REPORT FOR THE THIRD OF THREE YEARS OF THE NITRATE ADDITION PILOT TEST (2013) IN THE HYPOLIMNION OF ONONDAGA LAKE

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LIST OF ACRONYMS

CN-8	Calcium nitrate solution applied in the middle of Onondaga Lake during 2011 and 2012 (supplied by Yara Chemical)
DF	Dilution factor
DO	Dissolved oxygen
ISUS	*In situ* ultraviolet spectrophotometer
Metro	Metropolitan Syracuse Wastewater Treatment Plant (located at the southern end of Onondaga Creek adjacent to the mouth of Onondaga Creek)
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
MT	Metric ton
ng/L	Nanogram per liter
NO_2-N	Nitrite-nitrogen
NO_3-N	Nitrate-nitrogen
NYSDEC	New York State Department of Environmental Conservation
SRP	Soluble reactive phosphorus
SU	Syracuse University
SUNA	Submersible ultraviolet nitrate analyzer
UFI	Upstate Freshwater Institute (based in Syracuse, NY)
USEPA	United States Environmental Protection Agency

GLOSSARY OF TERMS

Deep Water (Profundal) – Offshore zone within a water body where water depths are greater than the depth to which sunlight can penetrate to support aquatic plants, in contrast with the littoral zone closer to shore. In Onondaga Lake, the profundal zone thermally stratifies typically from May to October.

Epilimnion - The upper portion of the water column during summer stratification where water temperatures are warmer than lower waters (typically in the portion of Onondaga Lake where water depths exceed 30 ft. [9 meters]). Epilimnion waters are warmer than the underlying hypolimnion layers and mixed by wind and waves.

Hypolimnion - The lower portion of the water column during summer stratification where water temperatures are cooler than upper waters (typically in the portion of Onondaga Lake where water depths exceed 30 ft. [9 meters]). There is less mixing in the hypolimnion than in the epilimnion.

Methylmercury - An organic form of mercury, which can be created from inorganic mercury by bacteria in sediments and water. Methylmercury is a potential neurotoxin, and the form of mercury that can most easily bioaccumulate in organisms.

Thermocline - Located within the interval of water between the epilimnion and hypolimnion corresponding to the water depth of the maximum rate of decrease in temperature with respect to depth.

EXECUTIVE SUMMARY

The third year of a three-year nitrate addition pilot test in Onondaga Lake, like the first two years, was completed successfully and met its objective: to demonstrate the ability to maintain nitrate concentrations in the hypolimnion (i.e., water deeper than 30 ft.) at levels sufficient to inhibit release of methylmercury from lake sediment to the overlying waters during summer stratification. As a result of adding nitrate, methylmercury concentrations measured in deep waters during 2013 were lower than during any prior year on record.

Methylmercury release from Onondaga Lake bottom sediment occurs as oxygen and nitrate become depleted from lower waters during summer stratification. Stratification is the natural process in Onondaga Lake and other temperate lakes whereby upper waters are warm and well-mixed during the summer while lower waters remain cool and isolated. Temperature-induced water density differences are the primary cause of lake stratification. Dissolved oxygen and nitrate become depleted in the lower waters as stratification continues through the summer. Complete depletion of oxygen and nitrate takes place as a result of bacterial decomposition of organic matter that eventually leads to the release of methylmercury from bottom sediments to the overlying deep waters. Some of the released methylmercury eventually enters the food web where it can bioaccumulate in lake organisms. The presence of nitrate in the lower waters limits methylmercury release and thereby limits mercury bioaccumulation. The presence of nitrate in lower waters of the lake also reduces the extent that soluble reactive phosphorus is released from lake sediments.

As in the first year (2011) and the second year of nitrate addition (2012), the third year (2013) consisted of multiple applications of a diluted calcium nitrate solution (hereafter called nitrate) to bottom waters in Onondaga Lake. Applications of nitrate in 2013 were completed during 29 non-consecutive days from July 9 through October 10, 2013. Nitrate application took between four and seven hours to complete each day, and the equipment and procedures were virtually the same as those used during 2011 and 2012. The liquid calcium nitrate applied in 2013 was the same commercially-available and commonly-used product applied in the lake's hypolimnion in 2011 and 2012. A self-propelled barge measuring approximately 40 ft. long and 24 ft. wide was again used in 2013 to conduct each of the nitrate applications. The barge is designed to dilute full-strength liquid nitrate with near-surface lake water and apply the nitrate near the bottom in the profundal zone (called Sediment Management Unit (SMU) 8) to achieve relative neutral buoyancy. The resulting solution is pumped through piping to between 7 and 17 ft. (2 and 5 meters) above the lake bottom or water depths between approximately 42 and 52 ft. (13 and 16 meters) at the north basin site and between 45 and 55 ft. (14 and 17 meters) at the south basin sites. The target dose for each daily application was 4,600 gallons of full-strength liquid nitrate (2.3 metric tons of nitrate-nitrogen). The dose of liquid nitrate can be easily controlled and modified to meet target nitrate levels in the lake water. Nitrate added to the lake was able to spread laterally throughout the entire deep water area of the lake, as determined by extensive lake monitoring.

A potential water quality impact from adding nitrate is increased nitrite-nitrogen (NO_2-N) levels in the hypolimnion to concentrations above the applicable New York State Department of Environmental Conservation water quality standard protective of warm-water fish propagation. As in 2011 and 2012, results from 2013 monitoring indicate that adding nitrate had no significant effect on nitrite concentrations in the lake.

SECTION 1

INTRODUCTION

This report describes the third year of a three-year pilot test being conducted on behalf of Honeywell International to maintain nitrate in the hypolimnion of Onondaga Lake in order to mitigate the release and/or production of methylmercury. Methylmercury is a substance that bioaccumulates in lake biota resulting in concentrations in some species and sizes of fish that make them unsuitable for human consumption.

With rising temperatures, the profundal zone of Onondaga Lake (where water depths are at least 30 feet) becomes thermally stratified each year typically from mid-May through mid-to-late October. The hypolimnion typically extends from a water depth of 30 ft. (9 meters) to the lake bottom in a stratified Onondaga Lake and is subject to gradual depletion of dissolved oxygen followed by depletion of nitrate. When concentrations of oxygen and nitrate are low enough, sediments can release methylmercury to the water column. Methylmercury in lower waters in the profundal zone of the lake can reach upper waters primarily when the lake turns over in the fall.

During 2007 and 2008, releases of methylmercury to the hypolimnion were found to be substantially lower than in previous years due primarily to elevated nitrate concentrations in the lake. The increase in nitrate was a consequence of wastewater treatment upgrades implemented at the Onondaga County Metropolitan Syracuse Wastewater Treatment Plant (Metro) located along the southern (upstream) shore of Onondaga Lake. Wastewater treated at Metro is discharged into the nearshore waters of the lake. In 2004, Onondaga County began operating a biologically-active filter system at Metro that converts ammonia to nitrate. As a result, the available pool of nitrate in the hypolimnion at the start of summer stratification roughly doubled. In 2005, Onondaga County activated a phosphorous-removal system resulting in decreased algal growth in the upper waters and reduced demand for electron acceptors in the hypolimnion. As a consequence of Metro's wastewater treatment process enhancements, nitrate persisted in the Onondaga Lake hypolimnion for a significantly greater time during the summer months of 2007 and 2008 compared to previous years, which inhibited the release of methylmercury from SMU 8 sediments (Upstate Freshwater Institute [UFI] and Syracuse University (SU), 2007; and Todorova et al., 2009).

The nitrate addition pilot test was conducted to further enhance benefits of nitrate that resulted from the 2004 Metro upgrades. The remedy for the Onondaga Lake bottom is described in a Record of Decision prepared by the New York Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) (2005). The Statement of Work appended to the Consent Decree for the Onondaga Lake remedy (United States District Court, Northern District of New York, 2007) specifies that Honeywell conduct a study to determine if nitrate addition would effectively reduce methylmercury in the water column while preserving the lake's stratification cycle.

As described in the NYSDEC-approved work plan and work plan addenda for this effort (Parsons and UFI, 2011, 2012 and 2013, respectively), the purpose of the nitrate addition pilot

test is to demonstrate that a widely-available nitrate solution can be added and mixed with lake bottom waters to effectively limit the release of methylmercury from sediment when the lake is thermally stratified and thereby reduce accumulations of methylmercury in hypolimnion waters. Results from this pilot test also provide additional information about the horizontal distribution of nitrate.

For the 2013 portion of the pilot test, as in 2011 and 2012, liquid nitrate solution was diluted with upper lake waters and added directly to the lower waters at three locations in the profundal zone of the lake. One application location was in the northern basin of Onondaga Lake, and the other two application locations were in the southern basin of the lake (Figure 1). The three application locations were the same as those where nitrate was applied in 2011 and 2012 and were at or near the center of one third of the Onondaga Lake hypolimnion water volume.

Nitrate was added to the lower, stratified waters of Onondaga Lake during 29 non-consecutive, single-day applications from July 9 through October 10, 2013. During nearly all of the application days, a target one-day dose of liquid calcium nitrate solution[1] totaling 1.47 to 2.27 metric tons of nitrate-nitrogen was applied over a four-to-seven-hour period at one of the three locations.

Monitoring during 2013 also helped to assess lake conditions not directly associated with nitrate addition. Surface water samples for laboratory mercury analyses were collected at the South Deep location again in 2013 and confirmed for a third year the effectiveness of adding nitrate. Total mercury and methylmercury concentrations in zooplankton were measured again in 2013. Zooplankton were sampled since they are food for other forms of aquatic life and they are expected to be a sensitive indicator of changes in methylmercury availability in the water column due to their short life span (i.e., weeks), limited range of movement, and close interaction with the water column chemistry. Sediment trap samples collected at South Deep were analyzed again in 2013 to assist with the ongoing assessment of the natural recovery of Onondaga Lake profundal zone sediment.

Fall turnover usually occurs sometime from mid-October to early November each year, with the exact timing dependent on a complex set of lake and meteorological factors. In 2013, water stratification in Onondaga Lake ended on November 3, when the lake waters became completely mixed vertically from top to bottom (referred to as turnover). The end of stratification in 2013 was approximately the same as in 2011 and two weeks later than in 2012.

This report presents barge design and as-built information in Section 2, pilot test procedures and observations in Section 3, and a summary of results in Sections 4 and 5, respectively. Appendix A is a photographic log. Appendix B is an example of daily monitoring information generated and provided on the same day when field data were collected. Appendix C is a summary of nitrate concentrations observed one meter above the lake bottom. Appendix D is the Data Usability and Summary Report for water quality data compiled in 2013 in association with nitrate addition work. An assessment of zooplankton data usability is included in the tissue and

[1] The liquid calcium nitrate used was labeled CN-8 by the supplier Yara Chemical, of Tampa, Florida

biological monitoring report for 2013 (Parsons and Anchor QEA, 2014). Appendix E consists of water depth profile plots of dissolved oxygen, nitrate-nitrogen, total mercury and methylmercury results for each day water samples were collected and analyzed in a laboratory. Appendix F presents construction water quality monitoring results for October and November of 2013. Appendix G presents total dissolved gas data for 2013.

SECTION 2

PILOT TEST DESIGN AND 2013 AS-BUILT SUMMARY

2.1 DESIGN BASIS AND SUMMARY

The first two years of nitrate addition were conservatively designed to commence prior to hypolimnetic nitrate-nitrogen concentrations falling below 1 milligram per liter (mg/L) at the 18-meter depth and continue to a few weeks prior to fall turnover. Figures 3 and 4 in the approved work plan for this effort (Parsons and UFI, 2011) show the nitrate and methylmercury concentration plots from 2008 through 2010. These plots indicate rapid nitrate depletion under anoxic conditions and subsequent increase in methylmercury concentration as nitrate concentrations in lower waters approach zero. These factors formed the basis for this pilot program design. The 2013 nitrate addition results reported herein further show that a target nitrate-nitrogen threshold of 1 mg/L effectively suppresses methylmercury water concentrations.

Nitrate additions were designed to be conducted at three predetermined locations in the lake included in Figure 1 and based on continuous monitoring results; the three locations are referred to as North, South Location #1 (hereafter called South1), and South Location #2 (hereafter called South2). In order to maintain the desired minimum concentration of nitrate (1 mg/L), the maximum nitrate application rate was determined based on peak four-week rolling average nitrate uptake rates in the hypolimnion as measured by UFI during the summers of 2007, 2008, and 2009. Based on these data and an assessment of the potential for induced demand, the design demand was set at 1.0 metric ton (MT) of nitrate-nitrogen per day or about 7.0 MT per week. In order to meet the nitrate design demand, an average of 4,800 gallons of liquid calcium nitrate (2.3 metric tons) needed to be added to the lower waters of the lake during each application. Pilot test results for 2011, 2012 and 2013 show essentially the same demand for nitrate of 0.8 MT per day.

