5	0.61	8.5	0.59	8.3	6.2	175	0.4	11.7	7.4	104		1.00	0.06		34.99	26.6	8.24	6.00		
SSW 24"	12/1/10	1013	0.11	3.5	0.69	9.7	0.21	2.9	5.8	162	0.4	13.0	5.3	74		1.40	0.14		34.78	25.9	8.22	5.87		
SSW 24"	1/25/11	957	0.19	6.0	0.51	7.2	0.11	1.5	3.2	90	0.6	18.0	5.5	77		1.00	0.05		34.72	25.1	8.21	5.90		
SSW 24"	2/8/11	1009	0.15	4.5	0.40	5.6	0.51	7.2	10.6	296	0.5	14.4	7.6	107		1.30	0.08		35.11	25.2	8.28	6.37		
SSW 24"	3/7/11	1109	0.23	7.0	0.64	9.0	0.46	6.4	2.7	76	0.5	15.0	4.0	56		1.20	0.08		34.38	25.3	8.23	6.25		
SSW 24"	4/11/11	1128	0.18	5.5	0.35	4.9	0.12	1.7	1.2	33	0.5	14.3	9.8	137		1.22	0.06		35.02	25.2	8.17	5.51		
SSW 24"	5/25/11	922	0.09	2.7	0.38	5.3	0.24	3.4	0.9	26	0.4	11.3	5.2	73		1.44	0.09		34.68	25.3	8.26	6.38		
SSW 24"	6/13/11	1036	0.20	6.1	0.53	7.4	0.27	3.8	1.8	50	0.5	14.6	5.9	83		1.33	0.06		34.68	25.1	8.21	7.01		
SSW 24"	7/21/11	919	0.15	4.6	0.37	5.2	0.24	3.3	0.6	18	0.4	13.9	4.9	69		1.44	0.06		34.79	25.6	8.20	6.50		
SSW 24"	8/22/11	1033	0.04	1.2	0.43	6.0	0.16	2.2	1.5	42	0.4	11.2	5.2	72		0.95	0.03		34.89	26.1	8.23	6.60		
SSW 24"	9/15/11	947	0.08	2.5	0.32	4.5	0.13	1.8	1.5	43	0.5	14.0	6.9	96		0.54	0.07		34.72	26.8	8.20	6.10		
SSW 24"	10/4/11	811	0.10	3.2	0.43	6.0	0.19	2.7	2.8	79	0.4	13.6	10.9	153		0.44	0.07		34.89	26.6	8.19	6.02		
SSW 24"	11/21/11	1220	0.13	4.0	0.78	10.9	0.19	2.7	2.0	56	0.4	12.5	5.2	73		0.65	0.13		35.00	25.6	8.19	6.24		
SSW 24"	12/27/11	1033	0.01	0.2	0.70	9.8	0.16	2.3	1.4	38	0.3	9.5	6.3	88		0.64	0.15		34.95	24.6	8.23	6.00		
SSW 24"	1/30/12	1035	0.06	1.8	0.51	7.2	0.19	2.6	2.0	57	0.4	11.1	5.1	71		4.61	1.50		34.95	24.6	8.21	5.87		
SSW 24"	2/27/12	1035	0.06	2.0	0.38	5.3	0.01	0.2	2.5	71	0.4	11.3	6.8	95		1.26	0.12		35.18	24.0	8.23	6.46		
SSW 24"	3/28/12	1015	0.15	4.6	0.02	0.3	0.36	5.0	1.4	39	0.5	14.3	6.8	95		0.89	0.03		34.98	23.9	8.23	6.39		
SSW 24"	4/16/12	1026	0.16	4.9	0.39	5.4	0.12	1.7	0.4	12	0.5	14.3	7.0	98		0.96	0.04		34.74	24.5	8.20	6.21		
SSW 24"	5/24/12	849	0.16	5.1	0.38	5.3	0.21	3.0	2.3	65	0.5	15.9	5.3	74		0.71	0.09		34.86	24.5	8.21	6.57		
SSW 24"	6/19/12	1026	0.15	4.8	0.49	6.8	0.32	4.5	3.6	100	0.4	12.1	6.4	90		0.90	0.09		35.04	25.1	8.14	6.54		
SSW 24"	7/3/12	815	0.06	1.8	0.59	8.3	0.29	4.0	3.0	83	0.4	11.3	4.2	59		1.92	0.03		34.90	25.4	8.20	6.61		
SSW 24"	8/27/12	1105	0.03	1.0	0.61	8.6	0.24	3.3	2.8	79	0.4	13.6	6.2	87		1.28	0.03		35.32	26.4	8.21	6.63		
SSW 24"	9/26/12	1047	0.04	1.3	0.29	4.0	0.26	3.6	1.5	42	0.5	15.1	11.6	162		1.22	0.05		35.24	26.6	8.21	5.90		
SSW 24"	10/10/12	958	0.07	2.1	0.61	8.5	0.26	3.7	3.2	89	0.4	11.9	6.4	89		1.13	0.04		35.23	26.4	8.21	5.88		
SSW 24"	11/19/12	1325	0.21	6.6	0.21	3.0	0.24	3.3	5.1	143	0.4	11.7	4.9	69		1.24	0.06		35.19	26.2	8.24	6.55		
SSW 24"	12/19/12	941	0.15	4.6	0.31	4.3	0.38	5.3	6.0	169	0.5	15.0	6.5	91		1.03	0.02		35.22	25.0	8.26	6.47		
SSW 24"	1/4/13	1016	0.11	3.3	0.39	5.5	0.15	2.1	0.4	12	0.4	13.8	4.9	69		1.16	0.04		35.21	25.0	8.22	6.01		
SSW 24"	2/13/13	1023	0.15	4.5	0.32	4.5	0.01	0.1	2.6	74	0.5	15.2	5.6	78		1.27	0.02		35.10	24.6	8.22	5.79		
SSW 24"	3/18/13	1133	0.14	4.4	0.49	6.9	0.52	7.3	2.3	64	0.4	12.9	4.5	63		0.96	0.03		34.94	24.4	8.22	5.75		
SSW 24"	4/3/13	1237	0.11	3.4	0.18	2.5	0.18	2.5	2.7	75	0.4	13.5	4.1	58		1.22	0.02		35.26	24.6	8.22	5.98		
SSW 24"	5/29/13	952	0.28	8.6	0.33	4.6	0.33	4.6	2.2	61	0.7	21.4	7.7	107		1.47	0.02		34.99	26.5	8.20	5.76		
SSW 24"	6/13/13	1043	0.27	8.3	0.41	5.7	0.41	5.7	2.1	59	0.6	18.0	5.1	71		1.29	0.05		34.92	26.1	8.17	5.69		
SSW 24"	7/1/13	1000	0.20	6.3	0.40	5.6	0.19	2.7	1.7	49	0.6	17.5	6.8	96		0.99	0.07		34.93	26.2	8.24	6.28		
SSW 24"	8/14/13	949	0.19	5.9	0.45	6.3	0.36	5.0	2.1	59	0.4	12.8	5.3	74		1.15	0.03		35.27	26.6	8.23	6.14		
SSW 24"	9/18/13	857	0.19	6.0	0.07	1.0	0.31	4.3	2.9	80	0.5	15.3	5.1	72		0.78	0.02		35.02	27.1	8.21	5.72		
SSW 24"	10/10/13	1022	0.22	6.8	0.39	5.4	0.32	4.5	1.9	54	0.5	16.8	6.8	96		1.52	0.09		35.11	26.4	8.23	5.61		
SSW 24"	11/21/13	1024	0.18	5.7	0.43	6.0	0.49	6.9	2.9	83	0.5	14.1	5.6	79		1.31	0.02		35.22	26.4	8.20	6.08		
SSW 24"	12/23/13	938	0.18	5.7	0.44	6.2	0.53	7.4	1.7	48	0.5	16.8	5.1	72		1.22	0.02		35.17	25.8	8.22	5.78		
SSW 24"	1/23/14	1215	0.16	5.1	0.36	5.0	0.41	5.8	3.1	86	0.5	15.4	6.5	91		2.48	0.02		35.25	25.1	8.21	5.34		
SSW 24"	2/12/14	1118	0.13	4.0	0.35	4.9	0.37	5.2	1.2	35	0.4	13.6	6.7	94		0.77			35.05	25.2	8.21	6.40		
SSW 24"	3/17/14	1037	0.25	7.7	0.54	7.6	0.25	3.5	1.9	54	0.5	16.9	6.5	92		1.46	0.05		34.81	25.7	8.20	6.20		
SSW 24"	4/10/14	941	0.22	6.7	0.47	6.6	0.20	2.8	1.5	43	0.5	15.7	5.4	76		1.07	0.09		34.90	25.7	8.21	6.11		
SSW 24"	5/13/14	1317	0.21	6.6	0.63	8.8	0.33	4.6	1.8	52	0.5	14.2	8.0	112		1.41	0.09		34.94	26.2	8.23	6.07		
SSW 24"	6/24/14	1143	0.22	6.7	0.56	7.8	0.50	7.0	6.9	194	0.8	23.3	6.0	83		1.61	0.03		34.84	26.1	8.20	4.92		
SSW 24"	7/23/14	1055	0.23	7.0	0.49	6.8	0.26	3.7	3.5	99	0.5	15.9	5.7	80		1.18	0.23		34.99	27.6	8.21	6.53		
SSW 24"	8/11/14	1141	0.13	3.9	0.26	3.7	0.38	5.3	0.4	12	0.3	10.4	4.6	64		1.44	0.03		34.94	27.1	8.21	6.01		
SSW 24"	9/28/14	1146	0.18	5.5	0.41	5.8	0.22	3.1	0.8	24	0.5	14.6	7.9	111		1.60	0.07		34.90	28.1	8.22	5.64		
SSW 24"	10/15/14	1156	0.15	4.8	0.15	2.1	0.30	4.2	0.6	16	0.6	18.3	8.9	125		1.69	0.11		34.97	27.7	8.21	5.85		
SSW 24"	11/25/14	1233	0.14	4.3	0.04	0.5	0.29	4.1	0.2	6	0.4	13.0	6.0	84		2.00	0.07		34.97	27.0	8.21	5.60		
SSW 24"	12/30/14	930	0.14	4.2	0.21	2.9	0.41	5.8	0.1	3	0.5	15.9	8.0	113		1.31	0.10		35.26	25.1	8.21	6.42		
SSW 24"	1/21/15	1047	0.19	5.8	0.24	3.3	0.44	6.2	1.4	39	0.5	15.6	6.3	88		6.49	0.04		35.27	25.3	8.22	6.06		
SSW 24"	2/18/15	911	0.25	7.6	0.70	9.8	0.46	6.4	3.0	85	0.5	16.0	8.5	119		5.16	0.11		34.79	24.9	8.13	5.63		
SSW 24"	3/9/15	1309	0.15	4.7	0.52	7.3	0.43	6.0	1.5	43	0.3	8.8	9.3	131		5.15	0.04		33.85	25.3	8.22	5.34		
SSW 24"	4/28/15	1522	0.17	5.3	0.36	5.1	0.29	4.1	0.7	21	0.4	11.1	7.5	106		5.20	0.04		34.44	26.2	8.14	4.67		
SSW 24"	5/14/15	1006	0.14	4.4	0.17	2.4	0.06	0.9	1.4	39	0.2	7.5	6.4	89		1.40	0.02		34.65	25.6	8.18	6.46		
SSW 24"	6/3/15	942	0.31	9.7	0.75	10.5	0.39	5.4	2.2	62	0.6	18.8	6.2	88		1.65	0.02		34.51	26.2	8.17	5.64		

NELHA Water Quality Laboratory

SSW 24"

Intake Depth: 10 m, Offshore Pipe Length: 81 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW 24"	7/7/15	857	0.05	1.7	0.15	2.1	0.18	2.5	1.1	31	0.4	11.1	5.6	78		2.25	0.07		34.94	25.7	8.12	5.89		
SSW 24"	8/14/15	1002	0.12	3.6	0.16	2.2	0.17	2.4	1.1	32	0.4	12.4	8.6	121		1.90	0.02		34.01	28.6	8.10	5.01		
SSW 24"	9/16/15	1005	0.13	4.1	0.59	8.2	0.36	5.0	2.4	67	0.2	7.0	9.2	129		1.70	0.09		34.29	29.5	8.14	5.59		
SSW 24"	10/28/15	1356	0.12	3.8	0.90	12.6	0.25	3.5	2.6	73	0.4	13.0	5.4	76		1.95	0.07		33.36	28.2	8.21	5.40		
SSW 24"	11/5/15	1009	0.06	2.0	0.36	5.0	0.09	1.3	1.2	33	0.3	10.3	6.1	85		1.85	0.09		34.07	28.1	8.19	5.69		
SSW 24"	12/9/15	1056	0.13	3.9	0.44	6.1	0.58	8.1	2.7	75	0.5	15.1	5.2	73		2.35	0.15		34.14	26.6	8.21	6.21		
SSW 24"	1/15/16	1117	0.12	3.6	0.46	6.5	0.42	5.9	2.7	75	0.4	11.8	5.7	80		2.00	0.08		33.86	25.3	8.18	5.95		
SSW 24"	2/11/16	946	0.09	2.8	0.49	6.8	0.16	2.2	1.3	38	0.4	11.1	4.7	66		1.95	0.06		34.51	24.9	8.23	5.66		
SSW 24"	3/3/16	1119	0.12	3.7	1.01	14.2	0.21	2.9	0.8	22	0.5	14.4	4.9	68		1.80	0.09		33.54	25.3	8.19	5.54		
SSW 24"	4/12/16	1128	0.09	2.9	0.93	13.0	0.57	8.0	0.8	22	0.4	11.4	4.6	65		2.30	0.06		34.45	25.7	8.07	5.49		
SSW 24"	5/10/16	1055	0.08	2.4	0.21	3.0	0.10	1.4	0.0	1	0.3	8.3	3.7	52		1.60	0.04		34.77	25.7	8.18	5.90		
SSW 24"	6/15/16	940	0.07	2.2	0.33	4.6	0.28	3.9	1.4	39	0.3	10.5	3.1	44		1.60	0.10		34.36	26.7	8.35	5.51		
SSW 24"	7/1/16	941	0.04	1.1	0.49	6.8	0.50	7.0	0.1	2	0.3	10.3	4.4	61		3.75	0.09		34.73	26.1	8.25	5.70		
SSW 24"	8/25/16	934	0.03	0.8	0.20	2.8	0.45	6.3	6.9	193	0.5	16.2	7.0	98		1.70	0.05		34.38	27.6	8.42	5.40		
SSW 24"	9/15/16	1013	0.03	1.0	1.26	17.7	0.20	2.8	6.8	191	0.4	11.0	5.9	83		1.90	0.07		34.45	27.6	8.23	6.18		
SSW 24"	10/20/16	1017	0.12	3.7	0.50	7.0	1.18	16.5	4.5	126	0.6	17.2	6.6	92		1.85	0.09		34.88	27.7	8.23	5.61		
SSW 24"	11/4/16	950	0.07	2.2	0.64	8.9	0.06	0.8	2.2	62	0.5	16.3	6.0	84		2.05	0.04		35.01	26.9	8.22	5.26		
SSW 24"	12/29/16	949	0.05	1.4	0.29	4.1	0.25	3.5	10.3	289	0.3	9.4	4.5	63		5.60	0.06		34.44	24.9	8.20	4.94		
SSW 24"	1/27/17	1055	0.02	0.6	0.20	2.8	0.19	2.6	2.0	56	0.3	8.9	3.2	45		2.15	0.04		34.67	24.9	8.21	5.50		
SSW 24"	2/23/17	955	0.11	3.3	0.44	6.1	0.27	3.8	3.6	101	0.3	9.8	3.3	46		5.65	0.07		32.73	25.0	8.23	5.64		
SSW 24"	3/17/17	940	0.09	2.8	0.21	3.0	0.54	7.5	2.4	68	0.3	10.3	3.1	44		5.75	0.08		33.69	25.3	8.21	5.25		
SSW 24"	4/10/17	1041	0.13	3.9	0.45	6.3	0.25	3.5	2.9	81	0.3	10.1	3.6	50		2.70	0.08		34.79	25.4	8.19	5.43		
SSW 24"	5/17/17	918	0.08	2.6	0.42	5.9	0.19	2.7	1.1	32	0.3	10.8	3.0	41		1.85	0.07		33.94	25.8	8.19	4.65		
SSW 24"	6/13/17	908	0.09	2.9	0.61	8.6	0.33	4.6	2.0	57	0.3	9.6	2.7	38		6.20	0.06		34.49	25.9	8.25	5.23		
SSW 24"	7/13/17	1033	0.02	0.7	0.29	4.0	0.34	4.7	1.6	46	0.3	8.0	3.0	42		1.85	0.05		34.93	27.6	8.22	4.17		
SSW 24"	8/2/17	925	0.08	2.6	0.14	2.0	0.30	4.2	2.2	60	0.4	11.8	3.8	53		1.90	0.09		34.99	27.0	8.15	5.75		
SSW 24"	9/12/17	932	0.10	3.0	0.12	1.7	0.61	8.6	0.7	19	0.9	27.7	7.9	111		2.20	0.07		34.34	27.4	8.17	5.01		
SSW 24"	10/12/17	1011	0.10	3.2	0.12	1.7	0.41	5.7	1.4	40	0.4	11.8	3.0	42		2.35	0.04		33.92	28.0	8.15	4.80		
SSW 24"	11/29/17	908	0.10	3.0	0.06	0.9	0.48	6.7	2.1	59	0.4	11.6	2.9	41		5.35	0.07		34.75	26.3	8.18	5.58		
SSW 24"	12/27/17	1032	0.10	3.1	0.22	3.1	0.41	5.7	1.0	29	0.4	12.0	3.4	48		1.50	0.07		35.23	25.2	8.16	6.04		
SSW 24"	1/11/18	1005	0.03	0.8	0.15	2.1	0.18	2.5	0.5	14	0.3	8.3	2.3	32		5.80	0.07		34.88	25.1	8.18	6.19		
SSW 24"	2/14/18	927	0.10	3.1	0.01	0.2	0.44	6.2	4.6	129	0.3	10.1	2.5	35		1.75	0.08		34.90	24.8	8.17	6.55		
SSW 24"	3/23/18	1018	0.13	4.0	0.26	3.7	0.24	3.4	1.7	48	0.4	11.7	1.9	27		1.55	0.07		34.62	24.6	8.18	6.35		
SSW 24"	4/24/18	1013	0.08	2.4	0.27	3.8	0.24	3.3	2.8	80	0.3	10.7	2.8	40		2.10	0.05		34.48	25.6	8.22	5.73		
SSW 24"	5/8/18	903	0.09	2.7	0.15	2.1	0.56	7.8	2.1	59	0.4	10.9	3.0	42		1.40	0.11		34.46	25.8	8.17	5.03		
SSW 24"	6/20/18	932	0.12	3.8	0.31	4.4	0.60	8.4	1.8	51	0.4	11.3	2.1	29		1.70	0.10		35.29	26.8	8.15	5.14		
SSW 24"	7/12/18	936	0.14	4.3	0.07	1.0	0.19	2.7	1.8	50	0.4	12.5	3.7	52		1.50	0.06		34.66	26.9	8.20	6.27		
SSW 24"	8/13/18	948	0.04	1.1	0.84	11.8	0.11	1.5	0.1	3	0.3	8.4	3.7	52		1.75	0.07		34.56	27.2	8.21	5.57		
SSW 24"	9/18/18	1537	0.08	2.4	0.57	8.0	0.30	4.2	0.4	11	0.4	12.2	11.5	161		0.90	0.07		34.68	28.3	8.23	6.00		
SSW 24"	10/11/18	852	0.05	1.5	0.16	2.2	0.23	3.2	0.2	5	0.3	10.2	2.2	31		6.25	0.12		34.75	27.5	8.18	3.81		
SSW 24"	11/2/18	849	0.04	1.1	0.13	1.8	0.31	4.4	1.1	30	0.4	11.3	2.7	37		6.20	0.11		34.57	27.9	8.16	4.38		
SSW 24"	12/21/18	947	0.17	5.4	0.16	2.3	0.56	7.9	0.6	17	0.4	12.9	2.6	36		6.50	0.09		34.44	25.6	8.22	4.03		
SSW 24"	1/15/19	931	0.11	3.4	0.29	4.1	0.20	2.8	1.6	45	0.4	11.2	2.8	39		5.05	0.25		34.90	24.7	8.18	6.26		
SSW 24"	2/13/19	907	0.04	1.2	0.09	1.2	0.09	1.2	1.2	33	0.3	9.3	2.1	30		2.00	0.09		34.82	24.2	8.09	6.33		
SSW 24"	3/7/19	1503	0.17	5.3	0.46	6.5	0.18	2.5	0.5	14	0.4	12.3	1.9	26		4.95	0.09		35.30	24.8	8.10	6.74		
SSW 24"	4/25/19	911	0.09	2.8	0.14	2.0	0.11	1.5	1.0	28	0.3	10.4	2.3	33		4.95	0.03		35.20	26.1	8.08	6.42		
SSW 24"	5/7/19	1021	0.07	2.2	0.19	2.7	0.41	5.7	1.2	33	0.3	9.9	2.0	28		2.50	0.04		35.43	25.5	8.15	6.37		
SSW 24"	6/20/19	1112	0.00	0.1	0.36	5.1	0.26	3.6	1.3	36	0.2	7.2	1.9	27		6.05	0.05		35.44	27.0	8.16	6.31		
SSW 24"	7/17/19	916	0.10	3.0	0.13	1.8	0.27	3.8	0.4	12	0.3	9.4	2.2	31		2.00	0.08		35.59	27.5	8.21	6.17		
SSW 24"	8/23/19	1427	0.14	4.3	-0.12	-1.7	0.31	4.4	1.4	38	0.4	11.0	2.0	29		1.35	0.06		35.13	29.0	8.19	5.88		
SSW 24"	9/26/19	1035	0.08	2.4	0.36	5.0	-0.02	-0.3	1.5	41	0.3	10.3	2.3	32		1.00	0.04		34.64	28.2	8.19	6.95		
SSW 24"	10/8/19	1002	0.04	1.1	0.46	6.4	0.19	2.6	0.8	23	0.2	7.4	3.4	47		0.75	0.05		35.17	28.7	8.17	6.03		
SSW 24"	11/14/19	1015	0.09	2.9	0.42	5.9	0.01	0.1	0.8	22	0.3	8.5	3.6	51		1.00	0.06		34.88	27.6	8.16	5.98		
SSW 24"	12/17/19	857	0.15	4.5	-0.09	-1.2	0.26	3.7	1.3	36	0.3	10.3	2.5	35		1.55	0.11		35.04	26.5	8.18	6.09		
SSW 24"	1/9/20	907	0.13	4.1	-0.24	-3.3	-0.23	-3.2	-0.9	-26	0.4	11.9	2.6	36		1.50	0.05		34.83	25.9	8.20	6.07		
SSW 24"	2/4/20	952	0.15	4.6	-0.42	-5.9	-0.01	-0.2	0.1	2	0.4	11.7	2.0	28		1.50	0.03		35.59	25.3	8.19	6.01		
SSW 24"	3/17/20	1721	0.08	2.6	-0.61	-8.5	0.24	3.3	-0.2	-7	0.3	9.8	1.8	25		1.40	0.02		35.77	25.0	8.18	6.50		
SSW 24"	4/1/20	COVID 19																						
SSW 24"	5/21/20	1100	0.11	3.4	-0.41	-5.7	0.29	4.0	0.5	14	0.3	9.7	2.3	32		1.80	0.04		35.85	26.4	8.15	6.11		
SSW 24"	6/9/20	917	0.13	3.9	-0.23	-3.2	0.31	4.4	-0.1	-4	0.3	8.2	2.6	36		1.15	0.04		36.16	26.6	8.17	6.00		

NELHA Water Quality Laboratory

SSW 24"

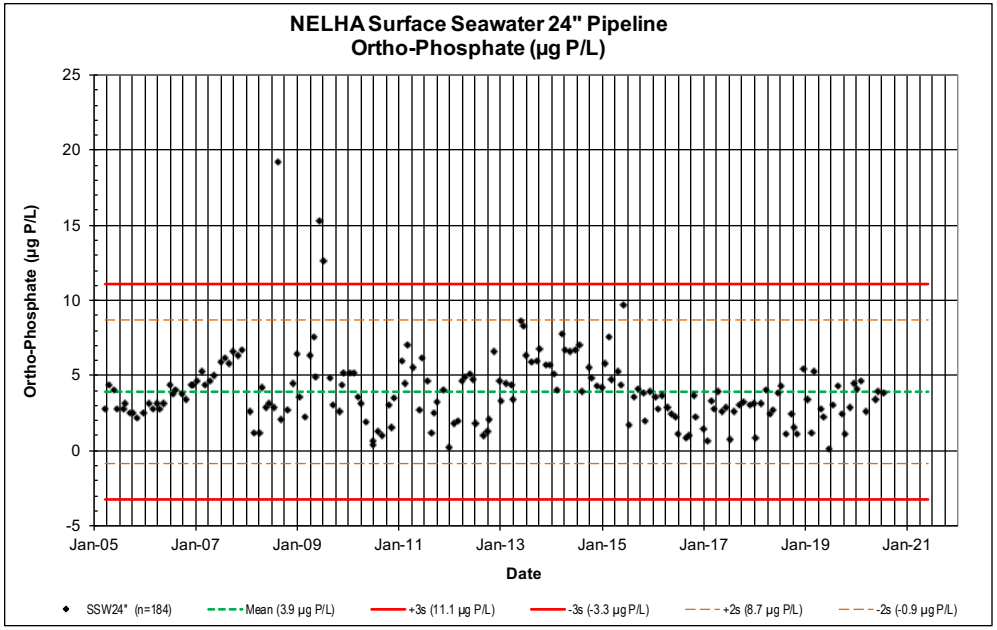
Intake Depth: 10 m, Offshore Pipe Length: 81 m

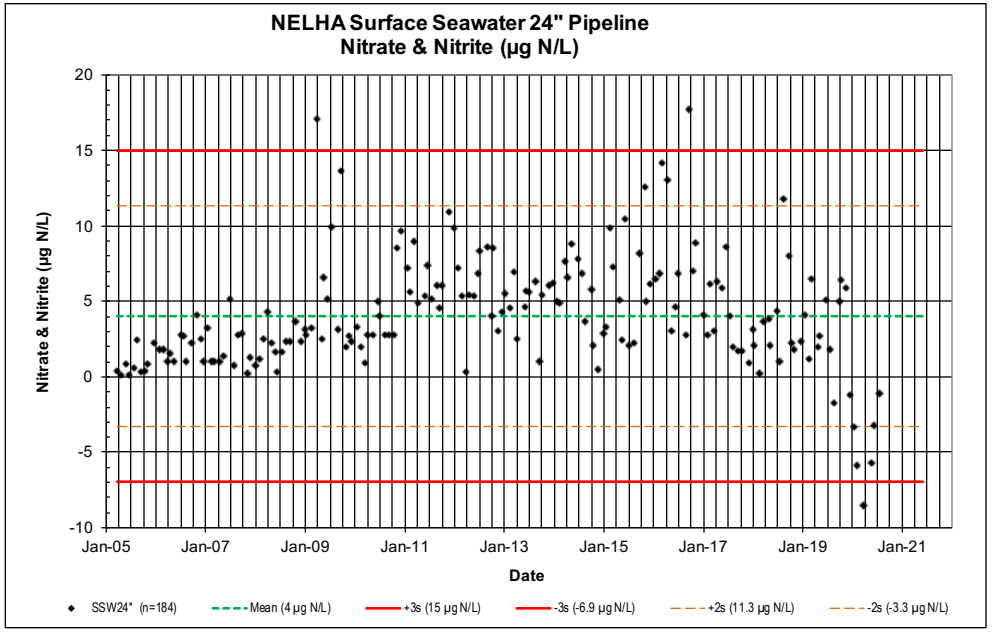
SITE ID	DATE M/D/Y	TIME (2400)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	TSS (mg/L)	Turbidity (NTU)	ALK (mEq/L)	SALINITY (PSU)	TEMP (˚C)	pH (unit)	DO (ppm)	Vibrio CFU/100mL	Total Count Marine Agar CFU/100mL
SSW 24"	7/14/20	1011	0.12	3.8	-0.08	-1.1	0.01	0.2	1.2	33	0.3	8.4	2.3	32		1.40	0.05		34.00	26.8	8.14	6.68		
SSW 24"	8/1/20																							
SSW 24"	9/1/20																							
SSW 24"	10/1/20																							
SSW 24"	11/1/20																							
SSW 24"	12/1/20																							
SSW 24"	1/1/21																							
SSW 24"	2/1/21																							
SSW 24"	3/1/21																							
SSW 24"	4/1/21																							
SSW 24"	5/1/21																							
SSW 24"	6/1/21																							
Mean (Mar.'05 - present)			0.13	3.9	0.29	4.0	0.32	4.5	2.88	80.8	0.38	12.0	5.18	73.38	1.02	1.94	0.08	2.31	34.82	25.98	8.21	6.09		
STD DEV			0.08	2.4	0.26	3.7	0.27	3.8	3.33	93.6	0.11	3.3	2.08	28.31	0.10	1.44	0.13	0.18	0.41	1.13	0.06	0.61		
Range																								
UWL	+2s		0.28	8.7	0.8	11.3	0.86	12.1	9.5	268	0.61	18.7	9.3	130.0	1.2	4.8	0.3	2.7	35.6	28.2	8.3	7.3		
LWL	-2s		-0.03	-0.9	-0.2	-3.3	-0.22	-3.1	-3.8	-106	0.15	5.3	1.0	16.8	0.8	-0.9	-0.2	2.0	34.0	23.7	8.1	4.9		
UCL	+3s		0.36	11.1	1.1	15.0	1.13	15.9	12.9	362	0.73	22.1	11.4	158.3	1.3	6.2	0.5	2.8	36.1	29.4	8.4	7.9		
LCL	-3s		-0.11	-3.3	-0.5	-6.9	-0.50	-6.9	-7.1	-200	0.04	2.0	-1.1	-11.6	0.7	-2.4	-0.3	1.8	33.6	22.6	8.0	4.3		
Data																								
Max. Value			0.62	19.2	1.3	17.7	2.93	41.1	25.7	723	0.89	27.7	11.6	162.4	1.2	6.5	1.5	2.8	36.2	29.5	8.4	7.3		
Min. Value			0.00	0.1	-0.6	-8.5	-0.23	-3.2	-0.9	-26	0.00	6.1	0.0	25.3	0.9	0.3	0.0	1.8	32.7	23.8	8.0	3.8		

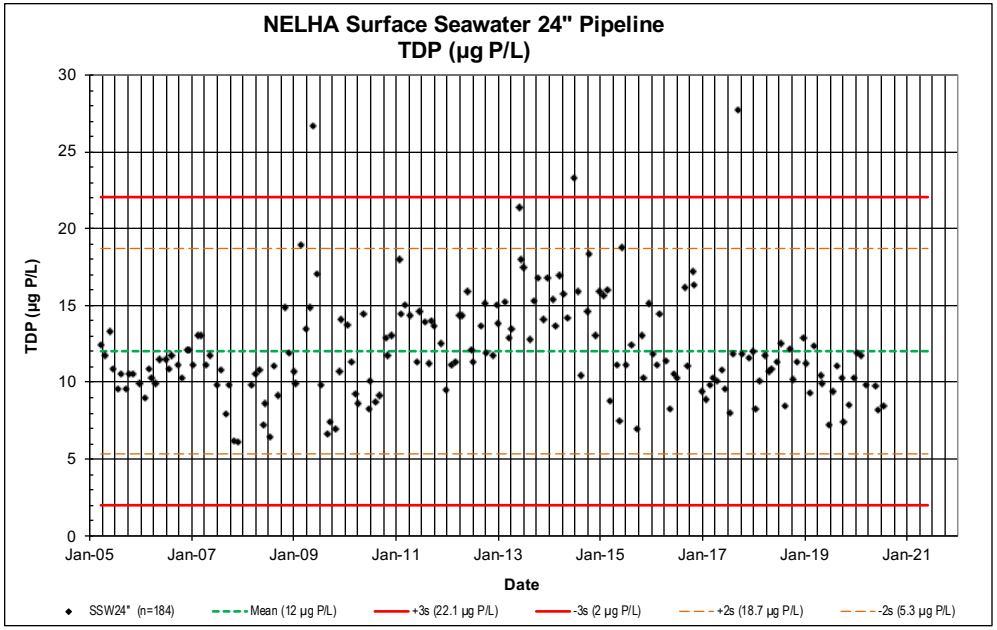
NELHA Water Quality Laboratory

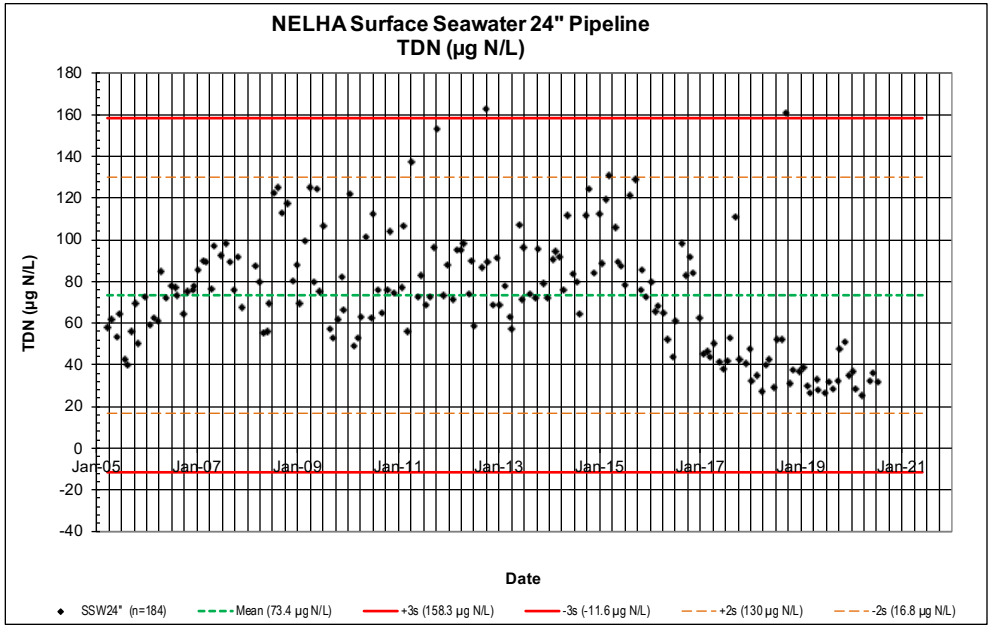
SSW 24" KP

Intake Depth: 10 m, Offshore Pipe Length: 81 m





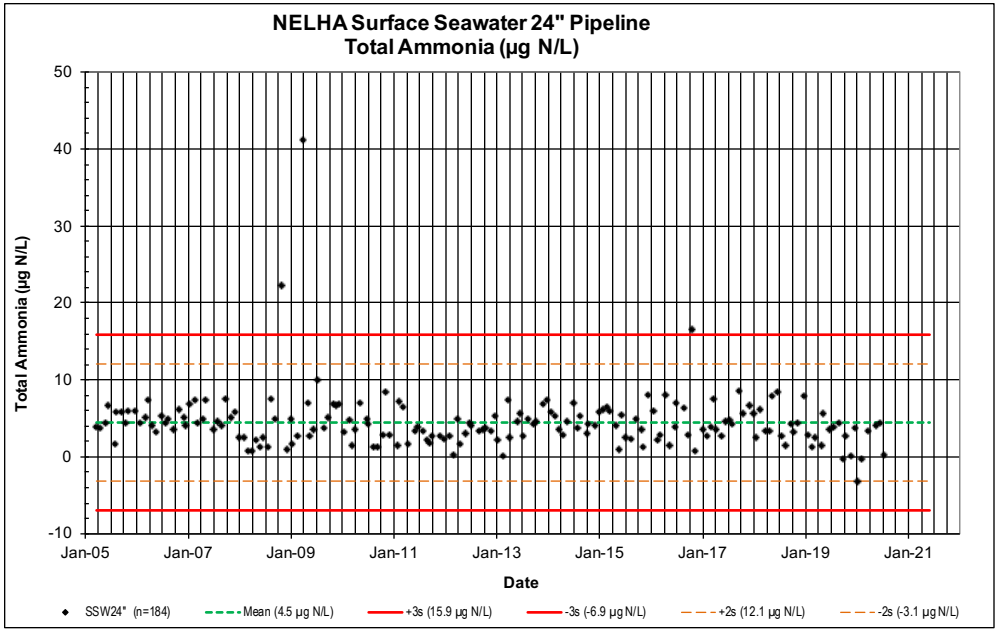


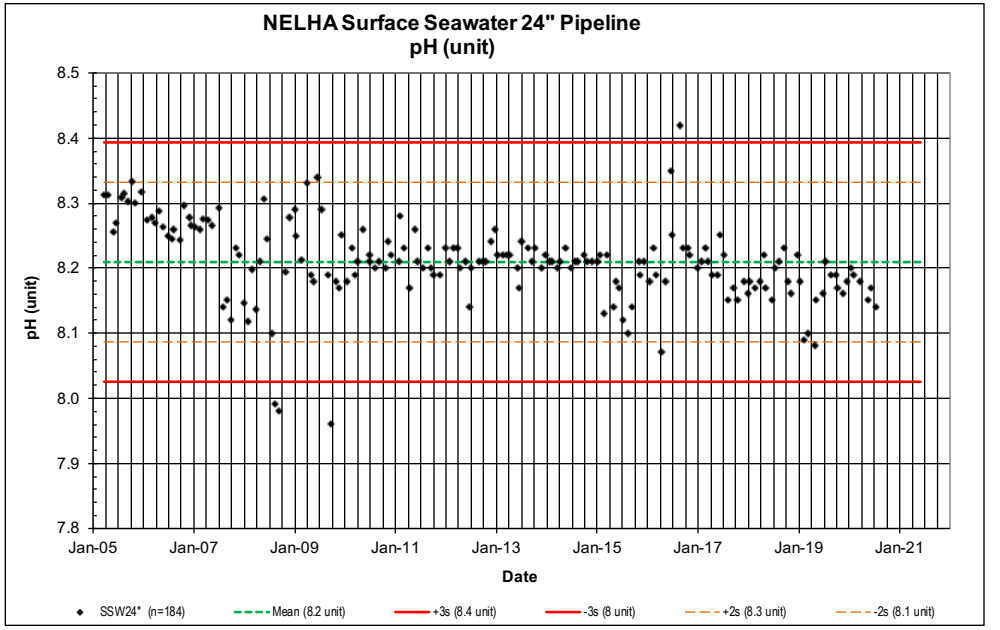


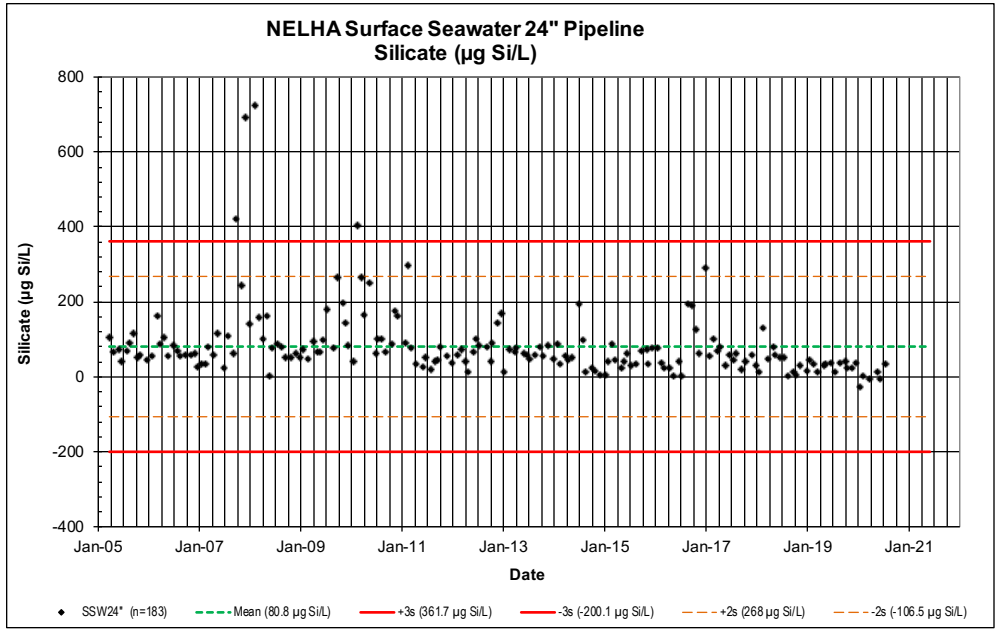
NELHA Water Quality Laboratory

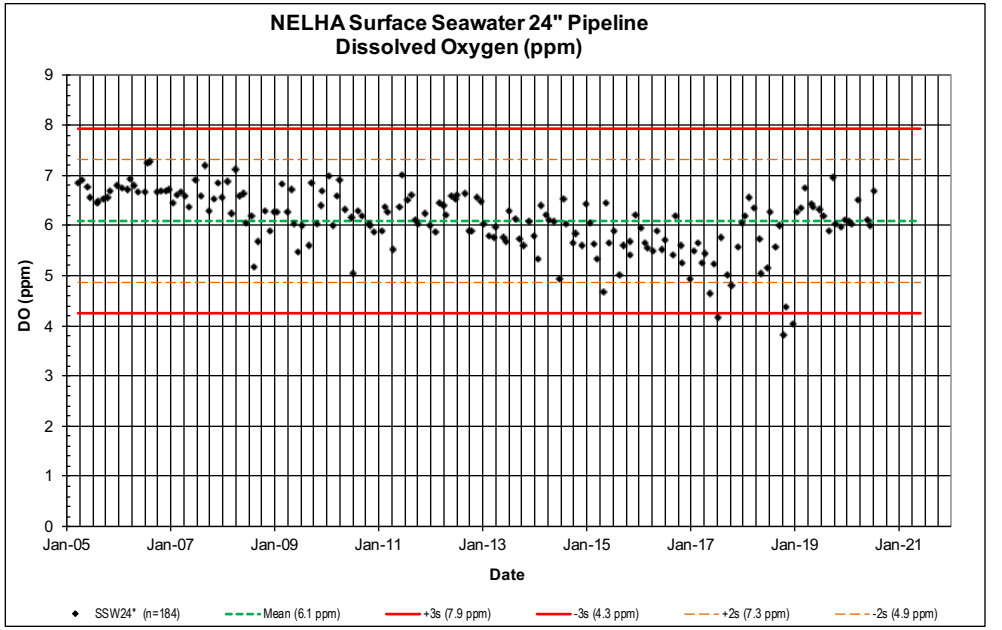
SSW 24" KP

Intake Depth: 10 m, Offshore Pipe Length: 81 m





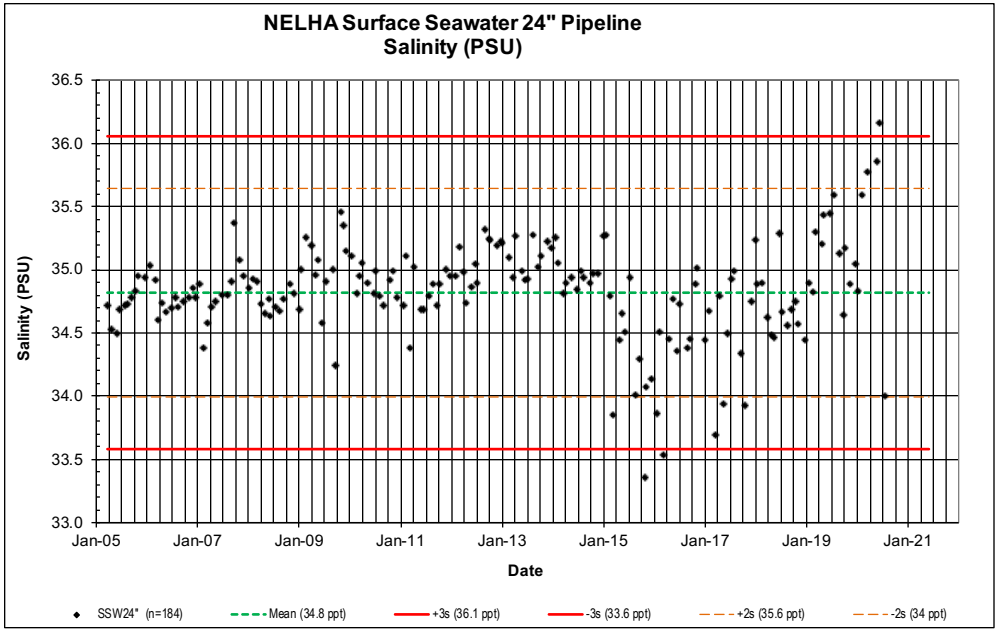


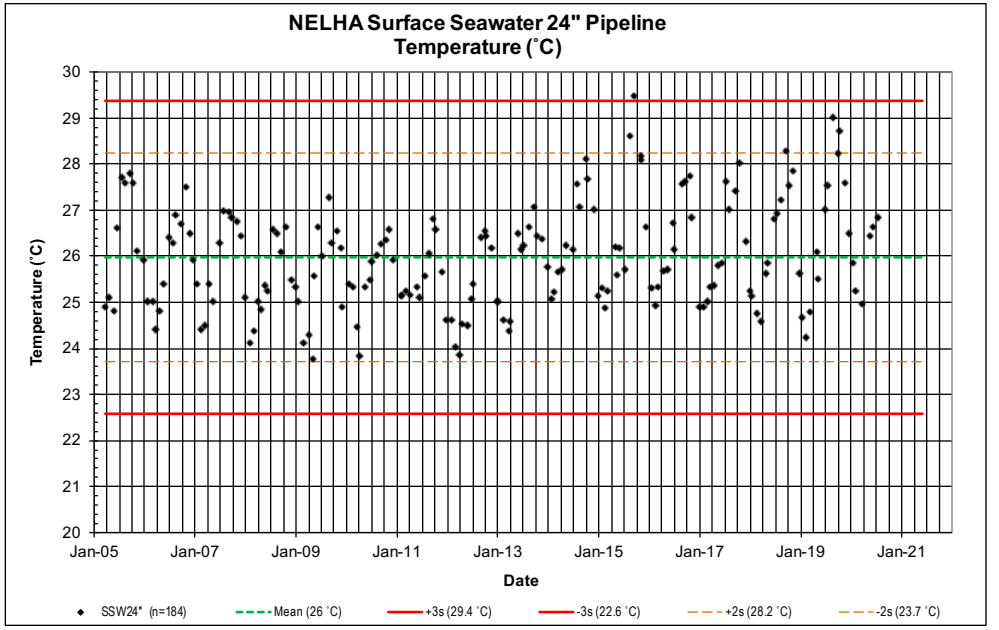


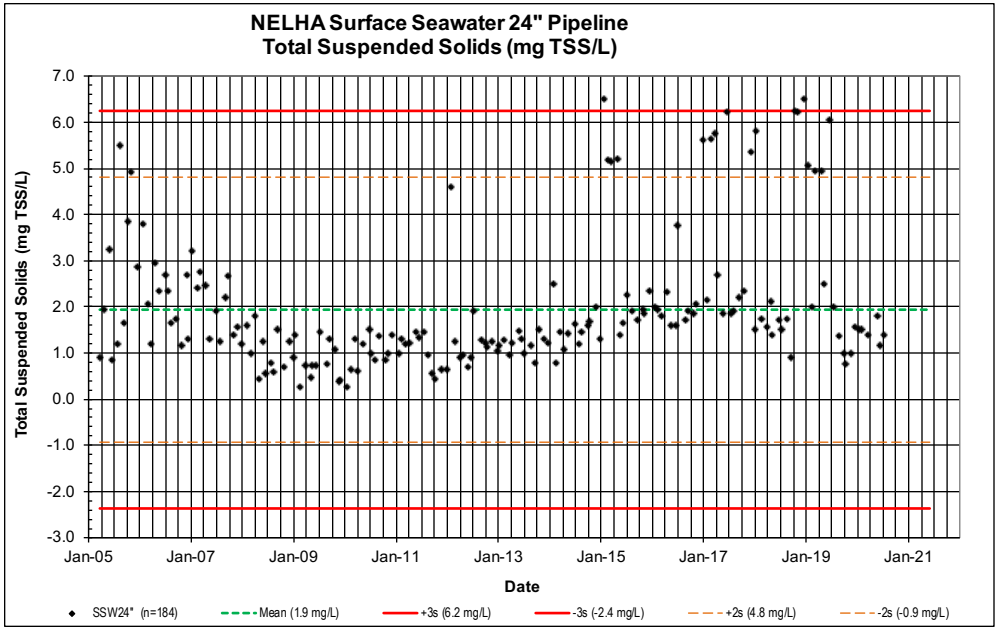
NELHA Water Quality Laboratory

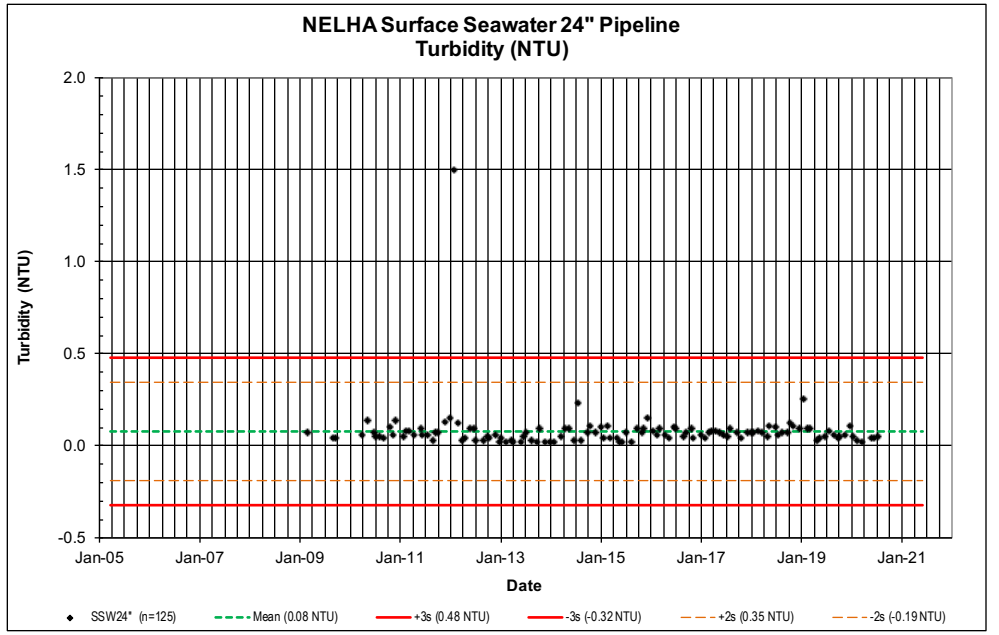
SSW 24" KP

Intake Depth: 10 m, Offshore Pipe Length: 81 m









NELHA Water Quality Laboratory

SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW 55"	8/11/05	920	0.09	1.3	0.11	1.5	0.41	5.7	5.1	144	0.34	4.8	3.9	54	0.91	2.15		2.335	34.753	27.4	8.32	6.5	1364	3425
SSW 55"	9/14/05	940	0.09	1.3	0.08	1.1	0.41	5.7	2.1	58	0.35	4.9	3.0	43	1.14	1.00		2.309	34.776	27.9	8.30	6.5	1200	3963
SSW 55"	10/10/05	1025	0.08	1.1	0.08	1.1	0.38	5.3	2.6	73	0.33	4.6	3.0	41	0.86	3.10		2.343	34.870	27.1	8.33	6.6	569	4700
SSW 55"	11/2/05	927	0.08	1.1	0.53	7.4	0.45	6.3	3.5	97	0.36	5.0	5.2	73	1.04	3.05		2.433	34.932	25.7	8.29	6.6	1600	6350
SSW 55"	12/20/05	920	0.10	1.4	0.27	3.8	0.48	6.7	3.4	96	0.32	4.5	4.5	62	1.05	3.40		2.661	34.902	25.7	8.31	6.7	2683	8133
SSW 55"	1/26/06	937	0.10	1.4	0.32	4.5	0.36	5.0	3.8	108	0.31	4.3	4.6	64		0.90		2.241	34.982	25.0	8.27	6.6	1381	9013
SSW 55"	2/28/06	1036	0.11	1.5	0.43	6.0	0.43	6.0	3.4	94	0.38	5.3	5.1	72		1.30		2.206	34.887	25.1	8.28	6.7	1881	7065
SSW 55"	3/23/06	1016	0.12	1.7	0.15	2.1	0.52	7.3	3.2	89	0.37	5.2	5.1	72		1.20		2.195	34.669	24.4	8.27	6.8	1817	7998
SSW 55"	4/18/06	1044	0.09	1.3	0.26	3.6	0.31	4.3	2.4	69	0.31	4.3	5.8	82	0.97	2.55		2.322	34.720	24.7	8.28	7.4	1150	6563
SSW 55"	5/18/06	1040	0.09	1.3	0.07	1.0	0.15	2.1	2.5	69	0.33	4.6	5.0	70	0.92	2.75		2.268	34.756	24.8	8.27	6.8	2006	7163
SSW 55"	6/29/06	920	0.12	1.7	0.16	2.2	0.40	5.6	2.2	63	0.31	4.3	5.8	81	1.02	2.15		2.324	34.718	26.3	8.25	6.4	3617	15000
SSW 55"	7/25/06	1032	0.12	1.7	0.29	4.1	0.34	4.8	3.4	95	0.34	4.8	5.8	82	1.06	1.50		2.264	34.806	25.8	8.26	7.2	2983	10867
SSW 55"	8/10/06	1056	0.12	1.7	0.07	1.0	0.35	4.9	2.4	67	0.36	5.0	5.6	78	0.95	0.95		2.299	34.696	26.8	8.26	7.2	1933	8275
SSW 55"	9/21/06	1054	0.12	1.7	0.16	2.2	0.28	3.9	2.8	79	0.34	4.8	5.1	71	0.96	1.15		2.269	34.722	26.7	8.26	6.8	2375	3400
SSW 55"	10/26/06	1034	0.15	2.1	0.86	12.0	0.47	6.6	5.0	142	0.32	4.5	7.4	103	0.96	2.15		2.448	34.697	27.2	8.28	6.5	3550	12000
SSW 55"	11/30/06	1059	0.14	2.0	0.07	1.0	0.47	6.6	2.1	58	0.35	4.9	5.9	83	1.03	2.55		2.433	34.865	26.5	8.28	6.7	2713	19800
SSW 55"	12/14/06	1110	0.15	2.1	0.26	3.6	0.39	5.5	2.1	59	0.39	5.5	5.4	76	0.95	1.45		2.470	34.738	25.9	8.27	6.8	2013	5163
SSW 55"	1/11/07	1027	0.15	2.1	0.41	5.7	0.41	5.7	3.3	92	0.34	4.8	5.7	80	1.01	2.40		2.133	34.824	25.5	8.28	6.3	1075	4388
SSW 55"	2/15/07	1045	0.21	2.9	0.33	4.6	0.50	7.0	2.8	79	0.46	6.4	5.9	83	1.07	2.05		2.098	34.450	24.5	8.26	6.6	2163	6850
SSW 55"	3/8/07	1045	0.17	2.4	0.28	3.9	0.36	5.0	5.0	141	0.40	5.6	6.1	85	0.97	1.20		1.947	34.498	24.4	8.28	6.7	1950	18167
SSW 55"	4/12/07	1100	0.12	1.7	0.26	3.6	0.38	5.3	4.1	115	0.33	4.6	5.1	71	0.94	2.80		1.994	34.665	25.4	8.28	6.6	2325	8325
SSW 55"	5/9/07	1045	0.18	2.5	0.34	4.8	0.55	7.7	7.9	222	0.44	6.2	5.5	77	0.98	5.50		1.987	34.708	24.9	8.27	6.6	2325	7713
SSW 55"	6/27/07	1025	0.15	4.6	0.34	4.7	0.45	6.3	2.7	75	0.29	9.1	7.4	103		1.55		2.474	34.792	26.2	8.30	7.1	2313	10300
SSW 55"	7/30/07	1330	0.16	5.1	0.04	0.6	0.21	2.9	13.7	384	0.30	9.4	5.3	75		2.60		1.569	35.020	26.5	8.15	6.8		
SSW 55"	8/30/07	853	0.17	5.3	0.13	1.8	0.50	7.0	5.2	147	0.23	7.0	5.0	70		2.65		2.435	34.888	26.6	8.15	6.4		
SSW 55"	9/24/07	946	0.20	6.1	0.19	2.6	0.50	7.0	1.9	52	0.28	8.7	13.1	184		1.10		2.046	35.472	26.9	8.15	6.3		
SSW 55"	10/30/07	1402	0.19	5.9	0.08	1.1	0.46	6.4	2.4	68	0.26	7.9	7.1	100		1.35		2.465	35.014	26.7	8.25	6.1		
SSW 55"	11/27/07	1410	0.19	6.0	0.09	1.3	0.00	0.0	4.7	131	0.22	6.9	4.8	67		1.60		2.415	34.918	26.2	8.23	6.5		
SSW 55"	12/31/07	1043	0.00		0.38	5.3	0.43	6.0	5.0	140	0.00		0.0			0.80		2.529	34.827	25.1	8.16	6.1		
SSW 55"	1/30/08	847	0.10	3.2	0.18	2.5	0.18	2.5	27.5	774	0.00		0.0			1.80		2.380	34.895	24.1	8.12	5.8		
SSW 55"	2/28/08	1035	0.04	1.2	0.29	4.1	0.05	0.7	10.6	299	0.33	10.2	5.9	83		1.05		2.430	34.922	24.1	8.19	6.4		
SSW 55"	3/31/08	1459	0.04	1.2	0.27	3.8	0.05	0.7	4.7	133	0.31	9.7	5.1	72		2.85		2.390	34.810	24.5	8.15	7.0		
SSW 55"	4/25/08	946	0.18	5.5	0.24	3.4	0.15	2.1	4.9	138	0.38	11.9	4.4	62		1.40		2.410	34.606	24.9	8.20	6.8		
SSW 55"	5/23/08	1050	0.14	4.3	0.32	4.5	0.23	3.2	NA	NA	0.23	7.1	4.9	69		0.35		2.340	34.720	25.2	8.31	6.6		
SSW 55"	6/10/08	1056	0.11	3.4	0.18	2.5	0.18	2.5	4.4	124	0.28	8.7	5.6	78		0.66		NA	34.621	25.2	8.24	5.9		
SSW 55"	7/18/08	1010	0.14	4.3	0.32	4.5	0.09	1.3	4.0	111	0.08	2.5	5.2	73		0.44			34.969	26.4	8.09	6.7		
SSW 55"	8/13/08	1111	0.65	**20.1**	0.09	1.3	0.96	13.5	3.1	88	0.36	11.0	8.6	121		0.62			34.671	26.2	8.02	4.9		
SSW 55"	9/8/08	911	0.07	2.2	0.14	2.0	0.44	6.1	2.4	68	0.30	9.2	7.8	109		0.56			34.81	26.0	8.11			
SSW 55"	10/23/08	1029	0.07	2.1	0.01	0.1	0.47	6.6	1.2	35	0.47	14.6	7.7	108		0.18			35.03	26.5	8.27	6.2		
SSW 55"	11/28/08	1024	0.11	3.5	0.42	5.9	0.10	1.4	3.3	93	0.40	12.3	6.5	92		0.66			35.12	25.1	8.24	6.1		
SSW 55"	12/30/08	927	0.14	4.4	0.31	4.4	0.40	5.6	2.9	81	0.35	10.9	7.0	99		0.77			35.15	25.2	8.22	5.8		
SSW 55"	1/12/09	1125	0.14	4.3	0.30	4.2	0.12	1.7	4.5	128	0.37	11.5	6.2	87		0.28			34.88	25.1	8.24	6.0		
SSW 55"	2/20/09	1054	0.10	3.1	0.42	5.9	0.19	2.7	5.0	140	0.56	17.2	5.6	79		1.60	0.04			24.0	8.17	6.5		
SSW 55"	3/30/09	1040	0.33	10.2	1.26	17.7	3.16	44.2	6.8	192	0.54	16.7	10.5	147		0.32			35.217	23.9	8.24	6.4		
SSW 55"	4/30/09	957	0.24	7.4	0.27	3.8	0.48	6.7	3.0	84	0.45	13.9	5.8	82		0.47			34.965	23.9	8.20	6.3		
SSW 55"	5/15/09	1345	0.15	4.8	0.31	4.3	0.19	2.7	3.1	88	0.78	24.1	7.7	107		0.33			35.08	25.2	8.17	6.1		
SSW 55"	6/10/09	942	0.60	18.5	3.08	43.2	0.31	4.3	3.7	105	0.59	18.4	7.2	101		0.66			34.917	32.1	8.34	4.7		
SSW 55"	7/10/09	953	0.55	17.0	3.71	51.9	1.51	21.1	4.0	111	0.45	13.9	8.7	122		1.19			35.23	31.3	8.21	4.5		
SSW 55"	8/27/09	1050	0.15	4.8	0.22	3.1	0.19	2.7	3.3	94	0.21	6.5	4.6	65		1.41	0.04		35.18	34.1	8.12	4.9		
SSW 55"	9/17/09	1001	0.14	4.3	1.73	24.2	0.24	3.4	7.8	218	0.28	8.6	6.1	85		1.16	0.05		35.29	31.7	7.95	5.2		
SSW 55"	10/26/09	1009	0.05	1.6	0.13	1.8	0.12	1.7	10.7	300	0.18	5.5	4.7	66		1.31			35.42	26.1	8.46	6.3		
SSW 55"	11/19/09	1338	0.14	4.2	0.21	2.9	0.45	6.3	5.3	148	0.36	11.0	6.7	94		0.52			35.44	27.9	8.13	5.0		
SSW 55"	12/3/09	1033	0.15	4.5	0.26	3.7	0.52	7.3	4.2	118	0.49	15.2	6.2	87		1.20			35.37	26.3	8.14	5.5		
SSW 55"	1/14/10	1043	0.25	7.7	1.26	17.6	0.23	3.2	3.1	87	0.45	13.9	5.6	79		0.35			35.10	25.6	8.17	6.1		
SSW 55"	2/16/10	1215	0.21	6.4	1.19	16.6	0.19	2.6	1.4	40	0.46	14.1	5.8	82		0.20			34.89	26.4	8.20	5.5		
SSW 55"	3/15/10	1019	0.13	3.9	0.26	3.6	0.01	0.1	14.2	400	0.35	10.8	8.4	118		1.70			35.06	26.4	8.20	6.1		
SSW 55"	4/1/10	925	0.13	4.1	0.39	5.5	0.21	3.0	4.7	131	0.28	8.6	4.5	63		0.50	0.03		35.08	25.9	8.21	6.3		
SSW 55"	5/10/10	950	0.08	2.6	1.10	15.4	0.41	5.8	11.4	320	0.44	13.7	6.5	92		1.05	0.09		34.97	27.0	8.20	6.1		
SSW 55"	6/23/10	1006	0.01	0.4	0.61	8.5	0.21	2.9	6.1	172	0.30	9.2	6.7	94		1.80	0.07		34.92	25.3	8.23	6.5		

NELHA Water Quality Laboratory

SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW 55"	7/1/10	1126	0.02	0.6	0.69	9.7	0.36	5.0	8.3	233	0.4	11.0	6.7	94		1.05	0.16		34.79	25.7	8.22	6.74		
SSW 55"	8/5/10	1023	0.08	2.5	0.66	9.3	0.25	3.5	7.0	197	0.3	9.7	6.2	87		1.30	0.02		34.72	25.8	8.22	6.63		
SSW 55"	9/2/10	1058	0.02	0.5	0.46	6.4	0.09	1.2	4.6	130	0.3	9.7	6.7	94		1.45	0.05		34.77	26.0	8.23	5.98		
SSW 55"	10/18/10	1011	0.16	4.9	1.05	14.7	0.17	2.4	2.0	56	0.5	15.2	6.8	96		0.25	0.09		34.96	28.8	8.19	6.10		
SSW 55"	11/4/10	1030	0.11	3.3	1.39	19.5	0.12	1.7	5.5	155	0.4	12.4	5.4	76		0.75	0.06		34.99	29.1	8.24	5.55		
SSW 55"	12/1/10	1035	0.13	4.0	1.04	14.5	0.01	0.1	5.4	153	0.6	17.5	9.1	127		0.75	0.04		34.84	28.1	8.22	5.48		
SSW 55"	1/25/11	1025	0.24	7.3	1.75	24.5	0.46	6.5	5.8	162	0.6	17.6	7.6	107		1.25	0.07		35.02	24.3	8.17	5.41		
SSW 55"	2/8/11	1027	0.14	4.4	0.65	9.1	0.19	2.6	1.8	51	0.4	13.1	4.3	60		0.95	0.04		35.16	26.9	8.26	5.94		
SSW 55"	3/7/11	1133	0.20	6.1	1.08	15.1	0.24	3.3	2.4	67	0.4	13.5	3.7	51		1.15	0.05		34.70	27.1	8.21	5.83		
SSW 55"	4/11/11	1152	0.21	6.5	0.97	13.6	0.04	0.6	1.3	38	0.5	16.8	6.0	84		1.17	0.08		35.15	27.4	8.17	5.11		
SSW 55"	5/25/11	938	0.09	2.9	0.64	8.9	0.35	4.9	0.9	25	0.4	13.5	5.4	75		0.94	0.04		34.80	27.9	8.25	5.70		
SSW 55"	6/13/11	1104	0.17	5.3	0.64	9.0	0.10	1.4	0.9	26	0.5	15.0	6.1	85		1.21	0.04		34.83	29.8	8.20	6.24		
SSW 55"	7/21/11	929	0.17	5.4	0.31	4.4	0.21	3.0	1.2	33	0.5	14.9	5.7	80		0.96	0.07		34.79	25.5	8.20	6.87		
SSW 55"	8/22/11	1046	0.07	2.1	0.11	1.5	0.07	1.0	0.8	24	0.4	11.3	4.6	64		1.06	0.02		34.97	25.8	8.23	7.09		
SSW 55"	9/15/11	1016	0.06	2.0	0.32	4.5	0.13	1.8	1.7	48	0.4	13.3	8.0	113		0.50	0.06		34.77	26.8	8.22	6.95		
SSW 55"	10/4/11	850	0.09	2.8	0.38	5.3	0.17	2.4	3.4	95	0.4	12.1	4.1	58		0.63	0.08		35.23	26.5	8.18	6.79		
SSW 55"	11/21/11	1243	0.09	2.7	0.16	2.2	0.03	0.4	1.4	41	0.4	13.6	5.8	81		0.88	0.04		35.00	25.6	8.19	6.33		
SSW 55"	12/27/11	1056	0.02	0.5	0.34	4.7	0.10	1.4	0.6	18	0.4	11.7	6.8	96		0.65	0.05		35.05	24.6	8.24	6.61		
SSW 55"	1/30/12	1103	0.04	1.3	0.25	3.5	0.06	0.9	1.7	48	0.4	11.6	6.8	95		1.65	0.08		35.05	24.6	8.22	6.77		
SSW 55"	2/27/12	1108	0.07	2.3	0.33	4.6	0.01	0.1	2.2	61	0.4	11.4	7.1	99		0.87	0.02		35.21	24.0	8.24	6.18		
SSW 55"	3/28/12	1052	0.16	4.9	0.02	0.3	0.36	5.0	1.2	34	0.5	14.0	6.3	88		0.84	0.02		35.06	23.8	8.23	6.97		
SSW 55"	4/16/12	1052	0.14	4.3	0.26	3.6	0.09	1.2	0.1	3	0.4	13.7	6.3	88		0.74	0.08		35.03	24.4	8.25	6.63		
SSW 55"	5/24/12	915	0.15	4.8	0.33	4.6	0.26	3.6	2.6	73	0.5	14.9	5.3	74		0.74	0.02		35.02	24.5	8.23	6.55		
SSW 55"	6/19/12	1042	0.12	3.9	0.41	5.8	0.23	3.2	3.1	88	0.4	13.2	8.2	115		0.73	0.06		35.26	24.9	8.15	6.79		
SSW 55"	7/3/12	849	0.02	0.6	0.43	6.0	0.27	3.8	2.7	76	0.3	10.7	6.3	88		1.87	0.02		35.24	25.3	8.23	7.11		
SSW 55"	8/27/12	1132	0.03	0.8	0.34	4.7	0.39	5.5	3.4	95	0.5	15.2	5.8	82		0.99	0.05		35.31	26.3	8.22	6.10		
SSW 55"	9/26/12	1120	0.05	1.4	0.23	3.2	0.46	6.5	2.2	61	0.5	15.4	10.0	140		3.49	0.04		35.29	26.5	8.23	6.00		
SSW 55"	10/10/12	1025	0.03	0.8	0.31	4.3	0.27	3.8	2.3	63	0.3	10.1	5.1	71		1.08	0.04		35.33	26.4	8.23	6.49		
SSW 55"	11/19/12	1350	0.10	3.0	0.69	9.6	0.26	3.7	6.2	174	0.5	14.1	9.7	136		1.64	0.05		35.25	26.1	8.26	6.82		
SSW 55"	12/19/12	1011	0.14	4.3	0.25	3.5	0.39	5.4	6.4	180	0.4	13.9	5.4	75		1.69	0.03		35.27	25.1	8.26	6.75		
SSW 55"	1/4/13	1044	0.10	3.2	0.43	6.0	0.26	3.7	0.9	24	0.4	12.7	4.1	57		1.24	0.08		35.26	25.0	8.23	6.24		
SSW 55"	2/13/13	1054	0.16	5.1	0.29	4.0	0.06	0.8	2.0	57	0.5	14.9	4.4	62		1.14	0.02		35.22	24.6	8.22	5.90		
SSW 55"	3/1/13	1157	0.15	4.8	0.55	7.7	0.56	7.8	2.0	57	0.4	13.4	5.4	75		8.37	0.41		35.01	24.1	8.22	5.83		
SSW 55"	4/3/13	1247	0.15	4.8	0.21	2.9	0.18	2.5	2.8	80	0.4	12.3	4.2	59		1.43	0.06		35.30	24.2	8.22	6.65		
SSW 55"	5/29/13	936	0.27	8.4	0.23	3.2	0.46	6.4	1.9	53	0.7	20.4	5.2	73		1.54	0.02		34.99	26.4	8.20	6.13		
SSW 55"	6/13/13	1101	0.27	8.4	0.32	4.5	0.56	7.9	2.2	61	0.5	17.0	4.2	60		1.23	0.03		35.05	26.1	8.18	6.09		
SSW 55"	7/1/13	1015	0.22	6.9	0.91	12.8	0.27	3.8	7.7	215	0.5	16.9	7.5	105		1.19	0.38		35.02	26.7	8.24	6.16		
SSW 55"	8/14/13	1034	0.16	4.9	0.39	5.4	0.26	3.7	2.6	72	0.4	12.4	5.0	70		1.09	0.02		35.00	26.7	8.23	6.30		
SSW 55"	9/18/13	839	0.18	5.7	0.01	0.1	0.25	3.5	2.9	80	0.5	15.1	7.4	104		0.85	0.02		35.01	26.9	8.24	6.51		
SSW 55"	10/10/13	1056	0.22	6.9	0.56	7.9	0.34	4.8	3.6	102	0.5	15.9	5.5	77		0.94	0.02		35.12	26.4	8.20	6.45		
SSW 55"	11/21/13	1035	0.18	5.5	0.39	5.4	0.33	4.6	5.1	143	0.5	16.2	5.9	82		0.99	0.02		35.18	26.5	8.21	6.05		
SSW 55"	12/23/13	955	0.20	6.1	0.56	7.9	0.49	6.9	4.3	120	0.5	16.8	5.2	73		0.91	0.02		35.09	25.8	8.21	6.17		
SSW 55"	1/23/14	1225	0.15	4.8	0.66	9.3	0.35	4.9	6.5	181	0.5	14.1	6.7	94		3.02	0.02		35.21	25.4	8.22	6.35		
SSW 55"	2/12/14	1130	0.14	4.4	0.46	6.4	0.34	4.7	3.5	98	0.4	13.4	5.1	72		1.10			34.89	25.5	8.24	6.10		
SSW 55"	3/17/14	1046	0.25	7.8	0.64	8.9	0.21	3.0	5.3	148	0.6	17.1	6.0	84		1.60	0.04		34.72	25.7	8.21	6.74		
SSW 55"	4/10/14	950	0.20	6.3	0.31	4.4	0.18	2.5	3.9	108	0.5	15.4	7.5	105		1.32	0.02		34.94	25.6	8.21	6.12		
SSW 55"	5/13/14	1324	0.19	5.8	0.36	5.0	0.29	4.0	4.3	121	0.4	13.8	5.5	77		1.17	0.02		34.82	25.7	8.23	6.38		
SSW 55"	6/24/14	1054	0.24	7.3	0.51	7.1	0.36	5.0	6.9	194	0.8	23.8	5.2	73		1.58	0.03		34.75	25.9	8.21	6.35		
SSW 55"	7/23/14	1131	0.26	7.9	1.56	21.8	0.46	6.4	13.3	374	0.5	16.8	5.9	82		1.43	0.12		34.76	27.1	8.23	6.36		
SSW 55"	8/11/14	1153	0.18	5.7	1.26	17.7	0.61	8.6	8.6	243	0.4	12.5	9.3	130		1.45	0.10		34.64	27.1	8.21	6.15		
SSW 55"	9/28/14	1123	0.19	5.8	1.11	15.6	0.21	3.0	9.3	260	0.5	15.9	10.3	144		1.48	0.05		34.85	28.2	8.21	6.15		
SSW 55"	10/15/14	1224	0.26	7.9	1.81	25.4	0.38	5.3	13.4	377	0.7	21.5	8.9	125		1.13	0.10		34.73	27.7	8.22	6.22		
SSW 55"	11/25/14	1245	0.19	5.9	1.42	19.9	0.31	4.3	9.7	273	0.5	15.5	8.4	118		1.44	0.05		34.69	27.3	8.22	6.32		
SSW 55"	12/30/14	955	0.20	6.3	1.22	17.1	0.41	5.8	7.2	202	0.5	15.9	8.0	113		1.48	0.10		34.95	25.4	8.21	6.42		
SSW 55"	1/21/15	1016	0.23	7.1	1.70	23.8	0.44	6.2	11.5	324	0.5	14.6	10.2	143		5.28	0.11		34.82	25.4	8.23	6.38		
SSW 55"	2/18/15	932	0.30	9.2	1.88	26.4	0.54	7.5	14.6	409	0.5	16.5	8.7	122		4.80	0.09		34.73	25.0	8.15	6.19		
SSW 55"	3/9/15	1248	0.20	6.2	1.88	26.3	0.48	6.7	15.6	437	0.5	15.8	9.3	130		4.95	0.02		34.02	25.3	8.24	6.51		
SSW 55"	4/28/15	1538	0.16	5.1	0.71	9.9	0.16	2.3	4.2	118	0.4	12.4	7.6	106		1.90	0.05		34.55	26.2	8.15	5.57		
SSW 55"	5/14/15	929	0.05	1.7	0.17	2.4	0.08	1.1	2.3	66	0.1	3.3	6.1	85		1.60	0.02		34.67	25.6	8.15	6.72		
SSW 55"	6/3/15	1003	0.27	8.4	1.60	22.4	0.26	3.7	12.6	353	0.5	14.7	7.8	109		1.55	0.02		33.20	26.3	8.19	6.15		

NELHA Water Quality Laboratory

SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
SSW 55"	7/7/15	909	0.11	3.4	1.26	17.6	0.18	2.5	11.6	326	0.3	8.5	8.2	115		1.80	0.06		34.10	26.7	8.10	6.11		
SSW 55"	8/14/15	932	0.11	3.4	0.06	0.8	0.16	2.3	1.2	33	0.4	13.9	20.8	291		1.70	0.02		33.37	28.7	8.12	6.13		
SSW 55"	9/16/15	1027	0.24	7.4	2.98	41.8	0.39	5.5	17.6	493	0.5	16.2	11.9	167		1.70	0.07		32.99	29.3	8.12	6.13		
SSW 55"	10/28/15	1415	0.16	4.9	0.44	6.1	0.26	3.7	3.3	93	0.4	13.3	5.5	77		2.20	0.09		34.52	28.0	8.21	4.10		
SSW 55"	11/5/15	914	0.08	2.4	0.61	8.6	0.19	2.6	3.0	85	0.4	10.9	5.3	74		1.75	0.10		34.26	28.1	8.23	5.83		
SSW 55"	12/9/15	1028	0.14	4.3	1.12	15.7	0.88	12.3	8.6	241	0.4	12.6	5.3	75		2.15	0.10		33.92	26.7	8.20	5.76		
SSW 55"	1/15/16	1135	0.15	4.7	1.06	14.9	0.44	6.2	8.5	238	0.4	12.9	6.2	87		2.45	0.03		34.13	25.5	8.20	6.35		
SSW 55"	2/11/16	1023	0.09	2.9	1.17	16.4	0.21	2.9	7.6	212	0.4	12.5	6.0	84		1.55	0.08		34.10	25.2	8.24	6.39		
SSW 55"	3/3/16	1129	0.12	3.8	0.81	11.3	0.85	11.9	4.8	134	0.5	15.7	5.6	78		1.80	0.07		34.63	25.5	8.20	6.90		
SSW 55"	4/12/16	1201	0.06	2.0	0.83	11.6	0.61	8.5	0.5	14	0.4	13.1	3.9	54		1.95	0.07		34.86	25.5	8.12	5.93		
SSW 55"	5/10/16	1108	0.10	3.0	0.31	4.4	0.06	0.9	0.4	11	0.4	12.3	5.1	71		5.25	0.05		34.74	25.9	8.23	6.06		
SSW 55"	6/15/16	950	0.07	2.3	0.10	1.4	0.21	2.9	0.8	23	0.4	10.9	3.1	43		1.55	0.11		34.76	26.7	8.40	6.36		
SSW 55"	7/1/16	952	0.06	2.0	0.71	9.9	0.34	4.8	0.0	1	0.3	9.8	3.8	54		1.55	0.07		34.90	26.2	8.31	6.30		
SSW 55"	8/25/16	959	0.02	0.6	0.20	2.8	0.47	6.6	0.7	18	0.5	15.6	6.9	97		1.10	0.07		35.00	27.6	8.44	6.15		
SSW 55"	9/15/16	1024	0.03	0.9	0.28	3.9	0.05	0.7	1.7	47	0.4	12.5	3.8	54		1.05	0.04		34.87	27.7	8.23	6.32		
SSW 55"	10/20/16	1107	0.19	6.0	0.96	13.4	1.30	18.2	3.3	94	0.6	18.9	6.5	91		1.70	0.07		34.97	27.5	8.23	6.03		
SSW 55"	11/4/16	1016	0.10	3.0	0.91	12.7	0.06	0.8	1.7	48	0.7	20.6	7.2	101		0.90	0.04		35.05	26.7	8.23	5.80		
SSW 55"	12/29/16	1033	0.04	1.3	0.25	3.5	0.11	1.5	2.3	65	0.3	8.9	2.7	38		1.25	0.02		34.95	24.8	8.19	5.26		
SSW 55"	1/27/17	1123	0.01	0.4	0.29	4.1	0.20	2.8	2.0	55	0.3	9.0	3.1	44		1.05	0.07		35.02	24.8	8.13	6.06		
SSW 55"	2/23/17	1026	0.09	2.8	0.33	4.6	0.28	3.9	1.4	38	0.4	11.5	3.0	42		0.73	0.07		34.65	24.9	8.20	6.06		
SSW 55"	3/17/17	1000	0.09	2.8	0.13	1.8	0.34	4.7	1.7	47	0.3	10.6	3.6	51		1.90	0.09		34.84	25.1	8.22	5.84		
SSW 55"	4/10/17	1007	0.12	3.6	0.17	2.4	0.21	2.9	1.1	31	0.3	9.4	3.5	49		1.90	0.05		35.06	25.0	8.20	6.08		
SSW 55"	5/17/17	939	0.10	3.0	0.47	6.6	0.31	4.4	1.5	42	0.4	11.0	2.6	36		2.30	0.06		34.68	25.8	8.18	4.79		
SSW 55"	6/13/17	949	0.08	2.5	0.26	3.6	0.31	4.3	2.2	62	0.3	9.4	2.0	28		6.85	0.08		34.77	25.6	8.26	6.24		
SSW 55"	7/13/17	1115	0.03	0.9	0.34	4.7	0.38	5.3	1.1	31	0.3	9.2	3.9	55		1.60	0.05		35.02	27.0	8.20	4.69		
SSW 55"	8/2/17	945	0.08	2.5	0.04	0.5	0.27	3.8	0.6	16	0.3	10.8	3.5	50		1.50	0.08		35.08	26.7	8.16	5.66		
SSW 55"	9/12/17	949	0.08	2.6	0.12	1.7	0.56	7.8	0.6	17	0.4	11.4	2.2	31		1.65	0.07		34.75	27.3	8.18	5.58		
SSW 55"	10/12/17	1055	0.12	3.6	0.01	0.2	0.50	7.0	1.5	42	0.4	11.6	2.6	36		0.73	0.08		34.95	27.9	8.16	5.15		
SSW 55"	11/29/17	929	0.12	3.8	0.11	1.6	0.70	9.8	2.1	58	0.4	11.6	2.3	33		1.80	0.18		35.07	26.2	8.17	5.21		
SSW 55"	12/27/17	1053	0.11	3.5	0.21	2.9	0.48	6.7	1.0	29	0.3	10.7	2.4	34		1.40	0.05		35.32	25.3	8.18	5.08		
SSW 55"	1/11/18	1040	0.02	0.5	0.19	2.7	0.21	2.9	0.6	18	0.3	8.9	2.3	33		1.55	0.07		34.90	25.1	8.19	6.29		
SSW 55"	2/14/18	951	0.09	2.8	0.05	0.7	0.29	4.1	4.7	133	0.3	10.7	3.2	44		1.75	0.10		34.91	24.7	8.17	6.58		
SSW 55"	3/23/18	1040	0.12	3.8	0.22	3.1	0.23	3.2	2.0	57	0.4	12.2	3.2	45		2.00	0.11		34.60	24.5	8.16	6.31		
SSW 55"	4/24/18	1055	0.09	2.9	0.30	4.2	0.30	4.2	3.2	90	0.4	11.0	2.9	41		1.50	0.06		34.43	25.5	8.23	5.90		
SSW 55"	5/8/18	928	0.08	2.5	0.19	2.7	0.64	9.0	1.2	35	0.3	10.4	2.9	41		1.25	0.06		34.55	25.6	8.17	5.69		
SSW 55"	6/20/18	1008	0.12	3.6	0.29	4.0	0.63	8.8	1.4	39	0.4	11.2	2.1	29		5.70	0.05		35.42	26.3	8.14	4.01		
SSW 55"	7/12/18	1030	0.17	5.3	0.08	1.1	0.23	3.2	2.5	69	0.4	13.4	2.9	40		2.05	0.05		34.57	26.8	8.19	5.85		
SSW 55"	8/13/18	1007	0.02	0.7	1.04	14.6	0.27	3.8	0.4	12	0.2	7.6	3.6	50		1.80	0.06		34.54	27.1	8.21	5.49		
SSW 55"	9/18/18	1618	0.08	2.4	0.57	8.0	0.46	6.5	0.1	3	0.4	11.2	5.0	70		1.65	0.08		34.67	27.9	8.20	6.48		
SSW 55"	10/11/18	1013	0.07	2.3	0.06	0.9	0.38	5.3	1.8	49	0.3	9.9	2.8	39		2.50	0.09		34.82	27.7	8.15	4.47		
SSW 55"	11/2/18	922	0.07	2.1	0.09	1.2	0.32	4.5	1.2	33	0.3	9.3	3.7	52		1.80	0.07		34.70	27.8	8.15	5.83		
SSW 55"	12/21/18	1008	0.16	5.0	0.23	3.2	0.56	7.8	0.4	11	0.4	13.1	2.3	33		1.70	0.06		34.67	25.6	8.20	4.06		
SSW 55"	1/15/19	1004	0.11	3.3	0.19	2.6	0.34	4.7	1.7	49	0.4	11.3	2.5	36		2.00	0.08		34.87	24.7	8.19	6.07		
SSW 55"	2/13/19	1003	0.03	0.9	0.16	2.3	0.01	0.2	1.0	28	0.3	9.0	2.0	28		1.80	0.08		35.51	24.4	8.09	6.15		
SSW 55"	3/7/19	1522	0.17	5.2	0.54	7.6	0.21	2.9	0.6	16	0.4	12.2	1.6	23		1.65	0.10		35.29	24.7	8.04	6.86		
SSW 55"	4/25/19	946	0.06	2.0	0.39	5.4	0.01	0.1	0.9	27	0.3	9.3	1.8	26		5.80	0.04		35.21	25.8	8.08	6.55		
SSW 55"	5/7/19	1023	0.06	2.0	0.22	3.1	0.64	9.0	1.5	44	0.3	9.3	1.8	25		1.30	0.06		35.41	25.7	8.18	6.43		
SSW 55"	6/20/19	1129	0.01	0.3	0.39	5.5	0.25	3.5	1.1	30	0.2	6.9	2.1	29		1.60	0.09		35.88	26.5	8.21	6.41		
SSW 55"	7/17/19	954	0.10	3.2	0.16	2.2	0.44	6.1	0.8	23	0.3	9.9	2.0	28		1.70	0.10		35.64	27.2	8.21	6.05		
SSW 55"	8/23/19	1428	0.13	3.9	-0.14	-1.9	0.42	5.9	1.6	44	0.3	10.7	2.1	30		1.25	0.07		34.98	28.4	8.18	6.12		
SSW 55"	9/26/19	1015	0.06	2.0	0.26	3.6	-0.18	-2.5	1.2	34	0.3	9.4	2.2	31		0.55	0.08		34.65	28.2	8.19	7.14		
SSW 55"	10/8/19	1033	0.03	1.0	0.42	5.9	0.21	3.0	0.8	23	0.3	8.1	3.5	49		0.65	0.06		35.33	28.5	8.20	6.30		
SSW 55"	11/14/19	1004	0.06	1.8	0.21	3.0	0.17	2.4	1.5	43	0.3	8.4	2.7	38		0.95	0.07		34.86	27.4	8.17	6.33		
SSW 55"	12/17/19	928	0.14	4.3	-0.13	-1.8	0.31	4.3	1.4	39	0.3	10.5	2.3	32		1.45	0.05		35.10	26.6	8.18	6.04		
SSW 55"	1/9/20	1019	0.15	4.5	-0.19	-2.6	-0.09	-1.2	5.5	155	0.4	12.2	2.6	36		1.45	0.04		34.86	25.9	8.19	6.28		
SSW 55"	2/4/20	1141	0.12	3.7	-0.54	-7.6	-0.01	-0.1	-0.3	-9	0.4	11.4	1.7	23		1.55	0.06		35.64	25.1	8.19	6.48		
SSW 55"	3/17/20	1711	0.08	2.6	-0.60	-8.4	0.24	3.3	0.5	15	0.3	10.1	1.3	18		1.50	0.04		35.81	24.9	8.24	6.67		
SSW 55"	4/1/20	COVID 19																						
SSW 55"	5/21/20	1128	0.11	3.4	-0.47	-6.6	0.44	6.1	0.7	19	0.3	9.5	2.3	32		1.55	0.07		35.98	26.2	8.16	6.51		
SSW 55"	6/9/20	932	0.08	2.4	-0.31	-4.3	0.39	5.4	0.2	6	0.3	8.3	2.2	31		1.10	0.05		36.17	26.2	8.17	6.17		

NELHA Water Quality Laboratory

SSW 55"

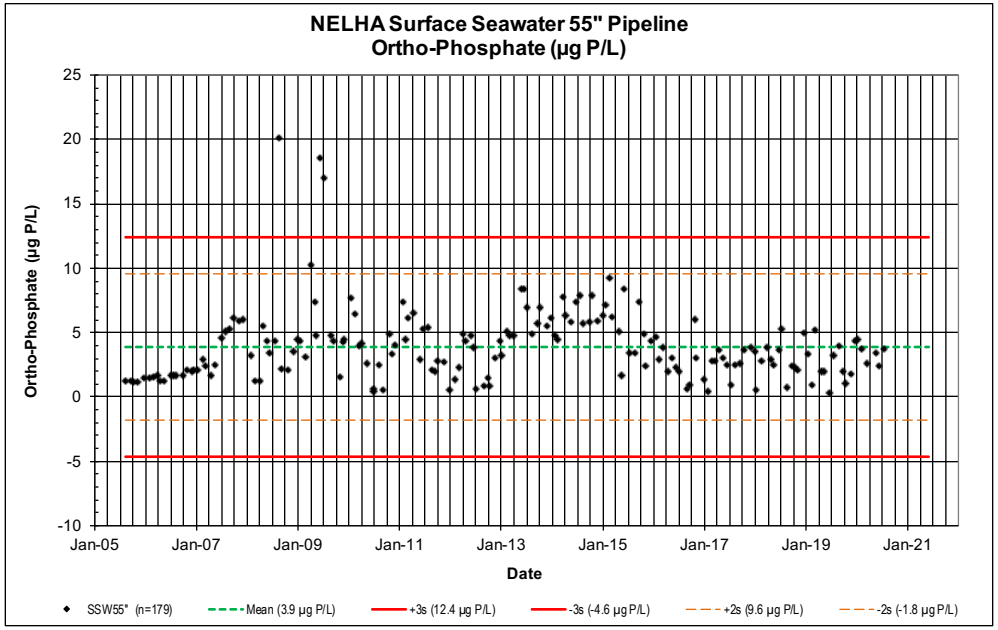
Intake Depth: 24 m, Offshore Pipe Length: 165 m

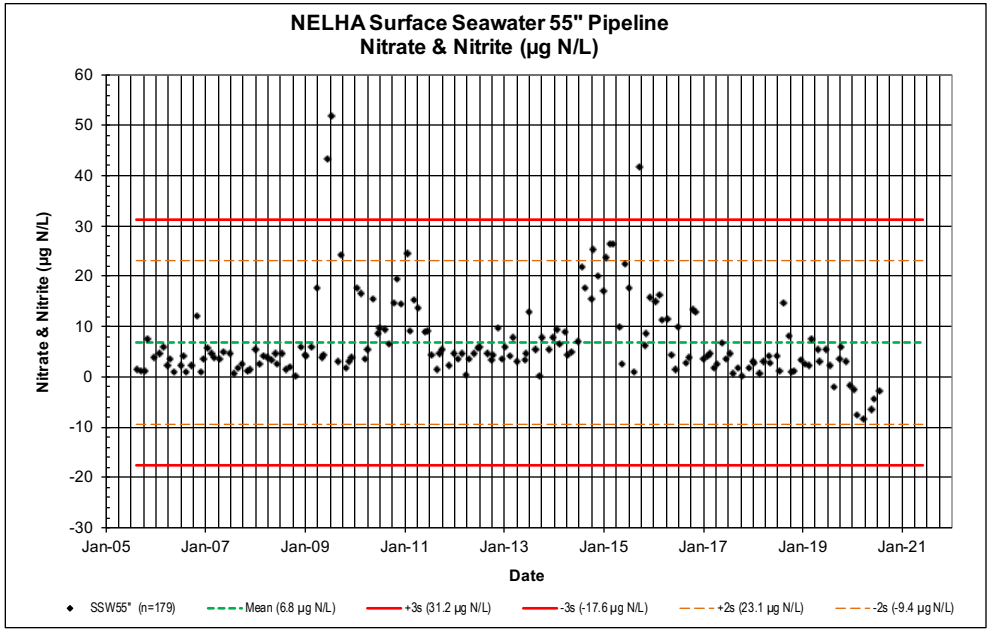
SITE ID	DATE M/D/Y	TIME (2400)	PO_4^{3-} (µM)	PO_4^{3-} (µg N/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg N/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	TSS (mg/L)	Turbidity (NTU)	ALK (mEq/L)	SALINITY (PSU)	TEMP (˚C)	pH (unit)	DO (ppm)	Vibrio CFU/100mL	Total Count Marine Agar CFU/100mL
SSW 55"	7/14/20	1045	0.12	3.7	-0.19	-2.7	-0.29	-4.1	1.3	36	0.3	9.3	1.4	20		1.05	0.07		34.20	26.4	8.15	6.34		
SSW 55"	8/1/20																							
SSW 55"	9/1/20																							
SSW 55"	10/1/20																							
SSW 55"	11/1/20																							
SSW 55"	12/1/20																							
SSW 55"	1/1/21																							
SSW 55"	2/1/21																							
SSW 55"	3/1/21																							
SSW 55"	4/1/21																							
SSW 55"	5/1/21																							
SSW 55"	6/1/21																							
Mean (Aug. '05 - present)			0.13	3.9	0.49	6.8	0.33	4.6	3.92	110.1	0.39	11.4	5.38	76.2	0.99	1.62	0.06	2.290	34.901	26.2	8.21	6.2		
STD DEV			0.09	2.8	0.58	8.1	0.31	4.3	3.83	107.6	0.11	4.1	2.54	34.8	0.07	1.18	0.05	0.207	0.396	1.5	0.06	0.6		
Range																								
UWL	+2s		0.31	9.6	1.65	23.1	0.94	13.2	11.6	325	0.62	19.6	10.5	146	1.12	3.98	0.17	2.704	35.694	29.2	8.33	7.4		
LWL	-2s		-0.04	-1.8	-0.67	-9.4	-0.28	-3.9	-3.7	-105	0.16	3.3	0.3	6	0.85	-0.75	-0.04	1.876	34.109	23.1	8.09	5.0		
UCL	+3s		0.40	12.4	2.23	31.2	1.24	17.4	15.4	433	0.73	23.7	13.0	181	1.19	5.16	0.22	2.911	36.091	30.8	8.40	8.0		
LCL	-3s		-0.13	-4.6	-1.26	-17.6	-0.59	-8.2	-7.6	-213	0.05	-0.8	-2.2	-28	0.79	-1.93	-0.09	1.669	33.712	21.6	8.02	4.4		
Data																								
Max. Value			0.65	20.1	3.71	51.9	3.16	44.2	27.5	774	0.78	24.1	20.8	291	1.14	8.37	0.41	2.661	36.170	34.1	8.46	7.4		
Min. Value			0.00	0.3	-0.60	-8.4	-0.29	-4.1	-0.3	-9	0.00	2.5	0.0	18	0.86	0.18	0.02	1.569	32.990	23.8	7.95	4.0		

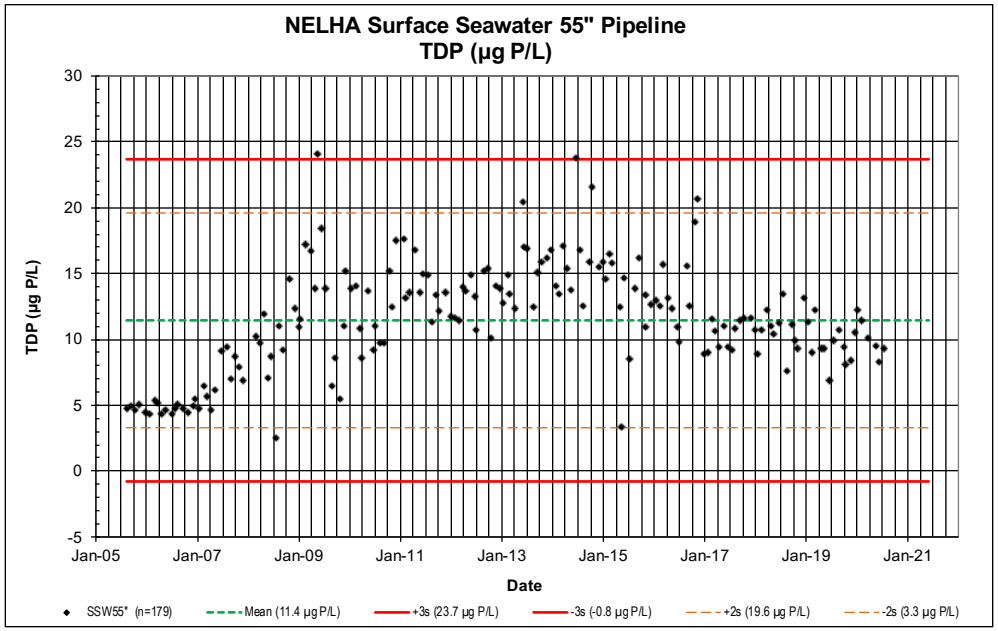
NELHA Water Quality Laboratory

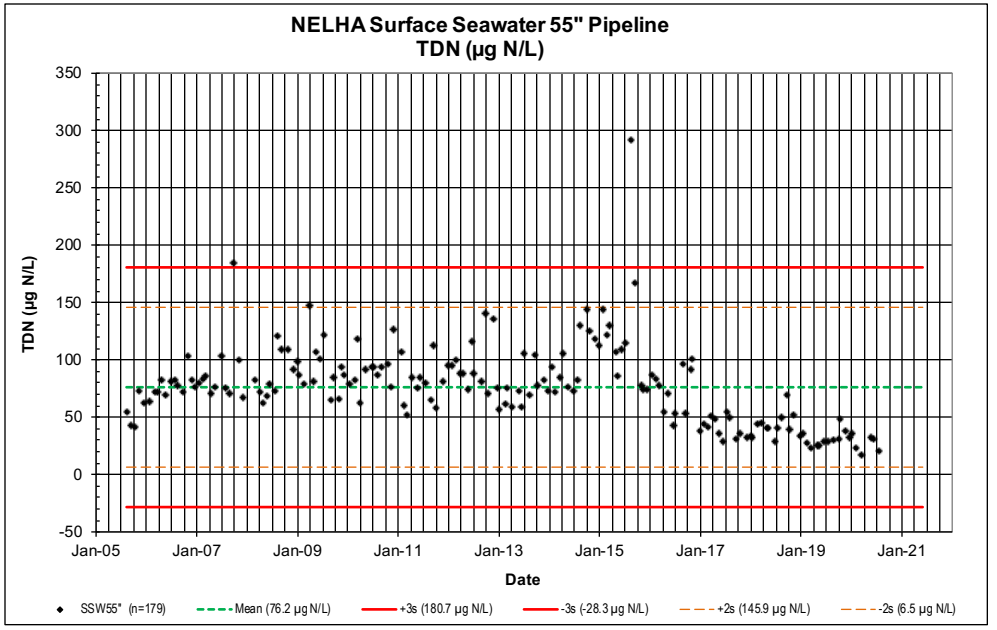
SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m





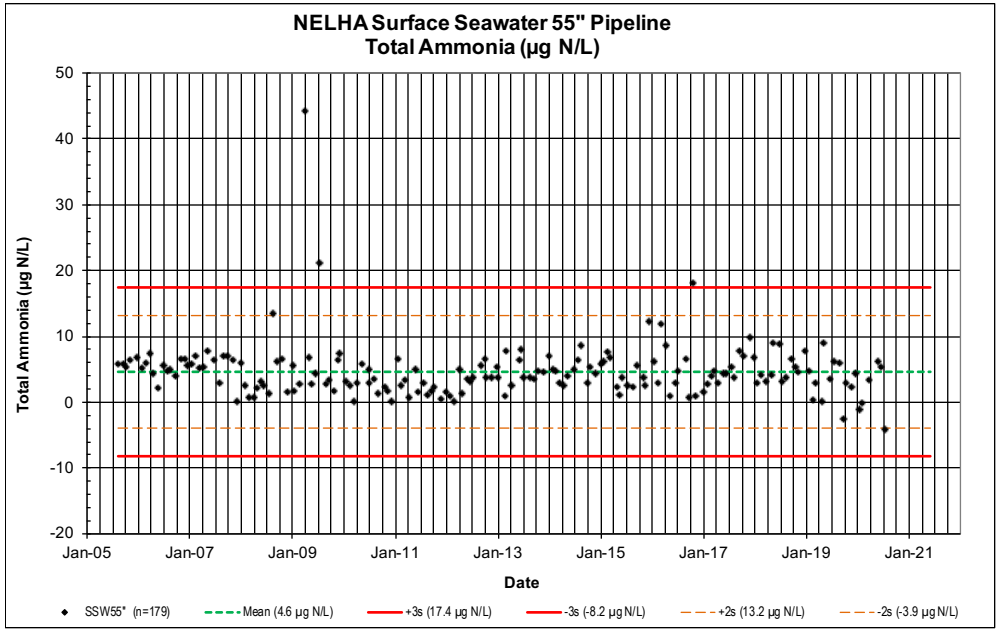


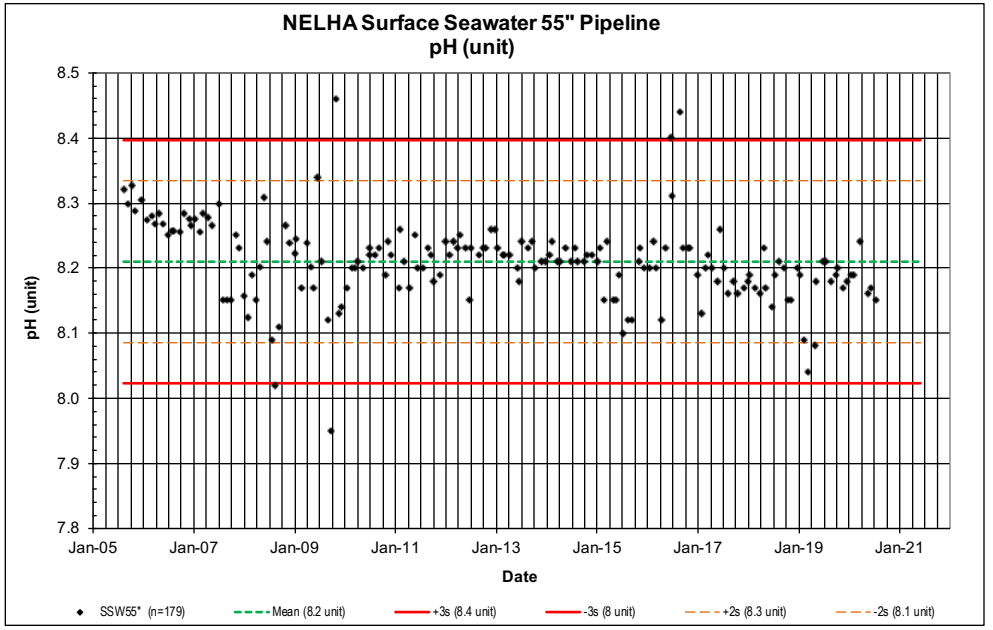


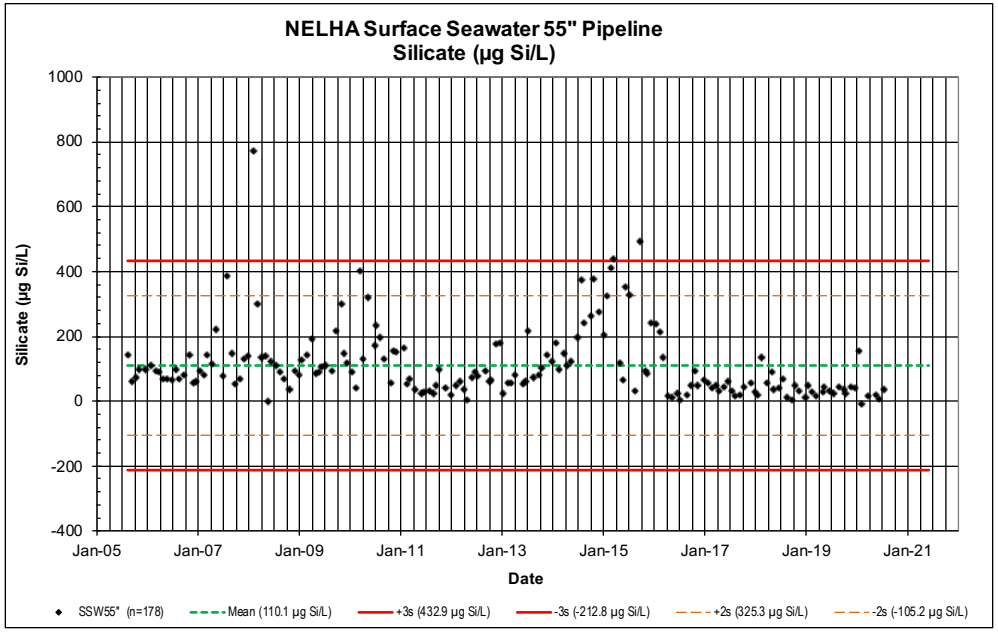
NELHA Water Quality Laboratory

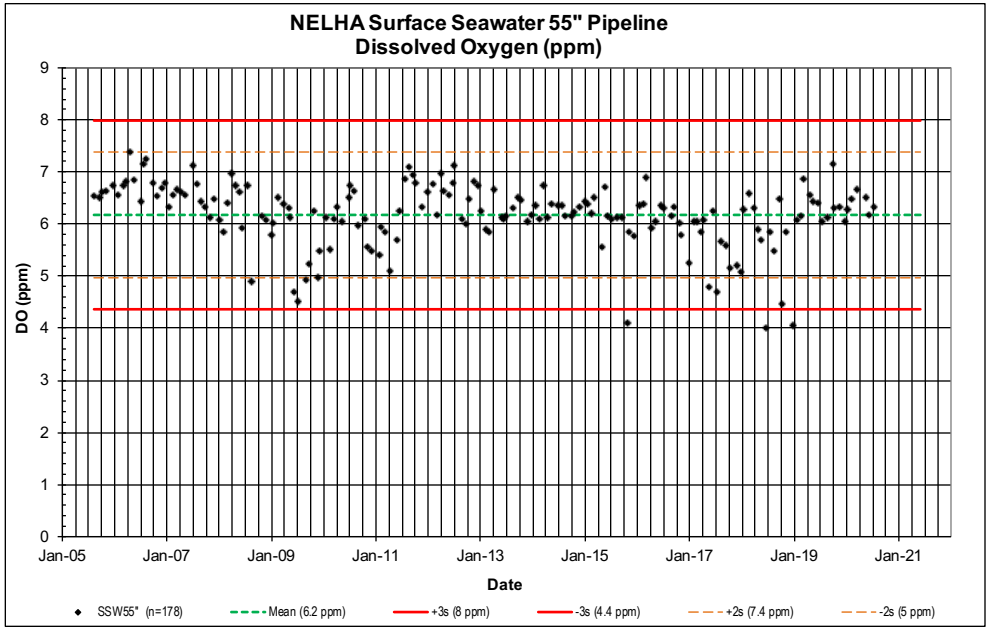
SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m