2.2 APPLICATION BARGE

The design objectives and basis for the barge used to deliver the nitrate are presented in the approved work plan (Parsons and UFI, 2011) and its two addenda (Parsons and UFI, 2012; and Parsons, 2013). The 2013 barge as–built drawing is presented in Figure 2, and Figure 3 presents the 2013 barge piping and instrumentation. The application system consisted of a modular barge made up of three joined 8.5-ft. by 40-ft. sections that housed the storage and delivery equipment. Nitrate was stored on the barge in two polyethylene nitrate holding tanks housed inside storage basins that provided secondary containment. Each of the two tanks had an 8-ft.-diameter footprint. Other equipment aboard the barge consisted of two dilution water pumps, two chemical pumps, a propulsion-driven power unit, a generator, a manifold for delivering dilution water and calcium nitrate, a shed for storage and protection, a portajon, and a deck crane. Each of the two dilution water pumps were equipped with a 12-inch diameter suction line and discharge line connected to a chemical pump and associated piping. The barge was specifically designed and constructed to include essential equipment while minimizing potential hazards and

obstacles affecting system operations and optimizing operating work space and efficiency. For example, the barge was suitably protected from ground fault circuit interruption.

The 2013 barge equipment layout is depicted in Figure 4 and was essentially the same equipment as used in 2011 and 2012. Positioning of the two nitrate holding tanks and the two dilution water pumps (labeled in Figure 4 as pumps) was based on distributing the total weight evenly throughout the surface area of the barge. Each of the two dilution water pumps used during 2013 could efficiently pump 3,500 gallons per minute of warmer, less dense dilution water from the lake's epilimnion and the heavier-than-water nitrate to waters in the lake's hypolimnion. At the end of the 2013 season, the barge was kept largely intact for the winter months and stored on the lake near the western shoreline along with the dredging and lake capping equipment.

SECTION 3

2013 PILOT TEST PROCEDURES AND OBSERVATIONS

3.1 NITRATE APPLICATION SEQUENCE

The 2013 lake water quality monitoring at South Deep on behalf of Honeywell began in April for various lake parameters and on May 20 for mercury and continued through November 20. Measurements of dissolved oxygen, nitrate and other water quality parameters in the deep portion of Onondaga Lake prior to the first application provided information needed to determine when to start adding nitrate to the lake. Water quality measurements during the nitrate application period helped to guide how much nitrate to apply at each location. Water quality monitoring was also conducted on October 14, October 21, and October 30 following the last application of nitrate on October 10 and on November 4 and November 20, 2013 following lake turnover.

Agencies were notified at least one week prior to the start of 2013 nitrate additions. The event schedules for Onondaga Lake Park and Syracuse Inner Harbor were checked in advance every week to be sure nitrate additions would not affect scheduled public activities.

An onshore support zone for storing and refilling the nitrate holding tanks on the barge was located along the lake's western shoreline on Honeywell property. Onshore support included a 16,000-gallon portable nitrate holding tank fitted with secondary containment and associated pumps and hosing.

In 2013, nitrate was applied continuously for approximately four to seven hours a day at one of three pre-determined locations. The daily duration for nitrate addition was determined based on how much nitrate was to be added that day and the extent of dilution required (i.e., increased dilution meant longer pumping times to apply the same volume of nitrate). A total of 29 applications of nitrate were completed during 2013, including 14 applications at South 1, seven applications at the South 2, and eight applications at the North location.

Each application of nitrate in 2013 involved the same three basic steps as in 2011 and 2012. First, the barge was moved and anchored at the designated application location. A concrete block anchoring system at each application location held the barge stationary for the duration of an application. Second, inflow and outflow piping with end-of-pipe diffusers were positioned deep within the lake water column. Third, the barge pumps were started that provided water from the epilimnion to mix with full-strength nitrate. The extent of diluting nitrate with water from the epilimnion was guided during each application by in-lake monitoring. The resulting neutrally buoyant nitrate-water mixture was directed to the lower waters in the lake hypolimnion via the hoses and diffusers. Each application continued until the desired quantity of nitrate was applied at the desired dilution to promote lateral migration of the nitrate applied. Photographs of the barge, equipment, and pumps are presented in Appendix A.

Tables 1 and 2 summarizes work completed as part of each 2013 nitrate application. The initial 2013 application was conducted on July 9, and resulted in applying 2.19 MT of nitrate-nitrogen at South1. In general, applications were conducted on Mondays, Wednesdays, and Thursdays, moving from location to location as directed by results from in-lake monitoring. Table 2 provides operational information, including application location, target dilution factor, lake water temperature and specific conductivity data, nitrate and dilution water flow rates, durations, and the total amount of calcium nitrate applied during each application of nitrate in 2013. A total of 63 MT of nitrate-nitrogen were added to the lower waters of Onondaga Lake during 2013 compared to 88 MT in 2011 and 72 MT in 2012.

3.2 IN-LAKE MONITORING

The extent of in-lake monitoring completed in association with each 2013 application of nitrate is summarized in Tables 3 and 4. In-lake monitoring was conducted by UFI deploying an *in situ* ultraviolet spectrophotometer (ISUS) or a submersible ultraviolet nitrate analyzer (SUNA) from a boat. UFI provided near real-time feedback on the vertical position of added nitrate several times each day during which an application occurred. Figure 5 illustrates the 2013 lake monitoring locations.

The objective of in-lake monitoring was to observe and characterize the vertical and horizontal distribution of nitrate in the lake. Monitoring locations were the same in 2013, 2012, and 2011. Measurements of water depth, nitrate-nitrogen, sulfide, temperature, specific conductivity, turbidity and parameters associated with light penetration and primary productivity were collected every 0.25 meter vertically throughout the water column. These data were downloaded and processed, and a summary of the day's results was provided the same day nitrate was applied. Each data summary included nitrate-nitrogen profiles at each monitoring location (Figure 5), as well as bubble plots illustrating nitrate-nitrogen concentrations at particular depths within the hypolimnion, including one plot of all measurements taken 1 meter above the lake bottom across the footprint of the hypolimnion. A UFI monitoring boat was used to collect nitrate data in the lake near the barge about an hour or two after the start of each nitrate application to collect profiles to identify the effective water depth where the calcium nitrate solution was applied (see comments in Table 2).

The performance of the ISUS-SUNA nitrate probe in Onondaga Lake has been compared with laboratory measurements of nitrate in Onondaga Lake water since 2006. Results from the ISUS-SUNA and from UFI's laboratory compared closely demonstrating that ISUS-SUNA measurements are reliable (Figure 6).

In addition to monitoring during each nitrate application, surface water samples were collected at South Deep on 24 different dates from May 20 to November 20, 2013 and analyzed in a laboratory for numerous water quality parameters. These parameters included low-level total mercury and methylmercury consistent with lake water monitoring efforts since 2008. Select surface water samples from the 2-meter and 14-meter water depths at South Deep were also analyzed for filtered (i.e., dissolved) total mercury. Surface water samples were collected weekly at South Deep in 2013 from June 17 to November 4 including the period from July 9 to October 10 when nitrate was being added to the lake. Collected surface water samples were

analyzed for total mercury, methylmercury, nitrogen forms, soluble reactive phosphorus and calcium. Samples collected from waters 14 meters and deeper were also analyzed for sulfide and ferrous iron.

SECTION 4

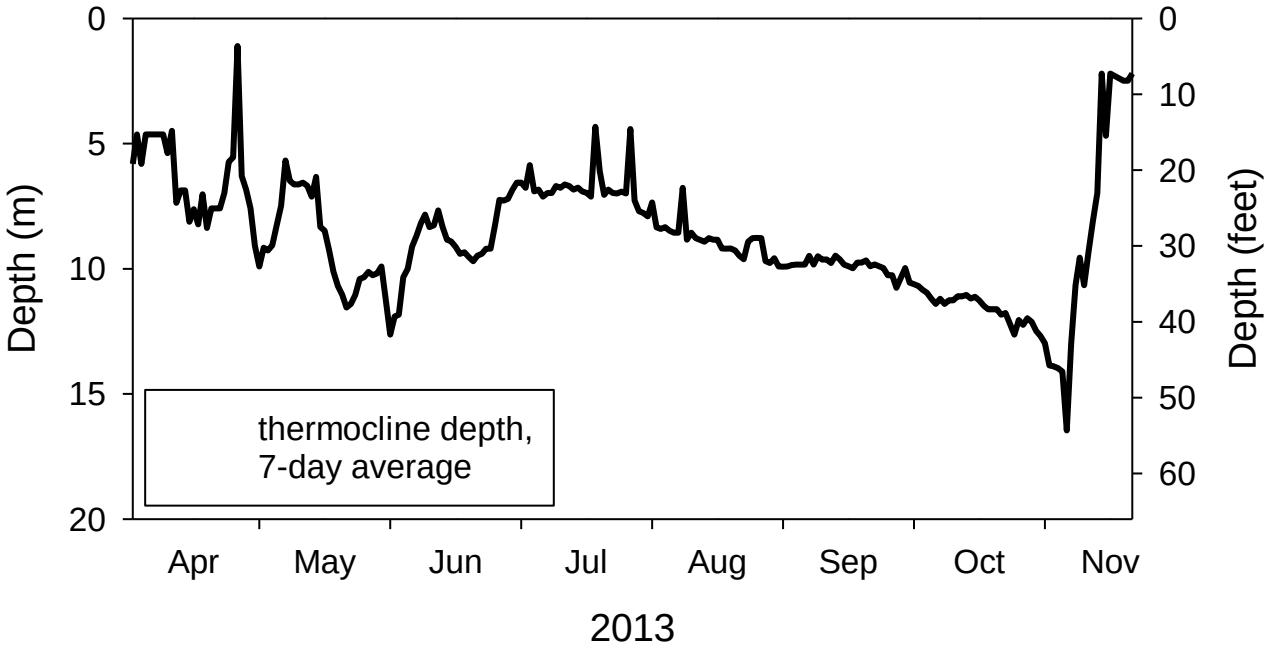
DISCUSSION OF 2013 PILOT TEST RESULTS

The objective for the nitrate addition pilot test during all three years (2011 through 2013) was to maintain summertime nitrate-nitrogen levels in the lower hypolimnion (below the 14-meter water depth) at or above 1 mg/L, thereby limiting accumulations of methylmercury in the hypolimnion. This section describes:

- Natural development of thermal stratification over time
- Oxygen and nitrate resources of the hypolimnion
- Effect of nitrate applications on nitrate levels
- Nitrite concentrations in lake water
- Other related monitoring from early July through early October 2013 when nitrate was being applied

4.1 THERMAL STRATIFICATION OBSERVED OVER TIME

The thermocline of a lake is located at the position of maximum temperature change with water depth and is the boundary between the epilimnion and the hypolimnion. Average thermocline depth at the South Deep robotic monitoring location (ISUS-11 on Figure 5) during 2013 were as follows:



Stratification became established by mid-May 2013, shutting off further significant inputs of nitrate from the epilimnion downward to the hypolimnion (below the 30-ft. water depth in Onondaga Lake). Stratification initiates an annual period of oxygen and nitrate depletion and locks in place the "ambient" oxygen and nitrate pools or supplies. The depth of the thermocline between the epilimnion and hypolimnion was relatively stable through June-July and then slowly descended through September, after which the rate of descent accelerated until the water column was effectively mixed by early November.

4.2 DISSOLVED OXYGEN AND NITRATE OBSERVATIONS

Figures 7 and 8 present 2013 dissolved oxygen and nitrate-nitrogen concentrations at the South Deep location for four different water depths. Figure 9 illustrates the depletion of the dissolved oxygen pool near the onset of stratification, based on readings from the UFI robotic buoy located at South Deep. Most of the oxygen available in the hypolimnion prior to lake stratification was consumed by late June. Nitrate applications were successful again in 2013 in keeping the nitrate-nitrogen levels above 1 mg/L throughout the summer months and throughout the hypolimnion.

Figure 10 illustrates the average nitrate-nitrogen concentrations in the hypolimnion over time, along with the cumulative mass of nitrate-nitrogen applied to the lower hypolimnion over time. The average nitrate-nitrogen concentration in the lake prior to the start of stratification in mid May 2013 was 2.7 mg/L, corresponding to a pool of about 123 MT of nitrate-nitrogen. These relatively high nitrate concentrations were most likely related to a very dry spring in the lake's watershed in 2013. Since Metro is the main source of nitrate-nitrogen to the lake, a dry spring translates to less dilution of Metro effluent, which contains on average approximately 12 mg/L of nitrate-nitrogen.

The red line in Figure 10 tracks cumulative additions of nitrate to the lower hypolimnion of Onondaga Lake in 2013. In general, the average rate of nitrate addition in 2013 was approximately 0.68 MT of nitrate-nitrogen per day (4.2 MT per week) throughout the application season which was lower than the basis of design and average daily loading rate for 2008 through 2010 of 0.8 MT per day (5.6 MT per week) included in the approved work plan (Parsons and UFI, 2011) due to a relatively large quantity of nitrate being available in the lake in May 2013 when the lake stratified. Figure 10 also illustrates the Onondaga Lake response to these applications, with average nitrate concentrations increasing when applications of nitrate were ongoing. Applications were not needed between July 29 and August 19, 2013 (see Table 1) when hypolimnion nitrate-nitrogen concentrations were sufficiently high without adding nitrate. Applications were stopped after October 10 in anticipation of fall turnover. Monitoring of lake water for nitrate and mercury continued throughout the summer months even when nitrate was not added; this monitoring continued until late November 2013.

Figure 11 illustrates nitrate depletion rates in the hypolimnion of Onondaga Lake in 2013 represented by measurements in the South Basin and North Basin (see Figure 6 for locations). Volume-weighted nitrate concentrations were calculated with respect to lake surface area and specific water volume and are presented as a function of time. Nitrate depletion in the South Basin averaged 0.0147 milligrams of nitrate-nitrogen per liter per day prior to commencing nitrate applications in early July, which was four percent higher than the rate of 0.0141 milligrams of nitrate-nitrogen per liter per day in the North Basin prior to applying nitrate. Nitrate depletion was also higher in the South Basin than in the North Basin during a temporary shutdown of nitrate applications in August when nitrate did not need to be added to the lake. Higher nitrate depletion in the South Basin of the lake in 2013 was expected and has typically been observed based on data available since 2007.

Figure 12 presents the distribution of average nitrate concentrations in the hypolimnion from mid-June through October 2013. Areas of the lake with water depths below 17.5 meters (57 ft.) were exposed to nitrate-nitrogen concentrations greater than 2.0 mg/L for most of the July to early October time period when nitrate was being applied except during an August shutdown when nitrate-nitrogen concentrations below 17.5 meters averaged 1.5 to 2 mg/L. Sediments below the 14.5-meter (48-ft.) water depth were generally exposed to nitrate concentrations greater than 1.5 mg/L once applications were begun. Concentrations of nitrate in Onondaga Lake waters were appreciably higher in 2012 and 2013 compared to 2011 due to higher nitrate concentrations in the lake during the springs of 2012 and 2013 prior to the lake becoming stratified (see Table 7). Based on 20 years of hydrologic data for inflows to the lake, nitrate concentrations in the lake during the spring of 2011 were lower than average, while nitrate concentrations in the lake during the spring of 2012 and during the spring of 2013 were higher than average.

Figure 13 illustrates the spatial and temporal extent of the measured nitrate-nitrogen concentrations, at a water depth of 1 meter (3 ft.) above the sediments. Concentrations of nitrate-nitrogen in these deepest waters generally ranged from 1.25 to 2.0 mg/L throughout the 2013 nitrate application period.

4.3 DILUTION AND DISPERSION OF APPLIED NITRATE

Because the specific gravity of the liquid calcium nitrate was 1.49, significant dilution was required to produce near neutrally buoyant nitrate, a characteristic essential to taking advantage of natural hydrodynamic forces that spread the nitrate around the lower depths of the lake. In 2011, the density of the diluted solution was estimated using the model developed by Chen and Millero (1978), which previously had been applied to Onondaga Lake (Effler, 1996). However, the Chen and Millero model under-predicted the required dilution rate. Fortunately, dilution rates did not vary significantly over short time periods. Once an appropriate dilution factor was determined for an application of nitrate, the same dilution factor could be used as a starting point for the next application. Further minor adjustments to dilution and pump rates were made based on real-time lake monitoring to achieve a neutrally buoyant plume.

Given the Chen and Millero equation is an empirical model based on a large database of measurements of sea water, data from the 2011 application season (i.e., temperatures, specific conductivities, flow rates and associated dilution factors that produced near-neutrally-buoyant

plumes) were applied to develop a multi-variable regression based on the use of liquid nitrate as the nitrate source. The regression relationship is expressed by the following equation for quantifying the dilution factor (DF), based on 16 applications of nitrate during 2011 that resulted in near-neutrally buoyant plumes:

$$DF = 651.89 – 21.58T_e + 10.59T_h + 0.1658SC_e + 0.03542SC_h$$

Where water temperature in the epilimnion and hypolimnion (T_e and T_h respectively) are in degrees Celsius and specific conductivity in the epilimnion and hypolimnion (SC_e and SC_h respectively) are in microsiemens per centimeter. The above regression relationship underestimated the required dilution for applications of nitrate in 2012 and again in 2013. Figure 14 provides a timeline of water temperatures at relevant depths within the epilimnion and the hypolimnion, the calculated/predicted dilution factors for those dates, and the actual dilution factor that was needed to produce a near neutrally-buoyant nitrate-water mixture on those dates.

During the summer of 2013, dispersion by natural hydrodynamic forces was again sufficient to distribute nitrate horizontally across the hypolimnion from the three application locations. Appendix B provides an example of the daily ISUS-SUNA data reports produced and issued by UFI to verify the application and distribution of the applied nitrate. Appendix C presents the bubble plots prepared by UFI illustrating conditions across the hypolimnion at a distance of 1 meter (3 ft.) above the lake bottom. The target nitrate-nitrogen concentration of 1 mg/L continued to be met in lower hypolimnion waters over the course of the 2013 season, and minimal concentrations of methylmercury were observed in the lower waters. Therefore, the project objectives were again successfully accomplished in 2013 using the same three fixed locations used in 2011 and 2012. For the entire 2013 nitrate application season, the dilution water pumps were operating at their full capacity of approximately 3,500 gallons per minute.

Applications of nitrate were terminated for 2013 on October 10, based on an assessment of the size of the nitrate pool and expected uptake of nitrate in lower waters of the lake through an estimated late turnover timeframe of early November. Approximately 70 MT of nitrate-nitrogen remained in the lake's hypolimnion on October 10, 2013, compared to 71 MT on October 10, 2011 and 101 MT on October 4, 2012, which was the last day of nitrate applications in those years. The 2012 nitrate pool was larger because nitrate levels in the upper portion of the hypolimnion were elevated as a consequence of the declining thermocline and elevated nitrate-nitrogen concentrations in the epilimnion. Other contributing factors included the temporary plunging Metro discharge in late summer 2012 and a conservatively-late estimate of November 5 for the lake to turnover in 2012.

The lowest measurement of nitrate observed in 2013 in the hypolimnion was 1.15 milligram per liter as nitrogen occurring on October 28 at a water depth of 18.25 meters.

4.4 SIGNIFICANCE OF 2013 NITRITE LAKE WATER CONCENTRATIONS

Nitrite-nitrogen (NO_2-N) concentrations measured in Onondaga Lake from 2006 through 2013 were compared to the New York State surface water quality standard established to protect warm water fish from effects of nitrite (Figure 15). Surface water quality standard for nitrite was exceeded to a minor extent in lower waters during each year, and the exceedances were less significant during 2011 through 2013 than before nitrate addition. Concentrations of nitrite remained below the New York State surface water quality standard in the upper waters where fish reside.

4.5 2013 MERCURY LAKE WATER CONCENTRATIONS

Methylmercury was not significantly released from underlying sediment to lower hypolimnion waters during the summer of 2013 when deep lake waters would be prone to methylmercury release in the absence of nitrate addition. This lack of methylmercury release from SMU 8 sediment demonstrates that nitrate addition was again effective in 2013 as it was in 2011 and 2012. From the beginning of the 2013 nitrate applications in early July through turnover on November 3, the maximum concentration of methylmercury observed in the lower waters of the lake was 0.25 ng/L (where 1 ng/L is 0.000001 mg/L) on October 30, 2013, at the 18-meter water depth (Figure 16).

Volume-weighted average hypolimnion water concentrations for dissolved oxygen, nitrate-nitrogen, and methylmercury for the summer-fall time period from 2006 through 2010 were compared to concentrations observed during the three years of pilot testing. Methylmercury concentrations were considerably lower in the lake's hypolimnion in 2011, 2012 and 2013 compared to recent prior years (Figure 17). The low methylmercury concentrations in 2011, 2012 and 2013 are consistent with the higher nitrate concentrations (as a result of nitrate additions) in those years than in recent prior years.

Figures 18 and 19 present the methylmercury and unfiltered total mercury results measured at South Deep over time at water depths of 2 meters (epilimnion), 12 meters (near the top of the hypolimnion), 16 meters (mid-to-lower hypolimnion), and 18 meters (bottom of the hypolimnion). Total mercury and methylmercury concentrations in samples collected in water near the lake bottom from the South Deep location are summarized in Table 5.

Unlike most recent years, a notable increase of total mercury to 15 ng/L was detected in samples collected at the 2-meter and 18-meter water depths on November 4, 2013 and increases of total mercury to 11 ng/L and 13 ng/L were measured in water samples collected at the 2-meter and 18-meter water depths respectively on November 20, 2013 (see Figure 19). Elevated total mercury concentrations in November coincide with complete mixing of the water column after fall turnover. Total mercury concentrations were higher throughout the water column (at the 2, 12, and 18 meter water depths) during this period as were turbidity levels measured at the South Deep location, while methylmercury concentrations remained low. Possible reasons for this increase in total mercury and turbidity (as was observed in 2012) include some resuspension of bottom sediment in SMU 8 or some transport of resuspension sediment to SMU 8 from closer to shore. Data from monitoring of dredging and capping activities during 2013 show no significant

effect in SMU 8 from dredging or capping activities based on water quality results compared to applicable construction water quality standards (see Appendix F).

Methylmercury concentrations in Onondaga Lake hypolimnion water have declined dramatically in recent years aided by the addition of nitrate (Figures 20 and 21). Methylmercury in the lower hypolimnion has been barely detectable since nitrate has been added beginning in 2011.

Table 6 summarizes dissolved mercury concentrations in samples collected in 2013 at the 2-meter water depth in the lake's epilimnion. Through October, 7 of 13 dissolved mercury results from the lake at the 2-meter water depth exceeded the New York State surface water quality standard of 0.7 ng/L. The highest dissolved mercury concentration measured in 2013 was 2.0 ng/L on July 29. From water samples collected every other week during September and October in the lake's hypolimnion at the 14-meter depth, dissolved mercury results were 0.21 to 0.26 ng/L. Dissolved mercury concentrations at the 2-meter water depth in 2013 through October ranged from less than 0.5 to 2.0 ng/L.

4.6 OTHER RELATED 2013 LAKE MONITORING

Other types of work completed in 2013 associated with nitrate addition were laboratory analyses for soluble reactive phosphorus, collection and analysis of sediment traps at the South Deep location, and zooplankton collection and analysis for mercury as discussed in subsections below. In addition, water velocity meters were deployed at two locations near the South Deep and North Deep locations and total dissolved gas was measured at the South Deep location. Water velocities were measured as water velocity vectors at a water depth approximately one meter above the lake bottom to monitor for significant water velocity magnitude and direction changes over time. Water velocity measurements showed no significant short-term changes and a peak velocity of less than 0.3 meters per second consistent with measurements made during 2012. Total dissolved gas data are presented in Appendix G and are consistent with prior year measurements.

4.6.1 2013 Soluble Reactive Phosphorus Results

An additional benefit to maintaining nitrate levels in the hypolimnion during periods of anoxia is that release of phosphorus from deep lake sediments has been reduced. The presence of nitrate in waters near the lake bottom prevents the reduction of iron and manganese oxyhydroxides that is typical in anaerobic surface sediments, which in turn reduces the release of phosphorus bound to those compounds. Soluble reactive phosphorus results from 2013 for three water depths in the lake's hypolimnion are presented in Figure 22. The reduction in phosphorus release from SMU 8 sediment is shown in Figure 23. The same mechanism preventing release of phosphorus from anaerobic lake sediment is thought to control the release of methylmercury from sediments (Matthews et al., 2013).