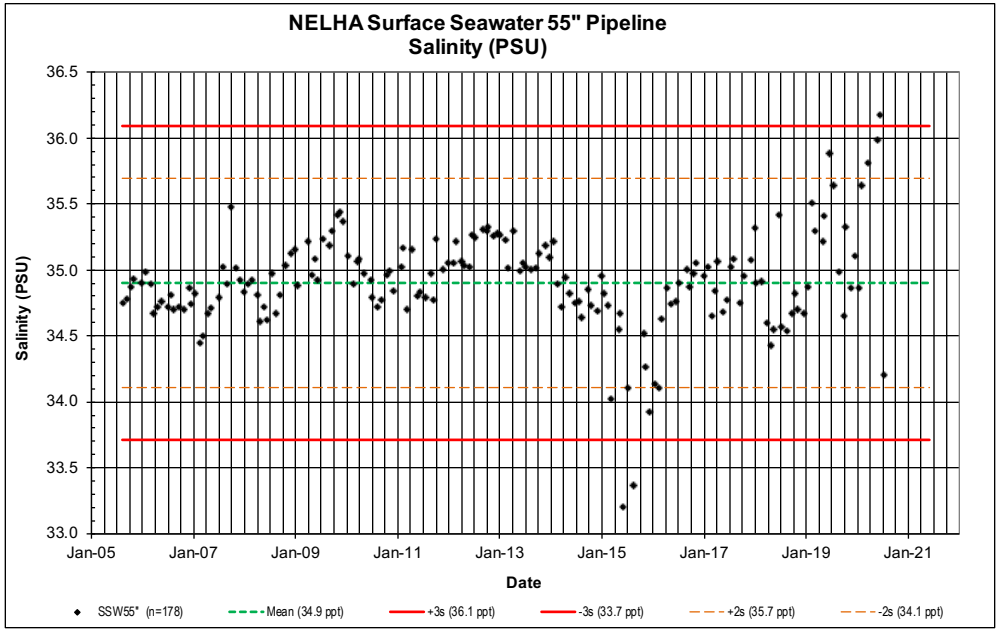


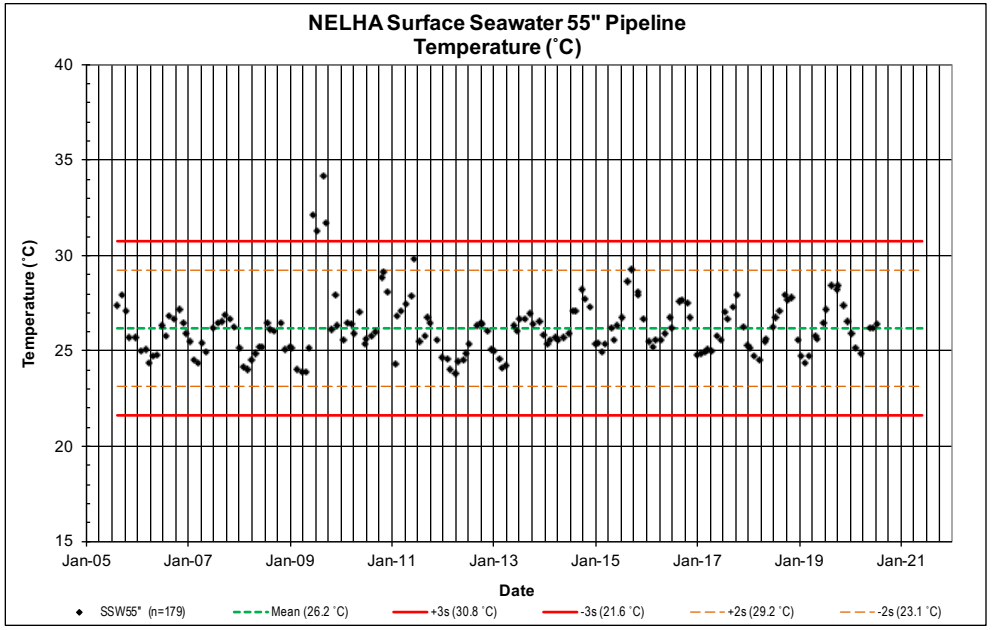


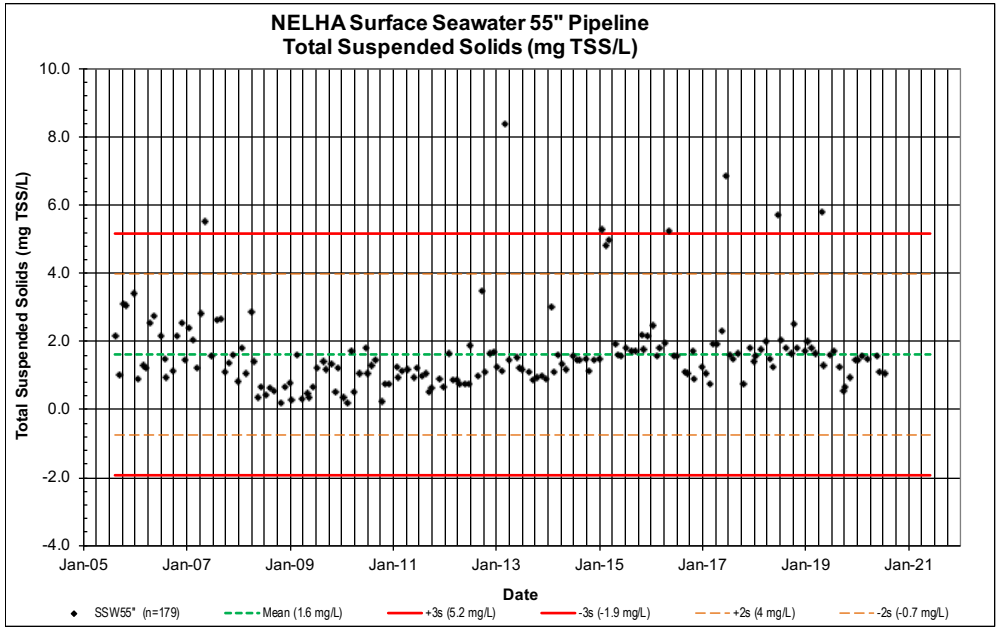
NELHA Water Quality Laboratory

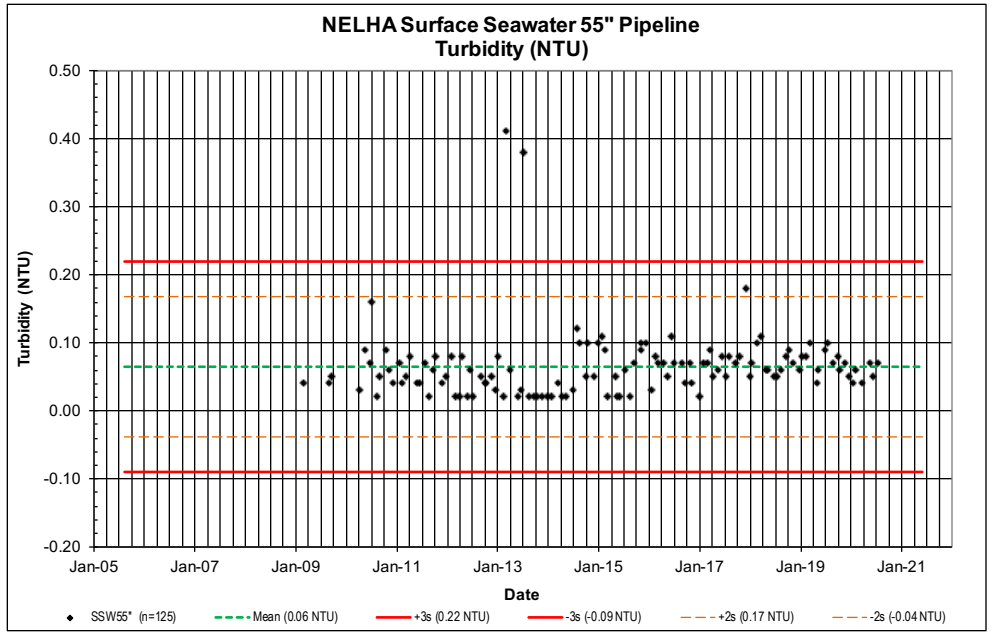
SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m









NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	8/16/88		2.9	91	38	529	0.02	0.3	78	2196	3.0	93	41	569	0.24			2.40	34.347	7.3	7.64			
DSW40"	8/31/88		3.1	95	41	572	0.09	1.3	80	2252	3.1	96	44	615	0.28				34.330	7.5	7.69			
DSW40"	9/9/88		3.1	97	41	574	0.00	0.0	83	2320	3.2	98	43	606	0.22			2.40	34.345	7.0	7.64			
DSW40"	9/15/88		3.2	98	41	579	0.00	0.0	86	2405	3.2	99	45	632	0.29			2.38	34.374	7.3	7.51	1.09		
DSW40"	9/23/88		3.1	97	41	571	0.00	0.0	82	2292	3.2	98	43	602	0.25			2.41	34.289	7.5	7.64	1.07		
DSW40"	9/30/88		2.9	88	36	503	0.03	0.4	82	2309	2.9	90	38	538	0.24			2.39	34.379	7.0	7.90	1.06		
DSW40"	10/7/88		3.2	99	42	583	0.00	0.0	86	2402	3.2	99	44	616	0.26			2.41	34.383	7.8	7.82	1.00		
DSW40"	10/14/88		3.1	97	41	574	0.00	0.0	80	2252	3.2	98	43	604	0.25			2.40	34.351	7.4	7.50	1.06		
DSW40"	10/21/88		3.2	98	41	580	0.00	0.0	85	2377	3.2	99	44	612	0.24			2.41	34.326	7.4	7.64	1.03		
DSW40"	10/28/88		3.2	98	41	576	0.00	0.0	83	2320	3.2	100	43	607	0.20			2.38	34.377	7.3	7.55	1.14		
DSW40"	11/4/88		3.1	95	41	571	0.00	0.0	78	2188	3.1	94	44	611	0.30			2.41	34.355	7.8	7.66	1.00		
DSW40"	11/9/88		3.2	98	41	580	0.00	0.0	77	2160	3.4	104	43	604	0.23			2.40	34.020	6.8	7.55	1.06		
DSW40"	11/18/88		3.0	94	40	559	0.00	0.0	82	2317	3.1	95	43	596	0.32			2.41	34.384	7.0	7.59	1.08		
DSW40"	11/25/88		3.1	96	41	573	0.00	0.0	80	2233	3.2	98	43	608	0.31			2.40	34.369	6.9	7.58	1.11		
DSW40"	12/2/88		3.1	95	41	568	0.00	0.0	77	2174	3.1	96	43	597	0.30			2.40	34.348	7.0	8.00	1.09		
DSW40"	12/9/88		3.1	96	41	580	0.00	0.0	83	2328	3.1	96	43	608	0.26			2.40	34.384	7.0	7.63	0.98		
DSW40"	12/16/88		3.1	95	41	571	0.00	0.0	79	2205	3.1	96	43	599	0.30			2.40	34.357	7.1	7.66	1.19		
DSW40"	12/23/88		3.2	98	42	585	0.03	0.4	85	2401	3.2	98	44	616	0.27			2.40	34.405	7.3	7.55	1.13		
DSW40"	12/28/88		3.0	94	40	557	0.00	0.0	79	2222	3.0	94	43	604	0.28			2.42	34.377	7.0	7.62	1.07		
DSW40"	1/4/89		3.0	94	40	560	0.00	0.0	79	2206	3.1	94	43	596	0.28			2.42	34.368	7.1	7.57	1.13		
DSW40"	1/12/89		3.1	95	41	568	0.02	0.3	81	2261	3.1	96	45	629	0.29			2.42	34.379	7.2	7.59	0.97		
DSW40"	1/20/89		3.1	96	41	573	0.00	0.0	81	2261	3.1	96	44	610	0.28			2.42	34.384	6.6	7.56	1.00		
DSW40"	1/27/89		3.1	96	41	572	0.02	0.3	82	2289	3.1	97	44	617	0.28			2.41	34.378	6.8	7.57	0.99		
DSW40"	2/1/89		3.1	96	42	584	0.02	0.3	81	2278	3.2	98	44	620	0.32			2.40	34.398	7.2	7.58	1.07		
DSW40"	2/7/89		3.1	96	41	573	0.00	0.0	84	2373	3.2	98	44	620	0.28			2.41	34.392	6.9	7.62	2.23		
DSW40"	2/15/89		3.1	96	41	570	0.00	0.0	80	2250	3.1	97	44	614	0.28			2.40	34.392	9.0	7.56	1.34		
DSW40"	2/21/89		3.1	95	40	565	0.02	0.3	82	2289	3.1	96	44	620	0.31			2.41	34.371	8.7	7.59	1.09		
DSW40"	2/27/89		3.1	95	40	567	0.00	0.0	82	2306	3.1	96	44	615	0.29			2.42	34.368	7.0	7.57	1.01		
DSW40"	3/6/89		3.1	94	41	577	0.02	0.3	74	2076	3.1	96	44	610	0.26			2.40	34.375	7.4	7.55	1.04		
DSW40"	3/13/89		3.0	93	41	574	0.07	1.0	76	2132	3.0	93	44	613	0.23			2.41	34.369	7.5	7.55	1.14		
DSW40"	3/20/89		3.1	95	42	582	0.05	0.7	81	2284	3.1	96	44	621	0.26			2.41	34.404	7.7	7.60	1.14		
DSW40"	3/28/89		3.1	96	42	592	0.07	1.0	84	2368	3.2	98	45	630	0.29			2.42	34.417	7.0	7.56	1.14		
DSW40"	4/4/89		3.1	96	42	585	0.02	0.3	81	2284	3.1	97	44	619	0.30			2.39	34.399	7.0	7.58	1.11		
DSW40"	4/10/89		3.1	95	41	580	0.00	0.0	79	2216	3.1	97	44	616	0.27			2.43	34.384	7.3	7.55	2.09		
DSW40"	4/18/89		3.1	95	41	578	0.02	0.3	77	2171	3.1	96	44	618	0.22			2.41	34.379	7.0	7.56	1.04		
DSW40"	4/24/89		3.0	94	42	582	0.00	0.0	79	2227	3.1	96	45	625	0.33			2.42	34.368	7.1	7.54	1.15		
DSW40"	5/1/89		3.0	94	42	587	0.00	0.0	84	2366	3.1	96	45	636	0.03			2.43	34.381	8.4	7.54	1.04		
DSW40"	5/8/89		3.1	96	42	594	0.00	0.0	86	2410	3.1	97	46	643	0.25			2.43	34.321	8.2	7.54	1.40		
DSW40"	5/15/89		3.1	96	42	591	0.00	0.0	86	2421	3.1	97	46	639	0.24			2.42	34.402	6.7	7.54	1.07		
DSW40"	5/22/89		3.1	95	42	586	0.00	0.0	84	2354	3.1	97	44	622	0.23			2.42	34.398	6.8	7.52	1.40		
DSW40"	5/30/89		3.1	96	42	594	0.00	0.0	87	2448	3.2	98	45	629	0.20			2.42	34.407	6.8	7.55	1.07		
DSW40"	6/5/89		3.1	95	42	592	0.03	0.4	81	2283	3.1	97	45	630	0.25			2.43	34.397	7.2	7.56	1.09		
DSW40"	6/13/89		3.1	95	41	574	0.00	0.0	87	2448	3.1	97	45	635	0.20			2.43	34.411	7.4	7.57	1.10		
DSW40"	6/19/89		3.1	96	42	594	0.00	0.0	87	2448	3.2	99	45	635	0.26			2.44	34.421	7.1	7.58	1.16		
DSW40"	6/26/89		3.1	95	42	584	0.00	0.0	83	2338	3.2	98	45	625	0.27			2.43		7.2		1.10		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/3/89		3.1	95	42	583	0.00	0.0	84	2366	3.1	95	44	623	0.23			2.40	34.410	7.1		1.09		
DSW40"	7/10/89		3.1	96	42	586	0.03	0.4	88	2462	3.1	96	45	632	0.24			2.39	34.419	7.8		1.04		
DSW40"	7/17/89		3.1	96	41	577	0.03	0.4	88	2473	3.2	98	45	626	0.27			2.38	34.429	7.4		1.09		
DSW40"	7/24/89		3.1	96	41	577	0.00	0.0	82	2313	3.1	97	44	621	0.26			2.39	34.392	7.4	7.54	1.04		
DSW40"	8/1/89		3.2	98	42	592	0.03	0.4	89	2500	3.2	98	45	629	0.24			2.38	34.430	7.2	7.53	1.05		
DSW40"	8/7/89		3.1	95	41	573	0.06	0.8	84	2347	3.1	97	44	622	0.29			2.39	34.383	7.5	7.53	0.97		
DSW40"	8/14/89		3.1	96	41	578	0.05	0.7	82	2302	3.1	97	45	623	0.27			2.39	34.385	7.4	7.55	0.93		
DSW40"	8/21/89		3.1	96	42	586	0.03	0.4	84	2366	3.1	97	45	625	0.27			2.39	34.398		7.53	0.90		
DSW40"	8/31/89		3.0	93	41	576	0.03	0.4	79	2217	3.1	95	43	603	0.26			2.37	34.373		7.54	0.97		
DSW40"	9/5/89		3.0	93	41	574	0.03	0.4	76	2148	3.1	95	43	606	0.30			2.39	34.373	7.9	7.56	0.93		
DSW40"	9/11/89		3.0	92	41	570	0.05	0.7	78	2188	3.0	93	44	622	0.24			2.37	34.378	7.6	7.55	1.10		
DSW40"	9/19/89		3.0	94	41	577	0.03	0.4	82	2302	3.1	96	45	633	0.32			2.37	34.394	7.7	7.55	1.13		
DSW40"	9/27/89		3.1	95	42	585	0.05	0.7	85	2377	3.1	95	45	627	0.28			2.37	34.413	7.7	7.58	1.09		
DSW40"	10/3/89		3.0	94	42	589	0.05	0.7	85	2377	3.1	95	43	608	0.27			2.37	34.412	7.9	7.55	1.27		
DSW40"	10/9/89		3.0	94	42	586	0.03	0.4	81	2274	3.0	94	43	604	0.24			2.37	34.388	7.8	7.59	1.09		
DSW40"	10/16/89		3.1	96	43	602	0.03	0.4	88	2462	3.1	97	44	619	0.25			2.37	34.434	7.7	7.55	1.00		
DSW40"	10/23/89		3.0	94	42	585	0.00	0.0	78	2177	3.1	95	44	610	0.31			2.35	34.387	8.0	7.53	1.09		
DSW40"	11/1/89		3.1	95	42	582	0.00	0.0	81	2268	3.1	95	44	612	0.25			2.37	34.377	7.9	7.52	1.07		
DSW40"	11/9/89		3.1	94	41	571	0.02	0.3	81	2278	3.1	95	44	610	0.23			2.60	34.390	7.7	7.55	1.44		
DSW40"	11/13/89		3.1	97	42	586	0.06	0.8	85	2393	3.2	98	45	631	0.27			2.36	34.438	7.6	7.52	1.34		
DSW40"	11/20/89		3.1	95	41	574	0.00	0.0	83	2324	3.1	97	44	618	0.26			2.35	34.405	7.5	7.54	1.37		
DSW40"	11/27/89		3.1	97	41	581	0.02	0.3	87	2450	3.2	98	44	617	0.25			2.37	34.415	7.5	7.51	1.29		
DSW40"	12/7/89		3.1	97	42	586	0.06	0.8	89	2507	3.2	98	45	626	0.25			2.37	34.423	7.6	7.55	1.43		
DSW40"	12/14/89		3.1	95	41	579	0.02	0.3	86	2422	3.1	97	44	610	0.25			2.36	34.402	7.2	7.55	1.31		
DSW40"	12/18/89		3.1	96	41	577	0.02	0.3	85	2393	3.1	97	44	613	0.26			2.36	34.397	7.4	7.54	1.20		
DSW40"	12/26/89		3.1	96	42	582	0.04	0.6	87	2450	3.1	96	44	613	0.23			2.33	34.410	7.2	7.55	1.29		
DSW40"	1/4/90		3.1	96	41	581	0.02	0.3	85	2393	3.1	97	44	615	0.24			2.33	34.397	7.6	7.55	1.17		
DSW40"	1/12/90		1.4	43	25	352	0.00	0.0	104	2930								2.33	34.276	7.5	7.54	1.21		
DSW40"	1/18/90		1.7	52	36	498	0.00	0.0	80	2252	1.7	53	33	458	0.97			2.34	34.435	7.4	7.53	1.26		
DSW40"	1/22/90		1.5	47	33	461	0.00	0.0	100	2799	1.5	46	30	416	0.98			2.34	34.430	7.4	7.54	1.27		
DSW40"	2/1/90		2.1	65	36	507	0.00	0.0	84	2365	2.2	68	36	509	0.80			2.34	34.395	7.5	7.52	1.11		
DSW40"	2/8/90		2.6	81	38	535	0.00	0.0	79	2228	2.7	84	31	437	1.05			2.34	34.410	7.5	7.53	1.49		
DSW40"	2/15/90		2.1	64	31	428	0.23	3.2	80	2244	2.7	84	39	551	0.79			2.34	34.412	7.5	7.55	1.11		
DSW40"	2/20/90		1.5	48	33	461	0.75	10.5	77	2156	2.3	71	40	567	0.84			2.36	34.420	7.5	7.56	1.16		
DSW40"	2/26/90		1.1	35	25	349	0.00	0.0	77	2172	2.0	61	36	507	0.81			2.36	34.417	7.5	7.53	1.17		
DSW40"	3/8/90		2.2	67	30	414	0.00	0.0	99	2775	3.1	94	33	468	0.80			2.36	34.425	7.3	7.55	1.04		
DSW40"	3/13/90		1.9	59	30	423	0.34	4.8	83	2333	2.9	88	44	611	0.89			2.36	34.400	7.5	7.53	1.09		
DSW40"	3/21/90		1.7	54	30	423	0.15	2.1	73	2043	2.5	78	39	539	0.87			2.36	34.416	7.5	7.57	1.06		
DSW40"	3/27/90		2.2	68	33	461	0.15	2.1	72	2011	2.7	83	38	532	0.80			2.37	34.531	7.8	7.56	1.14		
DSW40"	4/2/90		2.6	80	41	579	0.00	0.0	91	2564	2.2	68	44	612				2.36	34.388	7.6	7.52	1.07		
DSW40"	4/9/90		2.2	69	44	611	0.00	0.0	110	3101	1.9	59	41	580				2.37	34.432	7.3	7.55	1.11		
DSW40"	4/16/90		1.8	56	33	457	0.00	0.0	111	3117	1.4	44	29	406				2.36	34.391	7.7	7.59	1.13		
DSW40"	4/23/90		3.0	93	44	613	0.00	0.0			3.1	94	44	614	0.61			2.36	34.428	7.7	7.57	1.13		
DSW40"	4/30/90		3.0	92	43	601	0.00	0.0			3.0	94	43	606				2.35	34.401	7.8	7.55	1.21		
DSW40"	5/7/90		3.0	94	44	612	0.00	0.0			3.1	95	44	622	0.61			2.37	34.120	7.3	7.59	1.13		
DSW40"	5/14/90		3.0	93	43	601	0.10	1.4			3.0	94	44	610	0.57			2.36	34.368	7.5	7.54	1.14		
DSW40"	5/21/90		3.0	94	43	605	0.05	0.7			3.1	96	44	614	0.48			2.36	34.387	7.2	7.59	1.06		
DSW40"	5/29/90		3.0	94	43	608	0.05	0.7			3.1	96	44	618	0.60			2.36	34.389	8.1	7.58	1.11		
DSW40"	6/4/90		3.1	95	44	615	0.01	0.1			3.2	99	45	626	1.68			2.37	34.421	8.1	7.58	1.14		
DSW40"	6/11/90		3.1	96	43	598	0.10	1.4			3.1	97	43	606	2.43			2.37	34.413	8.0	7.58	1.11		
DSW40"	6/18/90		3.1	96	43	597	0.00	0.0			3.3	103	43	606	1.50			2.37	34.396	8.4	7.59	1.12		
DSW40"	6/25/90		3.2	98	43	599	0.02	0.3			3.3	102	43	608	0.66			2.37	34.401	7.7	7.59	1.13		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/2/90		3.2	99	43	600	0.02	0.3	87	2436	3.3	103	44	611	2.25			2.38	34.410	7.8	7.60	1.13		
DSW40"	7/6/90		3.2	98	43	604	0.22	3.1	87	2451	3.4	104	44	611				2.36	34.415	7.5	7.58	1.15		
DSW40"	7/13/90		3.2	99	43	598	0.16	2.2	85	2386	3.4	106	44	610	0.90			2.35	34.396	7.9	7.58	1.20		
DSW40"	7/23/90		3.2	99	43	597	0.00	0.0	85	2378	3.4	104	43	605	2.17			2.35	34.390	7.8	7.58	1.13		
DSW40"	7/30/90		3.2	99	42	595	0.00	0.0	82	2312	3.3	103	43	608	1.30			2.36	34.378	8.1	7.56	1.09		
DSW40"	8/6/90		3.2	100	43	598	0.10	1.4	85	2386	3.2	100	43	608	1.47			2.35	34.403	8.1	7.56	1.11		
DSW40"	8/13/90		3.0	92	42	584	0.00	0.0			3.4	106	43	599	2.69			2.36	34.395	8.0	7.57	1.16		
DSW40"	8/20/90		3.0	94	42	590	0.00	0.0			3.3	103	43	607	0.69			2.35	34.409	8.0	7.57	1.11		
DSW40"	8/27/90		3.0	94	42	590	0.00	0.0			3.3	103	43	604	4.88			2.36	34.412	8.9	7.55	1.20		
DSW40"	9/4/90		3.0	94	42	590	0.00	0.0			3.4	104	44	610	3.53			2.35	34.411	7.9	7.54	1.10		
DSW40"	9/10/90		3.0	94	42	587	0.00	0.0			3.3	103	44	610	0.74			2.35	34.394	7.1	7.56	1.07		
DSW40"	9/17/90		2.5	79	41	579	0.00	0.0	97	2716	3.7	114	46	639	0.78			2.33	34.292	8.4	7.55	1.20		
DSW40"	9/24/90		3.2	98	42	584	0.00	0.0	86	2410	3.5	107	43	603	0.81			2.34	34.382	7.9	7.56	1.11		
DSW40"	10/1/90		3.3	102	45	625	0.00	0.0	86	2428	3.5	109	45	636	0.76			2.33	34.389	8.0	7.57	1.17		
DSW40"	10/10/90		2.8	86	37	521	0.00	0.0	99	2766	3.6	112	48	671	0.88			2.33	34.388	7.9	7.57	1.12		
DSW40"	10/15/90		2.8	86	38	527	0.00	0.0	100	2817	3.9	122	50	707	0.63			2.33	34.383	7.6	8.40	1.13		
DSW40"	10/22/90		3.4	105	43	597	0.00	0.0	88	2480	3.4	106	45	631	0.97			2.33	34.369	8.0	7.54	1.10		
DSW40"	10/29/90		3.4	105	43	600	0.00	0.0	87	2445	3.5	108	45	636	0.67			2.34	34.397	8.0	7.55	1.12		
DSW40"	11/5/90		3.3	101	43	603	0.00	0.0	85	2390	3.6	110	45	631	0.65			2.33	34.378	8.0	7.55	1.11		
DSW40"	11/13/90		3.1	95	46	649	0.00	0.0	86	2424	3.3	101	49	682	0.62			2.34	34.398	8.8	7.54	1.09		
DSW40"	11/20/90		3.2	99	45	626	0.00	0.0	88	2470	3.5	109	47	655	0.66			2.33	34.389	7.5	7.55	1.04		
DSW40"	11/28/90		3.1	97	43	597	0.00	0.0	89	2486	3.2	100	44	619	0.67			2.34	34.397	7.2	7.59	1.10		
DSW40"	12/3/90		3.2	98	42	592	0.00	0.0	86	2427	3.3	102	44	615	0.62			3.33	34.392	7.2	7.55	1.06		
DSW40"	12/11/90		3.1	97	47	663	0.00	0.0	86	2421	3.3	102	50	699	0.59			2.33	34.397	7.3	7.56	1.05		
DSW40"	12/17/90		3.2	98	45	633	0.00	0.0	87	2452	3.2	100	47	656	0.53			2.34	34.417	7.4	7.55	1.08		
DSW40"	12/28/90		3.1	96	39	539	0.00	0.0	92	2573	3.4	106	39	545	1.14			2.35	34.423	6.6	7.56	1.08		
DSW40"	1/2/91		3.1	96	42	591	0.04	0.6	89	2486	3.2	98	44	618				2.33	34.424	7.0	7.56	0.97		
DSW40"	1/7/91																	2.33		7.7	7.60	0.94		
DSW40"	1/11/91		3.1	96	45	631	0.13	1.8	87	2440	3.3	102	46	643	0.68				34.402					
DSW40"	1/14/91														0.63			2.33	34.414	7.5	7.56	0.88		
DSW40"	1/24/91		2.9	90	42	595	0.03	0.4	79	2208	3.0	93	45	626	0.61			2.32	34.384	7.6	7.58	0.83		
DSW40"	1/28/91		3.3	101	43	602	0.13	1.8	85	2379	3.3	102	44	622	0.62			2.27	34.427	7.4	7.57	0.96		
DSW40"	2/4/91		3.1	97	42	595	0.14	2.0	79	2213	3.2	100	45	628	1.33			2.26	34.389	7.8	7.55	0.87		
DSW40"	2/11/91		3.2	99	44	613	0.14	2.0	87	2429	3.3	102	47	651	1.39			2.27	34.448	7.8	7.59	1.01		
DSW40"	2/19/91		3.0	94	43	598	0.16	2.2	88	2466	3.1	97	45	623	1.27			2.26	34.407	8.1	7.56	0.88		
DSW40"	2/25/91		2.3	71	32	454	0.02	0.3	105	2943	3.5	108	49	689	1.01			2.26	34.403	7.9	7.59	0.86		
DSW40"	3/4/91		2.6	81	36	497	0.05	0.7	93	2615	3.2	98	45	632	1.08			2.25	34.385	8.4	7.56	0.89		
DSW40"	3/11/91		2.5	77	34	482	0.02	0.3	99	2778	3.4	106	49	681	1.16			2.26	34.371	8.0	7.54	0.89		
DSW40"	3/18/91		2.3	72	34	469	0.00	0.0	104	2912	3.5	107	49	686	1.02			2.24	34.408	7.6	7.51	0.96		
DSW40"	3/27/91		2.3	70	32	445	0.05	0.7	114	3196	3.2	100	46	649	1.00			2.25	34.432	7.8	8.54	1.03		
DSW40"	4/1/91		3.2	99	42	587	0.00	0.0	90	2525	3.3	101	44	619	0.76			2.24	34.350	8.0		0.96		
DSW40"	4/8/91		3.3	101	43	598	0.00	0.0	89	2505	3.3	103	46	642	0.63			2.37	34.416	8.0	7.55	0.99		
DSW40"	4/15/91		3.0	92	41	580	0.13	1.8	78	2193	3.1	97	43	598	0.65			2.37	34.412	8.5	7.53	1.02		
DSW40"	4/23/91		3.2	99	34	475	0.00	0.0	87	2449	3.3	102	36	500	0.71			2.37	34.412	7.9	7.51	1.07		
DSW40"	4/29/91		3.2	98	43	605	0.05	0.7	85	2379	3.2	100	45	626	0.71			2.37	34.396	8.3	7.55	1.02		
DSW40"	5/6/91		3.0	93	42	587	0.11	1.5	86	2413	3.1	96	44	612	0.67			2.37	34.400	8.4	7.54	1.07		
DSW40"	5/13/91		3.0	94	42	588	0.16	2.2	87	2455	3.1	97	44	620	0.69			2.37	34.416	8.3	7.52	1.07		
DSW40"	5/20/91		3.2	98	46	644	0.11	1.5	90	2536	3.2	100	49	691	0.74			2.38	34.411	7.5	7.51	0.98		
DSW40"	5/28/91		3.2	98	45	625	0.31	4.3			3.2	99	46	646	0.71			2.37	34.403	7.7	7.50	1.03		
DSW40"	6/4/91		3.0	94	42	592	0.00	0.0	87	2429	3.1	97	44	622	0.70			2.37	34.389	8.7	7.58	1.07		
DSW40"	6/10/91		3.2	98	37	522	0.24	3.4	87	2429	3.4	104	38	534	0.70			2.37	34.401	8.4	7.55	1.02		
DSW40"	6/17/91		3.2	99	42	588	0.12	1.7	85	2382	3.4	106	44	609	0.80			2.37	34.369	8.9	7.60	1.03		
DSW40"	6/24/91		3.3	102	43	601	0.22	3.1	85	2382	3.5	108	47	651	0.66			2.38	34.412	8.2	7.57	0.67		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/1/91		3.3	102	40	566	0.21	2.9	88	2472	3.5	109	46	642	0.65			2.38	34.392	8.7	7.57	0.66		
DSW40"	7/9/91		3.2	99	42	588	0.15	2.1	88	2477	3.5	108	45	626	0.69			2.39	34.404	7.8	7.56	1.06		
DSW40"	7/16/91		3.4	104	42	592	0.07	1.0	84	2354	3.5	108	45	625	0.63			2.38	34.367	8.7	7.56	1.06		
DSW40"	7/22/91		3.3	103	42	594	0.12	1.7	87	2446	3.7	116	45	630	0.55			2.39	34.409	8.2	7.57	1.05		
DSW40"	7/26/91		3.4	104	43	604	0.15	2.1	88	2457	3.4	106	45	630	0.68			2.38	34.371	7.9	7.55	1.02		
DSW40"	8/5/91		3.3	102	43	604	0.18	2.5	85	2382	3.3	103	46	647	0.55			2.38	34.369	8.8	7.49	1.02		
DSW40"	8/15/91		3.3	101	43	597	0.23	3.2	88	2460	3.4	104	44	615	0.65			2.39	34.391	8.2	7.54	1.05		
DSW40"	8/21/91		3.2	99	44	609	0.24	3.4	90	2525	3.6	112	46	637	0.58			2.40	34.453	7.7	7.56	1.13		
DSW40"	8/27/91		3.2	98	43	605	0.15	2.1	88	2474	3.3	101	44	611	0.80			2.39	34.399	8.1	7.56	1.02		
DSW40"	9/6/91		3.1	96	45	625	0.25	3.5	80	2252	3.2	98	48	667	0.69			2.39	34.404	7.7	7.57	1.08		
DSW40"	9/13/91		3.1	95	42	587	0.18	2.5	87	2446	3.1	96	43	601	0.69			2.38	34.380	7.9	7.56	1.08		
DSW40"	9/18/91		3.4	104	43	599	0.25	3.5	91	2542	3.5	107	44	616	0.59			2.39	34.436	7.5	7.59	1.09		
DSW40"	9/25/91		3.1	96	42	592	0.15	2.1	92	2581	3.2	98	46	650	0.61			2.40	34.436	8.2	7.53	1.14		
DSW40"	10/1/91		2.7	85	43	602	0.00	0.0	90	2539	3.0	93	44	622	0.69			2.40	34.428	8.5	7.55	1.14		
DSW40"	10/9/91		2.9	90	42	591	0.00	0.0	91	2542	3.0	92	45	626	0.60			2.39	34.421	8.1	7.53	1.88		
DSW40"	10/25/91		3.4	105	42	587	0.00	0.0	90	2519	3.4	106	44	619	1.04			2.41	34.427	7.7	7.57	1.13		
DSW40"	11/4/91		3.1	97	42	594	0.00	0.0	87	2443	3.3	101	45	625	0.99			2.39	34.395	8.5	7.56	1.09		
DSW40"	11/8/91		3.1	94	41	580	0.00	0.0	87	2449	3.2	99	43	605	1.04			2.39	34.374	8.4	7.57	1.10		
DSW40"	11/14/91		3.1	94	42	588	0.00	0.0	86	2421	3.2	99	44	613	0.69			2.39	34.387	8.2	7.55	1.07		
DSW40"	11/22/91		3.1	94	42	583	0.12	1.7	84	2356	3.2	98	43	602	0.63			2.38	34.372	7.2	7.55	1.00		
DSW40"	11/29/91		3.0	94	43	597	0.25	3.5	86	2413	3.2	99	44	611	0.68			2.35	34.374	7.1	7.55	1.05		
DSW40"	12/6/91		3.1	97	42	583	0.10	1.4	83	2340	3.3	102	43	597	0.64			2.37	34.379	7.3	7.55	1.07		
DSW40"	12/12/91		3.0	93	41	580	0.13	1.8	86	2404	3.2	98	44	612	0.64			2.38	34.377	7.9	7.56	1.04		
DSW40"	12/19/91		3.1	97	42	594	0.15	2.1	85	2393	3.2	100	45	626	0.86			2.38	34.392	7.3	7.55	1.03		
DSW40"	12/23/91		3.2	100	41	577	0.00	0.0	87	2446	3.3	101	43	606	0.65			2.38	34.387	7.4	7.54	1.00		
DSW40"	1/3/92		3.2	100	42	588	0.00	0.0	83	2331	3.3	103	45	632	1.46			2.35	34.400	7.6	7.55	0.89		
DSW40"	1/10/92		3.1	96	41	580	0.14	2.0	84	2351	3.2	98	44	613	0.74			2.36	34.385	7.9	7.56	0.91		
DSW40"	1/16/92		3.2	98	42	590	0.11	1.5	91	2542	3.2	100	44	622	0.69			2.36	34.440	7.1	7.57	1.01		
DSW40"	1/22/92		3.2	98	43	597	0.06	0.8	84	2368	3.3	101	45	623	0.93			2.35	34.385	7.0	7.59	0.91		
DSW40"	1/30/92		3.2	100	43	597	0.13	1.8	84	2348	3.3	102	44	620	0.77			2.36	34.408	7.9	7.56	0.96		
DSW40"	2/6/92		3.2	98	42	590	0.30	4.2	84	2362	3.2	99	44	620	0.79			2.35	34.397	7.3	7.58	0.95		
DSW40"	2/14/92		3.1	97	42	583	0.20	2.8	88	2457	3.2	100	44	615	0.82			2.35	34.411	7.5	7.56	0.89		
DSW40"	2/20/92		3.1	96	44	615	0.08	1.1	85	2390	3.2	98	45	635	0.76			2.35	34.413	8.0	7.57	0.93		
DSW40"	2/27/92		3.1	96	42	581	0.10	1.4	83	2320	3.2	100	43	606	0.77			2.35	34.412	7.5	7.56	0.91		
DSW40"	3/5/92		3.1	95	43	605	0.30	4.2	83	2334	3.1	97	46	637	0.82			2.37	34.404	7.7	7.57	0.97		
DSW40"	3/12/92		3.2	98	42	587	0.00	0.0	82	2289	3.2	100	43	602	0.99			2.35	34.395	8.4	7.55	0.96		
DSW40"	3/20/92		3.2	98	43	601	0.04	0.6	79	2219	3.7	114	49	682	0.68			2.36	34.399	7.4	7.53	0.89		
DSW40"	3/25/92		3.2	98	42	591	0.00	0.0	84	2345	3.3	102	49	681	0.81			2.36	34.420	7.8	7.57	0.95		
DSW40"	4/2/92		3.3	101	42	590	0.00	0.0	84	2351	3.4	104	47	653	1.14			2.36	34.408	8.2	7.58	0.98		
DSW40"	4/9/92		3.3	103	42	591	0.43	6.0	83	2320	3.4	105	44	617	1.03			2.35	34.401	8.0	7.57	0.96		
DSW40"	4/21/92		3.3	101	42	581	0.47	6.6	82	2300	3.6	112	45	627	1.00			2.35	34.384	8.0	7.55	0.97		
DSW40"	4/24/92		3.1	96	41	573	0.24	3.4	80	2247	3.4	106	44	620	0.86			2.35	34.390	7.9	7.55	0.94		
DSW40"	5/1/92		3.2	99	41	577	0.23	3.2	82	2314	3.4	105	50	702	0.86			2.36	34.368	7.8	7.55	0.96		
DSW40"	5/7/92		3.3	101	43	606	0.30	4.2	84	2355	3.5	109	47	658	1.06			2.34	34.412	7.8	7.56	0.98		
DSW40"	5/15/92		3.1	96	43	597	0.27	3.8	86	2423	3.3	101	45	636	1.32			2.36	34.402	8.2	7.54	0.98		
DSW40"	5/21/92		3.0	93	41	576	0.32	4.5	83	2337	3.1	97	43	602	1.27			2.36	34.380	8.5	7.52	0.95		
DSW40"	5/29/92		2.9	91	42	581	0.23	3.2	83	2323	3.1	95	44	616	1.16			2.37	34.393	7.7	7.54	0.89		
DSW40"	6/4/92		3.1	97	41	573	0.00	0.0	83	2325	3.2	99	45	626	1.29			2.36	34.382	7.8	7.55	0.96		
DSW40"	6/9/92		3.0	93	45	635	0.33	4.6	84	2345	3.2	98	49	685	0.66			2.36	34.393	7.5	7.53	0.95		
DSW40"	6/19/92		3.0	92	42	590	0.25	3.5	83	2342	3.1	96	53	748	0.85			2.37	34.398	7.4	7.54	0.97		
DSW40"	6/25/92		3.0	92	42	587	0.31	4.3	85	2373	3.0	94	45	626	0.74			2.38	34.427	7.4	7.54	0.99		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/2/92		3.0	93	41	580	0.26	3.6	81	2266	3.1	95	43	608	0.70			2.38	34.386	7.5	7.55	0.97		
DSW40"	7/9/92		3.0	92	42	581	0.80	11.2	80	2247	3.1	96	43	606	0.70			2.37	34.392	8.0	7.54	1.01		
DSW40"	7/16/92		3.0	93	41	574	0.15	2.1	82	2303	3.0	94	42	581	0.77			2.37	34.385	7.8	7.55	0.95		
DSW40"	7/23/92		3.0	94	42	583	0.20	2.8	83	2331	3.1	97	44	619	0.97			2.37	34.399	8.1	7.55	0.99		
DSW40"	7/31/92		3.1	94	43	595	0.00	0.0	86	2412	3.2	98	45	626	0.86			2.37	34.402	7.9	7.50	1.04		
DSW40"	8/6/92		3.2	98	42	590	0.38	5.3	85	2396	3.3	101	44	620	0.79			2.38	34.405	7.8	7.56	1.06		
DSW40"	8/14/92		3.1	95	42	587	0.54	7.6	86	2409	3.3	101	45	632	0.68			2.38	34.410	7.2	7.56	1.09		
DSW40"	8/20/92		3.1	96	41	579	0.00	0.0	82	2300	3.2	99	47	664	0.82			2.37	34.373	7.6	7.56	1.05		
DSW40"	8/27/92		3.1	96	41	579	0.29	4.1	83	2337	3.2	98	45	626	0.75			2.38	34.412	7.5	7.55	1.12		
DSW40"	9/3/92		3.2	98	41	578	0.17	2.4	87	2443	3.3	101	46	649	0.68			2.37	34.391	7.5	7.56	1.09		
DSW40"	9/10/92		3.2	98	42	588	0.09	1.3	86	2407	3.3	103	44	612	0.96			2.38	34.429	7.6	7.55	1.13		
DSW40"	9/17/92		3.2	98	41	571	0.48	6.7	79	2226	3.3	102	49	681	0.68			2.37	34.362	7.4	7.55	1.06		
DSW40"	9/25/92		3.1	97	42	589	0.08	1.1	87	2455	3.2	99	48	668	0.68			2.37	34.396	7.8	7.55	1.11		
DSW40"	10/1/92		3.1	95	42	583	0.00	0.0	83	2342	3.2	99	46	640	0.69			2.38	34.400	7.9	7.57	1.06		
DSW40"	10/8/92		3.1	97	42	591	0.00	0.0	87	2432	3.2	99	46	647	0.62			2.38	34.409	7.8	7.57	1.04		
DSW40"	10/16/92		3.2	98	42	587	0.11	1.5	85	2384	3.2	100	47	658	0.73			2.38	34.399	7.8	7.56	1.10		
DSW40"	10/22/92		3.0	94	40	558	0.37	5.2	80	2253	3.2	98	45	633	1.01			2.36	34.330	8.6	7.56	1.23		
DSW40"	10/29/92		3.1	96	42	581	0.23	3.2	81	2286	3.3	102	44	616	0.75			2.37	34.359	8.0	7.56	1.12		
DSW40"	11/5/92		3.1	97	42	584	0.50	7.0	90	2518	3.3	102	46	643	0.72			2.39	34.388	7.2	7.57	1.08		
DSW40"	11/12/92		3.1	96	40	559	0.42	5.9	85	2396	3.2	100	45	634	0.90			2.38	34.347	8.0	7.57	1.12		
DSW40"	11/19/92		3.1	97	42	590	0.46	6.4	90	2530	3.4	105	45	624	0.73			2.38	34.372	7.7	7.55	1.07		
DSW40"	11/25/92		3.1	96	42	594	0.19	2.7	87	2436	3.4	104	44	618	0.75			2.37	34.346	7.3	7.56	1.06		
DSW40"	12/3/92		2.9	89	38	531	0.33	4.7	72	2011	3.3	101	41	568	0.84			2.37	34.247	7.5	7.56	1.07		
DSW40"	12/10/92		3.0	94	42	586	0.36	5.0	87	2442	3.3	102	44	623	0.79			2.37	34.351	8.1	7.56	1.16		
DSW40"	12/17/92		3.1	95	42	593	0.43	6.0	90	2534	3.3	102	45	626	0.75			2.38	34.386	7.7	7.55	1.11		
DSW40"	12/23/92		3.1	95	42	587	0.39	5.5	87	2431	3.5	108	44	615	0.73			2.38	34.376	7.6	7.58	1.16		
DSW40"	12/30/92		3.1	96	42	589	0.39	5.5	84	2363	3.3	103	45	632	0.80			2.37	34.356	7.7	7.58	1.11		
DSW40"	1/7/93		2.7	84	40	556	0.24	3.4	79	2225	2.9	88	42	590	0.86			2.35	34.369	10.6	7.65	2.07		
DSW40"	1/14/93		3.1	96	42	582	0.48	6.7	83	2318	3.2	98	45	626	0.77			2.36	34.376	7.3	7.55	1.14		
DSW40"	1/21/93		3.1	95	41	577	0.44	6.2	82	2311	3.1	95	45	629	0.80			2.35	34.362	7.9	7.58	1.19		
DSW40"	1/28/93		3.1	95	42	588	0.42	5.9	84	2354	3.1	96	50	698	0.85			2.36	34.383	7.2	7.57	1.11		
DSW40"	2/3/93		3.1	95	43	597	0.27	3.8	84	2347	3.1	96	44	619	0.57			2.36	34.378	7.6	7.57	1.14		
DSW40"	2/11/93		3.1	96	42	587	0.10	1.4	83	2321	3.2	99	43	606	0.58			2.36	34.401	7.7	7.58	1.18		
DSW40"	2/16/93		3.1	96	42	595	0.13	1.8	85	2384	3.3	101	44	621	0.64			2.36	34.427	7.8	7.59	1.16		
DSW40"	2/25/93		3.1	94	42	584	0.06	0.8	82	2301	3.1	95	44	610	0.67			2.36	34.396	7.6	7.59	1.11		
DSW40"	3/3/93		3.0	94	42	587	0.16	2.2	84	2366	3.1	94	45	632	0.69			2.36	34.412	7.7	7.60	1.13		
DSW40"	3/11/93		2.7	83	38	535	0.16	2.2	68	1897	2.8	86	41	571	0.72			2.33	34.294	10.0	7.63	6.06		
DSW40"	3/18/93		3.1	95	42	588	0.21	2.9	85	2395	3.2	98	45	626	0.70			2.35	34.420	7.0	7.59	1.12		
DSW40"	3/24/93		3.1	95	42	591	0.15	2.1	83	2324	3.1	97	46	642	0.67			2.35	34.409	6.9	7.60	1.12		
DSW40"	4/1/93		3.0	94	41	580	0.14	2.0	82	2289	3.1	95	46	647	0.68			2.36	34.385	7.8	7.59	1.12		
DSW40"	4/7/93		3.1	94	41	574	0.13	1.8	82	2291	3.1	96	47	655	0.59			2.35	34.374	7.7	7.61	1.15		
DSW40"	4/15/93		3.1	95	42	586	0.22	3.1	83	2318	3.2	98	45	632	0.72			2.35	34.376	8.3	7.60	1.24		
DSW40"	4/22/93		3.0	94	41	579	0.27	3.8	76	2147	3.1	96	44	621	0.69			2.35	34.358	8.1	7.58	1.20		
DSW40"	4/29/93		3.0	94	37	523	0.36	5.0	81	2265	3.1	96	45	626	0.66			2.35	34.360	8.3	7.58	1.15		
DSW40"	5/6/93		3.1	95	41	579	0.39	5.5	85	2400	3.1	96	46	639	0.68			2.36	34.382	7.8	7.59	1.17		
DSW40"	5/13/93		3.0	92	41	578	0.41	5.7	80	2255	3.0	94	49	682	0.64			2.36	34.372	8.0	7.59	1.16		
DSW40"	5/18/93		3.1	97	42	585	0.45	6.3	86	2418	3.2	98	44	617	0.70			2.36	34.390	7.7	7.58	1.11		
DSW40"	5/27/93		3.1	95	41	574	0.43	6.0	81	2272	3.2	98	45	635	0.74			2.35	34.348	8.4	7.58	1.17		
DSW40"	6/1/93		3.1	95	41	579	0.42	5.9	86	2402	3.1	97	47	665	0.65			2.36	34.391	7.9	7.58	1.15		
DSW40"	6/8/93		3.0	93	41	574	0.19	2.7	83	2331	3.1	95	43	601	0.66			2.35	34.366	8.2	7.58	1.13		
DSW40"	6/16/93		3.0	94	41	574	0.25	3.5	79	2228	3.1	95	43	596	0.65			2.35	34.361	8.2	7.58	1.15		
DSW40"	6/24/93		2.9	89	39	550	0.21	2.9	72	2032	2.9	91	41	577	0.65			2.34	34.300	9.9	7.59	1.26		
DSW40"	6/30/93		3.0	91	40	560	0.31	4.3	75	2111	3.1	94	44	620	0.69			2.34	34.317	9.8	7.57	1.21		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/6/93		3.1	95	42	583	0.25	3.5	81	2261	3.1	96	46	643	0.65			2.37	34.372	8.4	7.58	1.15		
DSW40"	7/12/93		3.1	96	42	582	0.37	5.2	82	2303	3.1	97	46	646	0.71			2.37	34.380	8.3	7.58	1.13		
DSW40"	7/19/93		3.0	94	41	577	0.14	2.0	81	2270	3.1	96	44	615	0.65			2.37	34.362	8.4	7.60	1.16		
DSW40"	7/30/93		2.9	91	39	549	0.19	2.7	72	2008	3.0	94	42	582	0.70			2.36	34.305	9.6	7.57	1.23		
DSW40"	8/4/93		3.0	93	41	579	0.21	2.9	82	2297	3.1	95	43	607	0.71			2.39	34.388	8.8	7.56	1.13		
DSW40"	8/10/93		2.9	90	42	588	0.18	2.5	84	2361	3.1	97	44	611	0.71			2.40	34.410	8.1	7.56	1.12		
DSW40"	8/18/93		3.0	94	41	573	0.31	4.3	71	2002	3.1	95	42	595	0.70			2.39	34.376	8.6	7.56	1.06		
DSW40"	8/25/93		3.1	95	42	581	0.19	2.7	83	2318	3.1	96	47	654	0.72			2.39	34.395	9.1	7.58	1.16		
DSW40"	9/2/93		3.1	94	41	574	0.28	3.9	79	2231	3.2	99	49	689	0.68			2.39	34.380	8.5	7.57	1.07		
DSW40"	9/9/93		3.0	94	41	573	0.28	3.9	77	2151	3.2	99	53	737	0.70			2.38	34.379	8.7	7.56	1.15		
DSW40"	9/14/93		3.0	94	41	571	0.16	2.2	77	2157	3.1	97	54	762	0.71			2.37	34.363	9.0	7.58	1.15		
DSW40"	9/21/93		3.1	96	41	575	0.22	3.1	82	2313	3.2	98	45	625	0.69			2.38	34.401	8.6	7.56	1.15		
DSW40"	9/28/93		3.0	94	41	574	0.13	1.8	78	2199	3.0	94	44	612	0.67			2.38	34.389	8.8	7.56	1.13		
DSW40"	10/7/93		3.0	93	42	582	0.17	2.4	73	2056	3.0	93	45	630	0.63			2.33	34.411	8.8	7.56	1.15		
DSW40"	10/12/93		3.1	95	41	578	0.15	2.1	81	2286	3.0	94	46	648	0.58			2.32	34.403	8.4	7.57	1.15		
DSW40"	10/19/93		3.0	94	41	580	0.11	1.5	81	2287	3.1	95	46	638	0.59			2.33	34.414	8.0	7.58	1.14		
DSW40"	10/28/93		3.0	94	41	571	0.25	3.5	78	2186	3.1	95	43	607	0.63			2.32	34.372	8.0	7.57	1.14		
DSW40"	11/2/93		3.1	96	41	578	0.15	2.1	82	2313	3.2	98	44	617	0.62			2.33	34.403	8.3	7.57	1.13		
DSW40"	11/9/93		2.9	90	40	567	0.37	5.2	80	2240	3.1	96	45	627	0.65			2.32	34.367	9.0	7.58	1.11		
DSW40"	11/16/93		3.1	94	42	581	0.11	1.5	83	2321	3.1	96	45	630	0.64			2.33	34.403	8.3	7.58	1.12		
DSW40"	11/23/93		3.0	94	40	567	0.18	2.5	80	2247	3.1	96	44	620	0.67			2.32	34.388	15.3	7.56	1.03		
DSW40"	12/1/93		3.0	94	41	576	0.09	1.3	81	2280	3.1	95	44	615	0.63			2.33	34.394	8.2	7.58	1.14		
DSW40"	12/9/93		3.1	97	41	574	0.02	0.3	80	2258	3.3	101	44	619	0.76			2.32	34.386	8.2	7.58	1.09		
DSW40"	12/14/93		3.1	95	40	566	0.01	0.1	78	2196	3.2	98	44	609	0.75			2.31	34.377	8.8	7.59	1.11		
DSW40"	12/20/93		3.0	93	41	572	0.16	2.2	83	2341	3.1	96	44	621	0.65			2.33	34.398	8.7	7.58	1.21		
DSW40"	12/28/93		3.1	94	41	577	0.33	4.6	84	2356	3.1	96	46	645	0.70			2.33	34.401	7.1	7.59	1.17		
DSW40"	1/6/94		3.1	96	41	579	0.35	4.9	84	2365	3.1	97	44	623	0.81			2.37	34.399	8.4	7.58	1.21		
DSW40"	1/12/94		3.1	97	41	579	0.14	2.0	85	2388	3.0	94	44	622	0.79			2.37	34.399	8.5	7.59	1.25		
DSW40"	1/18/94		3.1	95	11	150	0.05	0.7	81	2264	3.1	97	44	619	0.85			2.37	34.370	7.8	7.59	1.17		
DSW40"	1/26/94		3.0	92	41	575	0.04	0.6	83	2345	3.1	97	46	641	0.74			2.37	34.396	7.5	7.58	1.16		
DSW40"	2/2/94		3.1	95	41	575	0.12	1.7	86	2415	3.1	95	48	672	0.65			2.37	34.400	7.9	7.60	1.22		
DSW40"	2/9/94		3.1	95	42	585	0.28	3.9	86	2403	3.1	96	47	665	0.69			2.37	34.391	8.9	7.60	1.19		
DSW40"	2/15/94		3.1	97	41	576	0.17	2.4	86	2407	3.2	98	51	717	0.64			2.37	34.392	7.6	7.58	1.20		
DSW40"	2/24/94		3.1	94	40	556	0.14	2.0	81	2284	3.1	95	48	665	0.69			2.36	34.353	8.7	7.59	1.24		
DSW40"	3/2/94		3.0	94	41	578	0.08	1.1	80	2249	3.1	97	49	686	0.86			2.37	34.382	7.8	7.59	1.20		
DSW40"	3/9/94		3.1	96	41	568	0.25	3.5	87	2452	3.1	97	45	625	0.78			2.37	34.409	8.9	7.60	1.26		
DSW40"	3/17/94		3.0	94	40	565	0.10	1.4	81	2265	3.1	97	44	617	0.56			2.36	34.350	8.2	7.57	1.20		
DSW40"	3/22/94		3.0	94	41	575	0.02	0.3	84	2372	3.1	95	46	641	0.59			2.37	34.393	7.9	7.58	1.11		
DSW40"	3/29/94		3.0	94	41	569	0.05	0.7	79	2225	3.0	94	45	624	0.58			2.36	34.343	8.5	7.96	1.20		
DSW40"	4/5/94		3.1	95	41	578	0.09	1.3	88	2459	3.2	98	46	638	0.60			2.37	34.405	8.0	7.58	1.22		
DSW40"	4/14/94		3.1	96	41	577	0.10	1.4	86	2407	3.2	99	45	629	0.70			2.37	34.411	7.9	7.59	1.14		
DSW40"	5/12/94		3.1	97	42	582	0.02	0.3	85	2388	3.2	99	45	624	0.73			2.37	34.405	8.4	7.59	1.13		
DSW40"	5/17/94		3.0	94	41	575	0.06	0.8	86	2425	3.1	96	43	608	0.65			2.37	34.406	8.6	7.59	1.17		
DSW40"	5/25/94		3.1	95	41	570	0.09	1.3	82	2293	3.1	95	47	655	0.64			2.36	34.361	8.2	7.57	1.17		
DSW40"	6/1/94		3.1	95	41	579	0.04	0.6	86	2414	3.1	97	51	714	0.58			2.37	34.403	8.5	7.58	1.15		
DSW40"	6/7/94		3.0	93	40	554	0.06	0.8	77	2149	3.0	93	43	604	0.63			2.35	34.343	9.7	7.60	1.30		
DSW40"	6/16/94		3.0	93	41	572	0.01	0.1	84	2364	3.1	95	51	710	0.60			2.37	34.385	9.1	7.58	1.10		
DSW40"	6/23/94		3.0	94	41	579	0.15	2.1	86	2409	3.1	95	44	620	0.65			2.37	34.388	9.0	7.56	1.26		
DSW40"	6/29/94		3.0	94	41	572	0.22	3.1	87	2440	3.1	95	44	622	0.67			2.36	34.374	9.2	7.56	1.24		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/5/94		3.1	94	41	573	0.10	1.4	80	2249	3.1	95	44	623	0.65			2.36	34.361	9.7	7.56	1.29		
DSW40"	7/12/94		3.0	94	41	569	0.20	2.8	85	2400	3.1	97	44	615	0.61			2.36	34.364	9.9	7.58	1.25		
DSW40"	7/19/94		3.1	95	41	580	0.20	2.8	89	2505	3.1	97	47	654	0.65			2.38	34.406	9.1	7.57	1.24		
DSW40"	7/27/94		3.0	94	40	556	0.20	2.8	84	2370	3.2	98	45	625	0.64			2.37	34.384	8.5	7.55	1.17		
DSW40"	8/1/94		3.1	95	42	582	0.02	0.3	86	2406	3.1	96	44	618	0.62			2.37	34.398	8.4	7.57	1.19		
DSW40"	8/10/94		3.1	94	41	574	0.21	2.9	84	2356	3.1	95	45	624	0.70			2.37	34.383	7.8	7.57	1.16		
DSW40"	8/16/94		3.0	94	41	574	0.07	1.0	85	2395	3.1	95	45	626	0.65			2.37	34.390	8.7	7.56	1.21		
DSW40"	8/25/94		3.0	93	40	566	0.00	0.0	87	2447	3.2	99	48	671	0.69			2.37	34.364	8.5	7.57	1.22		
DSW40"	8/30/94		3.1	95	41	579	0.09	1.3	87	2445	3.1	95	45	626	0.69			2.37	34.375	8.5	7.57	1.22		
DSW40"	9/7/94		3.1	96	42	582	0.20	2.8	89	2491	3.2	100	46	640	0.65			2.37	34.386	8.7	7.57	1.14		
DSW40"	9/12/94		3.1	95	41	580	0.17	2.4	89	2491	3.2	98	47	652	0.65			2.38	34.423	8.8	7.57	1.20		
DSW40"	9/20/94		3.1	95	41	574	0.04	0.6	85	2401	3.1	96	48	670	0.68			2.37	34.371	9.9	7.58	1.14		
DSW40"	9/26/94		3.1	97	40	566	0.01	0.1	85	2399	3.2	99	53	737	0.68	0.04		2.37	34.363	9.2	7.56	1.15		
DSW40"	10/3/94		3.1	96	41	570	0.07	1.0	87	2447	3.1	95	44	620	0.61	0.01		2.36	34.392	8.6	7.58	1.22		
DSW40"	10/11/94		3.1	96	41	576	0.14	2.0	87	2454	3.2	98	36	498	0.53	0.00		2.36	34.402	8.9	7.59	1.21		
DSW40"	10/20/94		2.9	91	41	571	0.08	1.1	85	2373	3.0	94	30	415	0.45	0.00		2.36	34.356	9.3	7.58	1.16		
DSW40"	10/27/94		3.0	94	40	557	0.56	7.8	106	2991	3.1	96	45	634	0.65	0.12		2.37	34.390	8.0	7.58	1.16		
DSW40"	11/3/94		3.1	96	40	554	0.56	7.8	81	2273	3.2	98	45	628	0.69	0.09		2.36	34.365	10.2	7.58	1.18		
DSW40"	11/9/94		3.1	96	41	576	0.56	7.8	85	2391	3.1	96	45	626	0.63	0.12		2.37	34.388	11.5	7.59	1.21		
DSW40"	11/17/94		3.1	95	42	582	0.56	7.8	88	2470	3.1	96	45	630	0.79	0.07		2.37	34.394	9.1	7.56	1.16		
DSW40"	11/23/94		3.1	96	41	576	0.56	7.8	84	2372	3.1	97	46	641	0.71	0.00		2.37	34.379	9.6	7.59	1.18		
DSW40"	11/29/94		3.0	94	41	578	0.56	7.8	88	2462	3.1	96	45	633	0.63	0.03		2.38	34.393	9.2	7.57	1.23		
DSW40"	12/7/94		3.1	97	41	573	0.56	7.8	85	2390	3.2	98	45	626	0.66	0.12		2.37	34.367	9.4	7.55	1.16		
DSW40"	12/12/94		3.1	95	41	575	0.30	4.2	86	2414	3.2	98	46	638	0.66	0.05		2.36	34.370	10.1	7.56	1.24		
DSW40"	12/20/94		3.1	97	42	584	0.03	0.4	87	2450	3.4	104	47	657	0.69	0.04		2.36	34.381	7.2	7.59	1.13		
DSW40"	12/27/94		3.2	98	42	588	0.04	0.6	88	2470	3.3	101	46	645	0.64	0.18		2.40	34.400	7.9	7.58	1.19		
DSW40"	1/3/95		3.1	96	42	592	0.01	0.1	87	2449	3.2	98	42	589	0.55	0.04		2.33	34.396	7.5	7.59	1.08		
DSW40"	1/10/95		3.2	98	42	586	0.03	0.4	87	2435	3.2	100	45	630	0.62	0.00		2.34	34.376	7.7	7.58	1.22		
DSW40"	1/19/95		3.1	95	41	580	0.22	3.1	88	2464	3.1	96	45	632	0.59	0.04		2.32	34.382	8.4	7.60	1.23		
DSW40"	1/26/95		3.1	97	42	588	0.01	0.1	88	2473	3.2	98	47	655	0.65	0.19		2.33	34.408	7.4	7.57	1.22		
DSW40"	1/31/95		3.0	93	40	563	0.17	2.4	83	2319	3.0	94	43	607	0.64	0.05		2.32	34.376	8.7	7.60	1.45		
DSW40"	2/10/95		3.2	98	42	583	0.04	0.6	90	2514	3.2	99	47	656	0.70	0.27		2.33	34.419	8.1	7.57	1.20		
DSW40"	2/16/95		3.0	94	42	591	0.20	2.8	84	2348	3.1	96	45	626	0.69	0.00		2.33	34.367	7.4	7.58	1.08		
DSW40"	2/24/95		3.1	97	42	592	0.19	2.7	89	2495	3.2	98	45	632	0.65	0.01		2.33	34.415	7.6	7.58	1.08		
DSW40"	3/1/95		3.1	96	41	575	0.32	4.5	89	2502	3.1	96	46	642	0.73	0.03		2.33	34.368	7.8	7.56	1.07		
DSW40"	3/7/95		3.1	97	41	580	0.35	4.9	84	2366	3.2	98	43	597	0.67	0.02		2.33	34.365	13.5	7.55	1.04		
DSW40"	3/16/95		3.2	98	42	588	0.08	1.1	86	2403	3.2	100	45	631	0.62	0.04		2.33	34.370	14.4	7.57	1.01		
DSW40"	3/23/95		3.2	98	42	581	0.38	5.3	85	2395	3.2	98	43	599	0.59	0.02		2.33	34.364	8.6	7.57	1.04		
DSW40"	3/28/95		3.1	97	41	581	0.26	3.6	88	2470	3.2	98	44	618	0.66	0.00		2.34	34.370	8.6	7.58	1.07		
DSW40"	4/6/95		3.1	96	42	591	0.38	5.3	89	2500	3.2	99	47	661	0.69	0.05		2.35	34.385	8.4	7.55	1.11		
DSW40"	4/13/95		3.0	94	42	582	0.33	4.6	86	2426	3.1	96	47	665	0.68	0.01		2.34	34.374	11.1	7.57	1.20		
DSW40"	4/20/95		3.1	97	42	591	0.19	2.7	87	2444	3.1	97	43	608	0.75	0.07		2.41	34.382	9.8	7.57	1.15		
DSW40"	4/27/95		3.0	94	41	573	0.20	2.8	78	2187	3.1	94	46	648	0.74	0.01		2.40	34.334	10.8	7.57	1.23		
DSW40"	5/4/95		3.1	94	42	594	0.18	2.5	87	2441	3.2	98	47	652	0.73	0.00		2.41	34.380	9.6	7.57	1.16		
DSW40"	5/12/95		3.2	98	42	585	0.26	3.6	87	2443	3.2	99	46	647	0.69	0.22		2.41	34.371	11.1	7.54	1.18		
DSW40"	5/16/95		3.1	96	42	588	0.26	3.6	86	2427	3.2	98	46	641	0.74	0.02		2.40	34.361	11.2	7.53	1.18		
DSW40"	5/25/95		3.2	98	42	592	0.24	3.4	86	2425	3.2	98	45	625	0.73	0.01		2.41	34.393	8.9	7.53	1.19		
DSW40"	6/1/95		3.2	98	42	588	0.21	2.9	84	2369	3.2	98	46	647	0.79	0.02		2.41	34.384	10.2	7.53	1.18		
DSW40"	6/8/95		3.2	98	42	588	0.20	2.8	84	2362	3.2	98	46	642	0.73	0.01		2.41	34.384	8.9	7.56	1.21		
DSW40"	6/15/95		3.1	97	42	586	0.25	3.5	83	2337	3.2	98	45	637	0.76	0.02		2.41	34.379	9.2	7.55	1.23		
DSW40"	6/22/95		3.1	97	42	591	0.35	4.9	88	2481	3.2	98	46	641	0.68	0.12		2.42	34.418	9.7	7.53	1.12		
DSW40"	6/30/95		3.1	95	42	585	0.47	6.6	83	2342	3.1	97	46	638	0.67	0.02		2.42	34.391	9.6	7.56	1.05		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/5/95		3.1	96	42	584	0.02	0.3	83	2326	3.2	100	44	617	0.62	0.08		2.42	34.379	9.9	7.57	1.13		
DSW40"	7/12/95		3.0	93	41	569	0.09	1.3	83	2325	3.1	96	44	618	0.58	0.10		2.41	34.363	11.2	7.56	1.14		
DSW40"	7/19/95		3.0	93	41	572	0.01	0.1	84	2366	3.1	95	44	617	0.64	0.15		2.41	34.376	8.4	7.58	1.13		
DSW40"	7/27/95		3.0	94	41	575	0.04	0.6	83	2327	3.1	95	45	628	0.63	0.00		2.43	34.371	8.5	7.56	1.10		
DSW40"	8/2/95		3.1	97	41	575	0.36	5.0	88	2458	3.1	97	45	626	0.55	0.17		2.44	34.402	8.2	7.58	1.08		
DSW40"	8/10/95		3.0	93	41	578	0.31	4.3	85	2397	3.0	94	45	635	0.55	0.07		2.44	34.395	8.3	7.57	1.03		
DSW40"	8/16/95		3.0	93	40	566	0.39	5.5	82	2316	3.1	95	41	581	0.56	0.02		2.45	34.371	7.6	7.56	1.05		
DSW40"	8/24/95		3.0	94	42	585	0.25	3.5	82	2306	3.0	93	45	635	0.56	0.00		2.44	34.387	7.4	7.58	0.99		
DSW40"	8/31/95		3.0	94	42	588	0.20	2.8	85	2380	3.0	94	45	637	0.64	0.17		2.44	34.399	8.2	7.58	1.03		
DSW40"	9/6/95		3.1	95	42	582	0.19	2.7	85	2380	3.1	95	44	618	0.61	0.38		2.44	34.384	8.4	7.57	1.04		
DSW40"	9/14/95		3.0	93	41	572	0.31	4.3	82	2305	3.1	94	45	627	0.58	0.18		2.45	34.377	8.4	7.61	0.98		
DSW40"	9/20/95		3.0	94	41	576	0.12	1.7	82	2303	3.1	95	45	634	0.75	0.13		2.44	34.372	8.0	7.67	0.98		
DSW40"	9/27/95		3.0	93	41	574	0.31	4.3	81	2277	3.1	95	45	624	0.70	1.58		2.44	34.369	8.1	7.58	1.00		
DSW40"	10/5/95		3.0	94	41	575	0.52	7.3	82	2314	3.1	95	45	623	0.65	0.33		2.45	34.392	8.8	7.63	0.96		
DSW40"	10/10/95		3.0	93	41	576	0.41	5.7	84	2359	3.1	95	45	632	0.61	0.15		2.46	34.398	8.4	7.66	0.95		
DSW40"	10/19/95		3.0	94	42	581	0.50	7.0	81	2267	3.1	95	43	602	0.78	0.19		2.42	34.381	8.0	7.60	0.92		
DSW40"	10/25/95		3.0	93	42	584	0.30	4.2	82	2293	3.1	94	45	625	0.69	0.43		2.42	34.394	9.4	7.63	0.92		
DSW40"	11/1/95		3.0	94	42	583	0.39	5.5	83	2340	3.1	96	31	438	0.56	0.30		2.42	34.393	10.2	7.61	0.93		
DSW40"	11/8/95		3.0	94	41	577	0.41	5.7	82	2304	3.1	95	44	621	0.64	0.32		2.41	34.394	9.4	7.72	0.92		
DSW40"	11/16/95		3.0	92	41	580	0.47	6.6	78	2193	3.1	96	45	632	0.66	0.36		2.41	34.410	10.8	7.58	0.98		
DSW40"	11/21/95		3.1	96	41	578	0.48	6.7	83	2342	3.1	97	43	598	0.72	0.32		2.41	34.390	10.2	7.59	0.96		
DSW40"	11/27/95		3.1	96	42	594	0.47	6.6	83	2327	3.1	97	44	620	0.67	0.26		2.43	34.404	11.2	7.58	0.95		
DSW40"	12/5/95		3.0	93	42	581	0.29	4.1	82	2289	3.0	94	42	593	0.64	0.06		2.45	34.384	8.4	7.56	1.01		
DSW40"	12/11/95		3.0	94	44	619	0.36	5.0	87	2430	3.1	95	43	606	0.61	0.03		2.46	34.401	8.3	7.56	0.97		
DSW40"	12/21/95		3.0	94	42	582	0.21	2.9	83	2317	3.1	96	45	625	0.51	0.49		2.45	34.397	8.3	7.49	1.00		
DSW40"	12/27/95		3.0	94	42	581	0.07	1.0	83	2339	3.1	97	44	616	0.64	0.00		2.43	34.397	8.3	7.57	1.03		
DSW40"	1/3/96		3.1	94	42	585	0.12	1.7	84	2366	3.1	96	44	615	0.50	0.04		2.41	34.398	8.2	7.67	0.99		
DSW40"	1/10/96		3.0	94	41	574	0.02	0.3	85	2377	3.1	95	41	569	0.91	0.14		2.40	34.388	8.0	7.58	0.88		
DSW40"	1/17/96		3.0	94	41	573	0.01	0.1	81	2274	3.1	97	43	604	0.71	0.38		2.36	34.364	8.3	7.57	0.93		
DSW40"	1/23/96		3.1	95	41	575	0.11	1.5	84	2349	3.1	96	45	634	0.74	0.35		2.39	34.407	8.1	7.58	0.99		
DSW40"	1/31/96		3.1	95	41	573	0.26	3.6	81	2270	3.1	97	39	547	0.63	0.17		2.37	34.368	8.3	7.59	0.97		
DSW40"	2/7/96		3.0	94	43	603	0.40	5.6	81	2268	3.1	97	44	611	0.86	0.85		2.39	34.364	8.9	7.56	0.96		
DSW40"	2/16/96		3.1	94	42	588	0.33	4.6	81	2287	3.1	96	45	634	1.06	1.20		2.38	34.374	8.7	7.55	1.06		
DSW40"	2/22/96		3.0	94	42	585	0.56	7.8	83	2342	3.1	96	48	668	0.99	1.28		2.40	34.411	8.4	7.54	0.88		
DSW40"	2/28/96		3.1	95	42	582	0.40	5.6	85	2383	3.1	97	44	611	0.72	0.85		2.40	34.408	8.7	7.57	0.89		
DSW40"	3/7/96		3.1	95	42	589	0.34	4.8	85	2400	3.2	98	41	578	0.70	0.42		2.38	34.421	8.5	7.57	1.02		
DSW40"	3/14/96		3.0	92	41	573	0.49	6.9	81	2281	3.1	95	43	606	0.70	0.82		2.37	34.388	9.0	7.59	0.98		
DSW40"	3/21/96		3.0	92	41	572	0.57	8.0	79	2232	3.1	94	33	455	0.64	0.00		2.39	34.383	8.8	7.59	0.95		
DSW40"	3/28/96		3.1	95	41	576	0.30	4.2	81	2275	3.1	96	43	600	0.60	1.10		2.38	34.372	9.0	7.56	0.96		
DSW40"	4/3/96		3.1	94	40	567	0.19	2.7	79	2229	3.1	96	45	628	0.64	1.08		2.37	34.376	8.8	7.55	0.96		
DSW40"	4/10/96		3.1	95	41	578	0.44	6.2	83	2333	3.2	99	45	633	0.59	0.92		2.36	34.396	9.1	7.58	10.74		
DSW40"	4/17/96		3.1	96	41	576	0.22	3.1	86	2416	3.2	99	44	613	0.65	0.98		2.35	34.380	8.7	7.66	9.08		
DSW40"	4/24/96		3.1	97	41	577	0.12	1.7	84	2369	3.2	99	45	636	0.66	1.55		2.41	34.398	8.9	7.54	9.16		
DSW40"	4/30/96		3.2	98	41	574	0.07	1.0	82	2296	3.3	101	46	645	0.79	0.20		2.42	34.410	9.1	7.54	9.45		
DSW40"	5/9/96		3.0	94	42	582	0.08	1.1	73	2055	3.1	97	36	503	0.53	0.95		2.42	34.404	8.9	7.54	9.32		
DSW40"	5/17/96		3.1	95	41	569	0.14	2.0	78	2200	3.2	99	33	461	0.49	1.18		2.43	34.373	10.9	7.56	9.26		
DSW40"	5/22/96		3.0	94	41	568	0.16	2.2	80	2234	3.1	96	45	626	0.62	1.15		2.43	34.403	8.6	7.59	9.68		
DSW40"	5/29/96		3.1	95	42	582	0.25	3.5	88	2461	3.2	98	45	626	0.60	1.53		2.43	34.409	8.6	7.55	10.06		
DSW40"	6/5/96		3.0	94	41	578	0.12	1.7	85	2395	3.2	98	44	622	0.65	1.00		2.43	34.386	9.8	7.55	10.45		
DSW40"	6/10/96		3.0	94	42	590	0.05	0.7	86	2429	3.1	96	44	619	0.60	0.80		2.42	34.395	9.2	7.60	10.68		
DSW40"	6/19/96		3.0	94	41	575	0.25	3.5	83	2321	3.1	96	44	621	0.57	0.70		2.42	34.378	8.7	7.56	1.24		
DSW40"	6/28/96		3.0	94	42	582	0.30	4.2	84	2352	3.2	98	45	634	0.59	1.13		2.42	34.391	8.8	7.54	1.14		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/5/96		3.1	96	42	586	0.35	4.9	81	2271	3.2	99	47	654	0.67	0.90		2.42	34.405	8.8	7.55	1.08		
DSW40"	7/10/96		3.1	97	41	579	0.24	3.4	85	2376	3.3	101	45	636	0.63	1.38		2.42	34.394	10.1	7.56	1.08		
DSW40"	7/18/96		3.0	92	42	588	0.25	3.5	86	2411	3.0	94	45	635	0.64	1.28		2.44	34.394	10.1	7.59	1.06		
DSW40"	7/25/96		3.0	94	43	596	0.11	1.5	88	2473	3.1	97	46	645	0.64	1.18		2.31	34.422	8.7	7.57	1.16		
DSW40"	8/2/96		3.1	94	42	591	0.36	5.0	88	2479	3.2	98	46	649	0.57	0.90		2.11	34.405	8.2	7.59	1.19		
DSW40"	8/8/96		3.1	94	43	606	0.72	10.1	88	2481	3.1	97	46	638	0.64	0.85		2.28	34.402	8.4	7.56	1.08		
DSW40"	8/14/96		3.0	93	42	594	0.63	8.8	88	2471	3.1	97	43	605	0.60	1.35		2.17	34.388	8.7	7.56	1.04		
DSW40"	8/19/96		3.1	95	42	591	0.40	5.6	81	2281	3.2	99	46	639	0.58	0.78		2.27	34.413	9.3	7.57	0.90		
DSW40"	8/29/96		3.1	95	43	597	0.36	5.0	85	2397	3.1	96	47	652	0.59	1.28		2.27	34.421	8.6	7.56	0.95		
DSW40"	9/5/96		3.1	96	42	593	0.80	11.2	85	2383	3.1	97	47	658	0.63	0.88		2.27	34.429	8.1	7.54	1.01		
DSW40"	9/12/96		3.1	95	42	586	0.09	1.3	84	2370	3.1	96	38	526	0.70	0.77		2.25	34.411	8.1	7.59	0.93		
DSW40"	9/17/96		3.0	94	42	589	0.02	0.3	86	2411	3.1	97	33	465	0.80	1.00		2.26	34.402	8.3	7.53	0.99		
DSW40"	9/25/96		3.0	94	42	591	0.31	4.3	83	2329	3.1	96	42	584	0.83	0.85		2.22	34.399	8.5	7.54	0.96		
DSW40"	9/30/96		3.1	97	42	583	0.15	2.1	84	2362	3.2	99	41	578	0.83	0.20		2.17	34.380	8.7	7.54	0.92		
DSW40"	10/10/96		3.0	94	42	589	0.47	6.6	85	2400	3.1	96	45	625	0.58	0.87		2.23	34.384	8.9	7.56	1.00		
DSW40"	10/14/96		3.1	96	44	617	0.47	6.6	82	2310	3.2	100	45	631	0.66	0.38		2.28	34.384	9.1	7.57	0.93		
DSW40"	10/24/96		3.0	94	42	588	0.40	5.6	83	2345	3.1	96	45	626	0.70	0.75		2.29	34.387	8.7	7.54	0.96		
DSW40"	10/31/96		3.1	97	42	592	0.23	3.2	84	2345	3.2	100	45	634	0.64	0.85		2.36	34.393	8.2	7.53	0.98		
DSW40"	11/8/96		3.0	94	42	589	0.39	5.5	86	2419	3.1	95	44	619	0.62	0.77		2.36	34.395	7.8	7.51	1.01		
DSW40"	11/13/96		3.1	95	41	578	0.29	4.1	86	2404	3.1	97	45	626	0.70	0.92		2.37	34.394	8.3	7.57	1.02		
DSW40"	11/20/96		3.0	93	41	568	0.35	4.9	82	2309	3.1	96	44	611	0.62	1.25		2.34	34.369	7.7	7.52	1.04		
DSW40"	11/27/96		3.0	94	41	570	0.36	5.0	82	2313	3.1	97	46	642	0.68	0.98		2.36	34.388	8.2	7.55	1.04		
DSW40"	12/4/96		3.1	96	42	585	0.37	5.2	89	2491	3.2	98	45	636	0.70	0.95		2.36	34.404	8.2	7.54	0.99		
DSW40"	12/11/96		3.1	96	41	581	0.54	7.6	81	2278	3.2	98	49	679	0.68	0.87		2.35	34.375	8.5	7.55	1.01		
DSW40"	12/18/96		3.1	94	41	570	0.25	3.5	84	2362	3.2	98	44	614	0.70	0.85		2.36	34.403	8.3	7.56	1.00		
DSW40"	12/23/96		3.0	94	40	566	0.33	4.6	82	2302	3.1	96	43	604	0.90	0.68		2.35	34.376	8.5	7.55	1.50		
DSW40"	1/2/97		3.1	95	42	582	0.25	3.5	84	2351	3.1	97	44	613	0.68	0.85		2.36	34.385	8.2	7.56	0.96		
DSW40"	1/9/97		3.0	94	41	572	0.22	3.1	83	2333	3.2	98	43	606	0.60	0.85		2.36	34.381	6.9	7.56	0.96		
DSW40"	1/16/97		3.3	103	41	578	0.05	0.7	88	2485	3.4	106	45	632	0.67	1.00		2.36	34.412	7.8	7.57	0.97		
DSW40"	1/21/97		3.0	94	41	572	0.01	0.1	84	2352	3.1	96	42	594	0.70	0.63		2.15	34.712	8.7	7.57	1.00		
DSW40"	1/28/97		3.0	93	41	570	0.01	0.1	86	2429	3.0	94	43	598	0.69	0.73		2.16	34.932	8.8	7.56	1.01		
DSW40"	2/7/97		3.0	94	42	591	0.01	0.1	83	2334	3.1	95	45	629	0.65	0.98		2.12	34.376	8.4	7.57	1.05		
DSW40"	2/12/97		3.0	94	42	590	0.11	1.5	91	2543	3.1	96	44	610	0.70	0.92		2.16	34.419	8.0	7.59	1.02		
DSW40"	2/19/97		3.1	95	42	583	0.07	1.0	85	2378	3.1	96	44	620	0.53	0.70		2.11	34.391	8.1	7.59	0.98		
DSW40"	2/25/97		3.0	92	42	589	0.09	1.3	87	2447	3.1	95	46	639	0.62	1.00		2.14	34.412	12.6	7.61	1.00		
DSW40"	3/4/97		3.0	91	42	591	0.05	0.7	86	2420	3.0	93	46	640	0.71	1.13		2.14	34.400	8.3	7.61	0.97		
DSW40"	3/12/97		3.0	92	41	579	0.22	3.1	90	2537	3.1	97	43	609	0.71	0.80		2.15	34.383	8.2	7.57	1.00		
DSW40"	3/20/97		3.1	95	41	575	0.11	1.5	88	2472	3.3	101	43	607	0.52	1.25		2.15	34.390	8.2	7.56	0.96		
DSW40"	3/25/97		3.1	94	42	584	0.06	0.8	85	2390	3.2	99	44	622	0.69	0.87		2.12	34.391	8.1	7.55	1.01		
DSW40"	3/31/97		3.1	95	41	575	0.10	1.4	80	2254	3.2	98	45	627	0.62	0.50		2.12	34.358	8.8	7.56	1.03		
DSW40"	4/7/97		3.0	92	41	570	0.36	5.0	83	2327	3.1	95	42	587	0.69	0.52		2.15	34.372	9.0	7.56	0.93		
DSW40"	4/14/97		3.0	92	42	584	0.19	2.7	82	2308	3.0	94	**46**	649	0.62	0.75		2.67	34.387	8.8	7.59	0.91		
DSW40"	4/24/97		3.1	96	41	580	0.39	5.5	84	2364	3.7	113	42	588	0.69	0.70		2.62	34.373	8.8	7.58	1.02		
DSW40"	5/2/97		3.0	93	42	582	0.34	4.8	79	2207	3.1	97	43	606	0.67	0.70		2.70	34.392	10.3	7.57	0.91		
DSW40"	5/8/97		3.3	103	41	580	0.25	3.5	81	2263	3.6	110	**44**	616	0.66	0.78		2.65	34.374	8.6	7.59	0.89		
DSW40"	5/13/97		3.2	99	41	573	0.30	4.2	80	2233	4.1	126	42	595	0.67	0.75		2.46	34.377	9.6	7.59	0.96		
DSW40"	5/19/97		3.2	100	41	578	0.33	4.6	84	2368	3.4	106	43	604	0.65	0.95		2.49	34.399	7.7	7.61	0.97		
DSW40"	5/29/97		3.0	93	41	572	0.22	3.1	86	2422	3.1	97	42	594	0.62	0.80		2.49	34.371	8.1	7.58	1.52		
DSW40"	6/3/97		3.0	93	41	573	0.31	4.3	88	2481	3.1	97	43	604	0.70	0.88		2.56	34.379	7.8	7.61	1.06		
DSW40"	6/10/97		3.0	91	41	576	0.31	4.3	89	2504	3.1	95	42	593	0.67	0.80		2.53	34.347	7.7	7.67	1.03		
DSW40"	6/18/97		3.0	93	42	582	0.41	5.7	89	2486	3.2	98	**47**	651	0.60	0.50		2.51	34.378	7.7	7.56	1.01		
DSW40"	6/23/97		3.1	94	41	577	0.12	1.7	88	2473	3.2	100	42	587	0.65	0.45		2.65	34.359	7.8	7.60	1.06		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/3/97		3.1	96	41	575	0.04	0.6	87	2443	3.3	101	43	595	0.66	0.83		2.63	34.362	8.5	7.62	0.99		
DSW40"	7/9/97		3.1	94	41	578	0.23	3.2	87	2431	3.1	97	43	604	0.63	0.68		2.64	34.401	8.8	7.63	0.97		
DSW40"	7/17/97		3.0	94	41	576	0.07	1.0	88	2473	3.2	98	42	588	0.71	0.58		2.55	34.384	9.1	7.61	0.99		
DSW40"	7/25/97		3.1	96	42	584	0.16	2.2	90	2536	3.3	102	**45**	634	0.58	0.55		2.66	34.416	7.9	7.68	1.00		
DSW40"	7/31/97		3.1	94	41	576	0.16	2.2	90	2540	3.2	98	43	597	0.69	0.65		2.60	34.399	9.3	7.68	1.00		
DSW40"	8/7/97		3.1	94	40	566	0.14	2.0	83	2331	3.2	98	42	585	0.66	0.75		2.53	34.329	11.9	7.70	1.10		
DSW40"	8/13/97		3.1	94	41	574	0.02	0.3	84	2356	3.2	99	43	608	0.64	0.98		2.49	34.406	11.0	7.71	1.01		
DSW40"	8/22/97		3.0	94	41	571	0.14	2.0	85	2375	3.1	97	43	597	0.62	1.83		2.48	34.382	8.6	7.68	1.00		
DSW40"	8/27/97		3.1	95	41	578	0.26	3.6	89	2491	3.2	100	42	589	0.63	0.63		2.49	34.395	10.7	7.68	1.00		
DSW40"	9/3/97		3.1	96	41	577	0.29	4.1	91	2569	3.3	102	42	589	0.65	1.28		2.49	34.384	10.2	7.71	0.97		
DSW40"	9/11/97		3.1	97	41	577	0.21	2.9	87	2453	3.2	98	43	597	0.69	0.78		2.49	34.397	8.4	7.73	0.97		
DSW40"	9/18/97		3.1	95	41	573	0.10	1.4	85	2391	3.3	101	42	582	0.60	0.58		2.49	34.372	8.7	7.73	0.98		
DSW40"	9/25/97		3.1	97	42	585	0.42	5.9	90	2534	3.3	103	43	596	0.63	0.58		2.49	34.400	11.1	7.73	1.02		
DSW40"	9/30/97		3.0	93	41	568	0.38	5.3	85	2376	3.2	98	42	583	0.62	0.75		2.53	34.357	8.1	7.74	0.98		
DSW40"	10/9/97		3.0	94	40	566	0.31	4.3	83	2345	3.1	97	42	585	0.66	0.25		2.53	34.339	8.2	7.72	1.08		
DSW40"	10/16/97		3.1	96	41	574	0.34	4.8	88	2481	3.2	100	42	590	0.59	0.58		2.54	34.393	7.7	7.74	0.98		
DSW40"	10/23/97		3.0	93	41	574	0.19	2.7	86	2413	3.3	101	46	641	0.62	0.70		2.53	34.380	7.3	7.77	1.13		
DSW40"	10/30/97		3.1	97	41	575	0.20	2.8	89	2500	3.3	102	48	671	0.63	0.35		2.54	34.394	7.4	7.74	1.09		
DSW40"	11/6/97		3.1	95	42	587	0.28	3.9	87	2439	3.2	98	46	646	0.63	0.78		2.53	34.392	7.2	7.73	1.12		
DSW40"	11/10/97		3.2	98	43	596	0.28	3.9	90	2537	3.3	102	46	646	0.64	0.60		2.54	34.420	6.9	7.74	1.15		
DSW40"	11/20/97		3.1	94	42	593	0.33	4.6	89	2509	3.2	100	46	641	0.66	0.20		2.52	34.415	6.6	7.71	1.10		
DSW40"	11/25/97		3.1	95	42	585	0.36	5.0	87	2438	3.1	97	46	644	0.68	0.05		2.52	34.378	7.1	7.70	1.07		
DSW40"	12/1/97		3.2	98	41	581	0.33	4.6	89	2513	3.3	102	45	634	0.66	0.13		2.52	34.394	9.4	7.70	1.09		
DSW40"	12/11/97		3.1	97	40	562	0.09	1.3	90	2535	3.2	99	43	600	0.64	0.65		2.52	34.392	8.4	7.71	1.04		
DSW40"	12/18/97		3.1	96	42	582	0.29	4.1	87	2449	3.3	101	43	602	0.62	0.35		2.51	34.370	8.1	7.70	1.07		
DSW40"	12/24/97		3.1	96	42	592	0.20	2.8	92	2589	3.2	100	43	605	0.64	0.70		2.52	34.415	8.4	7.72	1.10		
DSW40"	12/29/97		3.1	95	41	576	0.23	3.2	84	2354	3.2	98	42	593	0.67	0.23		2.51	34.346	8.5	7.72	1.11		
DSW40"	1/6/98		3.1	95	42	588	0.07	1.0	89	2503	3.2	100	42	594	0.62	0.47		2.52	34.397	8.1	7.70	1.04		
DSW40"	1/14/98		3.1	96	42	583	0.02	0.3	88	2474	3.3	101	43	596	0.63	0.73		2.51	34.388	7.1	7.72	1.02		
DSW40"	1/22/98		3.2	98	41	581	0.02	0.3	88	2463	3.3	103	43	596	0.64	0.50		2.52	34.387	7.9	7.71	1.05		
DSW40"	1/29/98		3.2	98	40	564	0.14	2.0	84	2354	3.3	101	42	590	0.63	0.20		2.28	34.361	8.0	7.72	1.14		
DSW40"	2/5/98		3.2	98	42	582	0.09	1.3	87	2433	3.2	100	42	587	0.61	0.20		2.28	34.381	7.9	7.74	1.07		
DSW40"	2/9/98		3.1	97	41	580	0.13	1.8	85	2401	3.2	100	44	619	0.64	0.05		2.28	34.371	7.7	7.74	1.09		
DSW40"	2/17/98		3.1	95	41	570	0.22	3.1	83	2343	3.2	100	44	620	0.62	0.43		2.28	34.359	8.2	7.75	1.20		
DSW40"	2/23/98		3.2	99	41	576	0.21	2.9	89	2512	3.3	103	44	621	0.57	0.20		2.28	34.388	8.2	7.75	1.21		
DSW40"	3/5/98		3.2	99	42	584	0.12	1.7	86	2401	3.3	102	45	633	0.62	0.10		2.28	34.377	8.3	7.54	1.14		
DSW40"	3/12/98		3.3	101	41	572	0.16	2.2	84	2365	3.4	106	44	623	0.60	0.22		2.27	34.383	8.4	7.53	1.18		
DSW40"	3/19/98		3.1	97	41	570	0.22	3.1	85	2398	3.2	100	44	622	0.55	0.15		2.26	34.377	8.6	7.51	1.16		
DSW40"	3/25/98		3.5	107	42	586	0.30	4.2	91	2561	3.6	112	44	622	0.55	0.15		2.27	34.408	8.5	7.53	1.21		
DSW40"	4/2/98		3.3	102	42	584	0.27	3.8	89	2490	3.4	106	44	617	0.57	0.55		2.34	34.386	9.2	7.53	1.13		
DSW40"	4/9/98		3.3	101	41	581	0.17	2.4	83	2340	3.4	104	44	611	0.57	0.50		2.34	34.365	8.1	7.56	1.07		
DSW40"	4/16/98		3.3	101	42	588	0.09	1.3	91	2563	3.4	106	44	621	0.63	0.23		2.34	34.418	7.2	7.55	1.09		
DSW40"	4/20/98		3.3	102	39	543	0.14	2.0	87	2444	3.4	104	43	608	0.63	0.22		2.33	34.371	7.9	7.54	1.10		
DSW40"	4/30/98		3.3	101	42	587	0.21	2.9	94	2648	3.5	107	44	612	0.56	0.70		2.34	34.373	7.1	7.55	1.12		
DSW40"	5/7/98		3.3	101	41	575	0.16	2.2	88	2476	3.4	106	43	605	0.56	0.27		2.34	34.377	7.1	7.53	1.07		
DSW40"	5/15/98		3.2	99	41	579	0.19	2.7	86	2407	3.4	104	42	594	0.55	0.63		2.33	34.345	8.3	7.55	1.11		
DSW40"	5/21/98		3.2	98	42	583	0.10	1.4	81	2269	3.4	104	44	611	0.60	0.28		2.33	34.370	7.7	7.55	1.11		
DSW40"	5/28/98		3.2	100	41	580	0.04	0.6	86	2426	3.3	102	44	620	0.59	0.20		2.34	34.371	8.0	7.56	1.12		
DSW40"	6/4/98		3.3	103	41	580	0.05	0.7	89	2512	3.4	106	46	642	0.70	0.15		2.34	34.395	8.1	7.55	1.11		
DSW40"	6/9/98		3.2	100	41	580	0.10	1.4	89	2498	3.3	103	44	619	0.57	0.50		2.34	34.387	8.6	7.55	1.13		
DSW40"	6/17/98		3.3	101	42	584	0.06	0.8	89	2494	3.4	106	45	629	0.61	0.48		2.34	34.400	7.8	7.54	1.15		
DSW40"	6/23/98		3.2	100	42	585	0.20	2.8	89	2496	3.4	104	44	614	0.61	0.25		2.34	34.384	8.2	7.53	1.13		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/1/98		3.3	101	42	587	0.02	0.3	90	2516	3.4	106	44	617	0.57	0.07		2.42	34.392	8.1	7.54	1.11		
DSW40"	7/9/98		3.2	98	41	580	0.05	0.7	87	2435	3.4	106	44	617	0.57	0.52		2.99	34.372	8.0	7.52	1.06		
DSW40"	7/16/98		3.3	101	42	583	0.21	2.9	88	2457	3.4	104	45	625	0.62	0.17		2.38	34.381	8.1	7.54	1.07		
DSW40"	7/23/98		3.2	99	41	576	0.25	3.5	85	2382	3.3	103	44	621	0.62	0.80		2.40	34.344	8.2	7.54	1.14		
DSW40"	7/29/98		3.3	102	41	570	0.16	2.2	86	2404	3.5	107	45	632	0.70	0.22		2.35	34.363	8.2	7.53	1.12		
DSW40"	8/4/98		3.3	102	42	585	0.04	0.6	93	2598	3.4	106	45	634	0.69	0.65		2.38	34.386	7.3	7.53	1.13		
DSW40"	8/13/98		3.2	98	41	569	0.06	0.8	85	2376	3.3	103	45	625	0.69	0.37		2.38	34.338	7.7	7.52	1.13		
DSW40"	8/19/98		3.1	97	42	581	0.07	1.0	86	2410	3.3	102	45	626	0.69	1.02		2.36	34.351	10.1	7.51	1.17		
DSW40"	8/26/98		3.2	100	41	577	0.07	1.0	86	2427	3.4	105	45	631	0.67	0.45		2.34	34.354	8.2	7.52	1.05		
DSW40"	9/3/98		3.3	103	41	571	0.04	0.6	85	2379	3.5	108	45	626	0.69	0.35		2.34	34.357	8.7	7.52	1.05		
DSW40"	9/10/98		3.2	100	41	578	0.04	0.6	83	2320	3.4	106	46	650	0.77	0.38		2.36	34.339	9.2	7.51	1.01		
DSW40"	9/17/98		3.2	100	41	567	0.07	1.0	86	2404	3.5	108	46	645	0.82	1.53		2.37	34.364	10.8	7.50	1.01		
DSW40"	9/21/98		3.3	102	41	571	0.04	0.6	86	2404	3.5	108	46	637	0.71	1.07		2.39	34.378	9.3	7.53	1.04		
DSW40"	10/1/98		3.2	100	41	581	0.03	0.4	84	2370	3.5	107	46	643	0.65	0.78		2.39	34.370	9.6	7.53	1.22		
DSW40"	10/8/98		3.2	98	41	574	0.08	1.1	89	2497	3.4	104	45	628	0.66	0.02		2.37	34.342	9.0	7.52	1.14		
DSW40"	10/14/98		3.2	98	41	580	0.13	1.8	90	2519	3.4	104	45	634	0.68	0.13		2.36	34.373	9.5	7.52	1.18		
DSW40"	10/21/98		3.2	100	41	567	0.11	1.5	82	2309	3.5	107	45	633	0.69	0.85		2.35	34.355	9.7	7.54	1.15		
DSW40"	10/27/98		3.2	99	41	571	0.06	0.8	87	2438	3.4	104	46	639	0.67	1.20		2.36	34.395	9.1	7.56	1.22		
DSW40"	11/6/98		3.1	97	41	569	0.07	1.0	87	2429	3.3	103	43	606	0.70	0.88		2.29	34.399	9.7	7.54	1.04		
DSW40"	11/9/98		3.2	98	42	591	0.01	0.1	86	2413	3.4	106	43	596	0.81	1.28		2.34	34.401	9.3	7.56	1.17		
DSW40"	11/18/98		3.2	98	42	584	0.08	1.1	87	2434	3.4	104	43	600	0.72	1.25		2.33	34.395	9.6	7.55	1.16		
DSW40"	11/23/98		3.2	99	41	578	0.01	0.1	86	2418	3.3	103	44	610	0.71	1.58		2.27	34.375	9.3	7.55	1.13		
DSW40"	11/30/98		3.2	99	41	580	0.05	0.7	86	2425	3.4	105	43	601	0.72	0.65		2.31	34.381	7.5	7.55	1.15		
DSW40"	12/8/98		3.2	98	41	578	0.01	0.1	85	2400	3.3	103	43	605	0.75	0.80		2.21	34.385	8.2	7.56	1.08		
DSW40"	12/17/98		3.2	98	41	568	0.01	0.1	84	2349	3.3	101	43	598	0.74	0.65		2.20	34.363	10.0	7.54	1.15		
DSW40"	12/21/98		3.1	97	41	573	0.04	0.6	83	2325	3.3	102	44	615	0.83	1.15		2.22	34.361	10.0	7.55	1.21		
DSW40"	12/29/98		3.1	95	41	578	0.11	1.5	91	2563	3.2	99	43	602	0.69	0.65		2.23	34.404	9.4	7.54	1.14		
DSW40"	1/5/99		3.1	96	42	591	0.12	1.7	87	2446	3.3	101	43	608	0.72	0.80		2.24	34.403	9.0	7.54	1.08		
DSW40"	1/14/99		3.0	93	41	581	0.01	0.1	86	2406	3.2	98	44	610	0.74	0.90		2.21	34.369	8.7	7.53	1.19		
DSW40"	1/21/99		3.0	94	42	582	0.03	0.4	86	2428	3.2	98	44	615	0.75	0.85		2.23	34.382	8.4	7.53	1.15		
DSW40"	1/26/99		3.1	94	42	591	0.07	1.0	87	2435	3.2	100	43	605	0.68	0.90		2.24	34.380	7.9	7.55	1.07		
DSW40"	2/4/99		3.1	95	41	573	0.11	1.5	88	2457	3.3	102	44	613	0.73	0.73		2.22	34.385	7.8	7.53	1.16		
DSW40"	2/11/99		3.2	98	42	584	0.10	1.4	91	2551	3.2	99	44	615	0.68	1.15		2.24	34.418	7.6	7.55	1.26		
DSW40"	2/18/99		3.0	94	41	581	0.01	0.1	84	2371	3.2	99	43	600	0.70	0.58		2.20	34.343	8.7	7.55	1.35		
DSW40"	2/23/99		3.1	96	42	587	0.01	0.1	90	2532	3.3	101	44	611	0.69	0.88		2.21	34.415	8.1	7.54	1.19		
DSW40"	3/3/99		3.0	93	42	585	0.09	1.3	85	2388	3.0	94	43	602	0.64	1.05		2.19	34.348	8.2	7.52	1.26		
DSW40"	3/9/99		3.1	96	41	573	0.03	0.4	89	2503	3.3	101	42	591	0.64	0.87		2.21	34.395	8.6	7.55	1.08		
DSW40"	3/18/99		3.0	94	40	566	0.03	0.4	84	2350	3.2	99	43	604	0.65	0.95		2.18	34.327	7.6	7.55	1.12		
DSW40"	3/24/99		3.1	95	41	578	0.16	2.2	86	2424	3.2	100	44	610	0.66	0.75		2.18	34.363	7.3	7.55	1.53		
DSW40"	3/30/99		3.1	97	41	567	0.04	0.6	84	2361	3.2	98	43	603	0.66	0.92		2.18	34.338	8.5	7.54	1.15		
DSW40"	4/7/99		3.0	93	40	554	0.03	0.4	89	2491	3.1	97	44	609	0.64	0.87		2.18	34.364	9.0	7.52	1.08		
DSW40"	4/14/99		3.0	93	40	566	0.03	0.4	89	2506	3.1	97	43	599	0.67	0.70		2.22	34.342	8.4	7.51	1.12		
DSW40"	4/21/99		3.1	96	41	578	0.08	1.1	89	2509	3.3	101	44	613	0.63	0.60		2.20	34.384	10.5	7.54	1.09		
DSW40"	4/29/99		3.1	95	41	572	0.02	0.3	88	2459	3.2	100	43	599	0.65	0.73		2.17	34.366	7.7	7.54	1.14		
DSW40"	5/5/99		3.0	93	41	579	0.35	4.9	89	2500	3.4	104	44	612	0.65	0.75		2.19	34.396	8.9	7.52	1.17		
DSW40"	5/12/99		3.0	94	40	560	0.04	0.6	88	2470	3.2	99	43	597	0.66	0.67		2.17	34.393	8.8	7.51	1.15		
DSW40"	5/20/99		3.1	94	41	575	0.03	0.4	85	2385	3.2	99	44	611	0.67	0.85		2.21	34.384	9.5	7.52	1.00		
DSW40"	5/24/99		3.0	94	42	582	0.01	0.1	85	2386	3.2	100	44	620	0.72	0.77		2.24	34.408	9.5	7.53	0.99		
DSW40"	6/3/99		3.1	96	41	577	0.11	1.5	86	2401	3.3	102	45	626	0.66	0.50		2.22	34.383	9.0	7.51	1.05		
DSW40"	6/9/99		3.1	97	41	576	0.17	2.4	84	2359	3.4	104	43	608	0.64	0.55		2.19	34.378	9.4	7.55	1.07		
DSW40"	6/16/99		3.1	97	40	566	0.05	0.7	85	2376	3.3	102	46	639	0.69	1.03		2.26	34.405	8.8	7.53	1.09		
DSW40"	6/24/99		3.1	96	40	567	0.03	0.4	83	2342	3.3	102	44	617	0.69	0.55		2.18	34.399	7.7	7.53	1.01		
DSW40"	6/29/99		3.1	95	41	577	0.02	0.3	83	2317	3.2	99	44	617	0.69	0.98		2.18	34.398	8.4	7.52	0.92		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/8/99		3.1	97	41	576	0.03	0.4	88	2468	3.2	99	44	621	0.67	0.80		2.25	34.414	8.3	7.52	0.93		
DSW40"	7/12/99		3.0	93	41	573	0.07	1.0	81	2288	3.2	98	44	610	0.66	0.78		2.43	34.400	7.4	7.51	0.97		
DSW40"	7/20/99		3.1	95	41	573	0.14	2.0	85	2387	3.2	98	44	611	0.69	0.90		2.46	34.395	10.8	7.52	1.04		
DSW40"	7/27/99		3.1	95	41	571	0.27	3.8	80	2260	3.3	101	42	595	0.65	0.35		2.38	34.385	10.0	7.56	1.07		
DSW40"	8/5/99		3.1	97	43	599	0.24	3.4	81	2269	3.4	105	42	595	0.66	0.43		2.40	34.394	7.8	7.56	1.05		
DSW40"	8/11/99		3.0	94	42	585	0.13	1.8	83	2318	3.2	99	42	590	0.63	0.82		2.23	34.408	8.4	7.74	1.05		
DSW40"	8/18/99		3.1	94	41	567	0.15	2.1	80	2239	3.2	100	42	592	0.63	0.90		2.40	34.404	8.1	7.62	1.10		
DSW40"	8/24/99		3.1	94	42	587	0.02	0.3	83	2342	3.2	98	42	593	0.62	0.20		2.43	34.427	8.6	7.55	1.06		
DSW40"	8/31/99		3.0	93	41	573	0.04	0.6	82	2311	3.1	97	44	612	0.61	1.03		2.33	34.420	10.9	7.63	1.06		
DSW40"	9/8/99		3.1	95	42	587	0.02	0.3	83	2320	3.3	103	43	603	0.61	0.90		2.41	34.404	8.3	7.59	1.06		
DSW40"	9/15/99		3.1	96	40	566	0.04	0.6	80	2236	3.3	102	42	592	0.59	0.52		2.38	34.401	8.1	7.59	1.06		
DSW40"	9/20/99		3.0	94	42	589	0.03	0.4	82	2299	3.3	101	44	613	0.63	1.25		2.24	34.412	10.3	7.61	1.09		
DSW40"	9/30/99		3.0	92	40	563	0.09	1.3	82	2297	3.2	98	45	632	0.61	0.82		2.37	34.382	10.3	7.61	1.06		
DSW40"	10/12/99		2.9	90	41	574	0.17	2.4	79	2231	3.1	95	42	590	0.62	1.05		2.25	34.424	8.1	7.56	1.15		
DSW40"	11/3/99		3.0	93	41	578	0.10	1.4	89	2494	3.2	98	43	603	0.60	0.48		2.26	34.403	8.4	7.58	1.11		
DSW40"	12/15/99		3.0	92	40	557	0.04	0.6	81	2264	3.2	98	41	575	0.68	5.50		2.24	34.358	9.2	7.54	1.15		
DSW40"	1/10/00		3.1	94	43	595	0.15	2.1	89	2486	3.1	95	43	602	0.61	0.63		2.31	34.457	8.8	7.55	1.56		
DSW40"	2/7/00		3.1	96	41	578	0.25	3.5	80	2259	3.3	101	42	588	0.68	0.98		2.31	34.331	8.6	7.57	1.25		
DSW40"	3/1/00		3.2	98	42	587	0.16	2.2	88	2480	3.3	102	42	595	0.63	0.88		2.35	34.403	8.0	7.57	1.20		
DSW40"	4/10/00		3.1	95	41	576	0.06	0.8	86	2425	3.1	95	44	613	0.71	0.80		2.34	34.393	10.3	7.57	1.21		
DSW40"	5/15/00		3.0	94	41	571	0.04	0.6	84	2345	3.2	98	44	614	0.64	1.00		2.28	34.367	7.6	7.59	1.12		
DSW40"	6/6/00		3.1	94	42	585	0.04	0.6	83	2334	3.1	97	44	614	0.68	1.05		2.32	34.334	7.5	7.54	1.00		
DSW40"	7/26/00		3.1	96	42	581	0.03	0.4	91	2545	3.2	100	43	598	0.66	1.20		2.39	34.399	7.7	7.57	1.04		
DSW40"	8/30/00		3.0	94	42	584	0.03	0.4	83	2320	3.2	98	43	595	0.64	0.98		2.32	34.364	8.0	7.54	1.03		
DSW40"	9/6/00		3.1	95	42	585	0.02	0.3	89	2508	3.2	98	43	596	0.64	0.17		2.55	34.411	6.9	7.53	1.03		
DSW40"	10/20/00		3.1	95	42	592	0.06	0.8	82	2295	3.1	97	45	625	0.66	1.03		2.57	34.393	8.9	7.59	1.00		
DSW40"	11/14/00		3.1	96	43	599	0.14	2.0	85	2390	3.3	101	44	622	0.73	0.77		2.22	34.402	10.9	7.55	0.98		
DSW40"	12/20/00		3.1	96	43	605	0.30	4.2	89	2488	3.2	100	45	630	0.78	0.48		2.48	34.409	7.6	7.55	0.96		
DSW40"	1/23/01		2.9	91	40	562	0.02	0.3	84	2364	3.2	98	43	609	0.70	0.85		2.36	34.359	7.6	7.53	0.91		
DSW40"	2/5/01		3.1	94	43	601	0.07	1.0	85	2390	3.2	99	44	612	0.70	0.90		2.39	34.393	6.9	7.53	0.90		
DSW40"	3/5/01		3.0	93	43	600	0.03	0.4	86	2421	3.2	99	43	603	0.70	0.40		2.42	34.365	7.6	7.50	0.86		
DSW40"	4/16/01		3.1	94	42	591	0.01	0.1	85	2379	3.2	98	42	586	0.60	0.55		2.37	34.368	7.8	7.53	0.98		
DSW40"	5/9/01		3.1	95	41	577	0.29	4.1	81	2275	3.2	99	43	599	0.73	1.13		2.26	34.371	7.7	7.51	0.96		
DSW40"	6/8/01		3.0	94	41	577	0.04	0.6	84	2345	3.1	95	45	625	0.66	0.85		2.26	34.371	7.4	nd	0.95		
DSW40"	7/24/01		3.1	95	41	571	0.02	0.3	80	2258	3.2	100	44	620	0.59	1.03		2.30	34.405	8.9	7.51	0.08		
DSW40"	8/22/01		3.1	97	40	566	0.03	0.4	77	2149	3.3	101	44	614	0.61	0.73		2.35	34.388	8.3	7.49	0.91		
DSW40"	9/18/01		3.1	97	41	578	0.09	1.3	81	2272	3.3	102	45	631	0.61	0.45		2.34	34.403	8.6	7.53	0.87		
DSW40"	10/9/01		3.1	97	41	578	0.09	1.3	81	2272	3.3	102	45	636	0.63	0.88		2.33	34.409	10.1	7.52	0.96		
DSW40"	11/6/01		3.3	102	42	594	0.02	0.3	81	2262	3.4	106	44	612	0.63	1.30		2.32	34.420	7.1	7.53	0.99		
DSW40"	12/18/01		3.0	93	40	562	0.20	2.8	82	2300	3.0	94	42	595	0.61	1.05		2.31	34.391	7.3	7.52	0.99		
DSW40"	1/8/02		3.2	98	42	595	0.26	3.6	84	2370	3.3	102	42	594	0.86	0.53		2.31	34.402	7.0	7.55	0.90		
DSW40"	2/27/02		3.1	97	41	576	0.08	1.1	82	2299	3.3	102	42	593	0.68	0.35		2.34	34.387	8.6	7.54	1.07		
DSW40"	3/19/02		3.1	97	42	585	0.11	1.5	82	2307	3.2	100	42	594	0.70	0.75		2.39	34.378	7.7	7.55	1.04		
DSW40"	4/9/02		3.2	98	43	603	0.04	0.6	92	2591	3.3	103	42	584	0.57	0.45		2.39	34.418	7.2	7.52	0.93		
DSW40"	5/21/02		3.2	98	42	590	0.10	1.4	84	2368	3.3	103	42	585	0.58	0.63		2.37	34.417	7.6	7.54	1.11		
DSW40"	6/18/02		3.0	94	41	571	0.05	0.7	81	2283	3.2	99	43	596	0.53	0.90		2.38	34.375	7.1	7.55	1.28		
DSW40"	7/17/02		3.1	95	41	580	0.01	0.1	86	2410	3.2	100	45	628	0.60	0.90		2.38	34.395	7.1	7.56	1.19		
DSW40"	8/22/02		3.1	95	41	575	0.08	1.1	84	2367	3.2	99	41	568	0.58	0.77		2.41	34.356	9.0	7.54	1.23		
DSW40"	9/24/02		3.1	96	42	591	0.17	2.4	88	2459	3.2	100	41	572	0.54	0.55		2.39	34.376	6.9	7.57	3.23		
DSW40"	10/16/02		3.1	97	39	546	0.25	3.5	86	2408	3.3	102	42	586	0.62	0.75		2.40	34.378	9.8	7.56	0.71		
DSW40"	11/6/02		3.1	94	42	581	0.14	2.0	82	2314	3.2	100	40	558	0.60	0.85		2.38	34.360	8.5	7.55	0.89		
DSW40"	12/19/02		3.1	96	42	585	0.07	1.0	84	2363	3.2	98	41	568	0.60	0.77		2.37	34.395	8.6	7.55	0.66		
DSW40"	1/29/03		3.1	96	43	599	0.08	1.1	108	3028	3.3	102	39	546	0.52	0.65		2.39	34.424	7.5	7.56	1.10		
DSW40"	2/10/03		3.1	94	41	577	0.02	0.3	87	2443	3.2	98	45	625	0.55	0.70		2.38	34.426	7.6	7.56	1.12		
DSW40"	3/18/03		3.1	95	42	588	0.03	0.4	85	2400	3.2	100	59	825	0.51	0.75		2.13	34.429	9.3	7.56	1.13		
DSW40"	4/29/03		3.2	98	42	587	0.08	1.1	111	3123	3.3	102	48	670	0.52	0.65		2.28	34.413	7.6	7.58	1.12		
DSW40"	5/13/03		3.1	96	42	593	0.03	0.4	90	2523	3.2	99	47	663	0.52	0.55		2.31	34.432	7.8	7.58	1.12		
DSW40"	6/5/03		3.1	94	38	536	0.04	0.6	84	2345	3.2	100	45	636	0.51	0.73		2.24	34.404	8.6	7.61	1.08		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/31/03		3.1	96	42	592	0.05	0.7	87	2452	3.3	101	49	684		0.85		2.27	34.371	10.0	7.55	1.19		
DSW40"	8/27/03		3.1	94	39	548	0.07	1.0	80	2259	3.2	100	50	698		0.68		2.27	34.395	9.0	7.59	0.95		
DSW40"	9/17/03		3.1	97	40	563	0.09	1.3	81	2265	3.3	103	44	615		3.18		2.33	34.390	8.8	7.53	0.84		
DSW40"	10/7/03		3.1	95	41	573	0.25	3.5	82	2309	3.3	101	51	707		1.18		2.33	34.400	7.7	7.54	NO DATA		
DSW40"	11/4/03		3.1	94	38	530	0.05	0.7	94	2644	3.2	99	44	612		0.75		2.31	34.414	8.1	7.56	NO DATA		
DSW40"	11/14/03											0		0						7.5		1.00		
DSW40"	12/16/03		3.0	93	41	573	0.50	7.0	81	2262	3.3	103	45	626		1.25		2.04	34.411	7.7	7.53	1.72		
DSW40"	1/27/04		3.0	94	41	574	0.30	4.2	79	2211	3.3	102	45	630		0.75		2.14	34.394	9.6	7.53	1.24		
DSW40"	2/10/04		3.0	93	41	569	0.07	1.0	80	2250	3.3	102	44	611		1.08		2.20	34.395	8.9	7.53	1.24		
DSW40"	3/15/04		3.2	99	40	561	0.12	1.7	83	2337	3.4	104	46	646		0.38		2.25	34.448	9.9	7.54	0.87		
DSW40"	4/21/04		3.1	96	42	586	0.30	4.2	86	2405	3.2	99	44	621		1.05		2.34	34.402	8.7	7.54	1.28		
DSW40"	5/12/04		3.1	95	40	563	0.20	2.8	83	2333	3.3	103	44	622		0.65		2.34	33.540	10.0	7.56	1.39		
DSW40"	6/7/04		3.0	93	40	561	0.15	2.1	78	2180	3.2	99	45	628		0.80		2.32	33.390	8.7	7.53	1.71		
DSW40"	7/8/04		3.0	92	40	567	0.19	2.7	85	2385	3.2	98	44	612	0.55	2.60		2.40	33.340	10.7	7.55	1.44		
DSW40"	8/24/04		3.0	92	40	563	0.27	3.8	75	2110	3.1	96	43	607		0.92		2.39	33.320	9.1	7.55	1.35		
DSW40"	9/2/04		3.1	94	41	573	0.10	1.4	90	2526	3.2	98	45	629		0.35		2.37	33.400	7.7	7.55	1.69		
DSW40"	10/1/04		3.0	92	40	559	0.11	1.5	89	2508	3.2	99	48	666		0.93		2.37	33.390	8.8	7.59	1.26		
DSW40"	11/8/04		3.0	93	41	570	0.14	2.0	89	2499	3.2	99	48	671		0.55		2.37	33.290	8.1	7.55	1.61		
DSW40"	12/7/04		3.0	94	42	582	0.21	2.9	93	2610	3.2	98	49	682		0.98		2.37	33.330	8.3	7.58	1.59		
DSW40"	1/11/05		3.1	94	42	591	0.04	0.6	95	2676	3.4	104	45	627		0.60		2.40	34.431	8.1	7.63	1.61		
DSW40"	2/8/05		3.1	95	43	596	0.04	0.6	90	2523	3.3	103	49	686		1.25		2.41	34.396	7.9	7.62	1.69		
DSW40"	3/23/05		3.0	91	41	568	0.20	2.8	90	2538	3.2	98	45	627	0.85	0.90		2.40	34.335	9.9	7.61	1.54	2	109
DSW40"	3/23/05		3.0	93	40	566	0.18	2.5	92	2577	3.2	99	44.3	620	0.76	0.73		2.40	34.337	5.8	7.61	1.25	1	2036
DSW40"	4/21/05		3.0	94	40	560	0.21	2.9	90	2538	3.2	98	40.8	572		0.65		2.34	34.385	5.9	7.61	1.24	1	667
DSW40"	4/21/05		3.0	94	41	571	0.21	2.9	90	2532	3.2	98	42	582		0.80		2.36	34.362	9.1	7.61	1.66	1	61
DSW40"	5/26/05	925	3.0	92	40	560	0.20	2.8	82	2300	3.2	98	42.1	590		2.13		2.36	34.335	6.2	7.57	1.25	<1	253
DSW40"	5/26/05	905	2.9	91	39	542	0.21	2.9	81	2275	3.1	96	41	577		1.25		2.36	34.320	12.1	7.57	1.56	1	58
DSW40"	6/16/05	917	3.0	94	40	562	0.43	6.0	92	2575	3.2	98	43.0	603		1.38		2.37	34.416	5.7	7.58	1.26	1	136
DSW40"	6/16/05	840	2.9	91	40	554	0.43	6.0	83	2331	3.0	94	43	598		0.98		2.35	34.346	10.5	7.58	1.54	1	136
DSW40"	7/27/05	825	3.0	94	39	551	0.06	0.8	87	2450	3.2	99	42	595	0.66	1.18		2.38	34.385	12.1	7.60	1.48	<1	25
DSW40"	7/27/05	909	3.0	94	40	558	0.04	0.6	89	2506	3.3	101	41.7	584	0.67	0.18		2.37	34.386	5.9	7.60	no data	<1	58
DSW40"	8/11/05	740	3.0	94	41	568	0.26	3.6	89	2502	3.2	99	44	613	0.71	1.50		2.40	34.411	11.9	7.62	1.46	2	214
DSW40"	8/11/05	825	3.0	93	39	549	0.25	3.5	88	2468	3.2	98	42.3	592	0.54	1.75		2.40	34.418	5.9	7.62	1.26	<1	36
DSW40"	9/14/05	808	3.1	95	41	577	0.33	4.6	90	2521	3.4	104	42	587	1.05	1.73		2.36	34.409	10.0	7.60	1.61	<1	58
DSW40"	9/14/05	855	3.1	95	40	566	0.28	3.9	90	2521	3.3	101	43.9	615	0.59	1.33		2.36	34.430	5.9	7.60	1.21	1	1
DSW40"	10/10/05	912	3.0	94	42	587	0.26	3.6	86	2409	3.2	99	44	623	0.61	0.80		2.38	34.361	8.5	7.61	1.41	<1	67
DSW40"	10/10/05	942	3.1	95	42	588	0.25	3.5	86	2419	3.2	99	43.4	608	0.76	1.78		2.40	34.739	6.3	7.61	1.14	<1	39
DSW40"	11/2/05	802	3.0	94	42	590	0.27	3.8	87	2445	3.2	100	45	632	0.75	1.33		2.60	34.396	8.4	7.61	1.53	77	558
DSW40"	11/2/05	834	3.1	94	41	581	0.24	3.4	92	2577	3.3	102	44.1	618	0.85	3.00		3.00	34.397	6.3	7.60	1.23	30	119
DSW40"	12/20/05	809	3.0	94	41	576	0.38	5.3	87	2431	3.2	98	43	601	0.79	1.13		2.67	34.371	7.4	7.62	1.57	163	1178
DSW40"	12/20/05	839	3.0	94	41	577	0.38	5.3	88	2460	3.2	99	43.3	606	0.71	1.45		2.64	34.375	6.2	7.63	1.38	101	1119
DSW40"	1/26/06	854	3.0	93	41	568	0.25	3.5	88	2481	3.1	96	42.4	594		1.40		2.31	34.365	6.4	7.58	1.12	1	131
DSW40"	1/26/06	937	3.0	93	41	579	0.23	3.2	89	2494	3.2	98	44	623		1.20		2.27	34.378	9.1	7.59	1.35	20	75
DSW40"	2/28/06	915	3.1	96	41	571	0.30	4.2	86	2406	3.4	106	43.4	608		0.63		2.27	34.355	6.5	7.60	1.00	6	328
DSW40"	2/28/06	820	3.1	94	40	566	0.28	3.9	98	2744	3.5	107	44	622		0.88		2.28	34.348	9.8	7.60	1.05	3	267
DSW40"	3/23/06	900	3.0	93	40	558	0.38	5.3	92	2597	3.2	100	41.3	578		2.60		2.23	34.345	6.2	7.58	1.15	7	281
DSW40"	3/23/06	820	3.0	92	40	556	0.41	5.7	88	2457	3.2	98	42	590		0.82		2.25	34.318	8.6	7.59	1.11	3	42
DSW40"	4/18/06	954	3.1	95	43	599	0.17	2.4	85	2373	3.3	103	41.3	578	0.72	1.50		2.35	34.387	6.8	7.59	1.13	2	78
DSW40"	4/18/06	857	3.0	94	40	562	0.17	2.4	81	2275	3.2	98	40	563	0.63	1.43		2.41	34.373	9.5	7.59	1.07	2	64
DSW40"	5/18/06	950	3.1	95	41	570	0.05	0.7	88	2463	3.3	101	39.0	546	0.55	1.25		2.36	34.331	6.6	7.56	1.02	3	122
DSW40"	5/18/06	905	3.0	94	40	562	0.05	0.7	85	2373	3.3	102	41	571	0.56	1.33		2.36	34.355	8.9	7.58	1.39	6	97
DSW40"	6/29/06	1005	3.0	93	41	574	0.21	2.9	83	2342	3.1	97	45.4	636	0.72	1.48		2.32	34.388	6.6	7.58	0.97	7	125
DSW40"	6/29/06	1045	2.9	91	41	567	0.23	3.2	82	2309	3.2	99	45	632	0.60	2.10		2.28	34.390	10.0	7.60	1.31	7	294