4.6.2 2013 Sediment Trap Mercury and Solids Results

Table 8 presents mercury in slurry, triplicate total suspended slurry solids results and calculated mercury on slurry solids collected from sediment traps deployed typically for one week at the South Deep location from mid-May to late October 2013. Average suspended solids

contents in the 2013 samples ranged from 1,501 to 5,899 mg/L which was 50 percent higher on average than solids measured in sediment traps monitored similarly during 2011 and 2012. Mercury concentrations on sediment trap solids ranged from 0.03 to 1.31 milligrams per kilogram (mg/kg) in 2013 with a mean of 0.57 mg/kg compared to 1.1 mg/kg of mercury recorded in sediment traps in 2012 and 0.7 mg/kg of mercury recorded in sediment traps in 2011. Mercury deposition rates based on sediment trap results averaged 6.5 micrograms per square meter per day. Highest daily deposition rates for solids and mercury in 2013 were measured in the last sediment trap collection period from October 28 to November 4, 2013. An increase in surface water mercury concentrations was measured at each water depth monitored during the same October 28 to November 4 time period.

4.6.3 Zooplankton Mercury Results for 2013

Table 9 and Figures 24A and 24B present total mercury and methylmercury concentrations measured in zooplankton collected at the South Deep location in 2013.

The highest total mercury concentration observed in 2013 in zooplankton was 0.14 mg/kg (or parts per million) on a wet-weight basis observed on October 14 three weeks prior to fall turnover. The highest methylmercury concentrations observed in 2013 in zooplankton was 0.016 mg/kg also on October 14 which showed again how zooplankton methylmercury concentrations have declined as a result of adding nitrate to the lake. Peak concentrations of zooplankton methylmercury in Onondaga Lake from 2008 through 2012 were as follows (in milligrams per kilogram on a wet weight basis): 0.17 in 2008, 0.17 in 2009, 0.023 in 2010, 0.013 in 2011, and 0.014 mg/kg in 2012. The highest portion of methylmercury observed in 2013 as a percentage of total mercury was 87 percent prior to fall turnover and 25 percent following fall turnover.

SECTION 5

SUMMARY OF 2013 (YEAR 3) PILOT TEST RESULTS

Results from this third year of a three-year nitrate addition pilot test (2013) demonstrated successful delivery of sufficient quantities of liquid calcium nitrate to the lower hypolimnion of Onondaga Lake during summer stratification to meet pilot test objectives and thereby minimize methylmercury concentrations in deep waters of the lake. The minimum required nitrate-nitrogen concentration of 1 mg/L was maintained, on average, both vertically near the lake bottom and laterally throughout the lake, thus inhibiting the release of methylmercury from the sediments. Methylmercury release into the water column was effectively controlled throughout the profundal zone.

A total of 63 MT of nitrate-nitrogen were added to the hypolimnion of Onondaga Lake during 2013 (between July 9 and October 10) at rates averaging 0.68 metric tons per day. Sediment nitrate demand in the summer of 2013 was similar to the demand in the summers of 2011 and 2012, approximately 0.8 metric tons per day. Applications of nitrate continued uninterrupted from July 9 until October 10 at a typical rate of three applications per week with the exception of three weeks from July 29 to August 19 when nitrate did not need to be applied. Nitrate concentrations in lower waters declined after October 8 as expected until the lake turned over on November 3.

SECTION 6

REFERENCES

Chen, C.T. and Millero, F.J. 1978. *The Equation of State of Seawater Determined From Sound Speeds*. Journal of Marine Research 36:657-691.

Effler, S.W. 1996. *Limnological and Engineering Analysis of a Polluted Urban Lake*. Prelude to Environmental Management of Onondaga Lake, New York. Springer-Verlag, New York.

Matthews, D.A., et. al., 2013. *Whole-Lake Nitrate Addition for Control of Methylmercury in Mercury-Contaminated Onondaga Lake, NY*. Environmental Research, *125, pages 52-60.*

New York State Department of Environmental Conservation and United States Environmental Protection Agency Region 2. 2005. *Record of Decision*. Onondaga Lake Bottom Subsite of the Onondaga Lake Superfund Site. July 2005.

Parsons and Anchor QEA, 2014. *Onondaga Lake Tissue and Biological Monitoring Report for 2013.* Prepared for Honeywell. February 2014. Draft.

Parsons and UFI. 2010. *Report for the Nitrate Application Field Trial in the Hypolimnion of Onondaga Lake*. Prepared for Honeywell. March 2010.

Parsons and UFI. 2011. *Work Plan for Pilot Test to Add Nitrate to the Hypolimnion of Onondaga Lake*. Prepared for Honeywell. March 2011.

Parsons and UFI, 2012. Addendum 1 (2012) to Work Plan for Pilot Test to Add Nitrate to the Hypolimnion of Onondaga Lake. Prepared for Honeywell. May 2012.

Parsons and UFI, 2013. Report for the Second Year of the Nitrate Addition Pilot Test (2012) in the Hypolimnion of Onondaga Lake. Prepared for Honeywell. September 2013.

Parsons, 2013. Addendum 2 (2013) to Work Plan for Pilot Test to Add Nitrate to the Hypolimnion of Onondaga Lake. Prepared for Honeywell. June 2013.

Todorova, S.G., Driscoll, C.T., Matthews, D.A., Effler, S.W., Hines, M.E., and Henry, E.A., 2009. *Evidence for Regulation of Monomethyl Mercury by Nitrate in a Seasonally Stratified, Eutrophic Lake*. Environmental. Science and Technology, 43 (17), pp 6572–6578.

UFI. 2009. *Report on the 2008 Dye Tracer Study to Evaluate Transport and Mixing in the Hypolimnion of Onondaga Lake*. Prepared for Honeywell. July 2009.

UFI and SU. 2007. *Preliminary Feasibility Analysis for Control of Methylmercury Production in the Lower Waters of Onondaga Lake through Nitrate Addition*. A report prepared for Honeywell by Upstate Freshwater Institute, Syracuse, NY and Syracuse University, Center for Environmental Systems Engineering, Syracuse, NY.

UFI and SU. 2008. *Interpretive Report. Evaluation of Nitrate Addition to Control Methylmercury Production in Onondaga Lake*. 2007 Study. Prepared for Honeywell. April 2008.

United States District Court, Northern District of New York. 2007. State of New York and Denise M. Sheehan against Honeywell International, Inc. *Consent Decree Between the State of New York and Honeywell International, Inc.* Senior Judge Scullin. Dated October 11, 2006. Filed January 4, 2007.

TABLES

TABLE 1
2013 NITRATE ADDITION SUMMARY

Date/Location[1]	Metric Tons (as N) of CN-8 Applied[2]	Application Water Depth[3] (feet)	Dilution Water to CN-8 Volume Ratio[4]	Date/Location	Metric Tons (as N) of CN-8 Applied[2]	Application Water Depth[3] (feet)	Dilution Water to CN-8 Volume Ratio[4]
July 9 / S1	2.19	58	302	Sept 23 / N	2.22	56	479
July 10 / S2	2.22	59	284	Sept 24 / S1	2.21	59	409
July 11 / N	2.22	56	303	Sept 26 / N	2.25	54	430
July 15 / S1	1.95	60	298	Sept 30 / S1	2.16	57	428
July 17 / S2	2.22	58	298	Oct 2 / S2	2.25	52	426
July 18 / S1	2.22	58.5	271	Oct 3 / S1	2.22	51	427
July 22 / S1	2.22	58.5	275	Oct 8 / N	2.27	54	424
July 29 / S1	2.19	59	264	Oct 10 / S1	1.47	51	441
Aug 19 / S1	2.21	59	264				
Aug 21 / S2	2.22	58	283				
Aug 26 / S1	2.22	59	282				
Aug 28 / N	2.25	56	328				
Aug 29 / S2	2.25	58	296				
Sept 3 / S1	2.00	59	303				
Sept 5 / N	2.25	56	326				
Sept 9 / S1	2.22	56	350				
Sept 11 / N	2.25	56	371				
Sept 12 / S2	2.19	58	327				
Sept 16 / S1	2.21	59	373				
Sept 18 / N	2.22	56	386				
Sept 19 / S2	2.22	58	391				

Total nitrate applied = 63.2 Metric Tons

NOTES:

[1] S1 is the South Location 1, S2 is the South Location 2, and N is the North Location (see Figure 1).

[2] 2.3 metric tons = 4,800 gallons for CN-8.

[3] Water depth at the bottom of the 4-foot long diffuser at the lower end of each application pipe.

[4] Dilution water to CN-8 ratio is epilimnion water from Pump A and Pump B divided by CN-8 from Chemical System A + Chemical System B

TABLE 2
Summary of 2013 Nitrate Application Data Collection and Calculations

Date		7/9/2013	7/10/2013	7/11/2013	7/15/2013	7/17/2013	7/18/2013	7/22/2013	7/29/2013
Location		South #1	South #2	North	South #1	South #2	South #1	South #1	South #1
Diluton Factor / Ratio		302	284	303	298	298	271	275	264
Initial Flow CN-8 per pump gauge	gpm	14	15	14	14	14	15	15.5	16
CN-8 Flow Correction Factor		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Initial Flow CN-8 per pump Actual	gpm	11.20	12.00	11.20	11.20	11.20	12.00	12.40	12.80
Flow From Epilimnion System A	gpm	3422	3423	3409	3408	3340	3179	3423	3375
Flow from Epilimnion System B	gpm	3339	3383	3382	3263	3324	3319	3406	3388
Water Temp epi	degrees C	27.2	26.2	25.8	26.62	27.44	28.6	26.9	23.6
Specific Conductance epi	uS/cm	1749	1744	1739	1750	1579	1620	1621	1605
Water depth	feet	64	65	62	66	64	64.5	64.5	65
Target depth	feet	58	59	56	60	58	58.5	58.5	59
Water Temp target depth	degrees C	10.5	10.3	10.4	10.39	11.1	11.7	12	11.6
Specific Conductance target depth	uS/cm	2477	2485	2481	2484	2237	2264	2203	2184
Start time dosing	hours and minutes	910	1115	1310	1500	1020	1110	1250	1200
Total CN-8 Applied (two pumps)	gallons	4574	4637	4637	4073	4637	4637	4637	4574
Total Applied	metric tons NO3-N	2.19	2.22	2.22	1.95	2.22	2.22	2.22	2.19
Comments		Plume detected at 15 meter water depth (m). Chemical turned up to 15 gpm per gauge.	Plume detected at 16m and sinking, adjusted chemical gauge to 14.5 gpm, plume then too high in the water column and chemical turned back to 15 gpm per gauge.	Plume detected between 16.5 and 17 meter water depth. No adjustments made.	Plume detected between 16 and 18 meters. No adjustments made.	Plume detected at 16m. No adjustments made.	Plume detected between 15 and 17 meters. Turned chemical flow up slightly to 15.5 gpm per gauge	Plume detected plume at 17 meters. No adjustments made.	Plume detected at 17 meters. No adjustments made.
End Time_dosing	hours and minutes	1230	1430	1630	1730	1330	1430	1600	1450

Note: Flows of CN-8 were set each day at the same gauge reading for System A and System B unless noted otherwise.

Definitions:

1 CN8: Liquid calcium nitrate as specified by Yara Chemical.

2 DF: Dilution factor, or the ratio of dilution water flow to CN8 flow. Solution density is a function of temperature and salinity; the salinity input values were based on measured specific conductance values.

3 Q: Flow as measured in gallons per minute (gpm).

4 T: Temperature of lake water.

5 SC: Specific Conductance of lake water.

6 uS/cm: Microsiemens per centimeter, or the unit of measure of specific conductance.

7 Start Volume and End Volume: Applies to CN8.

8 Target Depth: The specific depth of release of the CN8 as controlled by the length of individual hoses which were manually connected to the manifold prior to each application. Early on in the season the target depth identified by a height of 2-3m off of the bottom depending on what the specific water depth was at N, S1 or S2 on a given day. Where the target depths are not consistent with being 2-3m off the botttom, the depths are based on insight from monitoring regarding specific depths at N, S1 or S2 within the hypolimnion that exhibited a higher nitrate demand between applications.

9 MT NO3-N: Metric tons of nitrate-nitrogen.

TABLE 2
Summary of 2013 Nitrate Application Data Collection and Calculations

Date		8/19/2013	8/21/2013	8/26/2013	8/28/2013	8/29/2013	9/3/2013	9/5/2013	9/9/2013	9/11/2013
Location		South #1	South #2	South #1	North	South #2	South #1	North	South #1	North
Diluton Factor / Ratio		264	283	282	328	296	303	326	350	371
Initial Flow CN-8 per pump gauge	gpm	16	15	15	13	14.5	14	13	12	11.5
CN-8 Flow Correction Factor		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Initial Flow CN-8 per pump Actual	gpm	12.80	12.00	12.00	10.40	11.60	11.20	10.40	9.60	9.20
Flow From Epilimnion System A	gpm	3428	3431	3418	3433	3451	3388	3402	3378	3420
Flow from Epilimnion System B	gpm	3332	3357	3343	3397	3410	3403	3385	3337	3408
Water Temp epi	degrees C	23.1	24.1	23.5	23.3	24.4	24.2	22.2	21.1	22.3
Specific Conductance epi	uS/cm	1917	1900	1896	1854	1880	1851	1892	1759	1898
Water depth	feet	65	64	65	62	64	65	62	64	62
Target depth	feet	59	58	59	56	58	59	56	56	56
Water Temp target depth	degrees C	10.9	12.2	11.7	11.5	11.5	12.3	11.7	11.7	11.7
Specific Conductance target depth	uS/cm	2467	2630	2428	2453	2445	2404	2432	1816	1804
Start time dosing	hours and minutes	1135	1000	1205	940	1020	1230	915	1240	925
Total CN-8 Applied (two pumps)	gallons	4606	4637	4637	4700	4700	4167	4700	4637	4700
Total Applied	metric tons NO3-N	2.21	2.22	2.22	2.25	2.25	2.00	2.25	2.22	2.25
Comments		Initial plume detected 1m off of the bottom. Turned chemical down to 15.5 gpm per gauge. Plume detected 2 meters above lake bottom. No additional adjustments made.	Plume detected between 16.5 and 18 meters but sinking. Adjusted chemical to 14.75 gpm per gauge. No additional adjustments needed.	Initial plume detected at 17m and sinking, adjusted chemical to 14.5gpm. Plume detected between 16 and 17 meters. No additional adjustments made.	Plume detected 2 meters above lake bottom. No adjustments made.	Plume detected on the bottom, adjusted chemcial flow to 14 gpm per gauge. No additional adjustments made.	Plume detected on the bottom, turned chemical flow down to 13.25 gpm per gauge	Plume detected on the bottom. Adjusted chemical from 13 gpm to 12.5 gpm per gauge. Plume continued to sink so chemical adjusted to 12 gpm.	Plume detected at approximately 16.5 to 17 meters, no adjustments made.	Plume detected 1m off the bottom, turned chemical down to 11gpm. Plume then detected 3 meters above lake bottom so adjusted chemical back to 11.5 gpm per gauge.
End Time_dosing	hours and minutes	1435	1310	1520	1320	1350	A: 1610, B: 1515	1320	1640	1350

Note: Flows of CN-8 were set each day at the same gauge reading for System A and System B unless noted otherwise.

Definitions:

1 CN8: Liquid calcium nitrate as specified by Yara Chemical.

2 DF: Dilution factor, or the ratio of dilution water flow to CN8 flow. Solution density is a function of temperature and salinity; the salinity input values were based on measured specific conductance values.

3 Q: Flow as measured in gallons per minute (gpm).

4 T: Temperature of lake water.

5 SC: Specific Conductance of lake water.

6 uS/cm: Microsiemens per centimeter, or the unit of measure of specific conductance.

7 Start Volume and End Volume: Applies to CN8.

8 Target Depth: The specific depth of release of the CN8 as controlled by the length of individual hoses which were manually connected to the manifold prior to each application. Early on in the season the target depth identified by a height of 2-3m off of the bottom depending on what the specific water depth was at N, S1 or S2 on a given day. Where the target depths are not consistent with being 2-3m off the botttom, the depths are based on insight from monitoring regarding specific depths at N, S1 or S2 within the hypolimnion that exhibited a higher nitrate demand between applications.

9 MT NO3-N: Metric tons of nitrate-nitrogen.

TABLE 2
Summary of 2013 Nitrate Application Data Collection and Calculations

Date		9/12/2013	9/16/2013	9/18/2013	9/19/2013	9/23/2013	9/24/2013	9/26/2013	9/30/2013	10/2/2013	10/3/2013
Location		South #2	South #1	North	South #2	North	South #1	North	South #1	South #2	South #1
Diluton Factor / Ratio		327	373	386	391	479	409	430	428	426	427
Initial Flow CN-8 per pump gauge	gpm	13	11.5	11	11	9	10.5	10	10	10	10
CN-8 Flow Correction Factor		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Initial Flow CN-8 per pump Actual	gpm	10.40	9.20	8.80	8.80	7.20	8.40	8.00	8.00	8.00	8.00
Flow From Epilimnion System A	gpm	3389	3438	3412	3440	3466	3426	3447	3518	3404	3463
Flow from Epilimnion System B	gpm	3422	3430	3382	3434	3425	3445	3433	3334	3412	3361
Water Temp epi	degrees C	22.3	19.9	18.9	19	18.2	17.7	17.6	17.8	18.5	18.6
Specific Conductance epi	uS/cm	1895	1909	1933	1913	1886	1972	1943	1970	1947	1971
Water depth	feet	64	65	62	64	62	65	62	63	64	63
Target depth	feet	58	59	56	58	56	59	54	57	52	51
Water Temp target depth	degrees C	11.1	11.6	11.5	11.5	11.8	11.5	11.7	11.8	12.1	11.4
Specific Conductance target depth	uS/cm	2376	2396	2424	2423	2495	2422	2429	2003	2430	2447
Start time dosing	hours and minutes	940	1210	950	1015	1100	1025	915	1150	920	915
Total CN-8 Applied (two pumps)	gallons	4574	4606	4637	4637	4637	4606	4700	4512	4700	4637
Total Applied	metric tons NO3-N	2.19	2.21	2.22	2.22	2.22	2.21	2.25	2.16	2.25	2.22
Comments		Plume detected on the bottom. Adjusted chemical from 13 to 12 gpm. Plume then detected at 16 meters. No additional adjustments needed.	Plume detected 2 meters above lake bottom. No adjustments made.	Plume detected on the bottom, chemical turned down to 10.5 gpm per gauge, plume still near bottom, adjusted chemical to 10 gpm, plume then 1.5 meters above lake bottom. No additional adjustments needed.	Plume detected at 17 meters and plunging. Turned chemical from back 11 to 10 gpm per gauge. No additional adjustments needed.	No adjustments needed.	Plume detected at 17 to 17.5 meters. No adjustments needed.	Plume detected at 16 meters. No adjustments needed.	Plume detected 16 to 16.5 meters. No adjustments needed.	Plume detected 16 to 17 meters. No adjustments needed.	Plume detected at approximately 17 meters. No adjustments needed.
End Time_dosing	hours and minutes	1340	1615	A: 1438, B: 1435	A: 1455, B: 1510	1620	1500	1405	1640	1405	1445

Note: Flows of CN-8 were set each day at the same gauge reading for System A and System B unless noted otherwise.

Definitions:

1 CN8: Liquid calcium nitrate as specified by Yara Chemical.

2 DF: Dilution factor, or the ratio of dilution water flow to CN8 flow. Solution density is a function of temperature and salinity; the salinity input values were based on measured specific conductance values.

3 Q: Flow as measured in gallons per minute (gpm).

4 T: Temperature of lake water.

5 SC: Specific Conductance of lake water.

6 uS/cm: Microsiemens per centimeter, or the unit of measure of specific conductance.

7 Start Volume and End Volume: Applies to CN8.

8 Target Depth: The specific depth of release of the CN8 as controlled by the length of individual hoses which were manually connected to the manifold prior to each application. Early on in the season the target depth identified by a height of 2-3m off of the bottom depending on what the specific water depth was at N, S1 or S2 on a given day. Where the target depths are not consistent with being 2-3m off the botttom, the depths are based on insight from monitoring regarding specific depths at N, S1 or S2 within the hypolimnion that exhibited a higher nitrate demand between applications.

9 MT NO3-N: Metric tons of nitrate-nitrogen.

TABLE 2
Summary of 2013 Nitrate Application Data Collection and Calculations

Date		10/8/2013	10/10/2013		TOTALS
Location		North	South #1		
Diluton Factor / Ratio		424	441		
Initial Flow CN-8 per pump gauge	gpm	10	A:9, B:10.5		
CN-8 Flow Correction Factor		0.8	0.8		
Initial Flow CN-8 per pump Actual	gpm	8.00	A:7.2, B:8.4		
Flow From Epilimnion System A	gpm	3366	3486		
Flow from Epilimnion System B	gpm	3415	3391		
Water Temp epi	degrees C	17.9	NM		
Specific Conductance epi	uS/cm	1882	NM		
Water depth	feet	62	63		
Target depth	feet	54	51		
Water Temp target depth	degrees C	11.4	NM		
Specific Conductance target depth	uS/cm	2693	NM		
Start time dosing	hours and minutes	930	1100		
Total CN-8 Applied (two pumps)	gallons	4731	A:1347, B:1723		
Total Applied	metric tons NO3-N	2.27	1.47		63.2
Comments		Plume detected 1 to 1.5 meters above lake bottom. No adjustments needed.	*Ran system A chemical at 9 gpm and system B chemical at 10.5 gpm per gauge because diluted. Additional rinse water added to CN-8 tanks and pumped out.		
End Time_dosing	hours and minutes	1435	1500		

Note: Flows of CN-8 were set each day at the same gauge reading for System A and System B unless noted otherwise.

Definitions:

1 CN8: Liquid calcium nitrate as specified by Yara Chemical.

2 DF: Dilution factor, or the ratio of dilution water flow to CN8 flow. Solution density is a function of temperature and salinity; the salinity input values were based on measured specific conductance values.

3 Q: Flow as measured in gallons per minute (gpm).

4 T: Temperature of lake water.

5 SC: Specific Conductance of lake water.

6 uS/cm: Microsiemens per centimeter, or the unit of measure of specific conductance.

7 Start Volume and End Volume: Applies to CN8.

8 Target Depth: The specific depth of release of the CN8 as controlled by the length of individual hoses which were manually connected to the manifold prior to each application. Early on in the season the target depth identified by a height of 2-3m off of the bottom depending on what the specific water depth was at N, S1 or S2 on a given day. Where the target depths are not consistent with being 2-3m off the botttom, the depths are based on insight from monitoring regarding specific depths at N, S1 or S2 within the hypolimnion that exhibited a higher nitrate demand between applications.

9 MT NO3-N: Metric tons of nitrate-nitrogen.

TABLE 3
2013 ONONDAGA LAKE SURFACE WATER MONITORING SUMMARY FOR NITRATE ADDITION

Date	Water column		Zooplankton: South Deep	Sediment Trap Mercury South Deep (10-meter water depth)	Dissolved Gas Measurements
	South Deep	ISUS profiling 34 locations			
May 20	3 depths	10 locations	□	○	
June 3	No samples	10 locations		○	
June 17	3 depths	◊	□	○	⊙
June 24	3 depths	◊		○	
July 1	4 depths	◊	□	○	⊙
July 8	4 depths	◊		○	
July 15	4 depths	◊	□	○	⊙
July 22	4 depths	◊		○	
July 29	4 depths	◊	□	○	⊙
August 5	4 depths	◊		○	
August 12	4 depths	◊	□		⊙
August 19	4 depths	◊		○	
August 26	4 depths	◊	□		⊙
September 5	5 depths	◊	□		
September 9	5 depths	◊	□	○	⊙
September 16	5 depths	◊	□	○	
September 23	5 depths	◊	□	○	⊙
September 30	5 depths	◊	□	○	
October 8	5 depths	◊	□	○	⊙
October 14	5 depths	◊	□	○	
October 21	5 depths	◊	□	○	⊙
October 28	2 depths	◊	□	○	
October 30	3 depths				
November 4	3 depths	10 locations	□	○	
November 20	3 depths	10 locations	□		

Notes:
1. Sediment traps were deployed typically for seven days. Trap recovery dates are shown in this table. Traps were also recovered on May 28 and June 10 and analyzed for mercury.
2. ISUS profiling was completed at 34 locations on an additional 21 days from June 20 through October 17, 2013.
3. Samples were not collected below the 12-meter water depth on October 28, because high winds curtailed sampling. Additional samples were collected at 2, 12, and 18m on October 30 to complete the profile.
4. Fall turnover occurred on November 3 after which only three water depths were collected.

TABLE 4

SUMMARY OF 2013 ISUS-SUNA MEASUREMENTS FOR ONONDAGA LAKE NITRATE ADDITION

Measurement period	June 17 to November 21
Frequency of profiling	Typically two days per week (41 days total)
Vertical resolution	Measurements every 0.25 meters from lake surface to bottom
Locations	34 locations were profiled per day, on average, until fall turnover on November 3.
Total profiles	1,297
Total measurements of nitrate	84,873
Selected parameters and accuracy	Nitrate to plus or minus 0.028 mg/L as nitrogen (N)
	Sulfide to plus or minus 0.064 mg/L as sulfur (S)
	Water temperature to plus or minus 0.1 degree Celsius
	Specific conductance to plus or minus 3 microsiemens per centimeter

Notes: ISUS – in situ ultraviolet spectroradiometer.

SUNA - Submersible ultraviolet nitrate analyzer

Other paramaters measured using the ISUS were turbidity, beam attenuation coefficient, backscattering, chlorophyll fluorescence, and photosynthetically-active irradiance.