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/25/06	850	2.9	89	41	570	0.27	3.8	82	2300	3.1	96	39	546	0.56	1.20		2.33	34.383	14.3	7.58	1.21	3	75
DSW40"	7/25/06	945	2.9	89	41	580	0.24	3.4	84	2348	3.1	94	38.5	539	0.61	1.05		2.32	34.400	6.6	7.57	1.23	1	67
DSW40"	8/10/06	925	2.9	89	39	545	0.17	2.4	84	2356	3.1	97	39	542	0.54	0.95		2.31	34.396	12.6	7.58	1.41	3	633
DSW40"	8/10/06	1008	2.9	90	40	564	0.22	3.1	84	2348	3.2	98	38.4	537	0.56	0.73		2.33	34.474	6.6	7.58	1.22	3	8
DSW40"	9/21/06	900	2.9	91	42	592	0.09	1.3	87	2455	3.1	96	39	547	0.52	0.93		2.33	34.415	7.7	7.59	3.32	27	39
DSW40"	9/21/06	1015	3.0	92	41	576	0.10	1.4	88	2463	3.2	98	38.6	541	0.56	1.00		2.34	34.446	6.8	7.57	1.32	16	56
DSW40"	10/26/06	850	3.0	92	44	611	0.20	2.8	86	2410	3.1	97	40	561	0.61	1.20		2.53	34.392	8.4	7.60	1.58	44	1491
DSW40"	10/26/06	950	3.0	92	44	611	0.38	5.3	85	2390	3.1	97	41.9	586	0.63	1.10		2.82	34.388	6.5	7.59	1.11	59	25300
DSW40"	11/30/06	925	2.9	90	41	578	0.20	2.8	85	2387	3.1	97	41	569	0.64	1.48		2.74	34.379	7.8	7.58	1.65	3	114
DSW40"	11/30/06	1020	3.0	92	42	581	0.21	2.9	84	2368	3.2	98	39.9	559	0.61	1.23		2.56	34.367	6.8	7.57	1.07	4	611
DSW40"	12/14/06	935	2.9	90	39	539	0.19	2.7	79	2210	3.1	96	39	542	0.53	1.48		2.71	34.357	9.7	7.59	1.70	243	458
DSW40"	12/14/06	1006	2.9	90	38	536	0.21	2.9	79	2208	3.1	95	38.6	541	0.59	1.30		2.72	34.354	7.0	7.58	1.06	229	394
DSW40"	1/11/07	1006	2.7	83	38	531	0.39	5.5	78	2182	2.9	89	40.0	560	0.63	1.35		2.24	34.439	8.7	7.67	1.92	176	1164
DSW40"	1/11/07	930	2.7	83	37	518	0.36	5.0	75	2115	3.1	95	40	565	0.61	1.53		2.34	34.437	9.7	7.66	2.07	327	956
DSW40"	2/2/07	930	2.6	80	35	492	NA	NA	72	2017	2.8	86	NA	NA						11.4				
DSW40"	2/5/07	930	2.6	79	35	487	NA	NA	71	1983	2.7	85								9.4	7.70			
DSW40"	2/6/07	1425																		7.8				
DSW40"	2/7/07	1600																		8.2				
DSW40"	2/8/07	1525																		7.7				
DSW40"	2/15/07	1015	2.5	78	34	475	0.39	5.5	69	1946	2.8	86	39.1	548	0.71	1.13		2.08	34.422	9.8	7.73	2.17	TNTC	11500
DSW40"	2/15/07	930	2.5	77	33	462	0.32	4.5	68	1910	2.7	84	36	503	0.68	1.40		2.25	34.413	11.9	7.74	2.47	TNTC	10600
DSW40"	2/20/07																			6.5			61	209
DSW40"	3/8/07	1025	2.9	91	42	590	0.32	4.5	83	2340	3.1	96	45.1	631	0.57	1.55		2.36	34.387	6.6	7.59	1.19	147	400
DSW40"	3/8/07	950	2.9	90	40	556	0.29	4.1	80	2250	3.1	96	44	616	0.57	1.33		2.08	34.364	8.9	7.60	1.60	37	272
DSW40"	3/9/07																			6.2				
DSW40"	3/15/07																			6.8				
DSW40"	4/12/07	1041	3.0	91	37	511	0.24	3.4	84	2345	3.1	97	37.4	524	0.55	1.73		2.22	34.392	6.8	7.59	1.07	7	139
DSW40"	4/12/07	930	2.9	91	37	517	0.13	1.8	84	2356	3.2	99	39	547	0.56	1.78		2.15	34.393	8.2	7.63	1.60	18	147
DSW40"	5/9/07	1025	3.0	92	45	628	0.29	4.1	85	2399	3.2	98	41.1	576	0.65	1.63		2.23	34.394	6.5	7.58	1.03	112	214
DSW40"	5/9/07	945	3.0	93	50	705	0.24	3.4	99	2780	3.4	104	41	579	0.66	1.90		2.06	34.391	8.7	7.61	1.55	207	381
DSW40"	6/27/07	950	2.9	91	44	621	1.11	15.6	81	2262	0.0		0.0			1.63		2.54	34.384	7.0	7.59	0.99	85	342
DSW40"	6/27/07	900	3.0	93	44	612	0.01	0.1	76	2141	0.0		0			1.33		2.48	34.391	8.2	7.61	1.52	145	344
DSW40"	7/30/07	1015	3.1	95	44	623	0.01	0.1	92	2573	2.4	75	40	560		3.08		2.41	34.420	10.1	7.43	1.11		
DSW40"	7/30/07	1143	3.0	93	44	616	0.04	0.5	85	2384	2.9	88	40.9	573		3.55		2.48	34.408	5.9	7.38	1.24		
DSW40"	8/29/07	1215	3.0	92	44	618	0.01	0.1	79	2217	2.8	85	43	609		1.18		2.48	34.412	11.4	7.67	1.02		
DSW40"	8/29/07	1305	3.0	92	44	615	0.30	4.2	81	2263	2.6	82	44.9	630		1.43		2.45	34.600	5.8	8.12	1.06		
DSW40"	9/24/07	1145	3.1	96	47	657	0.01	0.1	46	1296	0.0		0			1.08		1.68	34.429	9.5	7.74	1.03		
DSW40"	9/24/07	1355	3.1	96	45	625	0.01	0.1	81	2281	0.0		0.0			1.13		2.38	34.394	6.4	8.17	1.15		
DSW40"	10/30/07	959	3.1	95	43	608	0.42	5.9	78	2185	0.0		0			0.73		NA	34.346	8.9	7.67	1.06		
DSW40"	10/30/07	1131	3.2	100	46	647	0.01	0.1	85	2378	0.0		0.0			0.65		2.55	34.371	6.1	7.53	1.17		
DSW40"	11/27/07	1138	0.0		0		0.00				0.0		0			0.75		2.41	34.401	10.4	7.65	1.23		
DSW40"	11/27/07	1301	0.0		0		0.00		0		0.0		0.0			0.95		2.60	34.399	5.9	8.00	1.36		
DSW40"	12/28/07	1537	2.5	77	39	543	0.18	2.5	95	2666	0.0		0.0			0.58		2.54	34.409	6.0	7.69	1.49		
DSW40"	12/28/07	1417	2.4	74	37	517	0.11	1.5	79	2223	0.0		0			0.78		2.59	34.367	7.7	7.59	1.19		
DSW40"	1/29/08	1217	0.0		0		0.00				0.0		0			0.73		2.44	34.388	7.4	7.63	1.18		
DSW40"	1/30/08	917	2.4	76	39	542	0.18	2.5	99	2776	0.0		0.0			0.85		2.47	34.403	6.3	7.56	1.44		
DSW40"	2/28/08	1406	2.9	89	43	595	0.05	0.7	80	2248	2.6	81	42.6	597		0.75		2.47	34.392	5.9	7.68	1.24		
DSW40"	2/28/08	1306	2.9	91	43	598	0.05	0.7	78	2180	2.7	82	45	626		0.85		2.40	34.395	9.6	7.68	1.14		
DSW40"	3/31/08	1259	2.9	89	43	597	0.05	0.7	77	2169	2.5	78	41.9	587		2.15		2.46	34.510	6.0	7.52	1.47		
DSW40"	3/31/08	1117	2.9	90	43	599	0.05	0.7	86	2410	2.6	80	43	603		2.18		2.46	34.300	8.5	7.57	1.15		
DSW40"	4/25/08	923	2.7	83	NA	NA	0.15	2.1	81	2272	2.6	81	39.9	559		0.70		2.37	34.390	6.0	7.88	1.20		
DSW40"	4/25/08	855	2.8	86	NA	NA	0.15	2.1	79	2228	2.6	82	40	559		0.48		2.43	34.372	9.2	7.60	1.18		
DSW40"	5/23/08	924	2.6	81	42	590	0.09	1.3	NA	NA	2.6	81	42.1	590		0.40		2.37	34.386	6.4	7.64	1.23		
DSW40"	5/23/08	1216	2.6	81	43	601	0.09	1.3			2.6	81	57	799		0.93		2.34	34.407	9.4	7.64	1.20		
DSW40"	6/10/08	940	2.6	79	40	564	0.18	2.5	85	2394	2.4	75	42.6	596		0.70		NA	34.377	6.2	7.62	1.33		
DSW40"	6/10/08	1138	2.6	80	40	565	0.18	2.5	69	1949	2.5	76	42	595		0.50			34.363	8.8	7.65	1.11		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/18/08	1340	2.6	81	43	601	0.09	1.3	69	1928	2.1	66	41	576		0.17			34.535	10.0	7.60	1.86		
DSW40"	7/18/08	1406	2.6	81	42	590	0.09	1.3	86	2421	2.0	61	42.3	593		0.19			34.442	7.3	7.77	1.45		
DSW40"	8/13/08	1243	2.3	72	**34**	**474**	0.96	13.4	61	1701	2.2	70	40	556		0.55			34.408	12.0	7.63	NA		
DSW40"	8/13/08	1202	2.3	72	33	468	0.46	6.5	64	1798	2.2	67	39.4	551		0.34			34.403	9.3	7.64	NA		
DSW40"	9/8/08	1008	2.6	82	41	567	0.06	0.8	73	2053	1.9	58	36	504		0.22			34.50	12.8	7.53	1.53		
DSW40"	9/8/08	1036	2.5	78	41	567	0.35	4.9	73	2058	1.8	56	35.6	499		0.40			34.46	6.1	7.61	1.67		
DSW40"	10/23/08	1203	2.6	80	40	558	0.30	4.2	66	1866	2.7	84	46	647		0.30			34.49	11.8	7.50	1.61		
DSW40"	10/23/08	1112	2.6	79	40	556	0.46	6.5	66	1865	2.6	82	47.4	664		0.13			34.45	6.2	7.64	1.71		
DSW40"	11/28/08	1120	2.9	89	43	606	0.23	3.2	82	2308	2.7	85	44	617		1.19			34.43	12.1	7.69	2.42		
DSW40"	11/28/08	1057	2.8	86	42	595	0.29	4.0	81	2265	2.7	84	45.5	638		0.04			34.42	6.6	7.70	1.26		
DSW40"	12/30/08	939	2.4	75	41	569	0.33	4.6	73	2053	2.6	81	42.7	599		0.17			34.56	8.7	7.60	1.60		
DSW40"	12/30/08	1006	2.4	75	40	562	0.33	4.6	89	2509	2.6	81	43	601		0.08			34.57	12.1	7.65	1.48		
DSW40"	1/12/09	1152	2.7	85	38	535	0.12	1.7	75	2108	2.7	82	47.0	659		0.35			34.360	8.9	7.71	1.60		
DSW40"	1/12/09	1218	2.8	86	39	539	0.12	1.7	70	1954	2.8	87	42	583		0.68			34.362	12.8	7.66	1.55		
DSW40"	2/20/09	1309	2.7	82	40	562	3.28	46.0	85	2377	2.9	91	46.5	651		0.58	0.18		34.740	27.8	7.64	0.43		
DSW40"	2/20/09	1338	2.5	77	41	571	0.31	4.3	94	2651	2.8	85	46	643		0.83	0.18		34.21	11.0	7.61	1.68		
DSW40"	3/30/09	1306	2.8	86	27	382	0.19	2.6	72	2016	2.9	89	34.2	479		0.48			34.594	34.0	7.17	0.02		
DSW40"	3/30/09	1333	2.3	72	38	530	0.06	0.9	80	2242	2.4	73	37	517		0.46			34.664	11.5	7.53	1.46		
DSW40"	4/30/09	1032	3.7	116	15	207	0.51	7.2	82	2292	3.2	98	26.0	365		0.60			34.440	32.3	7.97	0.05		
DSW40"	4/30/09	1046	2.9	89	38	533	0.43	6.0	87	2453	2.4	75	46	648		0.53			34.555	12.3	7.63	1.67		
DSW40"	5/15/09																							
DSW40"	5/15/09	1415	3.1	97	40	561	0.19	2.7	85	2376	3.4	107	46	640		0.37			34.58	13.6	7.72	1.47		
DSW40"	6/10/09	1046	3.0	92	39	547	0.16	2.2	73	2062	2.8	86	39.5	553		0.24			34.391	9.1	7.68	1.36		
DSW40"	6/10/09	1234	3.1	96	40	562	0.16	2.2	87	2446	3.1	95	42	594		0.25			34.495	10.1	7.25	1.35		
DSW40"	7/10/09	1058	2.6	80	31	439	0.11	1.6	73	2039	2.4	76	34	482		0.25			34.66	13.2	7.64	1.57		
DSW40"	7/10/09	1039	2.6	80	31	429	0.44	6.2	59	1646	2.2	70	32.6	457		0.54			34.54	8.5	7.66	1.83		
DSW40"	8/27/09	1131	2.7	85	32	450	0.52	7.3	92	2571	2.6	81	38	528		0.40	0.02		34.54	10.3	7.56	1.43		
DSW40"	8/27/09	1003	2.6	81	33	463	0.34	4.7	74	2068	2.4	74	36.9	517		0.42	0.02		34.48	9.0	8.01	4.10		
DSW40"	9/17/09	1159	2.7	83	40	557	0.12	1.7	53	1475	2.9	90	42	583		3.99	0.17		34.59	8.8	8.15	1.50		
DSW40"	9/17/09	1138	2.2	69	30	421	0.54	7.5	42	1170	2.6	82	34.2	479		1.41	0.36		34.57	6.5	8.15	3.31		
DSW40"	10/26/09	1105	3.2	98	45	624	0.17	2.4	88	2469	3.2	98	45	637		0.79			34.53	9.3	7.57	1.12		
DSW40"	10/26/09	1053	3.0	93	43	607	0.26	3.6	86	2417	2.9	91	44.5	624		0.46			34.50	5.8	7.60	1.69		
DSW40"	11/19/09	1450	3.0	93	40	555	0.36	5.0	87	2445	3.0	94	45	633		0.35			34.61	9.1	7.49	1.07		
DSW40"	11/19/09	1419	3.1	96	40	555	0.27	3.8	86	2426	3.1	95	42.5	596		0.23			34.59	6.0	7.48	1.48		
DSW40"	12/3/09	928	3.1	95	40	561	0.34	4.8	91	2557	3.0	92	44.3	621		0.65			34.47	6.7	7.67	1.16		
DSW40"	12/3/09	911	3.1	95	40	560	0.34	4.8	91	2549	3.0	93	47	665		0.53			34.51	9.0	7.57	1.11		
DSW40"	1/14/10	940	3.1	97	41	580	0.69	9.6	85	2394	3.1	96	44.6	625		0.33			34.54	7.4	7.63	1.46		
DSW40"	1/14/10	830	3.1	98	42	585	0.72	10.1	88	2461	3.2	98	45	629		0.33			34.44	8.6	7.66	1.50		
DSW40"	2/16/10	1120	3.1	95	44	614	0.38	5.3	90	2517	3.2	100	45.5	638		0.88			34.34	6.8	7.57	1.09		
DSW40"	2/16/10	1055	3.0	94	43	607	0.28	3.9	83	2331	3.1	96	45	628		0.25			34.32	7.8	7.60	1.11		
DSW40"	3/15/10	917	3.1	95	43	597	0.10	1.4	91	2563	3.1	95	44.9	629		1.05	0.06		34.33	7.3	7.56	1.05		
DSW40"	3/15/10	840	3.1	96	43	597	0.10	1.4	90	2532	3.1	97	45	625		0.47			34.32	8.5	7.41	1.02		
DSW40"	4/1/10	835	3.3	102	41	571	0.29	4.0	87	2450	3.0	94	43.9	614		0.23	0.10		34.42	7.1	7.57	1.05		
DSW40"	4/1/10	823	3.3	101	41	576	0.34	4.7	90	2522	3.2	99	46	651		1.00	0.17		34.41	7.8	7.59	1.24		
DSW40"	5/10/10	840	2.9	90	42	584	0.52	7.3	91	2542	3.0	92	42.9	601		0.73	0.14		34.38	6.8	7.56	1.13		
DSW40"	5/10/10	828	2.9	90	42	587	0.86	12.0	94	2641	3.0	92	44	621		1.19	0.07		34.42	7.8	7.56	1.19		
DSW40"	6/23/10	914	3.0	93	44	616	0.22	3.1	95	2659	2.9	91	45.6	638		0.50	0.10		34.39	6.0	7.60	1.28		
DSW40"	6/23/10	853	3.0	92	44	617	0.23	3.2	95	2664	3.0	93	46	647		0.45	0.15		34.43	7.5	7.69	1.29		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/1/10	933	2.9	91	43	603	0.31	4.4	90	2530	3.0	94	48	666		0.70	0.06		34.30	7.8	7.56	1.20		
DSW40"	7/1/10	954	3.0	92	43	608	0.24	3.3	95	2679	2.9	91	45.6	638		0.55	0.06		34.29	6.0	7.55	1.30		
DSW40"	8/5/10	856	3.0	93	41	580	0.21	2.9	85	2400	3.0	94	45	625		0.93	0.10		34.36	7.8	7.62	1.23		
DSW40"	8/5/10	933	3.0	93	41	579	0.21	2.9	86	2417	3.0	94	44.5	624		0.93	0.02		34.38	6.0	7.55	1.31		
DSW40"	9/2/10	916	3.0	92	42	592	0.14	1.9	80	2237	3.0	94	47	653		0.75	0.02		34.26	7.6	7.53	1.30		
DSW40"	9/2/10	928	2.9	90	42	582	0.16	2.2	77	2169	3.0	93	47.2	661		0.75	0.03		34.17	7.1	7.54	1.37		
DSW40"	10/18/10	917	3.1	96	44	621	0.10	1.4	87	2448	3.2	99	46	646		0.50	0.10		34.18	7.2	7.59	1.48		
DSW40"	10/18/10	923	3.1	96	44	614	0.13	1.8	86	2405	3.2	100	47.4	663		0.45	0.12		34.18	6.3	7.57	1.54		
DSW40"	11/4/10	925	2.9	90	42	585	0.06	0.9	84	2364	3.0	92	45	636		0.35	0.05		34.40	8.3	7.60	1.30		
DSW40"	11/4/10	945	2.9	90	42	583	0.19	2.6	80	2257	3.0	92	45.4	636		0.60	0.07		34.39	6.5	7.58	1.34		
DSW40"	12/1/10	947	3.0	93	43	601	0.01	0.1	90	2522	2.9	90	49.6	695		0.27	0.10		34.31	6.3	7.58	1.24		
DSW40"	12/1/10	921	3.0	92	43	601	0.05	0.7	87	2454	2.9	90	50	695		0.40	0.05		34.34	8.0	7.61	1.17		
DSW40"	1/25/11	939	3.1	97	43	599	0.37	5.2	87	2431	3.1	95	47.4	664		0.57	0.07		34.35	6.3	7.56	1.21		
DSW40"	1/25/11	914	3.1	97	43	603	0.29	4.1	88	2460	3.1	95	47	664		0.65	0.04		34.35	7.7	7.54	1.56		
DSW40"	2/8/11	955	3.2	99	43	606	0.54	7.5	90	2515	3.3	102	47.6	667		0.60	0.08		34.39	6.1	7.66	1.34		
DSW40"	2/8/11	936	3.2	98	43	604	0.45	6.3	89	2493	3.3	101	46	646		0.68	0.06		34.39	8.1	7.66	1.32		
DSW40"	3/7/11	1042	3.2	98	43	597	0.42	5.9	88	2481	3.2	98	44.9	629		0.50	0.08		34.38	6.2	7.56	1.46		
DSW40"	3/7/11	1023	3.1	97	43	597	0.38	5.3	90	2527	3.2	100	44	623		0.58	0.10		34.38	7.8	7.60	1.40		
DSW40"	4/11/11	1046	3.1	95	44	621	0.11	1.5	94	2638	3.1	95	50.3	705		0.59	0.05		34.62	6.0	7.64	1.20		
DSW40"	4/11/11	948	3.0	94	45	626	0.06	0.9	87	2447	3.0	92	50	704		0.56	0.13		34.62	7.9	7.62	1.36		
DSW40"	5/25/11	1150	3.0	94	43	603	0.29	4.1	85	2390	3.0	93	46.4	650		0.70	0.08		34.39	7.3	7.60	1.87		
DSW40"	5/25/11	849	3.0	93	43	608	0.19	2.7	87	2443	3.1	95	47	658		0.51	0.08		34.37	8.0	7.64	2.49		
DSW40"	6/1/11	947	3.0	93	44	615	0.16	2.3	84	2366	3.0	93	47.8	670		0.84	0.03		34.33	6.1	7.60	1.70		
DSW40"	6/13/11	924	3.0	93	43	600	0.11	1.5	85	2395	3.0	92	48	673		0.63	0.08		34.36	8.8	7.63	1.69		
DSW40"	7/21/11	818	3.1	98	42	592	0.14	1.9	89	2500	3.2	98	46	649		0.69	0.02		34.35	8.3	7.57	1.30		
DSW40"	7/21/11	847	3.2	99	42	594	0.19	2.7	85	2394	3.2	99	44.7	627		0.55	0.02		34.31	6.1	7.53	1.47		
DSW40"	8/22/11	940	3.0	92	42	584	0.01	0.1	89	2493	3.0	94	44	621		0.48	0.04		34.29	8.2	7.58	1.57		
DSW40"	8/22/11	1015	3.1	95	42	590	0.04	0.6	91	2558	3.2	98	46.9	656		0.48	0.02		34.30	5.8	7.57	1.61		
DSW40"	9/15/11	808	2.9	91	40	566	0.07	1.0	83	2341	2.9	91	44	611		0.41	0.05		34.33	8.4	7.56	1.25		
DSW40"	9/15/11	824	3.0	92	41	570	0.11	1.5	84	2354	3.0	93	43.6	610		0.28	0.04		34.32	6.1	7.56	1.33		
DSW40"	10/4/11	1214	3.0	92	41	578	0.07	1.0	81	2286	3.0	92	44	611		0.26	0.02		34.54	9.1	7.55	1.23		
DSW40"	10/5/11	1156	3.0	92	41	581	0.04	0.6	80	2260	3.0	92	44.1	618		0.32	0.02		34.46	6.3	7.58	1.28		
DSW40"	11/21/11	1047	3.1	95	43	605	0.02	0.3	86	2408	3.1	95	47	664		0.36	0.05		34.30	8.4	7.67	1.00		
DSW40"	11/21/11	1126	3.1	95	43	596	0.02	0.3	82	2299	3.0	92	47.5	665		1.86	0.02		34.31	6.6	7.65	1.08		
DSW40"	12/27/11	1015	3.0	92	43	603	0.15	2.1	85	2386	3.0	92	49.1	687		0.42	0.06		34.20	6.3	7.57	1.18		
DSW40"	12/27/11	1000	2.9	91	43	600	0.04	0.6	86	2418	3.0	93	46	647		0.47	0.02		34.21	7.5	7.62	1.28		
DSW40"	1/30/12	1011	2.9	91	43	600	0.08	1.1	85	2401	2.9	91	47.1	660		0.34	0.07		34.40	6.3	7.52	1.16		
DSW40"	1/30/12	934	2.9	90	43	601	0.08	1.1	86	2403	2.9	90	47	656		0.43	0.02		34.53	7.8	7.66	1.22		
DSW40"	2/27/12	1019	3.0	93	42	584	0.01	0.1	85	2388	2.7	85	48.9	685		0.56	0.05		34.40	6.1	7.53	1.24		
DSW40"	2/27/12	959	2.9	91	42	582	0.01	0.1	84	2360	2.8	87	46	649		2.01	0.06		34.37	7.9	7.58	1.19		
DSW40"	3/28/12	943	3.0	93	38	534	0.37	5.2	80	2251	2.8	88	43.2	605		0.44	0.02		34.38	6.2	7.55	1.01		
DSW40"	3/28/12	909	2.9	90	38	527	0.36	5.0	79	2212	2.7	84	42	586		0.49	0.02		34.33	7.9	7.57	1.03		
DSW40"	4/16/12	946	3.2	99	43	601	0.01	0.1	80	2251	3.2	98	48.0	673		0.52	0.02		34.40	6.2	7.56	1.01		
DSW40"	4/16/12	934	3.1	97	43	596	0.01	0.2	78	2203	3.1	97	46	648		0.28	0.02		34.39	7.8	7.46	1.05		
DSW40"	5/24/12	952	3.2	99	44	620	0.15	2.1	86	2422	3.2	99	47.6	666		0.51	0.04		34.27	6.1	7.55	1.26		
DSW40"	5/24/12	1042	3.2	98	44	617	0.16	2.3	86	2423	3.3	103	46	644		0.48	0.05		34.31	7.8	7.52	1.10		
DSW40"	6/19/12	953	3.0	94	43	600	0.32	4.5	78	2192	3.0	93	45.8	641		0.37	0.02		34.44	6.2	7.46	1.09		
DSW40"	6/19/12	925	3.0	93	43	599	0.62	8.7	79	2229	2.9	90	45	634		0.52	0.07		34.42	8.0	7.75	1.15		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/3/12	942	3.0	94	41	568	0.31	4.3	80	2257	3.2	99	43	599		0.55	0.02		34.58	7.8	7.57	1.29		
DSW40"	7/3/12	958	3.2	98	41	573	0.21	3.0	78	2182	3.2	100	41.6	583		1.16	0.02		34.57	6.1	7.61	1.68		
DSW40"	8/27/12	1016	3.0	94	44	611	0.12	1.7	92	2588	3.2	98	47	662		0.45	0.02		34.35	7.3	7.57	1.35		
DSW40"	8/27/12	1029	3.1	95	45	633	0.19	2.7	93	2608	3.1	95	48.4	678		0.52	0.03		34.44	5.6	7.58	1.30		
DSW40"	9/26/12	1003	3.1	95	43	601	0.02	0.3	93	2616	3.3	101	49	689		0.64	0.05		34.46	8.3	7.42	1.31		
DSW40"	9/26/12	1015	3.1	97	43	605	0.13	1.8	94	2646	3.2	100	46.2	648		0.69	0.03		34.46	6.2	7.44	1.35		
DSW40"	10/10/12	915	3.0	93	42	591	0.10	1.4	89	2506	3.1	97	47	655		0.55	0.03		34.42	7.7	7.44	1.29		
DSW40"	10/10/12	930	3.0	94	42	589	0.12	1.7	89	2508	3.1	96	47.7	668		1.68	0.04		34.45	5.8	7.51	1.30		
DSW40"	11/19/12	1303	3.1	96	41	580	0.14	1.9	87	2440	3.2	98	50.6	709		0.43	0.02		34.28	6.0	7.61	1.41		
DSW40"	11/19/12	1249	3.1	96	42	582	0.09	1.3	89	2505	3.1	97	44	611		0.50	0.10		34.30	8.0	7.66	1.41		
DSW40"	12/19/12	918	3.3	101	42	589	0.21	3.0	89	2500	3.4	105	52.2	731		0.68	0.04		34.35	6.0	7.57	1.42		
DSW40"	12/19/12	906	3.3	102	42	593	0.16	2.3	89	2506	3.3	102	44	613		0.60	0.02		34.22	7.4	7.61	1.42		
DSW40"	1/4/13	945	3.0	93	42	592	0.06	0.9	87	2441	3.0	94	45.7	640		1.89	0.04		34.24	6.0	7.65	1.56		
DSW40"	1/4/13	933	3.0	94	43	598	0.11	1.6	90	2519	3.0	94	44	617		0.44	0.02		34.22	7.9	7.68	1.55		
DSW40"	2/13/13	956	3.1	95	41	568	0.01	0.1	81	2279	3.1	95	44.8	628		0.67	0.02		34.38	6.2	7.59	1.89		
DSW40"	2/13/13	937	3.08	95	41	568	0.01	0.1	84	2371	3.1	96	44	620		0.74	0.02		34.43	7.4	7.59	1.73		
DSW40"	3/18/13	1104	3.4	105	45	631	0.36	5.1	88	2463	3.2	100	49.3	691		0.65	0.03		34.39	6.0	7.57	1.70		
DSW40"	3/18/13	1046	3.33	103	45	626	0.39	5.4	87	2452	3.3	103	47	665		1.08	0.02		34.42	7.3	7.59	1.47		
DSW40"	4/3/13	1154	3.1	96	43	601	0.02	0.3	86	2423	3.1	96	47.5	665		0.55	0.02		34.43	5.8	7.58	1.55		
DSW40"	4/3/13	1137	3.08	95	43	599	0.01	0.2	85	2387	3.0	94	45.1	632		0.55	0.02		34.38	8.0	7.60	1.25		
DSW40"	5/29/13	1040	3.4	105	45	636	0.16	2.3	91	2560	3.4	106	50.0	701		1.34	0.02		34.44	5.8	7.53	1.36		
DSW40"	5/29/13	852	3.40	105	45	628	0.19	2.6	91	2558	3.4	107	50.6	709		0.65	0.02		34.50	8.0	7.57	1.41		
DSW40"	6/13/13	1007	3.1	96	40	565	0.37	5.2	81	2269	2.9	91	43.6	610		0.49	0.06		34.43	6.1	7.50	1.16		
DSW40"	6/13/13	945	3.09	96	41	571	0.32	4.5	85	2380	3.0	92	42.9	601		0.60	0.02		34.41	8.2	7.46	1.23		
DSW40"	7/1/13	918	3.0	94	44	611	0.19	2.7	85	2395	3.2	99	48.2	675		0.65	0.04		34.42	5.9	7.59	1.26		
DSW40"	7/1/13	903	3.1	95	43	601	0.08	1.1	87	2435	3.1	97	47	657		0.49	0.03		34.41	8.0	7.61	1.23		
DSW40"	8/14/13	932	3.1	95	43	608	0.11	1.5	88	2465	3.0	93	47	655		0.77	0.02		34.39	7.7	7.54	1.30		
DSW40"	8/14/13	942	3.1	95	43	606	0.12	1.7	87	2442	3.0	93	53	738		0.58	0.02		34.42	5.8	7.54	1.30		
DSW40"	9/18/13	953	3.1	95	41	579	0.20	2.8	81	2287	2.9	90	43	603		0.54	0.02		34.47	6.2	7.54	1.40		
DSW40"	10/10/13	930	2.9	91	41	576	0.24	3.4	81	2269	2.9	91	43	602		0.62	0.02		34.48	6.2	7.57	1.37		
DSW40"	11/21/13	958	3.1	96	43	606	0.50	7.0	84	2371	3.0	94	45	637		0.70	0.02		34.58	6.1	7.53	1.66		
DSW40"	12/23/13	925	3.0	93	42	584	0.36	5.0	81	2272	2.9	90	42	589		0.64	0.02		34.49	6.4	7.59	1.41		
DSW40"	1/23/14	1150	3.0	92	41	578	0.11	1.5	80	2257	3.0	92	43	609		1.21	0.02		34.29	6.4	7.55	1.60		
DSW40"	2/12/14	1046	3.06	95	43	608	0.43	6.0	87	2456	3.0	92	45	630		0.81			34.49	5.9	7.56	1.76		
DSW40"	3/17/14	1019	3.03	94	43	601	0.04	0.6	87	2447	2.9	89	45	634		0.73	0.03		34.42	5.8	7.59	1.54		
DSW40"	4/10/14	1109	3.09	96	44	619	0.09	1.3	90	2519	2.9	90	45.9	642		0.60	0.02		34.47	5.7	7.60	1.75		
DSW40"	5/13/14	1402	2.90	90	42	595	0.30	4.2	82	2309	2.9	89	45.1	632		0.74	0.02		34.50	5.8	7.61	1.90		
DSW40"	6/24/14	1237	3.03	94	44	612	0.76	10.6	77	2167	3.3	102	46.0	644		0.91	0.03		34.66	6.2	7.63	1.45		
DSW40"	7/23/14	1202	3.21	99	42	591	0.67	9.4	81	2280	3.1	95	45.2	634		0.63	0.05		34.68	6.0	7.57	1.46		
DSW40"	8/11/14	1111	2.29	71	37	515	0.33	4.6	74	2080	2.3	71	39.3	550		0.76	0.08		34.43	5.9	7.55	1.26		
DSW40"	9/29/14	1200	3.23	100	43	599	0.21	3.0	83	2328	3.3	102	46.3	648		0.84	0.07		34.66	6.2	7.59	1.28		
DSW40"	10/1/14	1247	3.00	93	43	608	0.30	4.2	80	2245	3.0	94	48.3	676		0.66	0.09		34.52	6.1	7.51	1.17		
DSW40"	11/25/14	1218	3.13	97	44	622	0.21	2.9	84	2360	3.1	96	48.1	673		1.13	0.04		34.50	6.0	7.64	1.22		
DSW40"	12/30/14	1016	3.07	95	43	599	0.14	1.9	86	2417	3.1	96	49.1	687		0.74	0.03		34.53	6.1	7.56	1.24		
DSW40"	1/21/15	1117	3.13	97	46	640	0.24	3.4	91	2551	3.2	100	47.9	671		2.85	0.07		34.67	6.0	7.59	1.31		
DSW40"	2/18/15	1029	3.26	101	49	690	0.34	4.7	96	2704	3.3	103	51.7	725		2.55	0.02		34.54	6.0	7.52	1.24		
DSW40"	3/9/15	1330	3.69	114	38	526	0.08	1.1	184	5176	3.8	118	59.5	833		2.60	0.02		34.31	6.0	7.53	1.27		
DSW40"	4/28/15	900	2.60	81	46	651	0.24	3.4	80	2257	3.1	96	51.4	720		3.00	0.04		34.43	6.2	7.52	1.44		
DSW40"	5/14/15	1029	2.94	91	43	607	0.09	1.3	86	2414	2.8	87	46.6	653		0.88	0.02		34.46	5.5	7.57	1.53		
DSW40"	6/3/15	928	2.85	88	42	585	0.49	6.8	75	2114	2.8	85	46.5	652		0.78	0.02		34.25	6.1	7.59	1.20		
DSW40"	7/7/15	844	2.89	89	44	611	0.12	1.7	77	2156	2.9	91	45.5	637		0.85	0.06		34.24	6.1	7.52	1.44		
DSW40"	8/14/15	1025	3.09	96	46	638	0.21	3.0	95	2657	3.0	92	71.6	1002		1.15	0.02		34.67	5.5	7.49	1.72		
DSW40"	9/16/15	952	2.95	91	52	735	0.39	5.5	79	2209	2.5	77	56.8	795		0.75	0.04		34.28	6.0	7.48	2.35		
DSW40"	10/28/15	1449	3.24	100	41	577	0.22	3.1	77	2174	3.3	102	44.5	623		0.93	0.10		34.45	6.3	7.56	1.32		
DSW40"	11/5/15	1036	3.03	94	41	573	0.06	0.9	72	2034	3.1	96	45.1	632		0.90	0.06		34.29	6.4	7.49	1.37		
DSW40"	12/9/15	1114	3.11	96	44	611	0.61	8.5	82	2297	3.1	97	45.5	637		0.85	0.06		34.19	7.2	7.60	4.95		
DSW40"	1/15/16	1102	2.50	77	36	505	0.43	6.0	66	1849	2.5	79	37.3	523		0.88	0.04		34.24	6.2	7.52	5.10		
DSW40"	2/11/16	913	2.96	92	43	598	0.42	5.9	81	2270	3.1	95	44.7	627		0.73	0.06		34.44	5.9	7.63	2.16		
DSW40"	3/3/16	1101	2.94	91	43	608	0.02	0.3	80	2233	3.1	95	44.7	626		0.83	0.05		34.54	5.7	7.53	1.68		
DSW40"	4/12/16	1116	2.93	91	45	625	0.46	6.5	79	2214	3.0	94	46.6	653		0.88	0.05		34.67	5.5	7.44	3.09		
DSW40"	5/10/16	1043	3.27	101	43	596	0.09	1.2	78	2194	3.2	99	44.2	620		0.80	0.03		34.56	5.5	7.58	3.09		
DSW40"	6/15/16	930	2.93	91	45	631	0.21	2.9	74	2075	2.9	91	42.3	592		0.93	0.06		34.55	5.7	7.27	2.88		

NELHA Water Quality Laboratory

DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW40"	7/1/16	931	2.94	91	39	541	0.20	2.8	74	2087	3.1	95	42.7	598		0.98	0.06		34.51	5.8	7.00	1.88		
DSW40"	8/25/16	923	4.86	151	67	937	0.14	2.0	123	3451	5.0	155	70.3	984		0.90	0.05		34.59	5.6	7.17	2.43		
DSW40"	9/15/16	943	2.95	92	68	959	0.14	2.0	105	2951	3.1	96	71.7	1005		0.80	0.04		34.58	5.5	7.58	1.93		
DSW40"	10/20/16	909	5.78	179	69	960	0.39	5.4	135	3799	6.1	190	71.3	998		0.95	0.05		34.52	5.7	7.58	1.55		
DSW40"	11/4/16	938	4.92	152	70	979	0.14	2.0	133	3726	5.1	157	72.1	1009		0.75	0.02		34.55	5.9	7.63	2.36		
DSW40"	12/29/16	936	2.79	87	40	560	0.05	0.7	84	2352	2.8	88	41.1	576		1.23	0.02		34.63	6.1	7.56	2.11		
DSW40"	1/27/17	1043	2.78	86	40	564	0.08	1.1	84	2357	2.9	89	41.9	587		0.90	0.03		34.71	6.0	7.61	2.71		
DSW40"	2/23/17	932	2.73	85	41	572	0.14	2.0	82	2293	2.8	88	40.3	564		1.45	0.03		34.52	6.1	7.61	4.52		
DSW40"	3/17/17	927	2.75	85	36	504	0.33	4.6	84	2351	2.8	88	40.6	568		0.88	0.06		34.44	6.2	7.55	2.18		
DSW40"	4/10/17	1100	2.81	87	42	584	0.21	2.9	88	2477	2.9	89	44.0	616		0.90	0.03		34.72	5.7	7.60	1.69		
DSW40"	5/17/17	903	2.73	85	39	551	0.13	1.8	78	2200	2.8	87	40.7	569		0.83	0.06		34.56	6.3	7.65	4.40		
DSW40"	6/13/17	846	2.70	84	41	570	0.22	3.1	80	2237	2.8	88	44.3	621		1.05	0.04		34.54	6.3	7.65	2.10		
DSW40"	7/13/17	1021	2.79	87	39	550	0.21	2.9	81	2285	2.8	87	41.5	582		1.05	0.04		34.86	6.0	7.55	1.52		
DSW40"	8/2/17	912	2.72	84	37	519	0.14	2.0	79	2231	2.8	88	37.5	525		0.50	0.05		34.89	6.3	7.55	4.56		
DSW40"	9/12/17	912	2.80	87	41	577	0.47	6.6	81	2262	2.9	90	41.9	587		0.85	0.03		34.56	6.1	7.58	2.52		
DSW40"	10/12/17	945	2.79	86	40	565	0.24	3.3	81	2283	2.9	90	41.7	585		0.70	0.02		34.58	6.2	7.51	3.95		
DSW40"	11/29/17	850	2.91	90	41	573	0.39	5.4	80	2258	3.0	94	41.1	575		1.03	0.05		34.54	6.4	7.55	4.68		
DSW40"	12/27/17	1012	2.94	91	38	534	0.47	6.6	78	2187	3.0	94	37.4	524		0.78	0.04		34.73	6.7	7.52	5.43		
DSW40"	1/11/18	923	2.75	85	40	560	0.11	1.5	85	2393	2.8	88	40.9	573		3.10	0.05		34.47	6.2	7.44	3.26		
DSW40"	2/14/18	908	2.76	85	41	572	0.14	2.0	86	2407	2.9	89	42.8	599		0.98	0.05		34.31	6.4	7.49	2.54		
DSW40"	3/23/18	951	2.83	88	42	583	0.14	1.9	79	2230	2.9	91	43.6	611		1.00	0.05		34.40	6.2	7.52	2.21		
DSW40"	4/24/18	930	2.78	86	40	566	0.18	2.5	84	2354	3.0	92	42.2	592		0.75	0.05		34.45	5.9	7.44	2.85		
DSW40"	5/8/18	841	2.85	88	39	551	0.43	6.0	83	2322	2.9	91	40.6	569		0.83	0.03		34.43	6.0	7.51	2.87		
DSW40"	6/20/18	916	2.81	87	39	548	0.49	6.9	81	2287	2.9	91	39.6	555		0.78	0.06		35.17	5.8	7.43	1.83		
DSW40"	7/12/18	1109	3.04	94	41	576	0.11	1.6	86	2413	3.0	94	43.1	604		0.98	0.05		34.55	5.7	7.49	1.76		
DSW40"	8/13/18	1024	2.66	82	43	603	0.23	3.2	79	2226	2.7	84	45.1	632		0.88	0.05		34.44	5.8	7.43	3.36		
DSW40"	9/18/18	1507	2.69	83	41	576	0.36	5.0	91	2570	2.8	86	43.4	608		1.45	0.07		34.59	5.6	7.48	2.62		
DSW40"	10/11/18	1037	2.70	84	40	556	0.18	2.5	82	2297	2.8	88	40.0	560		2.78	0.07		34.70	5.7	7.58	1.08		
DSW40"	11/2/18	939	2.72	84	39	544	0.49	6.8	79	2218	2.8	86	40.9	572		3.05	0.06		34.51	5.9	7.54	1.79		
DSW40"	12/21/18	1040	2.87	89	40	567	0.44	6.1	84	2349	3.1	95	40.7	571		3.15	0.05		34.61	5.7	7.58	1.36		
DSW40"	1/15/19	1036	2.86	89	39	544	0.08	1.1	87	2450	3.0	92	39.9	559		0.85	0.05		34.71	5.6	7.61	2.29		
DSW40"	2/13/19	852	2.80	87	38	537	0.04	0.5	86	2412	2.9	90	39.2	549		0.85	0.05		34.03	5.9	7.23	5.05		
DSW40"	3/7/19	1449	2.79	86	41	568	0.01	0.1	82	2309	2.9	89	40.6	569		0.78	0.07		35.05	5.7	7.62	1.47		
DSW40"	4/25/19	1001	2.73	85	40	554	0.12	1.7	84	2354	2.8	87	40.4	565		2.75	0.02		35.31	5.8	7.63	1.60		
DSW40"	5/7/19	1038	2.72	84	40	555	0.62	8.7	87	2442	2.8	87	40.5	567		0.80	0.03		35.46	5.7	7.68	1.57		
DSW40"	6/20/19	1139	2.77	86	39	546	0.09	1.2	82	2301	2.8	87	39.7	556		0.73	0.03		35.68	6.1	7.64	1.17		
DSW40"	7/17/19	1037	2.74	85	39	541	0.33	4.6	85	2398	2.8	88	39.0	546		4.28	0.04		35.80	5.8	7.59	1.34		
DSW40"	8/23/19	1500	2.83	88	41	575	0.31	4.3	83	2320	2.9	91	41.7	584		0.80	0.02		35.00	6.5	7.66	2.01		
DSW40"	9/26/19	1105	2.76	86	40	556	1.29	18.1	84	2362	2.9	90	41.3	578		0.53	0.04		34.60	5.8	7.66	1.43		
DSW40"	10/8/19	1052	2.68	83	47	659	0.14	2.0	80	2243	2.7	84	50.7	710		0.48	0.07		35.09	6.0	7.58	1.22		
DSW40"	11/14/19	1024	2.69	83	41	581	0.15	2.1	80	2252	2.7	83	42.7	598		0.43	0.02		34.28	6.0	7.57	1.13		
DSW40"	12/17/19	949	2.77	86	42	584	0.14	1.9	73	2060	2.8	88	41.6	582		1.00	0.05		35.00	6.4	7.58	1.20		
DSW40"	1/9/20	1041	2.79	86	41	581	0.17	2.4	77	2172	2.9	90	42.7	598		0.83	0.02		35.63	6.5	7.64	1.21		
DSW40"	2/4/20	1334	2.84	88	42	590	-0.20	-2.8	81	2282	2.9	91	43.2	605		0.73	0.02		35.44	6.1	7.59	1.28		
DSW40"	3/17/20	1556	2.85	88	41	580	-0.01	-0.2	79	2209	2.9	89	41.9	587		1.13	0.02		35.01	6.4	7.57	1.14		
DSW40"	4/1/20	COVID - 19																						
DSW40"	5/21/20	1226	2.65	82	40	565	0.23	3.2	76	2144	2.7	83	41.2	578		0.88	0.06		36.09	6.2	7.65	1.24		
DSW40"	6/9/20	942	2.72	84	39	553	0.28	3.9	80	2245	2.8	87	40.6	568		0.53	0.04		36.54	6.2	7.71	1.24		
DSW40"	7/14/20	1118	2.71	84	41	567	0.00	0.0	79	2214	2.5	78	39.9	558		0.63	0.05		34.00	6.3	7.63	1.13		
DSW40"	8/1/20																							
DSW40"	9/1/20																							
DSW40"	10/1/20																							
DSW40"	11/1/20																							
DSW40"	12/1/20																							
DSW40"	1/1/21																							
DSW40"	2/1/21																							
DSW40"	3/1/21																							
DSW40"	4/1/21																							
DSW40"	5/1/21																							
DSW40"	6/1/21																							
DSW40"	7/1/21																							

NELHA Water Quality Laboratory

DSW 40"

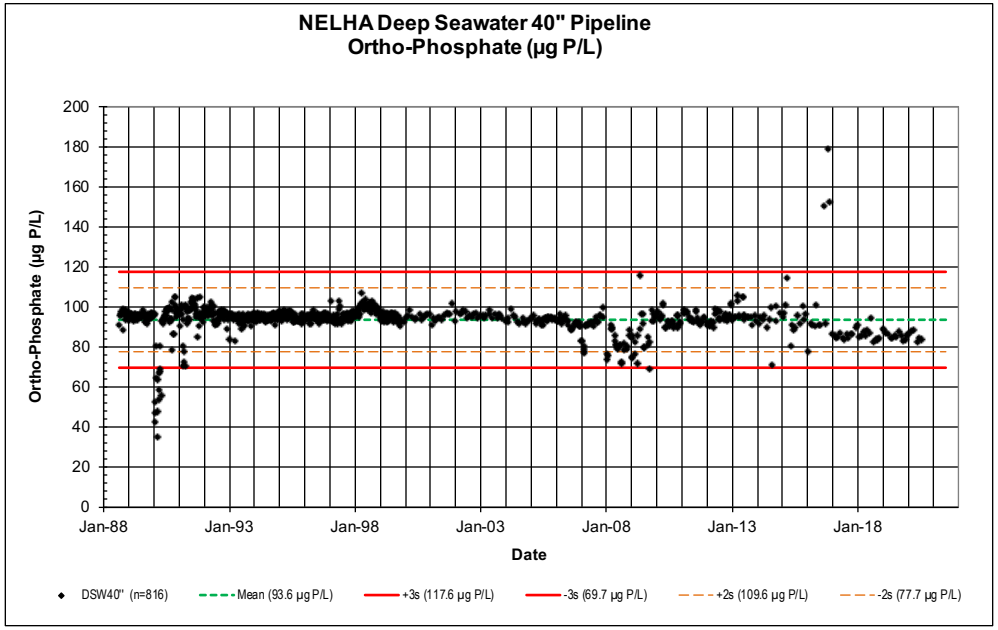
Intake Depth: 674 m, Offshore Pipe Length: 1,916 m

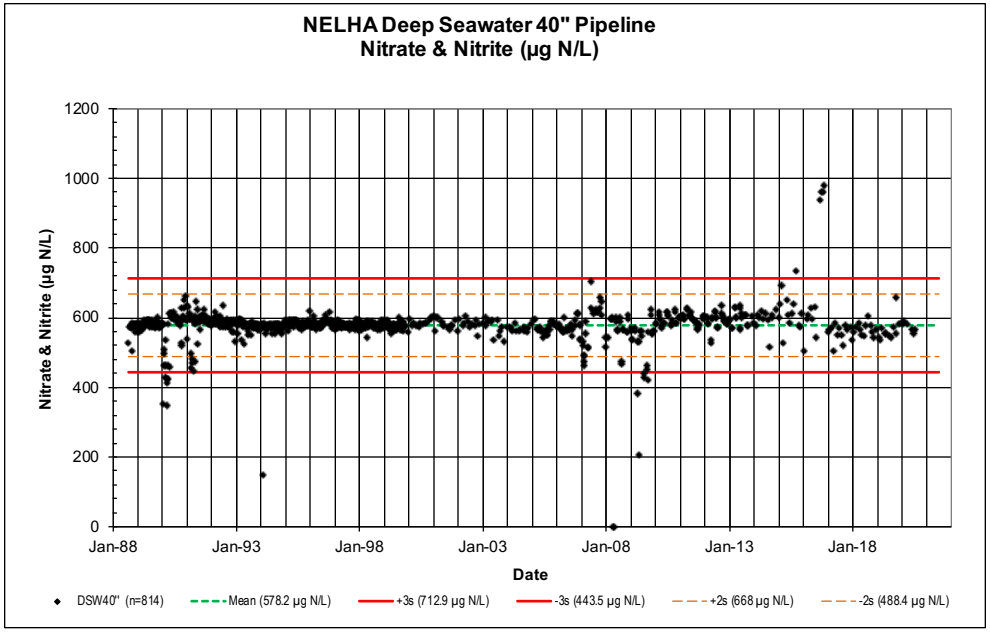
SITE ID	DATE M/D/Y	TIME (2400)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	TSS (mg/L)	Turbidity (NTU)	ALK (mEq/L)	SALINITY (PSU)	TEMP (˚C)	pH (unit)	DO (ppm)	Vibrio CFU/100mL	Total Count Marine Agar CFU/100mL
Mean (Aug. '86 - present)			3.0	94	41.1	578	0.2	2.5	84.5	2376	3.1	97	43.6	618	0.67	0.78	0.05	2.37	34.41	8.1	7.58	1.35		
STD DEV			0.3	8	4.0	45	0.2	2.7	7.8	204	0.5	9	6.2	56	0.31	0.60	0.04	0.1	0.19	1.9	0.09	1.03		
Range																								
UWL	+2s		3.6	110	49	668	0.57	8.0	100	2784	4.0	115	56.0	730	1.29	1.99	0.13	2.58	34.779	11.9	7.76	3.41		
LWL	-2s		2.4	78	33	488	-0.21	-2.9	69	1968	2.2	78	31.2	507	0.05	-0.43	-0.03	2.15	34.036	4.2	7.40	-0.71		
UCL	+3s		3.9	118	53	713	0.76	10.7	108	2988	4.4	124	62.2	786	1.60	2.59	0.17	2.69	34.965	13.8	7.85	4.44		
LCL	-3s		2.1	70	29	443	-0.40	-5.6	61	1764	1.7	69	25.0	451	-0.26	-1.03	-0.07	2.05	33.850	2.3	7.31	-1.74		
Data																								
Max. Value			5.8	179	69.9	979	3.3	46	184.3	5176	6.1	190	72.1	1009	4.88	5.50	0.36	3.33	36.54	34.0	8.54	10.74		
Min. Value			0.0	35	0.0	150	-0.2	-3	0.0	1170	0.0	0	0.0	0	0.03	0.00	0.02	1.68	33.29	5.5	7.00	0.02		

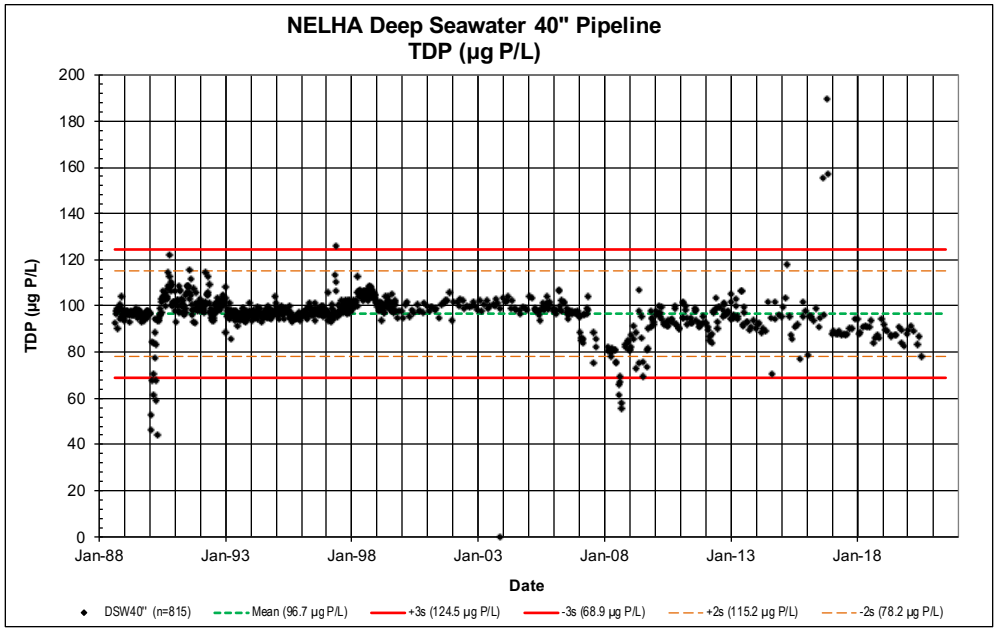
NELHA Water Quality Laboratory

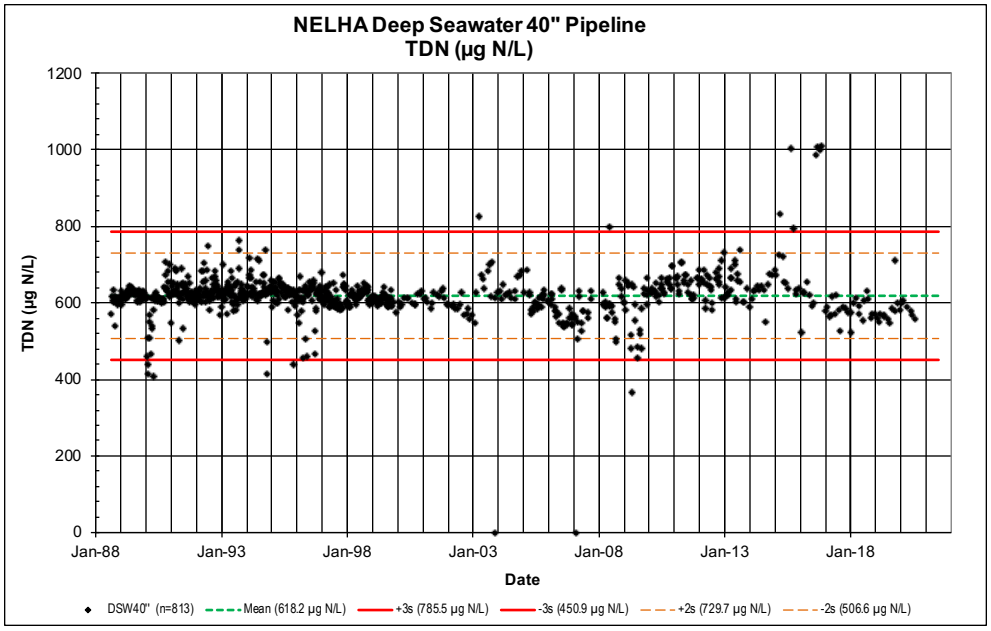
DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m





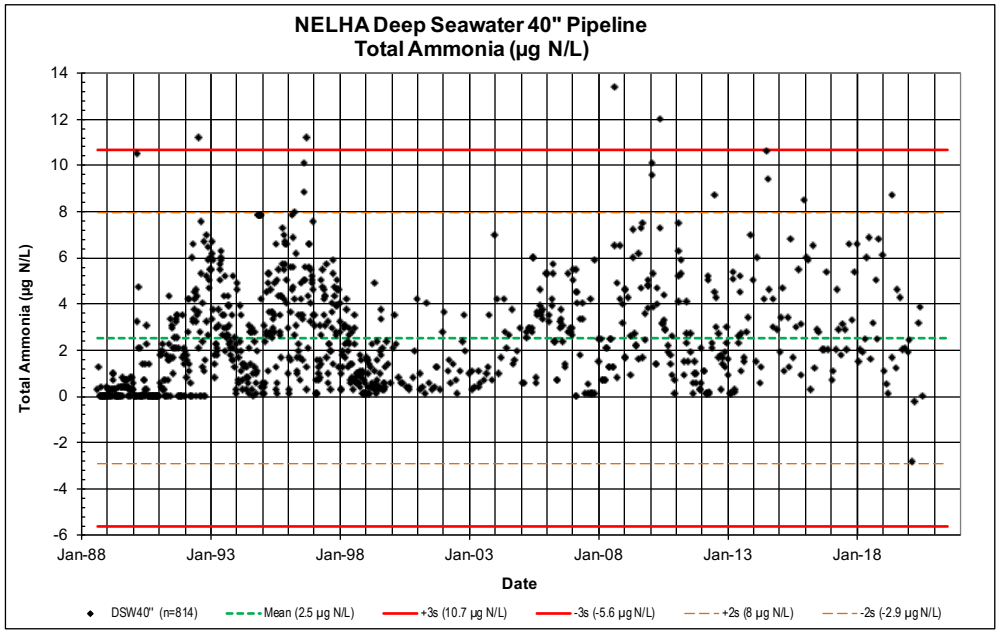


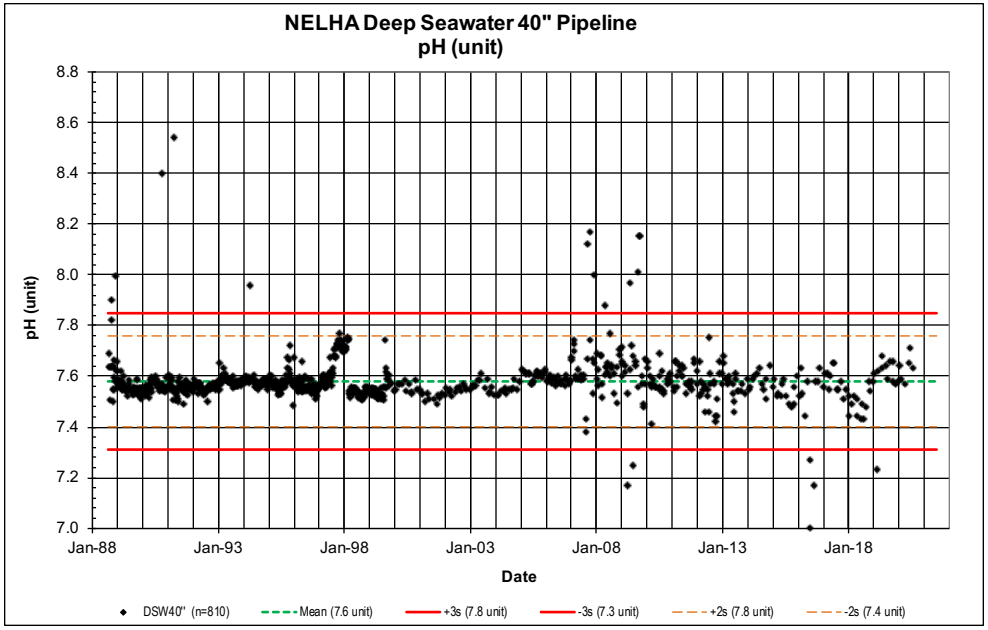


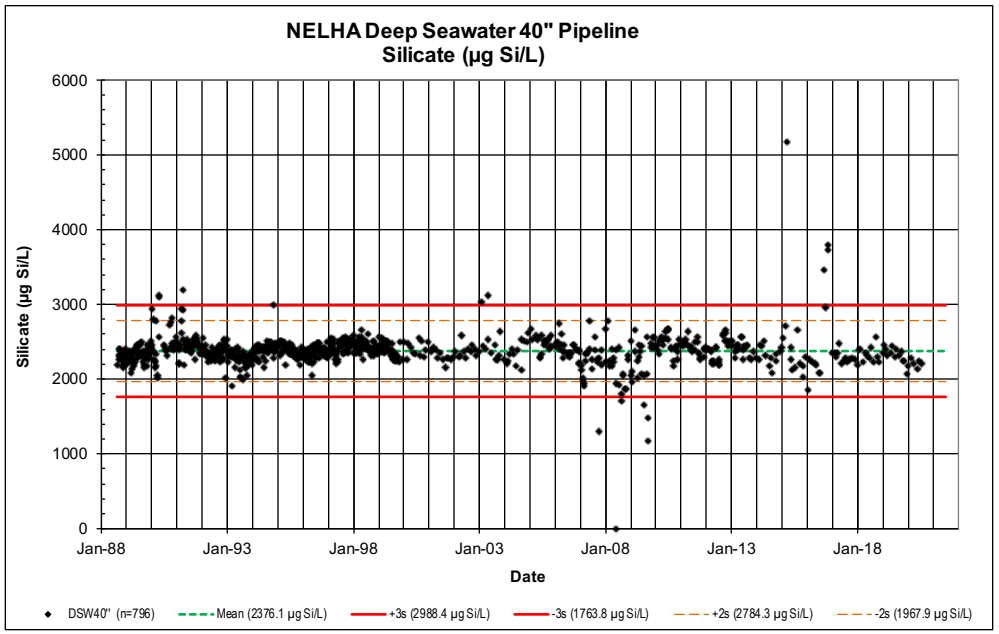
NELHA Water Quality Laboratory

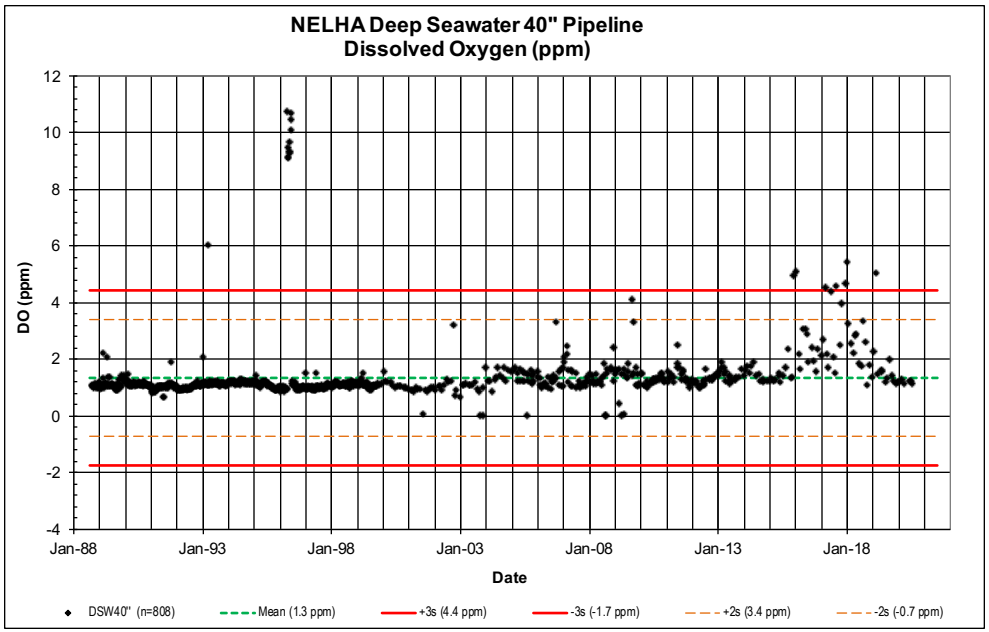
DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m





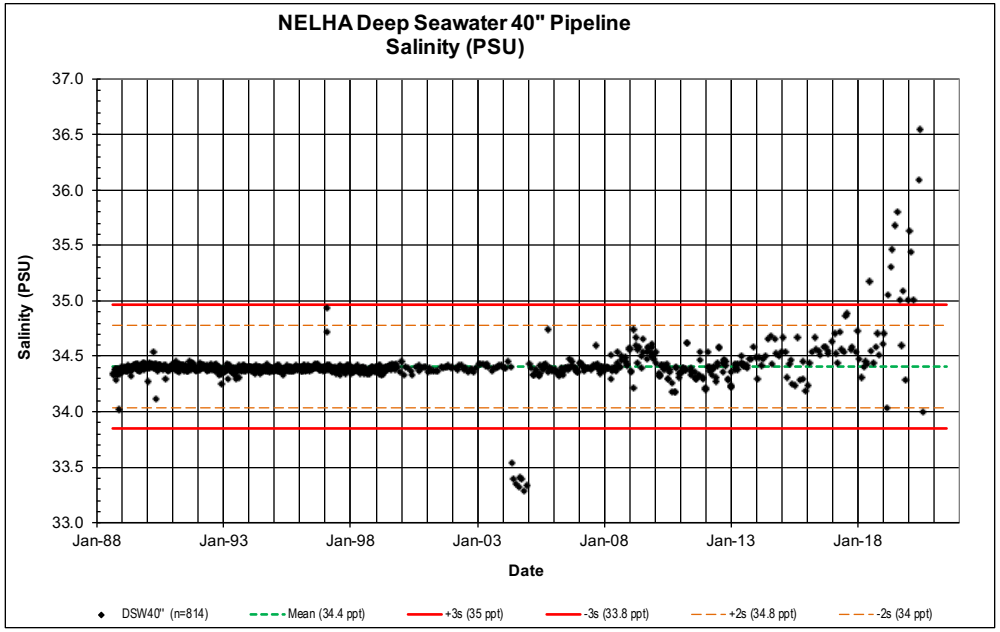


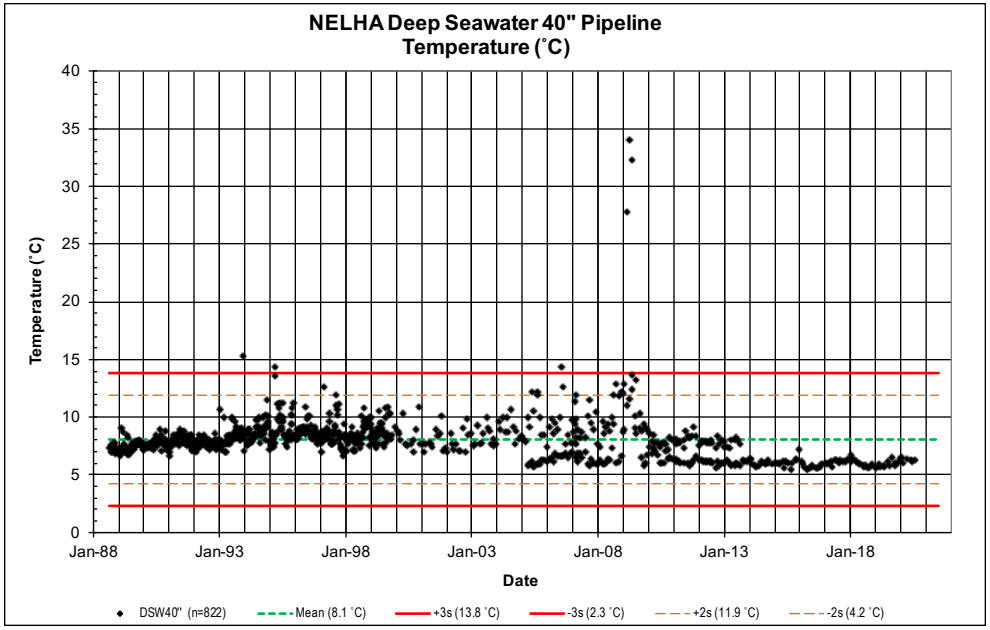


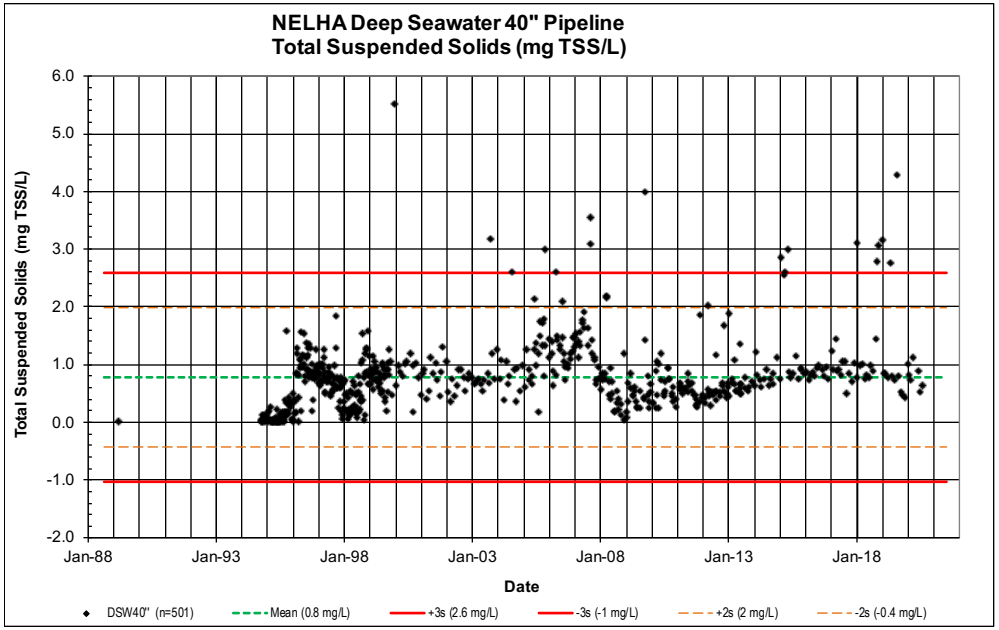
NELHA Water Quality Laboratory

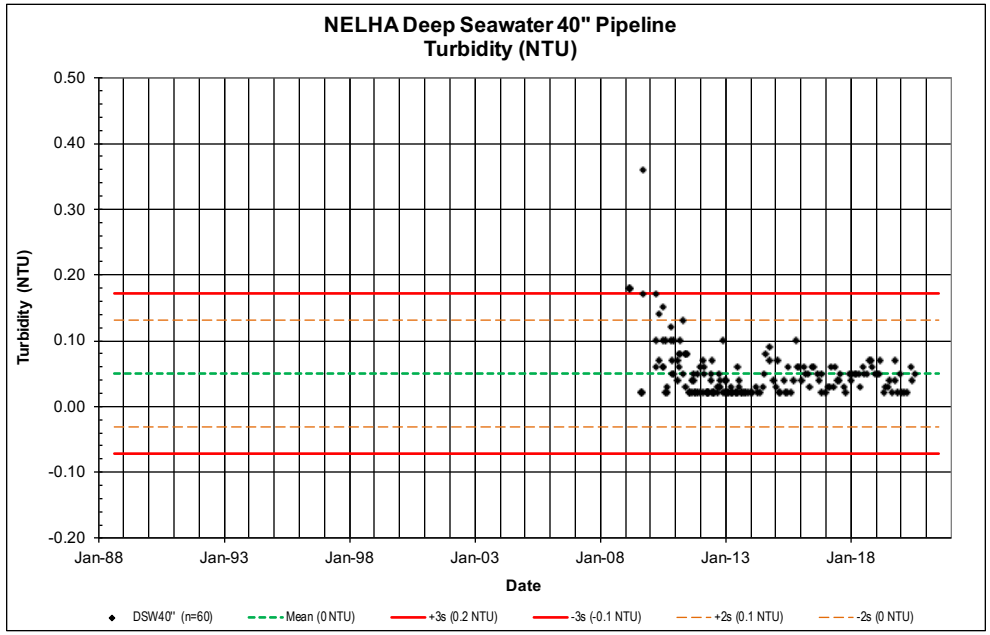
DSW 40"

Intake Depth: 674 m, Offshore Pipe Length: 1,916 m









NELHA Water Quality Laboratory

DSW 18"

Intake Depth: 628 m, Offshore Pipe Length: 1,834 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW18"	3/23/05		2.9	90	40	564	0.22	3.1	85	2384	3.2	99	44.7	626	0.56	0.45		2.37	34.310	7.2	7.63	1.32	31	5888
DSW18"	4/21/05		3.0	93	40	560	0.21	2.9	84	2357	3.1	96	39.4	552		0.50		2.35	34.353	6.9	7.62	1.31	8	167
DSW18"	5/26/05	1000	2.9	90	38	531	0.22	3.1	77	2172	3.1	97	41.2	576		4.10		2.37	34.315	7.6	7.59	1.40	38	133
DSW18"	6/16/05	942	2.9	89	38	529	0.41	5.7	80	2249	3.1	94	40.1	561		0.90		2.35	34.345	7.3	7.59	1.38	5	183
DSW18"	7/27/05	933	2.9	91	38	534	0.07	1.0	80	2253	3.1	97	42.2	590		0.60		2.38	34.334	7.4	7.62	1.43	33	242
DSW18"	8/11/05	848	2.9	90	39	545	0.25	3.5	81	2287	3.1	96	40.9	573		1.53		2.36	34.341	7.5	7.63	1.35	119	392
DSW18"	9/14/05	920	3.0	93	39	551	0.31	4.3	82	2304	3.2	99	43.6	611		0.92		3.00	34.317	7.0	7.59	1.20	27	105
DSW18"	10/10/05	1000	3.0	92	41	568	0.24	3.4	80	2254	3.2	99	43.8	613	0.71	1.33		2.38	34.304	6.8	7.61	1.28	10	53
DSW18"	11/2/05	903	2.9	91	39	551	0.26	3.6	80	2239	3.1	96	43.2	605	0.78	0.77		3.00	34.318	6.8	7.60	1.38	68	131
DSW18"	12/20/05	859	2.8	87	38	531	0.41	5.7	72	2019	3.0	94	41.2	576	0.59	1.18		2.59	34.278	7.4	7.60	1.58	50	192
DSW18"	1/26/06	916	3.0	91	41	568	0.25	3.5	85	2389	3.1	97	43.6	611		1.23		2.24	34.351	6.8	7.58	1.05	27	131
DSW18"	2/28/06	1005	3.1	96	40	561	0.43	6.0	83	2330	3.4	107	45.4	636		0.85		2.29	34.330	6.7	7.59	1.05	14	64
DSW18"	3/23/06	935	3.0	92	40	562	0.38	5.3	84	2356	3.3	101	42.2	591		0.85		2.24	34.331	6.9	7.58	1.15	19	42
DSW18"	4/18/06	1018	3.0	92	41	573	0.17	2.4	79	2210	3.0	94	40.1	561	0.59	1.50		2.32	34.344	7.2	7.59	1.13	37	64
DSW18"	5/18/06	1010	2.9	89	38	532	0.15	2.1	76	2134	3.1	96	40.3	564	0.63	1.25		2.36	34.303	7.3	7.59	1.23	106	428
DSW18"	6/29/06	944	2.9	90	39	543	0.24	3.4	77	2149	3.1	96	43.2	605	0.72	1.75		2.32	34.335	7.8	7.59	1.23	138	622
DSW18"	7/25/06	1010	2.9	89	40	566	0.26	3.6	80	2255	3.1	95	36.1	506	0.63	1.23		2.33	34.388	7.8	7.59	1.26	97	139
DSW18"	8/10/06	1035	2.8	86	39	548	0.26	3.6	77	2149	3.0	94	37.9	531	0.58	1.40		1.94	34.334	7.6	7.57	1.26	56	136
DSW18"	9/21/06	1035	2.8	88	41	567	0.08	1.1	76	2137	3.0	94	37.8	529	0.60	1.30		2.07	34.347	7.6	7.59	1.26	213	247
DSW18"	10/26/06	1015	2.9	90	43	601	0.29	4.1	82	2306	3.1	96	40.4	565	0.62	0.78		2.65	34.378	7.5	7.61	1.18	288	589
DSW18"	11/30/06	1040	2.8	88	41	570	0.19	2.7	79	2205	3.1	96	37.4	524	0.58	1.95		2.73	34.350	7.4	7.58	1.07	460	1891
DSW18"	12/14/06	1024	2.9	90	39	539	0.21	2.9	79	2205	3.1	96	37.1	520	0.57	2.13		2.41	34.362	7.3	7.58	1.29	384	1763
DSW18"					Pipeline sheared																			
DSW18"	12/3/09	1007	3.0	93	39	547	0.4	5.1	86	2419	3.0	91	42.4	594		0.75			34.42	7.0	7.60	1.14		
DSW18"	1/14/10	1021	3.1	95	41	572	0.3	4.8	83	2334	3.1	96	42.7	598		0.13			34.56	7.1	7.81	1.48		
DSW18"	2/16/10	1200	2.9	91	42	595	0.3	3.8	78	2202	3.0	94	44.5	623		0.58			34.34	7.2	7.61	1.26		
DSW18"	3/15/10	949	3.1	95	42	593	0.1	1.4	96	2688	3.0	93	44.8	627		0.57			34.34	6.8	7.58	1.26		
DSW18"	4/1/10	908	3.2	98	40	563	0.2	3.1	85	2379	3.1	97	44.3	621		0.23	0.04		34.41	6.7	7.59	1.13		
DSW18"	5/10/10	917	2.9	89	41	574	0.3	4.1	94	2651	2.9	91	42.5	596		0.90	0.08		34.36	7.0	7.56	1.43		
DSW18"	6/23/10	950	2.9	91	43	603	0.1	1.5	90	2530	3.0	91	45.8	642		0.50	0.05		34.37	6.9	7.59	1.34		
DSW18"	7/1/10	1103	2.87	89	43	596	0.2	2.7	85	2389	2.9	90	45.9	643		0.60	0.05		34.27	7.0	7.58	1.46		
DSW18"	8/5/10	1000	2.92	90	42	585	0.0	0.5	90	2520	2.9	89	45.2	633		1.45	0.31		34.31	21.3	7.54	1.45		
DSW18"	9/2/10	1004	2.78	86	42	584	0.2	3.2	80	2241	2.9	89	45.2	634		0.93	0.35		34.33	22.9	7.53	0.85		
DSW18"	10/18/10	949	3.02	93	44	621	0.1	1.4	83	2341	3.1	95	48.1	674		0.30	0.26		34.23	22.2	7.54	1.17		
DSW18"	11/4/10	1012	2.75	85	41	581	0.0	0.5	98	2754	2.8	88	44.1	617		0.50	0.64		34.44	22.0	7.56	1.10		
DSW18"	12/1/10	1019	2.96	92	43	599	0.0	0.6	89	2494	2.9	91	46.9	658		0.23	0.16		34.36	21.7	7.56	1.01		
DSW18"	1/25/11	1006	3.12	97	43	608	0.3	4.4	89	2502	3.1	97	45.4	636		0.60	0.18		34.40	21.1	7.52	2.02		
DSW18"	2/8/11	1014	3.11	96	43	599	0.6	8.4	88	2462	3.2	99	46.8	656		0.63	0.21		34.43	22.1	7.62	1.12		
DSW18"	3/7/11	1112	3.13	97	43	599	0.3	4.7	89	2500	3.2	101	45.6	639		0.68	0.06		34.34	21.9	7.64	1.19		
DSW18"	4/11/11	1135	3.08	95	45	626	0.1	1.3	91	2553	3.1	96	49.1	687		0.62	0.13		34.69	21.5	7.55	1.06		
DSW18"	5/25/11	928	2.91	90	43	600	0.2	2.6	88	2478	2.8	86	46.0	644		0.83	0.26		34.39	22.1	7.60	1.73		
DSW18"	6/13/11	1045	2.86	89	44	615	0.2	3.1	87	2438	2.9	89	46.8	656		0.68	0.10		34.41	21.9	7.58	1.25		
DSW18"	7/21/11	913	3.02	94	42	591	0.2	2.6	88	2476	3.0	93	44.8	627		0.57	0.05		34.30	22.9	7.53	0.99		
DSW18"	8/22/11	1026	2.79	86	42	584	0.0	0.1	92	2571	2.8	86	45.4	635		0.49	0.08		34.40	23.9	7.58	1.19		
DSW18"	9/15/11	1000	2.74	85	40	563	0.1	0.9	85	2390	2.8	86	42.7	597		0.37	0.10		34.38	23.5	7.48	1.46		
DSW18"	10/4/11	818	2.74	85	41	576	0.0	0.3	84	2371	3.0	92	44.1	618		0.24	0.07		34.41	23.6	7.42	1.04		
DSW18"	11/21/11	1227	2.98	92	43	596	0.0	0.6	84	2348	3.0	91	47.5	665		0.30	0.02		34.29	19.2	7.65	0.99		
DSW18"	12/27/11	1041	2.91	90	43	602	0.1	1.3	86	2407	2.9	89	47.6	667		0.16	0.05		34.28	16.4	7.54	1.10		
DSW18"	1/30/12	1042	2.71	84	43	596	0.0	0.1	84	2355	2.8	87	46.7	654		1.08	0.05		34.51	16.9	7.51	1.06		
DSW18"	2/27/12	1042	2.92	90	42	582	0.0	0.1	84	2347	2.7	84	46.3	649		0.49	0.04		34.45	17.1	7.54	1.10		
DSW18"	3/28/12	1024	2.84	88	38	529	0.4	5.0	80	2246	2.7	83	41.4	579		0.52	0.03		34.41	16.1	7.54	0.98		
DSW18"	4/16/12	1034	3.01	93	43	596	0.0	0.3	79	2211	2.9	91	47.2	661		0.51	0.05		34.50	18.0	7.56	0.88		
DSW18"	5/24/12	859	3.20	99	44	616	0.1	1.9	88	2475	3.2	99	47.9	671		0.50	0.05		34.21	7.1	7.51	1.26		
DSW18"	6/19/12	1034	3.04	94	42	593	0.4	6.1	78	2194	2.9	91	45.5	638		0.52	0.05		34.57	6.9	7.66	1.10		