TABLE 5

2013 MERCURY CONCENTRATIONS IN SURFACE WATER NEAR THE LAKE BOTTOM AT SOUTH DEEP

(Concentration (ng/l) at the 18-Meter Water Depth)

2013 SAMPLING DATE	TOTAL MERCURY	METHYL-MERCURY
May 20	0.87	0.05 U
June 17	2.1	0.053 U
June 24	1.5	0.05 U
July 1	1.7	0.05 U
July 8	1.5	0.071
July 15	1.9	0.13
July 22	0.95 J	0.11
July 29	1.4	0.1
August 5	0.51 UJ	0.071 U
August 12	2.7	0.11
August 19	3.9	0.11
August 26	2.7	0.11 UJ
September 5	4.3	0.15
September 9	3.1	0.13 U
September 16	3.6	0.14
September 23	5.3	0.19
September 30	11	0.2
October 8	2.2	0.14
October 14	7.9	0.15
October 21	3.5	0.21
October 30	7.4	0.25
November 4	15	0.16
November 20	13	0.16

U - not detected at reporting limit specified
J - estimated concentration

Note: Lake waters completely turned over by November 3.

TABLE 6

2013 DISSOLVED MERCURY WATER CONCENTRATIONS: SOUTH DEEP AT THE 2-METER WATER DEPTH

2013 SAMPLING DATE	DISSOLVED MERCURY, ng/L	
May 20	0.5	U
June 17	0.7	
June 24	0.85*	
July 1	0.89*	
July 8	0.63	
July 15	1.0*	
July 29	2.0*	
August 12	0.52	
August 26	0.53	
September 9	0.68	
September 23	0.85*	
October 8	1.6*	
October 21	1.1*	

* Exceeds New York State surface water qulaity standard of 0.7 ng/L for Class C/D waters based on human consumption of fish

U - not detected at reporting limit indicated
J - estimated value

Note:

(1) Dissolved mercury results from the 14-meter water depth ranged from 0.21 to 0.26 ng/L from water samples collected on September 9 and 23 and on October 8 and 21, 2013.

TABLE 7
KEY PILOT TEST INTER-ANNUAL VARIATIONS

Year	Spring Turnover Nitrate-N, mg/L	Metric Tons of Calcium Nitrate Applied	Summertime Nitrate-N Depletion Rates, milligrams per liter per day	Duration of Summer Stratification, days
2011	2.0	88	0.017	184
2012	2.7	72	0.016	163
2013	2.9	63	0.018	178

Note: The pilot test was managed conservatively all three years. During 2007-2010, nearly all of the hypolimnion methylmercury concentrations at 18 meters above 0.5 nanograms per liter were observed when nitrate-N was less than 0.5 mg/L.

TABLE 8
2013 MERCURY AND SOLIDS RESULTS FOR SEDIMENT TRAP SLURRY

Site	Trap Deploy Date	Trap Recover Date	Deployment Duration (Days)	Sample Volume (mL)	Slurry Mercury Results (µg/L)	Triplicate TSS Results (mg/L)	TSS Average (mg/L)	TSS Deposition (mg per m2 per day)	Mercury Concentration (mg/kg)	Mercury Deposition (µg per m^2 per day)
SD	05/14/13	05/20/13	6	170	1.10	1684 / 1572 / 1640	1632	10165	0.67	6.85
SD	05/20/13	05/28/13	8	162	2.60	3376 / 3488 / 3636	3500	15572	0.74	11.57
SD	05/28/13	06/03/13	6	155	1.20	1900 / 1752 /1828	1827	10372	0.66	6.81
SD	06/03/13	06/10/13	7	150	1.30	2784 / 3020 / 3580	3128	14661	0.42	6.09
SD	06/10/13	06/17/13	7	122	1.10	3868 / 3840 / 3444	3717	14266	0.30	4.22
SD	06/17/13	06/24/13	7	151	0.55	1400 / 1460 / 1644	1501	7092	0.37	2.60
SD	06/24/13	07/01/13	7	159	0.72	1580 / 1496 / 1516	1531	7678	0.47	3.61
SD	07/01/13	07/08/13	7	127	0.78	3256 / 2524 / 2812	2864	11396	0.27	3.10
SD	07/08/13	07/15/13	7	147	1.30	1968 / 2388 / 2056	2137	9851	0.61	5.99
SD	07/15/13	07/22/13	7	124	1.20	4252 / 4376 / 5488	4705	18092	0.26	4.61
SD	07/22/13	07/29/13	7	127	1.30	2640 /2816 / 3024	2827	11300	0.46	5.20
SD	07/29/13	08/05/13	7	115	0.12	4156 / 3160 / 3372	3563	12798	0.03	0.43
SD	08/05/13	08/12/13	7	139	–	2840 / 2280 / 2264	2461	10712	–	–
SD	08/12/13	08/19/13	7	130	1.50	3340 / 3312 / 2836	3163	12866	0.47	6.10
SD	08/19/13	08/26/13	7	126	–	4572 / 3584 / 3888	4015	15664	–	–
SD	08/26/13	09/05/13	10	112	–	4848 / 4492 / 4040	4460	11131	–	–
SD	09/05/13	09/09/13	4	130	0.59	2440 / 2240 / 2928	2536	17836	0.23	4.15
SD	09/09/13	09/16/13	7	130	0.16	2016 / 2036 / 1684	1912	7564	0.08	0.63
SD	09/16/13	09/23/13	7	137	1.70	2048 / 2428 / 2052	2176	9303	0.78	7.27
SD	09/23/13	09/30/13	7	125	2.00	1572 / 1528 / 1496	1532	6050	1.31	7.90

TABLE 8 (CONTINUED)
2013 MERCURY AND SOLIDS RESULTS FOR SEDIMENT TRAP SLURRY

Site	Trap Deploy Date	Trap Recover Date	Deployment Duration (Days)	Sample Volume (mL)	Slurry Mercury Results (µg/L)	Triplicate TSS Results (mg/L)	TSS Average (mg/L)	TSS Deposition (mg per m2 per day)	Mercury Concentration (mg/kg)	Mercury Deposition (µg per m^2 per day)
SD	09/30/13	10/08/13	8	128	1.80	1964 / 2056 / 1596	1872	6454	0.96	6.21
SD	10/08/13	10/14/13	6	117	1.40	1596 / 1532 / 1676	1601	6930	0.87	6.06
SD	10/14/13	10/21/13	7	127	0.91	1624 / 1808 / 1800	1744	6953	0.52	3.63
SD	10/21/13	10/28/13	7	125	3.00	3728 / 3708 / 3096	3511	13828	0.85	11.82
SD	10/28/13	11/04/13	7	132	7.10	6092 / 6356 / 5248	5899	23987	1.20	28.87
Arithmetic Mean			-	-	-	-	-	11700	0.57	6.5

SD – South Deep at the 10-meter water depth TSS – total suspended solids

Mercury concentration is the slurry mercury average divided by TSS average times a units conversion of 1,000. Concentrations are based on dry weight. Calculations of TSS and mercury include the surface area of the sediment traps (45 square centimeters).

TABLE 9

MERCURY CONCENTRATIONS IN ZOOPLANKTON SAMPLES COLLECTED AT SOUTH DEEP IN 2013

Field Sample ID	Date	Total mercury (mg/kg wet weight)	Methylmercury (mg/kg wet weight)	Methylmercury (Percent of Total Mercury)
OL-1904-01	5/20/13	0.028	0.0028	10
OL-1911-01	6/17/13	0.073J	0.0072	10
OL-1919-01	7/1/13	0.041	0.011	27
OL-1926-01	7/15/13	0.12	0.011	9
OL-1933-01	7/29/13	0.056	0.011	20
OL-1940-01	8/12/13	NM	0.011	No value
OL-1949-01	8/26/13	0.0083	0.0072	87
OL-1953-01	9/5/13	NM	0.0073	No value
OL-1957-01	9/9/13	NM	0.0084	No value
OL-1964-01	9/16/13	0.088	0.0058	7
OL-1969-01	9/23/13	0.074	0.0046	6
OL-1974-01	9/30/13	0.1	0.0097	10
OL-1979-01	10/8/13	0.071	0.0071	10
OL-1783-01	10/14/13	0.14	0.016	11
OL-1988-01	10/21/13	0.042	0.0081	19
OL-1994-01	10/28/13	0.065	0.011	17
OL-2025-01	11/4/13	0.068	0.011	16
OL-2029-01	11/20/13	0.059	0.015	25

J - estimated value

No value – not measured due to insufficient quantity of zooplankton biomass to analyze for both total mercury and methylmercury despite extra field team effort to provide additional biomass by completing an additional tow with the zooplankton net.