NELHA Water Quality Laboratory

DSW 18"

Intake Depth: 628 m, Offshore Pipe Length: 1,834 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW18"	7/3/12	822	3.16	98	41	573	0.2	3.0	78	2182	3.1	97	45.5	637		1.03	0.02		34.48	7.1	7.45	1.35		
DSW18"	8/27/12	1112	3.07	95	45	627	0.2	3.0	91	2565	3.0	94	47.4	664		1.08	0.06		34.41	6.5	7.55	1.29		
DSW18"	9/26/12	1055	3.12	97	43	599	0.2	2.6	93	2611	3.1	97	46.1	645		0.69	0.03		34.46	6.2	7.44	1.35		
DSW18"	10/10/12	1005	3.05	95	42	589	0.1	2.1	89	2490	3.0	94	45.7	640		0.52	0.10		34.44	6.4	7.48	1.30		
DSW18"	11/19/12	1331	3.10	96	42	582	0.1	1.5	90	2517	3.2	99	46.2	648		0.53	0.02		34.33	6.8	7.62	1.41		
DSW18"	12/19/12	954	3.29	102	42	594	0.2	2.8	90	2538	3.3	101	45.3	634		0.70	0.02		34.31	6.7	7.56	1.46		
DSW18"	1/4/13	1025	3.03	94	42	592	0.1	0.9	90	2534	3.0	93	44.5	623		0.42	0.02		34.42	6.8	7.62	1.46		
DSW18"	2/13/13	1033	3.09	96	41	576	0.0	0.1	81	2280	3.1	96	42.5	596		0.55	0.02		34.36	6.9	7.56	1.72		
DSW18"	3/18/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	4/3/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	5/29/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	6/13/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	7/1/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	8/14/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	9/18/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	10/10/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	11/21/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	12/23/13	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	1/23/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	2/12/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	3/17/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	4/10/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	5/13/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	6/24/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	7/23/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	8/11/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	9/29/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	10/1/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	11/25/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	12/30/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	1/21/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	2/18/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	3/9/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	4/28/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	5/14/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	6/3/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	7/23/14	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	8/14/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	9/16/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	10/28/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	11/5/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	12/9/15	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	1/15/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	2/11/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	3/3/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	4/12/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	5/10/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	6/15/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	7/1/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	8/25/16	No Sample - 18" DSW Pump Broken - Leaking Gate Valve Replaced																						
DSW18"	9/15/16	No Sample - 18" DSW Pump Broken																						
DSW18"	10/20/16	No Sample - 18" DSW Pump Broken																						
DSW18"	11/4/16	No Sample - 18" DSW Pump Broken																						
DSW18"	12/29/16	No Sample - 18" DSW Pump Broken																						
DSW18"	1/27/17	No Sample - 18" DSW Pump Broken																						
DSW18"	2/23/17	No Sample - 18" DSW Pump Broken																						
DSW18"	3/17/17	No Sample - 18" DSW Pump Broken																						
DSW18"	4/10/17	No Sample - 18" DSW Pump Broken																						
DSW18"	5/17/17	No Sample - 18" DSW Pump Broken																						
DSW18"	6/13/17	No Sample - 18" DSW Pump Broken																						
DSW18"	7/13/17	No Sample - 18" DSW Pump Broken																						
DSW18"	8/2/17	No Sample - 18" DSW Pump Broken																						
DSW18"	9/12/17	No Sample - 18" DSW Pump Broken																						
DSW18"	10/12/17	No Sample - 18" DSW Pump Broken																						
DSW18"	11/29/17	No Sample - 18" DSW Pump Broken																						
DSW18"	12/27/17	No Sample - 18" DSW Pump Broken																						
DSW18"	1/11/18	No Sample - 18" DSW Pump Broken																						
DSW18"	2/14/18	No Sample - 18" DSW Pump Broken																						
DSW18"	3/23/18	No Sample - 18" DSW Pump Broken																						
DSW18"	4/24/18	No Sample - 18" DSW Pump Broken																						
DSW18"	5/8/18	No Sample - 18" DSW Pump Broken																						
DSW18"	6/20/18	No Sample - 18" DSW Pump Broken																						

NELHA Water Quality Laboratory

DSW 18"

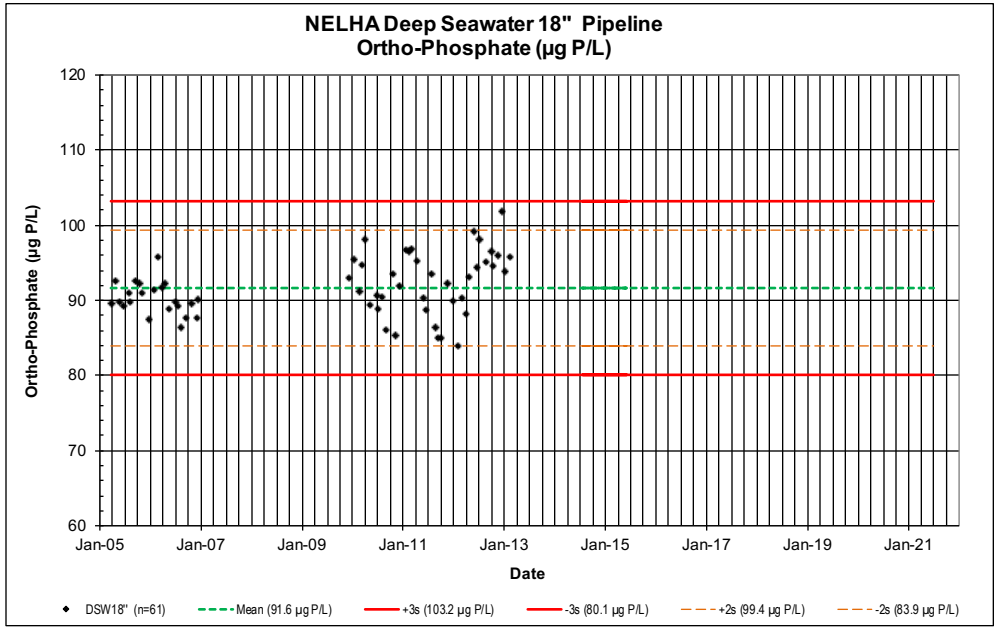
Intake Depth: 628 m, Offshore Pipe Length: 1,834 m

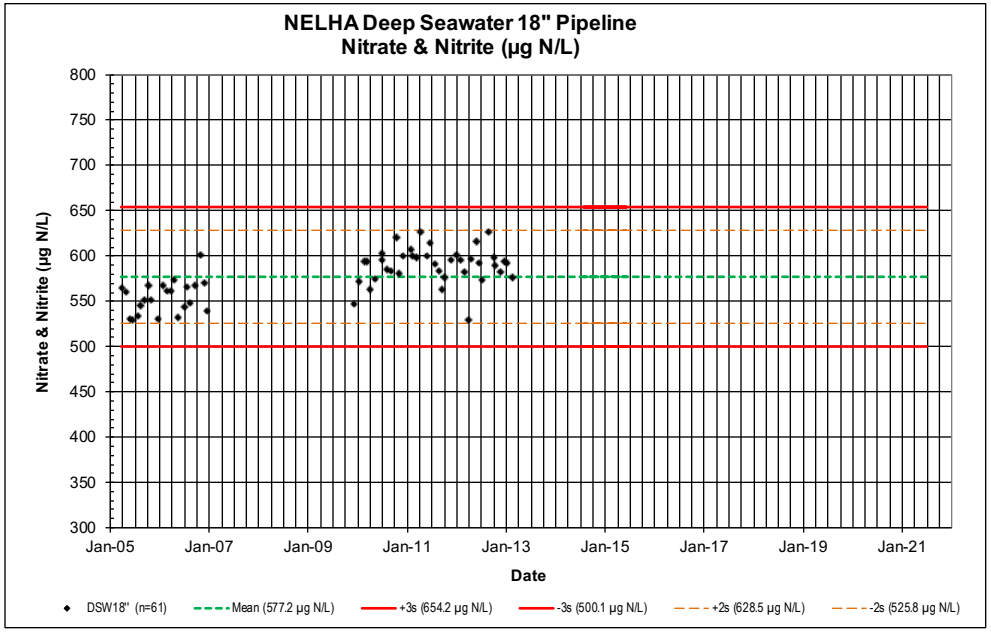
SITE ID	DATE M/D/Y	TIME (2400)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	$NO_3^- \& NO_2^-$ (µM)	$NO_3^- \& NO_2^-$ (µg N/L)	$NH_4^+ \& NH_3$ (µM)	$NH_4^+ \& NH_3$ (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	TSS (mg/L)	Turbidity (NTU)	ALK (mEq/L)	SALINITY (PSU)	TEMP (˚C)	pH (unit)	DO (ppm)	Vibrio CFU/100mL	Total Count Marine Agar CFU/100mL
DSW18"	7/12/18	No Sample - 18" DSW Pump Broken																						
DSW18"	8/13/18	No Sample - 18" DSW Pump Broken																						
DSW18"	9/1/18	No Sample - 18" DSW Pump Broken																						
DSW18"	10/11/18	No Sample - 18" DSW Pump Broken																						
DSW18"	11/2/18	No Sample - 18" DSW Pump Broken																						
DSW18"	12/21/18	No Sample - 18" DSW Pump Broken																						
DSW18"	1/15/19	No Sample - 18" DSW Pump Broken																						
DSW18"	2/13/19	No Sample - 18" DSW Pump Broken																						
DSW18"	3/7/19	No Sample - 18" DSW Pump Broken																						
DSW18"	4/25/19	No Sample - 18" DSW Pump Broken																						
DSW18"	5/7/19	No Sample - 18" DSW Pump Broken																						
DSW18"	6/20/19	No Sample - 18" DSW Pump Broken																						
DSW18"	7/17/19	No Sample - 18" DSW Pump Broken																						
DSW18"	8/23/19	No Sample - 18" DSW Pump Broken																						
DSW18"	9/26/19	No Sample - 18" DSW Pump Broken																						
DSW18"	10/8/19	No Sample - 18" DSW Pump Broken																						
DSW18"	11/14/19	No Sample - 18" DSW Pump Broken																						
DSW18"	12/17/19	No Sample - 18" DSW Pump Broken																						
DSW18"	1/9/20	No Sample - 18" DSW Pump Broken																						
DSW18"	2/4/20	No Sample - 18" DSW Pump Broken																						
DSW18"	3/17/20	No Sample - 18" DSW Pump Broken																						
DSW18"	4/1/20	No Sample - 18" DSW Pump Broken			COVID - 19																			
DSW18"	5/21/20	No Sample - 18" DSW Pump Broken																						
DSW18"	6/9/20	No Sample - 18" DSW Pump Broken																						
DSW18"	7/14/20	No Sample - 18" DSW Pump Broken																						
DSW18"	8/1/20																							
DSW18"	9/1/20																							
DSW18"	10/1/20																							
DSW18"	11/1/20																							
DSW18"	12/1/20																							
DSW18"	1/1/21																							
DSW18"	2/1/21																							
DSW18"	3/1/21																							
DSW18"	4/1/21																							
DSW18"	5/1/21																							
DSW18"	6/1/21																							
DSW18"	7/1/21																							
Mean (Mar. '05 - present)			3.0	92	41	577	0.20	2.8	84	2366	3.0	94	44	614	0.63	0.84	0.11	2.41	34.37	7.19	7.57	1.26	101	618
STD DEV			0.1	4	2	26	0.13	1.8	6	155	0.1	5	3	42	0.07	0.61	0.13	0.25	0.08	0.33	0.06	0.21	126	1279
Range																								
UWL	+2s		3.21	99	45	629	0.46	6.4	95	2676	3.3	103	49.8	698	0.76	2.06	0.36	2.91	34.535	7.8	7.69	1.67		
LWL	-2s		2.71	84	38	526	-0.06	-0.8	73	2056	2.7	85	37.8	530	0.49	-0.37	-0.15	1.91	34.209	6.5	7.46	0.84		
UCL	+3s		3.33	103	47	654	0.59	8.2	101	2831	3.5	108	52.8	740	0.82	2.67	0.49	3.17	34.616	8.2	7.75	1.88		
LCL	-3s		2.59	80	36	500	-0.19	-2.7	68	1901	2.6	80	34.8	488	0.43	-0.98	-0.27	1.65	34.127	6.2	7.40	0.63		
Data																								
Max. Value			3.3	102	45	627	0.60	8.4	98	2754	3.4	107	49.1	687	0.78	4.10	0.64	3.00	34.690	23.9	7.81	2.02	460	5888
Min. Value			2.7	84	38	529	0.01	0.1	72	2019	2.7	83	36.1	506	0.56	0.13	0.02	1.94	34.210	6.2	7.42	0.85	5	42

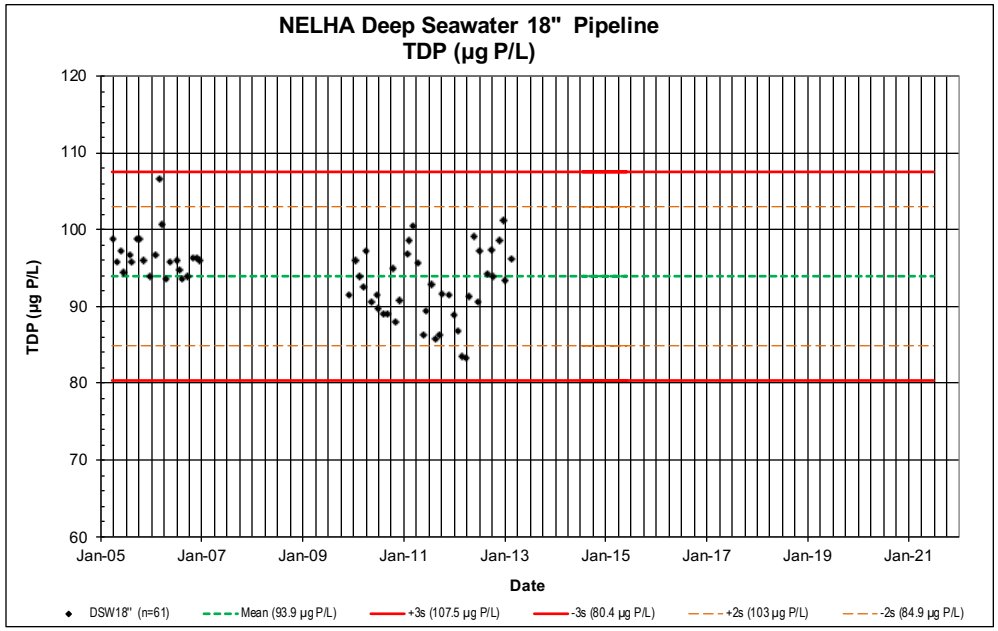
NELHA Water Quality Laboratory

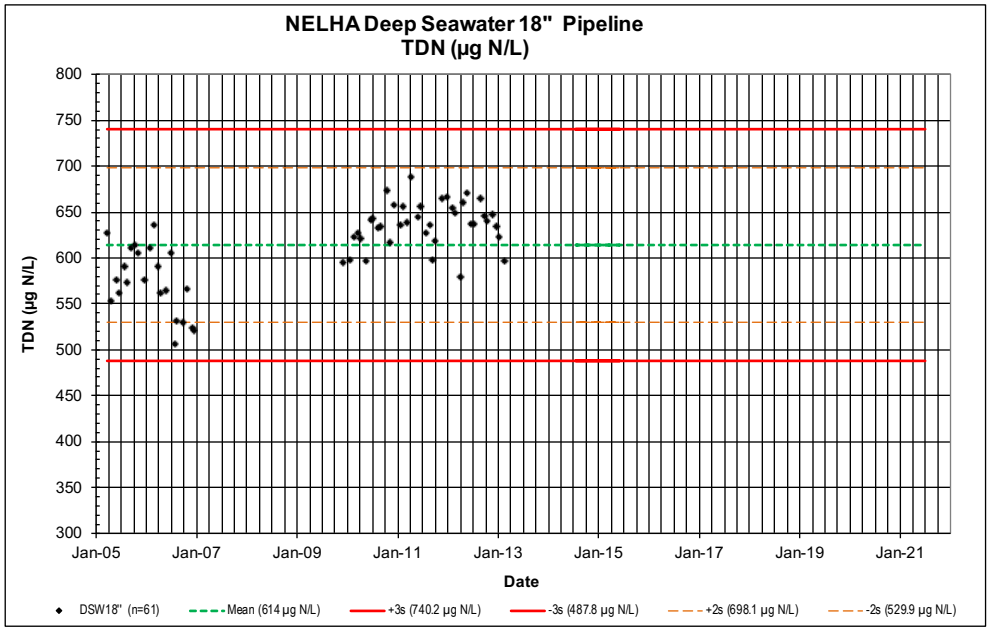
DSW 18" KP

Intake Depth: 628 m, Offshore Pipe Length: 1834 m





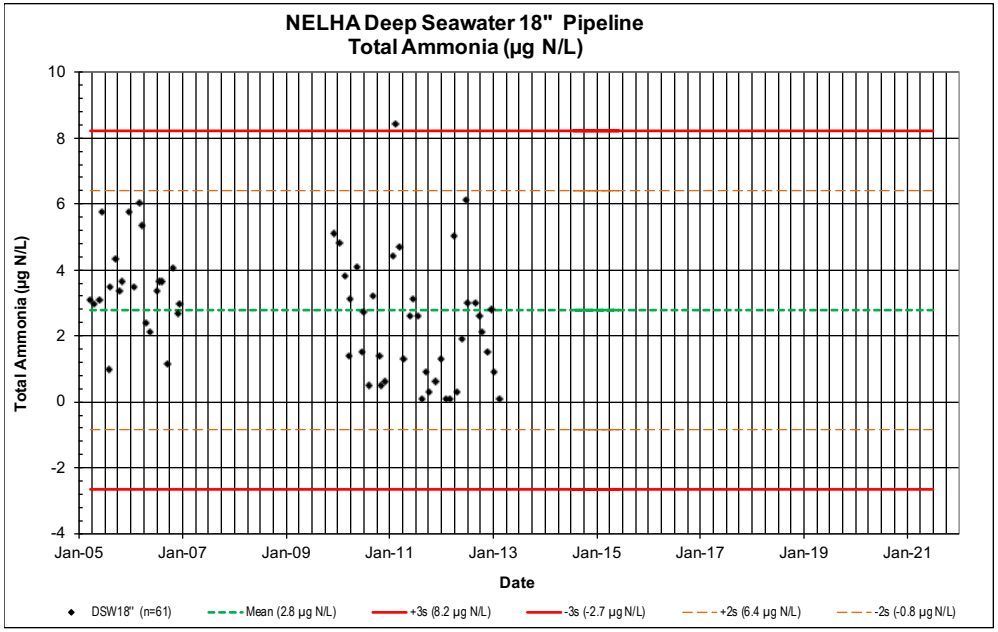


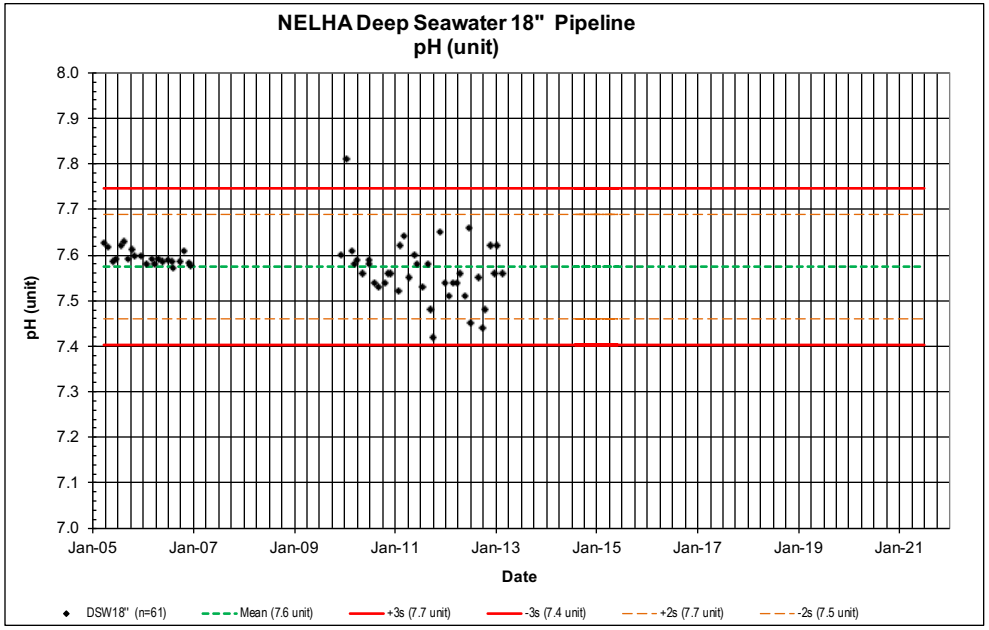


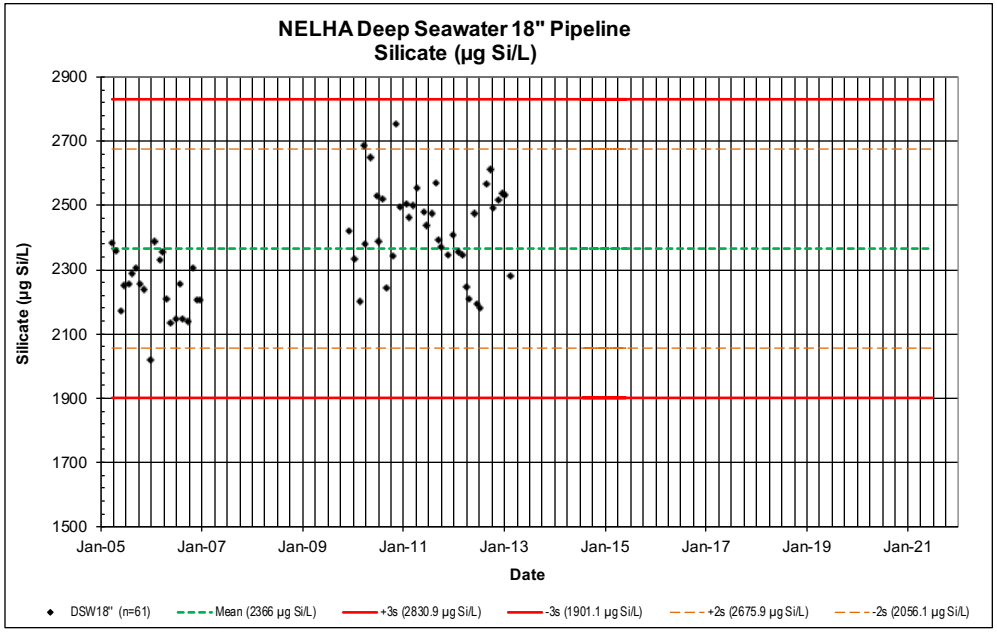
NELHA Water Quality Laboratory

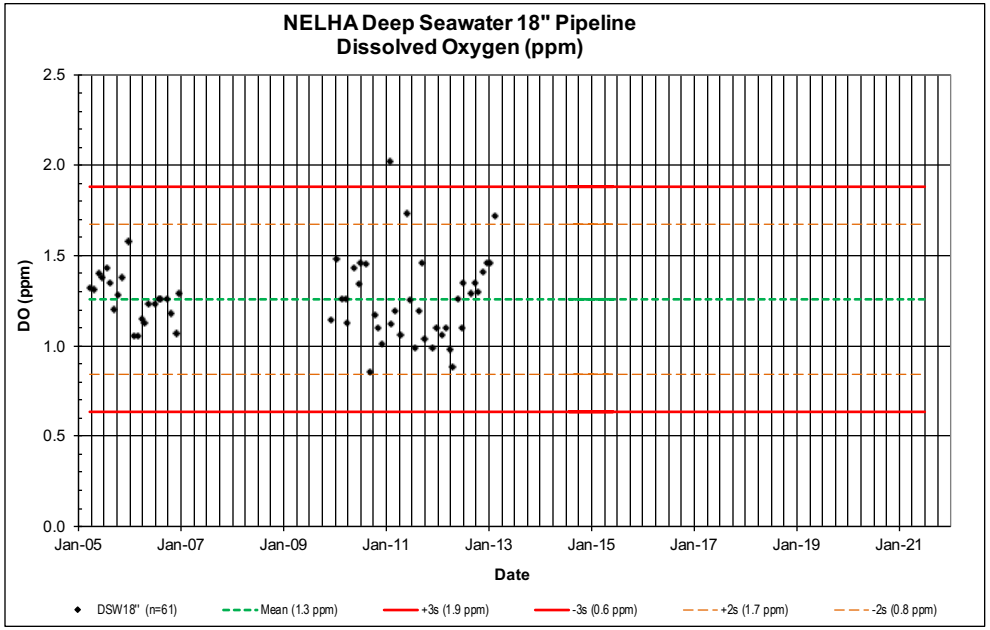
DSW 18" KP

Intake Depth: 628 m, Offshore Pipe Length: 1834 m





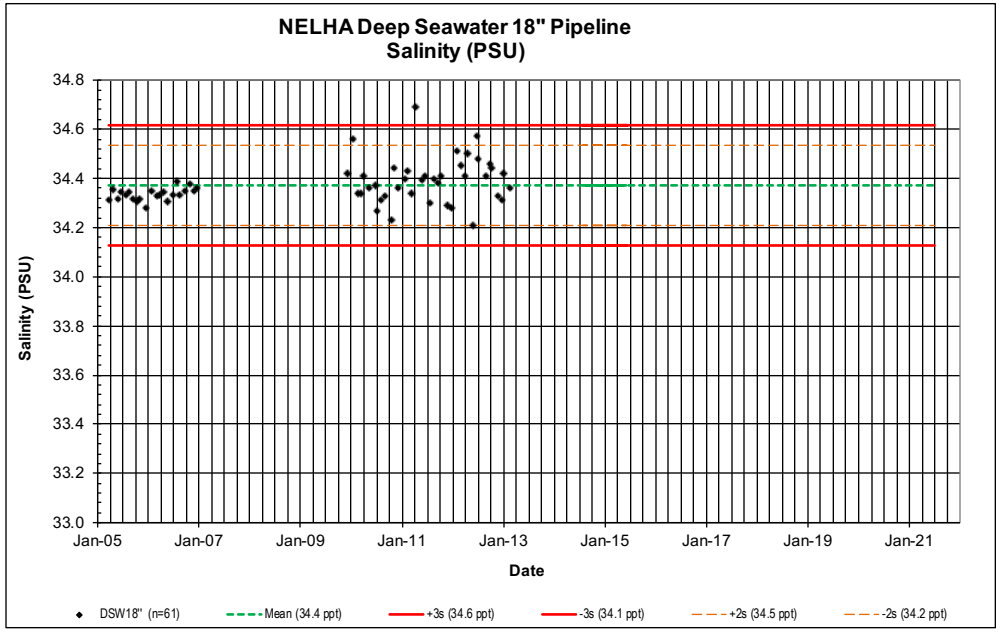


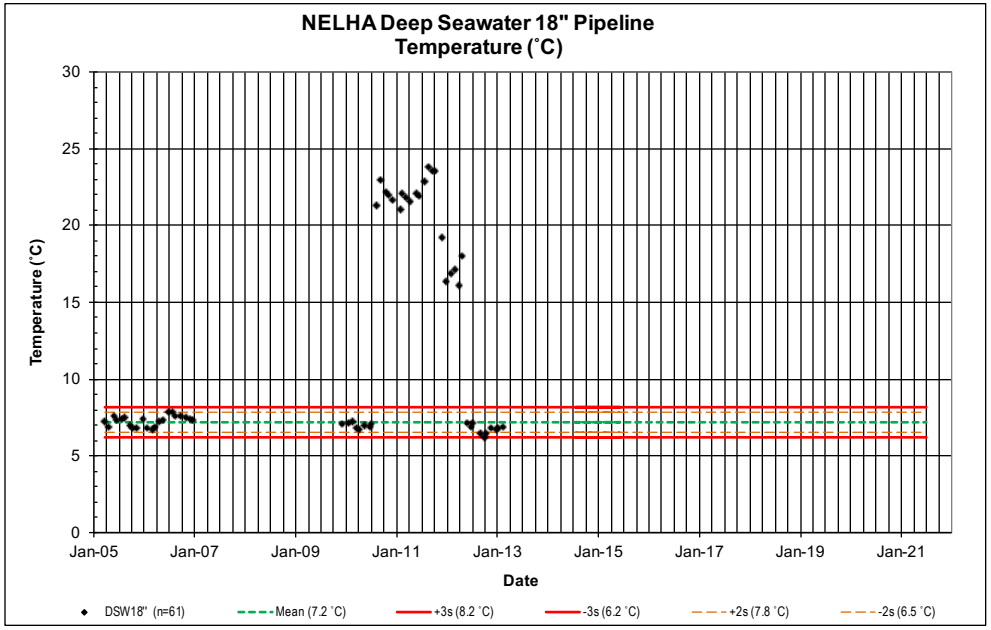


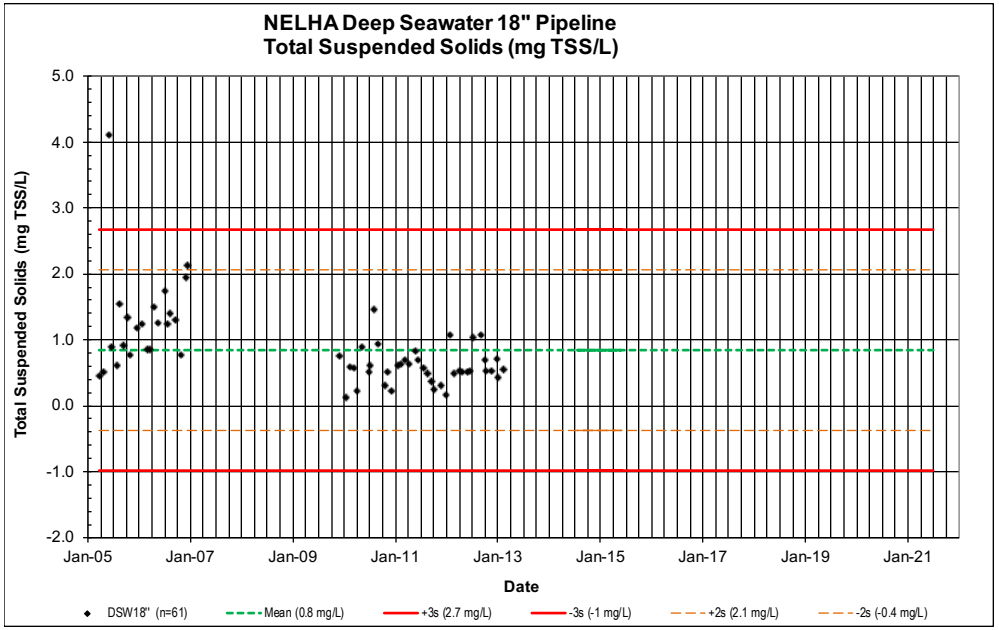
NELHA Water Quality Laboratory

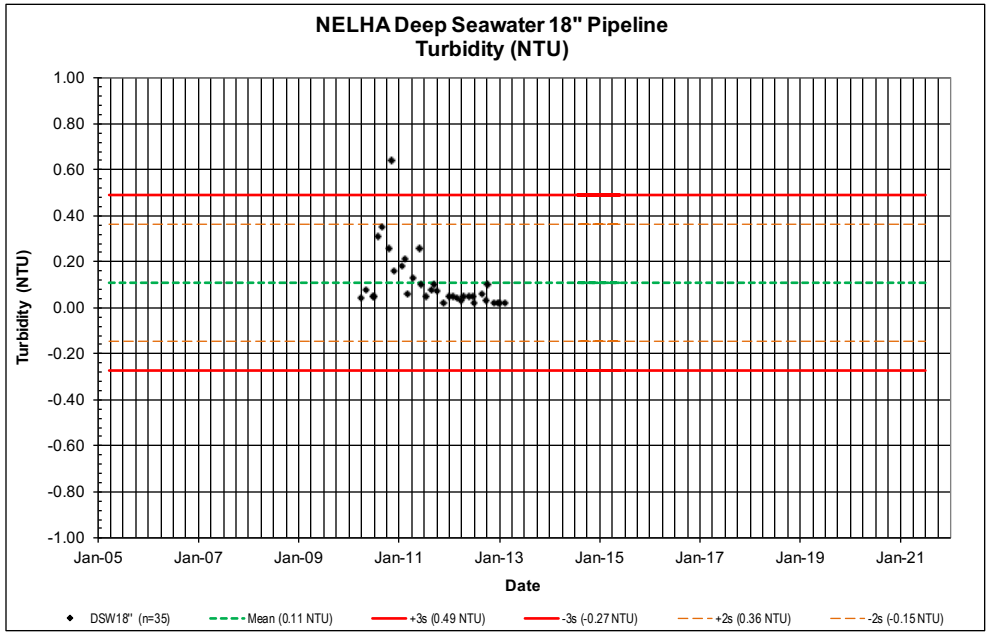
DSW 18" KP

Intake Depth: 628 m, Offshore Pipe Length: 1834 m









NELHA Water Quality Laboratory

DSW 55"

Intake Depth: 915 m, Offshore Pipe Length: 3,124 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW 55"	8/11/05	920	3.0	94	41	568	0.27	3.8	105	2946	3.2	99	43	604		1.75		2.39	34.469	5.8	7.65	1.45	43	309
DSW 55"	9/14/05	940	3.1	96	41	578	0.33	4.6	106	2971	3.3	102	44	610		1.48		2.39	34.479	5.5	7.61	1.50	21	50800
DSW 55"	10/10/05	1025	3.1	96	43	603	0.23	3.2	109	3064	3.3	102	46	644	0.74	1.55		2.41	34.498	5.1	7.64	1.64	6	5854
DSW 55"	11/2/05	927	3.1	95	43	597	0.27	3.8	106	2974	3.3	101	45	628	0.56	1.03		2.58	34.491	5.4	7.62	1.59	147	247
DSW 55"	12/20/05	920	3.1	95	42	589	0.38	5.3	105	2952	3.2	100	45	625	0.51	1.20		2.63	34.461	5.5	7.63	1.69	35	189
DSW 55"	1/26/06	937	3.0	94	41	576	0.25	3.5	108	3019	3.2	98	43	600		1.65		2.25	34.468	5.8	7.60	1.47	27	564
DSW 55"	2/28/06	1036	3.2	98	41	578	0.34	4.8	103	2893	3.6	110	45	635		1.08		2.18	34.465	5.8	7.61	1.48	143	400
DSW 55"	3/23/06	1016	3.0	94	41	571	0.45	6.3	103	2893	3.2	99	43	605		0.85		2.24	34.469	5.7	7.60	1.39	18	122
DSW 55"	4/18/06	1044	3.1	95	42	584	0.19	2.7	103	2893	3.1	96	42	588	0.56	1.40		2.36	34.466	5.7	7.63	1.48	788	1011
DSW 55"	5/18/06	1040	3.1	96	42	581	0.21	2.9	106	2977	3.3	103	43	595	0.56	1.60		2.34	34.472	6.0	7.60	1.39	29	156
DSW 55"	6/29/06	920	3.1	96	41	581	0.27	3.8	100	2809	3.2	99	41	568	0.63	1.65		2.06	34.467	5.8	7.60	1.31	51	203
DSW 55"	7/25/06	1032	3.0	92	42	587	0.25	3.5	99	2772	3.2	98	40	558	0.58	1.08		1.79	34.483	6.5	7.59	1.52	136	533
DSW 55"	8/10/06	1056	2.9	90	41	576	0.27	3.8	97	2719	3.1	97	40	555	0.62	0.83		2.06	34.403	6.5	7.59	1.54	113	302
DSW 55"	9/21/06	1054	3.0	91	43	605	0.08	1.1	99	2789	3.0	94	40	558	0.55	1.03		2.02	34.480	5.4	7.59	1.41	15	44
DSW 55"	10/26/06	1034	3.0	92	44	616	0.27	3.8	98	2764	3.2	99	43	601	0.56	0.95		2.51	34.470	6.0	7.61	1.38	61	297
DSW 55"	11/30/06	1059	3.0	92	41	580	0.22	3.1	99	2766	3.2	98	40	558	0.56	1.58		2.50	34.478	6.0	7.60	1.34	22	67
DSW 55"	12/14/06	1110	3.0	94	40	566	0.29	4.1	96	2685	3.2	100	40	558	0.55	1.25		2.43	34.461	5.8	7.59	1.28	13	47
DSW 55"	1/11/07	1027	3.0	94	43	597	0.36	5.0	98	2752	3.2	100	45	636	0.60	2.13		2.41	34.476	5.8	7.60	1.35	94	736
DSW 55"	2/15/07	1045	3.1	95	42	590	0.44	6.2	98	2755	3.4	104	45	625	0.62	1.43		2.38	34.480	6.1	7.62	1.35	26	158
DSW 55"	3/8/07	1045	3.0	92	44	619	0.25	3.5	102	2865	3.2	99	45	629	0.55	1.78		2.39	34.470	6.1	7.62	1.40	43	256
DSW 55"	4/12/07	1100	2.9	89	39	545	0.23	3.2	98	2758	3.1	97	40	557	0.58	1.28		2.28	34.481	6.0	7.62	1.37	105	1803
DSW 55"	5/9/07	1045	3.0	93	50	705	0.24	3.4	99	2780	3.4	104	42	594	0.65	0.90		2.07	34.472	5.8	7.62	1.47	30	128
DSW 55"	6/27/07	1025	3.0	94	46	642	0.01	0.1	91	2552	3.1	96	50	701		1.23		2.55	34.474	6.2	7.63	1.34	178	1378
DSW 55"	7/30/07	1335	3.1	96	45	636	0.11	1.5	96	2700	2.5	77	42	587		1.15		2.52	34.650	5.5	7.61	1.58		
DSW 55"	8/30/07	907	3.0	93	44	622	0.01	0.1	90	2533	2.6	79	43	603		1.00		2.47	34.506	5.9	7.81	1.47		
DSW 55"	9/24/07	952	3.0	93	45	629	0.05	0.7	96	2705	2.4	73	49	690		1.03		1.99	34.680	5.6	7.96	1.56		
DSW 55"	10/30/07	1353	3.0	92	43	608	0.01	0.1	99	2783	2.6	80	49	682		0.73		2.60	34.484	5.6	7.49	1.50		
DSW 55"	11/27/07	1416	3.2	98	49	685	0.69	9.6	95	2670	3.3	102	52	734		0.83		2.54	34.522	5.3	7.63	1.84		
DSW 55"	12/31/07	1105	2.7	83	40	562	0.66	9.3	69	1926	3.2	100	50	694		0.40		2.53	34.482	5.5	7.65	1.61		
DSW 55"	1/30/08	902	2.9	89	43	603	0.55	7.7	88	2474	3.0	93	47	662		0.75		2.42	34.500	5.6	7.70	2.25		
DSW 55"	2/28/08	1306	2.9	89	42	590	0.05	0.7	90	2529	2.6	79	42	587		0.68		2.72	34.490	5.4	7.63	1.67		
DSW 55"	3/31/08	1117	2.9	91	44	613	0.05	0.7	90	2536	2.6	81	44	620		1.35		2.50	34.560	5.4	7.55	1.55		
DSW 55"	4/25/08	855	2.8	86	NA	NA	0.15	2.1	97	2715	2.6	81	41	579		0.48		2.48	34.478	5.6	7.62	1.62		
DSW 55"	5/23/08	1210	2.6	81	43	605	0.49	6.9	NA	NA	2.4	73	45	637		0.65		2.43	34.450	5.7	7.71	1.68		
DSW 55"	6/10/08	1105	2.6	80	41	576	0.18	2.5	89	2507	2.4	75	43	598		0.53		NA	34.450	5.4	7.65	1.74		
DSW 55"	7/18/08	1018	2.6	81	43	605	0.09	1.3	95	2676	2.1	65	42	594		0.30			34.56	5.6	7.89	1.59		
DSW 55"	8/30/08	1121	2.7	84	41	581	0.43	6.0	91	2543	2.8	86	50	698		0.40			34.441	5.2	7.74	1.32		
DSW 55"	9/8/08	920	2.6	82	42	582	0.15	2.1	89	2512	2.3	72	45	632		0.45			34.50	5.6	7.66	NA		
DSW 55"	10/23/08	1029	2.7	83	42	583	0.39	5.5	85	2377	2.8	86	48	678		0.48			34.55	6.4	7.71	1.61		
DSW 55"	11/28/08	1012	3.0	92	44	616	0.32	4.5	94	2649	2.7	85	47	656		0.30			34.52	5.7	7.68	1.66		
DSW 55"	12/30/08	919	2.7	83	43	599	0.33	4.6	89	2509	2.7	85	45	633		0.36			34.59	5.5	7.65	1.88		
DSW 55"	1/12/09	1134	3.0	92	42	592	0.12	1.7	92	2594	2.9	91	47	656		0.70			34.43	5.1	7.63	1.59		
DSW 55"	2/20/09	1044	2.5	78	41	575	0.31	4.3	94	2651	2.9	90	46	639		0.92	0.06		34.72	6.1	7.46	1.56		
DSW 55"	3/30/09	1047	2.2	67	35	493	0.11	1.6	74	2072	2.4	73	38	535		0.25			34.69	5.6	7.69	1.55		
DSW 55"	4/30/09	949	3.0	92	39	542	0.55	7.7	83	2340	2.4	76	46	648		0.27			34.53	5.4	7.65	1.62		
DSW 55"	5/15/09	1338	3.3	102	42	587	0.19	2.7	88	2479	3.5	108	47	654		0.21			34.63	5.6	7.62	1.66		
DSW 55"	6/10/09	949	3.2	98	40	566	0.16	2.2	92	2596	3.1	95	42	586		0.21			34.51	6.1	7.63	1.50		
DSW 55"	7/10/09	1005	2.4	76	28	393	0.42	5.9	66	1845	2.2	70	32	452		0.44			34.69	5.2	7.65	1.44		
DSW 55"	8/27/09	1057	2.9	89	36	499	0.19	2.7	96	2693	2.6	80	40	558		0.37	0.02		34.65	5.2	8.26	1.40		
DSW 55"	9/17/09	952	2.3	71	34	480	0.23	3.2	54	1512	2.6	82	35	491		0.78	0.05		34.65	5.7	8.19	1.55		
DSW 55"	10/26/09	1009	3.0	94	45	637	0.09	1.3	105	2953	3.2	98	44	622		0.46			34.56	5.3	7.60	1.53		
DSW 55"	11/19/09	1345	3.1	97	41	570	0.50	7.0	105	2945	3.1	96	44	616		0.50			34.67	5.6	7.51	1.30		
DSW 55"	12/3/09	1017	3.1	96	41	568	0.44	6.1	106	2976	3.0	93	43	606		0.78			34.58	5.2	7.67	1.66		
DSW 55"	1/14/10	1032	3.2	98	42	595	0.24	3.3	102	2873	3.2	99	44	620		0.60			34.60	5.5	7.66	1.59		
DSW 55"	2/16/10	1207	3.1	96	45	626	0.29	4.1	107	3008	3.2	98	47	652		1.05			34.44	5.0	7.62	1.64		
DSW 55"	3/15/10	1030	3.1	96	44	610	0.10	1.4	112	3159	3.1	96	45	635		0.73	0.02		34.47	5.3	7.58	1.96		
DSW 55"	4/1/10	919	3.2	100	42	583	0.06	0.9	114	3210	3.3	102	43	605		0.18	0.08		34.52	5.2	7.59	1.98		
DSW 55"	5/10/10	942	3.0	93	43	600	0.32	4.5	112	3156	3.1	95	46	649		0.55	0.05		34.44	5.5	7.59	1.79		
DSW 55"	6/23/10	1013	3.0	93	44	620	0.18	2.5	109	3048	3.0	92	46	640		0.27	0.06		34.51	5.5	7.61	2.05		

NELHA Water Quality Laboratory

DSW 55"

Intake Depth: 915 m, Offshore Pipe Length: 3,124 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW 55"	7/1/10	1120	3.0	92	44	610	0.08	1.1	106	2987	3.0	94	47	662		0.58	0.04		34.37	5.4	7.61	1.96		
DSW 55"	8/5/10	1016	3.0	94	42	588	0.04	0.6	102	2866	3.0	93	44	622		0.70	0.02		34.52	6.0	7.57	1.56		
DSW 55"	9/2/10	1052	3.0	93	43	608	0.34	4.8	97	2734	3.2	98	46	647		0.80	0.02		34.42	6.5	7.57	1.62		
DSW 55"	10/18/10	1002	3.2	98	45	623	0.20	2.8	100	2817	3.3	101	48	669		0.43	0.07		34.33	5.9	7.58	1.92		
DSW 55"	11/4/10	1025	3.0	92	43	601	0.04	0.5	98	2754	3.1	95	45	632		0.45	0.03		34.51	5.7	7.61	1.59		
DSW 55"	12/1/10	1029	3.0	93	44	613	0.01	0.1	108	3020	3.0	93	48	670		0.30	0.04		34.40	5.4	7.56	1.57		
DSW 55"	1/25/11	1016	3.2	98	44	619	0.26	3.6	103	2892	3.2	98	50	703		0.50	0.05		34.47	5.5	7.54	1.54		
DSW 55"	2/8/11	1023	3.2	99	44	614	0.36	5.0	103	2879	3.3	101	46	648		0.68	0.06		34.51	5.4	7.63	1.68		
DSW 55"	3/7/11	1126	3.2	100	44	611	0.33	4.6	107	3000	3.2	101	46	638		0.50	0.05		34.40	5.2	7.61	1.90		
DSW 55"	4/11/11	1146	3.1	95	46	643	0.09	1.2	105	2961	3.2	99	50	706		0.59	0.04		34.77	5.3	7.61	1.53		
DSW 55"	5/25/11	938	3.0	94	43	604	0.19	2.6	107	2992	3.1	95	46	644		0.62	0.05		34.48	5.4	7.63	2.75		
DSW 55"	6/13/11	1058	3.0	94	45	637	0.10	1.4	108	3025	3.1	95	48	677		0.59	0.04		34.52	5.2	7.61	1.96		
DSW 55"	7/21/11	935	3.2	100	43	608	0.12	1.7	106	2987	3.2	100	45	635		0.64	0.02		34.46	5.2	7.56	1.67		
DSW 55"	8/22/11	1054	3.1	96	43	605	0.03	0.4	110	3076	3.1	96	46	641		0.62	0.02		34.44	4.9	7.58	2.01		
DSW 55"	9/15/11	1011	3.0	94	41	570	0.10	1.4	98	2746	3.0	93	43	596		0.19	0.02		34.34	5.6	7.58	1.60		
DSW 55"	10/4/11	844	3.0	94	43	599	0.02	0.3	101	2833	3.1	95	45	624		0.47	0.02		34.63	5.4	7.62	1.71		
DSW 55"	11/21/11	1238	3.1	96	44	619	0.01	0.1	103	2895	3.1	96	47	663		0.20	0.02		34.47	5.2	7.63	1.66		
DSW 55"	12/27/11	1051	3.0	92	44	616	0.11	1.6	105	2962	3.0	94	47	661		0.42	0.12		34.32	5.1	7.62	1.59		
DSW 55"	1/30/12	1055	2.9	90	44	621	0.03	0.4	100	2797	2.9	91	47	655		0.31	0.05		34.48	5.2	7.63	1.65		
DSW 55"	2/27/12	1058	3.0	94	43	602	0.01	0.1	98	2747	2.9	89	47	665		0.49	0.03		34.51	5.3	7.55	1.40		
DSW 55"	3/28/12	1044	3.0	92	39	550	0.21	3.0	92	2593	2.8	87	43	602		0.48	0.02		34.49	5.2	7.57	1.45		
DSW 55"	4/16/12	1045	3.2	100	44	616	0.04	0.6	97	2727	3.2	98	48	673		4.31	0.04		34.50	5.3	7.59	1.40		
DSW 55"	5/23/12	911	3.2	100	45	633	0.11	1.6	101	2838	3.2	99	48	665		0.44	0.03		34.33	5.5	7.56	1.81		
DSW 55"	6/19/12	1050	3.1	95	44	611	0.31	4.3	95	2658	3.1	95	46	646		0.42	0.02		34.63	5.3	7.65	1.86		
DSW 55"	7/3/12	837	3.2	99	43	605	0.24	3.4	99	2778	3.2	99	45	634		1.10	0.06		34.64	5.4	7.57	1.68		
DSW 55"	8/27/12	1125	3.1	95	45	627	0.14	1.9	110	3079	3.3	101	50	702		0.52	0.03		34.50	5.0	7.56	1.56		
DSW 55"	9/26/12	1114	3.2	98	44	616	0.51	7.2	111	3125	3.2	100	47	661		0.88	0.05		34.51	4.7	7.47	1.69		
DSW 55"	10/10/12	1019	3.1	96	44	610	0.13	1.8	109	3070	3.2	99	47	661		0.57	0.02		34.58	4.9	7.52	1.64		
DSW 55"	11/19/12	1345	3.2	99	43	606	0.18	2.5	107	2995	3.2	100	45	625		0.55	0.02		34.43	4.9	7.62	1.73		
DSW 55"	12/19/12	1005	3.4	104	44	613	0.14	2.0	108	3044	3.4	104	46	645		0.61	0.03		34.43	5.1	7.58	1.78		
DSW 55"	1/4/13	1037	3.1	95	44	614	0.19	2.7	107	2996	3.1	96	45	635		0.60	0.02		34.47	5.2	7.63	1.88		
DSW 55"	2/13/13	1047	3.1	98	43	596	0.01	0.1	99	2779	3.2	99	45	633		0.49	0.02		34.47	5.2	7.59	2.10		
DSW 55"	3/18/13	1149	3.4	105	47	660	0.41	5.8	108	3039	3.4	105	48	679		0.74	0.02		34.53	4.8	7.59	2.00		
DSW 55"	4/3/13	1252	3.1	96	44	614	0.09	1.3	103	2883	3.1	96	46	641		0.55	0.03		34.60	5.0	7.61	2.08		
DSW 55"	5/29/13	941	3.5	107	47	656	0.20	2.8	110	3086	3.3	103	50	696		0.61	0.02		34.56	5.1	7.58	1.87		
DSW 55"	6/13/13	1110	3.1	97	42	590	0.34	4.7	99	2781	3.0	93	43	608		0.51	0.05		34.66	5.2	7.55	1.71		
DSW 55"	7/1/13	1015	3.1	97	45	624	0.15	2.1	106	2972	3.1	98	47	659		0.62	0.02		34.43	5.1	7.62	2.43		
DSW 55"	8/14/13	1043	3.1	95	44	622	0.09	1.3	101	2842	3.0	94	46	638		0.50	0.02		34.36	5.2	7.55	1.69		
DSW 55"	9/18/13	846	3.1	95	43	606	0.08	1.1	102	2863	3.0	94	45	632		0.47	0.02		34.46	5.5	7.48	2.52		
DSW 55"	10/10/13	1105	3.1	95	43	607	0.26	3.6	100	2808	3.0	93	45	628		0.49	0.02		34.59	5.4	7.56	1.64		
DSW 55"	11/21/13	1042	3.1	96	45	625	0.29	4.1	102	2858	3.1	95	46	649		0.38	0.02		34.58	5.1	7.54	1.79		
DSW 55"	12/23/13	1003	3.0	93	42	584	0.36	5.0	100	2804	2.9	90	42	589		0.72	0.02		34.60	5.2	7.58	1.74		
DSW 55"	1/23/14	1230	3.0	94	44	616	0.20	2.8	104	2930	3.0	92	46	639		1.24	0.02		34.55	5.1	7.58	1.93		
DSW 55"	2/12/14	1134	3.0	94	45	624	0.25	3.5	106	2984	3.0	92	45	630		0.60			34.41	4.8	7.58	2.18		
DSW 55"	3/17/14	1052	2.9	90	44	612	0.16	2.3	100	2815	3.1	95	45	635		0.88	0.02		34.54	5.1	7.58	1.78		
DSW 55"	4/10/14	954	3.1	95	45	630	0.32	4.5	103	2879	3.0	93	46	640		0.81	0.04		34.44	5.2	7.58	1.90		
DSW 55"	5/13/14	1334	3.0	91	44	621	0.26	3.7	104	2911	3.0	92	46	640		0.68	0.02		34.55	5.0	7.58	2.47		
DSW 55"	6/24/14	1111	3.1	97	45	637	0.29	4.1	95	2655	3.3	103	47	656		0.82	0.04		34.41	5.1	7.62	1.90		
DSW 55"	7/23/14	1138	3.2	98	43	604	0.51	7.1	102	2868	3.1	95	45	630		0.66	0.12		34.60	5.2	7.59	1.98		
DSW 55"	8/11/14	1203	2.3	71	38	539	0.31	4.4	87	2433	2.3	72	40	554		0.76	0.09		34.56	5.4	7.54	1.75		
DSW 55"	9/29/14	1123	3.3	102	44	616	0.44	6.2	83	2328	3.3	103	46	648		0.88	0.10		34.57	5.1	7.56	1.97		
DSW 55"	10/15/14	1234	3.1	97	45	628	0.33	4.6	101	2831	3.1	96	46	650		0.70	0.04		34.48	5.1	7.67	1.79		
DSW 55"	11/25/14	1251	3.2	98	46	639	0.10	1.4	100	2805	3.1	97	49	689		0.69	0.03		34.52	5.2	7.60	1.77		
DSW 55"	12/30/14	1005	3.1	97	43	600	0.20	2.8	102	2869	3.1	97	49	689		0.76	0.10		34.48	5.0	7.56	1.93		
DSW 55"	1/21/15	1021	3.2	99	47	657	0.24	3.4	105	2939	3.2	99	49	682		2.46	0.04		34.67	5.3	7.59	1.58		
DSW 55"	2/18/15	944	3.2	100	51	710	0.54	7.5	116	3255	3.2	100	53	735		2.40	0.05		34.59	5.1	7.50	1.75		
DSW 55"	3/9/15	1257	3.7	114	37	522	0.67	9.4	121	3411	3.8	118	59	833		2.55	0.04		34.35	5.0	7.58	1.64		
DSW 55"	4/28/15	1554	2.9	91	48	672	0.16	2.3	99	2773	2.6	82	51	717		2.90	0.06		34.22	4.9	7.65	1.86		
DSW 55"	5/14/15	941	3.1	97	44	622	0.04	0.5	102	2858	3.0	92	47	660		0.63	0.02		34.22	5.3	7.50	2.84		
DSW 55"	6/3/15	1022	3.1	97	44	610	0.14	2.0	91	2568	2.9	91	47	658		0.93	0.07		34.46	5.3	7.56	2.08		

NELHA Water Quality Laboratory

DSW 55"

Intake Depth: 915 m, Offshore Pipe Length: 3,124 m

SITE ID	DATE	TIME	PO_4^{3-}		$NO_3^- \& NO_2^-$		$NH_4^+ \& NH_3$		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW 55"	7/7/15	920	3.0	93	46	650	0.10	1.4	94	2637	3.0	94	49	685		1.00	0.06		34.02	5.2	7.49	1.92		
DSW 55"	8/14/15	946	3.0	94	44	619	0.21	2.9	82	2300	2.3	73	65	906		1.00	0.02		33.89	5.2	7.46	2.69		
DSW 55"	9/16/15	1045	3.0	93	54	761	0.36	5.0	95	2682	3.0	94	57	802		0.85	0.04		34.44	5.3	7.44	3.86		
DSW 55"	10/28/15	1426	3.3	101	47	654	0.16	2.3	97	2728	3.3	102	49	692		2.63	0.76		33.91	5.5	7.56	2.03		
DSW 55"	11/5/15	928	3.2	99	46	646	0.09	1.3	94	2632	3.3	101	50	697		0.90	0.11		33.85	5.2	7.47	2.26		
DSW 55"	12/9/15	1038	3.2	100	45	624	0.81	11.3	100	2806	3.3	104	47	655		1.08	0.08		34.21	5.9	7.60	3.00		
DSW 55"	1/15/16	1144	2.6	80	40	558	0.59	8.3	83	2325	2.6	80	42	588		1.00	0.05		34.27	5.3	7.55	3.31		
DSW 55"	2/11/16	1036	3.0	94	44	619	0.49	6.8	95	2655	3.1	97	47	660		0.83	0.07		34.41	5.3	7.57	2.68		
DSW 55"	3/3/16	1138	3.0	93	45	628	0.21	3.0	99	2779	3.1	96	48	678		0.83	0.03		34.65	4.6	7.62	2.19		
DSW 55"	4/12/16	1209	3.0	92	50	697	0.57	8.0	93	2626	3.1	95	53	741		0.90	0.05		34.73	5.1	7.51	3.18		
DSW 55"	5/10/16	1114	3.3	102	44	611	0.07	1.0	92	2580	3.3	102	45	636		0.55	0.03		34.53	5.0	7.61	4.00		
DSW 55"	6/15/16	958	3.0	93	48	677	0.22	3.1	93	2612	3.0	93	45	635		0.90	0.08		34.68	4.8	7.23	2.61		
DSW 55"	7/1/16	1001	3.0	94	43	600	0.19	2.7	94	2648	3.1	98	48	667		0.83	0.04		34.67	4.7	6.98	2.46		
DSW 55"	8/25/16	949	4.8	149	68	958	0.26	3.6	147	4127	5.0	155	74	1032		1.50	0.05		34.69	4.8	7.09	2.86		
DSW 55"	9/15/16	1029	3.0	93	70	985	0.11	1.5	127	3579	3.0	94	72	1012		0.93	0.05		34.74	4.9	7.58	2.47		
DSW 55"	10/20/16	1059	5.7	176	70	987	0.13	1.8	155	4357	6.0	187	73	1016		0.98	0.04		34.69	5.1	7.60	2.23		
DSW 55"	11/4/16	1002	5.0	154	73	1018	0.16	2.2	160	4495	5.3	165	75	1054		0.83	0.02		34.67	5.1	7.62	2.99		
DSW 55"	12/29/16	1023	2.8	88	41	568	0.08	1.1	101	2841	3.0	92	42	592		1.15	0.02		33.91	4.9	7.59	3.30		
DSW 55"	1/27/17	1109	2.8	88	41	580	0.04	0.6	113	3185	2.9	91	43	605		0.98	0.04		34.90	4.7	7.57	3.42		
DSW 55"	2/23/17	1008	2.8	87	40	559	0.16	2.2	97	2724	2.9	91	41	577		1.75	0.04		34.61	4.9	7.58	3.44		
DSW 55"	3/17/17	953	2.8	88	36	505	0.24	3.3	94	2648	2.9	90	40	559		0.83	0.08		34.54	5.5	7.61	2.02		
DSW 55"	4/10/17	1000	2.9	89	43	602	0.15	2.1	100	2807	2.9	90	46	647		0.78	0.03		34.74	5.1	7.56	2.01		
DSW 55"	5/17/17	931	2.8	87	41	580	0.13	1.8	98	2765	2.9	91	43	599		1.20	0.03		34.80	5.1	7.60	2.08		
DSW 55"	6/13/17	943	2.9	89	43	607	0.58	8.1	104	2934	3.0	93	51	717		1.03	0.23		34.77	6.8	7.60	5.11		
DSW 55"	7/13/17	1106	2.7	85	41	569	0.16	2.3	98	2756	3.1	96	42	589		1.33	0.03		34.95	5.1	7.57	1.42		
DSW 55"	8/2/17	938	2.8	87	38	531	0.18	2.5	97	2730	2.9	90	39	551		0.95	0.04		35.10	5.2	7.56	1.75		
DSW 55"	9/12/17	941	2.8	88	42	584	0.44	6.1	92	2595	3.0	92	43	605		0.68	0.07		34.63	5.4	7.58	2.41		
DSW 55"	10/12/17	1046	2.9	88	42	582	0.27	3.8	94	2643	3.0	93	43	597		2.30	0.04		34.67	5.3	7.52	2.60		
DSW 55"	11/29/17	922	3.0	93	42	586	0.31	4.3	98	2760	3.1	95	43	608		0.78	0.05		34.69	5.3	7.61	3.90		
DSW 55"	12/27/17	1046	3.0	93	40	561	0.61	8.5	97	2729	3.1	95	39	547		1.03	0.04		34.85	5.1	7.52	4.84		
DSW 55"	1/11/18	1032	2.8	86	40	565	0.09	1.3	99	2783	2.9	91	41	576		0.75	0.07		34.51	5.0	7.41	3.15		
DSW 55"	2/14/18	943	2.9	88	42	590	0.12	1.7	104	2914	3.0	92	43	607		0.98	0.06		34.50	5.2	7.52	3.47		
DSW 55"	3/23/18	1033	2.9	89	44	610	0.14	1.9	94	2644	3.0	93	45	637		1.30	0.05		34.46	5.3	7.52	2.30		
DSW 55"	4/24/18	1047	2.8	88	41	575	0.37	5.2	101	2834	3.0	93	43	605		0.93	0.06		34.49	4.9	7.50	2.51		
DSW 55"	5/8/18	918	2.9	89	41	571	0.46	6.5	105	2955	3.1	97	42	587		0.75	0.04		34.50	4.8	7.51	2.50		
DSW 55"	6/20/18	944	2.9	91	40	558	0.53	7.4	95	2663	3.0	92	41	569		0.70	0.05		35.25	5.0	7.33	2.06		
DSW 55"	7/12/18	1020	3.1	96	42	587	0.09	1.2	100	2803	3.1	95	44	621		0.78	0.04		34.64	5.0	7.44	2.30		
DSW 55"	8/13/18	1000	2.7	82	45	624	0.16	2.2	99	2774	2.8	87	47	659		0.85	0.04		34.47	4.8	7.44	2.66		
DSW 55"	9/18/18	1608	2.7	84	41	581	0.29	4.0	102	2861	2.8	85	44	616		1.35	0.09		34.60	4.9	7.49	2.35		
DSW 55"	10/11/18	1006	2.7	85	41	578	0.19	2.7	95	2657	2.9	88	41	577		1.05	0.07		34.73	5.0	7.55	1.78		
DSW 55"	11/2/18	915	2.8	86	41	568	0.04	0.5	100	2818	2.9	90	41	580		3.08	0.08		34.59	4.7	7.54	2.17		
DSW 55"	12/21/18	1001	2.9	91	41	579	0.52	7.3	98	2744	3.1	95	42	593		2.85	0.03		34.57	4.8	7.57	3.09		
DSW 55"	1/15/19	958	2.9	90	41	569	0.01	0.2	103	2893	3.0	93	41	572		0.93	0.05		34.63	4.7	7.56	2.79		
DSW 55"	2/13/19	956	2.8	88	39	547	0.01	0.1	100	2819	2.9	91	40	562		0.90	0.05		34.93	5.0	7.21	3.80		
DSW 55"	3/7/19	1516	2.8	88	41	578	0.04	0.6	98	2764	2.9	91	42	585		0.85	0.06		35.20	4.9	7.61	2.34		
DSW 55"	4/25/19	941	2.8	87	41	570	0.04	0.6	102	2855	2.9	90	42	590		0.68	0.02		35.54	4.9	7.59	2.72		
DSW 55"	5/7/19	1016	2.8	86	40	564	0.46	6.4	100	2799	2.8	88	41	580		1.83	0.05		35.56	5.0	7.66	2.44		
DSW 55"	6/20/19	1123	2.8	87	40	555	0.11	1.5	97	2719	2.8	88	41	579		0.90	0.03		34.56	5.3	7.60	1.83		
DSW 55"	7/17/19	947	2.8	86	39	553	0.28	3.9	101	2823	2.8	87	40	557		0.85	0.05		35.05	5.0	7.58	2.17		
DSW 55"	8/23/19	1441	2.9	90	42	586	0.34	4.7	98	2753	3.0	92	43	601		0.60	0.04		35.14	6.0	7.61	1.74		
DSW 55"	9/26/19	1007	2.8	87	41	578	1.07	15.0	98	2746	2.9	90	42	586		0.53	0.05		34.45	5.1	7.59	1.99		
DSW 55"	10/8/19	1027	2.8	86	49	688	0.26	3.7	96	2703	2.8	87	53	747		0.33	0.05		35.12	5.4	7.59	1.62		
DSW 55"	11/14/19	959	3.1	95	43	598	0.13	1.8	96	2703	3.1	96	44	615		0.60	0.05		34.40	5.2	7.57	1.65		
DSW 55"	12/17/19	921	2.9	90	43	602	0.14	2.0	91	2558	3.0	92	43	604		1.05	0.05		35.08	5.2	7.55	1.49		
DSW 55"	1/9/20	1013	2.9	90	43	595	-0.08	-1.1	94	2649	3.0	94	44	622		0.65	0.02		35.88	5.2	7.56	1.84		
DSW 55"	2/4/20	1125	2.9	90	43	608	-0.43	-6.0	100	2821	3.0	93	44	618		0.68	0.04		35.51	4.9	7.57	1.62		
DSW 55"	3/17/20	1606	2.9	91	43	598	0.03	0.4	98	2753	3.0	94	44	622		0.63	0.04		35.34	5.3	7.57	1.59		
DSW 55"	4/1/20	COVID - 19																						
DSW 55"	5/21/20	1137	2.9	90	41	581	0.36	5.0	100	2817	2.8	86	42	595		0.48	0.04		36.08	5.3	7.59	1.48		
DSW 55"	6/9/20	926	2.8	88	41	576	0.31	4.3	95	2663	2.9	90	42	594		0.73	0.03		36.28	5.4	7.64	1.38		

NELHA Water Quality Laboratory

DSW 55"

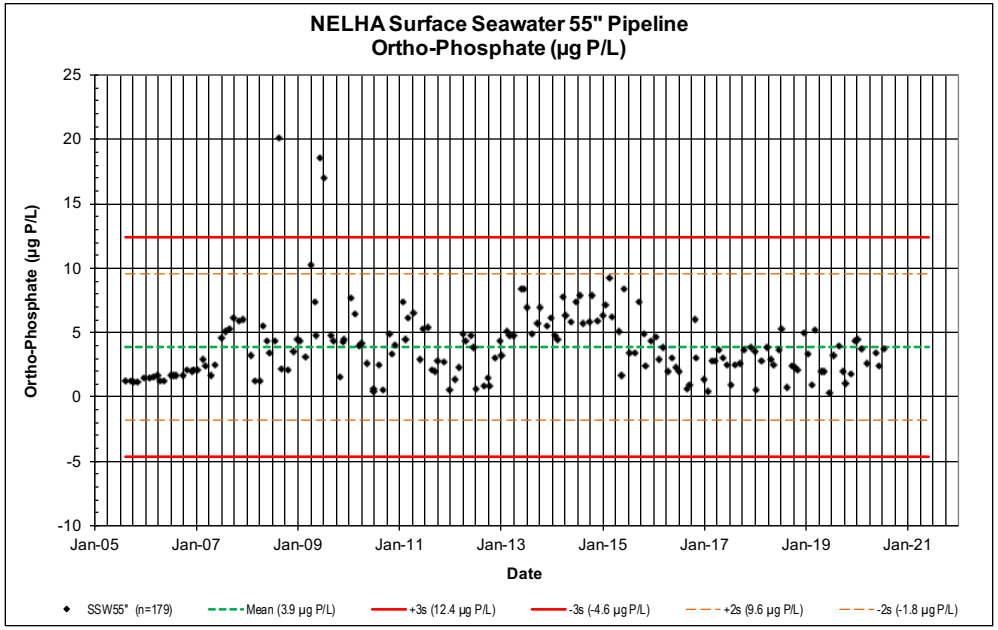
Intake Depth: 915 m, Offshore Pipe Length: 3,124 m

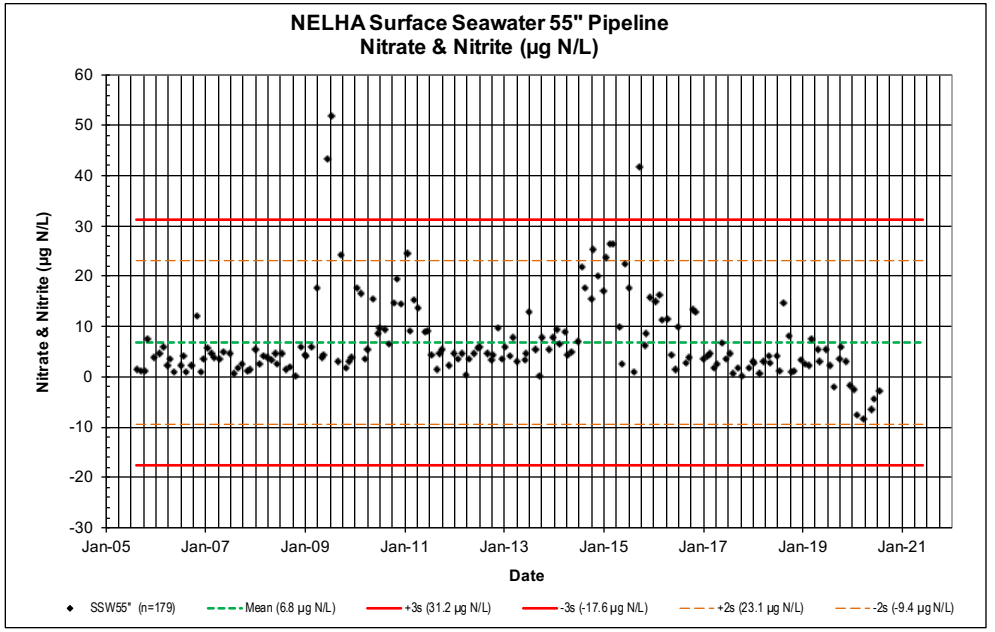
SITE ID	DATE	TIME	PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	TSS	Turbidity	ALK	SALINITY	TEMP	pH	DO	Vibrio	Total Count
	M/D/Y	(2400)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(mg/L)	(NTU)	(mEq/L)	(PSU)	(˚C)	(unit)	(ppm)	CFU/100mL	Marine Agar CFU/100mL
DSW 55"	7/14/20	1039	2.9	90	42	591	0.08	1.1	96	2701	2.8	87	41	580		0.55	0.05		34.20	5.3	7.60	1.40		
DSW 55"	8/1/20																							
DSW 55"	9/1/20																							
DSW 55"	10/1/20																							
DSW 55"	11/1/20																							
DSW 55"	12/1/20																							
DSW 55"	1/1/21																							
DSW 55"	2/1/21																							
DSW 55"	3/1/21																							
DSW 55"	4/1/21																							
DSW 55"	5/1/21																							
DSW 55"	6/1/21																							
DSW 55"	7/1/21												0											
Mean (Aug. '05 - present)			3.0	93	43.4	608	0.2	3.3	99.8	2804	3.1	94	45.4	640	0.6	0.90	0.05	2.37	34.58	5.33	7.59	1.98		
STD DEV			0.3	11	5.0	70	0.2	2.6	11.1	312	0.4	13	6.6	80	0.05	0.59	0.07	0.21	0.31	0.40	0.12	0.65		
Range																								
UWL	+2s		3.7	115	53	748	0.60	8.4	122	3429	3.9	120	59	800	0.69	2.07	0.19	2.78	35.210	6.1	7.83	3.29		
LWL	-2s		2.3	72	33	467	-0.13	-1.9	78	2180	2.2	69	32	480	0.48	-0.27	-0.09	1.95	33.955	4.5	7.35	0.67		
UCL	+3s		4.1	126	58	819	0.78	11.0	133	3742	4.3	133	65	879	0.74	2.66	0.26	2.99	35.524	6.5	7.95	3.94		
LCL	-3s		2.0	61	28	396	-0.32	-4.4	66	1867	1.8	56	26	400	0.43	-0.86	-0.16	1.74	33.642	4.1	7.23	0.01		
Data																								
Max. Value			5.7	176	73	1018	1.07	15.0	160	4495	6.0	187	75	1054	0.7	4.31	0.76	2.72	36.280	6.8	8.26	5.11		
Min. Value			2.2	67	28	393	-0.43	-6.0	54	1512	2.1	65	0	452	0.5	0.18	0.02	1.79	33.850	4.6	6.98	1.28		

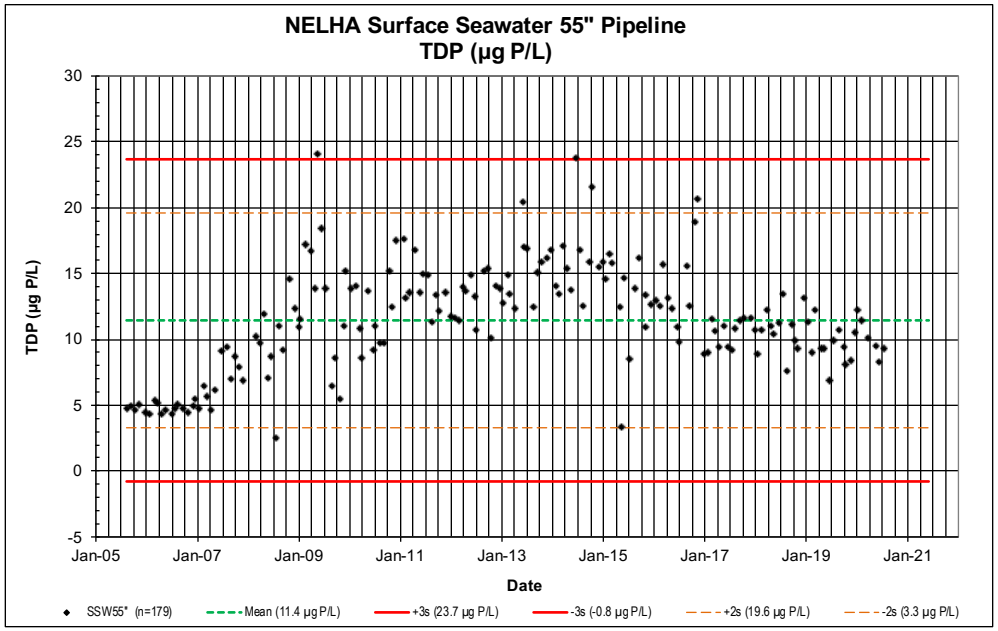
NELHA Water Quality Laboratory

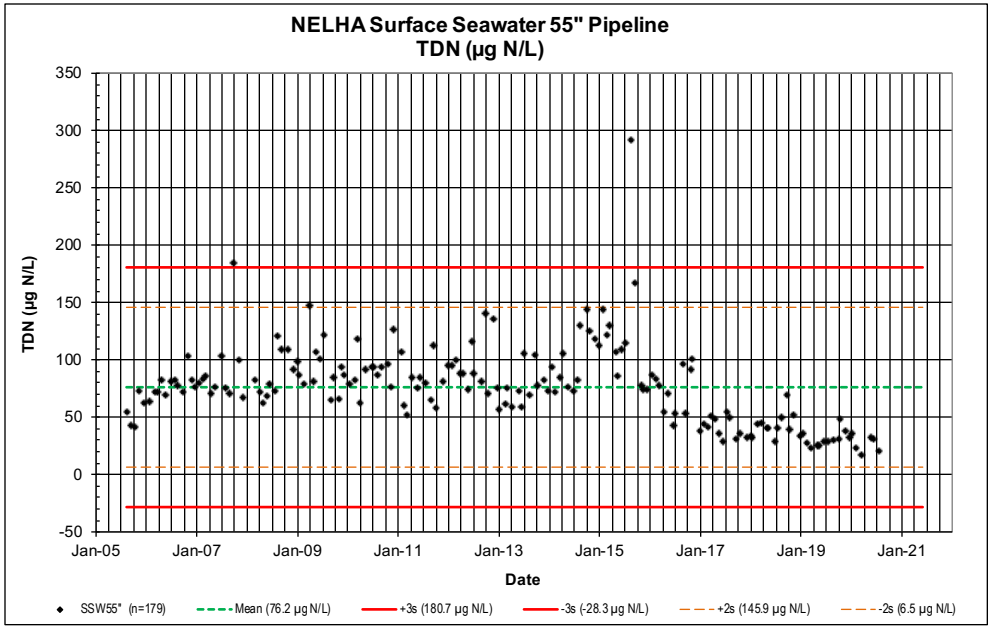
SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m





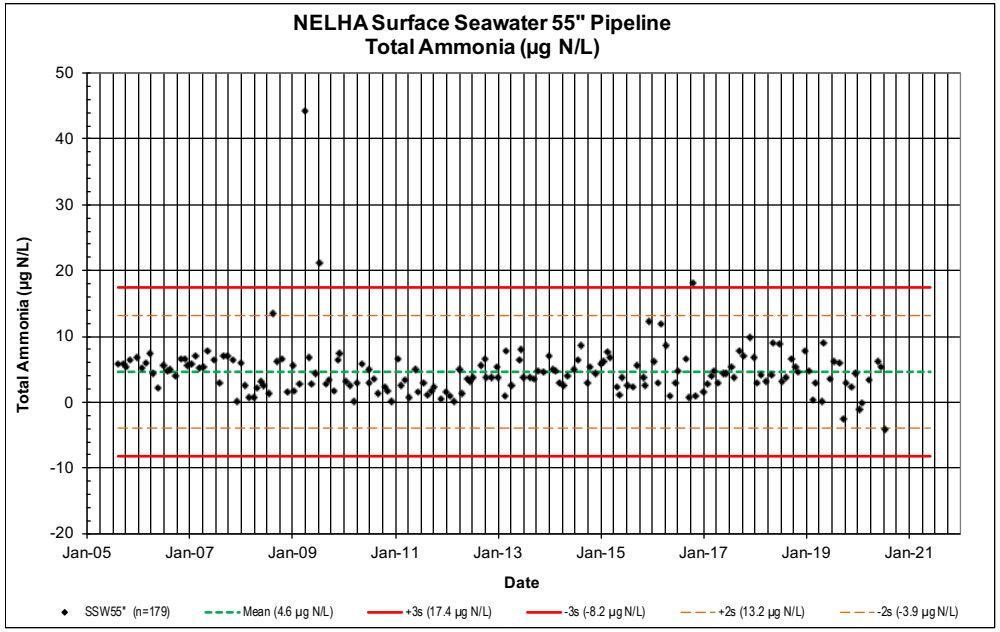


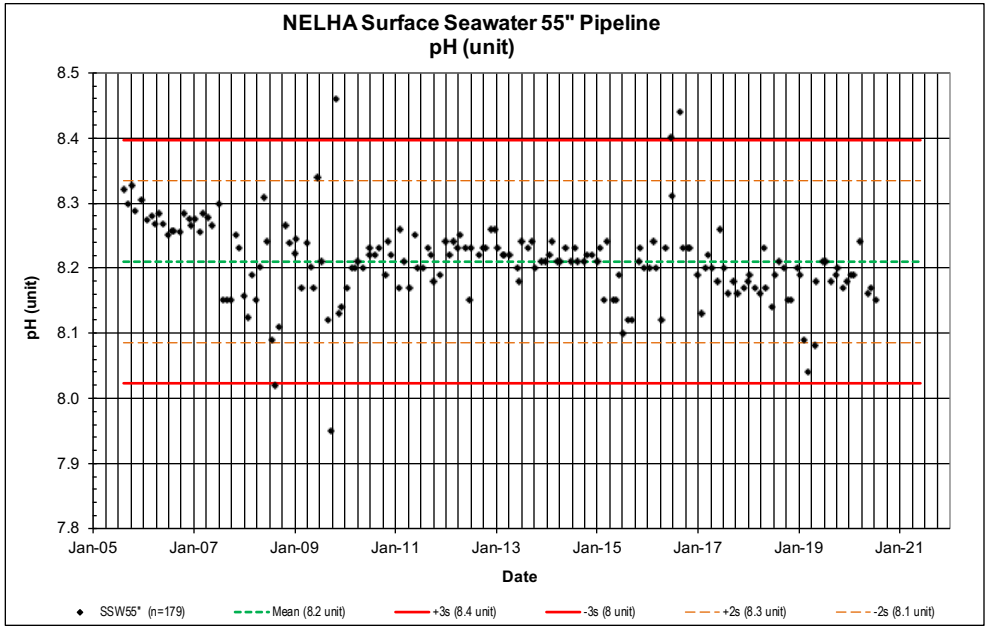


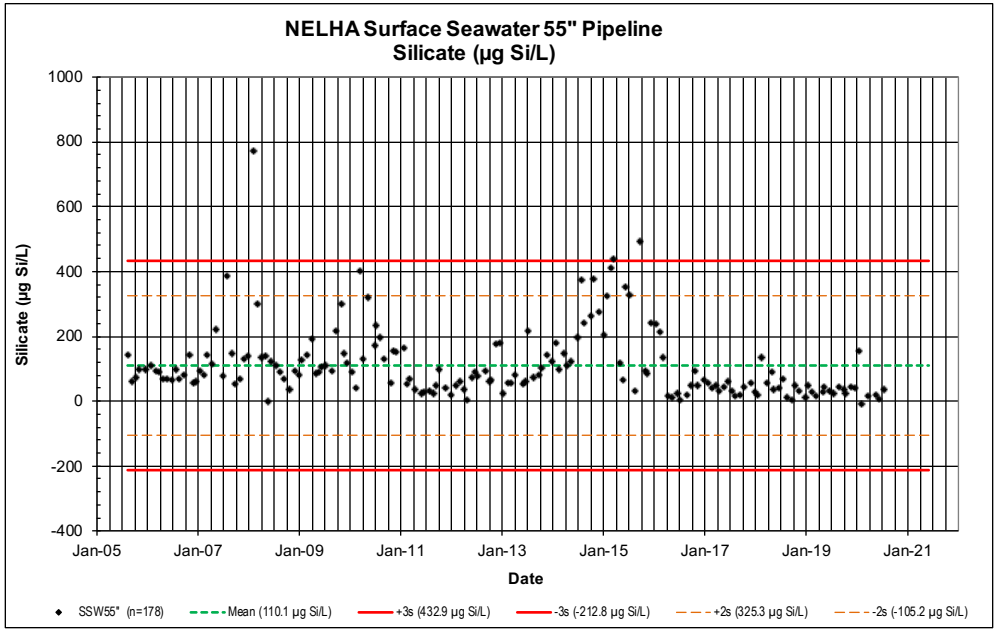
NELHA Water Quality Laboratory

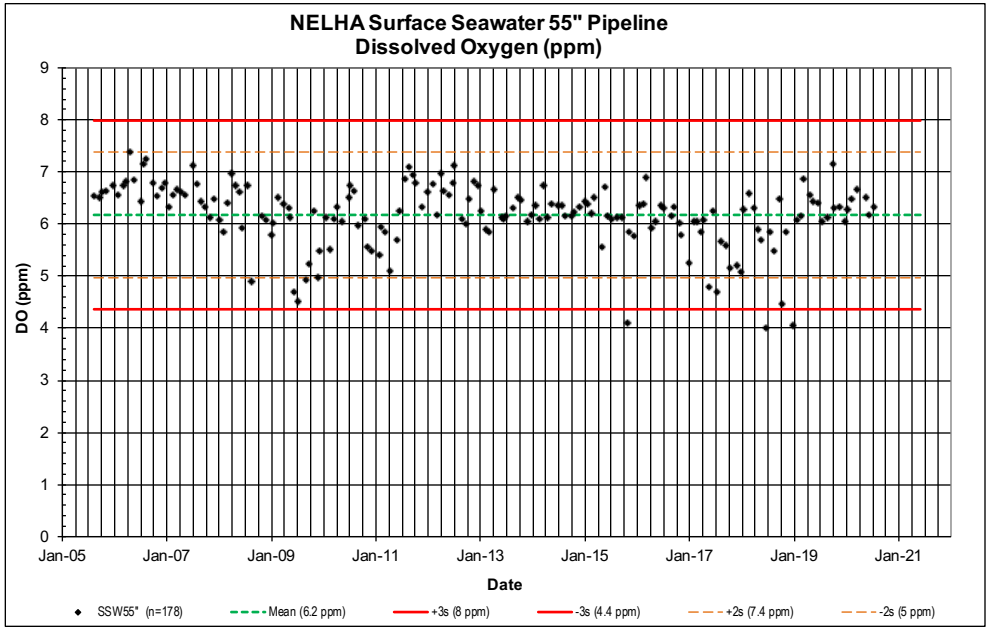
SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m





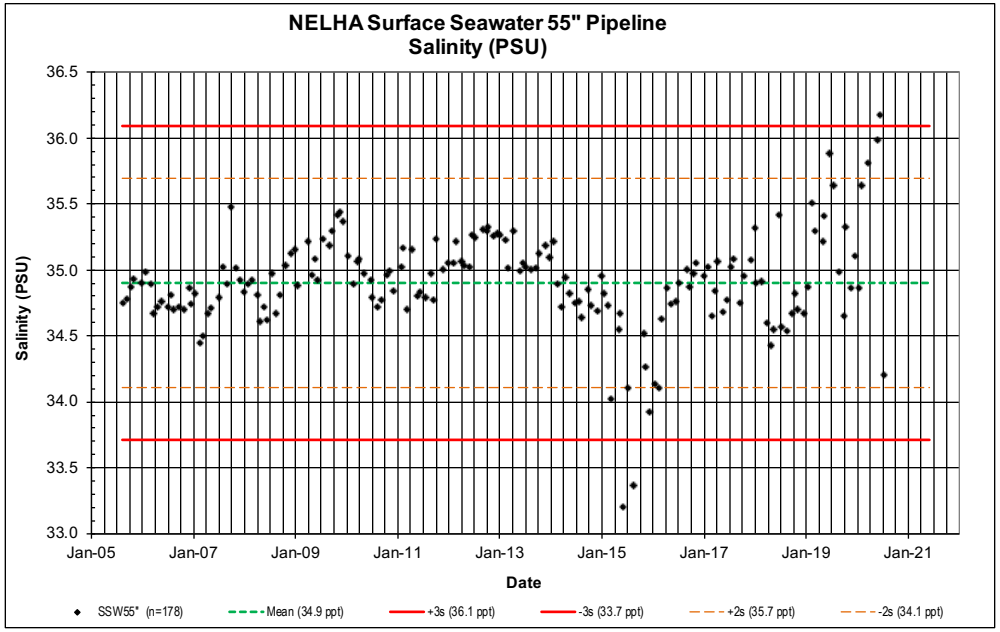


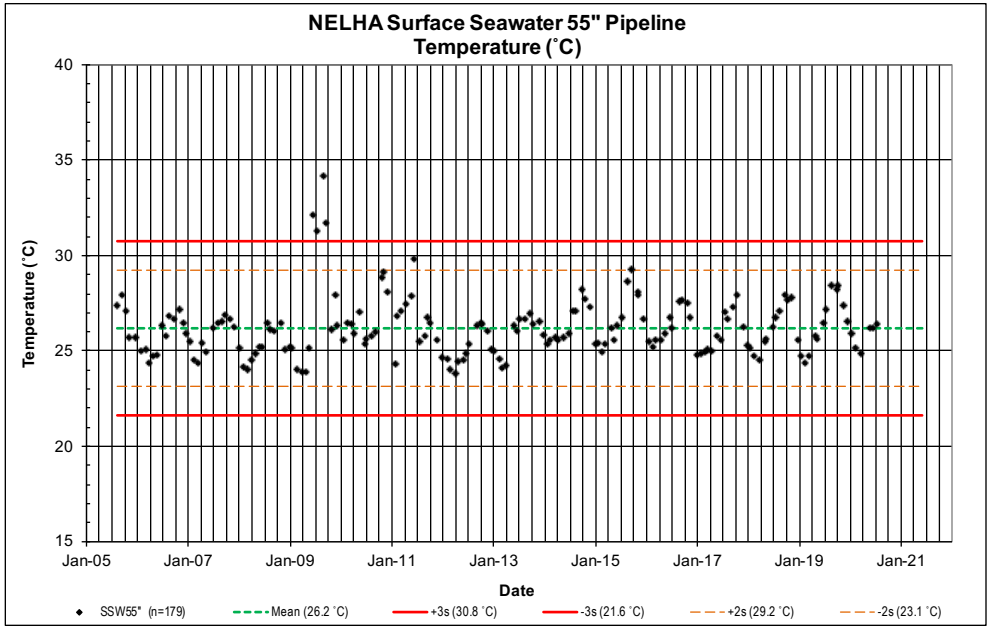


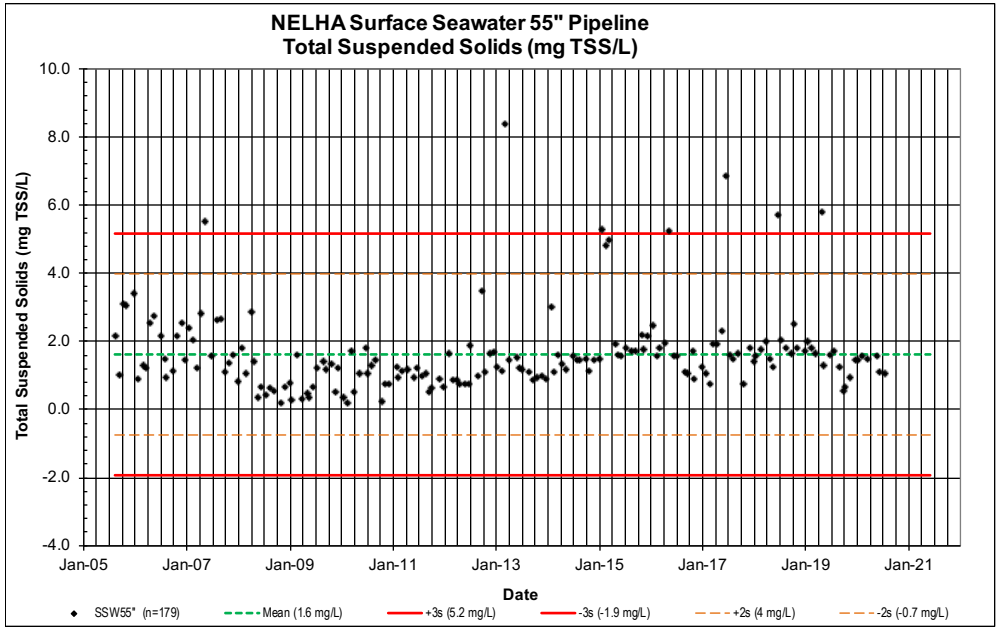
NELHA Water Quality Laboratory

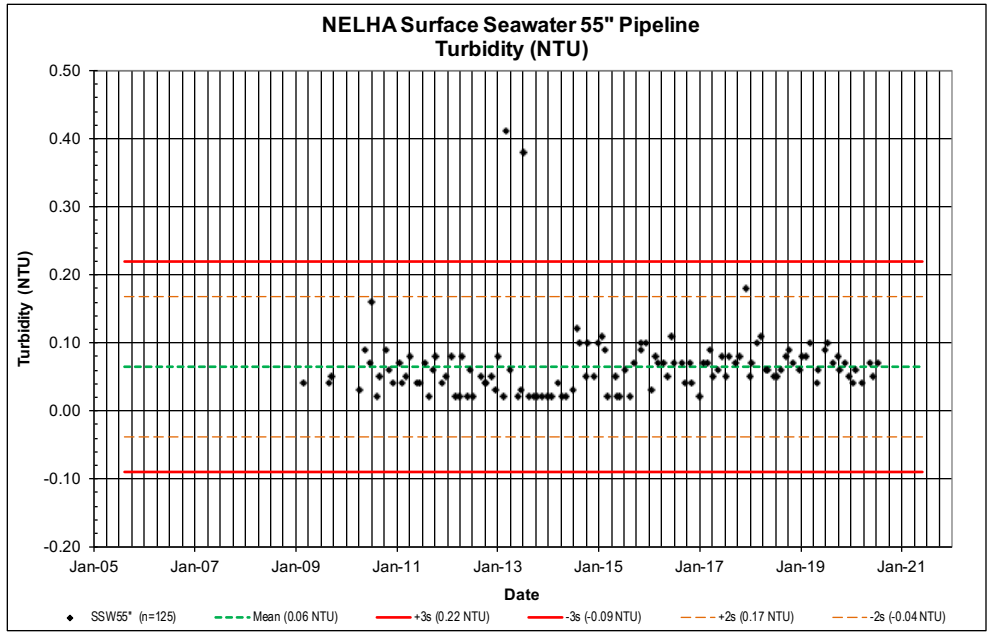
SSW 55"

Intake Depth: 24 m, Offshore Pipe Length: 165 m









APPENDIX D

Seawater Disposal Data Tables……Appendix D-1

Big Island Abalone Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19° 42'47.88"N
Longitude: 156° 2'41.73"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
293	24	4

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	BIA #1	950	8.16	34.68	25.27	5.30	3.8	2.0	115		38		3.0			6367	
05/19/11	BIA #1	1250	8.28	34.79	18.83	6.16	5.6	2.0	337		68		5.0			7518	
09/01/11	BIA #1	1112	8.56	34.38	14.33	13.39	6.9	2.0	303		41		7.4			8787	
12/08/11	BIA #1	1040	8.44	34.44	13.36	11.50	7.0	2.0	287		49		5.9			9097	
02/29/12	BIA #1	1045	8.27	34.81	16.13	7.74	4.0	2.0	505	233	63	47	8.0	34.0	718	9254	
05/31/12	BIA #1	844	7.99	34.61	15.94	7.70	5.2	2.0	432	268	77	53	5.6	43.0	1105	9900	
08/02/12	BIA #1	818	7.93	34.59	15.19	7.48	4.4	2.1	393	177	66	48	6.0	1.0	987	10185	
11/15/12	BIA #1	811	7.83	34.32	12.87	9.17	2.7	2.0	433	234	75	59	5.8	26.8	1327	10823	
02/20/13	BIA #1	908	7.83	34.83	14.53	7.81	6.4	2.2	587	296	79	65	7.4	43.0	917	10842	
05/16/13	BIA #1	805	7.86	34.73	16.70	7.79	7.1	2.8	442	161	81	36	5.5	67.6	1018	10666	
09/04/13	BIA #1 (composite)	813	7.75	34.17	13.12	8.95	5.0	2.6	3221	3117	308	337	10.5	54.0	934	10833	Problem with recirculation system
12/11/13	BIA #1	807	7.69	34.22	14.20	7.30	5.4	2.0	1131	933	129	128	8.8	54.4	1128	10097	
02/26/14	BIA #1	812	7.84	34.54	12.18	8.32	4.8	2.0	336	105	60	42	5.6	55.7	552	11619	
06/19/14	BIA #1	1116	8.39	34.51	17.16	9.63	3.7	3.8	395	80	58	31	6.8	69.5	610	11170	
09/04/14	BIA #1	821	7.97	34.59	16.94	7.59	6.3	2.8	557	159	58	22	9.5	58.6	317	11238	
12/17/14	BIA #1	845	7.83	35.04	11.87	9.60	4.8	2.0	1029	730	47	29	21.8	33.8	583	10958	
03/18/15	BIA #1	848	7.91	34.60	13.33	9.75	4.7	2.1	2110	45	302	713	7.0	226.6	40	9461	
06/18/15	BIA #1	829	7.94	34.36	13.05	9.69	4.3	2.0	223	64	46	36	4.9	18.9	529	8851	
08/20/15	BIA #1	816	7.89	34.50	12.38	9.20	4.8	2.0	1218	1088	59	131	20.6	37.5	967	9185	
12/02/15	BIA #1	832	8.02	34.83	14.72	8.48	4.4	2.0	601	457	69	58	8.7	22.7	1412	9554	
02/18/16	BIA #1	820	7.91	34.68	10.33	10.06	4.8	2.0	2583	2526	389	405	6.6	40.0	1969	9054	
06/01/16	BIA #1	8:22	7.84	34.21	14.11	8.62	4.8	2.0	241	115	47	37	5.2	39.4	1213	8816	
09/07/16	BIA #1	801	8.08	34.21	15.57	7.20	4.3	2.0	345	145	47	37	7.3	49.7	1632	10030	
12/01/16	BIA #1	812	7.66	34.39	10.63	8.89	4.3	2.0	279	162	52	43	5.3	73.5	1058	10628	
03/09/17	BIA #1	814	7.73	34.57	7.93	9.37	5.6	2.0	172	104	38	29	4.5	31.7	723	10573	
05/25/17	BIA #1	816	7.92	34.59	11.46	8.28	5.1	2.0	211	76	50	34	4.2	39.1	753	10786	
08/31/17	BIA #1	817	7.77	34.27	11.62	9.44	7.6	2.0	256	92	52	38	4.9	41.3	1021	10383	
12/07/17	BIA #1	901	7.95	34.95	10.50	9.30	5.2	2.0	193	107	45	35	4.3	31.9	1022	9599	
03/08/18	BIA #1	852	8.13	34.49	12.90	8.36	14.7	2.0	237	63	41	28	5.8	53.7	566	9557	
06/14/18	BIA #1	827	8.00	35.13	16.34	9.10	12.8	2.0	231	34	38	20	6.1	38.7	565	9616	
09/12/18	BIA #1	831	7.94	34.30	13.61	9.22	11.4	4.2	440	97	81	48	5.4	91.5	1283	8824	
12/12/18	BIA #1	829	7.90	34.87	12.07	8.64	13.9	2.0	306	83	44	14	6.9	1.6	982	9887	
03/07/19	BIA #1	842	7.70	34.90	10.74	10.02	11.0	2.0	242	145	54	39	4.5	34.6	1126	8730	
06/13/19	BIA #1	832	7.76	34.65	12.61	9.99	11.8	2.1	274	129	56	39	4.9	20.0	1228	9036	
09/18/19	BIA #1	902	8.02	35.04	14.44	9.48	6.8	2.0	255	126	52	39	4.9	24.3	1032	9815	
11/01/19	BIA #1	834	7.99	34.83	12.97	9.64	3.2	2.0	252	155	40	35	6.3	19.6	1223	8853	
03/12/20	BIA #1	840	7.90	34.92	13.80	9.00	4.6	2.0	233	73	51	33	4.6	42.9	744	8539	
06/18/20	BIA #1	850	7.93	37.02	13.54	9.84	4.5	2.9	1308	1176	82	72	16.0	43.2	1044	7941	
Mean			7.96	34.67	13.88	8.87	6.3	2.2	598	399	80	84	7.1	46.0	951	9660	
Std. Dev.			0.21	0.47	2.91	1.39	3.0	0.5	682	684	78	138	4.0	37.2	374	1106	
n=			38	38	38	38	38	38	38	34	38	34	38	34	34	38	

Big Island Abalone Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19° 42'50"N
Longitude: 156° 2'46"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
14	10	7

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	BIA #2	957	7.90	34.63	17.79	7.37	3.5	2.0	379		78		4.9			1924	
05/19/11	BIA #2	1231	7.94	34.72	19.64	6.47	3.0	2.0	379		69		5.5			2420	
09/01/11	BIA #2	1121	7.89	34.76	17.95	7.93	23.0	2.9	633		99		6.4			2989	
12/08/11	BIA #2	1053	7.92	34.62	17.41	7.97	1.2	7.5	927		126		7.4			3136	
02/29/12	BIA #2	1059	7.98	34.48	17.26	7.87	3.3	2.0	444	231	63	54	7.0	60.0	1153	3168	
05/30/12	BIA #2	822	7.85	34.63	17.05	7.50	3.8	2.0	482	282	70	62	6.9	58.8	1265	3256	
08/02/12	BIA #2	826	7.86	34.76	17.82	6.52	1.5	2.0	408	393	64	41	6.4	12.0	1185	3410	
11/15/12	BIA #2	819	7.83	34.72	17.41	7.91	3.0	2.0	623	297	73	57	8.5	55.7	1287	3578	
02/20/13	BIA #2	921	7.80	35.03	17.60	7.38	7.0	3.3	522	233	78	50	6.7	38.1	1155	3572	
05/16/13	BIA #2	813	7.87	34.84	18.55	6.68	4.2	2.3	453	234	76	35	6.0	44.0	1175	3434	
09/04/13	BIA #2	819	7.80	34.53	18.38	6.46	3.5	2.0	411	275	75	56	5.5	39.0	1205	3287	
12/11/13	BIA #2	817	7.79	34.33	17.52	6.90	2.4	2.0	479	368	70	66	6.8	35.0	1186	3083	
02/26/14	BIA #2	818	7.85	34.84	14.32	8.34	4.2	2.0	386	184	59	42	6.5	35.1	930	3542	
06/19/14	BIA #2	1139	8.31	34.64	15.64	9.24	4.2	2.0	327	138	67	47	4.9	34.5	1192	3269	
09/04/14	BIA #2	830	7.91	34.51	14.78	7.69	3.7	2.0	428	152	51	28	8.4	28.7	785	3139	
12/17/14	BIA #2	850	7.82	34.51	12.62	8.75	4.4	2.0	1005	634	51	35	19.7	32.2	662	3108	
03/18/15	BIA #2	902	7.75	34.62	15.57	8.70	4.7	2.3	697	65	92	1093	7.6	417.1	40	2792	
06/18/15	BIA #2	835	7.84	33.54	16.41	8.52	4.3	2.0	336	211	61	55	5.5	26.3	956	2569	
08/20/15	BIA #2	824	7.80	33.80	17.28	7.70	5.3	2.4	461	136	50	55	9.3	64.2	1139	2643	
12/02/15	BIA #2	838	7.98	34.75	14.46	8.76	4.5	2.0	531	399	73	65	7.3	25.3	1419	2815	
02/18/16	BIA #2	827	7.78	33.35	16.02	8.42	4.3	2.4	451	294	76	59	6.0	40.5	1299	2792	
06/01/16	BIA #2	829	7.76	34.26	17.52	7.50	3.8	2.0	352	258	65	45	5.5	21.7	1261	2719	
09/07/16	BIA #2	809	7.95	34.08	15.96	7.87	4.2	2.0	633	415	94	66	6.7	29.2	2186	2969	
12/01/16	BIA #2	818	7.79	34.52	15.01	8.03	3.2	2.0	387	232	55	47	7.0	113.6	1174	3050	
03/09/17	BIA #2	822	7.83	33.04	14.13	7.75	4.5	2.0	401	213	54	39	7.4	48.6	1048	2969	
05/25/17	BIA #2	822	7.88	34.60	15.03	7.04	5.0	2.0	316	200	66	44	4.8	32.3	1103	3030	
08/31/17	BIA #2	822	7.86	34.34	15.43	7.89	5.8	2.0	386	185	66	51	5.8	48.0	1238	2926	
12/07/17	BIA #2	907	7.86	34.50	14.51	7.57	12.0	2.0	359	201	59	43	6.1	91.3	1151	2799	
03/08/18	BIA #2	858	7.82	33.79	12.42	8.15	13.0	2.0	418	298	72	60	5.8	69.4	1455	2890	
06/14/18	BIA #2	831	7.93	34.82	16.90	9.36	13.5	2.0	377	197	58	32	6.5	75.7	976	2868	
09/12/18	BIA #2	837	7.83	34.39	17.27	8.03	14.9	2.0	470	226	78	52	6.1	133.4	1180	2646	
12/12/18	BIA #2	834	7.82	34.81	13.87	6.27	7.2	2.0	608	276	75	35	8.1	2.6	1522	2918	
03/07/19	BIA #2	849	7.69	35.07	15.09	8.20	12.2	2.0	412	260	65	45	6.4	52.4	1290	2667	
06/13/19	BIA #2	839	7.78	34.67	16.93	8.12	5.1	2.3	442	225	68	44	6.5	76.8	1182	2708	
09/18/19	BIA #2	908	7.92	35.09	16.98	8.21	12.7	2.0	404	250	68	48	5.9	56.5	1176	2897	
11/01/19	BIA #2	842	7.95	35.05	16.13	8.35	3.3	2.0	391	255	54	47	7.3	73.8	1259	2489	
03/12/20	BIA #2	848	7.87	35.49	16.58	8.00	13.5	2.0	375	220	64	46	5.9	52.7	1079	2647	
06/18/20	BIA #2	855	7.90	37.10	16.74	8.07	4.0	2.5	524	415	69	53	7.6	48.1	1222	2495	
Mean			7.87	34.59	16.26	7.83	6.2	2.3	474	260	70	79	6.9	61.0	1163	2937	
Std. Dev.			0.10	0.64	1.63	0.74	4.7	0.9	150	104	15	179	2.4	68.4	313	350	
n=			38	38	38	38	38	38	38	34	38	34	38	34	34	38	

Big Island Abalone Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19° 42'50"N
Longitude: 156° 2'46"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
12	6	7

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	BIA #3	1005	7.98	34.68	20.96	6.64	3.0	2.0	301		66		4.6			675	
05/19/11	BIA #3	1224	7.99	34.89	20.89	6.36	2.6	2.0	402		85		4.7			853	
09/01/11	BIA #3	1132	8.01	34.81	19.82	7.28	4.6	2.0	353		51		6.9			1056	
12/08/11	BIA #3	1059	7.94	34.72	18.90	7.55	5.0	2.0	410		70		5.9			1109	
02/29/12	BIA #3	1107	7.99	34.95	18.64	7.34	3.1	2.0	413	288	58	65	7.1	75.0	1260	1120	
05/30/12	BIA #3	828	7.93	34.68	19.09	7.38	3.5	2.0	389	209	59	50	6.6	50.0	913	1148	
08/02/12	BIA #3	831	7.96	34.90	19.82	6.95	1.8	2.0	368	213	75	53	4.9	48.0	865	1204	
11/15/12	BIA #3	826	7.91	35.06	19.48	7.35	3.5	2.0	508	244	76	62	6.7	54.4	1030	1262	
02/20/13	BIA #3	924	7.84	35.05	19.19	6.92	3.4	2.0	415	252	78	56	5.3	44.0	885	1260	
05/16/13	BIA #3	816	7.90	34.86	20.10	6.55	4.1	2.0	387	184	66	47	5.8	67.1	950	1210	
09/04/13	BIA #3	822	7.87	34.57	20.04	5.84	3.8	3.1	400	221	72	54	5.6	70.2	1068	1154	
12/11/13	BIA #3	820	7.78	34.35	19.12	6.20	4.7	2.0	371	222	60	58	6.2	49.5	1047	1083	
02/26/14	BIA #3	820	7.87	34.74	19.00	6.65	4.9	2.0	396	207	71	55	5.6	54.8	976	1244	
06/19/14	BIA #3	1142	7.83	34.58	17.81	6.92	3.5	2.0	410	278	80	76	5.1	53.2	1935	1145	
09/04/14	BIA #3	832	7.91	34.74	19.96	7.19	3.7	2.0	427	204	67	51	6.3	75.8	1024	1097	
12/17/14	BIA #3	852	7.85	35.15	19.40	6.97	5.1	2.0	505	226	65	49	7.8	41.1	975	1087	
03/18/15	BIA #3	904	7.79	34.57	19.84	7.07	3.8	2.0	785	36	57	826	13.9	157.9	39	979	
06/18/15	BIA #3	839	7.92	34.44	20.28	7.38	3.9	2.0	305	188	41	47	7.4	16.9	846	900	
08/20/15	BIA #3	8.28	7.90	34.86	20.73	6.67	4.2	2.0	376	206	46	42	8.2	19.7	965	925	
12/02/15	BIA #3	842	8.03	34.90	19.24	7.26	4.3	2.0	332	226	55	46	6.1	66.0	1003	987	
02/18/16	BIA #3	833	7.88	34.50	18.91	7.52	4.1	2.0	353	210	60	48	5.9	33.5	885	981	
06/01/16	BIA #3	833	7.87	34.41	19.63	7.12	3.5	2.0	297	215	53	36	5.7	22.5	970	956	
09/07/16	BIA #3	913	8.18	34.70	20.50	6.82	4.4	2.0	482	303	73	57	6.6	37.7	1484	1041	
12/01/16	BIA #3	823	7.95	34.74	18.57	7.18	4.5	2.0	279	206	51	43	5.4	35.5	1209	1067	
03/09/17	BIA #3	825	7.96	34.66	19.29	6.46	5.7	2.0	288	177	50	38	5.7	51.9	843	1038	
05/25/17	BIA #3	825	7.95	34.48	20.65	5.95	5.6	2.0	262	152	58	41	4.5	52.6	739	1059	
08/31/17	BIA #3	827	7.95	34.59	21.33	6.18	4.7	2.0	310	160	61	48	5.1	67.9	796	1023	
12/07/17	BIA #3	911	7.98	35.18	21.09	5.65	12.1	2.0	256	145	52	37	4.9	60.1	660	981	
03/08/18	BIA #3	904	7.94	34.82	18.74	6.64	14.6	2.0	286	166	54	43	5.3	74.0	786	1014	
06/14/18	BIA #3	836	7.95	35.01	20.98	8.34	12.7	2.0	314	164	53	35	6.0	44.1	742	1006	
09/12/18	BIA #3	844	7.94	34.58	21.79	6.43	5.4	2.0	297	179	54	40	5.5	69.4	859	928	
12/12/18	BIA #3	839	7.96	35.03	19.60	4.75	4.5	2.0	355	195	52	26	6.8	1.6	921	1023	
03/07/19	BIA #3	853	7.86	35.09	19.62	7.10	13.3	2.0	273	168	54	39	5.0	39.6	814	937	
06/13/19	BIA #3	845	7.99	34.75	21.30	6.83	5.4	2.0	295	173	57	35	5.2	36.6	863	950	
09/18/19	BIA #3	911	7.98	35.19	21.46	6.84	5.9	2.0	325	187	56	38	5.8	42.4	886	1015	
11/01/19	BIA #3	847	7.97	35.15	18.42	7.39	2.8	2.0	349	254	55	51	6.3	45.8	1211	870	
03/12/20	BIA #3	852	7.99	35.68	19.81	7.05	13.2	2.0	230	154	45	37	5.1	35.3	727	931	
06/18/20	BIA #3	859	7.99	37.06	20.54	6.95	3.5	2.0	279	189	51	37	5.5	50.5	838	878	
Mean			7.93	34.87	19.86	6.83	5.3	2.0	363	200	60	70	6.1	51.3	942	1031	
Std. Dev.			0.07	0.45	0.96	0.63	3.2	0.2	98	48	10	134	1.6	25.7	287	124	
n=			38	38	38	38	38	38	38	34	38	34	38	34	34	38	

Big Island Abalone Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19° 42'51"N
Longitude: 156° 2'46"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
14	12	7

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	BIA #4	1014	7.94	34.57	14.36	7.91	2.5	2.0	412		70		5.9			1561	
05/19/11	BIA #4	1214	8.03	34.91	19.83	6.69	2.9	2.0	354		56		6.3			1960	
09/01/11	BIA #4	1138	7.95	34.83	18.10	7.91	4.0	2.0	392		54		7.3			2416	
12/08/11	BIA #4	1104	7.94	34.76	17.52	7.75	1.3	11.8	1565		241		6.5			2534	
02/29/12	BIA #4	1109	7.93	34.99	17.07	7.62	3.2	6.4	701	392	77	53	9.1	33.0	1113	2560	
05/30/12	BIA #4	833	7.92	34.70	17.57	7.71	2.6	2.0	411	263	58	50	7.1	39.5	1171	2635	
08/02/12	BIA #4	839	7.94	34.84	18.44	7.40	1.8	2.0	376	262	65	51	5.8	17.0	1084	2758	
11/15/12	BIA #4	830	7.94	35.02	18.65	7.72	2.5	2.0	470	261	62	49	7.6	30.3	1079	2895	
02/20/13	BIA #4	927	7.86	35.05	17.90	7.26	1.9	2.0	401	274	59	49	6.8	39.0	1067	2890	
05/16/13	BIA #4	820	7.94	34.85	18.82	7.01	13.2	2.2	345	223	61	46	5.6	25.4	1122	2780	
09/04/13	BIA #4	826	7.87	34.56	19.33	6.21	3.5	2.0	496	237	80	56	6.2	47.1	1068	2666	
12/11/13	BIA #4	823	7.78	34.90	18.42	6.90	2.7	2.0	370	241	95	53	3.9	23.4	1127	2500	
02/26/14	BIA #4	823	7.87	34.80	17.73	7.87	2.3	2.0	443	246	78	59	5.7	22.6	1106	2873	
06/19/14	BIA #4	1145	7.85	34.58	18.83	6.29	3.1	2.8	413	252	85	66	4.9	32.7	1623	2655	
09/04/14	BIA #4	835	7.92	34.75	18.17	7.23	3.7	2.0	472	275	86	65	5.5	60.0	1248	2553	
12/17/14	BIA #4	857	7.77	35.02	16.98	7.50	5.1	2.0	527	305	68	67	7.7	42.7	1288	2526	
03/18/15	BIA #4	907	7.71	34.63	17.98	7.64	3.0	2.8	745	54	83	1125	9.0	225.4	62	2267	
06/18/15	BIA #4	844	7.76	34.55	18.42	7.40	4.0	2.2	505	253	114	86	4.4	24.1	1033	2087	
08/20/15	BIA #4	832	7.74	34.80	18.41	6.96	4.0	2.0	504	289	76	68	6.6	73.7	1275	2147	
12/02/15	BIA #4	832	8.02	34.83	14.72	8.48	4.4	2.0	601	457	69	58	8.7	22.7	1412	2286	
02/18/16	BIA #4	835	7.77	34.48	17.43	7.48	4.5	2.3	470	275	82	52	5.8	47.5	1081	2263	
06/01/16	BIA #4	838	7.74	34.43	17.78	7.28	2.8	2.0	388	184	68	46	5.7	42.4	1229	2204	
09/07/16	BIA #4	818	7.96	34.68	17.44	7.26	3.6	2.0	666	459	112	76	6.0	18.8	2097	2410	
12/01/16	BIA #4	827	7.87	34.71	16.74	7.67	1.3	2.0	362	250	63	55	5.7	60.9	1323	2479	
03/09/17	BIA #4	829	7.91	34.61	16.79	6.76	4.7	2.0	375	253	64	51	5.8	81.9	1168	2415	
05/25/17	BIA #4	829	7.88	34.51	17.58	6.08	5.4	2.0	440	243	82	60	5.4	87.5	1139	2464	
08/31/17	BIA #4	831	7.84	34.69	18.97	6.51	3.4	2.0	454	228	72	51	6.3	89.0	1077	2379	
12/07/17	BIA #4	915	7.89	35.12	18.05	5.91	6.1	2.0	403	235	67	46	6.0	102.5	1037	2274	
03/08/18	BIA #4	908	7.87	34.71	17.01	6.86	4.1	2.0	415	231	64	54	6.5	101.9	1053	2345	
06/14/18	BIA #4	839	7.85	35.02	18.66	8.53	4.8	2.0	429	240	61	41	7.0	88.2	1053	2327	
09/12/18	BIA #4	848	7.87	34.57	19.88	7.07	4.9	2.0	404	229	71	54	5.7	93.6	1081	2147	
12/12/18	BIA #4	842	7.91	35.03	18.59	5.04	4.2	2.0	449	230	68	36	6.6	2.6	1071	2369	
03/07/19	BIA #4	900	7.70	35.11	17.62	7.30	4.2	2.0	355	240	56	44	6.3	64.5	1112	2163	
06/13/19	BIA #4	850	7.88	34.74	18.95	7.04	3.4	2.0	362	247	60	44	6.0	69.6	1195	2197	
09/18/19	BIA #4	914	7.92	35.17	18.67	7.59	3.7	2.0	394	276	79	62	5.0	42.0	1262	2352	
11/01/19	BIA #4	850	7.97	35.20	17.82	7.86	2.1	2.0	399	289	64	56	6.3	52.5	1298	2024	
03/12/20	BIA #4	855	7.56	35.68	16.86	7.81	3.2	2.0	378	272	67	56	5.7	62.6	1225	2146	
06/18/20	BIA #4	902	7.89	37.07	17.59	7.41	4.0	2.4	462	290	76	56	6.0	108.0	1264	2021	
Mean			7.87	34.88	17.89	7.23	3.7	2.4	476	263	77	86	6.3	58.1	1166	2382	
Std. Dev.			0.10	0.44	1.12	0.70	1.9	1.7	204	69	31	184	1.1	41.0	280	282	
n=			38	38	38	38	38	38	38	34	38	34	38	34	34	38	

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'20.94"N
Longitude: 156° 3'19.02"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
29	16	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/21/10	Kona Blue Composite	945	8.16					0.8	2.0	151	13.6	16	4.7	9.4	39	38.1	705	
02/10/11	KPH (SE)	944	8.18	35.00	19,373	25.09	5.73	1.8	2.0	222		29		7.7			854	
05/18/11	KPH (SE)	927	8.20	34.89	19,312	26.20	6.58	4.6	2.0	109		20		5.5			1326	
09/14/11	KPH (SE)	910	8.08	34.87	19,301	26.50	6.37	1.9	2.0	204		22		9.3			1308	
12/07/11	KPH (SE)	1018	7.97	34.85	19,290	25.12	6.37	0.9	2.0	162		38		4.3			525	
03/08/12	KPH (SE)	815	8.01	34.89	19,312	24.03	5.03	1.6	2.0	151	25	46	22	3.3	54	67	408	
06/06/12	Blue Ocean Mariculture (SE)	844	8.18	34.94	19,340	25.50	5.92	2.0	2.0	189	16	26	10	7.3	41	53	453	
08/09/12	Blue Ocean Mariculture (SE)	908	8.11	35.29	19,533	26.66	6.48	2.3	2.0	356	37	65	36	5.5	133	90	416	
11/21/12	Blue Ocean Mariculture (SE)	1007	8.21	35.47	19,633	25.89	6.02	2.1	2.8	88	46	15	12	5.9	51	53	522	
02/28/13	Blue Ocean Mariculture (SE)	929	8.09	35.43	19,611	24.40	6.29	3.7	2.0	319	24	54	25	5.9	63	44	690	
05/30/13	Blue Ocean Mariculture (SE)	859	8.16	35.02	19,384	27.03	4.80	4.2	2.0	193	31	18	14	10.7	52	52	486	
09/05/13	Blue Ocean Mariculture (SE)	901	8.10	34.87	19,301	27.04	5.96	4.1	2.0	264	17	48	19	5.5	33.0	63	531	
12/18/13	Blue Ocean Mariculture (SE)	931	8.13	35.01	19,378	25.82	5.64	5.7	2.1	154	14	18	11	8.6	15.0	85	656	
03/06/14	Blue Ocean Mariculture (SE)	851	8.09	34.88	19,306	25.23	5.50	4.6	2.0	237	17	27	13	8.9	53.0	59	393	
06/19/14	Blue Ocean Mariculture (SE)	857	8.04	34.61	19,157	26.42	6.75	3.8	2.0	263	23	80	18	3.3	24.1	83	614	
09/25/14	Blue Ocean Mariculture (SE)	905	8.14	35.14	19,450	28.15	4.27	3.9	2.0	251	27	24	5	10.5	25.9	11	668	
12/18/14	Blue Ocean Mariculture (SE)	955	8.00	35.38	19,583	25.65	6.80	2.9	2.0	244	32	47	33	5.2	82.7	3	290	
03/12/15	Blue Ocean Mariculture (SE)	1122	8.12	34.75	19,234	25.56	6.50	2.3	2.0	283	39	104	44	2.7	77.7	141	410	
06/05/15	Blue Ocean Mariculture (SE)	950	8.04	34.57	19,135	27.10	6.65	4.1	2.0	300	78	30	30	9.9	36.8	1483	309	
09/10/15	Blue Ocean Mariculture (SE)	947	8.08	34.93	19,334	26.98	6.27	3.5	2.0	372	117	17	23	22.1	64.9	499	275	
12/09/15	Blue Ocean Mariculture (SE)	910	8.10	34.20	18,930	25.39	6.32	3.5	2.0	352	64	92	63	3.8	140.8	391	411	
02/25/16	Blue Ocean Mariculture (SE)	1007	8.19	34.56	19,129	24.52	7.06	7.8	3.1	612	27	192	139	3.2	183.4	142	944	
06/01/16	Blue Ocean Mariculture (SE)	1053	8.22	34.41	19,046	26.68	5.41	5.5	2.0	131	16	39	14	3.3	1.0	217	746	
08/26/16	Blue Ocean Mariculture (SE)	839	8.36	34.20	18,930	26.21	6.41	4.5	2.0	401	77	53	6	7.6	51.0	694	943	
12/01/16	Blue Ocean Mariculture (SE)	1003	8.08	34.86	19,295	24.61	5.99	5.4	2.0	231	29	74	63	3.1	151.4	361	1107	
03/09/17	Blue Ocean Mariculture (SE)	901	8.06	34.41	19,046	24.20	5.18	4.2	2.0	325	41	49	30	6.7	170.2	293	909	
05/24/17	Blue Ocean Mariculture (SE)	848	8.08	34.65	19,179	24.71	5.05	5.0	2.0	145	33	20	10	7.3	39.7	253	1217	
08/24/17	Blue Ocean Mariculture (SE)	903	8.01	34.23	18,947	23.98	5.42	5.0	2.0	245	110	36	14	6.8	39.8	610	819	
12/07/17	Blue Ocean Mariculture (SE)	937	8.10	35.27	19,522	24.14	4.51	10.0	2.0	154	50	22	13	7.0	34.4	323	1241	
03/08/18	Blue Ocean Mariculture (SE)	1018	8.07	34.99	19,367	23.83	5.83	12.2	2.0	126	7	20	12	6.4	49.5	147	1109	
05/08/18	Blue Ocean Mariculture (SE)	941	8.12	34.50	19,096	25.64	5.62				15		10		45.3	265		1st BAP sampling
06/14/18	Blue Ocean Mariculture (SE)	1056	7.88	35.11	19,434	24.45	5.89	18.6	6.3	652	76	179	112	3.7	414.2	436	463	
07/12/18	Blue Ocean Mariculture (SE)	919	8.13	34.69	19,201	26.06	6.22				103		30		27.3	376		monthly BAP testing
08/13/18	Blue Ocean Mariculture (SE)	939	8.13	34.57	19,135	25.01	5.82				89		15		21.1	430		monthly BAP testing
09/10/18	Blue Ocean Mariculture (SE)	847	8.05	34.60	19,151	25.76	6.25	6.3	2.0	204	70	48	35	4.2	57.9	452	1177	
10/11/18	Blue Ocean Mariculture (SE)	905	8.11	34.78	19,251	25.80	4.93				57		18		30.5	395		monthly BAP testing
11/02/18	Blue Ocean Mariculture (SE)	902	8.04	34.71	19,212	25.01	6.23				87		16		32.5	516		monthly BAP testing
12/13/18	Blue Ocean Mariculture (SE)	834	8.12	34.99	19,367	24.55	5.78	3.9	2.0	144	39	19	9	7.6	17.0	293	1315	
01/15/19	Blue Ocean Mariculture (SE)	923	8.17	34.74	19,229	23.86	6.14				32		20		40.8	320		monthly BAP testing
02/13/19	Blue Ocean Mariculture (SE)	944	7.78	35.56	19,683	23.10	6.60				48		170		418.9	298		monthly BAP testing
03/01/19	Blue Ocean Mariculture (SE)	913	8.17	34.64	19,174	24.32	6.50	3.7	2.0	90	6	18	12	5.1	32.2	93	1031	
04/25/19	Blue Ocean Mariculture (SE)	903	8.05	35.24	19,506	25.88	6.37				1		6		5.4	120		monthly BAP testing
05/07/19	Blue Ocean Mariculture (SE)	949	8.08	35.50	19,650	25.58	6.26				3		18		48.3	108		monthly BAP testing
06/05/19	Blue Ocean Mariculture (SE)	903	8.14	35.69	19,755	25.51	6.39	5.4	2.0	157	46	34	18	4.6	10.9	227	745	
07/17/19	Blue Ocean Mariculture (SE)	841	7.84	35.57	19,688	25.97	6.66				42		20		190.1	360		monthly BAP testing
08/23/19	Blue Ocean Mariculture (SE)	1414	7.96	35.14	19,450	25.95	6.04				85		47		186.8	530		monthly BAP testing
09/12/19	Blue Ocean Mariculture (SE)	916	8.05	34.89	19,312	25.09	7.32	3.7	2.0	229	93	33	19	6.9	54.1	544	1222	
10/16/19	Blue Ocean Mariculture (SE)	911	7.93	35.28	19,528	25.81	6.25				82		17		16.4	498		monthly BAP testing
11/06/19	Blue Ocean Mariculture (SE)	916	8.06	35.41	19,600	25.67	6.22	2.9	2.1	1031	64	209	21	4.9	20.6	421	1056	
12/17/19	Blue Ocean Mariculture (SE)	844	8.05	34.86	19,295	25.70	6.39				43		28		80.0	296		monthly BAP testing
01/09/20	Blue Ocean Mariculture (SE)	929	7.68	34.97	19,356	24.52	6.85				49		62		528.8	262		monthly BAP testing

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'20.94"N
Longitude: 156° 3'19.02"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
29	16	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
02/04/20	Blue Ocean Mariculture (SE)	944	8.15	35.43	19,611	23.88	6.20				50		12		15.2	294		monthly BAP testing
03/11/20	Blue Ocean Mariculture (SE)	855	8.10	35.91	19,877	24.51	6.16	5.8	2.0	150	-12	29	18	5.3	49.2	104	1461	
04/01/20	Blue Ocean Mariculture (SE)																	No sampling - COVID-19
05/21/20	Blue Ocean Mariculture (SE)	1051	8.08	35.79	19,810	26.03	6.33				-5		6		132.2	114		monthly BAP testing
06/26/20	Blue Ocean Mariculture (SE)	25.51	8.02	35.63	19,722	25.51	6.84	5.2	2.5	240	17	39	9	6.1	110.1	216	890	
07/14/20	Blue Ocean Mariculture (SE)	951	7.86	33.80	18,709	25.23	6.97				62		83		286.4	347		monthly BAP testing
Mean			8.07	34.96	19,348	25.40	6.08	4.6	2.2	260	43	50	29	6.5	88.1	280	786	
Std. Dev.			0.11	0.44	241	1.01	0.64	3.2	0.7	176	31	47	33	3.4	108.9	245	344	
n=			56	55	55	55	55	39	39	39	50	39	52	39	52	52	39	

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'20.49"N
Longitude: 156° 3'21.26"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
29	16	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
12/07/11	KPH Hatchery Effluent	1012	8.16	34.93	19,334	24.22	7.01	6.4	9.0	1232		65		19.0			175	
03/08/12	KPH Hatchery Effluent																	Not in use, no sample taken
06/06/12	BOM (Hatchery)																	Not in use, no sample taken
08/09/12	BOM (Hatchery)																	Not in use, no sample taken
11/21/12	BOM (Hatchery)																	Not in use, no sample taken
02/28/13	BOM (Hatchery)																	Not in use, no sample taken
05/30/13	BOM (Hatchery)																	Not in use, no sample taken
09/05/13	BOM (Hatchery)	857	7.38	34.74	19,229	26.61	6.78	6.8	2.0	698	9	76	10	9.2	147.8	68	176.8	
12/18/13	BOM (Hatchery)																	Not in use, no sample taken
03/06/14	BOM (Hatchery)																	Not in use, no sample taken
06/19/14	BOM (Hatchery)	851	7.75	34.63	19,168	26.26	6.84	4.4	2.6	396	5	65	15	6.1	210.9	87	219.4	
09/25/14	BOM (Hatchery)	902	8.10	35.01	19,378	28.07	4.08	2.5	2.0	175	5	26	5	6.9	55.2	10	238.6	
12/18/14	BOM (Hatchery)	950	7.76	35.46	19,627	25.66	6.40	3.9	2.0	343	5	32	3	10.6	87.8	2	117.7	
03/12/15	BOM (Hatchery)																	Not in use, no sample taken
06/05/15	BOM (Hatchery)	945	8.11	26.94	14,912	27.05	7.79	3.7	2.0	457	277	26	60	17.8	48.3	4563	100.4	
09/10/15	BOM (Hatchery)																	Not in use, pipes rerouted to SE tre
12/09/15	BOM (Nursery)	906	7.87	34.21	18,936	26.06	6.77	7.1	3.8	814	50	213	39	3.8	162.0	276	134.9	Pipes rerouted back to nursery
02/25/16	BOM (Nursery)	1002	7.95	34.81	19,268	24.76	9.32	9.4	3.7	503	31	106	48	4.8	115.2	102	309.7	
06/01/16	BOM (Nursery)																	No flow, system shut down
08/26/16	BOM (Nursery)	834	8.04	34.72	19,218	19.42	7.40	3.2	2.1	703	410	107	67	6.6	88.5	1729	290.3	
12/01/16	BOM (Nursery)	959	7.72	34.75	19,234	20.09	7.66	5.6	3.0	616	169	41	30	15.2	411.9	856	341.2	
03/09/17	BOM (Nursery)	858	8.01	34.52	19,107	24.76	5.85	6.1	3.4	273	7	35	12	7.9	99.8	85	280.1	
05/24/17	BOM (Nursery)	843	7.29	34.67	19,190	25.70	5.89	5.7	2.7	889	5	42	11	21.2	774.8	60	374.0	
08/24/17	BOM (Nursery)																	No flow, system shut down
12/07/17	BOM (Nursery)	933	7.48	35.34	19,561	25.60	4.68	5.9	5.3	1299	1	51	13	25.5	1558.0	47	377.0	Reconfigured sump into lazy riv
03/08/18	BOM (Nursery)	1014	7.69	34.99	19,367	24.12	6.60	9.0	4.9	620	0	51	16	12.2	362.3	47	366.5	
05/15/18	BOM (Nursery)																	No BAP Sample in May, system sh
06/21/18	BOM (Nursery)	1033	8.07	35.40	19,594	27.28	6.30	13.1	3.5	540	7	22	4	24.8	217.5	65	160.5	
07/12/18	BOM (Nursery)	909	7.54	34.66	19,185	27.03	6.74				3		30		241.1	50		monthly BAP testing
08/13/18	BOM (Nursery)	936	7.75	34.58	19,140	27.46	5.63				12		5		191.1	3		monthly BAP testing
09/10/18	BOM (Nursery)	843	8.12	34.63	19,168	28.25	6.02	11.4	2.0	89	2	15	4	6.1	12.7	68	399.9	
10/11/18	BOM (Nursery)	901	7.62	34.83	19,279	21.46	6.07				178		54		192.1	840		monthly BAP testing
11/02/18	BOM (Nursery)	859	7.18	34.71	19,212	27.97	7.08				11		29		1660.0	47		monthly BAP testing
12/13/18	BOM (Nursery)																	No flow, system shut down till 2
01/15/19	BOM (Nursery)																	No flow, system shut down till Feb.
02/13/19	BOM (Nursery)	917	8.02	35.44	19,616	24.15	6.89				1		3		116.7	33		monthly BAP testing
03/01/19	BOM (Nursery)	909	7.63	34.61	19,157	24.36	8.65	7.0	9.9	501	4	90	42	5.6	113.8	28	342.9	
04/25/19	BOM (Nursery)	859	7.60	35.23	19,500	26.01	6.75				1		18		249.8	24		monthly BAP testing
05/07/19	BOM (Nursery)	1145	8.00	35.07	19,412	26.34	7.65				1		15		262.9	33		monthly BAP testing
06/05/19	BOM (Nursery)	859	8.02	35.75	19,788	26.78	6.91	4.6	2.0	198	2	33	16	5.9	95.0	8	253.7	
07/17/19	BOM (Nursery)	837	7.79	35.56	19,683	27.34	6.92				0		5		150.9	18		monthly BAP testing
08/23/19	BOM (Nursery)	1410	7.74	35.23	19,500	28.91	8.23				1		17		297.6	46		monthly BAP testing
09/12/19	BOM (Nursery)	912	7.82	34.93	19,334	28.07	6.84	4.1	2.0	371	3	21	8	17.9	337.0	46	414.5	
10/16/19	BOM (Nursery)																	No Flow, system shut down till earl
11/06/19	BOM (Nursery)																	No Flow, system shut down till earl
12/17/19	BOM (Nursery)																	No Flow, system shut down till earl
01/09/20	BOM (Nursery)	921	8.18	34.89	19,312	25.85	5.69				0		7		25.9	273		monthly BAP testing
02/04/20	BOM (Nursery)	940	7.41	35.59	19,699	21.78	6.35				126		37		534.0	545		algae (?) present
03/11/20	BOM (Nursery)	850	7.46	35.84	19,838	19.00	7.34	9.6	5.9	1048	188	173	87	6.1	546.1	805	494.6	
04/01/20	BOM (Nursery)																	No sampling - COVID-19
05/21/20	BOM (Nursery)																	No Flow, system shut down

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'20.49"N
Longitude: 156° 3'21.26"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
29	16	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
06/26/20	BOM (Nursery)																0.0	No Flow, system shut down
07/14/20	BOM (Nursery)																	No Flow, system shut down
Mean			7.78	34.73	19,224	25.37	6.75	6.5	3.7	588	50	64	24	11.6	312.2	362	265	
Std. Dev.			0.28	1.50	830	2.61	1.05	2.8	2.3	336	99	52	22	7.0	391.8	880	124	
n=			31	31	31	31	31	20	20	20	28	20	30	20	30	30	20	

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'19.83"N
Longitude: 156° 3'21.75"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	6	2

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/08/12	KPH Quarantine Effluent	800	7.94	18.35	10,157	24.06	6.33	1.7	2.0	502	468	61	58	8.2	10.0	9436	21.5	
06/06/12	BOM (Quarantine)																0.0	Not in use, no sample taken
08/09/12	BOM (Quarantine)																0.0	Not in use, no sample taken
11/21/12	BOM (Quarantine)	1003	8.24	35.25	19,511	25.66	6.90	3.7	2.0	445	11	41	5	10.9	4.0	43	27.5	
02/28/13	BOM (Quarantine)																0.0	Not in use, no sample taken
05/30/13	BOM (Quarantine)																0.0	Not in use, no sample taken
09/05/13	BOM (Quarantine)																0.0	Not in use, no sample taken
12/18/13	BOM (Quarantine)	926	7.38	11.30	6,255	24.63	7.35	1.1	2.0	827	765	94	88	8.8	38.2	14354	34.6	County water mix
03/06/14	BOM (Quarantine)	853	8.01	10.08	5,579	23.63	6.96	1.5	2.0	926	896	99	97	9.4	21.4	15950	51.9	County water mix
06/19/14	BOM (Quarantine)	844	7.57	34.61	19,157	26.27	6.73	3.0	2.0	308	3	32	7	9.7	203.5	75	45.8	
09/25/14	BOM (Quarantine)	858	8.15	35.00	19,373	28.51	3.95	3.2	2.0	105	5	13	4	8.4	12.6	10	50.9	
12/18/14	BOM (Quarantine)																0.0	Not in use, no sample taken
03/12/15	BOM (Quarantine)	1125	8.10	34.66	19,185	25.10	6.23	3.0	2.0	289	39	49	45	5.9	155.9	188	49.1	
06/05/15	BOM (Quarantine)	941	8.15	12.94	7,162	26.55	8.14	3.2	2.0	162	5	17	20	9.6	44.3	43	79.4	
09/10/15	BOM (Quarantine)	9.58	7.84	8.46	4,683	27.73	7.34	1.3	2.0	950	858	79	85	12.1	43.1	14248	53.7	
12/09/15	BOM (Quarantine)	856	8.16	34.25	18,958	26.05	6.28	4.6	2.0	241	24	34	18	7.0	99.5	189	32.0	
02/25/16	BOM (Quarantine)	956	8.21	10.64	5,889	24.82	8.71	1.3	2.0	814	675	134	155	6.1	123.8	14446	93.6	
06/01/16	BOM (Quarantine)																0.0	No Flow, system shut down
08/26/16	BOM (Quarantine)																0.0	No Flow, system shut down
12/01/16	BOM (Quarantine)																0.0	No Flow, system shut down
03/09/17	BOM (Quarantine)																0.0	No Flow, system shut down
05/24/17	BOM (Quarantine)																0.0	No Flow, system shut down
08/24/17	BOM (Quarantine)																0.0	No Flow, system shut down
12/07/17	BOM (Quarantine)																0.0	No Flow, system shut down
03/08/18	BOM (Quarantine)																0.0	No Flow, system shut down
06/14/18	BOM (Quarantine)																0.0	No Flow, system shut down
07/12/18	BOM (Quarantine)																	No Flow, system shut down
08/13/18	BOM (Quarantine)																	No Flow, system shut down
09/10/18	BOM (Quarantine)																0.0	No Flow, system shut down
10/11/18	BOM (Quarantine)																	No Flow, system shut down
11/02/18	BOM (Quarantine)																	No Flow, system shut down
12/13/18	BOM (Quarantine)																0.0	No Flow, system shut down
01/15/19	BOM (Quarantine)																	No Flow, system shut down
02/13/19	BOM (Quarantine)																	No Flow, system shut down
03/01/19	BOM (Quarantine)																0.0	No Flow, system shut down
04/25/19	BOM (Quarantine)																	No Flow, system shut down
05/07/19	BOM (Quarantine)																	No Flow, system shut down
06/05/19	BOM (Quarantine)																0.0	No Flow, system shut down
07/17/19	BOM (Quarantine)																	No Flow, system shut down
08/23/19	BOM (Quarantine)																	No Flow, system shut down
09/12/19	BOM (Quarantine)																0.0	No Flow, system shut down
10/16/19	BOM (Quarantine)																	No Flow, system shut down
11/06/19	BOM (Quarantine)																0.0	No Flow, system shut down
12/17/19	BOM (Quarantine)																	No Flow, system shut down
01/09/20	BOM (Quarantine)																	No Flow, system shut down
02/04/20	BOM (Quarantine)																	No Flow, system shut down
03/11/20	BOM (Quarantine)																0.0	No Flow, system shut down
04/01/20	BOM (Quarantine)																	No Flow, system shut down
05/21/20	BOM (Quarantine)																	No Flow, system shut down
06/26/20	BOM (Quarantine)																0.0	No Flow, system shut down
07/14/20	BOM (Quarantine)																	No Flow, system shut down

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'19.83"N
Longitude: 156° 3'21.75"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	6	2

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
Mean			7.98	22.32	12,355	25.73	6.81	2.5	2.0	506	341	59	53	8.7	68.8	6271	16	
Std. Dev.			0.28	12.15	6,727	1.50	1.23	1.2	0.0	318	390	38	49	1.9	67.0	7271	26	
n=			11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'21.50"N
Longitude: 156° 3'21.65"W

Seawater DIsposal Trench Dimensions

L (ft)	W (ft)	D (ft)
4	4	2

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
09/05/13	Ice Machine Effluent	852	7.49	34.22	18,941	21.10	4.50	2.0	2.0	623	598	102.6	103.4	6.1	7.9	2336	1.4	
12/18/13	Ice Machine Effluent	936	7.54	34.71	19,212	19.24	5.52	3.3	2.0	790	565	89	86	8.8	38.6	14822	1.5	
03/06/14	Ice Machine Effluent	906	7.45	41.13	22,766	16.52	5.79	1.1	2.0	630	569	98	96	6.4	12.4	2233	2.6	
06/19/14	Ice Machine Effluent																3.9	No Sample
09/25/14	Ice Machine Effluent																7.0	No Sample
12/18/14	Ice Machine Effluent	1000	7.51	34.90	19,318	20.87	4.86	1.7	2.0	692	603	109	105	6.4	3.7	2385	8.3	
03/12/15	Ice Machine Effluent	1130	7.52	34.46	19,074	21.15	5.45	2.7	2.0	1260	1000	131	204	9.6	57.9	4536	8.8	
06/05/15	Ice Machine Effluent	1114	7.70	34.40	19,041	22.54	6.47	3.0	2.0	608	586	97	94	6.3	6.8	2168	8.7	
09/10/15	Ice Machine Effluent	1015	7.72	26.96	14,923	0.61	19.26	2.6	2.0	408	433	53	56	7.8	1.3	1373	5.9	
12/09/15	Ice Machine Effluent	923	7.95	32.27	17,862	8.10	12.71	3.8	2.0	621	548	111	85	5.6	32.0	1950	11.7	
02/25/16	Ice Machine Effluent	1013	7.71	32.99	18,260	20.75	6.19	3.5	2.0	672	629	126	121	5.4	6.8	2299	26.9	
06/01/16	Ice Machine Effluent	1044	7.49	38.74	21,443	9.30	6.09	3.4	2.0	650	635	98	100	6.6	1.1	2567	15.2	
08/26/16	Ice Machine Effluent	828	7.96	34.51	19,102	35.38	4.50	3.7	2.0	1011	951	163	145	6.2	3.9	3967	25.1	
12/01/16	Ice Machine Effluent	950	7.49	34.20	18,930	20.95	5.45	2.5	2.0	637	595	102	91	6.3	10.1	2486	29.5	
03/09/17	Ice Machine Effluent	853	7.66	36.12	19,993	9.59	6.28	2.8	2.0	668	636	103	100	6.5	15.9	3025	24.2	
05/24/17	Ice Machine Effluent	838	7.62	35.83	19,832	15.93	4.80	3.8	2.0	649	540	98	94	6.6	7.2	2758	32.5	
08/24/17	Ice Machine Effluent	859	7.59	35.88	19,860	20.87	4.65	4.5	2.0	641	619	101	90	6.3	6.8	2873	35.2	
12/07/17	Ice Machine Effluent	927	7.61	31.56	17,469	7.59	6.90	3.1	2.0	564	545	92	87	6.1	6.9	2433	27.2	
03/08/18	Ice Machine Effluent	1009	7.59	34.80	19,262	10.10	6.87	12.2	2.0	629	595	99	97	6.4	66.3	2812	25.6	
05/15/18	Ice Machine Effluent	1203	7.52	35.56	19,683	14.97	6.27				934		84		2.2	2713		1st BAP sampling
06/14/18	Ice Machine Effluent	1103	7.49	28.44	15,742	-1.71	9.30	4.7	2.0	513	503	83	68	6.2	0.6	2329	19.6	
07/12/18	Ice Machine Effluent	901	7.52	35.63	19,722	13.94	6.17				619		103		-2.7	3023		monthly BAP testing
08/13/18	Ice Machine Effluent	923	7.52	35.32	19,550	13.14	6.11				633		87		4.4	2849		monthly BAP testing
09/10/18	Ice Machine Effluent	1001	7.50	35.52	19,661	8.83	7.46	3.2	2.0	576	567	93	89	6.2	3.1	2638	23.4	
10/11/18	Ice Machine Effluent	857	7.60	35.57	19,688	15.27	6.30				598		90		15.0	2748		monthly BAP testing
11/02/18	Ice Machine Effluent	854	7.51	34.62	19,163	20.43	5.19				568		83		1.1	2686		monthly BAP testing
12/13/18	Ice Machine Effluent	827	7.72	33.96	18,797	18.44	5.35	3.6	2.0	577	534	88	84	6.5	1.6	2630	21.6	
01/15/19	Ice Machine Effluent	919	7.63	34.76	19,240	18.05	5.96				554		102		5.1	2856		monthly BAP testing
02/13/19	Ice Machine Effluent	914	7.48	35.14	19,450	21.37	5.56				572		89		5.6	2771		monthly BAP testing
03/01/19	Ice Machine Effluent	905	7.45	36.76	20,347	17.59	6.08	14.0	2.4	773	692	99	95	7.8	9.0	3012	1.9	
04/25/19	Ice Machine Effluent	855	7.27	36.25	20,065	20.45	5.47				607		91		0.5	2990		monthly BAP testing
05/07/19	Ice Machine Effluent	956	7.60	40.66	22,506	24.35	5.82				503		82		6.1	2940		monthly BAP testing
06/05/19	Ice Machine Effluent	854	7.52	35.80	19,816	21.73	5.94	3.1	2.0	581	563	91	89	6.4	0.5	2857	16.6	
07/17/19	Ice Machine Effluent	831	7.36	35.61	19,711	21.08	5.05				574		89		1.2	2765		monthly BAP testing
08/23/19	Ice Machine Effluent	1419	7.83	35.64	19,727	36.64	4.99				635		94		5.9	2621		monthly BAP testing
09/12/19	Ice Machine Effluent	906	7.72	49.60	27,454	13.20	6.84	3.5	2.0	616	6006	99	98	6.2	12.1	2652	22.5	
10/16/19	Ice Machine Effluent	905	7.58	35.22	19,495	19.93	5.34				479		86		5.2	2539		monthly BAP testing
11/20/19	Ice Machine Effluent	1422	7.53	35.37	19,578	23.08	5.47	2.5	2.0	888	588	101	94	8.8	1.9	2566	21.6	
12/17/19	Ice Machine Effluent	839	7.65	35.96	19,904	18.52	5.49				629		95		3.0	2808		monthly BAP testing
01/09/20	Ice Machine Effluent	917	7.63	38.14	21,111	14.42	5.91				634		91		-2.2	2867		monthly BAP testing
02/04/20	Ice Machine Effluent	935	7.58	38.08	21,078	16.58	5.62				629		98		-4.6	2722		monthly BAP testing
03/11/20	Ice Machine Effluent	940	7.70	22.52	12,465	15.83	10.60	11.3	2.8	552	299	92	72	6.0	-19.2	1431	23.8	algae chunks from discharge pipe flowing into sample
04/01/20	Ice Machine Effluent																	No sampling - COVID-19
05/21/20	Ice Machine Effluent	1046	7.66	35.81	19,821	15.90	6.17				584		91		11.7	2682		monthly BAP testing
06/26/20	Ice Machine Effluent	833	7.76	36.17	20,020	47.74	3.09	3.1	2.0	684	616	90	89	7.6	8.8	2834	0.2	Double checked temp before le
07/14/20	Ice Machine Effluent	1002	7.57	47.50	26,292	14.64	9.04				876		166		9.4	3890		collected from tower

Blue Ocean Mariculture LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'21.50"N
Longitude: 156° 3'21.65"W

Seawater DIsposal Trench Dimensions

L (ft)	W (ft)	D (ft)
4	4	2

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Chloride (mg/L)	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
Mean			7.59	35.52	19,660	17.79	6.44	4.2	2.0	673	736	100	97	6.7	8.6	2987	16	
Std. Dev.			0.13	4.27	2,361	8.50	2.59	3.2	0.2	167	832	19	24	1.0	14.9	1925	11	
n=			43	43	43	42	43	26	26	26	43	26	43	26	39	43	28	

Cellana LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°44'4"N
Longitude: 156° 3'11"W

Seawater Disposal Trench Dimensions
L (ft.) W (ft.) D (ft.)
Leach Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (Kgal/day)	Comment
09/21/11	C1 Disp. Field Access Pt South	1427	8.07	53.13	33.84	4.63	4.6	2.0	638		124		5.1			20	
12/08/11	C1 Disp. Field Access Pt South	952	7.39	35.12	28.37	4.35	1.2	2.5	121		20		6.1			0	
03/08/11	C1 Disp. Field Access Pt South	1000	7.80	35.10	28.37	4.21	1.8	2.0	94	9	33	15	2.8	15	148	0	
06/07/12	C1 Disp. Field Access Pt South	1010	7.81	35.26	29.37	3.73	11.4	2.0	1544	17	50	27	30.9	1240	137	62	
08/15/12	C1 Disp. Field Access Pt South	800	7.28	35.20	30.66	2.94	3.0	2.0	515	164	57	38	9.0	152	919	27	
11/15/12	C1 Disp. Field Access Pt South	1313	7.72	34.78	20.30	6.37	2.4	2.0	863	695	108	97	8.0	13	2459	28	
02/27/13	C1 Disp. Field Access Pt South	1031	7.25	34.53	25.60	4.50	4.2	2.0	726	580	113	103	6.4	51	2462	18	
05/30/13	C1 Disp. Field Access Pt South	1050	7.73	35.69	27.01	6.40	28.7	15.7	1429	674	234	210	6.1	90	2435	30	composite sample (centrifuge and pond)
09/05/13	C1 Disp. Field Access Pt South	1050	7.39	34.47	29.48	2.54	4.6	2.2	1312	690	533	555	2.5	548	2683	51	
12/18/13	C1 Disp. Field Access Pt South	1058	7.48	34.22	27.49	3.46	41.9	15.0	858	628	187	163	4.6	49	2820	55	
03/06/14	C1 Disp. Field Access Pt South	1104	7.56	34.27	24.72	6.98	7.6	5.2	693	585	107	97	6.5	19	2284	44	
06/19/14	C1 Disp. Field Access Pt South	955	7.52	33.95	28.83	4.90	14.8	3.8	743	557	143	131	5.2	94	3806	35	
09/25/14	C1 Disp. Field Access Pt South	1100	7.41	34.65	30.10	4.95	4.2	2.0	713	578	106	98	6.7	15	2181	35	
12/24/14	C1 Disp. Field Access Pt South	910	7.35	34.54	25.44	4.91	2.6	2.0	784	649	125	119	6.3	11	2432	7	
03/19/15	C1 Disp. Field Access Pt South	1113	7.56	31.91	23.47	7.12	8.2	3.6	937	633	125	135	7.5	18	3565	43	
06/04/15	C1 Disp. Field Access Pt South	1137	8.45	37.83	32.42	5.29	6.9	3.4	785	32	57	44	13.9	1	727	25	
09/10/15	C1 Disp. Field Access Pt South	832	7.84	36.63	27.54	6.20	4.0	2.0	766	789	103	121	7.4	0.4	2680	47	
12/16/15	C1 Disp. Field Access Pt South	909	7.98	37.67	24.14	7.26	7.4	6.2	1616	33	257	62	6.3	135	789	33	
02/17/16	C1 Disp. Field Access Pt South	1040	8.32	38.06	24.45	6.67	166.5	12.9	1058	45	411	298	2.6	87	3102	40	Met with Avery to diagnose high TSS values.
03/09/16	C1 Disp. Field Access Pt South	935					21.0										Resampled TSS.
04/13/16	C1 Disp. Field Access Pt South	1009					6.4										follow up TSS sample from high 1st Q value
06/30/16	C1 Disp. Field Access Pt South	909	7.79	22.59	25.60	7.02	2.6	2.0	857	732	124	120	6.9	3	8570	47	
09/23/16	C1 Disp. Field Access Pt South	840	7.84	38.84	12.63	8.82	7.9	2.1	1425	815	614	598	2.3	22	4781	72	
12/08/16	C1 Disp. Field Access Pt South	906	7.47	32.76	8.09	7.62	8.3	2.0	1084	824	108	108	10.0	84	2582	45	
03/09/17	C1 Disp. Field Access Pt South	1009	7.73	34.40	11.37	7.45	3.4	2.0	704	672	124	126	5.7	33	2363	31	
05/25/17	C1 Disp. Field Access Pt South	1053	7.67	34.69	9.55	4.71	3.7	2.0	610	542	100	96	6.1	6	2267	16	
09/14/17	C1 Disp. Field Access Pt South	1115	7.66	34.44	12.08	6.89	4.3	2.0	610	572	121	116	5.0	20	2276	27	
12/12/17	C1 Disp. Field Access Pt South	1107														21	No flow into sump
Mean			7.68	35.39	24.04	5.60	14.2	4.0	859	501	163	151	7.2	118	2542	33	
Std. Dev.			0.30	4.74	7.41	1.63	31.8	4.1	384	285	147	147	5.5	270	1724	18	
n=			25	25	25	25	27	25	25	23	25	23	25	23	23	24	

Discharge GPS:
Latitude: 19°44'4"N
Longitude: 156° 3'11"W

Seawater Disposal Trench Dimensions
L (ft.) W (ft.) D (ft.)
Leach Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (Kgal/day)	Comment
09/21/11	C2 Disp. Field Access Pt North	No Sample														0	
12/08/11	C2 Disp. Field Access Pt North	No Sample														0	
03/08/12	C2 Disp. Field Access Pt North	No Sample														0	
06/07/12	C2 Disp. Field Access Pt North	1018	8.18	35.38	29.93	5.32	1.5	2.0	96	6	19	7	5.1	6.8	21	62	
08/15/12	C2 Disp. Field Access Pt North	815	8.74	0.71	25.89	6.38	33.7	2.8	1392	1299	174	158	8.0	41.0	20432	27	
11/15/12	C2 Disp. Field Access Pt North	1319	7.84	34.10	21.59	6.71	1.8	2.7	869	686	104	94	8.4	10.3	2480	28	
02/27/13	C2 Disp. Field Access Pt North	1043	8.01	39.60	24.72	5.45	4.6	10.1	721	214	155	72	4.7	3.0	1508	18	
05/30/13	C2 Disp. Field Access Pt North	1050	7.62	34.93	28.50	5.41	3.5	2.0	691	608	104	94	6.6	4.0	2307	30	
09/05/13	C2 Disp. Field Access Pt North	1059	8.31	3.24	35.31	4.39	2.2	3.2	1727	1486	242	235	7.1	40	16898	51	
12/18/13	C2 Disp. Field Access Pt North	1106	7.72	35.12	21.13	7.09	8.7	4.3	632	565	99	95	6.4	3.0	2197	55	
03/06/14	C2 Disp. Field Access Pt North	1104	7.65	34.70	23.64	5.87	3.6	2.0	702	615	95	97	7.4	25.3	2481	44	
06/19/14	C2 Disp. Field Access Pt North	959	7.89	4.35	26.29	5.82	3.7	9.1	1045	139	614	572	1.7	235.4	22988	35	
09/25/14	C2 Disp. Field Access Pt North	1104	7.94	38.55	27.15	5.88	6.8	3.3	1464	257	293	190	5.0	445.5	5906	35	
12/24/14	C2 Disp. Field Access Pt North	925	7.96	26.05	24.38	4.22	1.7	2.0	3823	3381	766	811	5.0	95.4	18605	7	
03/19/15	C2 Disp. Field Access Pt North	1118	7.72	34.57	25.45	6.89	3.3	3.9	586	521	87	90	6.7	12.0	2270	43	
06/04/15	C2 Disp. Field Access Pt North	1146	7.61	34.51	18.82	7.41	3.3	2.2	745	588	83	95	9.0	7.9	2286	25	
09/10/15	C2 Disp. Field Access Pt North	842	7.66	35.01	27.68	6.15	3.7	2.0	738	666	96	90	7.7	2.4	2215	47	
12/16/15	C2 Disp. Field Access Pt North	919	7.91	0.14	24.69	8.24	19.5	17.2	1233	372	79	148	15.6	162.5	1166	33	
02/17/16	C2 Disp. Field Access Pt North	1054	7.74	34.42	21.42	6.54	3.0	3.4	642	598	109	101	5.9	9.5	2242	40	
06/30/16	C2 Disp. Field Access Pt North	921	7.76	34.26	24.63	6.87	3.7	2.0	506	465	82	81	6.2	1.8	2075	47	
09/23/16	C2 Disp. Field Access Pt North	847	7.63	34.72	12.09	9.32	3.3	2.0	1072	972	150	147	7.1	25.2	3863	72	
12/26/16	C2 Disp. Field Access Pt North	1009	7.66	34.66	22.81	5.95	3.4	2.0	609	568	90	90	6.8	12.2	2444	45	
03/09/17	C2 Disp. Field Access Pt North	1024	7.78	35.77	24.31	5.05	7.6	2.2	661	580	109	101	6.1	32.8	2496	31	
05/25/17	C2 Disp. Field Access Pt North	1100	7.69	34.53	17.03	5.71	3.1	2.0	587	565	95	92	6.2	10.6	2349	16	
09/14/17	C2 Disp. Field Access Pt North	1121	7.90	33.97	22.38	6.93	3.6	2.0	587	552	95	90	6.2	29.5	2208	27	
12/12/17	C2 Disp. Field Access Pt North	1107														21	No flow into PBR system
Mean			7.86	28.79	24.08	6.25	5.9	3.8	960	714	170	161	6.8	55	5520	32	
Std. Dev.			0.27	13.11	4.69	1.18	7.3	3.7	737	683	180	181	2.5	105	7005	19	
n=			22	22	22	22	22	22	22	22	22	22	22	22	22	23	

Discharge GPS:
Latitude:
Longitude:

Discharge Trench Dimensions
L (ft) W (ft) D (ft)

% of Facility Total Flow to this Discharge Location:
FW 0% SSW 20% DSW 25%

Date mm/dd/yy	Sample Name	Time 2400	pH unit SM4500-H+	Sal. PSU SM2520-B	Temp. ˚C	DO mg/L SM4500-O G	TSS mg/L <45 mg/L SM2540D	BOD mg/L <30 mg/L SM5210B	Total Nitrogen µg/L SM4500-NO3- F	Nitrate & Nitrite µg/L	Total Phosphorous µg/L SM 4500-P F	Ortho-Phosphate µg/L	N : P	Ammonia µg/L	Silicate µg/L	Avg. Fresh H2O k gal/day	Avg. Daily SSW k gal/day	Avg. Daily DSW k gal/day	Combined H20 k gal/day
03/08/11	Cellana PS-018	1638					12.4	4.0	638		124		5.15			0.0	3.90	0.00	3.9
06/23/11	Cellana PS-019	1845	8.33	34.10	25.10	7.31	30.9	3.6	999		154		6.49			0.0	4.30	0.00	4.3
Mean			8.33	34.10	25.10	7.31	21.65	3.80	818.50	#DIV/0!	139.00	#DIV/0!	5.82	#DIV/0!	#DIV/0!	0.00			
Std. Dev.			#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	13.08	0.28	255.27	#DIV/0!	21.21	#DIV/0!	0.95	#DIV/0!	#DIV/0!	0.00			
n=			1	1	1	1	2	2	2	0	2	0	2	0	0	0			

Discharge GPS:
Latitude:
Longitude:

Discharge Trench Dimensions
L (ft) W (ft) D (ft)

% of Facility Total Flow to this Discharge Location:

FW	SSW	DSW
0%	20%	25%

Date mm/dd/yy	Sample Name	Time 2400	pH unit SM4500-H+	Sal PSU SM2520-B	Temp. ˚C	DO mg/L SM4500-O G	TSS mg/L <45 mg/L SM2540D	BOD mg/L <30 mg/L SM5210B	Total Nitrogen µg/L SM4500-NO3- F	Nitrate & Nitrite µg/L	Total Phosphorous µg/L SM 4500-P F	Ortho-Phosphate µg/L	N : P	Ammonia µg/L	Silicate µg/L	Avg. Fresh H2O k gal/day	Avg. Daily SSW k gal/day	Avg. Daily DSW k gal/day	Combined H20 k gal/day
03/08/11	Cellana SWI-018	1520			33.10		2.1	<2	652		109		5.98			0.0	3.90	0.00	3.9
06/23/11	Cellana SWI-019	1536	8.20	34.40	33.30	7.42	2.5	<2	75		28		2.68			0.0	4.30	0.00	4.3
Mean			8.20	34.40	33.20	7.42	2.32	#DIV/0!	363.50	#DIV/0!	68.50	#DIV/0!	4.33	#DIV/0!	#DIV/0!	0.00			
Std. Dev.			#DIV/0!	#DIV/0!	0.14	#DIV/0!	0.31	#DIV/0!	408.00	#DIV/0!	57.28	#DIV/0!	2.34	#DIV/0!	#DIV/0!	0.00			
n=			1	1	2	1	2	0	2	0	2	0	2	0	0	0			

Discharge GPS:
Latitude:
Longitude:

Discharge Trench Dimensions
L (ft) W (ft) D (ft)

% of Facility Total Flow to this Discharge Location:

FW	SSW	DSW
0%	20%	25%

Date mm/dd/yy	Sample Name	Time 2400	pH unit SM4500-H+	Sal PSU SM2520-B	Temp. ˚C	DO mg/L SM4500-O G	TSS mg/L <45 mg/L SM2540D	BOD mg/L <30 mg/L SM5210B	Total Nitrogen µg/L SM4500-NO3- F	Nitrate & Nitrite µg/L	Total Phosphorous µg/L SM 4500-P F	Ortho-Phosphate µg/L	N : P	Ammonia µg/L	Silicate µg/L	Avg. Fresh H2O k gal/day	Avg. Daily SSW k gal/day	Avg. Daily DSW k gal/day	Combined H20 k gal/day
03/08/11	Cellana CTS-013	1638					14.7	2.7	555		108		5.14			0.0	3.90	0.00	3.9

Discharge GPS:
Latitude:
Longitude:

Discharge Trench Dimensions
L (ft) W (ft) D (ft)

% of Facility Total Flow to this Discharge Location:

FW	SSW	DSW
0%	20%	25%

Date mm/dd/yy	Sample Name	Time 2400	pH unit SM4500-H+	Sal PSU SM2520-B	Temp. ˚C	DO mg/L SM4500-O G	TSS mg/L <45 mg/L SM2540D	BOD mg/L <30 mg/L SM5210B	Total Nitrogen µg/L SM4500-NO3- F	Nitrate & Nitrite µg/L	Total Phosphorous µg/L SM 4500-P F	Ortho-Phosphate µg/L	N : P	Ammonia µg/L	Silicate µg/L	Avg. Fresh H2O k gal/day	Avg. Daily SSW k gal/day	Avg. Daily DSW k gal/day	Combined H20 k gal/day
03/08/11	Cellana SWI-018	1605					3.4	<2	809		148		5.47			0.0	3.90	0.00	3.9
06/23/11	Cellana SWI-019	1220	8.21	34.50	28.90	7.73	3.3	<2	413		55		7.51			0.0	4.30	0.00	4.3

Discharge GPS:
Latitude:
Longitude:

Discharge Trench Dimensions
L (ft) W (ft) D (ft)

% of Facility Total Flow to this Discharge Location:

FW	SSW	DSW
0%	5%	25%

Date mm/dd/yy	Sample Name	Time 2400	pH unit SM4500-H+	Sal PSU SM2520-B	Temp. ˚C	DO mg/L SM4500-O G	TSS mg/L <45 mg/L SM2540D	BOD mg/L <30 mg/L SM5210B	Total Nitrogen µg/L SM4500-NO3- F	Nitrate & Nitrite µg/L	Total Phosphorous µg/L SM 4500-P F	Ortho-Phosphate µg/L	N : P	Ammonia µg/L	Silicate µg/L	Avg. Fresh H2O k gal/day	Avg. Daily SSW k gal/day	Avg. Daily DSW k gal/day	Combined H20 k gal/day
06/23/11	Cellana NHL-006	1605	6.67	0.60	27.30	3.91	11.7	16.7	782		406		1.93			0.0	1.08	0.00	1.1

Discharge GPS:
Latitude:
Longitude:

Discharge Trench Dimensions
L (ft) W (ft) D (ft)

% of Facility Total Flow to this Discharge Location:

FW	SSW	DSW
0%	5%	25%

Date mm/dd/yy	Sample Name	Time 2400	pH unit SM4500-H+	Sal PSU SM2520-B	Temp. ˚C	DO mg/L SM4500-O G	TSS mg/L <45 mg/L SM2540D	BOD mg/L <30 mg/L SM5210B	Total Nitrogen µg/L SM4500-NO3- F	Nitrate & Nitrite µg/L	Total Phosphorous µg/L SM 4500-P F	Ortho-Phosphate µg/L	N : P	Ammonia µg/L	Silicate µg/L	Avg. Fresh H2O k gal/day	Avg. Daily SSW k gal/day	Avg. Daily DSW k gal/day	Combined H20 k gal/day
06/23/11	Cellana FBW-002	1240	8.17	34.50	26.80	8.25	5.9	<2	77		27		2.85			0.0	1.08	0.00	1.1

Cyanotech Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'42.14"N
Longitude: 156° 3'19.30"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/02/11	C1 (seawater removal pump)	1345	6.84	34.18	15.79	7.39	2.5	3.3	909		149		6.1			76	
05/05/11	C1 (seawater removal pump)	903	7.70	34.75	14.35	5.35	4	5.4	997		144		6.9			334	
09/21/11	C1 (seawater removal pump)																Rerouted to SW Sump
Mean			7.27	34.47	15.07	6.37	3.35	4.35	953		147		6.5			205	
Std. Dev.			0.61	0.40	1.02	1.44	1.20	1.48	62		4		0.6			183	
n=			2	2	2	2	2	2	2	0	2	0	2	0	0	2	

Cyanotech Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'34.12"N
Longitude: 156° 3'18.49"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/02/11	Cyanotech #2 Bug Removal															40	No Sample
05/11/11	Cyanotech #2 Bug Removal	1351	6.66	34.17	19.57	6.43	8.2	4.5	1252		193		6.5			170	
09/28/11	Cyanotech #2 Bug Removal	1247	6.36	34.39	15.80	8.04	2.4	5.2	1805		366		4.9			184	
12/07/11	Cyanotech #2 Bug Removal	1330	5.98	33.88	18.68	7.64	62.6	9.9	2721		961		2.8			124	
02/16/12	Cyanotech #2 Bug Removal	1515	6.79	33.52	17.87	7.42	13.0	7.6	2663	2038	534	344	5.0	26	2531	68	
05/30/12	Cyanotech #2 Bug Removal	1226	6.50	34.31	18.02	7.90	4.2	3.8	1206	962	165	140	7.3	38	2445	232	
09/20/12	Cyanotech #2 Bug Removal	1436	7.62	34.44	17.91	7.66	5.3	11.1	1685	1339	228	180	7.4	39	2652	270	
12/05/12	Cyanotech #2 Bug Removal	1329	6.40	33.87	17.26	7.46	4.8	7.9	1386	520	553	438	2.5	267	5927	108	
03/20/13	Cyanotech #2 Bug Removal	1225	7.04	33.60	15.81	10.46	5.6	7.6	1715	1283	223	186	7.7	95	2695	64	
05/30/13	Cyanotech #2 Bug Removal	1311	6.74	34.25	18.92	7.46	8.1	7.5	1982	1265	286	206	6.9	0	2605	247	
09/05/13	Cyanotech #2 Bug Removal	1332	6.19	33.54	21.49	6.13	5.8	13.4	1240	844	211	158	5.9	7	2505	296	
12/18/13	Cyanotech #2 Bug Removal	1407	6.36	35.30	18.04	7.35	54.3	14.6	968	976	428	161	2.3	60	2363	199	
03/06/14	Cyanotech #2 Bug Removal	1355	6.31	34.15	16.79	8.01	21.8	11.8	2528	952	650	149	3.9	63	2447	134	
06/19/14	Cyanotech #2 Bug Removal	1423	6.35	34.24	17.83	7.57	14.7	7.3	1605	694	298	197	5.4	129	3144	291	
10/01/14	Cyanotech #2 Bug Removal	1447	6.48	34.36	19.44	7.40	11.9	5.8	1298	639	179	119	7.2	113	2374	301	
12/24/14	Cyanotech #2 Bug Removal	1337	6.59	34.52	17.28	7.47	36.2	19.0	2350	1100	398	192	5.9	46	2667	301	TSS weight due to bugs
03/16/15	Cyanotech #2 Bug Removal	1337	6.10	34.50	15.86	8.63	20.6	6.8	2071	873	290	163	7.1	54	2245	65	
06/04/15	Cyanotech #2 Bug Removal	1323	6.46	34.11	17.66	8.42	8.5	7.1	909	960	92	145	9.9	129	2294	199	
09/02/15	Cyanotech #2 Bug Removal	1000	8.17	9.99	28.70	0.87	109.6	33.8	6786	232	1505	571	4.5	3165	4038		Invalid sample, lots of algal scum on
09/09/15	Cyanotech #2 Bug Removal	1354	6.22	34.04	18.42	8.41	6.8	8.8	1753	1097	191	131	9.2	197	2414	202	Resample during effluent discharge
12/02/15	Cyanotech #2 Bug Removal	1522	8.88	0.16	29.40	7.13	1.5	2.1	1528	1223	270	235	5.7	165	2988	204	small trickle of discharge
02/24/16	Cyanotech #2 Bug Removal	1414	6.91	33.72	16.87	8.05	26.8	8.6	1798	1054	299	202	6.0	143	2574	218	TSS weight due to bugs
06/08/16	Cyanotech #2 Bug Removal	1350	6.96	33.56	15.45	9.54	8.6	9.6	2288	658	280	141	8.2	29	2695	282	
09/07/16	Cyanotech #2 Bug Removal	1417	7.23	33.66	17.47	8.11	21.8	11.7	4514	1541	1178	224	3.8	261	4231	254	TSS weight due to bugs
11/30/16	Cyanotech #2 Bug Removal	1421	6.42	34.08	17.01	7.30	41.3	18.2	3146	290	391	278	8.0	1886	2781	216	TSS weight due to bugs
03/15/17	Cyanotech #2 Bug Removal	1408	6.59	34.05	18.77	5.47	54.5	8.0	2626	1082	406	188	6.5	316	2500	228	TSS weight due to bugs
05/18/17	Cyanotech #2 Bug Removal	1523	6.65	34.03	18.75	4.87	140.5	14.6	3503	1900	939	628	3.7	443	2779	277	TSS weight due to bugs & algae
08/24/17	Cyanotech #2 Bug Removal	1405	7.56	33.66	17.18	4.97	72.4	12.8	5178	3647	919	663	5.6	7	2313	321	TSS weight due to bugs & algae
12/07/17	Cyanotech #2 Bug Removal	1418	6.45	35.00	14.36	3.87	10.5	4.3	585	810	91	112	6.4	50	2246	221	
03/08/18	Cyanotech #2 Bug Removal	1344	7.75	34.35	9.76	7.97	4.2	2.4	808	611	113	106	7.2	88	2279	227	
06/20/18	Cyanotech #2 Bug Removal	1352	7.30	28.14	14.19	7.90	39.2	17.8	2150	762	695	445	3.1	190	6712	252	
09/26/18	Cyanotech #2 Bug Removal	1417	6.21	33.61	17.30	5.41	12.4	8.6	1054	668	513	417	2.1	149	2637	245	
12/13/18	Cyanotech #2 Bug Removal	1043	7.20	33.90	19.04	6.27	77.4	16.9	3108	2211	863	537	3.6	0	2496	267	TSS weight due to algae
03/07/19	Cyanotech #2 Bug Removal	1335	6.19	34.78	17.83	8.03	8.9	5.8	1031	691	208	146	5.0	86	2430	250	
06/05/19	Cyanotech #2 Bug Removal	1315	6.39	35.33	18.44	8.17	17.1	9.2	1573	742	676	625	2.3	34	2625	208	
09/18/19	Cyanotech #2 Bug Removal	1326	6.63	34.44	17.94	7.96	12.0	7.5	927	704	259	180	3.6	5	2452	153	
11/01/19	Cyanotech #2 Bug Removal	1332	7.37	36.02	18.85	8.39	451.0	23.5	88	1800	3108	545	0.0	399	2311	168	TSS weight due to lots of algae
03/11/20	Cyanotech #2 Bug Removal	1331	6.50	34.98	17.73	7.77	39.6	12.6	1546	825	424	329	3.6	88	2722	87	TSS weight due to bugs & algae
06/18/20	Cyanotech #2 Bug Removal	1344	7.10	18.80	18.91	8.64	36.9	19.0	2469	1216	1083	393	2.3	237	2368	196	
Mean			6.78	32.14	18.07	7.28	39.0	10.7	2049	1092	539	282	5.2	257	2842	204	
Std. Dev.			0.62	7.11	3.24	1.67	75.3	6.3	1296	636	544	172	2.2	598	972	74	
n=			38	38	38	38	38	38	38	35	38	35	37	34	35	38	

Cyanotech Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'29.04"N
Longitude: 156° 3'19.11"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/08/11	Cyanotech #3 (SW Sump)	1405	7.64	34.34	11.58	7.78	2.3	2.0	630		106		5.9			220	
05/05/11	Cyanotech #3 (SW Sump)	903	7.70	34.75	14.35	5.35	3.1	2.0	612		99		6.2			994	
09/01/11	Cyanotech #3 (SW Sump)	919	7.70	34.22	12.69	6.97	3.0	2.0	689	534	110	97	6.3			1436	
12/07/11	Cyanotech #3 (SW Sump)	1031	7.43	29.44	12.41	8.51	8.3	14.2	1338		450		3.0			1122	
02/16/12	Cyanotech #3 (SW Sump)	1518	6.75	32.82	15.05	8.52	6.3	4.0	885	548	152	122	5.8	37	3100	598	
05/30/12	Cyanotech #3 (SW Sump)	1215	7.18	34.01	18.22	7.24	2.6	2.3	750	612	125	119	6.0	23	2564	1877	
08/22/12	Cyanotech #3 (SW Sump)	1324	7.25	27.98	21.42	7.30	5.2	4.8	911	573	168	133	5.4	49	6499	2193	
12/05/12	Cyanotech #3 (SW Sump)	951	7.48	29.83	14.30	7.97	10.3	20.1	1287	1047	185	150	7.0	12	2662	1359	
03/20/13	Cyanotech #3 (SW Sump)	1251	6.92	12.94	19.12	8.49	6.7	6.5	1073	232	312	219	3.4	89	16051	489	
05/30/13	Cyanotech #3 (SW Sump)	1322	6.91	34.82	20.58	5.95	5.1	2.5	749	637	102	91	7.3	0	2405	3203	
09/05/13	Cyanotech #3 (SW Sump)	1336	7.03	25.25	22.42	6.79	6.3	7.0	1005	418	163	100	6.2	17	7418	3853	
12/18/13	Cyanotech #3 (SW Sump)	1420	6.51	27.32	19.19	7.48	6.7	14.2	2174	446	480	390	4.5	46	4934	2567	
03/06/14	Cyanotech #3 (SW Sump)	1346	7.06	25.83	18.27	7.59	5.2	4.8	941	435	177	128	5.3	26	4867	1710	
06/19/14	Cyanotech #3 (SW Sump)	1433	7.19	34.33	20.53	6.23	6.0	4.9	758	583	108	100	7.0	15	3201	3780	
09/24/14	Cyanotech #3 (SW Sump)	1441	7.38	34.17	21.28	6.50	5.0	4.4	855	500	125	72	6.8	7	3112	3913	
12/24/14	Cyanotech #3 (SW Sump)	1337	6.59	34.52	17.28	7.47	9.7	6.2	1063	677	183	147	5.8	72	2974	3913	
03/19/15	Cyanotech #3 (SW Sump)	1345	7.09	34.32	16.53	7.95	4.2	3.7	2280	630	256	116	8.9	27	2314	809	
06/04/15	Cyanotech #3 (SW Sump)	1332	7.24	33.85	15.84	6.73	4.4	4.0	771	618	96	102	8.0	39	2324	2554	
09/02/15	Cyanotech #3 (SW Sump)	1007	7.50	34.02	16.10	7.43	4.4	2.0	772	606	77	131	10.0	56	2484	2606	
12/02/15	Cyanotech #3 (SW Sump)	1528	8.02	34.07	12.21	6.78	2.9	2.0	654	626	100	97	6.5	5	2368	2632	
02/24/16	Cyanotech #3 (SW Sump)	1420	7.34	27.85	17.05	6.35	16.6	16.0	1096	520	328	206	3.3	4	6121	2817	
06/08/16	Cyanotech #3 (SW Sump)	1356	7.32	27.34	15.67	7.37	23.4	5.9	1222	491	247	175	4.9	81	6426	3658	
09/07/16	Cyanotech #3 (SW Sump)	1423	7.69	22.90	16.65	5.68	19.2	18.1	2063	644	436	193	4.7	9	14219	3291	
11/30/16	Cyanotech #3 (SW Sump)	1425	7.20	33.39	13.24	7.49	6.4	2.4	715	521	111	129	6.5	171	2797	2789	
03/15/17	Cyanotech #3 (SW Sump)	1417	7.60	33.64	14.58	4.73	11.0	2.0	638	502	118	93	5.4	8	2747	2954	
05/18/17	Cyanotech #3 (SW Sump)	1534	7.56	28.85	16.18	3.86	20.9	16.4	761	462	162	183	4.7	171	5323	3604	
08/24/17	Cyanotech #3 (SW Sump)	1412	7.47	34.50	11.96	4.52	4.1	2.0	619	564	99	92	6.3	22	2370	4177	
12/07/17	Cyanotech #3 (SW Sump)	1423	7.61	35.11	12.09	3.26	4.9	2.1	1138	553	157	85	7.2	2	2264	2865	
03/01/18	Cyanotech #3 (SW Sump)	1428	7.63	33.79	12.63	5.77	8.2	3.9	724	598	200	131	3.6	41	2723	2944	
06/20/18	Cyanotech #3 (SW Sump)	1359	7.16	32.96	14.04	6.01	14.8	6.2	809	553	257	202	3.1	3	3546	3258	
09/26/18	Cyanotech #3 (SW Sump)	1422	7.48	34.56	13.90	5.18	3.6	2.3	638	553	87	79	7.3	20	2360	3166	
12/12/18	Cyanotech #3 (SW Sump)	1403	7.52	29.41	13.25	3.68	38.0	21.7	1107	325	308	66	3.6	17	7031	3479	
03/07/19	Cyanotech #3 (SW Sump)	1341	7.30	34.67	11.45	7.28	14.5	2.6	1102	960	233	177	4.7	5	2739	3252	
06/05/19	Cyanotech #3 (SW Sump)	1320	7.51	34.80	11.25	9.06	3.9	2.2	657	520	113	94	5.8	24	2735	2700	
09/18/19	Cyanotech #3 (SW Sump)	1332	7.57	34.42	13.65	7.65	2.5	2.0	689	646	112	105	6.1	7	2498	1960	
11/01/19	Cyanotech #3 (SW Sump)	1337	7.53	36.06	14.28	7.78	3.2	2.0	593	573	62	78	9.6	-7	2254	2165	
03/11/20	Cyanotech #3 (SW Sump)	1347	7.33	34.46	14.45	7.38	5.2	2.7	1681	1512	309	291	5.4	119	3173	1091	
06/18/20	Cyanotech #3 (SW Sump)	1348	7.53	20.25	15.93	6.50	1.7	2.0	575	568	107	89	5.4	-5	2190	2538	
Mean			7.34	31.36	15.57	6.70	8.2	6.0	974	594	185	137	5.9	36	4200	2488	
Std. Dev.			0.32	4.92	3.09	1.40	7.3	5.8	433	214	108	67	1.7	45	3187	1079	
n=			38	38	38	38	38	38	38	35	38	35	38	31	34	38	

Discharge GPS:
Latitude: 19°43'28.89"N
Longitude: 156° 3'16.22"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)
Trickle Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/08/11	Cyano #4 Trickle Field	1616	7.67	34.44	18.08	6.18	1.8	2.0	604		97		6.2			148	
05/05/11	Cyano #4 Trickle Field	928	7.74	34.33	17.58	6.66	3.5	2.0	649		88		7.4			664	
09/01/11	Cyano #4 Trickle Field	929	7.72	34.43	17.42	6.74	2.1	2.0	619	532.2	82	80.8	7.5			718	
12/07/11	Cyano #4 Trickle Field	1041	7.49	34.20	16.64	6.60	1.3	2.0	651		87		7.5			461	
02/16/12	Cyano #4 Trickle Field	1522	7.6	34.52	33.66	4.05	1.0	2	665	589	93	85	7.2	9	2357	247	
05/30/12	Cyano #4 Trickle Field																Rerouted to SW Sump
Mean			7.64	34.38	20.68	6.05	1.91	2.00	638	561	89	83	7.2	9	2357	448	
Std. Dev.			0.10	0.12	7.28	1.14	0.97	0	25	40	6	3	0.5			250	
n=			5	5	5	5	4	5	5	2	5	2	5	1	1	5	

Discharge GPS:
Latitude: 19°43'33.30"N
Longitude: 156° 3'20.02"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)
Leach Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/30/11	Cyano #5 (Leach Field)	800	7.67	34.57	15.97	3.57	2.3	2.0	633		96		6.6			252	
05/05/11	Cyano #5 (Leach Field)	916	7.58	34.76	12.90	1.78	2.5	2.0	662		97		6.8			1153	
09/01/11	Cyano #5 (Leach Field)	857	7.64	34.34	15.84	1.54	1.7	2.0	643	575	93	89	6.9			1247	
12/07/11	Cyano #5 (Leach Field)															0	No sample, no cooling water during winter months
02/16/12	Cyano #5 (Leach Field)															0	No sample, no cooling water during winter months
05/30/12	Cyano #5 (Leach Field)	1230	7.57	34.31	19.90	2.31	0.9	2.0	666	623	101	100	6.6	1.5	2479	1123	
09/20/12	Cyano #5 (Leach Field)	1439	7.40	34.66	23.29	1.93	2.3	2.0	708	600	109	98	6.5	0.3	2549	1314	
12/05/12	Cyano #5 (Leach Field)															0	No sample, no cooling water during winter months
03/20/13	Cyano #5 (Leach Field)	1231	7.73	0.67	26.78	6.19	37.2	18.7	2023	34	1119	875	1.8	177	16290	287	
05/30/13	Cyano #5 (Leach Field)																Rerouted to SW Sump
Mean			7.60	28.89	19.11	2.89	7.8	4.8	889	458	269	290	5.9	59.4	7106	597	
Std. Dev.			0.11	13.82	5.22	1.77	14.4	6.8	556	283	416	390	2.0	101.4	7954	592	
n=			6	5	6	6	5	6	6	4	6	4	6	2	3	6	

Destiny Deep Sea Water, LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'00.0"N
Longitude: 156°02'13"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	8	7.9

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	Destiny #1	816	8.16	53.58	22.19	5.00	3.8	2.0	1042		176		5.9			0.3	
05/19/11	Destiny #1	819	7.64	54.79	22.82	4.73	3.8	2.0	1026		168		6.1			0.2	
08/24/11	Destiny #1	923	7.53	53.80	17.17	7.00	4.0	2.0	999		160		6.2			0.3	
12/08/11	Destiny #1	1021	7.58	53.97	13.50	7.38	0.9	2.0	994		155		6.4			0.2	
03/01/12	Destiny #1	1000	7.57	53.67	15.66	6.86	3.5	2.0	1010	1075	157	159	6.4	31	4356	0.2	
05/23/12	Destiny #1	1005	7.90	53.60	28.40	4.60	2.4	2.0	1041	961	165	166	6.3	14	4705	0.2	
09/20/12	Destiny #1															0.0	No Discharge (Facility not in operation)
12/05/12	Destiny #1															0.0	No Discharge (Facility not in operation)
03/21/13	Destiny #1															0.0	No Discharge (Facility not in operation)
05/16/13	Destiny #1	949	7.20	37.83	27.50	4.36	1.9	2.0	627	543	252	234	2.5	1	12356	0.1	
09/04/13	Destiny #1	951	7.29	35.05	29.91	2.05	2.5	2.0	567	510	154	156	3.7	6.7	8408	0.1	
12/11/13	Destiny #1															0.0	No discharge-preform production only
02/26/14	Destiny #1															0.1	No discharge-preform production only
06/25/14	Destiny #1															0.2	No discharge-preform production only
09/24/14	Destiny #1															0.2	No discharge-preform production only
12/17/14	Destiny #1															0.3	No discharge-preform production only
03/18/15	Destiny #1															0.4	No discharge-preform production only
06/22/15	Destiny #1															0.1	No discharge-preform production only
09/09/15	Destiny #1															0.1	No discharge-preform production only
12/04/15	Destiny #1															0.1	No discharge-preform production only
02/24/16	Destiny #1															0.1	No discharge-preform production only
06/08/16	Destiny #1															0.3	No discharge-preform production only
09/07/16	Destiny #1															0.5	No discharge-preform production only
11/30/16	Destiny #1															0.1	No discharge-preform production only
03/15/17	Destiny #1															0.2	No discharge-preform production only
06/01/17	Destiny #1															3.6	No discharge-preform production only
08/30/17	Destiny #1															9.3	No discharge-preform production only
12/07/17	Destiny #1															0.7	No discharge-preform production only
03/14/18	Destiny #1															0.7	No discharge-preform production only
Mean			7.61	49.54	22.14	5.25	2.85	2.00	913	772	173	179	5.5	13	7456	0.6	
Std. Dev.			0.31	8.13	6.21	1.77	1.10	0.00	197	288	33	37	1.5	13	3746	2	
n=			8	8	8	8	7	8	8	4	8	4	8	4	4	29	

Dew Point Systems Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'42.78"N
Longitude: 156° 3'31.18"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)
Leach Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
09/18/13	DPS #1	1015	7.54	34.66	10.51	4.49	3.1	2.0	603	566	90	87	6.7	7	2243	0.1	
12/18/13	DPS #1	1142	7.59	34.66	13.31	5.81	1.9	2.0	614	593	103	97	5.9	2	2391	0.1	
Mean			7.57	34.66	11.91	5.15	2.5	2.0	608	579	96	92	6.3	4	2317	0	
Std. Dev.			0.04	0.00	1.98	0.93	0.8	0.0	8	19	10	7	0.6	4	105	0	
n=			2	2	2	2	2	2	2	2	2	2	2	2	2	0	

Discharge GPS:
Latitude: 19°42'56.45"N
Longitude: 156° 2'20.23"W

Seawater Disposal Trench

L (ft)	W (ft)	D (ft)
37	8	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/17/11	HDM #1	1047	7.54	53.14	12.35	4.16	3.9	2.0	986		165		6.0			67	
05/18/11	HDM #1	1055	7.61	52.95	9.36	8.29	3.8	2.0	1007		155		6.5			67	
08/24/11	HDM #1	1000	7.54	52.89	11.75	4.30	3.0	2.0	960		161		6.0			59	
12/14/11	HDM #1	1035	7.56	52.47	11.11	7.17	1.4	2.0	951		141		6.7			62	
03/07/12	HDM #1	945	7.58	53.58	9.89	7.89	2.9	2.0	990	905	158	152	6.3	14.0	4165	80	
05/23/12	HDM #1	1031	7.56	52.21	8.92	7.83	2.8	2.0	1026	957	158	165	6.5	14.0	4095	89	
08/16/12	HDM #1	1057	7.67	29.43	10.21	8.00	1.6	2.0	498	458	77	72	6.5	10.0	2288	87	
11/15/12	HDM #1	958	7.50	43.51	11.28	7.82	3.1	2.0	1196	894	138	137	8.7	2.4	3959	77	
02/21/13	HDM #1	1100	7.46	39.42	11.79	8.50	2.9	2.0	872	837	128	129	6.8	2.4	3845	93	
05/16/13	HDM #1	1032	7.55	44.38	15.95	6.71	5.3	2.0	791	762	100	107	7.9	1.0	3492	86	
09/04/13	HDM #1	1046	7.52	53.64	9.77	9.37	2.9	2.0	999	981	160	164	6.2	43.0	4251	85	
12/11/13	HDM #1	1034	7.40	40.11	9.10	7.01	2.4	2.0	759	704	134	121	5.7	30.0	3211	84	
03/06/14	HDM #1	1331	6.96	31.56	13.19	7.91	4.1	2.0	680	641	94	103	7.2	40.8	2881	93	
06/25/14	HDM #1	1016	7.40	50.01	11.28	6.73	4.8	2.0	931	884	148	147	6.3	2.3	5811	86	
10/01/14	HDM #1	1121	7.42	52.64	17.25	10.43	4.8	2.0	979	935	157	160	6.2	29.0	5735	84	
01/07/15	HDM #1	1100	7.56	37.12	18.94	6.36	3.2	2.0	771	744	116	116	6.7	3.7	3434	85	
03/19/15	HDM #1	1023	7.30	53.38	8.86	8.22	4.5	2.0	981	983	139	167	7.1	21.8	4452	93	
06/26/15	HDM #1	1018	7.53	42.42	9.27	7.63	4.2	2.3	976	967	108	139	9.0	2.1	4152	86	
09/09/15	HDM #1	911	7.47	35.69	18.37	7.34	2.3	2.0	751	709	187	116	4.0	1.9	3028	85	
12/03/15	HDM #1	1138	7.67	41.31	9.80	6.80	5.0	2.0	868	772	123	122	7.1	7.0	3361	86	
02/24/16	HDM #1	958	7.62	38.20	13.88	7.32	3.7	2.0	804	723	145	143	5.6	12.1	3192	85	
06/08/16	HDM #1	942	7.50	42.99	15.57	6.84	4.5	2.0	796	787	118	117	6.7	3.0	3934	86	
09/08/16	HDM #1	912	7.75	35.59	13.87	6.93	4.4	2.0	1296	1116	168	162	7.7	27.9	5148	84	
11/30/16	HDM #1	1000	7.46	34.67	8.52	7.48	3.8	2.0	623	575	94	88	6.6	44.4	2844	83	
03/22/17	HDM #1	909	7.51	33.76	8.87	8.54	4.1	2.0	586	577	94	90	6.2	7.7	2835	89	
06/01/17	HDM #1															60	HDM no longer in business
Mean			7.51	43.88	11.97	7.42	3.6	2.0	883	805	135	129	6.6	15.3	3815	81	
Std. Dev.			0.15	8.14	3.14	1.32	1.0	0.1	182	164	28	28	1.0	14.8	931	10	
n=			25	25	25	25	25	25	25	21	25	21	25	21	21	26	

Indo-Pacific Sea Farms Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'43.28"N
Longitude: 156° 3'26.98"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
12	8	6

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/17/11	IPSF #1	1005	7.86	35.54	19.40	6.23	2.9	2.0	327		64		5.1			67.7	
06/09/11	IPSF #1	852	7.92	34.54	18.22	6.18	4.5	2.0	341		65		5.2			69.5	
09/22/11	IPSF #1	932	7.89	34.58	20.55	6.36	5.1	2.0	288		54		5.3			80.4	
12/15/11	IPSF #1	950	7.92	34.60	19.04	6.95	3.9	2.0	376		48		7.8			67.8	
03/08/12	IPSF #1	1035	8.09	34.97	21.07	6.12	1.8	2.0	306	151	58	40	5.3	29	717	67.7	
05/31/12	IPSF #1	901	8.00	34.77	19.83	7.33	3.6	2.0	424	122	53	33	8.0	25	817	70.8	
09/13/12	IPSF #1	1111	8.09	35.00	22.17	6.88	3.2	2.0	387	117	55	34	7.0	26	877	67.7	
12/13/12	IPSF #1	906	7.91	35.04	19.63	7.43	3.3	2.0	342	165	49	31	7.0	47	837	65.7	
03/21/13	IPSF #1	931	7.90	34.37	19.46	8.25	3.3	2.0	285	167	58	45	4.9	40	980	67.7	
05/30/13	IPSF #1	1114	8.19	35.06	23.08	6.72	3.4	2.0	308	114	59	37	5.2	26	845	67.7	
09/05/13	IPSF #1	1011	8.05	34.67	22.16	6.50	3.1	2.0	283	121	54	35	5.2	23	939	67.7	
12/18/13	IPSF #1	1034	7.98	34.89	19.14	6.91	2.5	2.3	362	228	68	51	5.3	31	1165	67.7	
03/06/14	IPSF #1	1004	8.06	34.77	21.40	8.06	4.8	2.0	311	98	53	31	5.9	37	608	71.7	
06/26/14	IPSF #1	1011	8.08	34.83	21.32	6.52	3.5	4.0	339	151	46	35	7.3	32	1073	67.7	
09/25/14	IPSF #1	1001	8.02	34.96	25.26	4.45	4.4	2.2	523	149	56	14	9.4	51	747	67.7	
12/24/14	IPSF #1	945	7.93	34.98	21.80	4.61	2.7	2.0	567	187	62	50	9.1	37	657	70.6	
03/19/15	IPSF #1	958	7.98	34.62	22.02	7.22	4.5	2.0	276	66	35	26	7.9	38	350	68.5	
06/25/15	IPSF #1	1000	8.01	34.44	21.94	5.52	4.5	2.0	375	175	21	40	17.6	30	753	67.7	
09/10/15	IPSF #1	856	7.87	34.70	23.54	7.06	5.7	2.0	468	211	29	35	16.0	25	893	67.7	
12/03/15	IPSF #1	1114	8.14	34.58	22.07	5.80	4.5	2.0	226	147	42	30	5.4	6	726	67.7	
02/25/16	IPSF #1	932	8.19	34.73	21.35	6.91	4.4	2.0	279	99	55	41	5.1	16	565	67.7	
06/02/16	IPSF #1	822	8.01	34.71	21.86	6.86	4.3	2.0	201	93	40	29	5.0	6	709	66.9	
09/08/16	IPSF #1	842	8.12	34.63	20.08	6.56	4.3	2.0	517	352	90	75	5.7	30	1909	67.0	
12/01/16	IPSF #1	922	7.96	34.64	19.94	7.07	6.2	2.0	317	201	57	45	5.6	58	971	67.0	
03/16/17	IPSF #1	840	7.72	34.65	21.33	6.04	4.9	2.0	370	115	74	52	5.0	165	626	66.9	
05/25/17	IPSF #1	905	7.85	34.61	21.80	4.37	15.8	2.2	560	107	111	74	5.0	187	651	67.7	
08/31/17	IPSF #1	849	7.79	34.71	22.62	5.29	5.4	2.0	559	135	110	86	5.1	291	811	68.5	
12/07/17	IPSF #1	951	7.82	34.98	21.04	3.34	5.9	2.0	525	148	97	81	5.4	460	707	67.7	
03/15/18	IPSF #1	1027	7.81	34.71	21.33	4.10	4.6	2.0	446	111	81	59	5.5	217	551	67.7	
06/21/18	IPSF #1	1002	7.89	35.34	22.21	5.41	5.6	2.0	393	141	67	54	5.9	146	693	67.7	
09/20/18	IPSF #1	1011	7.84	34.48	22.54	5.98	5.2	2.0	259	135	43	29	6.1	50	824	67.7	
12/13/18	IPSF #1	1017	8.06	34.89	20.28	5.72	11.7	2.0	273	169	51	41	5.4	41	784	67.0	
03/07/19	IPSF #1	1000	7.79	35.21	20.07	6.57	6.7	2.0	464	148	73	52	6.4	137	813	67.7	
06/13/19	IPSF #1	908	7.89	34.82	20.79	6.10	4.9	2.0	425	148	79	57	5.4	167	898	67.7	
09/19/19	IPSF #1	835	7.91	34.75	22.03	6.50	3.1	2.0	330	196	66	52	5.0	63	1049	67.7	
11/07/19	IPSF #1	939	7.91	35.05	21.28	6.81	4.2	2.0	385	224	179	49	2.2	63	973	67.7	
03/12/20	IPSF #1	914	7.90	35.57	18.39	7.32	4.7	2.0	420	223	72	55	5.8	92	958	67.7	
06/18/20	IPSF #1	945	7.89	36.75	23.05	5.85	4.6	2.0	347	170	63	48	5.5	120	911	57.7	
Mean			7.95	34.87	21.19	6.26	4.8	2.1	373	155	64	45	6.5	83	835	68	
Std. Dev.			0.12	0.42	1.48	1.06	2.4	0.3	96	53	27	16	2.8	95	253	3	
n=			38	38	38	38	38	38	38	34	38	34	38	34	34	38	

Kanaloa Octupus Farm (former Kona Clams Sump) Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'41.25"N
Longitude: 156° 3'34.16"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
0	0	0

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
02/29/12	Kona Clams	815	8.04	35.24	23.58	6.16	3.0	2.0	94	3	18	2.5	5.2	2.0	17	0.03	
05/30/12	Kona Clams	914	8.28	34.93	25.14	5.75	1.6	2.0	184	7	20	7	9.2	2.8	47	0.03	
08/23/12	Kona Clams	834	8.13	35.30	25.61	6.31	2.8	2.0	71	3	13	0	5.5	2.8	55	74	
11/21/12	Kona Clams	816	6.85	35.36	24.31	6.21	5.2	2.0	198	3	10	0	19.8	6.2	20	105	
03/20/13	Kona Clams	804	8.20	35.23	23.11	6.55	1.8	2.0	215	37	47	19	4.6	15.4	69	32	
05/30/13	Kona Clams	813	8.06	34.90	26.82	8.30	2.7	2.0	222	15	26	6	8.5	8.3	26	35	
09/05/13	Kona Clams	807	7.98	34.59	25.58	5.41	5.3	4.1	127	2	38	25	3.3	7.6	54	26	
12/18/13	Kona Clams															26	No Sample
03/06/14	Kona Clams	816	7.30	34.20	22.29	6.40	3.1	2.0	178	1	31	6	5.8	8.0	17	64	
																	Terminated lease
09/14/17	Kanaloa Octopus Farm	1103	8.11	34.66	28.49	5.08	3.4	2.5	98	2	17	7	5.9	39.6	55	28	(from tea-house)
11/02/17	Kanaloa Octopus Farm	910	8.06	34.98	24.69	5.06	4.0	2.0	220	100	33	16	6.7	19.2	384	29	
03/01/18	Kanaloa Octopus Farm	1138	8.13	34.65	23.53	5.24	4.1	2.0	221	109	36	26	6.2	86.4	547	29	
06/07/18	Kanaloa Octopus Farm	918	8.06	34.46	24.43	5.20	6.3	2.2	205	57	73	52	2.8	34.6	384	29	
09/10/18	Kanaloa Octopus Farm	1133	8.09	34.71	25.82	5.90	14.2	2.0	253	103	31	12	8.1	73.7	438	20	
11/09/18	Kanaloa Octopus Farm	857	8.07	34.91	24.75	5.80	4.6	2.1	229	98	34	15	6.7	44.7	380	17	
02/15/19	Kanaloa Octopus Farm	1419	8.16	35.07	22.94	6.14	3.8	2.4	255	88	35	22	7.3	94.4	378	22	
05/24/19	Kanaloa Octopus Farm	1325	8.14	35.56	27.61	3.91	4.4	2.0	205	45	25	15	8.1	101.9	278	22	
09/12/19	Kanaloa Octopus Farm	1143	8.08	34.78	26.45	6.36	4.4	2.0	167	72	33	19	5.1	30.1	314	24	
10/23/19	Kanaloa Octopus Farm	1353	8.10	35.95	25.86	6.21	1.9	2.0	258	129	47	38	5.6	2.4	623	34	
03/06/20	Kanaloa Octopus Farm	848	8.07	35.09	23.60	5.83	4.2	3.1	232	37	43	28	5.4	91.1	239	32	
06/12/20	Kanaloa Octopus Farm	858	8.11	36.11	24.70	5.56	2.6	2.1	197	67	21	20	9.3	32.6	296	28	
Mean			8.10	35.08	25.24	5.52	4.8	2.2	212	76	36	23	6.4	54	360	26	
Std. Dev.			0.03	0.53	1.67	0.68	3.1	0.3	45	36	14	12	1.7	33	145	5	
n=			12	12	12	12	12	12	12	12	12	12	12	12	12	12	

Kona Coast Shell Fish LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'38"N
Longitude: 156° 3'26"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
91	20	12

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/20/10	KCSF Effluent Trench	1040	8.14				1.4	2.0	500		81		6.2			932	
02/09/11	KCSF Effluent Trench	1052	8.24	34.95	24.55	6.98	7.5	2.0	397		66		6.0			751	
05/18/11	KCSF Effluent Trench	1012	8.13	34.63	17.04	8.03	2.3	2.0	278		48		5.8			820	
09/14/11	KCSF Effluent Trench	941	8.05	34.55	22.36	6.76	2.3	2.0	203		38		5.3			300	
12/01/11	KCSF Effluent Trench	1003	8.22	34.81	18.16	7.80	1.8	2.0	375		45		8.3			310	
02/29/12	KCSF Effluent Trench	930	7.92	34.66	15.40	8.22	16.1	2.3	580	407	91	70	6.4	5.0	1625	630	
05/23/12	KCSF Effluent Trench	914	7.92	34.52	15.14	8.03	1.9	2.0	464	303	69	55	6.7	3.4	1201	725	
08/09/12	KCSF Effluent Trench	810	7.80	34.82	15.19	7.15	2.6	2.0	408	363	59	58	6.9	7.0	1460	702	
11/15/12	KCSF Effluent Trench	855	7.83	34.77	11.75	8.56	1.4	2.0	537	393	69	60	7.8	7.4	1410	737	
02/20/13	KCSF Effluent Trench	1057	7.79	34.88	14.62	9.43	2.4	2.0	427	320	67	58	6.4	3.2	1376	815	
05/15/13	KCSF Effluent Trench	1009	8.01	34.87	14.91	8.34	5.9	2.5	471	338	78	65	6.0	16.4	1413	803	
08/28/13	KCSF Effluent Trench	1002	8.02	34.32	17.76	9.58	3.8	2.6	458	370	88	87	5.2	8.8	1379	757	
12/12/13	KCSF Effluent Trench	1044	8.04	34.88	19.51	6.34	3.2	2.0	194	110	32	26	6.1	7.7	518	642	
03/05/14	KCSF Effluent Trench	928	8.18	34.55	15.66	7.88	7.6	2.0	230	154	47	40	4.9	12.7	770	720	
06/26/14	KCSF Effluent Trench	1000	7.98	34.82	18.21	7.41	2.8	4.1	315	239	53	49	6.0	6.2	1407	760	
09/04/14	KCSF Effluent Trench	942	8.14	34.84	22.07	7.30	3.1	2.0	226	94	47	52	4.8	41.7	473	729	
12/18/14	KCSF Effluent Trench	1105	7.96	35.13	18.19	8.44	1.4	2.0	413	286	77	60	5.4	7.5	1021	782	
03/12/15	KCSF Effluent Trench	1009	7.88	34.28	16.63	7.20	2.8	2.0	827	627	184	162	4.5	100.0	2810	811	
06/18/15	KCSF Effluent Trench	1035	8.01	34.57	16.20	7.34	5.2	2.0	503	281	43	53	11.6	18.4	999	844	
09/02/15	KCSF Effluent Trench	912	7.90	34.55	15.24	9.27	6.7	2.0	480	348	64	63	7.5	28.8	1283	785	
12/03/15	KCSF Effluent Trench	1150	8.31	34.73	13.25	7.56	6.6	2.0	375	259	49	43	7.6	7.4	922	752	
02/17/16	KCSF Effluent Trench	1000	8.09	34.48	19.63	7.10	5.9	2.2	1253	1133	236	249	5.3	33.0	1865	698	
06/02/16	KCSF Effluent Trench	938	8.05	34.61	19.43	7.56	6.0	2.0	1249	1176	306	255	4.1	38.0	2022	653	
09/01/16	KCSF Effluent Trench	953	8.38	34.22	21.46	7.63	7.6	2.0	774	516	89	81	8.7	15.9	2224	532	
12/01/16	KCSF Effluent Trench	1038	8.01	34.17	17.30	7.58	6.6	2.0	478	372	92	81	5.2	61.8	1634	633	
03/15/17	KCSF Effluent Trench	822	8.17	34.42	16.57	6.81	4.3	2.0	636	470	109	97	5.8	54.3	1221	697	
06/01/17	KCSF Effluent Trench	823	7.87	34.30	18.21	6.54	13.6	2.0	571	391	133	110	4.3	11.0	1505	673	
08/30/17	KCSF Effluent Trench	824	8.10	34.21	16.40	7.38	5.3	2.0	446	225	59	50	7.6	44.3	1004	542	
12/07/17	KCSF Effluent Trench	1008	8.04	34.22	14.80	5.00	5.8	2.0	543	411	91	71	6.0	80.3	1753	523	
03/01/18	KCSF Effluent Trench	1109	7.59	34.44	8.09	9.68	4.2	2.0	566	569	99	92	5.7	23.6	2232	665	
06/14/18	KCSF Effluent Trench	1040	7.90	33.98	18.55	7.14	11.1	2.0	559	464	101	88	5.5	71.2	2338	604	tarp covering trench is 1/2 gone
09/20/18	KCSF Effluent Trench	852	7.83	33.37	19.46	6.72	4.3	2.0	752	644	130	123	5.8	46.6	1916	616	
12/12/18	KCSF Effluent Trench	941	7.89	34.77	16.50	5.46	6.9	2.0	602	428	102	67	5.9	3.3	1711	522	
03/01/19	KCSF Effluent Trench	1022	8.01	34.44	17.61	8.60	16.0	3.6	572	430	120	87	4.8	55.1	1420	551	
05/24/19	KCSF Effluent Trench	1124	8.09	35.70	21.57	7.73	7.0	2.0	359	194	71	49	5.0	59.7	1057	448	
09/18/19	KCSF Effluent Trench	1424	8.29	35.21	23.01	9.64	7.8	2.0	256	149	49	32	5.2	5.0	678	520	
11/01/19	KCSF Effluent Trench	930	8.06	33.86	17.20	9.07	5.7	2.0	458	354	59	53	7.7	48.3	1995	565	
03/11/20	KCSF Effluent Trench	905	7.85	35.90	13.80	8.04	5.5	2.0	448	388	77	69	5.9	44.0	1302	507	tarp covering trench has been fixed
06/18/20	KCSF Effluent Trench															158	Facility Shut Down
Mean			8.02	34.61	17.34	7.71	5.6	2.1	505	400	87	80	6.2	30	1453	646	
Std. Dev.			0.16	0.46	3.25	1.08	3.7	0.4	232	236	54	52	1.4	26	535	160	
n=			38	37	37	37	38	38	38	33	38	33	38	33	33	39	

Discharge GPS:
Latitude: 19°42'50.72"N
Longitude: 156° 2'6.35"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	8	7