FIGURES

Path: Q:\GIS\GIS_Lake\Baseline_Monitor\MXDs\2011_NitrateInjectLocs.mxd

Date Revised: 11/12/2013 10:06:07 AM

2013 Nitrate Application Locations

Bathymetry Contours For Water Depth

10 Foot Intervals

30 Foot Water Depth Contour

0 1,200 2,400 4,800 7,200

Feet

Figure 1

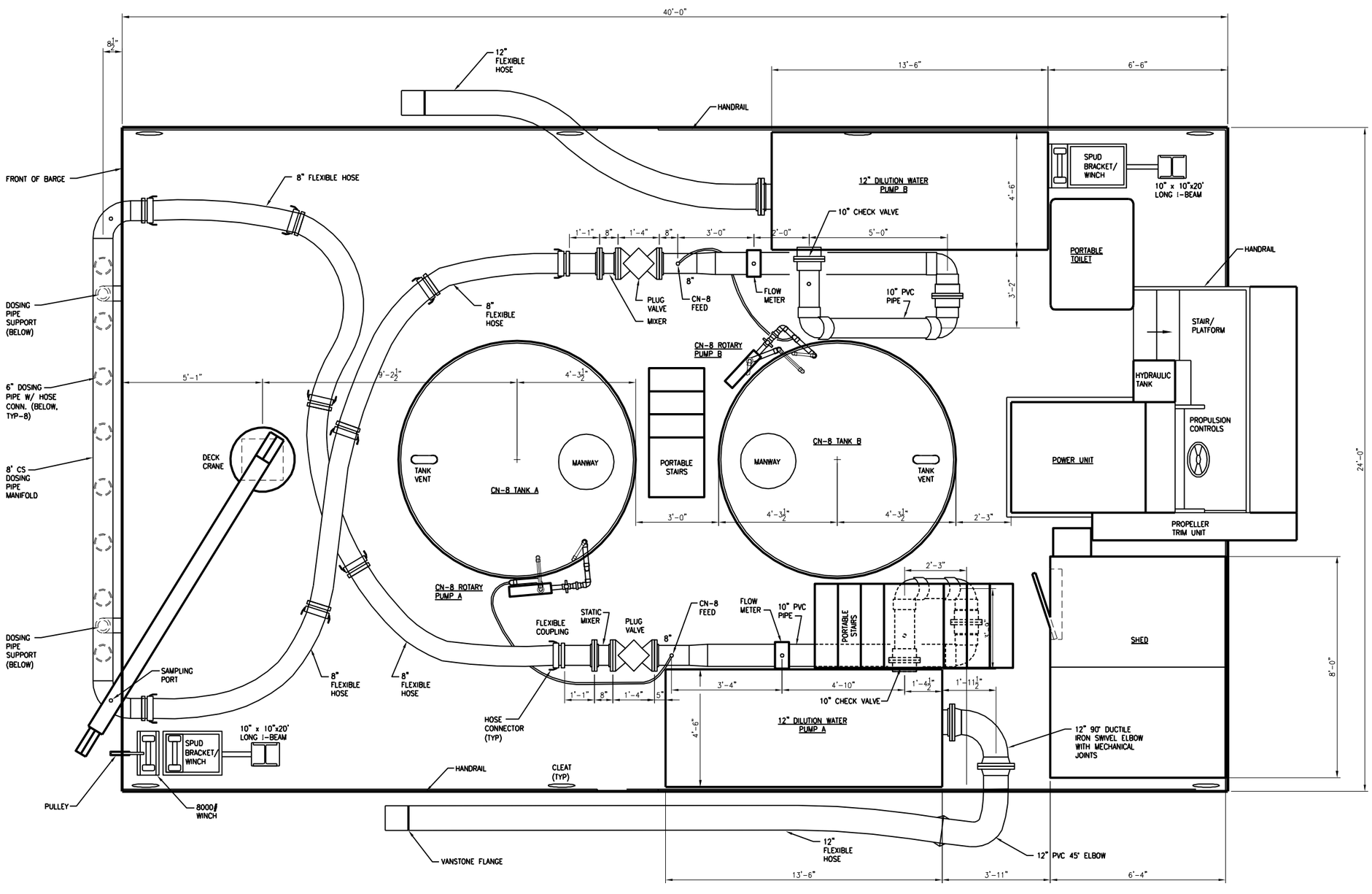
Honeywell

Onondaga Lake
Syracuse, New York

2013 Nitrate Application Locations

PARSONS

301 Plainfield Road, Suite 350; Syracuse NY 13212 Phone:(315)451-9560



NO	DESCRIPTION	DATE	DRAWN	CHK'D	APP'D
B	2013 UPDATE	11/12/13	JNG	HRP	
A	FOR INFORMATION ONLY	1/7/13	JTS		

DRAWN BY		DATE
CHECKED BY		DATE
APPROVED BY		DATE
PROJECT MGR.		DATE

SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

JOB 448314
BBS 05220

PROJECT TITLE
Honeywell
ONONDAGA LAKE
NITRATE ADDITION PILOT TEST
SYRACUSE, NEW YORK

DRAWING TITLE
FIGURE 2
BARGE AS-BUILT 2013

SCALE NO SCALE

DRAWING NO. 448314-M-001

REV. B

FILE NAME: P:\HONEYWELL -SYR\446625 - NITRATE ADDITION PILOT TEST 2011-2012\10.0 TECHNICAL CATEGORIES\10.16 CAD\2012\BARGE AS-BUILT\BARGE 2013.DWG
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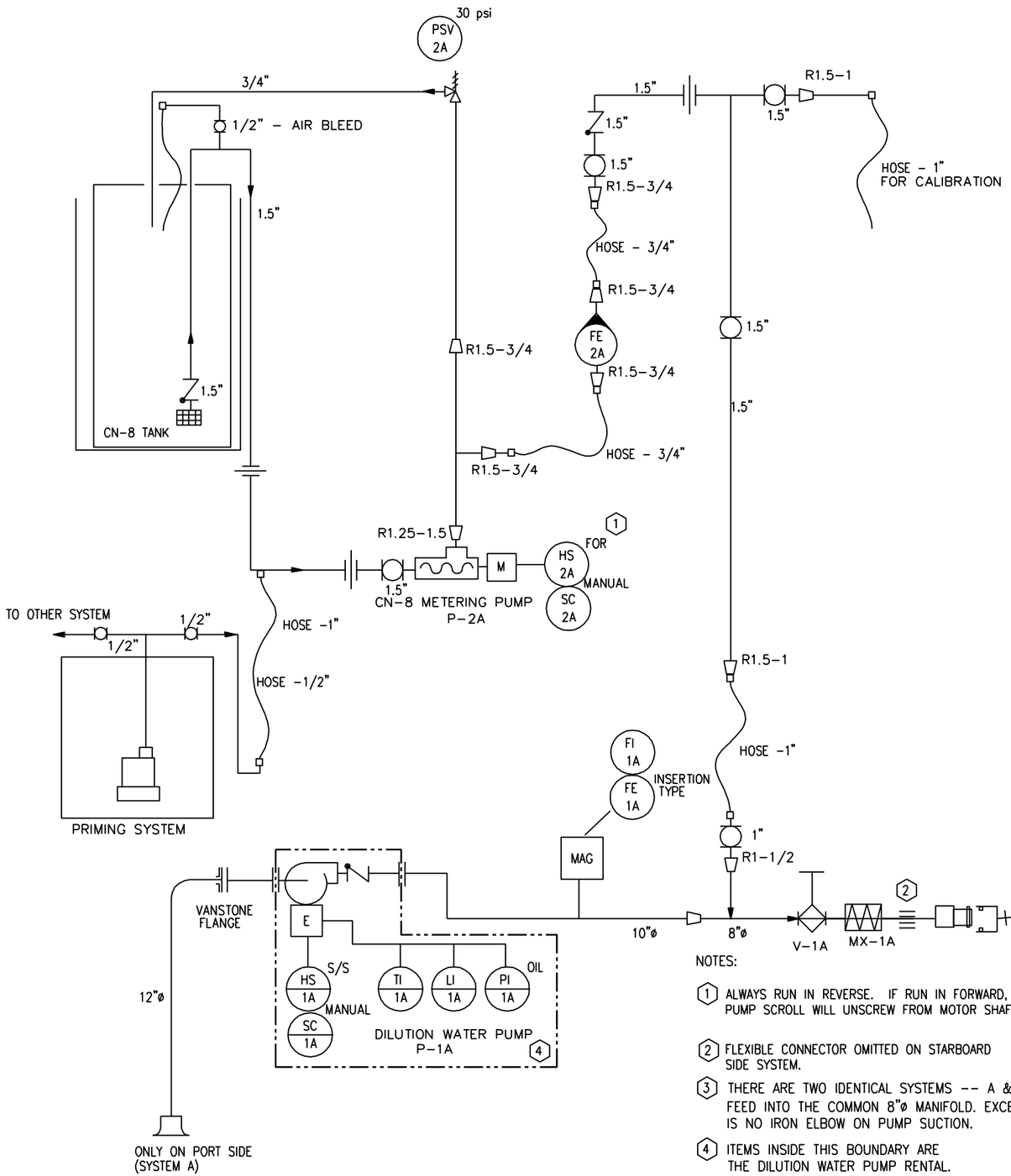

NOTES:

1. ALWAYS RUN IN REVERSE. IF RUN IN FORWARD, PUMP SCROLL WILL UNSCREW FROM MOTOR SHAFT.
2. FLEXIBLE CONNECTOR OMITTED ON STARBOARD SIDE SYSTEM.
3. THERE ARE TWO IDENTICAL SYSTEMS -- A & B. BOTH FEED INTO THE COMMON 8"ø MANIFOLD. EXCEPT THERE IS NO IRON ELBOW ON PUMP SUCTION.
4. ITEMS INSIDE THIS BOUNDARY ARE THE DILUTION WATER PUMP RENTAL.

TYPICAL TAG NUMBER CODING SYSTEM

- XX – CODES AND ABBREVIATIONS
- HS – FUNCTION SYMBOL (SEE SCHEDULE)
- 1A – TAG No. (MAY BE LETTER OR DIGIT OR BOTH)

BASIC SYMBOLS

FIELD MOUNTING

ABBREVIATIONS

FE	– FLOW ELEMENT
FI	– FLOW RATE INDICATOR
FOR	– FORWARD-OFF-REVERSE
HS	– HAND SWITCH
PI	– PRESSURE INDICATOR
PSV	– PRESSURE SAFETY VALVE
S/S	– START/STOP
SC	– SPEED CONTROL
TI	– TEMPERATURE INDICATOR
LI	– LEVEL INDICATOR

LEGEND

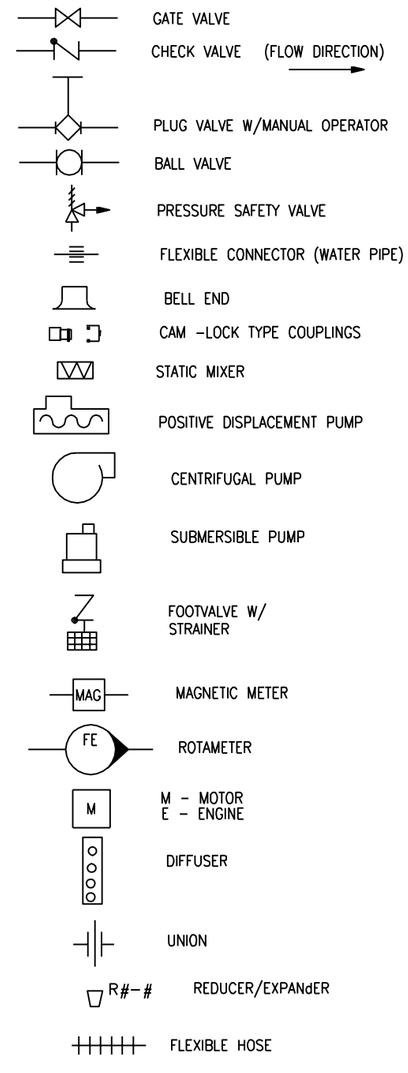

FIGURE 3

Barge Piping & Instrumentation Diagram
For 2013
Syracuse, N.Y.

PARSONS

446625 Onondaga Lake P&ID-09-12-11.dwg

FILE NAME: P:\HONEYWELL -SYR\446625 - NITRATE ADDITION PILOT TEST 2011-2012\10.0 TECHNICAL CATEGORIES\10.16 CAD\2012\BARGE AS-BUILT\446625 ONONDAGA LAKE P&ID 2013.DWG
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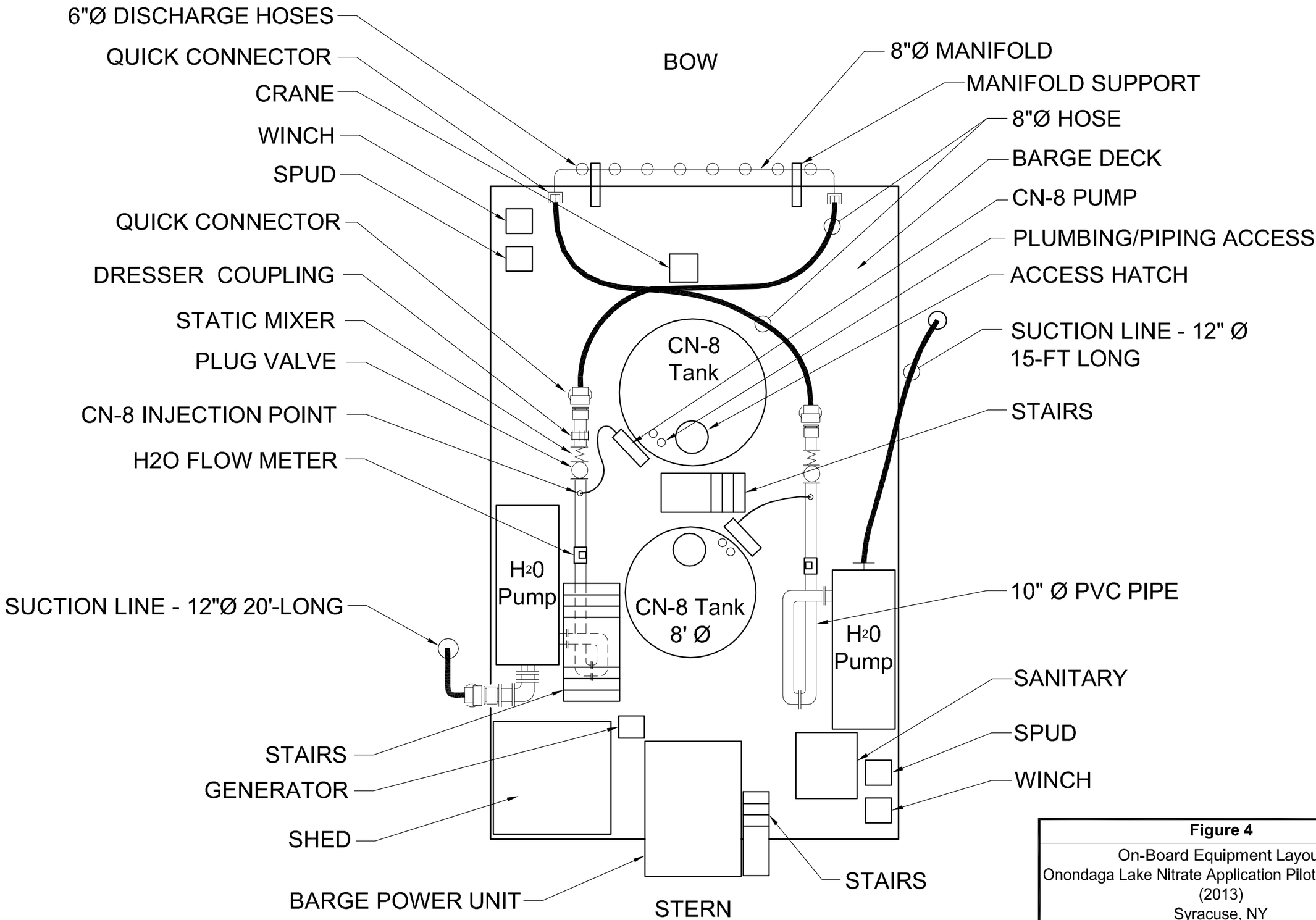

Figure 4

On-Board Equipment Layout
Onondaga Lake Nitrate Application Pilot Test Year 3
(2013)
Syracuse, NY