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/09/11	KSP #1 Maintance Cooling	900	7.45	34.99	15.77	5.12	2.4	2.0	670		108		6.2			0.5	
06/08/11	KSP #1 Maintance Cooling	848	7.53	34.55	10.40	5.14	2.7	2.0	607		92		6.6			0.5	
08/24/11	KSP #1 Maintance Cooling	1131	7.64	34.45	13.68	6.93	1.5	2.0	629		96		6.6			0.8	
12/08/11	KSP #1 Maintance Cooling	813	7.53	34.30	14.87	3.28	0.7	2.0	675		87		7.8			0.5	
03/01/12	KSP #1 Maintance Cooling	730	7.70	31.32	22.34	4.03	2.1	2.0	608	590	85	83	7.2	5.0	2877	1.0	
06/07/12	KSP #1 Maintance Cooling	945	7.64	34.27	29.96	3.46	2.4	2.0	645	615	92	58	7.0	5.0	2921	0.4	
08/09/12	KSP #1 Maintance Cooling	930	7.61	34.52	15.96	5.98	2.2	2.0	657	605	92	84	7.1	1.0	2936	1.0	
11/21/12	KSP #1 Maintance Cooling	920	7.58	34.60	23.46	4.60	1.4	2.0	908	641	103	99	8.8	4.0	3004	0.8	
02/21/13	KSP #1 Maintance Cooling	834	7.44	34.35	17.72	5.81	2.5	2.0	619	608	94	95	6.6	5.2	2888	0.7	
05/16/13	KSP #1 Maintance Cooling	932	7.52	34.51	7.95	2.39	5.1	2.0	662	597	141	69	4.7	2.5	2784	0.9	
09/04/13	KSP #1 Maintance Cooling	929	7.20	34.33	27.39	3.16	6.1	2.0	185	0	62	79	3.0	91.0	3369	0.0	
12/11/13	KSP #1 Maintance Cooling															0.0	Plant Shut Down (Bankruptcy)
02/26/14	KSP #1 Maintance Cooling															0.0	Plant Shut Down (Bankruptcy)
Mean			7.53	34.20	18.14	4.54	2.6	2.0	624	522	96	81	6.5	16.2	2968	0.6	
Std. Dev.			0.14	0.98	6.90	1.40	1.6	0.0	168	231	19	14	1.5	33.0	189	0.4	
n=			11	11	11	11	10	11	11	6	11	7	11	6	7	10	

Discharge GPS:
12 19°42'50.84"N
Longitude: 156° 2'5.45"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	8	7

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/09/11	KSP #2 Power Cooling	925	7.51	34.43	9.20	6.00	2.4	2.0	685		106		6.5			50.0	
06/08/11	KSP #2 Power Cooling	835	7.57	34.54	18.10	6.07	1.7	2.0	620		96		6.5			49.9	
08/24/11	KSP #2 Power Cooling	1147	7.64	34.70	31.64	2.40	1.9	2.0	643		98		6.6			76.8	
12/08/11	KSP #2 Power Cooling	833	7.57	34.20	8.36	1.71	0.2	2.0	639		93		6.9			53.9	
03/01/12	KSP #2 Power Cooling	805	7.56	34.39	8.71	2.80	0.9	2.0	635	620	89	96	7.1	15.0	2862	95.1	
06/07/12	KSP #2 Power Cooling	935	7.56	34.43	16.61	6.42	2.0	2.0	636	628	103	104	6.2	2.1	2966	44.2	
08/09/12	KSP #2 Power Cooling	921	7.52	34.78	14.79	3.45	9.2	2.0	1104	604	158	88	7.0	5.9	2907	98.4	
11/21/12	KSP #2 Power Cooling	911	7.52	34.42	8.74	6.93	2.6	2.0	728	676	99	98	7.4	2.0	2884	75.4	
02/21/13	KSP #2 Power Cooling	823	7.87	34.64	18.50	5.43	1.6	2.0	631	607	90	93	7.0	3.9	2882	70.1	
05/16/13	KSP #2 Power Cooling	920	7.57	34.73	19.58	6.92	2.7	2.0	648	595	119	78	5.4	9.3	2793	88.5	
09/04/13	KSP #2 Power Cooling	925	7.30	34.65	27.72	1.68	3.1	2.0	384	280	101	106	3.8	61.5	2966	0.0	
12/11/13	KSP #2 Power Cooling																Plant Shut Down (Bankruptcy)
Mean			7.56	34.54	16.54	4.53	2.6	2.0	668	573	105	95	6.4	14.2	2894	63.9	
Std. Dev.			0.13	0.18	7.84	2.13	2.4	0.0	168	132	20	9	1.0	21.3	61	28.4	
n=			11	11	11	11	9	11	11	7	11	7	11	7	7	11	

Discharge GPS:
Latitude: 19°43'28"N
Longitude: 156° 3'22"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
150	8	3.5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/16/11	KOF #1	1049	7.49	22.10	22.01	6.37	5.0	2.0	1149		161		7.1			79	
06/01/11	KOF#1	758	7.60	25.30	18.90	7.11	2.4	2.0	995		129		7.7			100	
09/14/11	KOF#1	1019	7.63	25.11	18.92	8.33	2.8	2.0	889		112		7.9			41	
12/14/11	KOF#1	837	7.47	23.59	18.77	7.79	1.4	2.0	1311		124		10.6			8	
02/16/12	KOF#1	900	8.07	34.95	21.79	6.72	4.4	2.0	353	96	56	35	6.3	76	464	166	
05/31/12	KOF#1	938	8.03	34.47	14.89	8.89	14.7	2.0	700	102	139	36	5.0	24	425	516	
08/16/12	KOF#1	1121	8.29	34.71	16.23	11.36	2.4	2.0	425	287	66	54	6.4	25	908	593	
12/12/12	KOF#1	947	8.06	34.50	13.14	13.92	11.7	2.9	361	26	42	18	8.6	14	287	911	
02/28/13	KOF#1	938	8.00	34.51	12.63	11.68	14.6	2.5	273	25	40	24	6.9	18	195	1038	
05/16/13	KOF#1	1010	8.31	34.60	14.63	11.53	14.1	2.2	351	30	65	47	5.4	13	233	1117	
09/04/13	KOF#1	1057	8.28	34.46	14.27	9.78	28.3	3.5	415	31	64	25	6.5	33	152	1156	
12/11/13	KOF#1	1100	8.19	34.71	13.70	10.22	9.4	2.0	210	81	47	44	4.4	28	264	940	
02/26/13	KOF#1	1040	8.32	34.46	11.73	11.71	2.0	2.0	165	49	39	25	4.2	11	283	967	
06/25/14	KOF#1	1053	8.42	34.58	12.82	12.88	24.3	7.0	497	68	101	33	4.9	44	1302	885	
09/24/14	KOF#1	1113	8.45	34.65	12.75	10.87	3.0	2.0	1820	1739	85	82	21.4	30	361	880	
12/17/14	KOF#1	1045	8.03	32.83	14.48	9.79	2.3	5.7	738	429	71	54	10.4	38.2	2197	836	
03/18/15	KOF#1	1035	7.58	25.79	19.64	8.02	5.5	2.4	909	143	92	2718	9.9	142.6	30	702	
06/18/15	KOF#1															17	No Flow
09/02/15	KOF#1															0	No Flow
11/24/15	KOF#1															0	No Flow
02/17/16	KOF#1															0	No Flow
06/01/16	BOM#1															0	No Flow
08/26/16	BOM#1															0	No Flow
12/01/16	BOM#1															0	No Flow
03/09/17	BOM#1															0	No Flow
05/24/17	BOM#1															0	No Flow
Mean			8.01	31.49	15.96	9.82	8.7	2.7	680	239	84	246	7.9	38	546	421	
Std. Dev.			0.34	4.81	3.35	2.22	8.2	1.4	451	466	38	743	4.0	36	602	452	
n=			17	17	17	17	17	17	17	13	17	13	17	13	13	18	

Discharge GPS:
Latitude: 19°43'27.84"N
Longitude: 156° 3'20.48"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	7	4

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/16/11	KOF#2																No Discharge
06/01/11	KOF#2																No Discharge
09/14/11	KOF#2																No Discharge
12/14/11	KOF#2																No Discharge
02/16/12	KOF#2																No Discharge
05/31/12	KOF#2																No Discharge
08/16/12	KOF#2																No Discharge
12/12/12	KOF#2																No Discharge
02/28/13	KOF#2																No Discharge
05/16/13	KOF#2																No Discharge
09/04/13	KOF#2																No Discharge
12/11/13	KOF#2	1104	8.12	34.60	11.02	9.61	6.7	3.8	318	196	71	61	4.5	10.0	1032	313	
02/26/14	KOF#2	1045	8.13	34.54	9.23	10.70	22.1	2.0	400	175	75	53	5.3	20.6	1075	322	
06/25/14	KOF#2	1056	8.26	34.54	11.27	10.48	7.8	2.9	263	101	64	45	4.1	21.6	1416	295	
09/24/14	KOF#2	1119	8.26	34.60	11.27	10.37	21.9	4.4	2491	1598	539	101	4.6	37.2	1016	293	
12/17/14	KOF#2	1050	8.01	33.95	10.09	10.04	24.8	2.0	1009	151	182	52	5.5	20.2	811	279	
03/18/15	KOF#2															234	No Discharge
06/18/15	KOF#2															6	No Flow
09/02/15	KOF#2															0	No Flow
11/24/15	KOF#2															0	No Flow
02/17/16	KOF#2															0	No Flow
06/01/16	BOM#2															0	No Flow
08/26/16	BOM#2															0	No Flow
12/01/16	BOM#2															0	No Flow
03/09/17	BOM#2															0	No Flow
05/24/17	BOM#2															0	No Flow
Mean			8.16	34.45	10.58	10.24	16.7	3.0	896	444	186	62	4.8	22	1070	116	
Std. Dev.			0.11	0.28	0.90	0.43	8.7	1.1	941	646	203	22	0.6	10	219	148	
n=			5	5	5	5	5	5	5	5	5	5	5	5	5	7	

Kohana Kai (SRT- 4) Seawater Disposal Log

Discharge GPS: SRT-4
Latitude: 19.729908°
Longitude: -156.058624°

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
125	35	6

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
09/20/19	Kohana Kai	847	8.21	34.89	27.98	5.86	1.6	2.0	39.1	9.2	17.9	16	2.2	2.3	10.4	5.13	
10/23/19	Kohana Kai	1455	8.22	35.86	29.04	6.57	1.3	2.0	39	3	19	9	2.1	-0.2	14	16.10	
03/06/20	Kohana Kai	1103	8.17	35.99	25.62	7.03	4.6	2.0	21	-21	27	18	0.8	3.7	-16	20	
06/18/20	Kohana Kai	1127	8.14	36.34	28.07	6.58	3.7	2.0	66	-4	18	15	3.6	4.8	98	13	
Mean			8.19	35.77	27.68	6.51	2.8	2.0	41	-3	20	14	2.2	3	27	14	
Std. Dev.			0.04	0.62	1.45	0.48	1.6	0.0	18	13	4	4	1.1	2	50	6	
n=			4	4	4	4	4	4	4	2	4	4	4	3	3	4	

Kona Deep Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19°42'53"N
Longitude: 156°02'32"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
12	12	11

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
08/24/11	Kona Deep Trench	1102	7.72	30.00	14.29	8.31	1.8	2.0	764		108		7.1			31	
12/07/11	Kona Deep Trench	914	7.47	30.69	14.10	7.90	0.7	2.0	802		105		7.6			61	
03/07/12	Kona Deep Trench	900	7.59	34.50	11.89	6.97	1.9	2.0	620	586	99	94	6.3	0.1	2756	52	
05/23/12	Kona Deep Trench	1049	7.71	24.23	15.69	8.08	1.4	2.0	828	775	113	109	7.3	3.6	8806	49	
08/16/12	Kona Deep Trench															25	No sample (facilty not in operation)
12/12/12	Kona Deep Trench															20	No sample (facilty not in operation)
03/28/13	Kona Deep Trench															13	No sample (facilty not in operation)
05/16/13	Kona Deep Trench	1040	7.51	39.04	13.06	8.33	2.7	2.0	740	665	117	98	6.3	0.5	3041	20	
09/04/13	Kona Deep Trench															10	No sample (facilty not in operation)
12/11/13	Kona Deep Trench	1046	7.46	34.86	10.42	8.20	2.0	2.0	622	605	130	105	4.8	10	2789	9	Deep Seawater AC Discharge
02/26/14	Kona Deep Trench	1024	7.62	34.69	9.74	8.64	1.8	2.0	715	634	108	106	6.6	5.1	2864	8	Deep Seawater AC Discharge
06/25/14	Kona Deep Trench	1025	7.51	34.75	12.97	8.20	3.6	2.2	610	586	97	99	6.3	3.8	3726	11	Deep Seawater AC Discharge
09/24/14	Kona Deep Trench	1059	7.60	35.91	14.49	8.21	3.2	2.0	703	669	102	101	6.9	3.0	2925	11	Deep Seawater AC Discharge
12/17/14	Kona Deep Trench	1032	7.57	34.68	9.8	8.94	2.4	2.0	691	650	110	108	6.3	2.1	3011	11	Deep Seawater AC Discharge
03/18/15	Kona Deep Trench	1050	7.56	34.53	24.66	6.32	2.7	2.0	771	100	96	2694	8.0	613	10	10	Deep Seawater AC Discharge
06/25/15	Kona Deep Trench	854	7.62	24.95	13.41	7.5	2.7	2.0	728	720	94	107	7.8	4.5	7244	15	Deep Seawater AC Discharge
09/09/15	Kona Deep Trench	858	7.63	22.2	13.93	10.3	2.7	2.0	772	721	109	103	7.1	8.5	7371	22	Deep Seawater AC Discharge
12/03/15	Kona Deep Trench	1053	7.84	34.27	9.58	7.51	2.9	2.0	663	634	100	98	6.7	3.1	2766	18	
02/24/16	Kona Deep Trench	846	7.91	34.18	6.87	10.19	2.6	2.0	697	668	128	129	5.5	4.6	2921	17	
06/08/16	Kona Deep Trench	858	7.27	33.55	10.07	8.49	3.6	2.0	590	596	98	95	6.0	2.6	3216	22	
09/01/16	Kona Deep Trench	918	7.97	32.22	14.36	8.74	3.5	2.0	811	859	100	95	8.1	4	7206	14	
12/07/16	Kona Deep Trench	835	7.53	34.36	8.24	9.26	3.6	2.0	649	592	93	86	7.0	24	2848	20	
03/16/17	Kona Deep Trench	1018	7.53	24.99	14.2	8.72	2.4	2.0	784	769	117	108	6.7	11	8077	14	
06/01/17	Kona Deep Trench	8:49	7.62	33.64	9.29	6.11	4.6	2.0	603	639	99	105	6.1	4	3446	43	
08/30/17	Kona Deep Trench	942	7.67	31.72	11.25	8.35	3.6	2.0	788	731	112	109	7.0	11	6181	82	
12/14/17	Kona Deep Trench	1017	7.59	30.99	10.5	7.59	5.5	2.0	735	689	114	110	6.4	13	5843	60	
03/08/18	Kona Deep Trench	1100	7.62	31.06	9.36	7.83	10.5	2.0	710	700	111	113	6.4	39	5564	87	
06/14/18	Kona Deep Trench	851	7.58	34.12	10.14	10.01	9.1	2.0	591	580	96	91	6.2	0	3160	73	
09/20/18	Kona Deep Trench	1052	7.49	34.49	15.07	7.82	3.4	2.0	642	602	98	94	6.6	26	2878	49	
12/12/18	Kona Deep Trench	1038	7.63	34.73	7.07	6.05	10.5	2.0	602	578	94	92	6.4	2	2829	41	
03/13/19	Kona Deep Trench	959	7.31	28	12.46	9.13	8.7	2.0	721	715	114	112	6.3	2	8229	44	
06/05/19	Kona Deep Trench	941	7.52	29.19	14.14	8.9	2.5	2.0	798	792	111	116	7.2	3	8879	50	
09/18/19	Kona Deep Trench	1413	7.74	28.74	13.04	8.5	2.0	2.0	747	729	108	108	6.9	4	5804	59	
11/01/19	Kona Deep Trench	1055	7.73	35.49	8.06	9.17	2.6	2.0	616	590	86	90	7.2	3	2714	50	
03/12/20	Kona Deep Trench	957	7.69	35.77	7.52	8.56	2.9	2.0	602	586	96	95	6.3	10	2718	39	
06/18/20	Kona Deep Trench															1	Facility shut down until ~ Jan 2021
Mean			7.61	32.15	11.92	8.28	3.7	2.0	700	647	105	192	6.7	28	4477	32	
Std. Dev.			0.15	3.96	3.49	1.04	2.5	0.0	76	129	10	481	0.7	113	2359	23	
n=			31	31	31	31	31	31	31	29	31	29	31	27	29	36	

Koyo USA Corporation Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'5.53"N
Longitude: 156° 2'15.58"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
35	16	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/20/10	Koyo Concentrate	950	7.74	47.00			1.0	<2.0	838		130		6.4			146	
10/20/10	Koyo 1st filter SW	1000	7.75	47.00			0.2	2.0	804		127		6.3			146	
02/09/11	Koyo Concentrate	1020	7.75	47.68	11.56	7.48	2.3	2.0	925		149		6.2			184	
02/09/11	Koyo 1st filter SW	1016	7.70	47.53	10.88	7.75	2.0	2.0	925		151		6.1			184	
05/18/11	Koyo Concentrate	1130	7.66	46.77	15.27	7.30	3.8	2.0	861		137		6.3			150	
05/18/11	Koyo 1st filter SW	1117	7.65	46.95	12.37	7.83	3.3	2.0	846		139		6.1			150	
08/24/11	Koyo Composite	937	7.61	47.35	11.19	8.00	3.0	2.0	849		141		6.0			383	
12/14/11	Koyo Composite	1015	7.67	46.02	13.21	8.15	0.9	2.0	893		129		6.9			312	
02/29/12	Koyo Composite	1000	7.66	45.22	10.95	8.66	2.8	2.0	861	813	118	128	7.3	1.0	3635	327	
05/23/12	Koyo Composite	939	7.64	42.36	12.40	8.43	1.6	2.0	927	770	134	141	6.9	6.7	3514	209	
08/15/12	Koyo Composite	921	7.49	50.30	15.90	6.85	3.6		1062	887	113	112	9.4	3.0	4317		BOD check std not compliant, resampled on 8/23
08/23/12	Koyo Composite	910	7.56	45.76	14.17	8.33	3.0	2.0	855	849	135	133	6.3	2.5	4100	265	
12/05/12	Koyo Composite	913	7.55	48.20	11.69	8.39	2.5	2.0	855	841	139	114	6.2	6.9	4171	238	
02/28/13	Koyo Composite	914	7.41	55.65	10.49	9.47	3.7	2.0	1089	1053	159	165	6.8	12.2	4818	177	
05/29/13	Koyo Composite	919	7.48	55.57	15.44	6.44	3.9	2.0	1149	1118	188	188	6.1	4.2	5047	78	
09/04/13	Koyo Composite	1007	7.44	58.97	14.34	6.31	3.0	2.0	1087	1045	175	180	6.2	41.4	4803	79	
12/11/13	Koyo Composite	1018	7.42	47.97	13.41	6.85	3.0	2.0	907	764	157	148	5.8	24.6	3835	79	
02/26/14	Koyo Composite	1006	7.51	59.82	11.38	7.63	3.3	2.0	1251	1092	184	177	6.8	12.3	5005	80	
06/25/14	Koyo Composite	1039	7.46	50.36	10.42	8.33	4.5	2.0	980	930	162	166	6.0	2.0	6162	148	
09/24/14	Koyo Composite	1036	7.41	50.61	10.93	8.00	3.6	2.0	990	891	119	157	8.3	37.8	3948	259	
01/07/15	Koyo Composite	1030	7.39	50.63	9.21	8.53	5.3	2.0	1069	928	152	147	7.0	3.1	4249	343	
03/18/15	Koyo Composite	1010	7.43	49.65	10.08	9.59	4.7	2.1	980	922	155	150	6.3	34.4	4394	184	
06/25/15	Koyo Composite	835	7.57	43.85	14.50	6.54	5.6	2.0	920	849	136	141	6.8	6.8	3622	104	
09/09/15	Koyo Composite	1339	7.63	52.18	10.65	10.54	6.2	2.0	1280	1158	121	174	10.6	5.7	5048	100	
12/02/15	Koyo Composite	902	7.76	46.65	10.37	9.22	5.4	2.0	952	842	140	141	6.8	42.6	3823	130	
02/25/16	Koyo Composite	1034	7.79	55.01	18.34	7.46	7.0	2.0	1068	1046	197	196	5.4	5.6	4653	130	
06/08/16	Koyo Composite	954	7.67	45.72	23.20	6.04	4.7	2.0	838	875	140	130	6.0	0.5	4398	246	
09/07/16	Koyo Composite	1405	8.19	56.85	25.55	5.27	5.8	2.0	1614	1562	262	258	6.2	12.5	7979	335	
11/30/16	Koyo Composite	1016	7.41	54.84	11.88	7.54	6.2	2.0	939	934	151	148	6.2	4.7	4613	414	
03/15/17	Koyo Composite	948	7.71	54.86	12.52	7.33	6.4	2.0	1036	992	171	164	6.1	13.3	4649	269	
06/01/17	Koyo Composite	1233	7.58	44.92	10.56	6.00	5.8	2.0	772	782	148	146	5.2	3.9	3893	465	sampled inside RO building, middle sump
08/30/17	Koyo Composite	957	7.57	54.74	16.54	6.34	6.8	2.0	990	918	163	160	6.1	9.6	4545	363	
12/07/17	Koyo Composite	1242	7.56	55.56	9.90	3.75	14.6	2.0	1020	931	158	163	6.5	9.8	4467	340	
03/14/18	Koyo Composite	921	7.59	56.20	12.42	5.90	6.6	2.0	962	913	170	170	5.7	29.0	4668	323	
06/14/18	Koyo Composite	1129	7.52	52.36	13.94	7.52	5.8	2.0	883	856	159	151	5.6	10.2	4212	352	
09/26/18	Koyo Composite	835	7.50	55.85	15.35	5.53	11.0	2.0	940	891	172	172	5.5	13.7	4680	378	
12/12/18	Koyo Composite	959	7.57	56.11	10.51	5.40	18.6	2.0	946	901	159	153	6.0	22.7	4850	421	
03/13/19	Koyo Composite	1027	7.41	57.26	14.47	7.44	6.2	2.0	844	823	159	163	5.3	1.9	5178	492	
06/05/19	Koyo Composite	1009	7.41	57.80	14.08	6.55	6.0	2.0	926	880	155	152	6.0	5.9	4736	343	
09/18/19	Koyo Composite	1359	7.58	57.47	15.56	7.73	4.5	2.0	996	935	161	158	6.2	6.1	4665	289	
11/06/19	Koyo Composite	900	7.68	56.97	13.10	7.58	3.1	2.0	113	1076	6	201	18.4	17.6	5215	285	
03/11/20	Koyo Composite	1002	7.65	59.17	13.34	7.65	8.2	2.0	1023	975	167	162	6.1	11.6	4620	195	
06/18/20	Koyo Composite	1050	7.63	58.97	14.27	8.08	5.0	2.0	1026	993	174	167	5.9	2.9	4579	208	
Mean			7.59	51.64	13.33	7.41	5.0	2.0	956	944	150	159	6.7	12	4603	245	
Std. Dev.			0.15	5.05	3.30	1.30	3.4	0.0	198	146	34	26	2.1	12	793	114	
n=			43	43	41	41	43	41	43	35	43	35	43	35	35	42	

Legacy Reef Seawater Disposal Log

Discharge GPS: "Tea-house" Building
Latitude: 19°72'81.31"N
Longitude: 156° 6'02.48"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
0	0	0

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
12/21/18	LRF #1	850	8.15	34.73	23.00	6.01	10.5	2.0	123.6	39.9	21.6	13.4	5.7	5.0	143	40	
02/15/19	LRF #1	857	7.90	34.92	20.71	5.87	3.6	2.7	194	129	35	23	5.5	10.0	534	50	
05/24/19	LRF #1	1154	8.04	35.77	22.33	6.08	3.6	2.0	175	115	32	22	5.5	3.9	516	61	
09/12/19	LRF #1	1223	8.19	34.86	27.41	5.35	4.8	2.0	64	2	17	10	3.8	35.4	63	109	
10/23/19	LRF #1	901	8.16	35.17	26.37	6.47	2.6	2.0	145	11	23	10	6.4	2.6	179	61	
03/11/20	LRF #1	919	8.14	36.12	24.64	4.91	13.6	2.0	139	-25	24	15	5.9	15.8	-15	33	
06/12/20	LRF #1	832	8.19	36.24	26.26	5.64	3.9	2.3	70	3	11	7	6.3	3.8	23	19	
Mean			8.11	35.40	24.39	5.76	6.1	2.1	130	39	23	14	5.6	11	206	53	
Std. Dev.			0.11	0.63	2.46	0.51	4.2	0.3	49	60	8	6	0.9	12	228	29	
n=			7	7	7	7	7	7	7	6	7	7	7	7	6	7	

Makai Ocean Engineering Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'47.16"N
Longitude: 156° 3'31.22"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
110	30	16

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
07/28/10	Makai Research Compound	847	7.94				1.2	2.0	398		62		6.4			230	
02/02/11	Makai Research Compound	828	8.28				1.0	2.0	463		78		5.9			246	
05/18/11	Makai Research Compound	1025	7.90	34.77	14.97	7.15	3.2	2.0	409		60		6.8			424	
08/17/11	Makai Research Compound	1111	7.96	34.55	14.87	6.58	2.3	2.0	406		64		6.3			232	
11/30/11	Makai Research Compound	1018	8.02	34.62	15.76	7.23	3.0	2.0	373		61		6.1			240	
02/09/12	Makai Research Compound	1038	7.93	34.79	15.58	6.36	4.6	2.0	356		60		5.9			331	
05/16/12	Makai Research Compound	1132	7.91	34.60	16.08	5.32	1.1	2.0	450		68		6.6			320	
08/01/12	Makai Research Compound	1028	7.80	34.55	13.70	4.71	3.7	2.0	456	385	63	58	7.2	1.4	1517	320	
11/08/12	Makai Research Compound	1103	7.94	34.96	18.70	6.11	5.3	2.0	360	273	50	44	7.2	5.0		652	
02/14/13	Makai Research Compound	1005	7.78	34.77	15.67	4.67	2.1	2.0	404	320	61	63	6.6	5.9	1225	668	
05/09/13	Makai Research Compound	1010	7.90	34.81	18.04	4.98	3.0	2.0	326	266	57	44	5.7	1.3	1062	646	
08/22/13	Makai Research Compound	1113	7.38	34.39	9.15	3.11	2.1	2.0	421	343	63	61	6.7	6.7	1324	607	
12/05/13	Makai Research Compound	959	7.85	34.85	16.51	4.48	1.8	4.5	437	359	61	56	7.1	3.6	1340	708	
02/25/14	Makai Research Compound	1148	7.84	34.69	16.41	5.27	2.3	2.0	411	335	65	57	6.3	5.8	1312	703	
05/14/14	Makai Research Compound	1200	7.93	34.73	18.23	7.67	4.9	2.0	372	313	60	55	6.2	11.0	1262	720	
08/13/14	Makai Research Compound	1215	7.83	34.91	20.26	5.22	3.2	2.6	413	307	64	56	6.5	14.9	1172	870	
12/10/14	Makai Research Compound	1335	7.87	35.05	18.31	5.00	2.6	2.0	388	320	65	56	5.9	1.6	1123	972	
02/26/15	Makai Research Compound	1115	8.26	35.03	18.02	5.41	1.3	2.0	697	339	92	50	7.6	3.9	1051	787	
06/04/15	Makai Research Compound	1000	7.69	34.10	14.74	5.50	3.4	2.0	408	359	51	65	7.9	7.7	1372	927	
09/02/15	Makai Research Compound	943	7.84	34.68	17.55	5.38	2.7	2.0	378	303	51	48	7.4	8.9	1085	646	
11/24/15	Makai Research Compound	1031	7.94	34.33	16.61	5.23	13.9	2.0	725	320	100	53	7.2	1.3	1125	828	shallow trench, collected sediment from bottom
02/17/16	Makai Research Compound	947	7.85	34.30	15.73	5.18	3.0	2.0	366	322	62	57	6.0	10.4	1150	2292	
05/12/16	Makai Research Compound	1358	7.92	34.47	16.20	5.92	2.9	2.0	412	305	52	49	8.0	1.8	1030	1702	
08/26/16	Makai Research Compound	1029	8.13	34.73	17.35	5.02	3.3	2.0	545	450	85	72	6.4	11.8	1872	959	
11/25/16	Makai Research Compound	1048	7.92	34.44	16.27	5.34	3.5	2.0	351	268	63	49	5.6	11.5	1245	1642	
03/08/17	Makai Research Compound	1018	8.01	34.67	16.71	5.33	2.9	2.0	302	257	48	41	6.3	13.8	1001	639	
05/18/17	Makai Research Compound	1050	7.90	34.53	16.65	3.32	4.5	2.0	301	243	48	43	6.3	0.9	1062	543	
08/17/17	Makai Research Compound	1139	7.90	34.41	18.20	5.27	5.7	2.0	294	257	49	45	6.0	15.1	1006	493	
11/02/17	Makai Research Compound	954	7.90	34.81	17.51	4.43	3.3	2.0	311	269	51	44	6.1	4.7	1071	438	
03/01/18	Makai Research Compound	1034	7.69	34.49	10.98	9.44	3.5	2.0	423	430	77	74	5.5	26.4	1706	430	
06/07/18	Makai Research Compound	1059	7.70	35.06	11.77	7.24	10.5	2.0	344	399	76	69	4.6	7.1	1653	362	
09/10/18	Makai Research Compound	1015	7.96	34.52	18.80	6.86	13.1	2.0	284	245	43	35	6.6	4.7	1002	218	
11/09/18	Makai Research Compound	931	7.56	34.56	9.58	11.04	4.1	2.0	507	478	85	79	6.0	5.3	1967	225	
02/15/19	Makai Research Compound	1303	7.56	33.24	12.26	7.81	4.3	2.0	434	411	70	65	6.2	0.8	1714	281	
05/24/19	Makai Research Compound	1141	7.46	35.80	14.34	8.42	3.7	2.0	480	446	75	69	6.4	6.1	1983	165	
09/12/19	Makai Research Compound	1203	7.90	35.21	15.65	8.58	3.4	2.0	389	362	65	60	6.0	11.4	1472	99	
10/23/19	Makai Research Compound	1446	8.00	35.45	18.35	7.57	1.1	2.0	251	239	51	45	4.9	-0.4	1032	119	
03/06/20	Makai Research Compound	1127	8.13	36.00	24.92	6.07	14.5	2.0	188	110	44	34	4.3	0.5	490	22	
06/18/20	Makai Research Compound	1213	8.03	33.51	25.85	5.54	3.3	2.0	234	175	42	37	5.5	8.4	682	14	
Mean			7.88	34.69	16.39	6.05	4.1	2.1	397	319	63	54	6.3	7	1261	583	
Std. Dev.			0.18	0.50	3.33	1.63	3.3	0.4	104	80	13	11	0.8	6	345	470	
n=			39	37	37	37	39	39	39	32	39	32	39	31	31	39	

Makai Ocean Engineering Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'36.26"N
Longitude: 156° 3'30.60"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
27	22	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
07/28/10	Makai 55"	901	7.67				1.2	2.0	640		101		6.3			4.7	
02/02/11	Makai 55"	949	7.68				1.2	2.0	625		101		6.2			5.0	
05/18/11	Makai 55"	820	7.66	34.46	6.05	2.38	3.0	2.0	655		101		6.5			8.7	
08/17/11	Makai 55"	1211	7.69	34.38	5.18	1.89	1.8	2.0	636		96		6.6			4.7	
11/30/11	Makai 55"	939	7.65	34.25	7.20	2.29	1.1	2.0	651		101		6.4			4.9	
02/09/12	Makai 55"	949	7.50	34.40	6.24	2.40	2.5	2.0	611		97		6.3			6.7	
05/16/12	Makai 55"	1045	7.57	34.47	5.79	1.86	1.5	2.0	660		104		6.3			6.5	
08/01/12	Makai 55"	940	7.48	34.23	7.30	2.50	1.9	2.0	675	604	103	94	6.6	1.4	2796	6.5	
11/08/12	Makai 55"	1002	7.50	34.67	7.15	2.94	1.8	2.0	622	592	91	95	6.8	6.1		13.3	
02/14/13	Makai 55"	1005	7.78	34.77	15.67	4.67	2.1	2.0	636	597	99	104	6.4	7.2	2824	13.6	
05/09/13	Makai 55"	852	7.43	34.43	6.40	2.81	2.3	2.0	679	607	102	98	6.7	0.7	2787	13.2	
08/22/13	Makai 55"	1028	7.30	34.38	7.40	2.71	2.1	2.0	633	604	97	97	6.5	3.5	2650	12.4	
12/05/13	Makai 55"	923	7.41	34.35	6.40	2.53	0.6	2.0	651	624	97	96	6.7	3.8	2733	14.4	
02/25/14	Makai 55"	1050	7.44	34.54	6.55	4.09	1.6	2.0	644	632	98	94	6.6	3.9	2905	14.3	
05/14/14	Makai 55"	1111	7.49	34.61	6.29	2.58	3.4	2.0	648	649	100	103	6.5	4.0	2968	14.3	
08/13/14	Makai 55"	1131	7.41	34.54	7.09	3.92	2.7	2.0	760	611	104	106	7.3	42.5	2646	14.3	
12/10/14	Makai 55"	1244	7.33	34.59	6.92	3.34	2.0	3.0	727	660	109	109	6.7	1.0	2897	14.3	
02/26/15	Makai 55"	1013	8.25	34.48	7.25	2.54	3.8	2.0	2110	705	302	97	7.0	5.6	2693	14.3	
05/28/15	Makai 55"	1032	7.54	34.91	6.83	3.15	3.3	2.0	2110	632	302	95	7.0	6.2	2831	14.3	
09/02/15	Makai 55"	932	7.54	34.81	7.37	5.74	2.3	2.0	653	661	90	100	7.3	22.9	2671	14.3	
11/24/15	Makai 55"	1056	7.56	33.64	6.09	2.69	4.1	2.0	404	635	59	99	6.8	0.4	2648	14.3	
02/17/16	Makai 55"	852	7.47	34.40	5.68	4.78	3.7	2.0	698	645	110	109	6.3	12.8	2824	14.3	
05/12/16	Makai 55"	1321	7.70	34.43	5.63	5.24	2.7	2.0	745	677	96	95	7.8	1.1	2628	14.3	
08/26/16	Makai 55"	1003	7.40	34.52	6.03	3.54	3.4	2.0	1016	970	160	152	6.4	1.3	4585	14.3	
11/25/16	Makai 55"	958	7.44	34.53	6.85	4.38	3.5	2.0	657	584	91	87	7.2	39.9	2825	14.3	
03/08/17	Makai 55"	938	7.68	34.63	6.11	4.29	4.4	2.0	649	595	95	92	6.8	18.1	2810	14.3	
05/18/17	Makai 55"	939	7.65	34.63	6.64	2.74	4.2	2.0	608	500	92	89	6.6	1.9	2744	14.3	
08/17/17	Makai 55"	1108	7.66	34.43	6.60	3.63	5.6	2.0	616	594	96	94	6.4	12.7	2705	14.3	
11/02/17	Makai 55"	1056	7.57	34.73	6.54	3.73	4.3	2.0	628	598	99	95	6.3	3.4	2754	14.3	
03/01/18	Makai 55"																No flow, system shut down and transferred back to NELHA
Mean			7.57	34.49	6.86	3.31	2.7	2.0	760	635	114	100	6.7	9	2854	12	
Std. Dev.			0.18	0.24	1.86	1.03	1.2	0.2	385	85	54	13	0.4	12	408	4	
n=			29	27	27	27	29	29	29	22	29	22	29	22	21	29	

Troutlodge Marine Farms Kona, LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'40.47"N
Longitude: 156° 3'30.45"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
30	8	5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/16/11	Troutlodge 1 (Main)	915	7.77	34.72	19.35	6.99	2.6	2.0	295		43		6.9			675	
06/08/11	Troutlodge 1 (Main)	1033	7.81	34.67	19.40	7.16	3.3	3.7	650		92		7.1			812	
09/28/11	Troutlodge 1 (Main)	1631	7.33	34.65	14.26	6.82	7.5	3.4	896		198		4.5			590	
12/07/11	Troutlodge 1 (Main)	1546	7.02	34.35	12.74	6.60	4.1	2.0	875	495	136	273	6.4	481	2072	144	
03/07/12	Troutlodge 1 (Main)	1400	7.23	34.46	11.18	7.17	12.0	5.9	1229	495	299	273	4.1	481	2072	65	
05/24/12	Troutlodge 1 (Main)	828	7.32	34.55	9.95	7.98	7.0	4.2	1126	554	263	239	4.3	632	3037	288	
08/16/12	Troutlodge 1 (Main)	944	7.28	34.97	10.97	7.81	7.0	4.0	1467	551	291	274	5.0			485	
11/14/12	Troutlodge 1 (Main)	1022	7.33	34.57	8.37	6.26	5.6	4.0	1911	576	281	279	6.8	691	2261	421	
02/20/13	Troutlodge 1 (Main)	1021	7.38	34.56	10.38	9.80	7.5	3.1	1465	580	244	236	6.0	690	2218	363	
05/09/13	Troutlodge 1 (Main)	819	7.51	34.66	8.85	9.11	2.2	2.0	742	547	114	114	6.5	156	2120	339	
08/22/13	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
12/05/13	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
02/25/14	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
05/14/14	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
08/13/14	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
12/10/14	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
02/26/15	Troutlodge 1 (Main)															0.0	No Sample (facility not in operation)
06/25/15	Marine Aqua 1 (Main)	913	7.93	34.34	19.29	5.85	2.7	2.0	319	268	49	46	6.5	4	992	0.0	
09/02/15	Marine Aqua 1 (Main)	902	8.11	33.36	21.59	6.73	6.2	2.0	5280	4720	130	139	40.7	210	1359	45.2	
12/03/15	Marine Aqua 1 (Main)	1207	7.74	34.40	12.26	3.71	2.5	2.0	709	647	107	105	6.6	11	1968	89.7	
02/24/16	Marine Aqua 1 (Main)	1442	8.28	33.28	22.75	6.56	5.9	2.4	3252	3065	262	257	12.4	46	879	49.9	
06/08/16	Marine Aqua 1 (Main)	921	8.10	34.60	23.14	5.80	4.5	2.0	279	175	39	32	7.2	8	635	71.2	
09/01/16	Marine Aqua 1 (Main)	854	7.91	34.34	16.30	7.43	3.8	2.0	864	816	64	65	13.5	34	1480	71.2	
11/30/16	Marine Aqua 1 (Main)	1032	7.87	34.45	15.61	7.48	4.8	2.0	962	884	112	106	8.6	52	1214	72.8	
03/08/17	Marine Aqua 1 (Main)	1013	8.00	27.79	17.02	6.90	3.7	2.0	1080	998	118	104	9.1	33	1354	94.9	
06/01/17	Marine Aqua 1 (Main)	948	7.84	34.95	16.43	4.18	4.4	2.7	3486	3270	392	373	8.9	131	2296	108.0	
08/24/17	Marine Aqua 1 (Main)	931	8.07	34.43	17.12	5.34	5.0	2.0	1032	923	100	85	10.3	41	1262	109.2	
12/14/17	Marine Aqua 1 (Main)	856	7.78	34.34	12.90	5.58	4.6	2.0	1587	1706	118	132	13.4	89	1653	108.0	
03/01/18	Jamestown Port Whitney Venture	1056	7.81	34.52	14.62	7.85	4.0	2.0	1106	1097	137	132	8.1	45	1190	108.0	
06/14/18	Jamestown Port Whitney Venture	1008	7.96	34.41	17.65	6.01	9.8	2.0	768	696	81	61	9.5	26	1102	108.0	
09/10/18	Jamestown Port Whitney Venture	1104	7.60	34.37	11.72	5.88	6.1	2.0	888	687	139	113	6.4	81	2124	108.0	
11/09/18	Jamestown Port Whitney Venture	941	7.89	34.72	18.69	5.20	3.7	2.0	489	447	76	66	6.5	14	1272	106.8	
02/15/19	Jamestown Port Whitney Venture	906	7.58	34.58	14.54	7.82	4.6	2.0	381	342	57	52	6.6	13	1317	108.0	
05/24/19	Jamestown Port Whitney Venture	929	7.56	35.64	14.99	7.51	3.8	2.0	516	485	73	67	7.1	6	1510	108.0	
09/12/19	Jamestown Port Whitney Venture	1130	7.86	34.46	15.35	7.48	3.9	2.0	587	537	78	71	7.6	21	1497	108.0	
10/23/19	Jamestown Port Whitney Venture	1401	7.92	35.79	18.78	7.28	1.9	2.0	1306	1232	116	109	11.3	25	1650	108.0	
03/06/20	Jamestown Port Whitney Venture	857	7.92	35.41	16.25	6.97	4.0	2.0	652	586	73	66	8.9	25	1214	108.0	
06/18/20	Jamestown Port Whitney Venture	1023	7.81	36.49	16.18	7.54	6.0	2.0	521	477	75	70	7.0	18	1362	108.0	
Mean			7.73	34.41	15.44	6.80	5.0	2.5	1184	995	140	141	8.8	150	1597	160	
Std. Dev.			0.30	1.37	3.91	1.27	2.2	1.0	1058	1028	91	93	6.4	225	539	198	
n=			31	31	31	31	31	31	31	28	31	28	31	27	27	30	

Marine Aqua LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'41.65"N
Longitude: 156° 3'30.18"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
12	12	10

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/16/11	Troutlodge 2 (Sub)	928	8.08	34.83	23.85	5.56	2.1	2.0	63		17		3.7			19	
06/08/11	Troutlodge 2 (Sub)	1047	8.15	34.81	25.61	6.00	2.1	2.0	54		16		3.4			10	
09/28/11	Troutlodge 2 (Sub)	1635	8.14	35.14	25.99	5.45	1.4	2.0	78		13		6.0			6	
12/07/11	Troutlodge 2 (Sub)	1551	7.93	34.88	24.44	5.38	1.2	2.0	132		12		11.0			1	
03/07/12	Troutlodge 2 (Sub)	1413	8.21	35.23	23.67	5.63	2.8	2.0	76	6	18	4	4.2	1.0	17	0	
05/24/12	Troutlodge 2 (Sub)	833	8.19	35.05	23.77	5.51	2.0	2.0	67	8	19	7	3.5	3.6	56	0	
08/16/12	Troutlodge 2 (Sub)	949	8.17	35.26	25.64	5.67	2.5	2.0	168	11	18	2	9.3	5.0	70	2	
11/14/12	Troutlodge 2 (Sub)	1031	8.24	35.56	25.26	6.16	2.8	2.0	90	9	18	5	5.0	1.8	56	1	
02/14/13	Troutlodge 2 (Sub)	1027	8.06	35.79	23.75	5.62	3.8	2.0	280	8	30	15	9.4	24	60	0	
05/09/13	Troutlodge 2 (Sub)	822	8.10	34.95	25.62	5.57	1.8	2.0	72	5	22	13	3.3	2.8	41	1	
08/22/13	Troutlodge 2 (Sub)	951	8.07	34.86	27.56	6.76	2.2	2.0	240	104	36	28	6.7	44	80	108	
12/05/13	Troutlodge 2 (Sub)	841	8.13	35.40	26.12	5.27	1.7	2.0	77	14	8	10	9.6	2.9	78	108	
02/25/14	Troutlodge 2 (Sub)															0	No Sample (facility not in operation)
05/14/14	Troutlodge 2 (Sub)															0	No Sample (facility not in operation)
08/13/14	Troutlodge 2 (Sub)															0	No Sample (facility not in operation)
12/10/14	Troutlodge 2 (Sub)															0	No Sample (facility not in operation)
02/26/15	Troutlodge 2 (Sub)															0	No Sample (facility not in operation)
06/25/15	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
09/02/15	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
12/03/15	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
02/24/16	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
06/08/16	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
09/01/16	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
11/30/16	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
03/08/17	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
06/01/17	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
08/24/17	Marine Aqua 2 (Sub)															0	No Sample (facility not in operation)
03/01/18	Jamestown Port Whitney Venture															0	No Sample (facility not in operation)
06/14/18	Jamestown Port Whitney Venture															0	No Sample (facility not in operation)
09/10/18	Jamestown Port Whitney Venture																
Mean			8.12	35.15	25.11	5.72	2.2	2.0	116	21	19	11	6.3	11	57	9	
Std. Dev.			0.08	0.31	1.22	0.41	0.7	0.0	75	34	8	8	2.9	15	21	28	
n=			12	12	12	12	12	12	12	8	12	8	12	8	8	11	

Marine Mammal Center Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'17.01"N
Longitude: 156° 3'16.56"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8.3	8.3	5.17

Date (mm/dd/yy)	Sample Name	Time (2400)	Tide (ft)	Tide (cycle)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/16/14	MMC 1	951	1.60	High	7.93	34.93	25.62	6.28	6.2	3.2	652	340	73	59	8.9	4.7	1473	125.3	
10/23/14	MMC 1	927	0.37	Low	7.96	35.04	24.79	5.90	6.1	2.0	381	305	69	63	5.6	15.3	1272	125.3	
10/30/14	MMC 1	914	1.95	High	7.99	34.99	26.01	5.23	6.2	2.0	294	192	63	52	4.7	15.4	820	125.3	
11/06/14	MMC 1	904	0.3	Low	8.00	34.83	26.59	5.91	5.6	2.0	305	149	77	62	4.0	45.3	599	125.3	
12/10/14	MMC 1	914	1.50	Ebb	7.88	35.02	25.01	6.41	3.6	2.0	382	116	93	16	4.1	0.9	748	125.3	
03/19/15	MMC 1	1057	0.1	Flood	7.92	34.74	20.84	6.46	3.3	2.3	220	146	48	28	4.6	13.2	732	59.7	
06/18/15	MMC 1	0913	-0.1	Low	8.19	34.42	26.55	6.44	3.2	2.0	89	2	29	34	3.0	10.1	5	33.5	
08/20/15	MMC 1	912	1.30	Ebb	8.07	34.97	28.26	5.07	3.3	2.0	203	12	42	19	4.8	14.5	82	57.8	
12/02/15	MMC 1	924	1.74	High	7.80	34.62	18.75	4.31	4.0	2.0	812	640	131	122	6.2	72.1	2168	58.5	
02/18/16	MMC 1	0926	0.50	Flood	8.16	34.48	24.66	7.79	4.3	4.9	729	517	203	186	3.6	140.6	13	32.6	Effluent tank over-flowing
06/08/16	MMC 1	1038	-0.10	Low	8.28	34.49	27.07	6.38	3.1	2.0	61	10	18	10	3.4	1.2	30	20.0	
09/01/16	MMC 1	0905	0.01	Low	8.48	34.86	27.83	5.36	3.8	2.0	148	63	65	63	2.3	52.4	3	75.5	
11/30/16	MMC 1	847	0.70	Ebb	8.07	34.97	25.66	5.17	3.8	2.0	412	142	92	79	4.5	202.8	71	18.1	
03/16/17	MMC 1	1036	0.20	Ebb	8.03	33.94	25.28	6.20	4.1	2.3	287	96	94	75	3.0	45.7	573	19.4	
06/01/17	MMC 1	1004	0.90	High	8.11	34.82	26.26	4.22	3.6	2.0	61	10	22	12	2.8	10.6	49	87.5	
08/24/17	MMC 1	920	0.30	Ebb	8.13	34.38	27.38	4.58	4.1	2.0	159	29	70	48	2.3	47.4	43	126.8	
12/05/17	MMC 1																	62.6	No flow - System drained and shut down until early 2018.
03/01/18	MMC 1																	3.9	No flow - System drained and shut down.
06/21/18	MMC 1	1048	1.30	High	8.11	28.97	25.39	5.62	10.6	2.0	587	500	49	40	11.9	1.6	4862	15.5	
09/10/18	MMC 1	1037	###	Low	8.19	34.71	27.72	5.39	13.7	2.0	124	22	29	22	4.3	44.5	24	83.4	
11/09/18	MMC 1	1006	0.7	Ebb	8.19	29.20	27.18	4.90	3.1	2.0	105	44	36	31	2.9	14.2	261	110.1	
03/01/19	MMC 1	924	0.4	Low	8.21	34.48	24.29	6.61	13.7	2.2	140	17	25	16	5.7	20.6	112	108.0	
05/24/19	MMC 1	1104	0.25	Ebb	8.18	35.72	26.84	6.60	5.3	2.0	79	3	20	9	4.0	16.8	20	98.5	
09/12/19	MMC 1	1102	0.75	Flood	8.15	34.87	27.83	7.08	3.4	2.0	122	24	27	10	4.5	34.9	140	73.5	
10/23/19	MMC 1	1208	2.0	High	8.05	35.64	22.70	7.00	1.8	2.0	234	173	50	39	4.7	21.3	778	82.2	
03/06/20	MMC 1	909	0.26	Low	8.12	35.85	25.00	6.50	5.3	2.0	133	-1	31	21	4.3	29.9	-18	113.2	middle tank overflowing
06/12/20	MMC 1	1042	0.6	Ebb	8.10	36.05	24.05	6.50	2.6	2.0	125	75	15	15	8.2	7.1	351	111.5	
Mean					8.09	34.44	25.50	5.92	5.1	2.2	274	145	59	45	4.7	35	608	77	
Std. Dev.					0.14	1.68	2.21	0.90	3.1	0.6	216	180	42	40	2.2	46	1044	41	
n=					25	25	25	25	25	25	25	24	25	25	25	25	24	27	

Marine Mammal Center Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'17.23"N
Longitude: 156° 3'16.70"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8.3	8.3	4.83

Date (mm/dd/yy)	Sample Name	Time (2400)	Tide (ft)	Tide (cycle)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/16/14	MMC 2	959	1.60	High	8.19	34.95	28.18	6.23	3.6	2.0	253	51	54	39	4.7	26.6	95	72.0	
10/23/14	MMC 2	932	0.37	Low	8.18	35.16	27.59	6.03	3.9	2.0	180	30	53	49	3.4	38.2	44	72.0	
10/30/14	MMC 2	919	1.95	High	8.08	34.99	26.90	5.63	4.6	2.0	257	95	65	63	3.9	59.9	332	72.0	
11/06/14	MMC 2	909	0.3	Low	8.12	34.79	27.41	6.23	4.4	2.0	172	44	44	32	3.9	14.2	212	72.0	
12/10/14	MMC 2	921	1.50	Ebb	7.89	34.98	23.78	6.35	4.1	2.0	399	200	67	73	6.0	27.0	646	72.0	
03/19/15	MMC 2	1100	0.1	Flood	8.02	34.35	22.57	7.07	4.7	3.0	289	122	32	22	9.1	25.6	648	32.2	
06/18/15	MMC 2	931	-0.1	Low	8.17	34.50	26.65	5.32	3.4	2.0	69	1	23	14	3.0	2.0	7	18.1	
08/20/15	MMC 2	914	1.30	Ebb	8.11	35.01	28.53	4.85	3.4	2.0	390	69	98	79	4.0	95.5	89	31.2	
12/02/15	MMC 2	924	1.74	High	7.80	34.62	18.75	4.31	4.0	2.0	812	640	131	122	6.2	72.1	2168	31.6	
02/18/16	MMC 2	934	0.50	Flood	8.12	34.30	24.70	6.22	4.4	2.7	513	224	179	150	2.9	224.3	23	17.7	Effluent tank over-flowing
06/08/16	MMC 2	1012	-0.10	Low	8.30	34.56	27.13	6.17	3.4	2.0	54	8	19	10	2.9	1.7	61	10.8	
09/01/16	MMC 2	906	0.01	Low	8.52	34.86	27.81	5.79	3.5	2.0	79	20	27	36	2.9	12.8	9	40.7	
11/30/16	MMC 2	849	0.70	Ebb	8.09	34.92	25.69	5.77	4.1	2.0	136	28	70	59	2.0	64.9	194	9.8	
03/16/17	MMC 2	1024	0.20	Ebb	8.04	34.22	25.36	6.29	2.9	2.0	237	87	51	34	4.7	26.0	418	10.6	
06/01/17	MMC 2	1009	0.90	High	8.13	34.79	26.29	4.29	3.0	2.0	56	4	11	4	5.1	5.9	56	47.2	
08/24/17	MMC 2	922	0.30	Ebb	8.13	34.53	24.75	4.55	4.1	2.0	66	4	31	21	2.1	21.8	47	68.4	
12/05/17	MMC 2																	33.8	No flow - System drained and shut down until early 2018.
03/01/18	MMC 2																	2.1	No flow - System drained and shut down.
06/21/18	MMC 2	1057	1.30	High	8.11	30.24	25.81	6.19	4.1	2.0	483	398	39	28	12.5	1.1	3938	8.3	
09/10/18	MMC 2	1041	-0.06	Low	8.21	34.03	27.92	6.05	26.0	4.8	319	51	122	56	2.6	59.6	547	45.0	Effluent ws green from alge growth inside tank
11/09/18	MMC 2	1011	0.7	Ebb	8.18	34.92	27.52	4.53	4.1	2.0	156	31	52	40	3.0	50.8	59	59.4	
03/01/19	MMC 2	909	0.4	Low	8.22	34.53	24.33	6.71	4.6	2.1	215	44	44	27	4.9	49.0	86	58.3	
05/24/19	MMC 2	1107	0.25	Ebb	8.21	35.61	27.04	6.39	3.1	2.0	66	6	52	41	1.3	26.5	164	53.2	
09/12/19	MMC 2	1105	0.75	Flood	8.18	34.86	28.46	6.90	11.9	2.0	109	14	32	16	3.4	27.1	94	39.7	
10/23/19	MMC 2	1211	2.0	High	8.05	35.63	22.06	7.02	2.5	2.0	239	189	50	39	4.8	13.9	880	44.4	
03/06/20	MMC 2	913	0.26	Low	8.12	35.71	25.11	6.34	7.1	3.1	221	-18	72	45	3.1	75.7	-10	61.1	
06/12/20	MMC 2	1045	.6	Ebb	8.10	35.97	24.33	6.65	3.4	3.4	185	123	122	107	1.5	114.2	388	60.4	
Mean					8.13	34.68	25.79	5.92	5.1	2.3	238	99	62	48	4.2	45	448	42	
Std. Dev.					0.13	1.04	2.31	0.83	4.7	0.7	177	147	40	35	2.4	48	859	23	
n=					25	25	25	25	25	25	25	24	25	25	25	25	24	27	

Moana Technologies, Inc. Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'4.79"N
Longitude: 156° 2'35.88"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
55	42	10

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/17/11	MT #1	1221	7.65	34.40	20.18	4.19	5.7	4.9	1987		261		7.6			258	
06/03/11	MT #1	1316	7.72	34.90	22.06	4.37	8.5	3.8	1588		234		6.8			249	
09/14/11	MT #1	829	7.70	35.00	24.06	5.64	9.5	3.9	880		119		7.4			266	
12/14/11	MT #1	913	7.75	34.96	21.58	4.18	8.5	3.8	1192		130		9.2			253	
02/16/12	MT #1	800	7.44	34.87	20.11	5.21	5.7	3.0	1008	308	132	65	7.6	356	792	295	
05/23/12	MT #1	823	7.77	34.89	23.36	4.30	11.7	4.2	966	165	133	49	7.3	399	362	331	
08/09/12	MT #1	1007	7.69	34.43	23.47	5.35	5.8	4.3	1397	490	189	150	7.4	550	891	273	
12/12/12	MT #1	926	7.68	35.21	22.44	4.82	5.4	6.2	1377	301	184	76	7.5	509	654	339	
02/27/12	MT #1	913	7.65	35.11	21.13	5.35	4.6	6.2	1807	679	198	113	9.1	533	652	328	
05/16/13	MT #1	847	7.50	35.20	25.18	4.70	34.3	14.5	2993	597	362	122	8.3	1338	308	352	
09/04/13	MT #1	912	7.75	34.93	24.36	4.63	5.8	4.8	1446	521	169	106	8.6	607	511	314	
12/11/13	MT #1	910	7.57	34.48	21.88	5.91	6.6	5.3	1415	614	106	106	13.3	635	752	323	
02/26/14	MT #1	841	7.73	34.86	21.00	5.33	5.4	3.3	1316	354	179	77	7.3	443	679	372	
06/25/14	MT #1	847	7.62	34.84	25.46	5.01	7.9	4.3	1352	483	181	92	7.5	562	427	346	
09/24/14	MT #1	931	7.57	34.61	24.88	4.28	5.6	7.3	1506	486	188	122	8.0	714	680	375	
12/17/14	MT #1	915	7.68	34.88	22.83	5.13	6.1	4.4	1283	453	184	88	7.0	397	749	336	
03/18/15	MT #1	948	7.77	34.53	22.31	6.21	5.0	5.6	408	94	51	634	7.9	198.5	497	286	
06/04/15	MT #1	1027	7.69	34.20	25.19	5.57	11.0	8.8	738	327	90	75	8.2	590.5	615	357	
09/09/15	MT #1	840	7.40	34.06	26.79	4.11	11.6	7.1	1912	686	201	146	9.5	683.1	948	217	
12/03/15	MT #1	1042	7.69	34.46	24.12	4.35	9.8	9.7	1974	830	284	187	7.0	729.7	674	306	
02/24/16	MT #1	1027	7.71	34.50	22.51	5.28	10.7	11.0	1606	209	298	168	5.4	720.9	649	319	
06/08/16	MT #1	846	7.52	34.19	24.69	4.78	24.0	13.3	2579	721	383	220	6.7	1219.6	786	315	
09/01/16	MT #1	936	7.95	34.91	27.37	4.41	9.9	7.8	1804	592	213	100	8.5	640.0	186	282	
12/07/16	MT #1	850	7.71	34.81	21.03	5.58	7.6	6.8	1395	399	186	159	7.5	834.0	827	157	
03/15/17	MT #1	845	8.00	34.65	19.22	5.53	6.5	3.9	1269	603	196	120	6.5	421.5	1017	338	
06/01/17	MT #1	837	7.67	34.83	21.45	4.58	5.9	5.2	1152	427	189	137	6.1	520.9	795	294	
08/24/17	MT #1	1012	7.62	34.66	22.10	3.92	8.1	6.9	1317	538	185	99	7.1	607.7	855	421	
12/13/17	MT #1	947	7.64	35.34	22.28	2.98	11.8	10.1	1414	630	217	121	6.5	930.0	572	336	
03/08/18	MT #1	1046	7.60	34.90	21.35	5.09	9.1	7.4	1202	390	205	133	5.9	605.4	531	312	
06/14/18	MT #1	1143	7.74	35.18	23.63	5.18	17.3	5.6	1051	372	170	109	6.2	484.7	648	350	
09/20/18	MT #1	1111	7.34	34.49	24.21	4.30	6.8	7.1	1394	560	193	114	7.2	624.1	651	327	
12/12/18	MT #1	1056	7.57	35.16	22.88	3.35	9.4	9.1	1407	549	222	135	6.3	692.6	548	333	
03/01/19	MT #1	1008	7.70	34.50	20.93	5.75	6.0	6.6	1213	435	213	122	5.7	429.3	797	304	
06/05/19	MT #1	927	7.61	35.81	25.57	4.38	21.7	9.5	921	573	291	133	3.2	643.5	309	362	
09/19/19	MT #1	1003	7.69	35.00	25.38	4.35	10.7	10.0	1751	585	225	140	7.8	645.3	549	330	
11/01/19	MT #1	1043	7.72	35.61	24.06	5.08	14.7	9.2	1645	445	207	129	7.9	694.9	562	275	
03/01/20	MT #1															151	No Sample - COVID-19 Shutdown
06/18/20	MT #1	1109	7.76	35.36	23.42	5.29	14.5	9.6	1243	328	238	149	5.2	545.5	1383	156	
Mean			7.66	34.83	23.09	4.82	10.0	6.9	1430	477	200	136	7.4	621	662	304	
Std. Dev.			0.13	0.39	1.92	0.70	6.1	2.8	474	164	67	96	1.6	222	228	59	
n=			37	37	37	37	37	37	37	33	37	33	37	33	33	38	

NELHA Gateway Center Seawater Disposal Log

Discharge GPS:
Latitude: 19°42'56"N
Longitude: 156° 2'05"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)
Leach Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
06/01/11	NELHA #1 (Gateway SWAC)	1011	7.65	34.45	13.32	7.72	2.0	2.0	662		102		6.5			36.0	
08/17/11	NELHA #1 (Gateway SWAC)	1250	7.65	34.33	11.53	8.05	3.8	2.0	648		95		6.8			36.0	
11/30/11	NELHA #1 (Gateway SWAC)	916	7.66	34.53	10.08	8.22	0.6	2.0	636		103		6.2			35.0	
02/09/12	NELHA #1 (Gateway SWAC)	1018	7.63	34.44	11.61	8.17	2.4	2.0	651		93		7.0			35.0	
05/16/12	NELHA #1 (Gateway SWAC)	1106	7.61	34.35	11.02	7.40	2.5	2.0	652		102		6.4			33.8	
08/01/12	NELHA #1 (Gateway SWAC)	959	7.59	34.23	13.79	7.74	2.8	2.0	1569	596	275	95	5.7	1.8	2856	31.5	
11/08/12	NELHA #1 (Gateway SWAC)	1023	7.56	34.71	13.20	8.57	2.4	2.0	625	592	93	96	6.7	6.6		31.8	
02/14/13	NELHA #1 (Gateway SWAC)	927	7.44	34.34	11.53	6.74	2.1	2.0	648	597	94	93	6.9	2.0	2839	33.0	
05/09/13	NELHA #1 (Gateway SWAC)	947	7.56	34.04	13.12	7.73	5.7	2.0	672	616	97	95	6.9	3.4	2921	30.8	
08/22/13	NELHA #1 (Gateway SWAC)	1009	7.52	34.37	15.66	7.19	5.2	3.2	769	609	98	97	7.8	8.9	2758	30.2	
12/05/13	NELHA #1 (Gateway SWAC)	940	7.57	34.50	13.56	7.54	3.1	2.0	692	625	95	100	7.3	1.5	2829	30.6	
02/25/14	NELHA #1 (Gateway SWAC)	1030	7.48	34.25	13.82	8.77	3.0	3.4	716	630	91	95	7.9	4.2	2776	32.1	
05/14/14	NELHA #1 (Gateway SWAC)	1052	7.45	34.35	12.43	7.61	3.6	2.9	705	647	104	103	6.8	4.9	2924	32.0	
08/13/14	NELHA #1 (Gateway SWAC)	1051	7.49	34.65	14.88	7.24	2.8	2.0	679	602	106	104	6.4	8.9	2572	31.8	
12/10/14	NELHA #1 (Gateway SWAC)	1130	7.46	34.74	14.17	7.99	4.6	2.0	721	659	110	107	6.6	0.6	2832	31.8	
02/26/15	NELHA #1 (Gateway SWAC)	948	8.48	34.64	10.77	8.36	3.4	2.0	785	705	57	110	13.9	0.4	2721	52.2	
05/28/15	NELHA #1 (Gateway SWAC)	952	7.50	34.36	9.95	10.82	2.5	2.0	785	623	57	93	13.9	7.5	2775	61.7	
08/19/15	NELHA #1 (Gateway SWAC)	924	7.53	11.57	8.43	11.98	3.7	2.0	665	636	99	98	6.7	10.7	2670	69.9	
11/24/15	NELHA #1 (Gateway SWAC)	849	7.52	10.35	8.41	12.55	2.3	2.0	686	631	101	99	6.8	8.2	2643	76.1	
02/17/16	NELHA #1 (Gateway SWAC)	825	7.94	13.41	7.54	11.26	4.0	2.0	678	637	110	107	6.2	7.8	2795	76.1	
05/12/16	NELHA #1 (Gateway SWAC)	1153	7.65	24.43	8.07	11.84	3.0	2.0	716	637	89	93	8.1	1.6	2495	74.9	
08/26/16	NELHA #1 (Gateway SWAC)	923	7.60	6.40	8.76	10.35	3.8	2.0	1068	972	141	137	7.6	22.7	4560	78.1	
11/25/16	NELHA #1 (Gateway SWAC)	927	7.48	18.48	7.56	11.63	3.7	2.0	547	496	87	85	6.3	9.8	2415	80.1	
03/08/17	NELHA #1 (Gateway SWAC)	856	7.63	19.29	6.94	10.20	3.6	2.0	624	600	95	91	6.6	15.3	2830	81.9	
05/18/17	NELHA #1 (Gateway SWAC)	958	7.64	12.54	7.75	6.70	4.0	2.0	613	494	91	89	6.7	3.4	2872	81.5	
08/17/17	NELHA #1 (Gateway SWAC)	1030	7.66	33.94	8.45	7.36	4.6	2.0	617	595	97	93	6.4	15.2	2739	99.4	
11/02/17	NELHA #1 (Gateway SWAC)	1016	7.57	25.26	7.58	7.03	4.8	2.0	614	584	96	93	6.4	11.3	2626	97.5	
03/01/18	NELHA #1 (Gateway SWAC)	951	7.46	33.06	6.82	4.52	4.1	2.0	557	580	99	96	5.6	23.0	2663	118.0	
06/07/18	NELHA #1 (Gateway SWAC)	937	7.46	34.63	7.23	2.40	4.3	2.0	544	573	97	94	5.6	1.7	2769	116.4	
09/10/18	NELHA #1 (Gateway SWAC)	903	7.36	31.41	6.95	4.21	4.4	2.0	570	564	95	90	6.0	1.7	2595	169.7	
11/09/18	NELHA #1 (Gateway SWAC)	1055	7.43	4.66	12.13	6.98	3.1	2.0	583	563	98	89	5.9	2.4	2729	75.7	
02/15/19	NELHA #1 (Gateway SWAC)	947	7.39	34.53	11.04	8.27	3.5	2.0	650	567	93	86	7.0	8.7	2856	56.3	
05/24/19	NELHA #1 (Gateway SWAC)	1010	7.26	2.23	11.47	9.88	2.6	2.0	579	563	90	88	6.4	1.6	2824	56.8	
09/12/19	NELHA #1 (Gateway SWAC)	953	7.74	2.82	12.33	9.09	2.8	2.0	629	574	94	94	6.7	8.7	2687	61.3	
10/23/19	NELHA #1 (Gateway SWAC)	959	7.72	3.74	13.42	8.44	1.2	2.0	555	576	93	90	6.0	-3.4	2763	56.1	
03/12/20	NELHA #1 (Gateway SWAC)	1101	7.73	2.98	10.60	8.34	3.9	2.0	604	586	98	96	6.2	6.3	2620	55.6	
06/12/20	NELHA #1 (Gateway SWAC)	1007	7.62	34.72	13.66	7.69	3.2	2.0	581	590	72	82	8.1	-1.1	2741	56.6	
Mean			7.59	25.56	10.80	8.29	3.3	2.1	684	610	100	96	7.1	6	2797	61	
Std. Dev.			0.20	12.28	2.62	2.12	1.1	0.3	176	78	33	10	1.8	6	348	31	
n=			37	37	37	37	37	37	37	32	37	32	37	30	31	37	

NELHA Spillway Seawater Disposal Log

Discharge GPS:
Latitude: 19°42'55"N
Longitude: 156° 2'13"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
45	30	6

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/30/11	NELHA #2 (55" Spillway)	1057	7.60	34.35	6.08	4.87	2.6	2.0	632		101		6.3			72	
06/01/11	NELHA #2 (55" Spillway)	945	7.63	34.40	6.15	3.69	2.0	2.0	662		102		6.5			72	
08/17/11	NELHA #2 (55" Spillway)	1223	7.87	34.81	18.52	4.55	2.1	2.0	505		77		6.6			90	
11/30/11	NELHA #2 (55" Spillway)	928	7.99	34.61	14.93	5.18	0.9	2.0	371		60		6.2			112	
02/09/12	NELHA #2 (55" Spillway)	958	7.94	34.95	15.43	4.98	1.9	2.0	651		93		7.0			72	
05/16/12	NELHA #2 (55" Spillway)	1055	7.59	34.35	6.14	7.55	1.8	2.0	661		105		6.3			72	
08/01/12	NELHA #2 (55" Spillway)	947	7.53	34.37	7.42	2.78	2.6	2.0	701	604	98	94	7.2	0.1	2807	72	
11/08/12	NELHA #2 (55" Spillway)	1014	7.47	34.55	7.02	2.88	1.9	2.0	604	593	93	95	6.5	4.1		72	
02/14/13	NELHA #2 (55" Spillway)	916	7.46	34.72	6.66	6.49	2.3	2.0	655	604	95	94	6.9	3.7	2867	72	
05/09/13	NELHA #2 (55" Spillway)	842	7.51	34.55	7.69	2.85	2.3	2.0	620	610	95	95	6.5	0.7	2767	72	
08/22/13	NELHA #2 (55" Spillway)	1018	7.60	34.58	12.26	3.83	3.3	2.0	570	529	86	87	6.7	7.6	2426	72	
12/05/13	NELHA #2 (55" Spillway)	932	7.64	34.84	9.52	2.90	1.8	2.0	626	580	86	90	7.3	0.0	2645	72	
02/25/14	NELHA #2 (55" Spillway)	1041	7.76	34.81	12.90	4.05	1.7	2.0	515	496	81	57	6.3	0.8	2256	72	
05/14/14	NELHA #2 (55" Spillway)	1101	7.61	34.78	7.75	4.11	1.6	2.0	664	587	93	95	7.1	14.8	2705	72	
08/13/14	NELHA #2 (55" Spillway)	1120	7.48	34.54	7.03	5.41	2.4	2.0	811	612	108	109	7.5	21.3	2630	72	
12/10/14	NELHA #2 (55" Spillway)	1158	7.41	34.64	6.58	5.33	3.6	2.0	721	659	109	108	6.6	0.5	2828	72	
02/26/15	NELHA #2 (55" Spillway)	1003	8.34	34.42	7.51	2.37	2.8	2.0	745	713	83	87	9.0	2.9	2582	72	
05/28/15	NELHA #2 (55" Spillway)	1016	7.50	35.40	7.20	4.72	3.0	2.0	745	611	83	97	9.0	6.1	2742	72	
08/19/15	NELHA #2 (55" Spillway)	941	7.51	34.63	6.32	7.79	3.5	2.0	643	636	107	99	6.0	5.2	2667	72	
11/24/15	NELHA #2 (55" Spillway)	930	7.66	34.34	5.35	3.19	4.2	2.0	686	628	101	98	6.8	2.3	2656	72	
02/17/16	NELHA #2 (55" Spillway)	839	7.56	34.36	5.12	3.19	2.9	2.0	661	639	110	109	6.0	9.3	2793	72	
05/12/16	NELHA #2 (55" Spillway)	1307	7.64	34.44	5.18	16.23	3.5	2.0	732	664	93	94	7.9	1.5	2580	72	
08/26/16	NELHA #2 (55" Spillway)	952	7.91	34.63	14.29	6.62	4.2	2.0	815	638	104	99	7.9	13.0	3128	72	
11/25/16	NELHA #2 (55" Spillway)	945	7.78	34.59	12.98	6.76	4.9	2.0	589	390	70	59	8.4	103.8	1906	72	
03/08/17	NELHA #2 (55" Spillway)	926	7.77	34.60	10.20	5.88	3.7	2.0	544	471	77	73	7.1	21.0	2200	72	
05/18/17	NELHA #2 (55" Spillway)	927	7.78	34.55	12.39	3.52	3.7	2.0	475	141	71	66	6.7	7.0	2043	72	
08/17/17	NELHA #2 (55" Spillway)	1056	7.73	34.35	10.67	5.99	3.9	2.0	573	513	87	78	6.6	13.3	2360	72	
11/02/17	NELHA #2 (55" Spillway)	1043	7.77	34.79	12.84	4.40	4.2	2.0	469	438	74	65	6.3	16.7	1928	72	
03/01/18	NELHA #2 (55" Spillway)	1337	7.90	34.43	17.10	4.29	3.5	2.0	343	328	62	56	5.5	25.1	1551	72	
06/07/18	NELHA #2 (55" Spillway)	1007	7.85	35.07	16.19	6.69	13.3	2.0	352	327	72	66	4.9	6.1	1605	72	
09/10/18	NELHA #2 (55" Spillway)	930	7.91	34.58	17.29	5.35	13.1	2.0	357	301	54	48	6.6	10.4	1423	72	
11/09/18	NELHA #2 (55" Spillway)	1115	7.74	34.89	13.40	3.76	3.8	2.0	467	405	73	55	6.4	10.9	1962	72	
02/15/19	NELHA #2 (55" Spillway)	1032	7.68	34.85	15.29	5.55	11.6	2.0	418	316	56	38	7.4	23.1	1498	72	
05/24/19	NELHA #2 (55" Spillway)	1025	7.61	35.59	13.31	5.30	3.3	2.0	467	411	70	59	6.7	5.3	2074	72	
09/12/19	NELHA #2 (55" Spillway)	1032	7.69	34.89	7.04	5.21	3.7	2.0	644	577	96	94	6.7	21.4	2717	72	
10/23/19	NELHA #2 (55" Spillway)	1142	7.67	35.79	6.72	5.36	1.6	2.0	611	537	94	92	6.5	-2.1	2846	72	
03/06/20	NELHA #2 (55" Spillway)	953	7.73	35.25	12.48	5.23	4.6	2.0	511	433	75	65	6.8	-0.9	1871	72	
06/12/20	NELHA #2 (55" Spillway)	1025	7.77	36.18	12.90	4.65	3.1	2.0	489	431	64	62	7.7	9.9	2057	72	
Mean			7.70	34.75	10.36	5.09	3.7	2.0	587	513	86	81	6.8	11	2359	74	
Std. Dev.			0.18	0.42	4.03	2.30	2.8	0.0	126	134	16	20	0.8	19	470	7	
n=			38	38	38	38	38	38	38	32	38	32	38	28	31	38	

NELHA 55" Seawater Disposal Log

Discharge GPS:
Latitude: 19°42'44"N
Longitude: 156° 2'54"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
28	20	6

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/30/11	NELHA #3 (SRT 55")	1057	7.60	34.35	6.08	4.84	0.8	2.0	647		106		6.1			43.9	
06/01/11	NELHA #3 (SRT 55")	1033	7.62	34.49	7.00	2.34	2.7	2.0	652		98		6.7			43.9	
08/17/11	NELHA #3 (SRT 55")	1216	7.71	34.40	6.38	2.75	4.4	2.0	715		105		6.8			43.9	
11/30/11	NELHA #3 (SRT 55")	938	7.68	34.28	5.83	2.22	8.3	2.0	666		104		6.4			43.9	
02/09/12	NELHA #3 (SRT 55")	947	7.60	34.47	6.18	1.67	9.5	2.0	617		96		6.4			43.9	
05/16/12	NELHA #3 (SRT 55")	1043	7.57	34.55	5.93	1.45	1.9	2.0	669		106		6.3			43.9	
08/01/12	NELHA #3 (SRT 55")	938	7.59	34.37	6.58	1.82	2.8	2.0	721	609	98	96	7.4	5.6	2817	43.9	
11/08/12	NELHA #3 (SRT 55")	1002	7.55	34.69	6.19	1.96	2.6	2.0	683	595	92	95	7.4	28.7		43.9	
02/14/13	NELHA #3 (SRT 55")	912	7.36	34.59	5.95	3.05	1.6	2.0	713	597	96	95	7.4	2.1	2806	43.9	
05/09/13	NELHA #3 (SRT 55")	850	7.49	34.54	5.82	2.17	2.2	2.0	686	610	100	96	6.9	10.4	2796	43.9	
08/22/13	NELHA #3 (SRT 55")	1026	7.39	34.45	6.62	1.89	3.1	2.0	668	603	96	95	7.0	4.9	2646	43.9	
12/05/13	NELHA #3 (SRT 55")	921	7.50	34.56	5.84	1.52	1.5	2.0	669	621	92	99	7.3	0.4	2703	43.9	
02/25/14	NELHA #3 (SRT 55")	1049	7.50	34.43	5.65	2.08	1.8	2.0	400	632	109	99	3.7	13.1	2916	43.9	
05/14/14	NELHA #3 (SRT 55")	1110	7.51	34.80	6.05	2.71	2.7	2.0	673	635	100	103	6.7	3.7	2929	43.9	
08/13/14	NELHA #3 (SRT 55")	1130	7.44	34.60	6.04	3.27	2.4	2.0	680	607	107	106	6.3	13.4	2651	43.9	
12/10/14	NELHA #3 (SRT 55")	1240	7.44	34.79	6.08	2.03	3.5	2.0	769	660	112	105	6.8	4.3	2878	43.9	
02/26/15	NELHA #3 (SRT 55")	1011	8.32	34.64	5.54	1.95	2.8	2.0	909	715	92	91	9.9	15.6	2712	43.9	
05/28/15	NELHA #3 (SRT 55")	1030	7.58	34.85	5.66	4.15	2.9	2.0	909	619	92	102	9.9	9.8	2815	43.9	
08/19/15	NELHA #3 (SRT 55")	950	7.57	33.82	5.95	7.38	3.6	2.0	634	637	102	100	6.2	5.9	2626	43.9	
11/24/15	NELHA #3 (SRT 55")	1053	7.70	34.31	5.94	7.51	4.4	2.0	692	630	101	99	6.9	1.1	2637	43.9	
02/17/16	NELHA #3 (SRT 55")	849	7.61	34.15	5.44	6.93	3.0	2.0	665	644	111	107	6.0	8.5	2808	43.9	
05/12/16	NELHA #3 (SRT 55")	1317	7.65	34.43	5.73	7.20	2.8	2.0	760	665	96	96	7.9	0.9	2586	43.9	
08/26/16	NELHA #3 (SRT 55")	1001	7.53	34.55	6.70	4.89	4.1	2.0	1173	980	157	139	7.5	15.7	4529	43.9	
11/25/16	NELHA #3 (SRT 55")	955	7.51	34.53	6.66	5.10	3.2	2.0	700	617	90	84	7.8	46.3	2812	43.9	
03/08/17	NELHA #3 (SRT 55")	935	7.68	34.63	6.44	4.80	7.2	2.0	646	597	94	91	6.9	16.0	2810	43.9	
05/18/17	NELHA #3 (SRT 55")	936	7.61	34.65	6.33	3.40	4.1	2.0	623	230	94	89	6.6	2.6	2749	43.9	
08/17/17	NELHA #3 (SRT 55")	1106	7.70	34.43	6.41	5.43	4.1	2.0	643	602	98	95	6.6	15.3	2711	43.9	
11/02/17	NELHA #3 (SRT 55")	1054	7.59	34.71	6.94	4.65	4.6	2.0	629	605	98	93	6.4	14.2	2761	43.9	
03/01/18	NELHA #3 (SRT 55")	1349	7.51	34.45	7.15	3.59	6.1	2.0	581	595	106	97	5.5	23.3	2835	43.9	
06/07/18	NELHA #3 (SRT 55")	1016	7.47	35.05	7.12	4.04	13.6	2.0	554	565	101	96	5.5	6.7	2703	43.9	
09/10/18	NELHA #3 (SRT 55")	938	7.53	34.51	7.39	4.10	6.3	2.0	656	571	97	90	6.8	19.0	2653	43.9	
11/09/18	NELHA #3 (SRT 55")	1124	7.43	34.75	7.34	7.34	4.6	2.0	605	571	95	84	6.3	12.3	2744	43.9	
02/15/19	NELHA #3 (SRT 55")	1042	7.17	34.75	6.81	4.75	4.9	2.0	606	572	96	89	6.3	16.4	2925	43.9	
05/24/19	NELHA #3 (SRT 55")	1043	7.38	35.79	6.82	4.85	5.1	2.0	592	566	91	86	6.5	4.3	2846	43.9	
09/12/19	NELHA #3 (SRT 55")	1038	7.69	34.87	7.36	5.21	2.8	2.0	625	578	97	95	6.5	17.3	2798	43.9	
10/23/19	NELHA #3 (SRT 55")	1150	7.65	35.80	8.76	3.13	1.4	2.0	613	551	95	93	6.4	0.0	2827	43.9	
03/06/20	NELHA #3 (SRT 55")	1002	7.66	36.17	7.77	3.91	5.5	2.0	649	602	96	91	6.8	4.5	2826	43.9	
06/12/20	NELHA #3 (SRT 55")	1032	7.68	36.21	8.29	3.35	3.3	2.0	592	596	83	83	7.1	4.0	2693	43.9	
Mean			7.57	34.70	6.49	3.83	4.0	2.0	676	609	100	96	6.8	11	2824	44	
Std. Dev.			0.17	0.50	0.76	1.80	2.5	0.0	119	101	11	10	1.0	10	329	0	
n=			38	38	38	38	38	38	38	32	38	32	38	31	31	38	

Discharge GPS:
Latitude: 19°43'23"N
Longitude: 156° 3'16"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
64	22	10

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/30/11	NELHA #4 (SRT-5)	1122	7.61	34.38	9.24	8.63	2.1	2.0	631		106		6.0			36.0	
06/02/11	NELHA #4 (SRT-5)	937	7.60	34.55	27.58	4.20	2.6	2.0	665		105		6.3			36.0	
08/17/11	NELHA #4 (SRT-5)	1204	7.74	34.43	13.58	7.80	2.1	2.0	707		103		6.9			36.0	
11/30/11	NELHA #4 (SRT-5)	956	7.69	34.34	20.96	5.97	1.7	2.0	657		100		6.6			36.0	
02/09/12	NELHA #4 (SRT-5)	930	7.59	34.61	19.93	6.33	1.5	2.0	640		94		6.8			36.0	
05/16/12	NELHA #4 (SRT-5)	1034	7.59	34.47	25.94	3.41	2.1	2.0	674		104		6.5			36.0	
08/01/12	NELHA #4 (SRT-5)	929	7.59	34.48	26.88	3.60	2.4	2.0	670	614	97	95	6.9	1.4	2812	36.0	
11/08/12	NELHA #4 (SRT-5)	No sample - Flow diverted for perculation test for new SIS Sump														0.0	
02/14/13	NELHA #4 (SRT-5)	No sample - Flow diverted for perculation test for new SIS Sump														0.0	
05/09/13	NELHA #4 (SRT-5)	No sample - No Flow														0.0	
08/22/13	NELHA #4 (SRT-5)	1040	7.54	34.34	15.46	8.00	2.5	2.0	662	606	101	99	6.6	34.8	2773	36.0	
12/05/13	NELHA #4 (SRT-5)	913	7.55	34.78	14.12	7.38	0.5	2.0	674	636	94	100	7.2	0.1	2808	36.0	
02/25/14	NELHA #4 (SRT-5)	1100	7.55	34.45	13.20	7.83	1.7	2.0	659	629	105	102	6.3	0.7	2854	36.0	
05/14/14	NELHA #4 (SRT-5)	1124	7.59	34.47	16.51	7.04	2.5	2.0	679	641	102	104	6.7	1.7	2940	36.0	
08/13/14	NELHA #4 (SRT-5)	1145	7.55	34.65	17.70	6.82	6.5	2.1	881	635	113	111	7.8	31.7	2645	36.0	
12/10/14	NELHA #4 (SRT-5)	1258	7.43	34.44	14.93	7.01	2.6	2.0	725	661	108	108	6.7	0.5	2912	36.0	
02/26/15	NELHA #4 (SRT-5)	1027	8.22	34.50	13.54	8.32	3.1	2.0	771	719	96	92	8.0	0.8	2659	36.0	
05/28/15	NELHA #4 (SRT-5)	1304	7.55	34.96	8.96	9.20	2.6	2.0	771	627	96	99	8.0	11.0	2807	36.0	
08/19/15	NELHA #4 (SRT-5)	1009	7.67	34.79	9.36	11.26	3.6	2.0	657	633	106	100	6.2	4.7	2641	36.0	
11/24/15	NELHA #4 (SRT-5)	945	7.56	34.31	8.92	9.49	3.8	2.0	690	627	100	98	6.9	0.9	2610	36.0	
02/17/16	NELHA #4 (SRT-5)	1107	7.76	33.73	8.43	12.90	3.6	2.0	660	636	111	104	5.9	8.9	2792	36.0	
05/12/16	NELHA #4 (SRT-5)	1347	7.67	34.45	8.39	10.54	3.7	2.0	741	666	94	94	7.9	0.9	2526	36.0	
08/26/16	NELHA #4 (SRT-5)	1015	7.54	34.61	7.51	9.67	4.1	2.0	1060	976	158	139	6.7	11.7	4625	36.0	
11/25/16	NELHA #4 (SRT-5)	1016	7.48	34.58	7.37	9.91	4.6	2.0	677	613	92	86	7.4	44.9	2845	36.0	
03/08/17	NELHA #4 (SRT-5)	1104	7.66	34.74	6.25	5.26	3.5	2.0	650	594	95	92	6.8	16.8	2818	36.0	
05/18/17	NELHA #4 (SRT-5)	1021	7.60	34.64	6.35	6.58	3.5	2.0	633	269	95	90	6.7	3.3	2856	36.0	
08/17/17	NELHA #4 (SRT-5)	1120	7.68	34.44	6.67	10.18	2.9	2.0	611	598	97	93	6.3	13.6	2695	36.0	
11/02/17	NELHA #4 (SRT-5)	1109	7.61	34.74	6.68	8.33	4.6	2.0	617	596	98	91	6.3	9.9	2697	36.0	
03/01/18	NELHA #4 (SRT-5)	1407	7.54	34.52	6.41	8.66	4.4	2.0	598	578	100	98	6.0	24.3	2762	36.0	
06/07/18	NELHA #4 (SRT-5)	1041	7.53	35.08	6.41	10.03	4.2	2.0	552	565	98	95	5.6	6.6	2765	36.0	
09/10/18	NELHA #4 (SRT-5)	950	7.50	34.44	6.49	7.60	13.5	2.0	612	564	92	92	6.7	6.2	2652	36.0	
11/09/18	NELHA #4 (SRT-5)	1134	7.49	34.92	7.77	5.28	4.2	2.0	599	574	96	88	6.2	2.0	2780	36.0	
02/15/19	NELHA #4 (SRT-5)	1055	7.13	34.70	6.13	9.19	3.8	2.0	598	569	94	90	6.3	13.6	2824	36.0	
05/24/19	NELHA #4 (SRT-5)	1056	7.12	35.63	7.31	9.95	5.2	2.0	599	566	93	88	6.4	8.0	2820	36.0	
09/12/19	NELHA #4 (SRT-5)	1116	7.69	34.79	7.29	3.56	2.6	2.0	603	578	95	96	6.3	16.0	2683	36.0	
10/23/19	NELHA #4 (SRT-5)	1431	7.66	35.89	7.07	9.05	10.8	2.0	595	551	96	94	6.2	3.5	2805	36.0	
03/06/20	NELHA #4 (SRT-5)	1042	7.39	36.27	7.39	7.31	4.8	2.0	648	598	94	92	6.9	8.2	2661	36.0	
06/12/20	NELHA #4 (SRT-5)	1057	7.66	36.24	7.34	5.57	4.3	2.0	592	586	86	88	6.9	10.7	2638	36.0	
Mean			7.58	34.72	11.54	7.77	3.8	2.0	670	610	100	97	6.7	10	2817	33	
Std. Dev.			0.18	0.53	6.32	2.26	2.4	0.0	93	101	12	10	0.6	11	361	10	
n=			35	35	35	35	35	35	35	29	35	29	35	28	29	35	

NELHA SRT-5 2" Pipe Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'23"N
Longitude: 156° 3'16"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
1	1	0.5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/30/11	NELHA #5 (SRT-5 2")	1127	7.64	34.47	5.67	5.67	1.7	2.0	650		100		6.5			7.2	
06/02/11	NELHA #5 (SRT-5 2")	933	7.61	34.25	28.55	3.69	1.0	2.0	665		105		6.3			7.2	
08/17/11	NELHA #5 (SRT-5 2")	1139	7.73	34.49	14.71	2.83	2.8	2.0	713		103		6.9			7.2	
11/30/11	NELHA #5 (SRT-5 2")	949	7.64	34.30	21.25	1.95	1.0	2.0	634		102		6.2			7.2	
02/09/12	NELHA #5 (SRT-5 2")	930	7.59	34.61	19.93	6.33	5.5	2.0	629		98		6.4			7.2	
05/16/12	NELHA #5 (SRT-5 2")	1032	7.54	34.42	26.12	1.54	2.1	2.0	697		104		6.7			7.2	
08/01/12	NELHA #5 (SRT-5 2")	926	7.57	34.50	26.82	1.83	2.0	2.0	657	605	99	99	6.6	0.4	2829	7.2	
11/08/12	NELHA #5 (SRT-5 2")	944	7.60	34.74	22.38	2.05	2.8	2.0	601	591	96	97	6.3	11.4		7.2	
02/14/13	NELHA #5 (SRT-5 2")	858	7.43	34.47	24.55	2.01	5.5	2.0	554	597	99	97	5.6	2.0	2828	7.2	
05/09/13	NELHA #5 (SRT-5 2")	907	7.48	34.45	28.02	1.99	1.6	2.0	626	609	99	95	6.3	0.5	2843	7.2	
08/22/13	NELHA #5 (SRT-5 2")	1036	7.44	34.40	14.99	2.53	2.6	2.0	630	608	92	96	6.9	3.4	2769	7.2	
12/05/13	NELHA #5 (SRT-5 2")	905	7.49	34.65	14.51	2.07	1.6	2.0	664	625	98	100	6.8	0.1	2822	7.2	
02/25/14	NELHA #5 (SRT-5 2")	1057	7.51	34.48	13.47	3.70	2.0	2.0	654	630	86	103	7.6	0.4	2845	7.2	
05/14/14	NELHA #5 (SRT-5 2")	1118	7.53	34.54	16.67	1.77	3.1	2.0	655	641	100	104	6.5	2.5	2938	7.2	
08/13/14	NELHA #5 (SRT-5 2")	1138	7.46	34.54	17.39	2.38	2.2	2.0	705	604	107	106	6.6	13.6	2614	7.2	
12/10/14	NELHA #5 (SRT-5 2")	1254	7.38	34.75	14.02	1.66	3.0	2.0	719	667	88	108	8.2	4.8	2926	7.2	
02/26/15	NELHA #5 (SRT-5 2")	1022	8.21	34.59	13.67	1.99	2.9	2.0	723	713	96	93	7.5	2.0	2638	7.2	
05/28/15	NELHA #5 (SRT-5 2")	1043	7.53	35.00	9.71	3.00	3.0	2.0	723	632	96	99	7.5	7.6	2816	7.2	
08/19/15	NELHA #5 (SRT-5 2")	1019	7.56	34.61	10.22	6.79	4.6	2.0	660	639	100	100	6.6	4.5	2659	7.2	
11/24/15	NELHA #5 (SRT-5 2")	939	7.59	34.50	8.33	3.44	4.3	2.0	698	624	100	99	7.0	3.3	2634	7.2	
02/17/16	NELHA #5 (SRT-5 2")	917	7.60	34.43	8.08	4.33	3.7	2.0	668	643	110	104	6.1	8.1	2781	7.2	
05/12/16	NELHA #5 (SRT-5 2")	1339	7.66	34.53	8.58	4.32	3.3	2.0	743	662	97	94	7.7	0.6	2468	7.2	
08/26/16	NELHA #5 (SRT-5 2")	1011	7.53	34.63	6.95	2.37	3.7	2.0	1084	987	159	139	6.8	7.9	4671	7.2	
11/25/16	NELHA #5 (SRT-5 2")	1009	7.45	34.56	6.42	2.77	2.7	2.0	605	608	93	89	6.5	9.3	2876	7.2	
03/08/17	NELHA #5 (SRT-5 2")	947	7.65	33.46	6.25	9.98	4.4	2.0	673	589	97	93	7.0	21.6	2844	7.2	
05/18/17	NELHA #5 (SRT-5 2")	1016	7.60	34.56	6.62	2.57	4.6	2.0	605	302	95	89	6.4	1.9	2862	7.2	
08/17/17	NELHA #5 (SRT-5 2")	1124	7.69	34.44	5.59	2.69	4.2	2.0	616	597	102	98	6.0	16.1	2686	7.2	
11/02/17	NELHA #5 (SRT-5 2")	1114	7.57	34.72	5.87	3.45	3.3	2.0	626	606	99	95	6.3	8.3	2707	7.2	
03/01/18	NELHA #5 (SRT-5 2")	1400	7.53	34.49	6.14	2.02	12.5	2.0	618	575	99	98	6.2	26.7	2764	7.2	
06/07/18	NELHA #5 (SRT-5 2")	1025	7.50	35.08	6.54	3.02	12.1	2.0	578	562	99	94	5.9	7.8	2838	7.2	
09/10/18	NELHA #5 (SRT-5 2")	946	7.51	34.53	6.38	2.62	9.9	2.0	627	568	93	90	6.7	12.4	2604	7.2	
11/09/18	NELHA #5 (SRT-5 2")	1138	7.48	34.87	5.61	2.40	10.3	2.0	599	576	95	88	6.3	4.8	2761	7.2	
02/15/19	NELHA #5 (SRT-5 2")	1051	7.18	34.58	5.86	4.20	4.7	2.0	589	569	94	90	6.3	11.9	2831	7.2	
05/24/19	NELHA #5 (SRT-5 2")	1051	7.28	35.89	7.00	3.23	3.7	2.0	587	565	92	87	6.4	2.3	2821	7.2	
09/12/19	NELHA #5 (SRT-5 2")	1112	7.69	34.84	7.02	2.10	2.4	2.0	609	577	97	95	6.3	12.8	2668	7.2	
10/23/19	NELHA #5 (SRT-5 2")	1427	7.64	35.97	6.84	1.96	2.2	2.0	561	564	94	93	6.0	3.9	2791	7.2	
03/06/20	NELHA #5 (SRT-5 2")	1036	7.67	36.18	7.38	1.95	4.7	2.0	634	605	96	93	6.6	4.3	2661	7.2	
06/12/20	NELHA #5 (SRT-5 2")	1053	7.65	36.17	7.66	1.67	3.5	2.0	596	579	88	91	6.7	8.4	2600	7.2	
Mean			7.56	34.70	12.42	3.08	4.0	2.0	655	610	99	97	6.6	7	2819	7	
Std. Dev.			0.16	0.53	7.38	1.71	2.8	0.0	86	94	11	9	0.5	6	361	0	
n=			38	38	38	38	38	38	38	32	38	32	38	31	31	38	

NELHA Kau Pump Station Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'22"N
Longitude: 156° 3'21"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8	8	1.5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/30/11	NELHA #6 (Kau Pump Station)	1136	7.65	34.36	7.42	2.29	8.3	2.0	601		94		6.4			14.4	
06/01/11	NELHA #6 (Kau Pump Station)	1044	7.70	34.50	9.10	2.33	9.7	2.0	576		85		6.8			14.4	
08/17/11	NELHA #6 (Kau Pump Station)	1131	7.71	34.66	8.48	2.20	3.2	2.0	689		94		7.3			14.4	
11/30/11	NELHA #6 (Kau Pump Station)	1007	7.71	34.36	7.97	1.52	6.3	2.0	605		96		6.3			14.4	
02/09/12	NELHA #6 (Kau Pump Station)	918	7.82	34.56	14.47	3.96	8.2	2.0	241		34		7.1			14.4	
05/16/12	NELHA #6 (Kau Pump Station)	1015	8.01	34.76	21.76	5.81	0.9	2.0	278		40		7.0			14.4	
08/01/12	NELHA #6 (Kau Pump Station)	919	8.14	34.92	26.04	6.22	1.9	2.0	148	61	22	11	6.8	3.2	241	14.4	
11/08/12	NELHA #6 (Kau Pump Station)	938	8.08	34.85	21.15	6.02	1.3	2.0	171	114	28	20	6.1	20.9		14.4	
02/14/13	NELHA #6 (Kau Pump Station)	845	7.87	34.94	16.08	5.51	3.0	2.0	247	259	54	48	4.6	2.4	1045	14.4	
05/09/13	NELHA #6 (Kau Pump Station)	916	8.08	35.17	23.10	5.00	4.2	2.0	504	408	79	66	6.4	1.3	1615	14.4	
08/22/13	NELHA #6 (Kau Pump Station)	1047	7.87	34.66	10.87	3.81	2.2	2.0	503	449	78	76	6.4	4.8	1707	14.4	
12/05/13	NELHA #6 (Kau Pump Station)	855	7.48	34.65	8.30	1.66	1.6	2.0	534	492	71	78	7.5	1.8	1901	14.4	
02/25/14	NELHA #6 (Kau Pump Station)	1109	7.85	34.44	9.32	5.03	2.6	2.0	620	589	104	99	6.0	2.2	2288	14.4	
05/14/14	NELHA #6 (Kau Pump Station)	1132	7.89	34.51	7.91	3.89	7.5	2.0	688	606	105	101	6.5	17.4	2362	14.4	
08/13/14	NELHA #6 (Kau Pump Station)	1138	7.46	34.54	17.39	2.38	5.5	2.0	242	105	36	23	6.8	8.2	424	14.4	
12/10/14	NELHA #6 (Kau Pump Station)	1305	7.60	34.75	9.73	5.23	3.6	2.0	460	371	74	63	6.2	5.8	1311	14.4	
02/26/15	NELHA #6 (Kau Pump Station)	1036	8.42	34.67	16.47	4.25	14.3	2.0	408	312	51	47	7.9	1.4	954	14.4	
05/28/15	NELHA #6 (Kau Pump Station)	1052	8.14	35.08	24.87	5.91	2.4	2.0	408	85	51	23	7.9	8.1	385	14.4	
08/19/15	NELHA #6 (Kau Pump Station)	1024	8.01	34.99	27.97	6.32	3.4	2.0	235	164	39	28	6.1	7.1	593	14.4	
11/24/15	NELHA #6 (Kau Pump Station)	1041	7.85	35.70	11.36	4.77	4.8	2.0	262	174	41	33	6.5	3.0	609	14.4	
02/17/16	NELHA #6 (Kau Pump Station)	938	7.95	34.07	12.91	2.47	3.2	2.0	432	387	73	68	5.9	7.8	1423	14.4	
05/12/16	NELHA #6 (Kau Pump Station)	1334	8.05	36.87	18.18	4.90	2.9	2.0	310	175	39	33	7.9	1.7	651	14.4	
08/26/16	NELHA #6 (Kau Pump Station)	1022	7.89	36.40	10.65	6.74	4.7	2.0	561	452	84	79	6.7	6.7	1936	14.4	
11/25/16	NELHA #6 (Kau Pump Station)	1023	7.45	34.55	6.92	2.70	5.5	2.0	550	166	56	39	9.9	68.4	734	14.4	
03/08/17	NELHA #6 (Kau Pump Station)	953	7.77	36.03	16.95	4.90	3.5	2.0	497	467	77	71	6.5	15.3	2141	14.4	
05/18/17	NELHA #6 (Kau Pump Station)	1027	7.97	34.63	6.02	1.59	12.9	2.0	287	150	47	39	6.1	2.4	1203	14.4	
08/17/17	NELHA #6 (Kau Pump Station)	1129	7.75	34.75	6.76	5.22	23.7	5.3	785	427	136	81	5.8	79.5	2008	14.4	thick algal mat growth covering sump
11/02/17	NELHA #6 (Kau Pump Station)	1121	8.05	34.94	26.17	4.52	3.5	2.0	196	168	37	28	5.3	6.9	756	14.4	
03/01/18	NELHA #6 (Kau Pump Station)	1415	7.60	34.78	6.38	1.82	7.3	2.0	457	240	67	46	6.9	25.0	1167	14.4	
06/07/18	NELHA #6 (Kau Pump Station)	1049	7.74	36.45	17.00	6.65	12.6	2.0	139	82	28	18	5.1	3.1	402	14.4	
09/10/18	NELHA #6 (Kau Pump Station)	957	7.64	37.02	9.18	6.89	14.1	2.0	199	152	37	25	5.4	4.5	747	14.4	
11/09/18	NELHA #6 (Kau Pump Station)	1144	7.05	32.60	17.30	2.87	15.8	2.0	674	316	124	75	5.4	31.7	1395	14.4	
02/15/19	NELHA #6 (Kau Pump Station)	1102	7.25	35.02	7.11	2.88	17.4	2.0	419	282	77	48	5.4	9.8	1325	14.4	
05/24/19	NELHA #6 (Kau Pump Station)	1115	7.15	36.02	7.38	2.86	10.1	2.0	491	404	81	65	6.1	4.0	1978	14.4	
09/12/19	NELHA #6 (Kau Pump Station)	1123	7.77	34.54	8.67	1.92	63.1	2.0	792	437	171	71	4.6	10.4	2101	14.4	lots of macroalgae particulates in TSS sample
10/23/19	NELHA #6 (Kau Pump Station)	1438	7.88	35.92	7.95	2.42	2.5	2.0	325	288	59	53	5.5	0.6	1367	14.4	
03/06/20	NELHA #6 (Kau Pump Station)	1050	7.70	35.02	7.73	1.21	32.4	2.5	665	447	115	73	5.8	4.8	1751	14.4	lots of macroalgae particulates in sample
06/26/20	NELHA #6 (Kau Pump Station)	846	7.68	35.28	8.64	1.90	6.8	2.0	673	578	98	81	6.9	9.3	2619	14.4	resample due to excessive macroalage in 6/12/20 sample
Mean			7.78	35.00	13.20	3.91	8.9	2.1	444	306	70	53	6.4	12	1327	14	
Std. Dev.			0.28	0.82	6.55	1.76	11.2	0.5	189	162	33	25	1.0	18	670	0	
n=			38	38	38	38	38	38	38	32	38	32	38	32	31	38	

NELHA Lab Building Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'42"N
Longitude: 156° 3'35"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)
Leach Field

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
06/08/11	NELHA #7 (Lab)	922	7.58	34.25	8.56	2.22	2.8	2.0	646		98		6.6			64.9	
08/17/11	NELHA #7 (Lab)	1055	7.68	34.34	8.77	2.72	0.9	2.0	690		103		6.7			64.9	
11/30/11	NELHA #7 (Lab)	1032	7.69	34.33	9.56	1.84	0.7	2.0	649		98		6.6			64.9	
02/09/12	NELHA #7 (Lab)	1058	7.55	34.43	11.03	6.87	1.8	2.0	680		95		7.2			64.9	
05/16/12	NELHA #7 (Lab)	1218	7.60	34.32	9.62	2.28	0.9	2.0	655		102		6.4			64.9	
08/01/12	NELHA #7 (Lab)	1037	7.55	34.40	11.56	5.89	2.4	2.0	706	592	94	93	7.5	2.6	2407	64.9	
11/08/12	NELHA #7 (Lab)	910	7.42	35.00	9.25	2.84	1.7	2.0	592	576	92	95	6.4	6.2		64.9	
02/14/13	NELHA #7 (Lab)	1016	7.35	34.55	9.18	5.29	2.1	2.0	563	585	93	66	6.0	6.0	2330	64.9	
05/09/13	NELHA #7 (Lab)	1023	7.44	34.48	9.58	3.34	2.1	2.0	620	592	93	91	6.6	0.4	2365	64.9	
08/22/13	NELHA #7 (Lab)	1057	7.79	34.40	18.31	4.66	3.3	2.0	649	596	94	98	6.9	2.8	2382	64.9	
12/05/13	NELHA #7 (Lab)	1019	7.48	34.55	9.17	2.21	1.3	2.0	638	608	93	95	6.9	3.5	2357	64.9	
02/25/14	NELHA #7 (Lab)	1206	7.47	34.41	9.45	3.06	2.1	2.0	641	613	105	99	6.1	2.3	2404	64.9	
05/14/14	NELHA #7 (Lab)	1212	7.57	34.78	12.24	5.89	2.9	2.0	666	625	98	101	6.8	2.8	2408	64.9	
08/13/14	NELHA #7 (Lab)	1228	7.49	34.55	13.41	7.02	3.1	2.0	678	591	103	104	6.6	1.9	2260	64.9	
12/10/14	NELHA #7 (Lab)	1325	7.42	34.86	12.54	4.06	2.5	2.0	719	636	104	105	6.9	0.6	2316	64.9	
02/26/15	NELHA #7 (Lab)	1132	8.03	34.57	18.58	5.75	3.7	2.0	738	705	90	99	8.2	3.6	2247	64.9	
05/28/15	NELHA #7 (Lab)	1105	7.58	34.82	17.94	6.22	6.1	2.0	738	602	90	97	8.2	12.5	2276	64.9	
08/19/15	NELHA #7 (Lab)	1037	7.56	34.98	10.47	6.75	3.8	2.0	641	610	91	97	7.0	3.5	2128	64.9	
11/24/15	NELHA #7 (Lab)	1015	7.66	34.28	10.26	9.71	5.1	2.0	716	627	98	97	7.3	0.7	2189	64.9	
02/17/16	NELHA #7 (Lab)	1133	7.62	34.34	12.45	8.83	3.4	2.0	636	619	107	105	5.9	13.3	2250	64.9	
05/12/16	NELHA #7 (Lab)	1412	7.65	34.33	14.96	9.05	3.9	2.0	724	617	97	92	7.4	1.4	2002	64.9	
08/26/16	NELHA #7 (Lab)	1045	7.57	34.53	11.54	8.23	3.8	2.0	1005	950	151	140	6.7	2.3	4296	64.9	
11/25/16	NELHA #7 (Lab)	1035	7.59	34.41	11.65	8.94	5.8	2.0	593	491	88	80	6.8	26.1	2094	64.9	
03/08/17	NELHA #7 (Lab)	1046	7.68	34.45	15.93	6.90	4.2	2.0	639	572	94	88	6.8	18.4	2281	64.9	
05/18/17	NELHA #7 (Lab)	1115	7.67	34.65	18.24	5.04	5.4	2.1	668	466	95	88	7.0	4.5	2234	64.9	
08/17/17	NELHA #7 (Lab)	1156	7.70	34.37	15.63	7.60	4.1	2.0	616	575	98	93	6.3	11.4	2277	64.9	
11/02/17	NELHA #7 (Lab)	1142	7.62	34.65	15.66	6.00	3.3	2.0	611	567	97	88	6.3	12.0	2241	64.9	
03/01/18	NELHA #7 (Lab)	1452	7.58	34.43	16.11	6.41	13.6	2.0	575	563	98	95	5.8	33.2	2277	64.9	
06/07/18	NELHA #7 (Lab)	1120	7.55	35.00	13.30	8.51	12.0	2.0	526	535	99	94	5.3	11.1	2212	64.9	
09/10/18	NELHA #7 (Lab)	1201	7.53	34.57	17.32	8.18	13.8	2.0	575	552	92	89	6.2	4.9	2277	64.9	
11/09/18	NELHA #7 (Lab)	1203	7.51	34.81	17.36	6.12	11.3	2.0	601	553	93	83	6.5	10.7	2287	64.9	
02/15/19	NELHA #7 (Lab)	1220	8.07	34.94	23.24	5.96	4.4	2.0	199	127	34	24	5.8	5.8	567	64.9	
05/24/19	NELHA #7 (Lab)	1305	7.66	35.71	20.42	7.65	4.7	2.0	498	431	75	65	6.6	1.2	1977	64.9	
09/12/19	NELHA #7 (Lab)	1308	7.93	34.70	26.12	6.84	3.9	2.0	405	321	65	56	6.2	15.3	1317	64.9	
10/23/19	NELHA #7 (Lab)	1537	7.84	35.75	24.28	6.83	3.6	2.0	458	386	70	64	6.5	5.5	1501	64.9	
03/11/20	NELHA #7 (Lab)	1411	7.78	36.44	21.22	7.10	4.4	2.0	365	331	61	56	6.0	7.8	1248	64.9	
06/12/20	NELHA #7 (Lab)	1138	7.65	36.17	15.57	7.26	3.2	2.7	539	542	90	84	6.0	4.6	2059	64.9	
Mean			7.63	34.73	14.50	6.05	4.3	2.0	617	555	93	88	6.6	7	2176	65	
Std. Dev.			0.16	0.52	4.70	2.12	3.3	0.1	130	135	17	20	0.6	8	567	0	
n=			36	36	36	36	36	36	36	32	36	32	36	32	31	36	

Kampachi Farms LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'40"N
Longitude: 156° 3'32"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
16	16	3

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/21/10																	
02/10/11																	
05/12/11	Kona Blue SK (1)	1001	8.18	34.83	25.89	6.14	2.3	2.0	135		17		7.9			190	
08/18/11	Kampachi Farms 1, SK	1057	8.12	34.96	26.71	5.47	2.9	2.0	234		29		8.1			159	
12/01/11	Kampachi Farms 1, SK															0	No Discharge
02/16/12	Kampachi Farms 1, SK															0	No Discharge
05/17/12	Kampachi Farms 1, SK	832	8.16	34.91	24.99	6.46	2.6	2.0	122	7	17	4	7.2	11	29	146	
08/08/12	Kampachi Farms 1, SK	800	8.07	35.15	26.33	6.47	2.6	2.0	165	11	22	1	7.5	17	130	167	
12/05/12	Kampachi Farms 1, SK	827	8.12	35.34	24.96	5.59	3.0	2.0	215	16	15	14	14.8	62	78	154	
02/27/13	Kampachi Farms 1, SK															0	No Discharge
05/15/13	Kampachi Farms 1, SK	834	8.09	34.88	26.20	5.53	2.4	2.0	205	9	27	8	7.7	51	47	161	
08/28/13	Kampachi Farms 1, SK	854	8.10	34.72	26.90	5.93	3.1	2.0	233	12	29	4	8.0	34	52	152	
12/12/13	Kampachi Farms 1, SK	1059	7.96	35.16	26.12	4.65	2.0	2.0	226	6	33	9	6.8	129	44	185	
03/05/14	Kampachi Farms 1, SK	849	8.11	34.84	25.00	6.11	2.3	2.0	166	9	22	13	7.7	134	49	150	
06/26/14	Kampachi Farms 1, SK																No Discharge
09/24/14	Kampachi Farms 1, SK	907	8.12	34.89	27.93	5.34	3.1	2.0	152	15	23	4	6.6	6	8	68	
12/17/14	Kampachi Farms 1, SK	955	8.10	35.24	25.94	6.00	4.3	2.0	248	11	26	6	9.5	10	4	104	
03/19/15	Kampachi Farms 1, SK	757	7.89	34.33	24.71	5.78	1.8	2.0	98	13	32	9	3.1	49	45	123	
06/12/15	Kampachi Farms 1, SK	848	8.03	34.76	26.46	6.41	4.3	2.0	299	6	26	13	11.7	118	49	109	
08/19/15	Kampachi Farms 1, SK	1105	8.08	35.09	28.82	6.00	4.6	2.0	343	6	23	7	14.9	214	18	115	
12/09/15	Kampachi Farms 1, SK	840														0	No Discharge
02/17/16	Kampachi Farms 1, SK															0	No Discharge
06/01/16	Kampachi Farms 1, SK															0	No Discharge
08/26/16	Kampachi Farms 1, SK	1123	8.52	35.01	28.24	5.93	4.3	2.0	347	7	62	16	5.6	82	8	126	
11/25/16	Kampachi Farms 1, SK	1117	8.15	34.93	26.20	5.89	3.9	2.0	139	7	26	14	5.4	63	116	130	
03/08/17	Kampachi Farms 1, SK															0	No Discharge
05/18/17	Kampachi Farms 1, SK	907	8.15	34.52	25.94	4.50	4.5	2.0	102	6	18	5	5.7	20	32	92	
08/17/17	Kampachi Farms 1, SK	1232	8.17	34.42	28.03	6.03	5.0	2.0	73	3	20	11	3.7	36	28	90	
11/02/17	Kampachi Farms 1, SK	939	8.14	35.06	27.48	4.39	4.2	2.0	95	3	16	4	5.9	25	19	86	
03/01/18	Kampachi Farms 1, SK	1222	8.21	34.69	25.03	5.59	8.3	2.0	74	1	27	10	2.8	27	22	78	
06/07/18	Kampachi Farms 1, SK																No Discharge
09/10/18	Kampachi Farms 1, SK	1154	8.10	34.80	28.19	5.76	5.1	2.0	206	1	21	6	10.0	157	31	190	
11/09/18	Kampachi Farms 1, SK	921	8.12	34.97	27.64	4.45	11.7	2.0	174	5	18	5	9.9	72	26	159	
02/15/19	Kampachi Farms 1, SK	1154	7.60	6.93	20.70	6.26	3.8	4.4	832	165	423	331	2.0	692	715	133	
05/24/19	Kampachi Farms 1, SK	1216	8.11	35.73	27.76	5.78	4.1	2.0	196	5	31	15	6.3	141	19	184	
09/18/19	Kampachi Farms 1, SK	1430	8.18	35.28	29.19	6.03	2.9	2.0	129	7	21	13	6.2	43	5	167	
10/23/19	Kampachi Farms 1, SK	1522	8.10	35.82	28.54	6.04	13.2	2.0	273	10	64	23	4.3	160	19	179	
03/06/20	Kampachi Farms 1, SK															0	No Discharge
06/26/20	Ocean Era 1															0	No Discharge
Mean			8.10	33.89	26.53	5.71	4.3	2.1	211	14	42	23	7.3	98	66	103	
Std. Dev.			0.15	5.51	1.77	0.60	2.8	0.5	148	32	79	66	3.2	139	142	69	
n=			26	26	26	26	26	26	26	24	26	24	26	24	24	26	

Kampachi Farms LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'39.22"N
Longitude: 156° 3'33.51"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
4	4	2

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/21/10																	
02/10/11																	
5/12/11	Kona Blue Grouper (1)	1005	8.19	34.80	25.99	6.14	2.5	2.0	103		17		6.1			66	
08/18/11	Kampachi Farms 2 Grouper 1	1048	8.14	30.27	26.19	5.90	2.3	2.0	121		19		6.4			55	
12/01/11	Kampachi Farms 2 Grouper 1															0	No Discharge
02/16/12	Kampachi Farms 2 Grouper 1															0	No Discharge
05/17/12	Kampachi Farms 2 Grouper 1															0	No Discharge
08/08/12	Kampachi Farms 2 Grouper 1															0	No Discharge
12/05/12	Kampachi Farms 2 Grouper 1															0	No Discharge
02/27/13	Kampachi Farms 2 Grouper 1	1000	8.04	35.29	24.88	5.76	3.3	2.0	248	8	32	14	7.8	72	43	43	
05/15/13	Kampachi Farms 2 Grouper 1	838	8.06	34.98	25.76	5.48	2.4	2.0	270	9	37	20	7.2	133	29	81	
08/28/13	Kampachi Farms 2 Grouper 1	846	8.13	34.83	26.48	6.01	2.9	2.0	124	10	30	18	4.2	28	49	76	
12/12/13	Kampachi Farms 2 Grouper 1															0	No Discharge
03/05/14	Kampachi Farms 2 Grouper 1															0	No Discharge
06/26/14	Kampachi Farms 2 Grouper 1															0	No Discharge
09/24/14	Kampachi Farms 2 Grouper 1	900	7.97	34.98	27.89	5.19	3.1	2.5	702	18	45	1	15.7	493	8	68	
12/17/14	Kampachi Farms 2 Grouper 1	947	8.06	35.56	25.91	6.07	4.3	2.0	423	22	29	3	14.5	156	4	104	
03/19/15	Kampachi Farms 2 Grouper 1															0	No Discharge
06/12/15	Kampachi Farms 2 Grouper 1	839	8.09	34.81	26.19	6.55	3.9	2.0	289	22	20	15	14.4	46	51	109	
08/19/15	Kampachi Farms 2 Grouper 1	1055	8.22	16.89	29.06	6.73	2.2	2.0	670	557	75	77	8.9	15	10919	115	
12/09/15	Kampachi Farms 2 Grouper 1	831														0	No Discharge
02/17/16	Kampachi Farms 2 Grouper 1	1015	8.14	34.53	24.87	5.98	4.3	2.0	228	19	26	14	8.7	64	12	93	
06/01/16	Kampachi Farms 2 Grouper 1	913	8.21	34.52	26.32	5.39	3.1	2.0	47	7	17	11	2.8	11	10	93	
08/26/16	Kampachi Farms 2 Grouper 1	1114	8.55	35.04	28.18	5.22	4.3	2.0	221	9	16	10	13.9	35	20	126	
11/25/16	Kampachi Farms 2 Grouper 1	1107	8.19	34.90	26.02	5.76	4.3	2.0	73	7	18	11	4.0	30	79	130	
03/08/17	Kampachi Farms 2 Grouper 1	1120	8.21	34.78	25.12	5.12	4.7	2.0	128	6	19	6	6.9	23	42	150	
05/18/17	Kampachi Farms 2 Grouper 1	844	8.11	34.52	25.64	5.55	4.0	2.0	95	6	21	8	4.5	14	32	137	
08/17/17	Kampachi Farms 2 Grouper 1	1223	8.15	34.50	27.79	5.69	8.3	2.0	152	3	27	12	5.6	97	30	135	
11/02/17	Kampachi Farms 2 Grouper 1	931	8.10	35.04	27.33	4.63	3.4	2.0	147	4	17	4	8.6	88	16	86	
03/01/18	Kampachi Farms 2 Grouper 1	1214	8.19	34.79	25.10	5.50	8.5	2.0	41	0	16	7	2.5	43	30	78	
06/07/18	Kampachi Farms 2 Grouper 1																No Discharge
09/10/18	Kampachi Farms 2 Grouper 1																No Discharge
11/09/18	Kampachi Farms 2 Grouper 1	913	8.16	34.91	27.53	4.74	12.2	2.0	164	5	24	10	6.8	72	21	159	
02/15/19	Kampachi Farms 2 Grouper 1	1148	8.15	35.07	24.41	6.48	12.7	2.0	84	0	22	13	3.8	26	61	133	
05/24/19	Kampachi Farms 2 Grouper 1	1209	8.18	35.74	27.32	5.73	3.0	2.0	59	5	16	7	3.8	14	18	184	
09/12/19	Kampachi Farms 2 Grouper 1	1327	8.16	34.89	29.61	6.71	2.7	2.0	56	2	17	10	3.3	9	43	167	
10/23/19	Kampachi Farms 2 Grouper 1	1518	8.18	35.83	28.08	6.24	5.0	2.0	218	7	45	14	4.9	45	22	179	
03/06/20	Kampachi Farms 2 Grouper 1	1208	8.11	36.11	25.75	6.58	4.6	2.0	115	-11	30	25	3.8	80	-19	220	
06/26/20	Ocean Era 2															0	No Discharge
Mean			8.15	34.07	26.56	5.80	4.7	2.0	199	32	26	14	7.0	72	524	80	
Std. Dev.			0.10	3.81	1.38	0.59	2.9	0.1	176	117	14	15	3.9	102	2322	66	
n=			24	24	24	24	24	24	24	20	24	22	24	22	21	25	

Kampachi Farms LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'40"N
Longitude: 156° 3'33"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
8.5	4.75	2.5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/21/10																	
02/10/11																	
5/12/11																	
08/18/11	Kampachi Farms 3, Grouper 2	1051	8.14	34.55	26.50	5.66	1.9	2.0	64		10		6.4			159	
12/01/11	Kampachi Farms 3, Grouper 2	914	8.11	34.99	25.13	6.00	1.1	2.0	212		34		6.2			126	
02/16/12	Kampachi Farms 3, Grouper 2	830	8.17	35.11	24.51	4.95	0.5	2.0	100	9	16	6	6.3	33	24	198	
05/17/12	Kampachi Farms 3, Grouper 2	828	8.12	34.80	25.08	5.81	1.9	2.0	202	9	22	9	9.2	95	22	146	
08/08/12	Kampachi Farms 3, Grouper 2	824	8.12	35.13	26.03	5.71	1.9	2.0	103	10	19	5	5.4	32	43	167	
12/05/12	Kampachi Farms 3, Grouper 2	823	8.14	35.34	24.95	6.27	1.8	2.0	146	13	21	10	7.0	31	72	154	
02/27/13	Kampachi Farms 3, Grouper 2	1005	8.07	35.26	24.71	5.81	2.9	2.0	152	9	27	16	5.6	34	53	122	
05/15/13	Kampachi Farms 3, Grouper 2	841	8.07	34.95	26.03	5.24	2.0	2.0	125	9	32	21	3.9	74	46	161	
08/28/13	Kampachi Farms 3, Grouper 2	850	8.08	34.80	26.55	6.11	7.9	2.0	182	12	28	12	6.5	44	48	152	
12/12/13	Kampachi Farms 3, Grouper 2	1103	8.06	35.20	26.31	5.50	2.1	2.0	121	5	21	10	5.8	41	41	185	
03/05/14	Kampachi Farms 3, Grouper 2	845	8.09	34.82	24.63	6.34	2.8	2.0	177	8	24	12	7.5	44	50	277	
06/26/14	Kampachi Farms 3, Grouper 2	848	8.06	34.90	26.14	6.10	2.7	2.0	155	7	30	18	5.2	64	62	127	
09/24/14	Kampachi Farms 3, Grouper 2	903	8.07	34.97	26.75	5.65	2.7	2.0	279	17	35	9	8.0	100	10	68	
12/17/14	Kampachi Farms 3, Grouper 2	950	8.08	35.35	25.70	6.06	3.0	2.0	29	13	28	7	1.0	83	4	104	
03/19/15	Kampachi Farms 3, Grouper 2	750	7.84	24.78	24.33	6.06	2.6	2.0	181	18	24	44	7.6	93	83	123	
06/12/15	Kampachi Farms 3, Grouper 2	845	8.04	34.68	26.24	6.89	3.6	2.0	189	11	19	15	9.8	74	45	109	
08/19/15	Kampachi Farms 3, Grouper 2	1101	8.07	34.23	28.28	5.98	4.6	2.0	155	7	22	8	7.0	66	10	115	
12/09/15	Kampachi Farms 3, Grouper 2	838	8.10	33.90	26.16	6.38	3.6	2.0	212	32	26	18	8.2	160	193	100	
02/17/16	Kampachi Farms 3, Grouper 2	1021	8.13	34.33	24.85	6.14	3.2	2.0	129	21	24	15	5.4	43	9	124	
06/01/16	Kampachi Farms 3, Grouper 2	918	8.20	34.21	26.28	6.04	2.1	2.0	54	8	17	11	3.2	19	13	139	
08/26/16	Kampachi Farms 3, Grouper 2	1119	8.55	34.96	27.86	6.07	3.7	2.0	115	8	19	10	6.0	20	25	126	
11/25/16	Kampachi Farms 3, Grouper 2	1113	8.16	34.93	25.89	5.96	4.2	2.0	134	7	29	16	4.7	52	59	130	
03/08/17	Kampachi Farms 3, Grouper 2	1124	8.20	23.40	24.97	5.79	2.7	2.0	99	6	16	7	6.1	55	49	150	
05/18/17	Kampachi Farms 3, Grouper 2	849	8.10	34.46	25.79	4.99	4.4	2.0	63	9	16	8	3.9	23	28	137	
08/17/17	Kampachi Farms 3, Grouper 2	1228	8.14	34.41	27.58	5.87	4.3	2.0	221	4	27	15	8.2	153	35	135	
11/02/17	Kampachi Farms 3, Grouper 2	935	8.10	35.03	27.21	4.87	4.8	2.0	476	4	55	27	8.7	420	154	86	
03/01/18	Kampachi Farms 3, Grouper 2	1218	8.22	34.34	24.70	5.52	5.0	2.0	63	18	17	10	3.6	50	381	78	
06/07/18	Kampachi Farms 3, Grouper 2	1138	8.16	34.53	26.35	6.40	3.2	2.0	64	0	17	9	3.8	59	34	101	
09/10/18	Kampachi Farms 3, Grouper 2	1151	8.17	34.67	27.95	6.03	13.3	2.0	44	2	13	4	3.4	22	22	190	
11/09/18	Kampachi Farms 3, Grouper 2	918	8.16	34.89	27.38	4.49	11.6	2.0	83	7	16	9	5.1	13	17	159	
02/15/19	Kampachi Farms 3, Grouper 2	1151	8.15	35.05	24.08	6.50	13.6	2.0	76	1	18	12	4.1	27	52	133	
05/24/19	Kampachi Farms 3, Grouper 2	1212	8.18	35.30	27.07	6.57	3.6	2.0	42	7	15	8	2.8	12	21	184	
09/12/19	Kampachi Farms 3, Grouper 2	1330	8.15	34.82	28.79	6.90	1.9	2.0	69	2	17	9	4.2	21	39	167	
10/23/19	Kampachi Farms 3, Grouper 2															0	No flow, sump under construction
03/06/20	Kampachi Farms 3, Grouper 2															0	No flow, sump under construction
06/26/20	Ocean Era 3	950	8.04	14.44	26.20	6.83	3.0	2.0	67	-11	17	6	4.1	37	-2	200	
Mean			8.12	33.57	26.09	5.93	3.9	2.0	135	9	23	12	5.7	65	54	134	
Std. Dev.			0.10	4.26	1.20	0.56	3.1	0.0	86	7	8	8	2.0	74	72	52	
n=			34	34	34	34	34	34	34	31	34	32	34	32	31	34	

Discharge GPS:
Latitude: 19°43'38.88"
Longitude: 156° 3'34.77"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
4	4	2.5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/21/10	Kona Blue Main	1000	8.16				0.8	2.0	157	10.7	12	0.8	13.1	57	153.6	287	
02/10/11	Kona Blue Main	752	8.18	35.04	25.19	5.00	2.3	2.0	277		43		6.4			241	
05/12/11	Kona Blue Main	1012	8.18	33.38	26.04	6.04	2.4	2.0	183		23		8.0			226	
08/18/11	Kampachi Farms 4, Main	1043	8.05	34.63	26.78	5.57	2.0	2.0	239		25		9.6			189	
12/01/11	Kampachi Farms 4, Main	911	8.09	34.97	25.07	6.73	0.7	2.0	162		22		7.4			150	
02/16/12	Kampachi Farms 4, Main															0	No Discharge
05/17/12	Kampachi Farms 4, Main	815	8.15	33.95	24.97	6.64	1.4	2.0	138	7	21	7	6.6	4	72	180	
08/08/12	Kampachi Farms 4, Main	828	8.06	35.07	26.31	6.16	2.1	2.0	178	27	25	8	7.1	80	137	206	
12/05/12	Kampachi Farms 4, Main	812	8.12	35.27	25.09	6.42	2.7	2.0	164	12	22	11	7.5	58	86	190	
02/27/13	Kampachi Farms 4, Main	958	8.10	35.48	25.31	6.12	2.9	2.0	183	8	28	14	6.5	16	113	122	
05/15/13	Kampachi Farms 4, Main	843	8.10	34.92	26.29	5.37	6.5	2.0	192	9	25	7	7.7	26	67	188	
08/28/13	Kampachi Farms 4, Main	843	8.03	34.31	26.72	5.82	3.9	2.0	266	6	69	46	3.8	128	78	178	
12/12/13	Kampachi Farms 4, Main	1111	8.03	34.89	26.52	5.34	3.4	2.0	351	26	41	14	8.6	67	271	228	
03/05/14	Kampachi Farms 4, Main															0	No Discharge
06/26/14	Kampachi Farms 4, Main	846	8.12	34.88	26.61	6.39	7.5	2.6	129	6	25	15	5.1	6	65	131	
09/24/14	Kampachi Farms 4, Main	857	8.12	35.05	28.22	4.92	12.8	2.0	193	13	25	3	7.6	7	15	68	
12/17/14	Kampachi Farms 4, Main															0	No Discharge
03/19/15	Kampachi Farms 4, Main															0	No Discharge
06/12/15	Kampachi Farms 4, Main															0	No Discharge
08/19/15	Kampachi Farms 4, Main	1047	8.14	35.01	29.05	5.76	3.7	2.0	109	9	18	7	6.1	26	190	115	
12/09/15	Kampachi Farms 4, Main	825	7.99	34.19	25.59	6.40	3.7	2.0	252	35	38	20	6.6	132	396	100	
02/17/16	Kampachi Farms 4, Main															0	No Discharge
06/01/16	Kampachi Farms 4, Main	907	8.16	34.50	26.54	5.81	2.8	2.0	148	27	27	11	5.5	56	37	139	
08/26/16	Kampachi Farms 4, Main	1105	8.64	35.07	28.47	5.88	6.5	2.0	355	8	120	47	3.0	52	329	126	
11/25/16	Kampachi Farms 4, Main	1057	8.13	34.86	26.05	5.82	3.2	9.1	222	7	35	22	6.4	69	184	130	
03/08/17	Kampachi Farms 4, Main	1111	8.17	34.65	25.28	5.13	3.5	2.0	116	9	18	7	6.5	80	79	100	
05/18/17	Kampachi Farms 4, Main															0	No Discharge - rearranging tanks
08/17/17	Kampachi Farms 4, Main															0	No Discharge - rearranging & upgrading tanks
11/02/17	Kampachi Farms 4, Main	923	8.15	34.27	27.54	4.76	22.7	2.0	233	3	41	8	5.7	6	19	86	very low flow, some TSS from sediment on bottom
03/01/18	Kampachi Farms 4, Main	1204	8.25	34.92	23.35	6.06	10.8	2.0	30	1	15	7	2.0	26	22	78	
06/07/18	Kampachi Farms 4, Main																No Discharge
09/10/18	Kampachi Farms 4, Main	1144	8.12	34.72	28.06	5.65	4.2	2.0	203	2	20	7	10.2	159	31	190	
11/09/18	Kampachi Farms 4, Main	905	8.13	32.04	27.54	6.23	11.8	2.0	120	2	16	5	7.5	50	23	159	
02/15/19	Kampachi Farms 4, Main	1141	8.15	33.82	24.23	6.54	5.3	2.0	91	21	25	16	3.7	20	485	133	
05/24/19	Kampachi Farms 4, Main	1203	8.08	35.71	26.17	6.14	4.1	2.0	233	29	30	18	7.7	156	167	184	
09/12/19	Kampachi Farms 4, Main	1316	8.12	34.83	28.80	6.63	2.8	2.0	232	3	26	13	8.9	200	34	167	
10/23/19	Kampachi Farms 4, Main	1510	8.14	35.77	23.45	6.31	3.0	3.9	489	7	104	48	4.7	220	19	179	
03/06/20	Kampachi Farms 4, Main	1201	8.10	36.12	25.66	6.81	5.7	2.3	148	-9	25	15	6.0	94	7	293	
06/26/20	Ocean Era 4	917	8.06	14.80	26.15	7.04	3.2	2.0	82	-8	14	6	5.9	41	6	267	
Mean			8.13	34.04	26.24	5.98	4.9	2.3	196	10	33	15	6.7	71	119	132	
Std. Dev.			0.11	3.78	1.45	0.59	4.5	1.3	92	11	24	13	2.2	61	126	87	
n=			30	29	29	29	30	30	30	24	30	26	30	26	26	34	

Kampachi Farms LLC Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'39"N
Longitude: 156° 3'34"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
10	10	3

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/21/10																	
02/10/11																	
5/12/11																	
08/18/11	Kampachi Farms 5, K	1040	8.20	35.04	26.42	5.26	2.7	2.0	102		15		6.8			49	
12/01/11	Kampachi Farms 5, K	926	8.15	35.03	24.65	5.16	0.3	2.0	133		21		6.3			44	
02/16/12	Kampachi Farms 5, K	840	8.19	35.05	24.18	5.90	1.3	2.0	140	24	15	24	9.3	22	250	70	
05/17/12	Kampachi Farms 5, K	838	8.15	35.00	24.99	5.15	2.2	2.0	119	7	20	9	6.0	23	22	90	
08/08/12	Kampachi Farms 5, K	835	8.16	35.18	26.17	5.25	2.3	2.0	97	8	16	6	6.1	19	57	103	
12/05/12	Kampachi Farms 5, K	817	8.16	35.29	24.89	5.03	2.8	2.0	79	10	19	8	4.2	13	63	95	
02/27/13	Kampachi Farms 5, K	953	8.11	35.33	25.39	7.20	2.0	2.0	129	9	29	18	4.5	17	49	43	
05/15/13	Kampachi Farms 5, K	847	8.05	34.75	26.21	5.28	2.0	2.0	140	9	27	8	5.2	47	49	81	
08/28/13	Kampachi Farms 5, K	838	8.08	34.83	26.77	5.71	2.4	2.0	119	8	48	38	2.5	67	51	76	
12/12/13	Kampachi Farms 5, K	1109	7.96	35.10	26.41	5.20	2.1	2.0	338	9	33	10	10.2	140	46	114	
03/05/14	Kampachi Farms 5, K	842	8.00	34.83	24.48	6.07	2.5	2.0	277	9	34	13	8.1	134	49	150	
06/26/14	Kampachi Farms 5, K	841	8.00	34.79	25.84	6.71	3.3	2.6	236	7	41	22	5.7	131	60	127	
09/24/14	Kampachi Farms 5, K	852	8.10	35.00	27.59	6.24	3.8	2.0	343	17	47	15	7.3	35	25	68	
12/17/14	Kampachi Farms 5, K	945	7.89	35.34	25.82	4.42	3.2	2.0	285	11	32	5	8.9	136	4	104	
03/19/15	Kampachi Farms 5, K															0	No Discharge
06/12/15	Kampachi Farms 5, K	836	8.05	34.70	26.16	6.81	3.6	2.0	176	6	19	22	9.2	95	50	109	
08/19/15	Kampachi Farms 5, K	1051	8.11	34.27	28.42	6.06	4.6	2.0	263	9	18	7	14.8	106	44	115	
12/09/15	Kampachi Farms 5, K	829	8.10	33.63	26.33	6.44	4.0	2.0	121	9	19	6	6.4	60	53	133	
02/17/16	Kampachi Farms 5, K	1012	8.15	34.51	25.14	5.81	3.5	2.0	98	19	22	15	4.4	22	44	93	
06/01/16	Kampachi Farms 5, K	911	8.14	34.22	26.48	5.65	2.8	2.0	125	7	17	10	7.6	84	22	93	
08/26/16	Kampachi Farms 5, K	1111	8.47	35.02	28.12	5.77	5.9	2.0	269	8	52	15	5.2	149	30	126	
11/25/16	Kampachi Farms 5, K	1101	8.18	34.35	26.16	5.95	4.1	3.9	81	7	21	13	3.8	20	156	130	
03/08/17	Kampachi Farms 5, K	1116	8.19	34.67	25.19	5.19	5.4	2.0	168	5	23	9	7.2	47	38	100	
05/18/17	Kampachi Farms 5, K	839	8.13	34.46	26.01	5.40	4.4	2.0	98	5	20	9	4.9	31	28	92	
08/17/17	Kampachi Farms 5, K	1219	8.14	34.48	28.38	5.82	3.2	2.0	120	2	22	14	5.5	112	26	90	
11/02/17	Kampachi Farms 5, K	927	8.12	35.04	27.44	4.74	3.3	2.0	87	4	9	5	9.7	31	16	86	
03/01/18	Kampachi Farms 5, K	1211	8.20	34.47	25.26	5.73	13.1	2.0	85	1	21	11	4.1	58	31	78	
06/07/18	Kampachi Farms 5, K	1133	8.15	34.80	26.70	6.17	12.5	2.0	98	6	39	27	2.5	47	202	151	
09/10/18	Kampachi Farms 5, K	1147	8.15	34.61	28.01	5.93	3.5	2.0	154	2	22	9	7.0	87	33	190	
11/09/18	Kampachi Farms 5, K	910	8.15	34.66	27.51	5.84	3.8	2.0	103	5	23	10	4.5	29	79	159	
02/15/19	Kampachi Farms 5, K	1145	8.15	34.92	24.19	6.45	3.3	2.0	69	2	20	12	3.5	29	53	133	
05/24/19	Kampachi Farms 5, K	1205	8.17	35.73	27.16	6.05	4.0	2.0	89	5	17	9	5.1	32	19	184	
09/12/19	Kampachi Farms 5, K	1323	8.16	33.36	28.65	6.89	2.0	3.7	70	2	18	9	3.9	41	60	167	
10/23/19	Kampachi Farms 5, K	1515	8.14	35.76	28.27	6.46	1.9	2.0	41	5	20	12	2.1	21	19	179	
03/06/20	Kampachi Farms 5, K	1205	8.09	36.07	25.19	6.85	3.1	2.0	48	-23	23	16	2.1	37	-18	220	
06/26/20	Ocean Era 5	920	8.11	15.01	26.00	7.05	2.3	2.0	61	-10	13	5	4.6	23	5	200	
Mean			8.13	34.27	26.30	5.88	3.6	2.1	142	6	24	13	6.0	59	52	112	
Std. Dev.			0.09	3.39	1.27	0.68	2.5	0.4	81	8	10	7	2.7	43	54	48	
n=			35	35	35	35	35	35	35	31	35	33	35	33	32	36	

Ocean Rider, Inc. Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'22.14"N
Longitude: 156° 3'24.35"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
11	11	3

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	Central Sump	1144	8.05	34.40	23.59	6.60	2.5	2.0	215		32		6.7			50.5	
06/24/11	Central Sump	804	8.13	34.48	22.89	5.64	2.8	2.0	299		40		7.5			58.3	
09/29/11	Central Sump	855	8.02	34.93	25.17	6.37	2.4	2.0	172		21		8.2			54.9	
12/14/11	Central Sump	846	7.85	34.70	23.21	6.32	0.9	2.1	230		21		11.0			61.4	
03/08/12	Central Sump	839	8.14	34.15	23.81	6.53	1.0	2.0	178	60	26	19	6.8	17.0	729	58.8	
06/06/12	Central Sump	825	7.98	34.55	24.09	5.24	2.4	2.0	185	53	32	15	5.8	12.4	341	56.3	
08/23/12	Central Sump	815	7.82	34.98	24.33	6.03	2.8	2.1	264	87	26	12	10.2	15.0	506	56.1	
12/06/12	Central Sump	826	8.08	34.33	23.92	6.97	2.5	2.0	210	93	27	14	7.8	2.4	802	55.1	
02/28/13	Central Sump	821	8.18	34.65	23.00	5.84	1.9	2.0	358	44	56	15	6.4	10.6	344	35.7	
05/30/13	Central Sump	837	8.12	34.80	24.63	6.60	2.8	2.0	167	87	33	22	5.1	13.8	324	42.6	
09/05/13	Central Sump	837	8.02	34.66	23.87	5.76	2.9	2.0	141	96	41	20	3.4	10.6	374	42.8	
12/18/13	Central Sump	853	7.92	34.81	23.64	5.65	3.6	2.7	182	63	29	24	6.3	13.6	272	48.0	
03/06/14	Central Sump	838	8.06	34.80	23.73	5.56	2.9	2.0	157	26	22	8	7.1	4.9	136	41.7	
06/25/14	Central Sump	823	8.01	34.48	24.62	6.14	3.9	2.1	168	73	30	20	5.6	36.2	714	50.4	
09/25/14	Central Sump	821	7.83	34.86	25.95	6.40	3.3	2.0	207	66	32	10	6.5	1.0	215	61.8	
12/18/14	Central Sump	928	7.95	35.35	24.12	6.78	3.0	2.0	235	96	38	19	6.2	7.6	342	50.0	
03/12/15	Central Sump	835	7.67	34.47	22.72	6.01	9.6	3.0	502	140	99	50	5.1	73.4	568	64.4	
06/04/15	Central Sump	821	7.88	33.87	24.20	5.68	4.5	2.0	2110	265	302	36	7.0	15.0	845	89.3	
08/20/15	Central Sump	846	8.03	34.89	24.78	5.27	3.5	2.0	258	130	33	24	7.8	0.3	575	57.8	
12/03/15	Central Sump	809	7.87	34.64	24.05	5.75	3.7	2.0	196	69	31	9	6.3	2.5	339	62.3	
02/24/16	Central Sump	822	8.13	34.43	23.65	6.08	2.9	2.0	168	36	38	25	4.4	4.0	275	84.6	
06/02/16	Central Sump	800	8.04	34.69	25.19	6.44	10.7	2.0	89	33	17	12	5.1	5.9	194	107.1	
09/01/16	Central Sump	822	8.31	34.76	24.56	5.69	3.7	2.0	237	163	46	39	5.1	0.3	499	117.8	
11/30/16	Central Sump	828	8.06	34.95	24.23	5.74	2.8	2.0	118	40	23	11	5.2	25.5	186	65.8	
03/09/17	Central Sump	842	8.09	34.69	22.81	4.94	4.6	2.0	161	78	25	16	6.4	18.0	358	77.3	
05/24/17	Central Sump	823	8.03	34.68	22.58	5.24	4.3	2.0	152	129	29	22	5.2	11.6	569	63.4	
08/24/17	Central Sump	837	8.03	34.54	24.01	5.75	3.1	2.0	238	172	42	29	5.7	13.4	576	78.2	
12/13/17	Central Sump	836	8.02	35.40	23.23	5.10	10.1	2.0	122	66	23	14	5.3	27.7	298	94.3	
03/14/18	Central Sump	827	8.11	34.54	21.93	6.07	10.9	2.0	128	78	28	18	4.7	30.4	329	93.6	
06/20/18	Central Sump	828	8.06	35.05	24.33	5.37	3.4	2.0	113	70	21	10	5.3	0.8	443	89.7	
09/20/18	Central Sump	833	7.80	33.79	23.45	5.85	4.8	2.3	412	158	45	13	9.1	37.2	1126	83.9	
12/13/18	Central Sump	813	8.13	34.67	22.97	5.92	10.7	2.0	162	93	32	22	5.1	12.1	597	56.8	
03/01/19	Central Sump	850	8.11	34.23	22.34	6.09	12.3	2.0	161	94	28	21	5.7	17.0	506	73.1	
06/05/19	Central Sump	836	8.02	33.89	22.68	6.35	3.4	2.0	263	223	45	38	5.8	6.0	1990	82.8	
09/18/19	Central Sump	841	8.11	34.26	23.92	6.24	2.5	2.0	213	156	36	29	5.9	2.5	1176	77.4	
11/01/19	Central Sump	905	8.15	34.78	23.85	5.89	9.6	2.0	282	179	40	36	7.0	15.7	883	91.2	
03/11/20	Central Sump	836	8.14	34.49	22.22	6.38	10.4	2.0	151	91	38	28	4.0	12.6	911	82.6	
06/18/20	Central Sump	828	8.10	36.55	22.93	6.15	2.4	2.0	191	144	38	28	5.1	7.5	667	82.9	
Mean			8.03	34.66	23.72	5.96	4.6	2.1	258	101	41	21	6.2	14	559	68	
Std. Dev.			0.13	0.47	0.89	0.48	3.2	0.2	319	56	46	10	1.6	14	364	19	
n=			38	38	38	38	38	38	38	34	38	34	38	34	34	38	

Discharge GPS:
Latitude: 19°43'22.79"N
Longitude: 156° 3'25.79"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
13	9	3

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	OR #2 (west)	1158	8.16	34.68	25.70	6.60	1.8	2.0	206		30		6.9			50.5	
06/24/11	OR #2 (west)	810	8.25	35.19	25.36	6.05	2.7	2.0	209		32		6.5			58.3	
09/29/11	OR #2 (west)	900	8.19	36.58	26.00	7.42	3.3	2.0	156		21		7.4			54.9	
12/14/11	OR #2 (west)	851	8.21	34.98	23.34	6.41	1.3	2.0	249		18		13.8			61.4	
03/08/12	OR #2 (west)	843	8.14	35.80	24.27	4.89	2.3	2.0	181	1	30	1	6.0	3.0	513	61.2	
06/06/12	OR #2 (west)	831	7.64	34.92	25.97	0.42	4.2	20.7	918	5	164	15	5.6	4.5	2526	56.3	
08/23/12	OR #2 (west)	819	7.87	34.99	23.52	5.06	3.7	2.2	363	62	51	2	7.1	9.0	799	56.1	
12/06/12	OR #2 (west)	831	8.03	34.86	19.37	3.81	2.5	3.0	332	142	46	12	7.2	0.5	1800	55.1	
02/28/13	OR #2 (west)	825	7.83	36.39	22.00	3.65	5.3	4.8	1795	33	321	18	5.6	51	1366	35.7	
05/30/13	OR #2 (west)	841	8.14	34.66	24.73	5.62	7.2	2.8	372	36	56	17	6.6	46	383	42.6	
09/05/13	OR #2 (west)	840	8.16	35.89	24.34	7.19	45.5	5.8	710	0	117	6	6.1	6.0	1899	42.8	
12/18/13	OR #2 (west)	858	7.99	35.14	22.73	6.14	7.6	4.0	437	47	46	17	9.5	12.0	235	48.0	
03/06/14	OR #2 (west)	841	8.12	34.73	23.26	6.56	4.0	2.0	244	14	23	8	10.7	25.2	70	41.7	
06/25/14	OR #2 (west)	827	8.23	35.06	23.68	8.86	66.8	2.8	617	3	100	14	6.2	12.4	299	50.4	
09/25/14	OR #2 (west)	826	7.99	34.51	24.37	6.70	11.4	3.2	435	162	61	32	7.1	42.6	1117	61.8	
12/18/14	OR #2 (west)	934	8.04	35.77	22.47	7.16	6.5	3.5	388	51	46	11	8.4	30.5	276	50.0	
03/12/15	OR #2 (west)	825	7.86	34.16	20.70	4.04	12.4	5.4	1053	185	166	112	6.3	157.1	2490	64.4	
06/04/15	OR #2 (west)	826	8.01	34.25	25.13	6.01	5.8	3.2	418	51	54	19	7.8	7.6	230	89.3	
08/20/15	OR #2 (west)	851	8.10	34.66	25.83	5.63	4.0	2.0	201	58	30	16	6.7	1.7	389	57.8	
12/03/15	OR #2 (west)	814	7.93	34.53	23.50	5.61	6.1	3.1	276	62	35	13	8.0	23.8	260	62.3	
02/24/16	OR #2 (west)	828	8.16	34.80	22.38	5.77	3.7	5.2	152	20	43	27	3.5	24.2	330	84.6	
06/02/16	OR #2 (west)															0.0	No flow
09/01/16	OR #2 (west)															0.0	No flow
11/30/16	OR #2 (west)	831	8.12	35.34	23.08	6.34	4.0	2.0	151	6	31	17	4.9	86.2	158	65.6	
03/09/17	OR #2 (west)															0.0	No flow
05/24/17	OR #2 (west)	827	8.11	34.80	24.60	4.92	17.9	3.4	327	5	52	9	6.3	22.1	8	63.3	
08/24/17	OR #2 (west)	840	8.16	34.72	26.26	5.53	5.2	2.0	90	6	20	1	4.5	11.3	66	78.0	
12/13/17	OR #2 (west)	839	8.07	35.75	22.48	4.29	5.8	3.7	198	5	23	7	8.6	44.3	121	94.1	
03/14/18	OR #2 (west)	830	8.24	34.88	22.56	6.13	6.1	2.6	155	0	19	8	8.0	24.8	10	93.5	
06/20/18	OR #2 (west)	832	8.22	35.23	23.40	5.55	5.5	4.4	345	33	53	19	6.6	7.5	892	89.6	
09/20/18	OR #2 (west)	838	7.88	34.39	23.20	5.87	9.4	2.0	311	218	40	34	7.7	27.1	1079	83.7	
12/13/18	OR #2 (west)	817	8.07	35.16	22.03	6.26	12.0	2.0	218	129	46	33	4.8	25.0	675	56.5	
03/01/19	OR #2 (west)	855	8.08	24.67	20.15	5.70	5.7	3.4	281	26	54	37	5.2	120.8	47	72.9	
06/05/19	OR #2 (west)	840	8.10	35.25	25.43	6.38	5.8	2.1	124	29	26	18	4.7	5.5	108	82.5	
09/18/19	OR #2 (west)	845	8.07	35.18	25.12	6.89	23.9	5.6	471	43	86	18	5.5	6.6	319	77.1	
11/01/19	OR #2 (west)	910	8.15	35.21	24.04	7.44	13.8	2.1	259	148	42	31	6.2	27.0	299	90.8	
03/11/20	OR #2 (west)	839	8.06	35.61	20.99	6.98	5.1	2.6	256	109	43	32	6.0	22.6	457	82.2	
06/18/20	OR #2 (west)	831	8.05	36.86	22.08	7.75	7.2	3.2	280	134	48	26	5.9	19.7	656	82.6	
Mean			8.07	34.85	23.54	5.88	9.6	3.6	376	59	59	20	6.8	29	641	60	
Std. Dev.			0.13	1.88	1.73	1.47	12.8	3.2	324	62	58	20	1.9	35	701	24	
n=			35	35	35	35	35	35	35	30	35	31	35	31	31	35	

Ocean Rider, Inc. Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'23.26"N
Longitude: 156° 3'25.47"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
12	7	3.5

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/03/11	OR #3 (east)	1158	8.16	34.68	25.70	5.70	1.8	2.0	206		30		6.9			50.5	
06/24/11	OR #3 (east)	837	8.02	34.72	23.33	5.94	2.8	3.7	192		35		5.5			58.3	
09/29/11	OR #3 (east)	905	8.06	34.14	25.34	6.31	0.8	2.0	219		28		7.8			54.9	
12/14/11	OR #3 (east)	854	8.09	34.91	22.72	6.51	0.7	2.0	221		21		10.5			61.4	
03/08/12	OR #3 (east)	846	8.13	35.11	23.64	5.18	1.7	2.0	181	78	33	21	5.5	10.0	359	58.8	
06/06/12	OR #3 (east)	834	8.13	34.98	23.50	5.82	2.1	2.0	178	80	33	17	5.4	1.8	333	56.3	
08/23/12	OR #3 (east)	824	8.02	35.07	23.26	6.35	2.3	2.0	198	140	31	22	6.4	2.0	621	56.1	
12/06/12	OR #3 (east)	834	8.06	34.88	22.14	6.04	4.1	2.0	200	115	32	19	6.3	0.9	491	55.1	
02/28/13	OR #3 (east)	829	7.98	35.28	22.45	6.07	2.2	2.0	156	67	33	20	4.8	14.1	267	35.7	
05/30/13	OR #3 (east)	845	8.19	34.83	25.05	6.43	3.2	2.0	241	103	34	26	7.1	0.1	427	42.6	
09/05/13	OR #3 (east)	844	8.01	34.69	24.08	5.43	2.9	2.0	196	137	41	28	4.8	5.7	570	42.8	
12/18/13	OR #3 (east)	901	8.00	35.12	23.89	5.91	4.5	2.0	205	123	37	27	5.5	3.8	513	48.0	
03/06/14	OR #3 (east)	846	8.11	34.83	24.36	5.86	2.4	2.0	109	13	19	10	5.9	22.5	72	41.7	
06/25/14	OR #3 (east)	830	8.02	34.79	24.28	6.30	5.3	2.0	183	91	36	21	5.1	11.2	539	50.4	
09/24/14	OR #3 (east)	832	8.03	34.87	25.27	6.47	4.0	2.0	284	132	38	18	7.4	5.6	471	61.8	
12/18/14	OR #3 (east)	937	8.00	35.23	24.36	5.64	2.6	2.0	131	30	24	9	5.5	19.4	80	50.0	
03/12/15	OR #3 (east)	828	8.01	34.50	22.86	5.90	10.7	2.0	492	293	116	78	4.2	68.9	974	64.4	
06/04/15	OR #3 (east)	829	7.99	34.48	24.47	5.30	3.5	2.0	418	77	54	23	7.8	9.1	278	89.3	
08/20/15	OR #3 (east)	854	8.05	34.87	24.71	5.23	3.7	2.0	211	96	33	21	6.4	3.3	474	57.8	
12/03/15	OR #3 (east)	818	8.03	34.59	24.44	5.47	3.4	2.0	152	76	24	14	6.4	5.9	288	62.3	
02/24/16	OR #3 (east)	831	8.15	34.69	24.04	6.28	2.9	2.0	89	27	40	25	2.2	9.0	74	84.6	
06/02/16	OR #3 (east)	805	8.15	34.77	25.91	5.95	3.2	2.0	67	18	13	10	5.1	3.8	53	107.1	
09/01/16	OR #3 (east)	828	8.39	34.79	25.90	6.01	3.9	2.0	189	75	33	27	5.8	2.4	281	117.8	
11/30/16	OR #3 (east)	836	8.11	32.90	24.78	5.79	4.3	2.0	126	56	26	12	4.9	13.3	1349	65.8	
03/09/17	OR #3 (east)	845	8.14	34.61	24.09	5.08	13.5	2.0	119	18	19	6	6.2	11.7	154	77.3	
05/24/17	OR #3 (east)	831	8.09	34.66	24.04	4.90	3.8	2.0	138	68	22	14	6.3	11.0	322	63.4	
08/24/17	OR #3 (east)	844	8.06	34.53	24.75	5.60	3.4	2.0	148	98	29	11	5.1	9.8	463	78.2	
12/13/17	OR #3 (east)	847	8.06	34.47	22.25	4.84	10.3	2.0	196	123	31	21	6.3	28.7	957	94.3	
03/14/18	OR #3 (east)	833	8.17	34.63	23.46	5.47	3.8	2.0	99	34	18	10	5.4	24.0	145	93.6	
06/20/18	OR #3 (east)	835	8.04	35.30	23.55	5.57	11.1	2.0	188	143	32	22	5.8	4.6	667	89.7	
09/20/18	OR #3 (east)	841	7.82	34.35	21.43	5.19	4.6	2.0	286	162	44	25	6.4	30.9	918	83.9	
12/13/18	OR #3 (east)	820	8.15	34.83	23.99	6.16	5.3	2.0	139	80	28	18	4.9	7.7	406	56.8	
03/01/19	OR #3 (east)	858	8.19	34.61	23.60	6.52	4.3	2.0	75	10	18	11	4.1	21.1	41	73.1	
06/05/19	OR #3 (east)	843	8.11	35.68	25.46	6.46	4.0	2.0	170	125	36	29	4.7	13.0	609	82.8	
09/18/19	OR #3 (east)	848	7.99	35.30	24.09	5.77	4.8	2.0	266	135	46	24	5.7	2.6	814	77.4	
11/01/19	OR #3 (east)	912	8.10	35.32	22.40	6.52	2.1	2.0	250	191	41	37	6.1	21.3	854	91.2	
03/11/20	OR #3 (east)	843	8.04	35.64	18.05	7.03	12.4	2.0	243	177	46	38	5.2	6.6	703	82.6	
06/18/20	OR #3 (east)	834	8.02	36.84	21.16	6.75	3.1	2.0	249	215	46	40	5.4	0.7	925	82.9	
Mean			8.08	34.86	23.76	5.89	4.4	2.0	195	100	34	22	5.8	12	485	68	
Std. Dev.			0.09	0.57	1.50	0.53	3.1	0.3	84	62	16	13	1.3	13	317	19	
n=			38	38	38	38	38	38	38	34	38	34	38	33	34	38	

Pacific Hybrid Seawater Disposal Log

Discharge GPS:
Latitude:
Longitude:

Seawater Disposal Trench Dimensions
L (ft.) W (ft.) D (ft.)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
06/18/20	Pacific Hybreed	1156	8.21	36.16	22.40	6.19	5.2	2.0	837.4	797.4	116.7	108.4	7.2	-8.9	1425.6	6.1	
Mean			8.21	36.16	22.40	6.19	5.2	2.0	837	797	117	108	7.2	-9	1426	6	
Std. Dev.			#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#####	#DIV/0!	#DIV/0!	#DIV/0!	
n=			1	1	1	1	1	1	1	1	1	1	1	0	1	1	

Pacific Planktonics Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'38"N
Longitude: 156° 3'32"W

Seawater Disposal Trench Dimensions

L (ft.)	W (ft.)	D (ft.)
11	9	9

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
07/22/10	Pacific Planktonics	930	8.00				2.1	2.0	273		45.9		5.9			11.5	
07/28/10	Pacific Planktonics	930	8.12				1.2	2.0	234		37		6.3				
02/03/11	Pacific Planktonics	845	8.25	23.87	23.58	7.15	3.4	2.0	430		42		10.2			7.2	
05/12/11	Pacific Planktonics	941	8.15	34.64	25.57	5.77	3.0	2.0	183		27		6.8			13.5	
08/18/11	Pacific Planktonics	859	8.13	34.98	25.60	6.51	2.5	2.0	168		27		6.2			19.6	
12/01/11	Pacific Planktonics	943	8.13	35.01	24.31	6.09	1.1	2.0	223		39		5.7			21.1	
02/16/12	Pacific Planktonics	947	8.17	35.16	23.93	5.52	2.6	2.0	352	32	33	22	10.7	71	0	58.6	
05/17/12	Pacific Planktonics	902	8.10	34.82	24.99	5.14	3.3	2.0	296	38	40	21	7.4	71	19	66.9	
08/08/12	Pacific Planktonics	958	8.13	35.15	26.32	6.12	2.7	2.0	318	80	46	29	6.9	54	29	55.8	
11/14/12	Pacific Planktonics	1016	8.18	35.48	25.90	6.60	3.8	2.0	373	104	61	40	6.1	60	44	57.3	
02/20/13	Pacific Planktonics	1010	8.04	35.60	24.02	5.90	19.9	3.7	614	152	86	37	7.2	164	71	45.6	Trench almost empty, tuna tank H2O supply off
05/15/13	Pacific Planktonics	918	8.06	35.05	26.39	5.47	4.8	2.1	564	180	79	61	7.1	111	44	46.1	
09/05/13	Pacific Planktonics	1132	7.99	35.11	26.84	5.77	1.2	2.0	403	163	48	32	8.4	46	39	46.1	
12/12/13	Pacific Planktonics	1025	8.15	35.23	25.51	5.85	5.7	2.6	351	47	36	15	9.8	35	58	7.2	Debris from bucket scraping wall during collection
03/05/14	Pacific Planktonics	917	8.17	34.33	23.05	5.51	2.8	2.0	295	28	24	13	12.3	26	43	7.6	
06/26/14	Pacific Planktonics	917	8.12	34.79	25.55	5.76	5.0	4.6	340	31	51	14	6.7	33	60	7.2	
09/24/14	Pacific Planktonics	917	8.10	35.06	27.39	5.20	4.0	2.0	275	23	16	13	17.5	36	7	7.2	
12/18/14	Pacific Planktonics	1005	8.04	35.43	24.90	5.53	1.7	2.0	256	12	21	4	12.4	9	4	7.5	
03/12/15	Pacific Planktonics	902	8.06	34.53	23.18	6.37	12.5	2.3	600	77	99	56	6.1	153	186	7.3	
06/04/15	Pacific Planktonics	949	8.13	34.59	27.15	4.83	3.6	2.0	418	5	54	14	7.8	17	28	7.2	
09/02/15	Pacific Planktonics	854	7.99	33.97	26.85	6.13	4.4	2.0	263	74	32	15	8.2	41	222	70.6	
12/03/15	Pacific Planktonics	1159	8.17	34.85	25.97	5.21	6.6	2.0	213	34	27	10	8.0	30	57	7.5	
02/18/16	Pacific Planktonics	905	7.90	34.65	23.66	4.92	5.4	2.8	394	40	61	25	6.5	128	7	11.5	1st effluent tested with shrimp use
06/02/16	Pacific Planktonics	850	7.99	34.47	26.06	4.53	4.1	2.5	416	33	50	23	8.3	73	26	11.4	
09/01/16	Pacific Planktonics	837	8.31	34.81	25.05	4.74	6.3	2.0	425	100	37	23	11.6	117	334	11.4	
12/01/16	Pacific Planktonics	1028	8.08	34.92	24.84	6.19	6.7	2.0	152	23	40	22	3.8	40	128	11.6	
03/15/17	Pacific Planktonics	834	8.32	34.79	24.32	4.90	4.2	2.0	143	16	24	8	5.9	38	20	11.4	
05/18/17	Pacific Planktonics	1035	8.00	34.58	26.12	3.59	6.7	2.3	242	32	46	14	5.3	93	40	11.5	
08/24/17	Pacific Planktonics	939	7.91	34.57	27.07	3.67	5.7	2.0	134	24	26	12	5.2	48	35	11.7	
12/14/17	Pacific Planktonics	1004	8.04	35.36	23.81	5.53	5.5	2.0	180	21	19	8	9.5	34	31	11.5	
03/14/18	Pacific Planktonics	855	8.15	34.73	23.81	5.02	4.0	2.0	137	7	17	7	8.2	35	1	11.5	
06/14/18	Pacific Planktonics	1014	8.09	35.14	26.48	5.97	4.1	2.0	192	17	25	12	7.8	36	23	11.5	
09/20/18	Pacific Planktonics	948	7.89	34.41	25.43	4.90	4.5	2.0	243	85	27	14	9.0	81	313	11.5	
12/12/18	Pacific Planktonics	1413	8.11	35.14	24.04	4.25	5.4	2.0	231	100	34	20	6.8	52	353	11.4	
03/01/19	Pacific Planktonics	842	8.04	34.61	23.21	6.00	5.1	2.1	222	30	34	18	6.6	42	2	11.5	
05/24/19	Pacific Planktonics	923	7.97	35.77	26.45	5.64	4.9	2.0	177	25	39	11	4.6	19	14	11.5	
09/12/19	Pacific Planktonics	858	8.09	34.88	25.74	6.43	4.5	2.0	232	105	37	24	6.2	71	477	11.5	
10/23/19	Pacific Planktonics	939	8.12	35.62	25.89	6.26	2.4	2.0	167	60	27	14	6.2	13	270	11.5	
03/12/20	Pacific Planktonics	1011	8.15	35.47	24.49	6.77	12.2	2.0	126	17	22	12	5.9	28	13	11.5	
06/18/20	Pacific Planktonics	1018	8.06	36.67	26.38	6.52	3.8	2.0	61	24	23	14	2.6	13	34	11.5	
Mean			8.09	34.69	25.26	5.59	4.8	2.2	283	54	39	20	7.6	56	89	20	
Std. Dev.			0.10	1.87	1.24	0.81	3.4	0.5	130	46	18	13	2.7	39	123	19	
n=			40	38	38	38	40	40	40	34	40	34	40	34	33	39	

Royal Hawaiian Sea Farms, Inc. Effluent Log

Discharge GPS:
Latitude: 19°43'31.49"N
Longitude: 156° 3'26.02"W

Discharge Trench Dimensions

L (ft)	W (ft)	D (ft)
49	7	4

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/10/11	RHSF Composite	917	8.17	34.73	24.72	5.69	2.8	2.0	117		20		6.0			337	
06/09/11	RHSF Composite	802	8.29	34.80	25.33	6.61	2.5	2.0	94		13		7.2			424	
09/21/11	RHSF Composite	820	8.20	35.12	26.31	6.84	0.7	2.0	85		12		7.1			473	
12/14/11	RHSF Composite	822	8.07	34.04	24.38	4.73	1.6	2.0	124		3		41.3			386	
03/07/12	RHSF Composite	800	8.05	35.15	23.17	6.53	2.6	2.0	213	8	18	5	11.8	15.0	26	358	
06/07/12	RHSF Composite	808	8.21	35.00	25.14	6.31	2.2	2.0	146	11	19	3	7.7	8.4	48	363	
08/15/12	RHSF Composite	830	8.20	35.18	25.79	5.19	3.3	2.0	209	5	8	2	26.1	21.0	76	322	
12/06/12	RHSF Composite	855	8.29	35.16	24.53	6.40	2.6	2.0	174	4	12	2	14.5	22.2	66	197	
02/27/13	RHSF Composite	855	8.02	35.26	23.91	6.42	2.7	2.6	212	4	28	19	7.6	28.5	54	297	
05/15/13	RHSF Composite	808	8.19	35.03	26.14	6.04	2.7	2.0	157	10	18	8	8.6	20.4	61	287	
08/28/13	RHSF Composite	806	8.20	34.57	26.29	6.57	3.2	2.0	128	2	50	35	2.6	5.4	78	283	
12/11/13	RHSF Composite	743	7.91	35.09	24.52	6.30	2.3	2.0	305	73	29	7	10.6	7.9	47	300	
03/05/14	RHSF Composite	809	8.08	34.62	23.01	6.00	3.5	2.0	165	7	16	4	10.3	13.5	43	182	
06/25/14	RHSF Composite	815	8.08	34.94	25.96	6.74	3.8	2.0	159	6	22	7	7.3	14.0	61	261	
09/24/14	RHSF Composite	804	7.92	35.21	27.56	6.93	3.4	2.0	201	3	26	6	7.7	5.2	1	282	
12/17/14	RHSF Composite	815	8.05	35.39	24.59	5.82	2.2	2.0	206	16	21	3	9.7	10.3	4	261	
03/18/15	RHSF Composite	818	8.09	34.74	24.00	6.63	3.0	3.8	738	30	90	18	8.2	3.6	40	205	
06/12/15	RHSF Composite	815	8.16	35.01	25.76	6.07	3.0	2.0	195	3	21	16	9.3	18.7	51	211	
09/09/15	RHSF Composite	812	8.02	35.05	28.96	5.60	4.7	2.0	245	13	26	9	9.3	4.9	32	136	
12/02/15	RHSF Composite	817	8.10	35.31	25.27	6.42	4.5	2.4	241	10	36	25	6.7	10.8	32	202	
02/24/16	RHSF Composite	811	8.18	34.79	24.12	6.32	2.3	2.0	172	8	33	19	5.3	25.9	3	202	
06/01/16	RHSF Composite	807	8.16	34.58	26.36	6.47	4.0	2.0	148	13	17	5	8.9	23.4	12	239	
09/07/16	RHSF Composite	745	8.61	34.95	26.88	5.93	3.5	2.0	227	7	30	12	7.5	25.5	5	273	
11/30/16	RHSF Composite	810	8.10	35.05	24.03	6.02	4.4	2.0	165	5	37	25	4.5	67.5	40	259	
03/15/17	RHSF Composite	811	8.37	34.88	24.41	5.81	4.0	2.0	129	1	15	5	8.6	23.2	9	170	
05/24/17	RHSF Composite	806	8.28	34.68	25.40	4.97	3.4	2.0	128	2	16	3	8.0	31.7	27	228	
08/30/17	RHSF Composite	803	8.32	34.66	27.29	6.01	4.3	2.0	140	7	23	10	6.1	30.5	18	337	
12/13/17	RHSF Composite	822	8.22	35.59	24.14	5.57	8.3	2.0	86	3	14	3	6.1	21.8	35	286	
03/14/18	RHSF Composite	809	8.31	34.72	23.53	5.79	3.9	2.0	161	1	18	7	9.0	28.1	0	219	
06/20/18	RHSF Composite	818	8.33	35.48	26.77	5.77	4.9	2.0	159	4	20	7	8.1	11.7	46	203	
09/26/18	RHSF Composite	807	8.31	34.84	27.80	5.35	6.6	2.0	188	5	26	2	7.1	45.3	10	289	
12/12/18	RHSF Composite	810	8.18	35.27	24.51	5.91	4.7	2.0	149	8	15	1	10.1	20.8	15	257	
03/13/19	RHSF Composite	821	8.24	35.52	24.15	6.50	11.0	2.0	74	1	19	7	4.0	1.8	10	210	
06/05/19	RHSF Composite	823	8.35	35.69	27.03	6.63	3.6	2.0	130	4	20	11	6.7	6.9	6	236	
09/18/19	RHSF Composite	823	8.32	35.36	27.79	6.15	4.2	2.0	106	7	29	18	3.7	6.3	27	353	
11/06/19	RHSF Composite	825	8.26	35.33	26.81	6.20	3.0	2.0	201	-2	36	11	5.6	22.6	9	266	
03/01/20	RHSF Composite															246	No Sample - COVID-19 Shutdown
06/18/20	RHSF Composite	818	8.30	36.80	26.49	6.47	3.7	2.0	139	-7	21	13	6.7	17.7	10	229	
Mean			8.19	35.07	25.48	6.10	3.7	2.1	179	8	24	10	9.1	19	30	270	
Std. Dev.			0.14	0.45	1.46	0.51	1.8	0.3	107	13	14	8	6.6	13	23	72	
n=			37	37	37	37	37	37	37	31	37	33	37	33	33	38	

Silver Spiral Seas Seawater Disposal Log
(Former Kona Clams Espec greenhouse location)

Discharge GPS:
Latitude: 19°43'41.25"N
Longitude: 156° 3'34.16"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
0	0	0

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
02/29/12	Kona Clams	815	8.04	35.24	23.58	6.16	3.0	2.0	94	3	18	2.5	5.2	2.0	17	0.03	
05/30/12	Kona Clams	914	8.28	34.93	25.14	5.75	1.6	2.0	184	7	20	7	9.2	2.8	47	0.03	
08/23/12	Kona Clams	834	8.13	35.30	25.61	6.31	2.8	2.0	71	3	13	0	5.5	2.8	55	74	
11/21/12	Kona Clams	816	6.85	35.36	24.31	6.21	5.2	2.0	198	3	10	0	19.8	6.2	20	105	
03/20/13	Kona Clams	804	8.20	35.23	23.11	6.55	1.8	2.0	215	37	47	19	4.6	15.4	69	32	
05/30/13	Kona Clams	813	8.06	34.90	26.82	8.30	2.7	2.0	222	15	26	6	8.5	8.3	26	35	
09/05/13	Kona Clams	807	7.98	34.59	25.58	5.41	5.3	4.1	127	2	38	25	3.3	7.6	54	26	
12/18/13	Kona Clams															26	No Sample
03/06/14	Kona Clams	816	7.30	34.20	22.29	6.40	3.1	2.0	178	1	31	6	5.8	8.0	17	64	
09/20/17	Espec Greenhouse	908	7.47	34.69	10.33	5.22	3.3	2.0	576	551	97	94	5.9	1.6	2202	2.5	1st sampling for DSW discharge for ESPEC
11/01/17	Espec Greenhouse	1354	7.51	34.41	16.72	6.38	3.4	2.0	588	561	96	90	6.1	2.1	2171	2.9	
03/16/18	Espec Greenhouse	905	7.60	34.44	14.44	2.50	12.0	2.0	621	573	93	88	6.7	4.2	2337	2.1	
06/20/18	Espec Greenhouse	855	7.44	35.01	14.29	3.27	11.9	2.0	637	598	97	92	6.6	2.4	2325	1.4	
09/26/18	Espec Greenhouse	1128	7.46	34.17	23.00	2.50	4.8	2.0	540	531	96	87	5.6	8.1	2226	3.0	
12/28/18	Espec Greenhouse	1050	7.76	34.73	10.12	3.50	3.2	2.0	656	582	92	92	7.1	13.4	2278	1.2	
03/07/19	Espec Greenhouse	940	7.13	35.16	12.78	2.84	11.9	2.0	590	561	94	91	6.3	2.9	2445	1.3	Stopped Operations at NELHA.
09/20/19	Silver Spiral Seas	857	8.18	34.86	28.31	5.64	2.7	2.0	113	0	19	16	5.9	6.7	18	0.0	1st Sample for SS in greenhouse
10/23/19	Silver Spiral Seas	927	8.16	35.58	28.21	6.20	2.0	2.0	120	5	20	9	6.0	25.0	22	1.0	
03/12/20	Silver Spiral Seas	1235	7.64	36.11	14.24	2.78	3.6	2.0	574	570	94	92	6.1	5.3	2187	0.0	
06/18/20	Silver Spiral Seas	1147	7.68	36.59	12.71	2.56	3.5	2.0	575	578	89	89	6.5	-3.5	2136	0.0	
Mean			7.73	35.03	20.08	4.97	4.6	2.1	362	273	57	48	6.9	6	1087	19	
Std. Dev.			0.41	0.61	6.37	1.79	3.4	0.5	232	287	37	42	3.4	6	1142	30	
n=			19	19	19	19	19	19	19	18	19	17	19	18	19	15	

Shrimp Improvement Systems Hawaii LLC
#2 Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'39.47"N
Longitude: 156° 3'29.78"W

Seawater Disposal Trench Dimensions

L (ft.)	W (ft.)	D (ft.)
9	8	4

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (Kgal/day)	Comment
03/10/11	HHA#1 (Kona Sump)	1026	7.96	34.63	25.20	6.02	11.4	2.2	473		64		7.4			155	
06/08/11	HHA#1 (Kona Sump)	1122	8.11	34.90	26.17	5.71	3.1	2.0	287		46		6.2			184	
09/21/11	HHA#1 (Kona Sump)	843	8.01	34.90	24.21	5.32	4.3	2.0	415		66		6.3			161	
12/14/11	HHA#1 (Kona Sump)	937	7.97	35.02	22.92	5.20	8.2	3.7	728		53		13.7			112	
03/01/12	HHA#1 (Kona Sump)	900	8.08	35.29	24.47	5.20	3.6	2.2	414	44	47	10	8.8	113	13	77	
06/06/12	HHA#1 (Kona Sump)	1000	8.15	34.93	25.60	5.67	4.2	2.2	421	21	57	18	7.4	109	33	78	
08/22/12	SIS#2 (Kona Sump)															0	No effluent- no production during facility upgrade
11/21/12	SIS#2 (Kona Sump)															0	No effluent- no production during facility upgrade
02/21/13	SIS#2 (Kona Sump)															0	No effluent- no production during facility upgrade
05/30/13	SIS#2 (Kona Sump)	958	7.77	35.54	27.33	3.08	18.1	17.3	1995	46	422	71	4.7	284	108	7	Composite (tank bottom and flow through)
09/05/13	SIS#2 (Kona Sump)	959	7.65	35.39	22.28	5.62	13.8	6.0	1392	361	195	104	7.1	324	1431	115	
12/18/13	SIS#2 (Kona Sump)	1001	7.94	35.09	21.04	6.62	29.4	10	1178	44	253	11	4.7	152	716	101	
03/06/14	SIS#2 (Kona Sump)	954	8.02	34.93	23.19	6.62	29.6	18	2168	1506	244	91	8.9	100	76	128	
06/19/14	SIS#2 (Kona Sump)	917	7.35	35.33	25.86	3.50	16.4	13.8	2983	179	506	137	5.9	1531	524	65	
09/25/14	SIS#2 (Kona Sump)															0	No effluent- no production during facility upgrade
12/24/14	SIS#2 (Kona Sump)															0	No effluent- no production during facility upgrade
03/19/15	SIS#2 (Kona Sump)	945	7.04	36.36	24.88	4.42	34	27	6206	40.5	1237.5	782.5	5.0	7057	116.5	581	
06/18/15	SIS#2 (Kona Sump)	1009	7.82	34.53	23.26	7.15	54.2	17.1	1627.5	130.3	354.7	180.2	4.6	221.1	489.7	188	
09/10/15	SIS#2 (Kona Sump)	914	7.64	33.98	20.91	7.31	24.1	9.4	1412.5	344.5	196.6	79.1	7.2	309.5	1076.1	79	
12/03/15	SIS#2 (Kona Sump)	930	8.11	34.73	26.35	4.91	10.2	7.9	544	2.8	83.7	20.7	6.5	137.8	57.2	122	
02/25/16	SIS#2 (Kona Sump)	842	8.10	34.89	24.52	6.52	9.3	13.3	620.4	36.1	137.4	98.9	4.5	51.7	63	120	
06/01/16	SIS#2 (Kona Sump)	944	7.57	34.75	27.27	4.25	45.8	24.2	1650	8.4	359	140.8	4.6	413.2	6.2	111	
09/07/16	SIS#2 (Kona Sump)	905	7.93	35.32	27.56	4.34	84.2	26.3	3139.3	12.8	719.1	281.5	4.4	1010.2	492.5	98	
09/23/16	SIS#2 (Kona Sump)	910	8.59	34.91	28.09	5.23	14.8	11.7	1372.5	96	233.9	166	5.9	154	210		resample due to high solids
11/18/16	SIS#2 (Kona Sump)	1101	8.47	35.17	27.03	4.14	21.3	2.0									resample via peristolic pump - heavily chlorinated sump
11/18/16	SIS#2 (Kona Sump)	1106					20.7	2.0								111	resample via bucket - heavily chlorinated sump
12/02/16	SIS#2 (Kona Sump)	919	7.68	35.16	23.34	5.44	86.0										resample - bucket collection
12/09/16	SIS#2 (Kona Sump)	918	7.21	34.80	24.45	5.53	61.2	11.1	934.1	13.2	360.6	265.8	2.6	307.2	97.3		sampled at last "settling" tank with peristaltic pump
12/09/16	SIS#2 (Kona Sump)	928	7.19	34.81	24.48	5.48	60.8	11.4	1109.3	11	363.9	281.6	3.0	513.4	125		sampled at final sump with peristaltic pump
03/16/17	SIS#2 (Kona Sump)	910	8.25	34.82	23.76	6.90	8.1	2.0	484.2	111.8	111.1	54.2	4.4	3.0	345.5	111	sampled at final sump with bucket
05/25/17	SIS#2 (Kona Sump)	945	8.43	34.49	25.00	5.09	17.4	2.0	603	144	109	44	5.5	7.3	602	128	Chlorine ~100ppm
09/14/17	SIS#2 (Kona Sump)	1032	8.07	34.76	26.01	5.91	13.0	9.9	962.8	102.3	231.5	147.8	4.2	292.8	460.6	120	
12/14/17	SIS#2 (Kona Sump)	943	7.69	35.57	22.66	5.58	17.9	3.3	771	9	149	59	5.2	43.8	62	116	
03/15/18	SIS#2 (Kona Sump)	958	7.82	34.86	24.86	4.65	11.6	2	373.2	20.6	99.2	55.2	3.8	32.1	40.8	89	
06/21/18	SIS#2 (Kona Sump)	941	7.46	35.38	22.14	6.41	17.5	6.6	931.3	307.1	231.8	98.3	4.0	1.9	1310.1	78	
09/20/18	SIS#2 (Kona Sump)	1207	7.60	36.85	28.66	5.03	6.8	4.8	588.1	123.8	184.9	125.4	3.2	29.2	647.5	61	
12/21/18	SIS#2 (Kona Sump)	929	7.61	34.94	23.72	4.18	32.6	9.7	949	9.7	299.8	151	3.2	158	44.9	84	
03/13/19	SIS#2 (Kona Sump)	857	8.05	35.37	23.75	5.31	12.4	5.1	216.9	0.2	41.7	21.9	5.2	91.8	31.3	79	
06/14/19	SIS#2 (Kona Sump)	849	8.01	35.15	26.00	5.91	9	11.1	730.7	29.7	126.8	32.4	5.8	144	319.5	81	
09/20/19	SIS#2 (Kona Sump)	924	8.16	35.12	27.09	5.66	44.8	2	1069.6	70.1	268.5	70.6	4.0	9.4	201.3	61	undissolved chlorine tab pieces present in sump
11/07/19	SIS#2 (Kona Sump)	851	8.01	34.99	25.06	5.89	5.6	2	485.1	63.8	71.4	47	6.8	11.2	200.5	71	
03/01/20	SIS#2 (Kona Sump)															88	No Sample - COVID-19 Shutdown
06/12/20	SIS#2 (Kona Sump)	936	7.85	36.32	27.06	5.38	32.2	23.5	1184	34.1	130.8	64.4	9.1	546.5	217.9	69	
Mean			7.86	35.13	24.85	5.40	25.2	9.5	1239	131	248	124	5.6	472	337	97	
Std. Dev.			0.36	0.54	1.99	0.98	21.7	7.7	1149	278	236	146	2.2	1285	382	95	
n=			34	34	34	34	35	34	32	30	32	30	32	30	30	31	

Shrimp Improvement Systems Hawaii LLC
#3 Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'44.26"N
Longitude: 156° 3'27.69"W

Seawater Disposal Trench Dimensions

L (ft.)	W (ft.)	D (ft.)
55	13	7

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (Kgal/day)	Comment
03/03/11	HHA#2 (Office Sump)	1050	7.98	34.70	25.33	5.83	7.4	2.1	470		57		8.2			288	
06/08/11	HHA#2 (Office Sump)	1138	8.10	34.72	26.74	5.19	4.7	2.0	329		51		6.5			342	
09/21/11	HHA#2 (Office Sump)	836	8.03	35.19	26.98	5.66	9.8	2.8	579		88		6.6			299	
12/14/11	HHA#2 (Office Sump)	944	7.95	35.15	24.60	3.98	13.4	3.3	728		53		13.7			208	
03/01/12	HHA#2 (Office Sump)	936	8.04	35.32	24.83	4.25	6.6	3.4	595	74	82	21	7.3	103	56	143	
06/06/12	HHA#2 (Office Sump)	1017	8.12	35.22	26.31	4.99	10.4	7.2	1023	32	271	14	3.8	146	22	145	
08/22/12	SIS#3 (Office Sump)	1221	8.28	35.13	26.63	5.29	14.0	7.2	939	47	97	6	9.7	139	531	2	
11/21/12	SIS#3 (Office Sump)	837	7.92	34.51	25.52	5.30	13.5	4.9	1627	1242	247	247	6.6	503	1806	7	
02/21/13	SIS#3 (Office Sump)	914	7.67	36.24	22.89	4.25	32.4	11.0	1663	158	219	85	7.6	564	203	30	
05/30/13	SIS#3 (Office Sump)	946	7.76	35.91	24.15	5.44	25.2	21.6	3252	169	596	516	5.5	2102	1001	7	Composite (tank bottom and flow through)
09/05/13	SIS#3 (Office Sump)	953	7.89	35.09	25.48	5.31	14.9	7.1	1075	205	191	61	5.6	216	863	344	
12/18/13	SIS#3 (Office Sump)	957	7.80	35.26	21.69	6.18	22.1	12.8	1784	439	254	95	7.0	587	514	302	
03/06/14	SIS#3 (Office Sump)	943	8.08	34.88	23.76	6.89	9.1	5.2	459	74	50	27	9.2	62	677	300	
06/19/14	SIS#3 (Office Sump)	911	7.60	34.74	22.64	6.20	20.8	12.8	2563	38	542	125	4.7	485	410	382	
09/25/14	SIS#3 (Office Sump)	931	7.56	34.91	23.21	3.95	33.9	5.2	1813	204	272	49	6.7	366	877	439	
12/24/14	SIS#3 (Office Sump)	850	7.53	35.17	23.86	5.52	17.5	13.3	2102	80	361	201	5.8	999	49	512	
03/19/15	SIS#3 (Office Sump)	938	7.54	34.69	25.06	5.40	15.0	11.9	754	34	195	157	3.9	238	65	964	
06/18/15	SIS#3 (Office Sump)	1001	7.95	34.39	26.57	6.15	15.0	5.7	807	35	189	108	4.3	50	124	380	
09/10/15	SIS#3 (Office Sump)	920	7.89	35.11	28.96	5.57	29.2	7.6	1156	45	229	116	5.0	67	147	370	
12/03/15	SIS#3 (Office Sump)	942	8.03	34.66	24.50	4.98	19.2	12.2	1404	128	177	24	7.9	556	519	277	
02/25/16	SIS#3 (Office Sump)	849	8.12	34.88	24.16	6.16	19.0	11.6	854	44	202	72	4.2	41	163	253	
06/01/16	SIS#3 (Office Sump)	951	8.17	34.18	26.71	5.18	15.6	7.3	921	27	224	58	4.1	123	242	239	
09/07/16	SIS#3 (Office Sump)	858	8.02	35.26	27.63	4.33	54.2	20.9	2817	65	654	143	4.3	288	64	220	
09/23/16	SIS#3 (Office Sump)	901	8.45	35.03	27.97	4.73	24.0	14.7	1973	84	429	110	4.6	104	162		resample from high solids
11/18/16	SIS#3 (Office Sump)	1034	8.00	34.97	26.38	3.78	21.0	5.6									resample via peristolic pump
11/18/16	SIS#3 (Office Sump)	1040					21.4	4.4								236	resample via bucket
12/02/16	SIS#3 (Office Sump)	909	7.93	34.67	24.54	5.58	13.4										resample via peristolic pump
12/09/16	SIS#3 (Office Sump)	945	8.01	34.82	24.96	6.02	13.6	8.4	533	16	116	85	4.6	373	146		composite of both discharge pipes via buckets
03/16/17	SIS#3 (Office Sump)	907	8.00	34.83	24.90	6.09	19.5	2.0	749	34	145	59	5.2	15	125	236	composite of both discharge pipes via buckets
05/25/17	SIS#3 (Office Sump)	939	8.18	34.63	25.89	4.57	55.1	2.0	685	39	236	98	2.9	11	183	255	Chlorine ~10ppm
09/14/17	SIS#3 (Office Sump)	1025	8.37	34.47	27.41	5.47	18.6	9.7	917	47	250	45	3.7	136	325	278	Ozone only on at night
12/14/17	SIS#3 (Office Sump)	950	7.87	35.36	24.42	4.89	28.7	8.4	843	28	222	81	3.8	197	122	321	
03/15/18	SIS#3 (Office Sump)	1004	8.02	34.58	24.29	4.82	14.2	3.3	679	30	99	34	6.8	30	243	178	
06/21/18	SIS#3 (Office Sump)	949	7.97	33.41	26.88	5.35	24.0	7.6	734	147	181	60	4.1	78	1683	243	
09/20/18	SIS#3 (Office Sump)	1159	7.59	38.15	22.71	4.18	25.6	8.7	919	28	333	237	2.8	197	260	453	
12/21/18	SIS#3 (Office Sump)	936	7.88	34.80	22.88	4.63	13.4	5.2	573	113	137	103	4.2	181	502	165	
03/13/19	SIS#3 (Office Sump)	849	7.82	35.35	21.33	6.44	7.7	7.5	560	154	125	49	4.5	192	655	140	
06/14/19	SIS#3 (Office Sump)	857	7.42	35.31	27.34	4.26	186.4	38.9	1990	29	1609	103	1.2	637	161	141	
06/25/19	SIS#3 (Office Sump)	840	7.76	35.53	26.30	4.57	7.4										TSS resample #1
06/26/19	SIS#3 (Office Sump)	836	7.72	35.88	26.57	4.08	8.4										TSS resample #2
06/28/19	SIS#3 (Office Sump)	840	7.66	35.85	27.63	4.43	8.6										TSS resample #3
09/20/19	SIS#3 (Office Sump)	918	8.06	35.02	25.64	4.89	42.8	10.5	1027	83	498	58	2.1	4	552	100	undissolved chlorine tab pieces present in sump
11/07/19	SIS#3 (Office Sump)	843	8.17	24.72	23.91	6.24	11.6	2.0	1720	784	302	166	5.7	13	7158	119	
03/01/20																139	No Sample - COVID-19 Shutdown
06/12/20	SIS#3 (Office Sump)	929	7.96	36.30	25.95	5.70	8.0	9.7	491	73	67	37	7.4	212	253	134	
Mean			7.93	34.86	25.26	5.18	22.6	8.7	1161	142	264	101	5.6	294	614	252	
Std. Dev.			0.23	1.74	1.76	0.78	27.7	6.8	709	242	270	94	2.3	393	1232	172	
n=			43	43	43	43	44	40	38	34	38	34	38	34	34	38	

Shrimp Improvement Systems Hawaii LLC
#1 Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'22.65"N
Longitude: 156° 3'16.92"W

Seawater Disposal Trench Dimensions

L (ft.)	W (ft.)	D (ft.)
64	22	10

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (Kgal/day)	Comment
07/21/10	SIS Composite	930	8.20				36.2	18.6	1754		485		3.6				
08/26/10	SIS Composite	930	8.15				46.0	17.8	1341		356		3.8				
08/26/10	SIS Composite	930	8.15				78.0	20.1	1399		359		3.9			215	
10/21/10	SIS Composite	915	8.18				34.4	7.8	1162	33	228	0	5.1				
12/02/10	SIS Composite	902	7.92	34.50			37.4	9.3	1293	118	249	84	5.2	427	538	309	
02/02/11	SIS Composite	1330	8.07	34.70	20.44		14.4	9.7	784		221		3.5			308	
05/11/11	SIS Trench Grab	1315	7.87	34.52	26.41	4.74	25.0	16.6	1773		362		4.9			234	
08/18/11	SIS Trench Grab	847	7.52	34.87	22.58	3.07	7.1	7.6	1164		177		6.6			256	
11/30/11	SIS Trench Grab	955	7.36	35.10	23.68	0.20	9.9	10.1	1782		430		4.1			232	
02/09/12	SIS Trench Grab	926	7.50	34.88	22.62	0.06	6.5	10.9	1470		337		4.4			298	
06/07/12	SIS Trench Grab	834	7.65	34.69	24.42	0.53	10.3	12.9	1333	4	226	55	5.9	435	916	310	
08/15/12	SIS Composite	1000	8.26	35.31	26.53	6.56	18.4	34.8	1632	38	303	52	5.4	178	629	290	
11/08/12	SIS Trench Grab	950	7.47	35.55	24.50	6.55	16.2	14.0	1860	34	420	89	4.4	853		352	
02/14/13	SIS Trench Grab	852	7.44	35.81	23.03	6.18	33.8	17.7	1884	35	351	197	5.4	868	251	246	
05/09/13	SIS Trench Grab	910	7.46	35.22	25.95	5.85	23.5	18.7	1887	58	415	86	4.6	464	375	213	
08/22/13	SIS Trench Grab	1040	7.61	34.61	24.02	5.52	21.5	13.8	1564	177	233	118	6.7	490	945	312	
12/05/13	SIS Trench Grab	910	7.53	35.29	22.33	6.02	17.6	16.1	1496	165	245	129	6.1	751	722	278	
02/25/14	SIS Trench Grab	1102	7.38	34.88	21.68	6.02	20.1	10.8	1735	189	331	118	5.2	610	909	303	
05/14/14	SIS Trench Grab	1126	7.59	34.61	23.56	5.89	18.3	6.3	1508	205	229	114	6.6	764	779	149	
08/13/14	SIS Trench Grab	1148	7.27	34.43	25.71	5.40	17.8	8.7	2087	149	430	227	4.9	1181	949	316	
12/10/14	SIS Trench Grab	1300	8.05	34.44	26.16	7.40	24.4	7.5	1428	119	202	27	7.1	213	959	350	
02/26/15	SIS Trench Grab	1030	8.01	34.88	21.60	6.45	15.8	20.8	418	200	54	127	7.8	568	734	1197	
05/28/15	SIS Trench Grab	1300	7.30	34.47	22.75	5.66	18.4	21.2	418	745	54	316	7.8	1302	1606	455	
09/10/15	SIS Trench Grab	930	7.45	34.67	22.01	7.47	22.2	8.4	1669	489	259	191	6.4	672	1220	401	
12/03/15	SIS Trench Grab	953	7.62	34.20	21.42	5.78	44.6	16.6	1747	200	378	131	4.6	759	847	325	
02/25/16	SIS Trench Grab	833	7.41	34.78	18.94	7.29	41.7	25.7	1739	297	434	226	4.0	611	1163	301	
06/01/16	SIS Trench Grab	1006	7.44	34.50	18.66	6.74	35.2	16.5	1427	334	427	234	3.3	629	1623	283	
09/07/16	SIS Trench Grab	916	7.85	34.54	16.45	7.63	15.4	9.5	2342	623	487	302	4.8	655	2805	259	
11/18/16	SIS Trench Grab	1136	7.76	34.78	17.04	6.45	10.3	7.5									resampled due to effluent from DAF was rerouted to main trench
12/09/16	SIS Trench Grab	1025	7.48	34.27	23.11	6.62	39.6	12.7	1967	330	361	337	5.4	1722	734	281	
03/16/17	SIS Trench Grab	958	7.48	34.41	18.73	8.18	20.2	3.5	858	271	243	159	3.5	35	1230	280	
05/25/17	SIS Trench Grab	1025	7.59	34.75	21.74	5.39	14.8	6.7	745	178	326	197	2.3	155	905	306	no chlorine
09/14/17	SIS Trench Grab	1009	7.86	34.54	22.97	7.02	42.0	9.0	1556	167	424	283	3.7	745	990	326	Ozone has been running continuously since May 2017
12/14/17	SIS Trench Grab	929	7.47	35.22	23.20	5.86	25.2	11.2	1685	195	318	128	5.3	1241	316	367	Bolton construction crew should start trench repair soon (by Jan 2018)
03/15/18	SIS Trench Grab	937	8.02	34.79	25.20	4.62	5.0	3.4	2577	4	720	15	3.6	157	32	213	Composite north side 2 big pipes. Bolton was pumping sludge out of trench
06/21/18	SIS Trench Grab	925	7.74	35.05	25.17	6.58	7.6	2.0	776	160	242	129	3.2	5	681	274	
09/20/18	SIS Trench Grab	1140	7.48	34.96	26.25	4.94	8.0	7.5	1022	139	231	115	4.4	142	662	515	
12/21/18	SIS Trench Grab	916	7.52	34.89	24.20	5.17	79.6	11.6	2247	51	652	354	3.4	66	343	249	
03/13/19	SIS Trench Grab	837	7.41	35.64	25.35	6.19	48.8	7.5	1045	36	399	219	2.6	296	209	220	
06/14/19	SIS Trench Grab	841	7.84	34.77	25.22	6.73	16.6	11.2	875	104	198	85	4.4	186	777	222	
09/20/19	SIS Trench Grab	906	7.63	34.91	25.60	6.57	20.1	2.0	983	201	246	167	4.0	2	933	162	
11/07/19	SIS Trench Grab	823	7.59	34.80	23.67	6.67	38.4	3.1	1011	125	334	196	3.0	27	770	190	
03/01/20	SIS Trench Grab															227	No Sample - COVID-19 Shutdown
06/12/20	SIS Trench Grab	919	7.73	36.22	26.02	6.25	45.0	12.2	916	98	233	101	3.9	94	342	203	
Mean			7.68	34.86	23.13	5.68	26.3	12.1	1437	184	324	156	4.7	524	840	306	
Std. Dev.			0.28	0.43	2.61	1.89	17.0	6.6	497	166	131	91	1.3	423	513	162	
n=			43	39	38	36	43	43	42	34	42	34	42	33	32	40	

Shrimp Improvement Systems Hawaii LLC
#3 Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'20.53"
Longitude: 156° 3'17.97"W

Seawater Disposal Trench Dimensions
L (ft.) W (ft.) D (ft.)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (°C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (Kgal/day)	Comment
12/03/15	SIS DAF Unit	1015	7.29	33.82	25.60	0.84	5.8	10.9	2949	294.1	515.8	408.1	5.7	2907.2	829.9	75	
02/25/16	SIS DAF Unit																Pump failure, system not operational. Anticipated operational in mid-April 2016
06/01/16	SIS DAF Unit	1021	6.78	21.78	27.99	0.26	27.0	36.8	5698	248	631	61	9.0	5630.0	10838	68	
09/07/16	SIS DAF Unit	932	7.91	15.72	27.16	5.82	79.6	34.7	6488	1260	857	625	7.6	3329.1	21372	60	Unit is overflowing
09/23/16	SIS DAF Unit	931	7.90	15.64	27.34	2.85	18.5	28.7	4545	634	1244	247	3.7	5991	24487		DAF unit not working, resample
11/18/16	SIS DAF Unit	1125														68	DAF unit not working, effluent rerouted to main trench, resampled at main trench
12/02/16	SIS DAF Unit	934	7.67	31.00	23.91	6.27	60.0										DAF with geobag installed. Sample was clear but hard to filter
12/09/16	SIS DAF Unit	1008	7.89	30.51	27.33	5.94	51.5	7.7	2877	2208	313	318	9.2	510	3190		DAF with geobag installed. Sample was clear but hard to filter, did solvent trials
03/16/17	SIS DAF Unit	930	7.56	3.78	27.17	11.59	4.6	7.2	2588	1130	383	329	6.8	1354	21122	68	DAF, geobag and ozone (3/14/17). Clear sample, hard to filter, polymer present
05/25/17	SIS DAF Unit	1011	7.59	26.70	27.77	6.43	22.8	5.2	1674	505	246	196	6.8	1044	5477	78	Ozone generator on for ~ 2 months, no chlorine, still hard to filter due to polymer
09/14/17	SIS DAF Unit	921	7.95	27.07	27.71	11.12	4.3	2.9	1508	832	214	187	7.0	696	5176	74	Continuos Ozone injection this quarter. Filter 1L for TSS - no polymer present
12/14/17	SIS DAF Unit	914	7.28	19.94	24.43	16.28	8.1	2.3	1242	918	333	396	3.7	23	9547	72	
03/15/18	SIS DAF Unit	917	7.65	31.90	23.23	5.45	67.4	7.3	2183	1881	677	665	3.2		2650	55	Polymer in filter. Ammonia not analyzed due to potentially clogging coils in heater.
06/21/18	SIS DAF Unit	912	7.84	33.36	27.77	5.59	18.0	5.5	1488	715	295	207	5.0	381	1701	49	
09/20/18	SIS DAF Unit	1126	6.86	7.49	28.89	0.47	7.9	22.2	3003	1584	1000	978	3.0	2906	19474	38	
12/21/18	SIS DAF Unit																System was shut down Oct/Nov 2018, will be shutdown for a while
03/13/19	SIS DAF Unit																DAF unit still shut down
06/14/19	SIS DAF Unit																DAF unit still shut down
09/20/19	SIS DAF Unit																DAF unit still shut down
11/07/19	SIS DAF Unit																DAF unit still shut down
Mean			7.55	22.98	26.64	6.07	28.9	14.3	3020	1017	559	385	5.9	2252	10489	64	
Std. Dev.			0.39	9.93	1.76	4.69	26.5	12.7	1707	619	331	257	2.2	2088	8779	12	
n=			13	13	13	13	13	12	12	12	12	12	12	11	12	11	

Symbrosia, Inc. Seawater Disposal Log

Discharge GPS:
Latitude:
Longitude:

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
0	0	0

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/23/19	Symbrosia - Back Lab Door	907	7.68	35.52	17.91	6.16	3.2	2.0	613.9	507.4	93.6	86.1	6.6	2.9	2309.1	0.71	
03/12/20	Symbrosia - Back Lab Door	1209	7.89	36.56	25.89	5.76	4.6	2.0	506	461	88	76	5.8	5.6	2110	0.83	
06/18/20	Symbrosia - Back Lab Door	1422	7.67	22.88	26.20	8.88	7.3	3.2	686	61	103	94	6.6	19.4	2344	0.83	
Mean			7.75	31.65	23.33	6.93	5.0	2.4	602	343	95	85	6.3	9	2254	0.79	
Std. Dev.			0.12	7.62	4.70	1.70	2.1	0.7	90	245	8	9	0.5	9	126	0.07	
n=			3	3	3	3	3	3	3	3	3	3	3	3	3	3.00	

Symbrosia, Inc. Seawater Disposal Log

Discharge GPS:
Latitude:
Longitude:

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
0	0	0

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
03/06/20	Symbrosia - Test Pad	1125	8.08	36.11	25.78	6.13	9.4	3.3	125.3	67.8	34.9	26.3	3.6	6.7	421.4	13.87	
06/12/20	Symbrosia - Test Pad	1118	8.15	35.83	27.53	6.03	3.9	2.6	73	21	17	17	4.3	4.6	120	13.87	
Mean			8.12	35.97	26.66	6.08	6.7	3.0	99	44	26	22	4.0	6	271	14	
Std. Dev.			0.05	0.20	1.24	0.07	3.9	0.5	37	33	13	7	0.5	1	213	0	
n=			2	2	2	2	2	2	2	2	2	2	2	2	2	2	

Taylor Shellfish-Kona Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'46.86"N
Longitude: 156° 3'30.21"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
19	12	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
12/02/10	T#1 Main Office	1044		34.05			29.4	5.9	2309	1645	631	349.6	3.7	334	1619	510	
02/09/11	T#1 Main Office	821	7.79	34.36	18.55	6.38	17.9	3.0	1899		373		5.1			614	
05/11/11	T#1 Main Office	842	7.80	34.25	19.00	5.67	11.4	2.0	1644		267		6.2			630	
08/18/11	T#1 Main Office	930	7.80	34.38	19.01	4.13	14.0	3.3	1724		307		5.6			592	
12/08/11	T#1 Main Office	915	7.77	34.46	21.50	4.14	11.9	2.1	2154		231		9.3			622	
02/29/12	T#1 Main Office	900	7.85	34.89	21.28	4.72	4.7	2.0	1834	1575	182	154	10.1	113	750	648	
05/17/12	T#1 Main Office	1003	7.61	34.21	20.39	4.23	16.2	2.9	1532	1318	245	223	6.3	169	1380	665	
08/08/12	T#1 Main Office	915	7.66	34.47	19.33	4.79	7.9	4.0	3425	2585	366	245	9.4	179	1192	613	
12/06/12	T#1 Main Office	922	7.63	34.31	20.04	4.37	3.3	2.0	1660	1330	263	244	6.3	145	1231	470	
02/21/13	T#1 Main Office	1005	7.51	34.87	20.38	5.04	6.2	2.5	2100	1803	269	242	7.8	158	1055	570	
05/15/13	T#1 Main Office	938	7.53	34.75	22.14	4.36	6.7	2.7	1984	1503	318	257	6.2	269	1119	523	
08/28/13	T#1 Main Office	926	7.85	34.52	21.06	6.54	17.2	4.7	1584	1245	162	94	9.8	71	1064	561	
12/12/13	T#1 Main Office	1000	7.41	34.66	19.87	7.01	5.3	2.0	1414	1376	280	310	5.1	43	1282	576	
03/05/14	T#1 Main Office	941	7.73	34.47	18.41	6.03	12.9	3.1	2683	2416	548	445	4.9	84	946	633	
06/26/14	T#1 Main Office	927	7.81	34.79	22.07	5.42	7.3	7.7	987	837	134	123	7.4	94	1164	629	
09/04/14	T#1 Main Office	907	7.79	34.90	23.20	4.86	10.9	3.5	2082	1440	336	189	6.2	361	1029	554	
12/18/14	T#1 Main Office	1021	7.57	34.65	5.05	5.05	8.7	3.9	2201	1831	255	168	8.6	171	1289	630	
03/12/15	T#1 Main Office	925	7.63	34.11	17.06	6.40	24.1	6.8	4779	4179	794	805	6.0	343	4046	577	
06/12/15	T#1 Main Office	905	7.73	34.57	17.81	6.98	22.4	5.0	1730	1162	230	84	7.5	80	1069	657	
09/02/15	T#1 Main Office	814	7.66	34.05	21.03	5.93	13.6	5.4	1842	1380	182	136	10.1	177	1020	397	
12/03/15	T#1 Main Office	837	7.66	33.61	18.43	4.49	6.1	3.5	520	1608	73	243	7.1	237	1149	582	
02/24/16	T#1 Main Office	908	7.58	34.00	16.73	5.79	6.5	5.8	1432	960	256	197	5.6	107	1234	562	
06/02/16	T#1 Main Office	859	7.80	34.66	19.61	5.37	13.6	7.1	2500	1135	355	181	7.0	150	1139	614	
09/08/16	T#1 Main Office	803	7.64	35.00	16.91	5.56	11.2	5.4	2248	1706	354	268	6.3	231	2250	564	
12/07/16	T#1 Main Office	907	7.68	34.53	16.67	6.01	6.3	3.2	1491	1227	162	154	9.2	179	1455	572	
03/15/17	T#1 Main Office	904	7.80	34.61	18.40	4.99	17.2	2.3	1498	1140	204	125	7.4	196	937	586	
06/01/17	T#1 Main Office	908	7.63	34.54	18.00	3.43	18.9	3.9	1549	1238	233	165	6.6	201	1480	575	
08/30/17	T#1 Main Office	858	7.61	34.51	18.37	3.89	5.4	2.0	1139	850	163	127	7.0	226	1319	532	
12/13/17	T#1 Main Office	905	7.66	34.59	18.16	4.01	23.1	2.8	1499	1161	274	187	5.5	219	1329	458	
03/08/18	T#1 Main Office	927	7.66	34.42	18.47	7.15	11.9	4.5	1266	1019	219	140	5.8	144	1101	407	
06/14/18	T#1 Main Office	908	7.78	35.01	20.26	4.87	19.0	3.2	1442	822	209	108	6.9	58	916	455	
09/20/18	T#1 Main Office	906	7.51	32.27	22.65	4.90	8.9	4.8	987	783	125	95	7.9	122	1143	491	
12/12/18	T#1 Main Office	905	7.67	34.82	19.96	3.72	17.1	3.3	1466	942	211	89	6.9	128	930	451	
03/13/19	T#1 Main Office	912	7.67	34.99	18.45	5.92	25.8	6.2	2963	2756	286	179	10.3	125	1277	529	
06/13/19	T#1 Main Office	937	7.75	34.75	19.52	4.37	19.9	4.0	1103	793	161	64	6.8	127	1162	514	
09/19/19	T#1 Main Office	920	7.64	34.61	18.36	3.96	6.5	2.5	1255	1018	163	105	7.7	156	1360	571	
11/07/19	T#1 Main Office	900	7.59	34.90	19.57	3.07	20.2	4.0	1539	1285	159	106	9.7	183	1069	529	
03/01/20	T#1 Main Office															540	No sample - COVID-19 shutdown
06/18/20	T#1 Main Office	918	7.66	36.32	18.41	4.00	14.0	5.3	1903	1428	214	130	8.9	197	1657	555	
Mean			7.68	34.52	19.03	5.07	13.2	3.9	1825	1456	268	198	7.2	170	1299	558	
Std. Dev.			0.10	0.57	2.88	1.05	6.7	1.6	747	679	139	136	1.7	77	555	67	
n=			37	38	37	37	38	38	38	34	38	34	38	34	34	39	

Taylor Shellfish-Kona Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'45.69"N
Longitude: 156° 3'30.19"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
11	10	8

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
12/02/10	T#2 New Hatchery	1050					10.9	2.3	2132.3	1930	196.4	149.2	10.9	218	997	449	
02/09/11	T#2 New Hatchery	848	7.77	34.22	18.73	7.47	24.0	5.2	2337		306		7.6			543	
05/11/11	T#2 New Hatchery	858	7.95	33.82	17.23	7.46	9.6	2.3	1508		308		4.9			557	
08/18/11	T#2 New Hatchery	940	7.80	34.54	18.31	6.46	10.1	2.2	1286		202		6.4			523	
12/08/11	T#2 New Hatchery	920	7.84	34.59	18.47	7.72	18.3	3.1	1756		209		8.4			551	
02/29/12	T#2 New Hatchery	921	7.67	34.82	19.06	6.86	10.5	2.2	1401	1078	231	178	6.1	124	1108	574	
05/17/12	T#2 New Hatchery	1016	7.84	34.44	20.21	6.99	6.0	2.0	1198	1125	161	171	7.4	130	1132	588	
8/8//12	T#2 New Hatchery	930	7.75	34.63	18.37	7.02	4.7	2.0	1015	759	134	99	7.6	122	1154	538	
12/06/12	T#2 New Hatchery	939	7.77	34.68	18.92	7.12	3.3	2.3	1562	1284	240	231	6.5	133	965	412	
02/21/13	T#2 New Hatchery	1023	7.69	34.47	18.54	6.17	42.3	2.4	926	578	269	107	3.4	119	1423	501	
05/15/13	T#2 New Hatchery	950	7.74	34.87	22.46	5.62	14.0	6.7	3615	2766	350	212	10.3	414	1059	459	
08/28/13	T#2 New Hatchery	936	7.65	34.48	20.03	7.12	7.2	4.2	1824	1513	291	252	6.3	478	1211	492	
12/12/13	T#2 New Hatchery	1011	7.43	34.74	17.74	5.62	5.5	2.0	1616	1457	249	258	6.5	162	1319	505	
03/05/14	T#2 New Hatchery	954	7.73	34.43	16.50	7.15	10.0	2.0	1566	1245	266	231	5.9	135	1634	557	
06/26/14	T#2 New Hatchery	939	7.77	34.60	20.19	7.22	10.4	14.1	1760	1407	321	212	5.5	170	1858	553	
09/04/14	T#2 New Hatchery	918	7.71	33.80	20.50	5.96	32.1	5.8	2258	1625	409	244	5.5	326	1618	486	
12/18/14	T#2 New Hatchery	1027	7.59	35.13	19.32	6.36	24.6	3.0	2033	1602	269	215	7.6	232	1095	553	
03/12/15	T#2 New Hatchery	938	7.62	34.34	17.35	7.58	15.9	4.8	5088	4038	875	919	5.8	650	2316	502	
06/12/15	T#2 New Hatchery	923	7.79	34.68	20.07	6.10	32.5	7.9	2627	2603	410	354	6.4	225	926	573	
06/25/15	T#2 New Hatchery	934	7.75	34.03	20.09	6.16	49.0	6.8	1964	1103	399	151	4.9	130	962		resampled to verify
09/02/15	T#2 New Hatchery	835	7.54	33.24	19.13	8.02	8.6	4.3	2305	1815	332	282	6.9	166	1442	345	
12/03/15	T#2 New Hatchery	854	7.75	33.27	18.48	6.45	7.5	3.1	592	1905	69	299	8.6	285	1137	480	
02/24/16	T#2 New Hatchery	934	7.72	34.10	18.23	7.56	5.1	5.5	1561	653	2989	258	0.5	249	819	490	
06/02/16	T#2 New Hatchery	920	7.89	32.66	21.64	7.53	84.0	16.6	6980	5618	1060	707	6.6	371	2605	535	
09/08/16	T#2 New Hatchery	823	8.05	34.38	19.02	6.92	52.4	13.5	15985	13941	1591	1053	10.0	395	2472	491	
09/22/16	T#2 New Hatchery	812	7.94	34.46	19.85	7.23	7.5	4.7	4865	3976	661	614	7.4	525	1919		resample
11/18/16	T#2 New Hatchery	829	7.59	32.98	18.30	7.61	8.8	4.5									resample
12/02/16	T#2 New Hatchery	838	7.51	33.05	17.60	7.94	16.2										resample
12/07/16	T#2 New Hatchery	929	7.66	34.08	16.34	7.71	5.2	3.0	1535	1204	209	202	7.4	240	1420	498	
03/15/17	T#2 New Hatchery	918	7.85	33.54	20.51	5.71	7.7	2.2	2011	1589	319	262	6.3	386	745	511	
06/01/17	T#2 New Hatchery	928	7.81	34.56	20.26	4.98	10.4	4.4	2546	2079	305	187	8.3	221	1037	501	
08/30/17	T#2 New Hatchery	918	7.77	34.07	22.16	8.06	31.2	5.4	1717	1030	385	106	4.5	244	939	462	
12/13/17	T#2 New Hatchery	921	7.75	34.88	19.08	4.74	8.9	2.8	2226	1867	283	223	7.9	251	858	398	
03/18/18	T#2 New Hatchery	949	7.70	34.31	16.21	7.28	20.8	3.7	1813	1528	229	157	7.9	135	1293	354	
06/14/18	T#2 New Hatchery	926	7.85	33.61	20.97	6.94	15.5	2.2	1669	1058	218	164	7.7	170	760	396	
09/20/18	T#2 New Hatchery	923	7.83	34.16	22.65	6.38	6.8	4.9	1667	1361	74	67	22.4	84	1102	429	
12/12/18	T#2 New Hatchery	920	7.85	34.50	19.17	4.87	41.8	5.5	2686	1902	325	119	8.3	102	1253	393	
03/13/19	T#2 New Hatchery	931	7.59	34.68	18.39	7.60	60.1	5.1	1121	804	181	37	6.2	140	1050	462	
06/13/19	T#2 New Hatchery	950	7.85	34.03	18.96	8.02	8.7	4.0	1430	1142	150	62	9.5	114	1194	449	
09/19/19	T#2 New Hatchery	938	7.80	34.18	20.96	7.35	9.0	3.6	1340	1008	156	78	8.6	101	896	498	
11/07/19	T#2 New Hatchery	915	7.77	34.23	18.44	7.53	6.8	4.7	1337	1045	98	90	13.6	109	1370	472	
03/01/20	T#2 New Hatchery															482	No sample - COVID-19 shutdown
06/18/20	T#2 New Hatchery	927	7.84	36.61	19.70	7.32	7.1	6.2	3831	3498	302	278	12.7	199	1121	498	
Mean			7.75	34.27	19.22	6.88	18.4	4.7	2467	2087	401	256	7.6	229	1284	489	
Std. Dev.			0.12	0.67	1.55	0.88	17.7	3.3	2512	2294	504	224	3.3	135	456	60	
n=			41	41	41	41	42	41	40	36	40	36	40	36	36	39	

Taylor Shellfish-Kona Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'44.98"N
Longitude: 156° 3'30.67"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
26	21	4

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
12/02/10	T#3 Baby Clams	1044		34.51			2.7	2.0	1670.9	1466	202.9	170.9	8.2	157	1271	325	
02/09/11	T#3 Baby Clams	854	7.88	34.09	19.63	6.39	13.6	2.0	1546		192		8.1			395	
05/11/11	T#3 Baby Clams	901	7.79	34.61	19.06	6.59	10.7	2.0	1302		133		9.8			405	
08/18/11	T#3 Baby Clams	948	7.87	34.33	16.70	5.75	16.4	2.4	1491		192		7.8			380	
12/08/11	T#3 Baby Clams	924	7.92	34.53	18.77	6.33	4.3	2.0	1578		163		9.7			401	
02/29/12	T#3 Baby Clams	928	7.85	34.93	19.38	5.78	8.3	2.0	1349	1101	107	69	12.6	90	974	418	
05/17/12	T#3 Baby Clams	1020	7.83	34.71	20.33	5.39	4.2	2.0	2004	879	468	123	4.3	150	869	428	
08/08/12	T#3 Baby Clams	938	7.81	34.58	17.08	6.67	5.9	2.0	1267	942	149	81	8.5	94	1347	382	
12/06/12	T#3 Baby Clams	946	7.76	33.93	19.07	6.08	8.4	3.0	1707	1230	265	125	6.4	88	1647	291	
02/21/13	T#3 Baby Clams	1028	7.67	34.80	18.74	6.37	8.2	2.0	1595	1221	188	109	8.5	98	1094	356	
05/15/13	T#3 Baby Clams	954	7.65	34.77	20.43	5.27	8.0	2.1	1524	1093	174	102	8.8	198	1156	325	
08/28/13	T#3 Baby Clams	944	7.81	34.29	18.68	6.27	7.3	2.0	1446	1136	163	48	8.9	253	1478	348	
12/12/13	T#3 Baby Clams	1016	7.59	34.87	17.86	5.21	3.2	2.0	1395	1313	149	122	9.3	116	1446	358	
03/05/14	T#3 Baby Clams	1000	7.81	33.46	19.11	5.72	23.3	3.8	1737	1196	356	157	4.9	161	1031	396	
06/26/14	T#3 Baby Clams	948	7.90	34.73	19.43	7.81	10.4	12.0	1129	824	137	48	8.2	95	1682	393	
09/04/14	T#3 Baby Clams	926	7.81	34.60	19.51	6.55	11.0	3.6	1687	1233	287	86	5.9	146	1404	345	
12/18/14	T#3 Baby Clams	1034	7.80	34.97	20.09	5.62	6.8	3.0	1879	1582	132	43	14.2	84	1112	393	
03/12/15	T#3 Baby Clams	945	7.70	34.28	17.05	7.02	5.4	4.3	4279	2533	492	341	8.7	406	2667	347	
06/12/15	T#3 Baby Clams	933	7.90	34.19	18.94	7.39	127.0	11.2	2602	1053	908	97	2.9	72	1267		Invalid sample due to sampling error
06/25/15	T#3 Baby Clams	941	7.91	34.19	18.75	6.56	8.1	3.0	1457	1175	137	78	10.7	44	898	396	Resample
09/02/15	T#3 Baby Clams	841	7.62	34.35	9.31	7.23	12.2	3.5	1693	1351	140	122	12.1	155	1065	238	
12/03/15	T#3 Baby Clams	907	7.98	0.37	20.10	7.85	185.0	9.9	656	1293	223	233	2.9	133	1578		Cleaning down 2 raceways
12/16/15	T#3 Baby Clams	935	7.82	33.86	19.37	7.51	22.5	5.8	1759	1269	233	112	7.6	190	957	331	Resample
02/24/16	T#3 Baby Clams	941	7.76	34.30	19.06	6.52	6.5	6.5	1514	597	225	138	6.7	356	1058	338	
06/02/16	T#3 Baby Clams	927	7.83	34.25	19.80	6.57	11.2	7.9	3179	818	294	84	10.8	390	1428	370	
09/08/16	T#3 Baby Clams	828	8.09	34.55	20.13	6.46	40.7	9.3	3001	1610	669	120	4.5	26	1482	339	
09/22/16	T#3 Baby Clams	822	7.98	35.15	16.47	6.90	6.6	4.0	3107	2244	299	186	10.4	253	2061		resample
11/18/16	T#3 Baby Clams	837	7.73	34.43	16.37	6.57	7.2	3.5									resample
12/02/16	T#3 Baby Clams	844	7.69	34.51	17.01	7.28	9.0										resample
12/07/16	T#3 Baby Clams	934	7.79	34.53	14.30	7.89	7.2	2.7	1372	1055	141	130	9.7	193	1671	330	
03/15/17	T#3 Baby Clams	924	7.98	34.49	18.47	5.77	7.3	2.0	1230	846	157	80	7.9	177	1071	354	
06/01/17	T#3 Baby Clams	936	7.94	34.64	19.35	5.05	32.3	5.4	1537	941	273	102	5.6	206	1160	347	
08/30/17	T#3 Baby Clams	924	7.86	34.47	20.07	6.66	7.6	2.6	1160	839	138	55	8.4	167	1049	319	
12/13/17	T#3 Baby Clams	927	7.82	35.03	18.68	4.30	27.5	4.4	1575	1336	227	92	6.9	179	931	274	
03/08/18	T#3 Baby Clams	956	7.85	34.67	17.65	7.60	16.4	3.9	1445	1157	170	91	8.5	121	851	244	
06/14/18	T#3 Baby Clams	932	7.88	35.03	19.29	6.61	11.1	2.9	1309	887	179	60	7.3	97	997	274	
09/20/18	T#3 Baby Clams	938	7.77	34.65	22.90	6.35	9.2	4.9	1215	1066	76	49	16.0	102	1047	297	
12/12/18	T#3 Baby Clams	930	7.90	34.87	17.97	4.67	18.5	3.5	1853	1435	176	77	10.5	90	1267	273	
03/13/19	T#3 Baby Clams	937	7.81	35.21	20.05	7.32	8.5	3.4	1760	1528	186	112	9.5	118	777	320	
06/13/19	T#3 Baby Clams	956	8.09	34.87	22.17	7.22	17.8	3.8	1197	963	114	43	10.5	93	769	311	
09/19/19	T#3 Baby Clams	943	7.87	34.74	24.20	6.36	6.4	3.8	1454	1262	160	118	9.1	107	701	345	
11/07/19	T#3 Baby Clams	925	7.81	34.95	18.63	6.95	47.0	2.9	1855	1663	151	133	12.3	124	1134	343	
03/01/20	T#3 Baby Clams															350	No sample - COVID-19 shutdown
06/18/20	T#3 Baby Clams	932	7.88	36.80	20.24	6.88	6.7	4.8	1325	1092	120	65		116	938	370	
Mean			7.83	33.82	18.81	6.46	19.0	4.0	1703	1222	228	108	8.6	153	1225	345	
Std. Dev.			0.11	5.24	2.29	0.85	32.7	2.6	658	376	157	57	2.8	87	387	46	
n=			42	43	42	42	43	42	41	37	41	37	40	37	37	39	

Taylor Shellfish-Kona Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'45.21"N
Longitude: 156° 3'30.85"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
09/13/12	T#4 Hatchery (Steady State)	828	7.87	35.15	23.26	6.00	2.6	2.0	245	115	37	18	6.6	13	408		
09/13/12	T#4 Hatchery (Tank Discharge)	837	7.98	35.18	23.78	6.28	4.0	2.0	1964	1661	68	60	28.9	86	401	98	
12/06/12	T#4 Hatchery	930	8.19	34.82	23.54	6.39	8.3	3.0	1092	807	57	41	19.2	59	753	75	
02/21/13	T#4 Hatchery	1011	8.01	34.60	22.36	6.07	2.7	2.0	833	607	64	53	13.0	59	1264	91	
05/15/13	T#4 Hatchery	943	8.07	34.93	23.59	5.11	18.6	2.0	1154	834	77	55	15.0	53	597	84	
08/28/13	T#4 Hatchery	931	8.08	34.73	24.94	5.87	5.9	2.3	566	358	47	41	12.0	55	389	90	
12/12/13	T#4 Hatchery	1005	7.88	34.91	23.34	5.24	2.7	2.0	2464	2255	100	103	24.6	119	542	92	
03/05/14	T#4 Hatchery	948	8.17	34.78	22.11	6.22	4.1	2.0	2002	1701	62	57	32.1	79	456	101	
06/26/14	T#4 Hatchery	932	8.17	34.63	24.44	6.01	4.7	8.4	1910	1793	64	66	29.8	123	679	101	
09/04/14	T#4 Hatchery	912	8.14	33.89	24.12	6.52	4.6	2.0	2360	2061	125	126	18.9	78	1096	89	
12/18/14	T#4 Hatchery	1021	8.07	34.84	22.77	5.30	2.7	2.0	1533	1274	70	59	21.9	3	748	101	
03/12/15	T#4 Hatchery	932	8.06	34.61	21.75	5.65	2.5	3.5	2582	1633	147	119	17.5	228	842	97	
06/12/15	T#4 Hatchery	916	8.16	33.74	23.09	6.79	10.1	2.0	692	256	88	52	7.8	9	1143	111	
09/02/15	T#4 Hatchery	827	7.92	34.77	23.86	6.48	4.4	2.0	872	704	51	40	17.2	597	64	67	
12/03/15	T#4 Hatchery																No Flow - Operations shutdown till New
02/24/16	T#4 Hatchery	924	8.18	34.58	23.15	5.69	3.9	4.6	376	259	67	48	5.6	11	301	95	
06/02/16	T#4 Hatchery	912	8.15	34.81	21.32	6.27	3.5	4.2	753	483	110	49	6.8	34	948	104	
09/08/16	T#4 Hatchery	817	8.38	34.04	23.78	5.89	4.5	2.0	1200	1044	89	107	13.5	22	1365	95	
12/07/16	T#4 Hatchery	921	8.02	34.19	18.60	6.83	3.3	2.0	1330	1068	75	72	17.6	43	1612	97	
03/22/17	T#4 Hatchery	856	7.97	34.29	19.84	7.18	3.9	2.0	653	517	58	49	11.2	26	958	99	
06/01/17	T#4 Hatchery	920	8.04	33.39	21.22	4.69	13.7	2.0	1971	1605	83	66	23.7	28	1533	97	
08/30/17	T#4 Hatchery	911	8.03	34.52	21.57	6.16	2.9	2.0	248	168	43	28	5.8	19	698	90	
12/13/17	T#4 Hatchery	913	8.05	34.13	20.64	4.33	5.5	2.0	1184	967	57	50	20.8	70	1188	77	
03/08/18	T#4 Hatchery	941	8.03	32.52	21.37	7.46	5.0	2.0	844	638	98	58	8.6	24	2053	69	
06/14/18	T#4 Hatchery	920	8.06	33.30	31.71	6.26	10.9	2.0	1527	1032	64	55	23.8	76	1445	77	
09/20/18	T#4 Hatchery	931	7.67	34.36	22.40	6.71	5.4	4.2	1071	833	124	98	8.7	133	1037	83	
12/12/18	T#4 Hatchery	912	8.06	33.90	19.55	4.59	5.4	2.0	2396	1934	116	99	20.7	2	1570	76	
03/13/19	T#4 Hatchery	926	7.99	35.18	21.16	6.63	3.1	2.0	710	580	46	35	15.5	2	530	89	
06/21/19	T#4 Hatchery	840	7.94	34.96	21.04	7.09	7.5	3.1	1620	1384	92	84	17.6	109	976	87	
09/19/19	T#4 Hatchery	932	8.55	31.08	19.90	6.52	7.9	2.0	738	619	94	76	7.9	8	3375	97	
11/07/19	T#4 Hatchery	908	7.98	34.54	22.16	6.13	3.1	2.2	625	518	46	53	13.5	33	909	86	
03/01/20	T#4 Hatchery															88	No sample - COVID-19 shutdown
06/18/20	T#4 Hatchery															0	No flow - system shut down
Mean			8.06	34.31	22.55	6.08	5.6	2.6	1251	990	77	64	16.2	73	996	87	
Std. Dev.			0.16	0.86	2.33	0.76	3.7	1.3	689	606	28	27	7.4	111	640	19	
n=			30	30	30	30	30	30	30	30	30	30	30	30	30	30	

Taylor Shellfish-Kona Seawater Disposal Log

Discharge GPS:
Latitude: 19°43'45.21"N
Longitude: 156° 3'30.85"W

Seawater Disposal Trench Dimensions
L (ft) W (ft) D (ft)

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
06/25/15	T#5 Northern Bldg	940	8.11	34.80	23.32	5.99	2.5	2.0	2039.8	1740.7	88.6	83.2	23.0	97	409.6	111	Newly online discharge trench
09/02/15	T#5 Northern Bldg	820	7.92	34.79	24.46	6.39	5.8	2.4	2428	2132	105	94	23.2	542	132	67	
12/03/15	T#5 Northern Bldg	845	8.15	34.08	21.91	5.86	4.9	9.8	5783	5584	432	456	13.4	209	960	155	
02/24/16	T#5 Northern Bldg	917	8.12	34.65	23.75	5.61	3.1	4.4	844	712	64	61	13.2	42	139	95	
06/02/16	T#5 Northern Bldg	908	8.17	34.26	23.55	6.04	2.2	4.0	1056	796	108	52	9.8	2	710	104	
09/08/16	T#5 Northern Bldg	809	8.30	34.63	23.04	6.55	5.0	2.0	3880	3079	168	180	23.1	129	1069	95	
12/07/16	T#5 Northern Bldg	913	8.11	34.73	22.79	5.90	3.4	2.4	1260	1067	99	95	12.8	95	563	97	
03/15/17	T#5 Northern Bldg	910	8.27	34.59	24.21	4.76	5.1	2.0	687	502	58	45	11.9	35	189	99	
06/01/17	T#5 Northern Bldg	913	8.10	34.61	25.29	3.99	4.1	2.0	654	434	62	43	10.5	43	272	97	
08/30/17	T#5 Northern Bldg	905	8.17	18.10	26.63	6.32	4.1	2.0	370	156	39	21	9.5	27	261	90	
12/13/17	T#5 Northern Bldg															77	No flow, system shut down till early 2018
03/08/18	T#5 Northern Bldg	933	8.12	18.40	23.40	6.96	5.5	2.2	255	94	29	19	8.7	23	66	69	
06/14/18	T#5 Northern Bldg	914	8.21	35.07	25.26	4.98	3.0	2.0	330	159	29	19	11.3	15	149	77	
09/20/18	T#5 Northern Bldg	916	7.97	34.21	27.31	5.28	6.8	2.7	541	393	41	28	13.2	56	134	83	
12/12/18	T#5 Northern Bldg															76	No flow, system shut down till early 2019
03/13/19	T#5 Northern Bldg	918	8.07	34.71	23.75	5.83	6.4	2.0	418	319	53	37	7.9	6	484	89	
06/13/19	T#5 Northern Bldg	943	8.24	34.25	26.34	6.42	3.8	2.1	416	274	63	40	6.6	21	356	87	
09/19/19	T#5 Northern Bldg	924	8.18	34.20	27.58	5.55	4.2	2.0	621	442	62	46	10.0	34	527	96	
11/07/19	T#5 Northern Bldg															0	No flow, system shut down will early 2020
03/01/20	T#5 Northern Bldg															0	No sample - COVID-19 shutdown
06/18/20	T#5 Northern Bldg															0	No flow - system shut down
Mean			8.14	32.51	24.54	5.78	4.4	2.9	1349	1118	94	82	13.0	86	401	79	
Std. Dev.			0.10	5.57	1.69	0.75	1.4	2.0	1529	1450	97	107	5.4	133	303	38	
n=			16	16	16	16	16	16	16	16	16	16	16	16	16	18	

WHEA Seawater Disposal Log

Discharge GPS:
Latitude: 19°42'50.77"N
Longitude: 156° 2'13.12"W

Seawater Disposal Trench Dimensions

L (ft)	W (ft)	D (ft)
13	7	6.3

Date (mm/dd/yy)	Sample Name	Time (2400)	pH (unit) SM4500-H+	Sal. (PSU) SM2520-B	Temp. (˚C)	DO (mg/L) SM4500-O G	TSS (mg/L) <30 mg/L SM2540D	BOD (mg/L) <30 mg/L SM5210B	Total Nitrogen (µg N/L) SM4500-NO3- F	Nitrate & Nitrite (µg N/L)	Total Phosphorous (µg P/L) SM 4500-P F	Ortho-Phosphate (µg P/L)	N : P (ratio)	Ammonia (µg N/L) SM 4500-NH3 G	Silicate (µg Si/L)	Discharge Volume (kgal/day)	Comment
10/16/14	WHEA #1	852	8.09	34.72	25.98	6.20	3.6	2.0	248	60	26.9	13.4	9.2	14.2	430	158	
10/23/14	WHEA #1	855	8.11	34.88	27.21	6.39	6.3	2.0	169	54	27	13	6.3	23.6	350	158	
10/30/14	WHEA #1	854	7.98	34.71	24.95	6.27	5.2	2.0	268	125	51	25	5.2	10.0	713	158	
11/06/14	WHEA #1	847	7.93	34.44	24.86	6.55	5.1	2.0	352	92	38	16	9.2	7.4	640	158	
12/10/14	WHEA #1	1105	8.08	34.97	24.23	6.23	3.7	2.0	285	224	37	47	7.7	1	958	158	
03/19/15	WHEA #1	1036	7.92	34.77	22.84	6.74	3.9	3.0	205	96	25	20	8.1	21	786	49	
06/05/15	WHEA #1	916	7.92	34.10	23.30	5.23	5.9	2.1	411	130	54	29	7.7	33	1090	82	
08/19/15	WHEA #1	908	8.02	34.39	26.01	5.80	4.3	2.0	248	104	37	26	6.8	38	817	77	
11/24/15	WHEA #1	923	7.96	34.46	21.31	6.14	4.4	2.0	466	286	61	52	7.6	29	1282	51	
02/25/16	WHEA #1	821	8.00	34.64	20.05	7.15	3.8	2.0	364	261	72	63	5.1	28	1220	44	
06/08/16	WHEA #1	821	7.93	34.77	23.65	6.14	3.3	2.0	272	180	56	46	4.9	17	988	48	
09/07/16	WHEA #1	1000	8.38	34.81	23.92	5.23	3.6	2.0	408	267	67	51	6.1	41	1775	66	
11/30/16	WHEA #1	951	8.05	34.82	22.44	6.00	4.6	2.0	215	105	37	35	5.9	45	853	55	
03/08/17	WHEA #1	846	8.08	34.50	22.27	6.90	3.1	2.0	185	131	35	26	5.3	26	731	42	
05/25/17	WHEA #1	841	8.00	34.50	23.47	4.85	4.0	2.0	224	135	40	27	5.6	24.2	756	52	
08/17/17	WHEA #1	1012	7.96	34.45	23.64	6.69	12.2	2.0	281	191	55	43	5.1	34.4	993	58	
11/02/17	WHEA #1	1033	8.00	34.88	22.76	4.67	3.6	2.0	245	153	41	25	6.0	25.8	794	51	
03/01/18	WHEA #1	923	7.86	34.49	17.16	6.97	4.4	2.3	344	280	65	57	5.3	25.9	1476	61	
06/07/18	WHEA #1	959	8.01	34.94	21.66	6.07	5.9	2.7	407	165	63	53	6.4	35.4	952	51	
09/10/18	WHEA #1	921	7.96	34.77	22.44	5.65	4.8	2.0	243	182	47	32	5.2	17.5	953	52	
11/09/18	WHEA #1	1029	7.98	34.95	23.46	4.06	3.2	2.0	231	161	44	31	5.2	25.9	977	56	
02/15/19	WHEA #1	1022	7.93	34.95	19.23	5.95	14.3	2.3	293	165	44	31	6.7	44.7	872	52	
05/24/19	WHEA #1	1033	8.00	35.85	22.97	6.02	3.5	2.0	252	170	46	35	5.5	31.1	999	73	
09/12/19	WHEA #1	1019	8.08	34.86	26.16	5.52	3.9	2.0	217	105	35	22	6.3	38.0	577	114	
10/23/19	WHEA #1	1135	7.97	35.64	23.08	6.28	3.4	2.3	373	247	58	37	6.5	32.4	1200	111	
03/11/20	WHEA #1	1019	7.99	36.37	20.68	6.36	6.3	2.1	302	171	44	37	6.8	23.4	821	113	
06/12/20	WHEA #1	956	8.07	36.03	24.43	6.14	3.3	3.5	200	127	22	19	9.3	24.0	641	47	
Mean			8.01	34.88	23.12	6.01	4.9	2.2	285	162	45	34	6.5	27	913	81	
Std. Dev.			0.10	0.52	2.21	0.72	2.6	0.4	79	65	14	14	1.3	11	303	42	

APPENDIX E

NELHA Environmental Incident Report Form…… Appendix E-1

NELHA ENVIRONMENTAL INCIDENT REPORT FORM

Instructions: The NELHA Water Quality Laboratory will investigate and complete this form for any type of petroleum product or hazardous materials/waste spill or environmental monitoring incident discovered or investigated within the NELHA facility. A copy of this report will be provided to NELHA Management Team and to the Tenant where the incident occurred. Signatures will be required by the NELHA Executive Director and Tenant to close out the Environmental Incident Report Form.

1. NELHA Water Quality Laboratory Personnel Involved in Spill/Incident Reporting:

Name, Title, and Phone Number: _____

_____

2. Company Involved in the Spill/Incident Reporting:

Company Name: _____

Name, Title, and Phone Number: _____

_____

3. Incident Discovery, Location and Conditions:

Monitoring Location (Well, Trench, Pond, Ocean Transect): _____

Tenant Notification (Time and Date): _____

GPS Datum: _____

Street Address: _____

Weather Conditions: _____

4. General Spill Information:

Common Name of Spilled Substance: _____

Trade Name and Supplier of Spilled Substance: _____

Quantity Spilled (Estimate): _____

Describe Concentration of Material (Estimate): _____

Identify the Discharge Point: _____

Describe Environmental Damage (i.e., fish kill?): _____

_____

Date of Spill: _____/_____/_____

Time Spill Started: _____ AM _____ PM Time Spill Ended: _____ AM _____ PM

5. Actions taken:

To Contain Spill or Impact of Incident: _____

_____

_____

To Cleanup Spill or Recover from Incident: _____

_____

_____

To Remove Cleanup Material: _____

_____

_____

To Document Disposal: _____

_____

_____

To Prevent Reoccurrence (Corrective Action): _____

_____

_____

_____

_____

Date Corrective Action Implemented: _____

6. Reporting the Spill:

List all agencies contacted; include names, dates, and phone numbers for people you spoke with:

_____

_____

_____

7. Additional Notes/Information (if necessary):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

8. Signatures:

NELHA Executive Director: _____

Date: _____

Tenant: _____

Date: _____

APPENDIX F - Discharge Monitoring Report-Quality Assurance 36 Study

Discharge Monitoring Report-Quality Assurance 36 Study …...…….. Appendix F-1

PERFORMANCE EVALUATION

Scheduled Study

DMRQA 38

23-Mar-2018 Through 06-Jul-2018

49480552
RTC Labcode

EPA Labcode

Participating Laboratory:

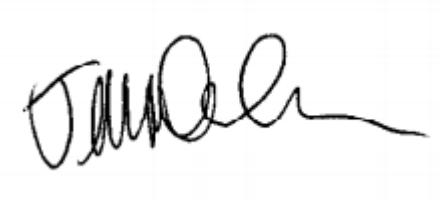
Natural Energy Lab of HI Authority
Keith Olson
73-4460 Queen Kaahumanu Hwy., 101
KAILUA KONA HI 96740 US

Thank you for participating in study DMRQA 38. Additional information about this study may be found online at www.sigmaaldrich.com/pt.

Sigma-Aldrich RTC Inc.
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Laramie, WY 82070 USA
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www.sigmaaldrich.com

This report shall not be reproduced except in full, without written approval of the laboratory. The data and results reported in this document are the property of the participating laboratory and are confidential. If you wish to appeal an evaluation listed in this report, please call our QA Supervisor at (307) 742-5452 or email RTCreports@sial.com

Sincerely,



Jennifer Duhon
Proficiency Testing Supervisor

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

RTC is accredited to perform PT programs for the scope of accreditation to ISO/IEC 17043 under ANAB certificate AP-1469

Demands

Method:SM 5210 B 22nd ED (2012) [990001013]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
5-day BOD [1,2]	43.3 mg/L	40.2	20.6 to 59.9	0.47	Acceptable
1530 / PE1130-20ML - Lot LRAB6088 /Analyst:PM/ Analysis Date: 2018-06-07	*Evaluation Criteria - 1* ☒*Voluntary*			*Evaluation Parameter - a:0.6237, b:0.7022, c:0.0928, d:0.6636*	

Minerals

Method:SM 2320 B 22nd ED (2012) [990000671]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
Alkalinity as $CaCO_3$ [1,2]	45.0 mg/L	43.3	36.8 to 49.8	1.06	Acceptable
1505 / PE1041-1KT - Lot LRAB4797 /Analyst:PM/ Analysis Date: 2018-05-29	*Evaluation Criteria - 4* ☒*Voluntary*				*Evaluation Parameter - break:40, highPercentage:0.15, lowPercentage:0.20*

Miscellaneous Analytes

Method:SM 2130 B 22nd Ed (2011) [20042619]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
Turbidity [1,2]	13.5 NTU	14.1	11.6 to 16.6	-0.73	Acceptable
2055 / PE1081-20ML - Lot LRAB6354 /Analyst:PM/ Analysis Date: 2018-06-05	*Evaluation Criteria - 1* ☒*Voluntary*			*Evaluation Parameter - a:1.0040, b:-0.0368, c:0.0475, d:0.1575*	

Method:SM 4500-H+ B 22nd ED (2011) [20105015]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
pH [1,2]	6.80 Units	6.85	6.65 to 7.05	-0.75	Acceptable
1900 / PE1210-20ML - Lot LRAB5406 /Analyst:PM/ Analysis Date: 2018-05-23	*Evaluation Criteria - 1* ☒*Voluntary*			*Evaluation Parameter - a:1, b:0, c:0, d:0.066667*	

Nutrients

Method:In House Method [0]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
Ammonia as N [1,2] 1515 / PE1195-20ML - Lot LRAB7323 /Analyst:PM/ Analysis Date: 2018-06-05	4.53 mg/L *Evaluation Criteria - 1* ☒*Voluntary*	4.24	3.23 to 5.26	0.86	Acceptable *Evaluation Parameter - a:0.9923, b:0.0567, c:0.0583, d:0.0914*

Method:SM 4500-NO_3^- I 21st ED (2000) [20118552]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
Nitrate+nitrite as N [1,2] 1820 / PE1195-20ML - Lot LRAB7323 /Analyst:PM/ Analysis Date: 2018-06-05	5.30 mg/L *Evaluation Criteria - 1* ☒*Voluntary*	5.21	4.29 to 6.13	0.29	Acceptable *Evaluation Parameter - a:0.9957, b:-0.0010, c:0.0509, d:0.0400*

Method:SM 4500-P F 22nd ED (2011) [20124816]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
Orthophosphate as P [1,2] 1870 / PE1195-20ML - Lot LRAB7323 /Analyst:PM/ Analysis Date: 2018-06-05	4.24 mg/L *Evaluation Criteria - 1* ☒*Voluntary*	4.31	3.66 to 4.96	-0.32	Acceptable *Evaluation Parameter - a:1, b:0, c:0.05, d:0*

Method:SM 4500-P J 22nd ED (2012) modified [990001210]

Analyte	Result Units	Assigned Value	Accept. Window	Z	Evaluation
Nitrogen, total [2] 1827 / PE1051-2ML - Lot LRAB4853 /Analyst:PM/ Analysis Date: 2018-06-06	13.26 mg/L *Evaluation Criteria - 1* ☒*Voluntary*	13.8	9.34 to 18.2	-0.36	Acceptable *Evaluation Parameter - a:0.9645, b:0.1885, c:0.1035, d:0.0225*
Phosphorus as P, total [1,2] 1910 / PE1051-2ML - Lot LRAB4853 /Analyst:PM/ Analysis Date: 2018-06-06	2.15 mg/L *Evaluation Criteria - 1* ☒*Voluntary*	2.09	1.7 to 2.49	0.45	Acceptable *Evaluation Parameter - a:0.9932, b:0.0084, c:0.0506, d:0.0254*

Sample Information

Demand - WP

PE1130-20ML / Lot LRAB6088

Analytes	Units	Gravimetric Value	Study Mean	Study Std. Dev.
5-day BOD [1,2] 1530 Demands	mg/L	63.4±0.323	39.3	7.24
Carbonaceous BOD (CBOD) [1,2] 1555 Demands	mg/L	63.4±0.177	38.6	8.78
Chemical oxygen demand (COD) [1,2] 1565 Demands	mg/L	64.8±0.330	65.1	6.09
Dissolved organic carbon (DOC) [1,2] 1710 Demands	mg/L	25.6±0.131	0	0
Total organic carbon (TOC) [1,2] 2040 Demands	mg/L	25.6±0.131	25.2	1.33
5-day BOD [1,2] 1530 Miscellaneous Analytes	mg/L	63.4±0.323	39.3	7.24
Carbonaceous BOD (CBOD) [1,2] 1555 Miscellaneous Analytes	mg/L	63.4±0.177	38.6	8.78
Chemical oxygen demand (COD) [1,2] 1565 Miscellaneous Analytes	mg/L	64.8±0.330	65.1	6.09
Total organic carbon (TOC) [1,2] 2040 Miscellaneous Analytes	mg/L	25.6±0.131	25.2	1.33

Minerals - WP

PE1041-1KT / Lot LRAB4797

Analytes	Units	Gravimetric Value	Study Mean	Study Std. Dev.
Calcium, Ca [1,2] 1035 Minerals	mg/L	56.4±0.288	57.1	3.13
Magnesium, Mg [1,2] 1085 Minerals	mg/L	11.2±0.0572	11.3	0.64
Potassium, K [1,2] 1125 Minerals	mg/L	23.1±0.118	23.2	1.69
Sodium, Na [1,2] 1155 Minerals	mg/L	20.0±0.102	20.2	1.18
Alkalinity as $CaCO_3$ [1,2] 1505 Minerals	mg/L	43.3±0.221	44.1	1.61
Calcium hardness as CaCO3 [1,2] 1550 Minerals	mg/L	141±0.718	144	9.64
Specific conductance, Conductivity (25ºC) [1,2] 1610 Minerals	µmhos/cm	615	612	20
Hardness [2] 1750 Minerals	mg/L	187±0.954	0	0
Hardness, total as $CaCO_3$ [1,2] 1755 Minerals	mg/L	187±0.954	188	9.16
Calcium, Ca [1,2] 1035	mg/L	56.4±0.288	57.1	3.13
Magnesium, Mg [1,2] 1085	mg/L	11.2±0.0572	11.3	0.64
Potassium, K [1,2] 1125	mg/L	23.1±0.118	23.2	1.69
Sodium, Na [1,2] 1155	mg/L	20.0±0.102	20.2	1.18
Alkalinity as $CaCO_3$ [1,2] 1505	mg/L	43.3±0.221	44.1	1.61
Calcium hardness as CaCO3 [1,2] 1550	mg/L	141±0.718	144	9.64
Specific conductance, Conductivity (25ºC) [1,2] 1610	µmhos/cm	615	612	20
Hardness, total as $CaCO_3$ [1,2] 1755	mg/L	187±0.954	188	9.16

pH - WP - 20ML

PE1210-20ML / Lot LRAB5406

Analytes	Units	Gravimetric Value	Study Mean	Study Std. Dev.
pH [1,2] 1900 Miscellaneous Analytes	Units	6.85±0.0349	6.81	0.05

Simple Nutrients - WP

PE1195-20ML / Lot LRAB7323

Analytes	Units	Gravimetric Value	Study Mean	Study Std. Dev.
Ammonia as N [1,2] 1515 Nutrients	mg/L	4.22±0.0215	4.24	0.45
Nitrate as N [1,2] 1810 Nutrients	mg/L	5.23±0.0267	5.21	0.35
Nitrate+nitrite as N [1,2] 1820 Nutrients	mg/L	5.23±0.0267	5.24	0.28
Orthophosphate as P [1,2] 1870 Nutrients	mg/L	4.31±0.0220	4.32	0.24
Ammonia as N [1,2] 1515	mg/L	4.22±0.0215	4.24	0.45
Nitrate as N [1,2] 1810	mg/L	5.23±0.0267	5.21	0.35
Nitrate+nitrite as N [1,2] 1820	mg/L	5.23±0.0267	5.24	0.28
Orthophosphate as P [1,2] 1870	mg/L	4.31±0.0220	4.32	0.24

Complex Nutrients - WP

PE1051-2ML / Lot LRAB4853

Analytes	Units	Gravimetric Value	Study Mean	Study Std. Dev.
Kjeldahl nitrogen, total (TKN) [1,2] 1795 Nutrients	mg/L	14.1±0.0721	14.3	1.75
Organic nitrogen [1,2] 1865 Nutrients	mg/L	14.1±0.0721	0	0
Nitrogen, total [2] 1827 Nutrients	mg/L	14.1±0.0721	14.1	2.36
Phosphorus as P, total [1,2] 1910 Nutrients	mg/L	2.10±0.0107	2.21	0.12

Turbidity - WP

PE1081-20ML / Lot LRAB6354

Analytes	Units	Gravimetric Value	Study Mean	Study Std. Dev.
Turbidity [1,2] 2055 Miscellaneous Analytes	NTU	14.1±0.0717	14	1.23

Definitions and Interpretation of Statistical Analysis:

Assigned Value: Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a given purpose. See ISO/IEC 17043 for additional information. In general the assigned value is the value used to assess proficiency and may or may not be the made to value (gravimetric value).

Accept. Window: The range of values that constitute acceptable performance for a laboratory participating in this PT study.

Z: A Z-Score tells how a single data point compares to normal data. A Z-Score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a Z-Score less than |2| is considered to be in control, a Z-Score between |2| and |3| is considered 'Questionable', but still within control and a Z greater than |3| is considered not acceptable and the method is out of control. For WS studies, a z-score greater than |2| is unacceptable. Calculated as **Z = (Reported Value - Assigned Value) / Proficiency Std. Dev.**

Proficiency Std. Dev.: Standard deviation calculated based on **Evaluation Criteria.**

Study Mean: Statistical study mean calculated using a robust statisitical model (RTC employs the 'Biweight Program'). Robust statistical techniques to minimize the influence that extreme results can have on estimates of the mean and standard deviation. NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

Study Std. Dev.: Standard deviation calculated from study data using robust statisicals (Biweight).

Gravimetric Value: The 'prepared to' value, determined by gravimetric means. The uncertainty associated to this value is standard uncertainty and based on RTC's gravimetric tolerances.

Evaluation Criteria:

1 - Regression Equation - Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c, & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d.

2 - Study Robust Mean and c,d regression - Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation calculated from robust study mean and variables c & d as proficiency value = robust mean and proficiency standard deviation = c * proficiency value + d.

3 - Fixed Limits - Acceptance windows based on span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * percentage.

4 - Adjustable Fixed Limits - Acceptance windows base on a span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * lowPercentage where gravimetric < break and gravimetric +/-

gravimetric * highPercentage where gravimetric >= break.

5 - Study Statistics - Acceptance windows based on a number of standard deviations span from the study mean as study mean +/- (deviations * standard deviation).

6 - Log Transform Statistics - Acceptance windows based on lognormal distributed data. Acceptance windows = mean(lognormal) +/- span * standard deviation(lognormal).

7 - Reserved

8 - Regression Equation 2SD - Acceptance windows based on EPA equation of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c, & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d. Generally reserved for drinking water studies.

Proficiency Test Item Preparation, Homogeneity and Stability Assessment - RTC uses proprietary and published methods for the manufacture, homogeneity and stability testing of proficiency test items. RTC's proficiency test materials meet requirements of ISO Guide 34. For more information contact RTC. Additionally RTC complies with TNI Volume 3 'General Requirements for Environmental Proficiency Test Providers', EL-V3-2009, 2009 for all TNI Fields of Proficiency Testing analytes.

Metrological Traceability - All preparations are made using balances calibrated annually traceable to NIST standards. Where appropriate analytical measurements are traceable through an unbroken chain to NIST standards, or a Certified Reference Material manufactured under ISO Guide 34 in conjunction with ISO/IEC 17025.

Statistical Analysis - RTC uses robust statistics to calculate study means and standard deviations - Reference - Kafadar, K, A Biweight Approach to the One-Sample Problem, Journal of the American Statistical Association, Vol. 77, No. 378, June, 1982, pp. 416-424.

Additional Information - Go to www.pt.sigmainformatics.com for additional information on summary statistics for specific methods, advice on the interpretation of the statistical analysis, and additional comments/recommendations. If you failed an analyte it may be required to perform a corrective action and/or retest. RTC recommends that you contact your accreditation body for specific instruction.

Program analyte accrediting footnotes

[1] NELAC Compliant, covered by RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Authorizing Officer: 

Date: 7/27/2018

Patrick Brumfield, ASQ CQA

QA Manager

This section of the report is for informational purposes only. If you are unsure about specific accreditation requirements, please contact your state coordinator.

UNACCEPTABLE ANALYTES

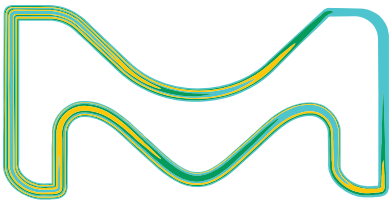
PASS RATE

Number of Reported Results:	9
Number of Passing Results:	9
Pass Rate:	100%

PROFICIENCY TESTING

Evaluation Report

Scheduled Study	**DMRQA 39**
Study Type	WPCHEM_MICRO
Open Date	2019-03-22
Close Date	2019-07-19
Report Generated	2019-08-10
Laboratory	Natural Energy Lab of HI Authority Pam Madden 73-4460 Queen Kaahumanu Hwy., 101 KAILUA KONA HI 96740 US
Account Number	49480552



The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

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Provider of the proficiency test

Sigma-Aldrich RTC, Inc.
2931 Soldier Springs Road
Laramie, WY 82070 USA
ptservice@milliporesigma.com

Statistical analysis and reporting powered by

QuoData GmbH Quality & Statistics!

Authorized release of the report

Jennifer Duhon
(PT coordinator)

Sign: Jennifer Duhon

If you have any questions about your report, please call 800-576-5690 or email ptservice@milliporesigma.com. This report shall not be reproduced except in full, without written approval of the laboratory. A laboratory may not claim endorsement by ANAB, NELAC or any other federal agency.

Sigma-Aldrich RTC, Inc. is accredited by ANAB to provide PT programs for the scope of accreditation under ANAB Certificate # AP-1469.

Accreditors

Evaluations of this study will be sent to the accreditor(s) listed below. If any of the information listed below is not correct, please contact Sigma-Aldrich RTC immediately.

No accreditors were selected to receive this report.

Summary Results for DMRQA 39
PE1051-2ML Complex Nutrients - WP
LRAB4854

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
SM 4500-P J 22nd ED (2012) modified 990001210				
Nutrients				
Nitrogen, total[2] 1827 Analyst: PM Analysis Date: 2019-06-27	19.9 mg/L *voluntary*	19.3 mg/L *Evaluation Criteria – 5** *Parameters*: deviations:3*	16.2 - 22.3 mg/L	**0.6** Acceptable
Phosphorus as P, total[1,2] 1910 Analyst: PM Analysis Date: 2019-06-27	4.25 mg/L *voluntary*	4.14 mg/L *Evaluation Criteria – 1** *Parameters*: a:0.9932, b:0.0084, c:0.0506, d:0.0254*	3.43 - 4.85 mg/L	**0.5** Acceptable
Group Analysis Summary	Acceptable: 2/2		**Score: 100% - Acceptable**	

* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Summary Results for DMRQA 39
PE1130-20ML Demand - WP
LRAB8996

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
SM 5210 B 22nd ED (2012) 990001013				
Demands				
5-day BOD[1,2] 1530 Analyst: PM Analysis Date: 2019-05-17	73.0 mg/L *voluntary*	77.4 mg/L *Evaluation Criteria – 1** *Parameters*: a:0.6237, b:0.7022, c:0.0928, d:0.6636*	41.2 - 114 mg/L	**-0.4** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	

* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Summary Results for DMRQA 39
PE3074-500ML Hardness/TSS - Whole Volume - WP
LRAC1769

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
SM 2540 D 22ND ED (2012) 990000678				
Miscellaneous Analytes				
Total Suspended Solids, Non-Filterable Residue (TSS)[1,2] 1960 Analyst: PM Analysis Date: 2019-05-23	46.8 mg/L *voluntary*	49.1 mg/L *Evaluation Criteria – 1** *Parameters*: a:0.9728, b:-0.6338, c:0.0300, d:1.5793*	39.7 - 58.4 mg/L	**-0.7** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	

* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Summary Results for DMRQA 39
PE1041-1KT Minerals - WP
LRAC1170*

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
SM 2320 B 22nd ED (2012) 990000671				
Minerals				
Alkalinity as $CaCO_3$[1,2] 1505 Analyst: PM Analysis Date: 2019-07-09	118 mg/L *voluntary*	117 mg/L *Evaluation Criteria – 4** *Parameters*: break:40, highPercentage:0.15, lowPercentage:0.20*	99.2 - 134 mg/L	**0.2** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	

* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Summary Results for DMRQA 39
PE1210-20ML pH - WP - 20ML
LRAC0603

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
SM 4500-H+ B 22nd ED (2011) 20105015				
Miscellaneous Analytes				
pH[1,2] 1900 Analyst: PM Analysis Date: 2019-05-31	7.47 Units *voluntary*	7.61 Units *Evaluation Criteria – 1** *Parameters*: a:1, b:0, c:0, d:0.066667*	6.85 - 8.37 Units	**-0.6** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	

* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Summary Results for DMRQA 39
PE1195-20ML Simple Nutrients - WP
LRAB9036

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
In House Method In House Method				
Nutrients				
Ammonia as N[1,2] 1515 Analyst: PM Analysis Date: 2019-06-27	14.5 mg/L *voluntary*	14.8 mg/L *Evaluation Criteria – 1** *Parameters*: a:0.9923, b:0.0567, c:0.0583, d:0.0914*	12.0 - 17.7 mg/L	**-0.4** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	
SM 4500-NO3¯ I 21st ED (2000) 20118552				
Nutrients				
Nitrate+nitrite as N[1,2] 1820 Analyst: PM Analysis Date: 2019-06-27	16.7 mg/L *voluntary*	16.5 mg/L *Evaluation Criteria – 1** *Parameters*: a:0.9957, b:-0.0010, c:0.0509, d:0.0400*	13.9 - 19.2 mg/L	**0.2** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	
SM 4500-P F 22nd ED (2011) 20124816				
Nutrients				
Orthophosphate as P[1,2] 1870 Analyst: PM Analysis Date: 2019-06-27	3.11 mg/L *voluntary*	3.20 mg/L *Evaluation Criteria – 1** *Parameters*: a:1, b:0, c:0.05, d:0*	2.72 - 3.68 mg/L	**-0.6** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	

* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Summary Results for DMRQA 39
PE1081-20ML Turbidity - WP
LRAC0922

Analyte	Reported Value	Assigned Value	Acceptance Window	z-score*
SM 2130 B 22nd Ed (2011) 20042619				
Miscellaneous Analytes				
Turbidity[1,2] 2055 Analyst: PM Analysis Date: 2019-07-09	5.34 NTU *voluntary*	5.64 NTU *Evaluation Criteria – 1** *Parameters*: a:1.0040, b:-0.0368, c:0.0475, d:0.1575*	4.36 - 6.91 NTU	**-0.7** Acceptable
Group Analysis Summary	Acceptable: 1/1		**Score: 100% - Acceptable**	

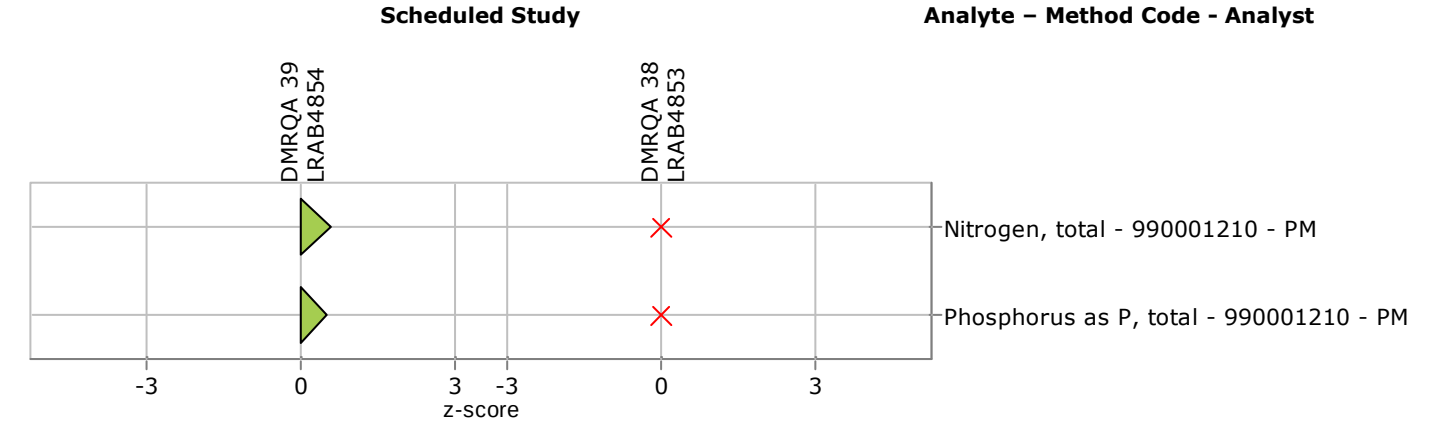
* Evaluation parameters used for the statistical analysis: explanation at the end of report; A yellow highlighted results is acceptable but to be checked.

[1] NELAC Compliant, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by Sigma-Aldrich RTC's ANAB Proficiency Testing Provider accreditation, Cert AP-1469

Graphical z-score Overview for DMRQA 39
PE1051-2ML Complex Nutrients - WP

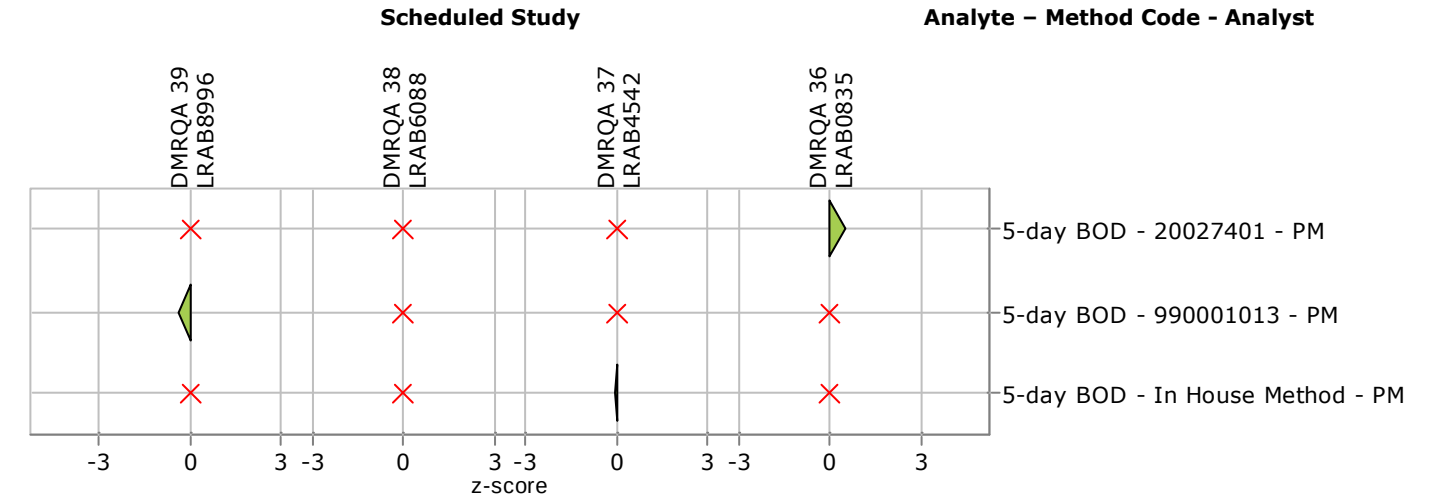
z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

Graphical z-score Overview for DMRQA 39
PE1130-20ML Demand - WP

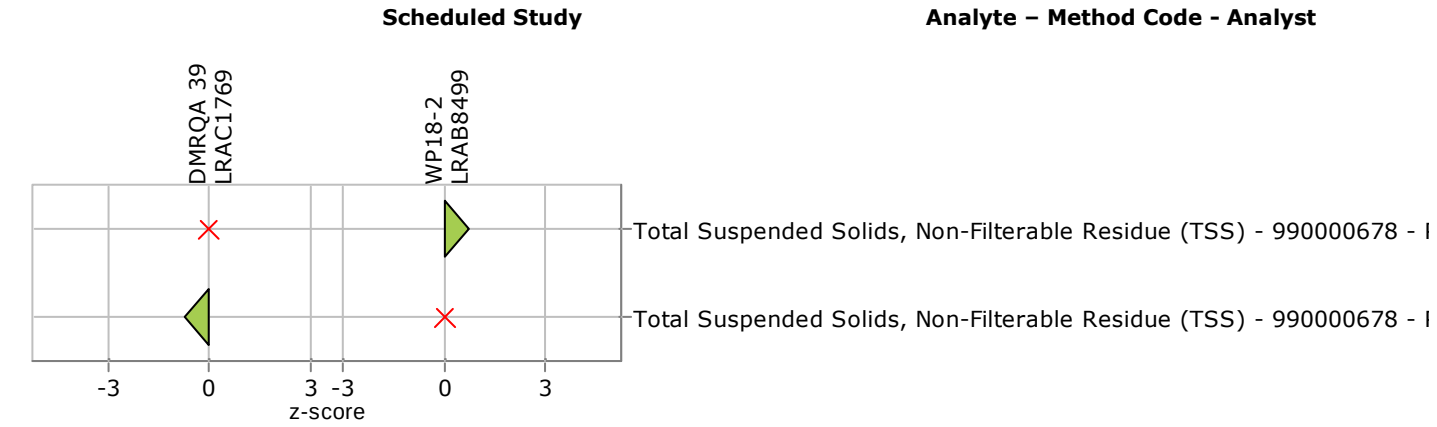
z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

Graphical z-score Overview for DMRQA 39
PE3074-500ML Hardness/TSS - Whole Volume - WP

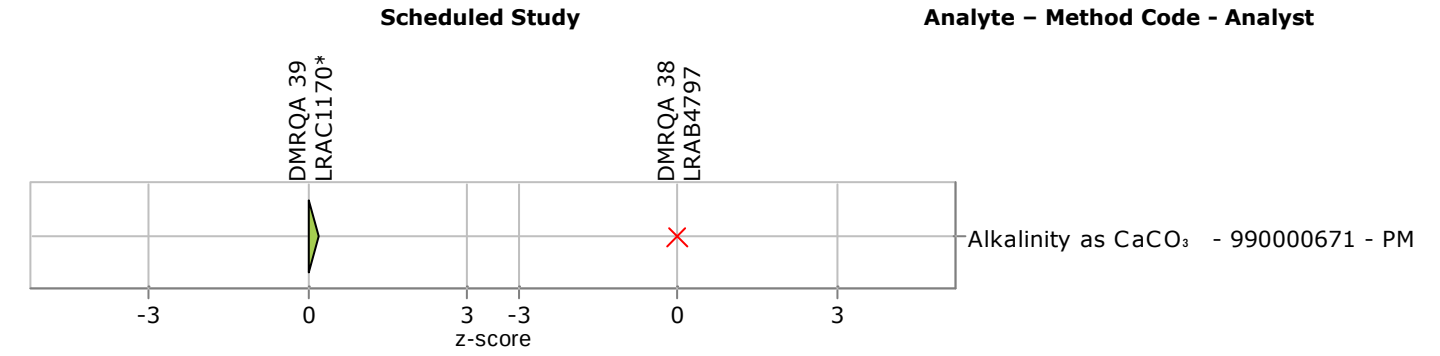
z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

Graphical z-score Overview for DMRQA 39
PE1041-1KT Minerals - WP

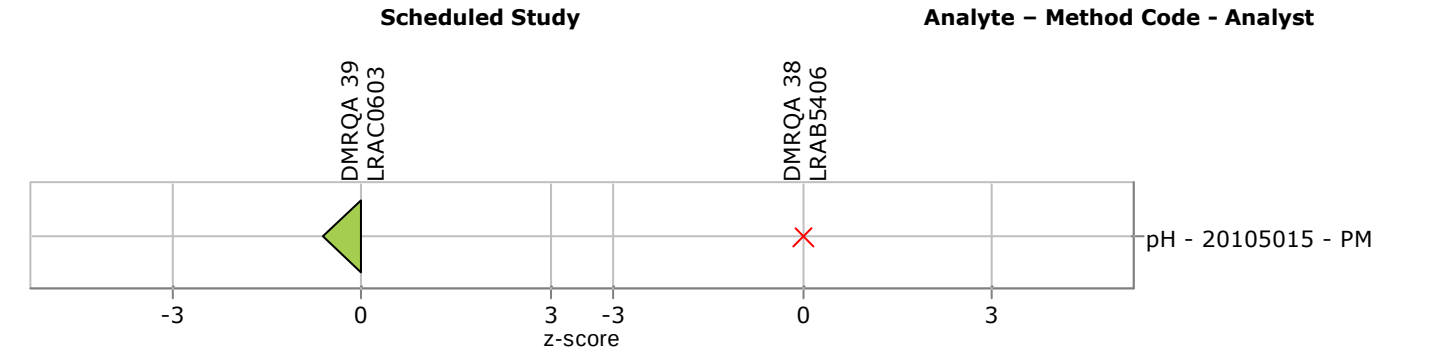
z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

Graphical z-score Overview for DMRQA 39
PE1210-20ML pH - WP - 20ML

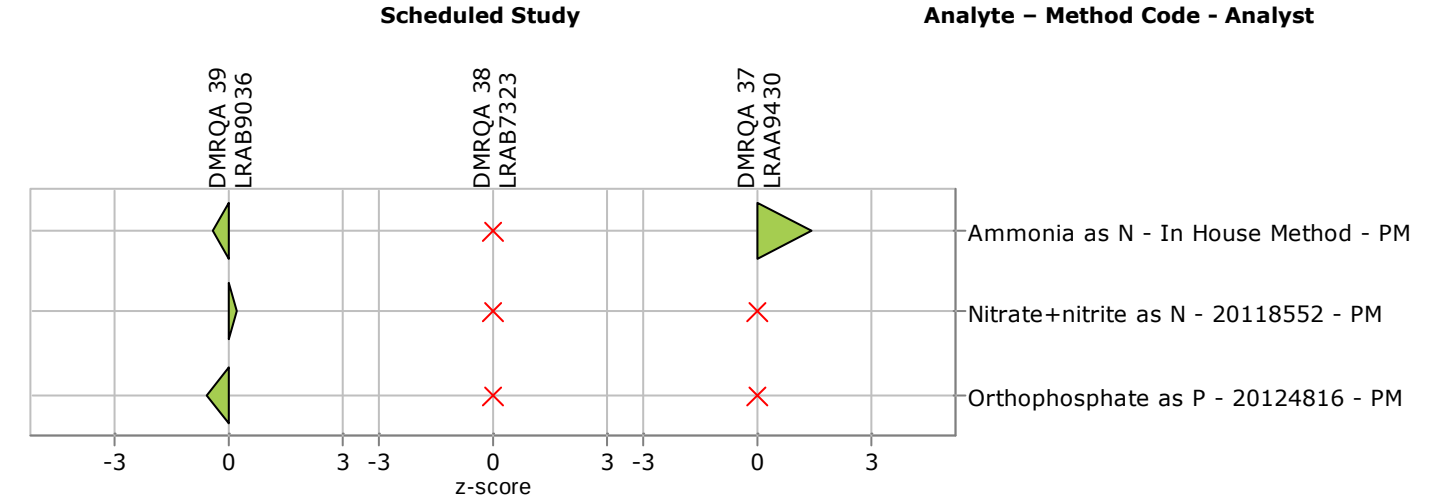
z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

Graphical z-score Overview for DMRQA 39
PE1195-20ML Simple Nutrients - WP

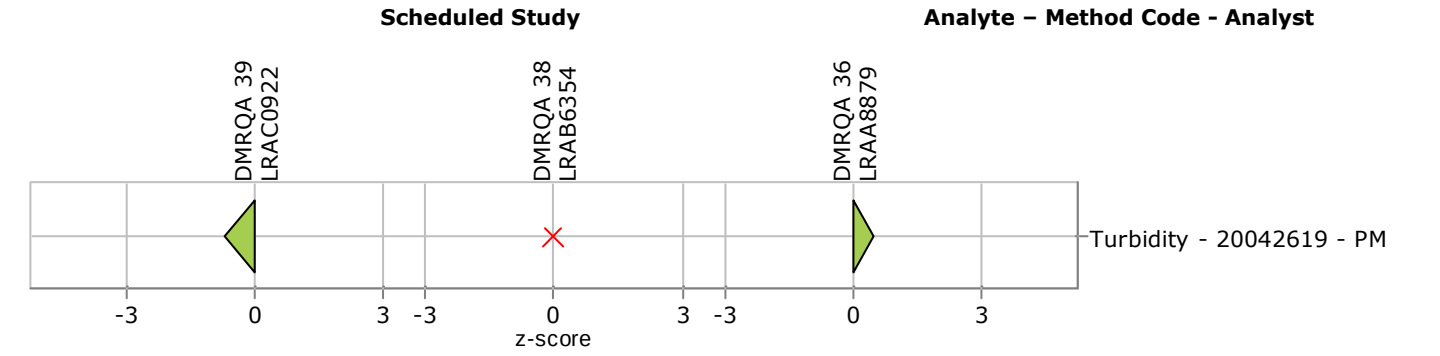
z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

Graphical z-score Overview for DMRQA 39
PE1081-20ML Turbidity - WP

z-score Overview* for DMRQA 39 and the Previous three Scheduled Studies of this Study Type



* Evaluation parameters used for the statistical analysis; explanation at the end of report

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1 Aim of the Proficiency Test

This interlaboratory study is a proficiency test for the assessment of laboratory performance. It was conducted in the framework of external quality assurance and the report provides an external appraisal of the participant laboratories' competence in the particular testing field.

2 Sample Information

PE1051-2ML Complex Nutrients - WP LRAB4854

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
Nitrogen, total 1827	mg/L	18.3 ± 0.0935	---	19.3	1.01
Phosphorus as P, total 1910	mg/L	4.16 ± 0.0212	0.350	4.44	0.270

PE1130-20ML Demand - WP LRAB8996

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
5-day BOD 1530	mg/L	123 ± 1.00	4.50	75.4	14.9

PE3074-500ML Hardness/TSS - Whole Volume - WP LRAC1769

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
Total Suspended Solids, Non-Filterable Residue (TSS) 1960	mg/L	51.1 ± 0.261	---	---	---

PE1041-1KT Minerals - WP LRAC1170*

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
Alkalinity as $CaCO_3$ 1505	mg/L	117 ± 0.600	20.0	119	5.19

PE1210-20ML pH - WP - 20ML LRAC0603

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
pH 1900	Units	7.61 ± 0.0200	---	7.53	0.0673

* If there are not enough data available to provide Study mean and Study Std. Dev, this is indicated by "---".

PE1195-20ML Simple Nutrients - WP LRAB9036

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
Ammonia as N 1515	mg/L	14.9 ± 0.100	0.350	15.1	1.00
Nitrate+nitrite as N 1820	mg/L	16.6 ± 0.100	0.200	16.5	0.590
Orthophosphate as P 1870	mg/L	3.20 ± 0.0200	0.340	3.27	0.143

PE1081-20ML Turbidity - WP LRAC0922

Analyte	Unit	Gravimetric Value	PTRL	Study Mean*	Study Std. Dev.*
Turbidity 2055	NTU	5.65 ± 0.0300	1.20	5.40	0.466

* If there are not enough data available to provide Study mean and Study Std. Dev, this is indicated by "---".

3 Data Availability

PE1051-2ML Complex Nutrients - WP LRAB4854

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
Nitrogen, total 1827	19	19	25	25
Phosphorus as P, total 1910	74	74	77	77

PE1130-20ML Demand - WP LRAB8996

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
5-day BOD 1530	91	91	92	92

PE3074-500ML Hardness/TSS - Whole Volume - WP LRAC1769

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
Total Suspended Solids, Non-Filterable Residue (TSS) 1960	1	1	1	1

PE1041-1KT Minerals - WP LRAC1170*

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
Alkalinity as $CaCO_3$ 1505	18	18	20	20

* Only quantitative values are taken into account in the calculation of study mean and study std.dev. (i.e. without missing results, without less-than results, without larger-than results).

PE1210-20ML pH - WP - 20ML
LRAC0603

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
pH 1900	101	101	111	111

PE1195-20ML Simple Nutrients - WP
LRAB9036

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
Ammonia as N 1515	115	115	122	122
Nitrate+nitrite as N 1820	26	26	27	27
Orthophosphate as P 1870	32	32	34	34

PE1081-20ML Turbidity - WP
LRAC0922

Analyte	Number of participating laboratories		Number of data points	
	in total	with quantitative data points only*	in total	quantitative only*
Turbidity 2055	44	44	46	46

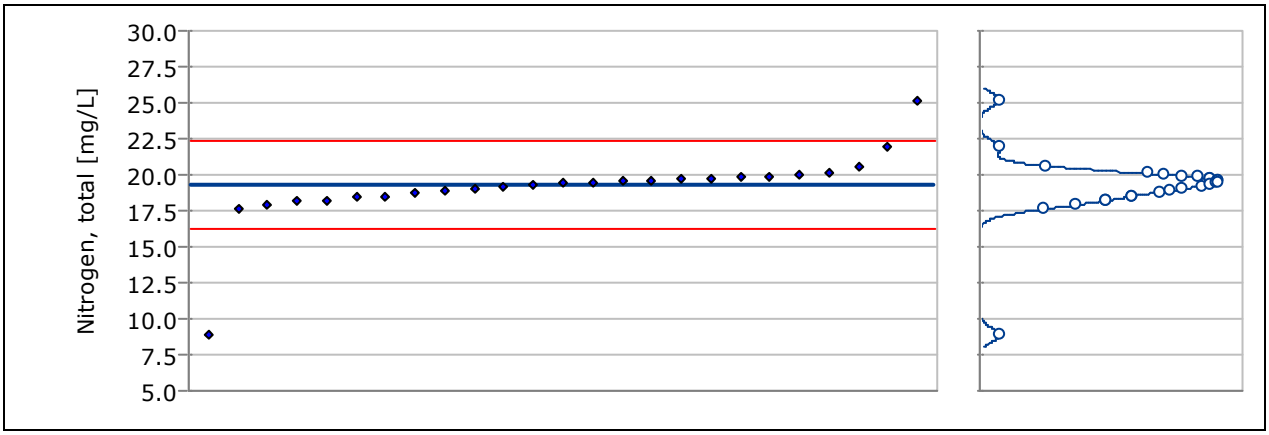
* Only quantitative values are taken into account in the calculation of study mean and study std.dev. (i.e. without missing results, without less-than results, without larger-than results).

4 Results

4.1 PE1051-2ML Complex Nutrients - WP / LRAB4854

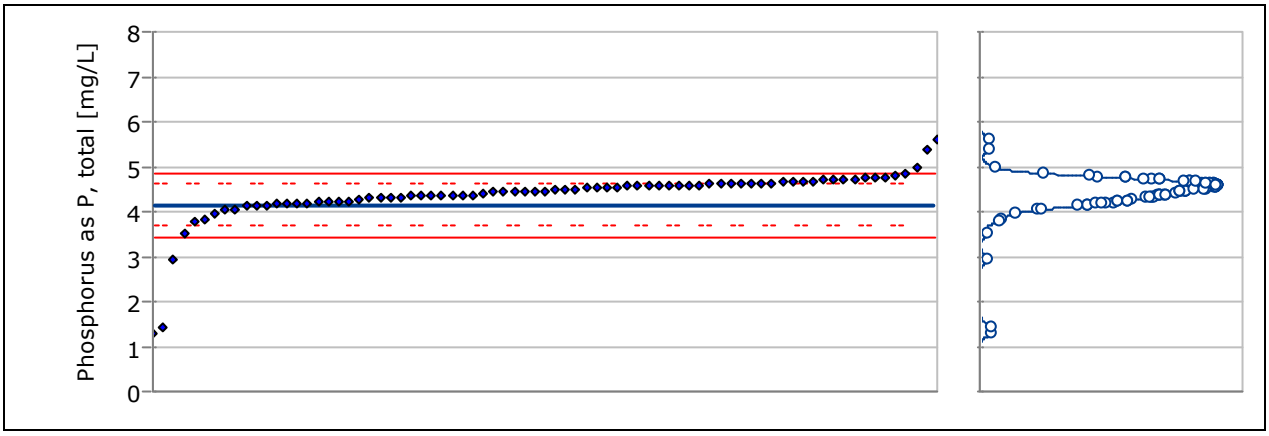
4.1.1 Nitrogen, total

No. of participating laboratories (in total / with quant. data points only)	19 / 19
No. of data points (in total / quantitative)	25 / 25
Assigned value	19.3 mg/L
Proficiency std. dev.	1.01 mg/L
Acceptance window	16.2 - 22.3 mg/L



4.1.2 Phosphorus as P, total

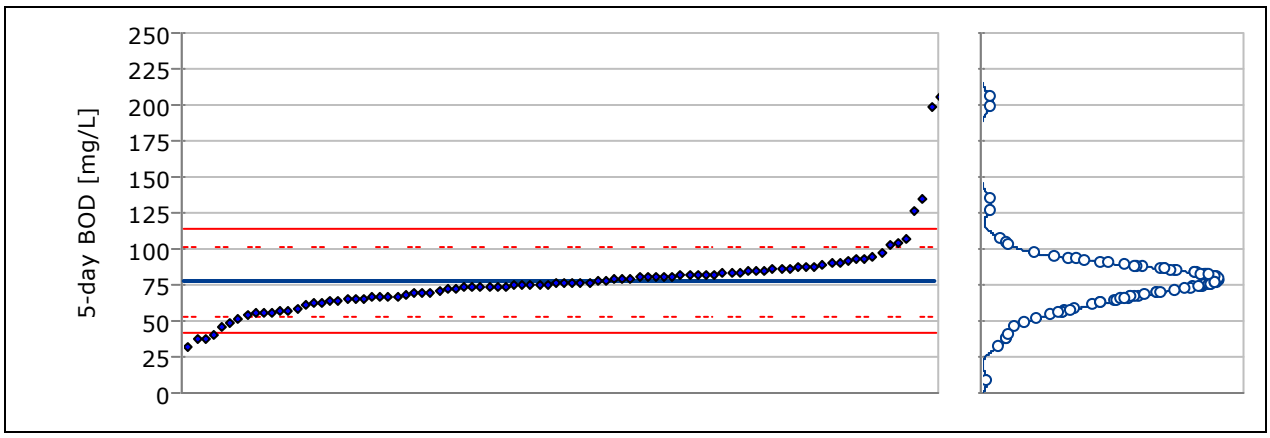
No. of participating laboratories (in total / with quant. data points only)	74 / 74
No. of data points (in total / quantitative)	77 / 77
Assigned value	4.14 mg/L
Proficiency std. dev.	0.236 mg/L
Acceptance window	3.43 - 4.85 mg/L



4.2 PE1130-20ML Demand - WP / LRAB8996

4.2.1 5-day BOD

No. of participating laboratories (in total / with quant. data points only)	91 / 91
No. of data points (in total / quantitative)	92 / 92
Assigned value	77.4 mg/L
Proficiency std. dev.	12.1 mg/L
Acceptance window	41.2 - 114 mg/L



4.3 PE3074-500ML Hardness/TSS - Whole Volume - WP / LRAC1769

4.3.1 Total Suspended Solids, Non-Filterable Residue (TSS)

No. of participating laboratories (in total / with quant. data points only)	1 / 1
No. of data points (in total / quantitative)	1 / 1
Assigned value	49.1 mg/L
Proficiency std. dev.	3.11 mg/L
Acceptance window	39.7 - 58.4 mg/L

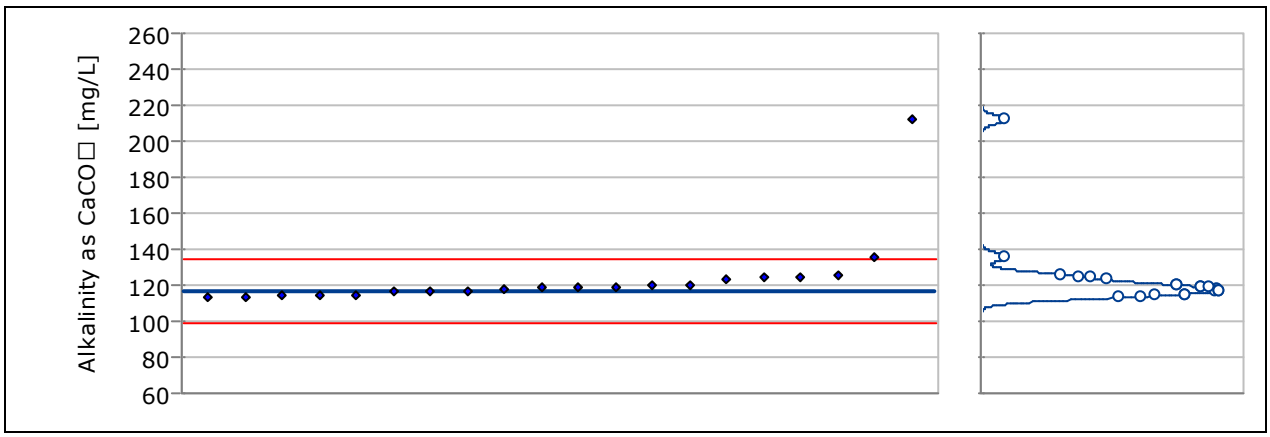


Number of laboratories with quantitative data points is less than 8. A reliable kernel density estimation cannot be guaranteed.

4.4 PE1041-1KT Minerals - WP / LRAC1170*

4.4.1 Alkalinity as $CaCO_3$

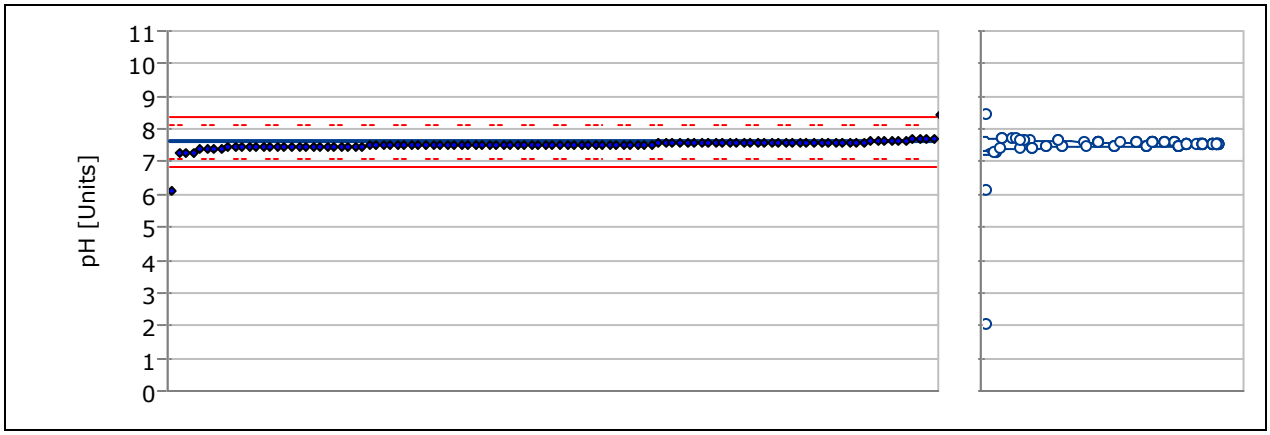
No. of participating laboratories (in total / with quant. data points only)	18 / 18
No. of data points (in total / quantitative)	20 / 20
Assigned value	117 mg/L
Proficiency std. dev.	5.84 mg/L
Acceptance window	99.2 - 134 mg/L



4.5 PE1210-20ML pH - WP - 20ML / LRAC0603

4.5.1 pH

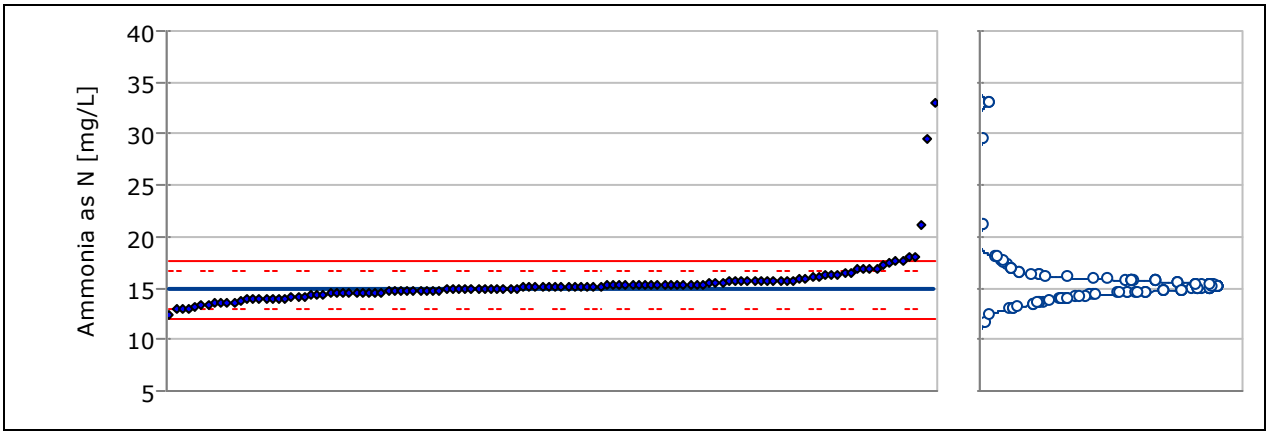
No. of participating laboratories (in total / with quant. data points only)	101 / 101
No. of data points (in total / quantitative)	111 / 111
Assigned value	7.61 Units
Proficiency std. dev.	0.0667 Units
Acceptance window	6.85 - 8.37 Units



4.6 PE1195-20ML Simple Nutrients - WP / LRAB9036

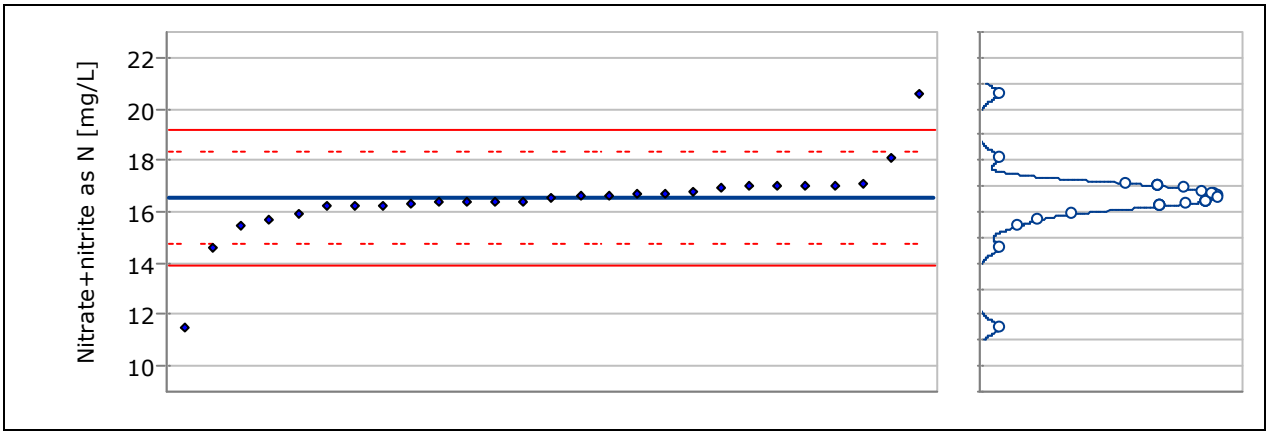
4.6.1 Ammonia as N

No. of participating laboratories (in total / with quant. data points only)	115 / 115
No. of data points (in total / quantitative)	122 / 122
Assigned value	14.8 mg/L
Proficiency std. dev.	0.960 mg/L
Acceptance window	12.0 - 17.7 mg/L



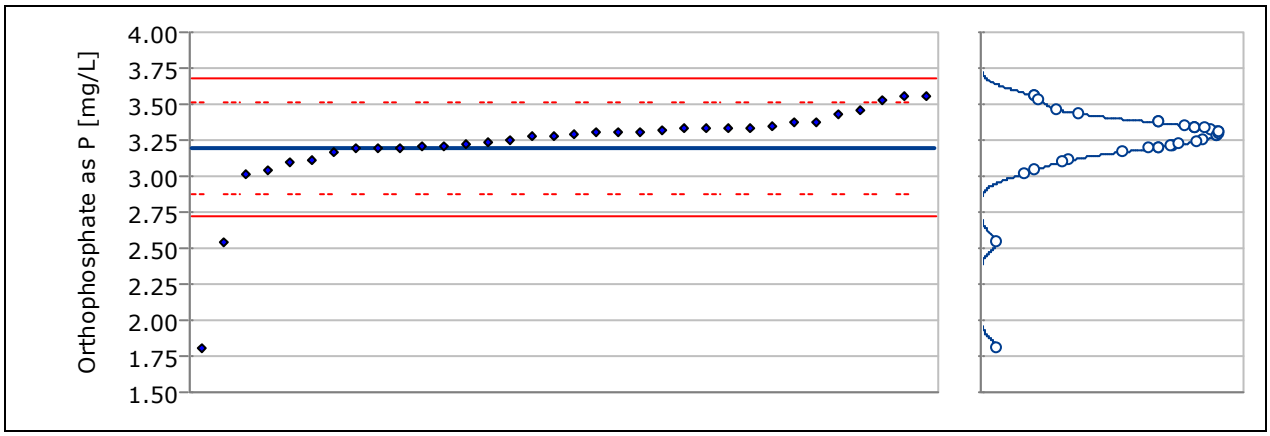
4.6.2 Nitrate+nitrite as N

No. of participating laboratories (in total / with quant. data points only)	26 / 26
No. of data points (in total / quantitative)	27 / 27
Assigned value	16.5 mg/L
Proficiency std. dev.	0.885 mg/L
Acceptance window	13.9 - 19.2 mg/L



4.6.3 Orthophosphate as P

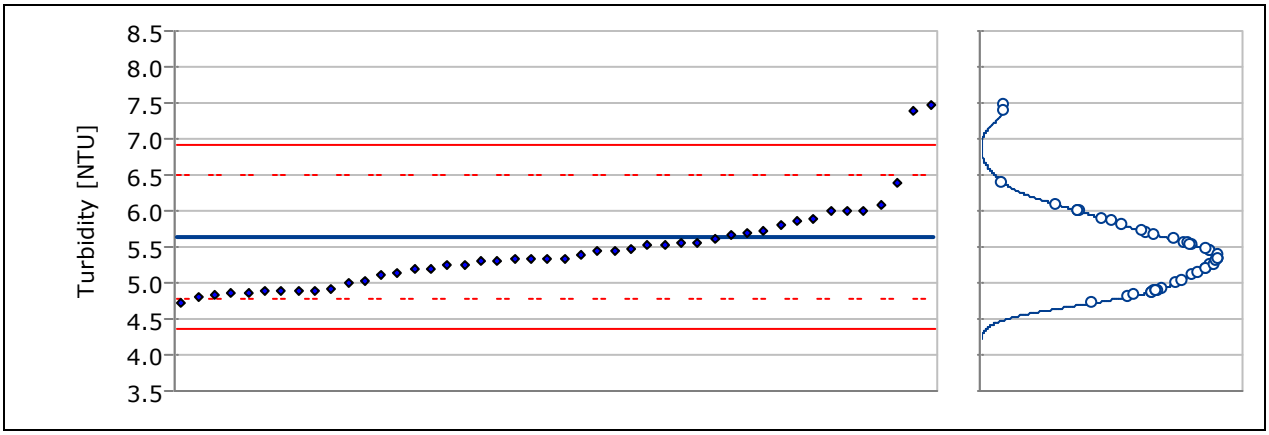
No. of participating laboratories (in total / with quant. data points only)	32 / 32
No. of data points (in total / quantitative)	34 / 34
Assigned value	3.20 mg/L
Proficiency std. dev.	0.160 mg/L
Acceptance window	2.72 - 3.68 mg/L



4.7 PE1081-20ML Turbidity - WP / LRAC0922

4.7.1 Turbidity

No. of participating laboratories (in total / with quant. data points only)	44 / 44
No. of data points (in total / quantitative)	46 / 46
Assigned value	5.64 NTU
Proficiency std. dev.	0.426 NTU
Acceptance window	4.36 - 6.91 NTU



5 Statistical Analysis

5.1 Definitions and Interpretation

Reported Value

The participant's result.

Assigned Value

Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a given purpose. See ISO/IEC 17043 for additional information. In general, the assigned value is the value used to assess proficiency and may or may not be the made to value (gravimetric value).

Acceptance Window

The range of values that constitute acceptable performance for a laboratory participating in this PT study.

z-score

A z-score shows how a single data point compares to normal data. A z-score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a z-score less than |2| is considered to be in control and 'Acceptable'; a z-score between |2| and |3| is considered 'Questionable', but still within control and 'Acceptable' and a z-score greater than |3| is considered 'Not Acceptable' and the method is out of control. For WS studies, a z-score greater than |2| is not acceptable.

Calculated as z = (Reported Value - Assigned Value) / Proficiency Std. Dev.

A z-score cannot be provided

(1) for presence/absence data,
(2) for identification data and other categorial data,
(3) where the analyte is not present in the sample,
(4) for "less than" and "greater than" values,
(5) NOEC analytes (in the framework of WETT analysis).

In cases (1) to (3) the participant's result is only evaluated by "acceptable" if it matches with the assigned value. Otherwise the result is indicated as "not acceptable". In case the analyte is not present in the sample and a PTRL is available, the participant's result is indicated as "acceptable" as long the result is less than the PTRL.

In case (4) the following evaluation rules will be applied:

- "less than" values:
  - When the analyte is not present in the sample the result is always "acceptable".
  - When the analyte is truly present in the sample, the result is only "acceptable" if the "less than" value is greater than the lower limit of the acceptance window.
- "greater than" values:
  - When the analyte is not present in the sample the result is always "not acceptable".
  - When the analyte is truly present in the sample, the result is only "acceptable" if the "greater than" value is less than the upper limit of the acceptance window.

In case (5) the result is indicated as "acceptable" if it lies within the acceptance window, otherwise the result is indicated as "not acceptable".

Proficiency Std. Dev.

Standard deviation calculated based on Evaluation Criteria.

PTRL

Proficiency Testing Reporting Limit

Study Mean

Statistical study mean calculated using a robust statistical model. Robust statistical techniques are used to minimize the influence extreme results can have on estimates of the mean and standard deviation. NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

Choice of statistical technique: In case of quantitative data points from at least 8 laboratories, Algorithm A (ISO 13528, Section C.3.1), and in case of quantitative data points of 4 to 7 laboratories, the Hampel estimator (ISO 13528, Section C.5.3) is applied. A study mean cannot be calculated in case there are quantitative data points from less than 4 laboratories available.

Study Std. Dev.

Standard deviation calculated from study data using robust statistics.

In case of quantitative data points from at least 8 laboratories, Algorithm A (ISO 13528, Section C.3.1), and in case of quantitative data points of 4 to 7 laboratories, the Q method (ISO 13528, Section C.5.2) is applied. A study standard deviation cannot be calculated in case there are quantitative data points from less than 4 laboratories available.

Gravimetric Value

The 'prepared to' value, determined by gravimetric means. The uncertainty associated with this value is the standard uncertainty and based on Sigma-Aldrich RTC's gravimetric tolerances.

Analytical Value

The measured value, determined after preparation. The uncertainty associated to this value is the standard uncertainty and based on the measurement process.

5.2 Evaluation Criteria

1 - Regression Equation

Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d.

2 - Study Robust Mean and c, d regression

Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation calculated from robust study mean and variables c & d as proficiency value = robust mean and proficiency standard deviation = c *proficiency value + d.

3 - Fixed Limits

Acceptance windows based on span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * percentage.

4 - Adjustable Fixed Limits

Acceptance windows based on a span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * lowPercentage where gravimetric < break and gravimetric +/- gravimetric * highPercentage where gravimetric >= break.

5 - Study Statistics

Acceptance windows based on a number of standard deviations span from the study mean as study mean +/- (deviations * standard deviation).

6 - Log Transform Statistics

Acceptance windows based on lognormal distributed data. Acceptance windows = mean(lognormal) +/- span * standard deviation(lognormal).

7 - Regression Equation 2SD

Acceptance windows based on EPA equation of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d. Generally reserved for drinking water studies.

8 - Study Median and Dilution Levels

Acceptance windows based on study median ± 1 dilution. If the median falls between two test dilutions, then the assigned value is set at the higher value, and the lower acceptance limit is the second test dilution below the median, and the upper acceptance limit is the second test dilution above the median. Generally reserved for NOEC analytes (in the framework of WETT analysis).

9 - Fixed Limits based on Analytical Value

Acceptance windows based on span of analytical value from measurements.

6 Notes on the Interpretation of the Results

z score Overview

The z-scores are presented as colored triangles. For each item, the z-scores of all analytes of the current and the previous (up to three) scheduled studies of this study type. The z-scores depend on the lot, analytical method used, and analyst (if given). A red cross is shown if no z-score is available.

For the assessment of participants by means of z-scores according to ISO/IEC 17043:2010 [2], the triangles were colored as follows:

$\|z\| \leq 2$	green
$2 < \|z\| < 3$	yellow (WS studies, WETT samples: red)
$\|z\| \geq 3$	red.

For $|z| \geq 3$, the corresponding triangles are displayed as -3 or 3. For $|z| > 2$, the value of the z score is displayed next to the triangle (yellow or red). A z-score = 0 is shown as a light blue vertical bar.

Interpretation of the z-scores' overview:

A z-score < 0, i.e. the triangle points to the left, means that the measurement result is lower than the assigned value.

A z-score > 0, i.e. the triangle points to the right, means that the measurement result is higher than the assigned value.

A z-score = 0, i.e. a light blue vertical bar is shown, means that the measurement result coincides with the assigned value.

Figures per Combination of Item, Lot and Analyte

The *diagram on the left* shows the participant results by means of blue diamonds.

The horizontal blue line indicates the assigned value.

Both the acceptance and the check limits for the participant results are calculated based on z-scores.

The acceptance limits are displayed as solid lines and correspond to z-scores of ±3. For WS studies and non-NOEC analytes (in the framework of WETT analysis), the acceptance limits correspond to a z-score ±2. For NOEC analytes (in the framework of WETT analysis), the acceptance limits correspond to ±1 dilution.

The check limits are displayed as dashed lines and correspond to z-scores of ±2. They are only calculated if a rule is given by the evaluation criterion.

In case there are at least 8 laboratories with quantitative data points are available: The *diagram on the right* is a kernel density estimation of the distribution of the participant results. The measurement values are indicated as small circles. The kernel width is determined by the ISO 13528 formula from section 10.3.2 i) a).

7 Proficiency Test Item Preparation, Homogeneity and Stability Assessment

Sigma-Aldrich RTC uses proprietary and published methods for the manufacture, homogeneity and stability testing of proficiency test items. Sigma-Aldrich RTC's proficiency test materials meet the requirements of ISO 17034. For more information contact Sigma-Aldrich RTC. Additionally, Sigma-Aldrich RTC complies with the TNI Volume 3 'General Requirements for Environmental Proficiency Test Providers', EL-V3-2009, 2009 for all TNI Fields of Proficiency Testing analytes.

8 Metrological Traceability

All preparations are made using balances calibrated annually traceable to NIST standards. Where appropriate analytical measurements are traceable through an unbroken chain to NIST standards, or a Certified Reference Material manufactured under ISO 17034 in conjunction with ISO/IEC 17025.

9 Additional Information

Go to merck-pt.com for additional information on summary statistics for specific methods, advice on the interpretation of the statistical analysis and additional comments/recommendations. Sigma-Aldrich RTC recommends that you contact your accreditation body for specific instruction.

10 References

[1] ISO 13528: Statistical methods for use in proficiency testing by interlaboratory comparison, August 2015

[2] ISO/IEC 17025:2017: General requirements for the competence of testing and calibration laboratories

[3] ISO/IEC 17043:2010: Conformity assessment - General requirements for proficiency testing, May 2010

[4] S. Uhlig und P. Henschel (1997): Limits of tolerance and z-scores in ring tests. Fresenius' J. Anal. Chem., Vol. 358, pp. 761-766.

[5] ISO 17034:2016: General requirements for the competence of reference material producers.

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APPENDIX G – Critique of “A Review of Coastal Monitoring…in West Hawaii

Critique of “A Review of Coastal Monitoring…in West Hawaii …...……..Appendix G-1

NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

An Attached Agency of the Department of Business, Economic Development & Tourism, State of Hawaii

Source of 100% Hawaii Deep Seawater ™

October 23, 2008

NELHA's Critique of ***"A Review of Coastal Monitoring Data for Development in West Hawaii***"

This critique will focus on six inaccuracies and omissions in regards to NELHA's Comprehensive Environmental Monitoring Program (CEMP) in ***"A Review of Coastal Monitoring Data for Development in West Hawaii"*** (UH Hilo Coastal Review) on page 38, 48 and 51, Figure 7A-G, and Table 6.

1. The NELHA Water Quality Laboratory measures temperature, salinity, pH, dissolved oxygen, chl-a, turbidity, nutrients, tide state, and biota monitoring of its anchialine ponds on a quarterly basis since 1993 with the exception of biota monitoring which is performed on a biannual basis. This was not reflected in Table 6 on page 38 in the UH Hilo Coastal Review.

2. The authors of the UH Hilo Coastal Review stated on page 51 that there was "suspiciously high fecal indicator bacterial cell concentrations" at site C24. NELHA has evaluated site C24 from 1989-1993 on a monthly sampling frequency and from 1993 – 2007 on a quarterly sampling frequency for Enterococcus in accordance to the State of Hawaii, Department of Health (HDOH), Title 11 Chapter 54 Specific criteria for recreational areas. The criteria states "at locations where sampling is less frequent than 5 samples per 25-30 days, no sample shall exceed the single sample maximum" of 89 CFU per 100mL. NELHA has never exceeded this standard at site C24. **NELHA Figure # 1**

3. The authors of the UH Hilo Coastal Review did not evaluate NELHA's six nearshore marine water transect location with respect to the HDOH, Title 11 Chapter 54 West Hawaii Area-Specific rules to determine trends to the nearshore marine environment. The report's conclusions regarding NELHA's nearshore marine water quality were solely based on an inland single sample groundwater seepage location site C24.

4. Sample site C24 is *not* a wastewater trench (page 39) or a disposal trench (page 48 and 51). The sampling period evaluated for C24, 1992 – 1997, was before any development occurred in the HOST Park Region except for the SMA mandated beach park amenities and access road. Therefore, there was no impact from NELHA tenants because they did not exist.

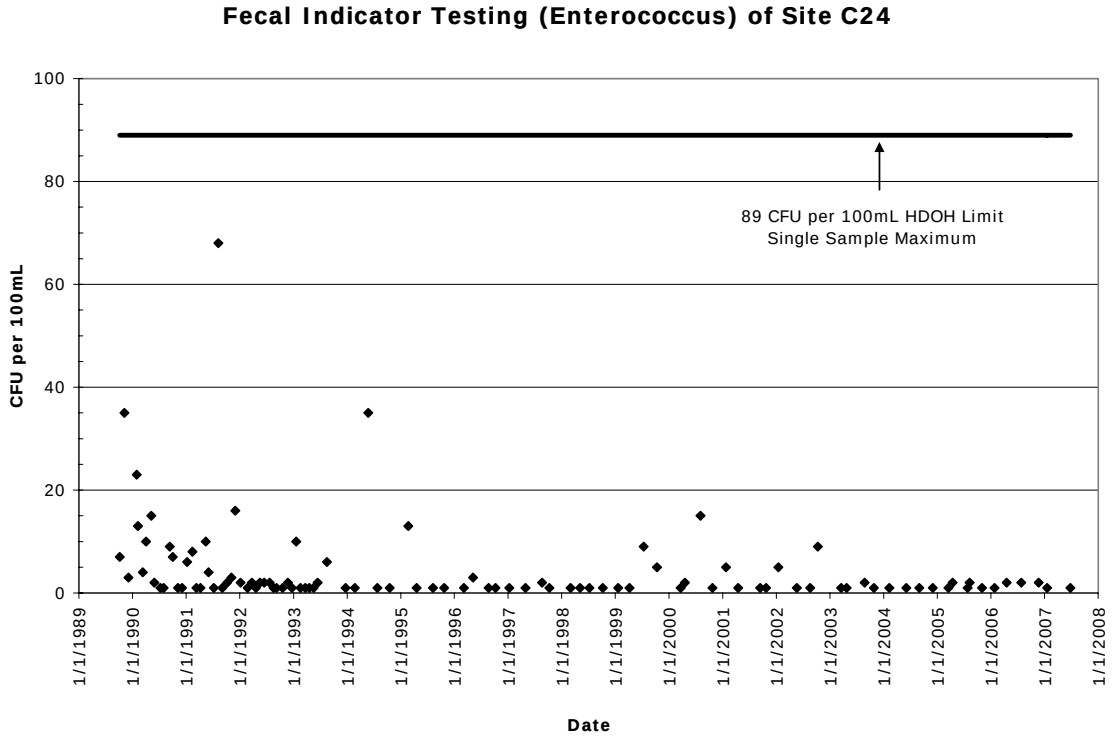
5. The authors of the UH Hilo Coastal Review incorrectly applied the HDOH, Title 11 Chapter 54 West Hawaii Area-Specific rules on sample site C24 due to the fact it does not fit the specified transect sampling criteria of 1m, 10m, 50m, 100m, and 500m distances extending seaward.

6. The authors of the UH Hilo Coastal Review chose to highlight results from site C24, a single sample lava rock embayment location with a historical groundwater seepage ~80m inland from the shoreline, as having 2 orders of magnitude greater nutrient concentrations as compared to the HDOH, Title 11 Chapter 54 West Hawaii Area-Specific multiple station transect rules for samples having a salinity greater than 32ppt. Sample site C24 had an average salinity of 17.4 ppt. A better tool for evaluating this sample location for the analytes NO_3 & NO_2, PO_4, TDN, and TDP would be a mixing plot model as mandated by the HDOH, Title 11 Chapter 54 West Hawaii Area-Specific rules when the salinity of any sample within a transect is less than 32 ppt. However this location is not a transect, and does not clearly fall into any regulatory classification. **NELHA Figure # 2**

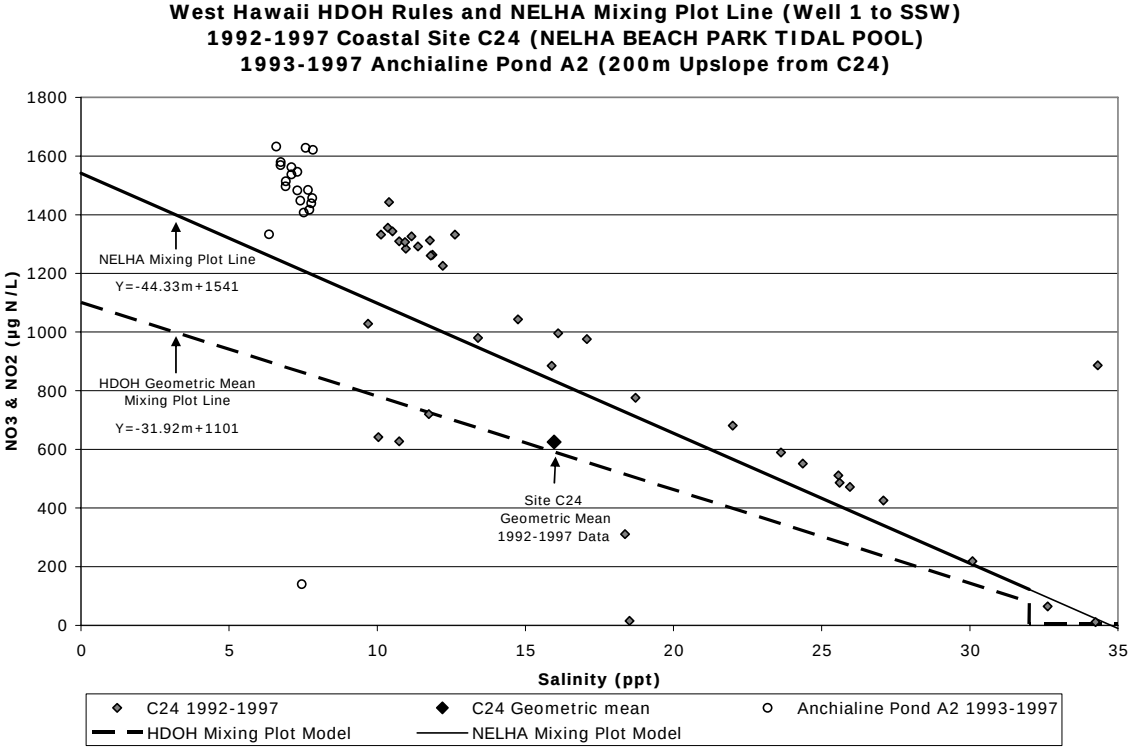
Conclusion

NELHA respectfully requests the authors to correct the inaccuracies and omissions in the UH Hilo Coastal Review. In particular, its statements on page 38, 48, and 51 regarding site C24 being a HOST Park wastewater or disposal trench with high nutrient and fecal indicator data. In addition, NELHA would like Table 6 to correctly state the analytes that NELHA routinely measures in its anchialine pond monitoring program. Finally, NELHA welcomes a thorough review of all of its nearshore transect data to the HDOH, Title 11 Chapter 54 West Hawaii Area-Specific.

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NELHA Figure #1



NELHA Figure #2