PARSONS

FILE NAME: P:\HONEYWELL -SYR\446625 - NITRATE ADDITION PILOT TEST 2011-2012\10.0 TECHNICAL CATEGORIES\10.16 CAD\2012\BARGE AS-BUILT\ON-BOARD-2013.DWG
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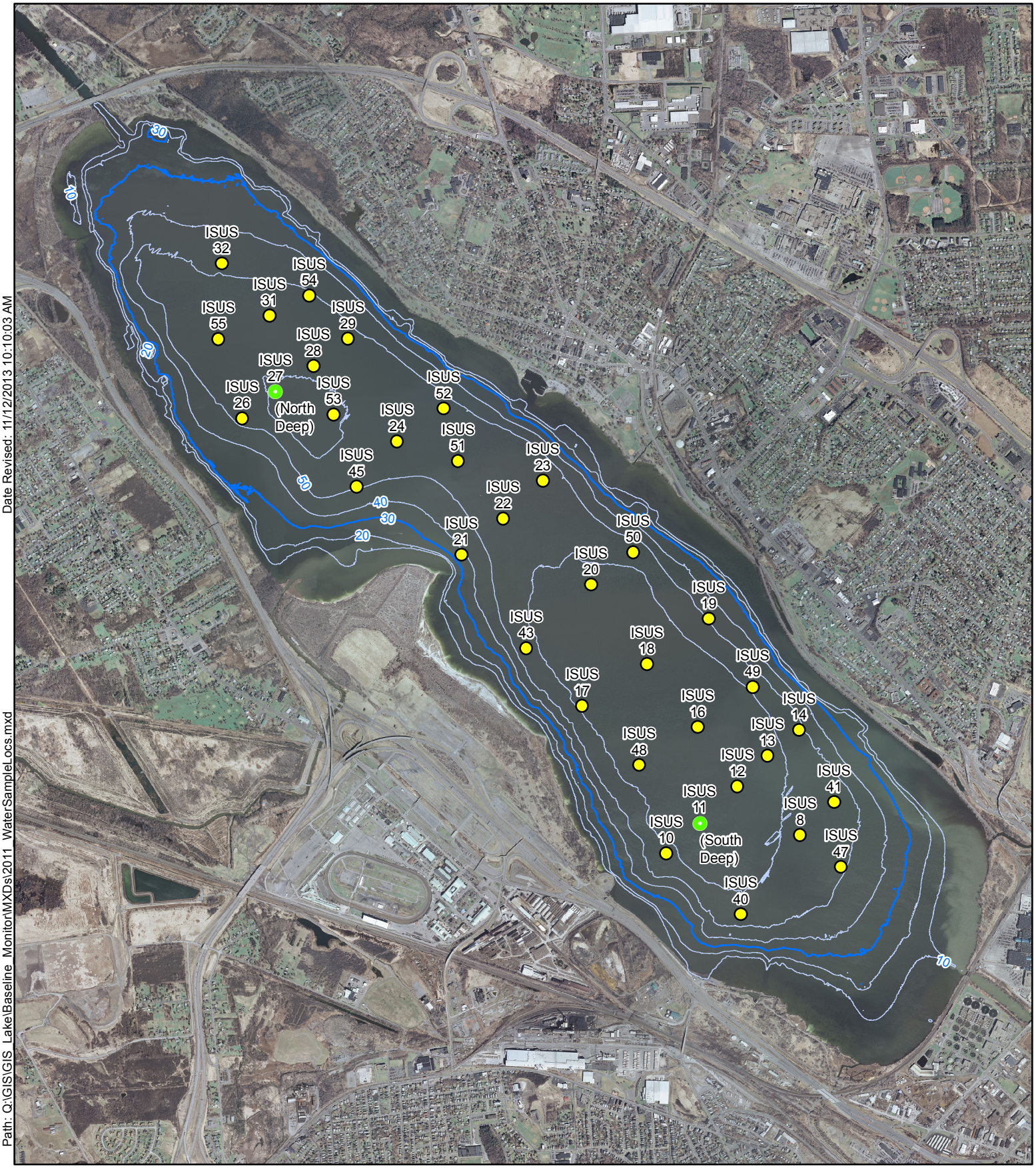

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Date Revised: 11/12/2013 10:10:03 AM

North Deep and South Deep

ISUS-SUNA Monitoring Location

Bathymetry Contours For Water Depth

10 Foot Intervals

30 Foot Water Depth Contour

0 1,200 2,400 4,800 7,200

Feet

Figure 5

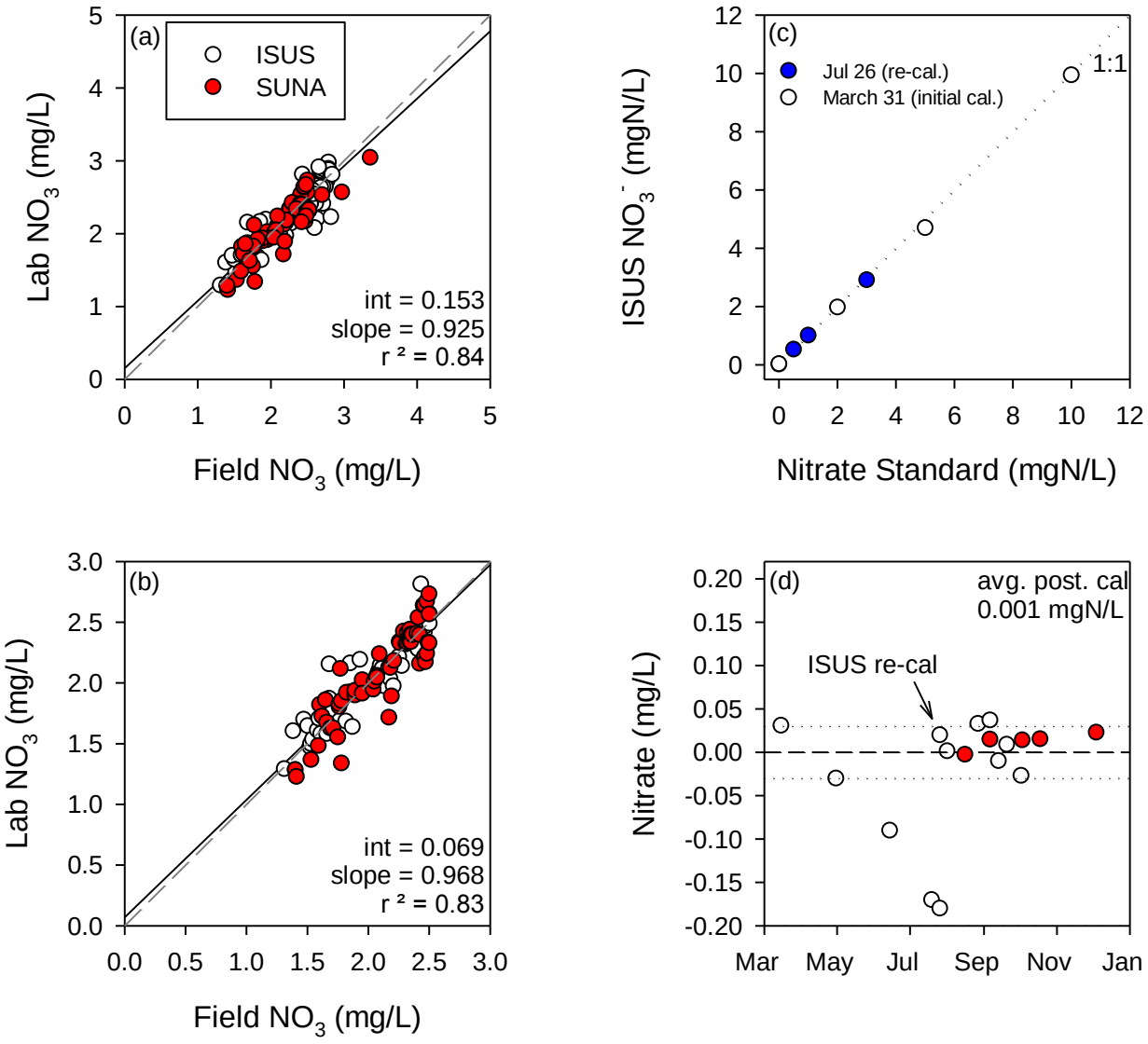
Honeywell

Onondaga Lake
Syracuse, New York

2013 ISUS-SUNA
Monitoring Locations

PARSONS

301 Plainfield Road, Suite 350; Syracuse NY 13212 Phone:(315)451-9560



(a) all paired field and lab data from South Deep

(b) paired data from South Deep in the 0-2.5 mgN/L range

(c) ISUS verification with laboratory nitrate standards (initial spring calibration and re0calibration to correct drifting), and

(d) time series of nitrate distilled water (DIW) laboratory checks with the zero line and upper and lower bounds of ISUS accuracy (±0.028 mgN/L).

Figure 6 Comparison of Paired 2013 Field and Laboratory Surface Water Results for Nitrate (NO_3^-)

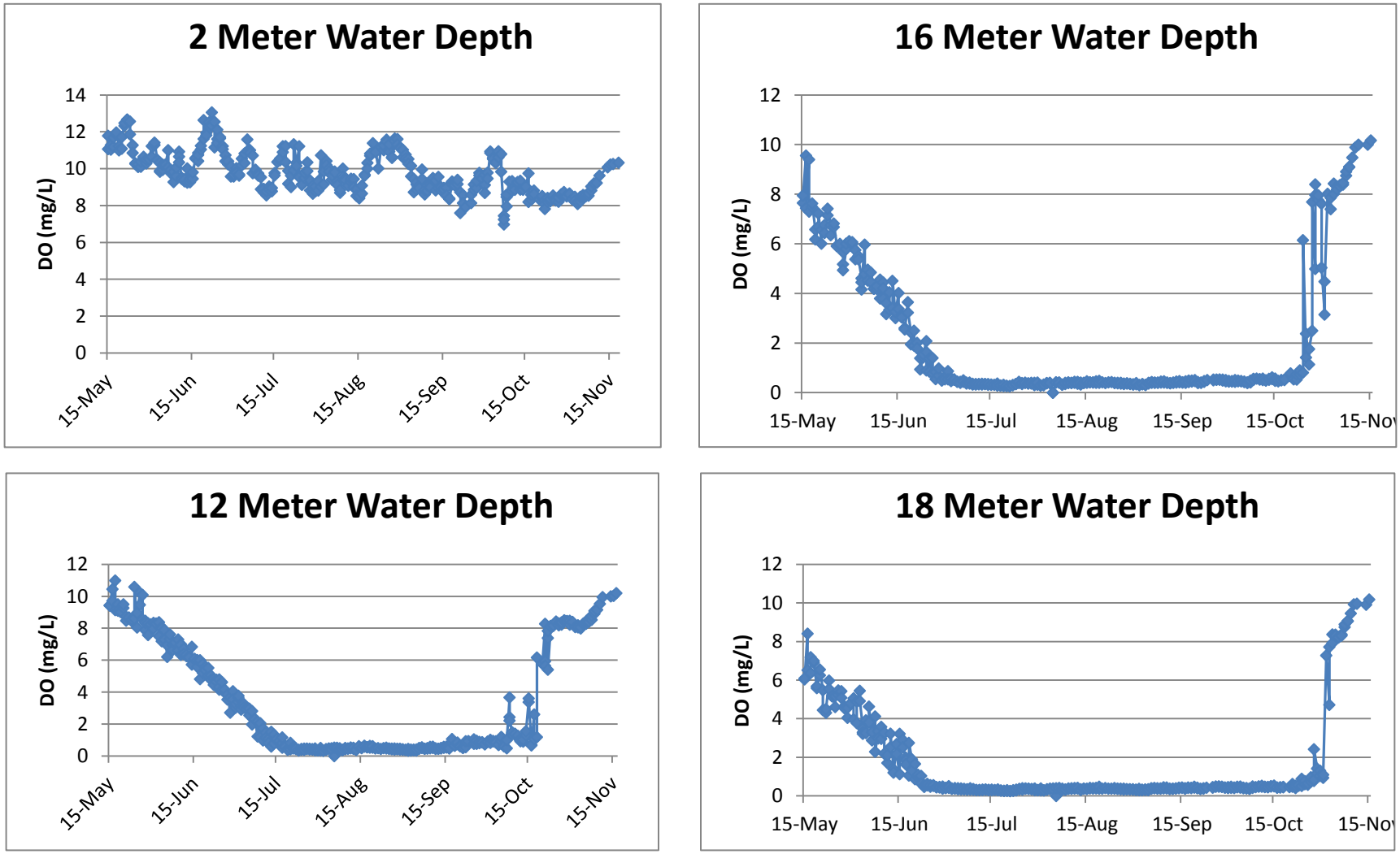


Figure 7 2013 Dissolved Oxygen (DO) Concentrations at 2, 12, 16 and 18-Meter Water Depths at South Deep

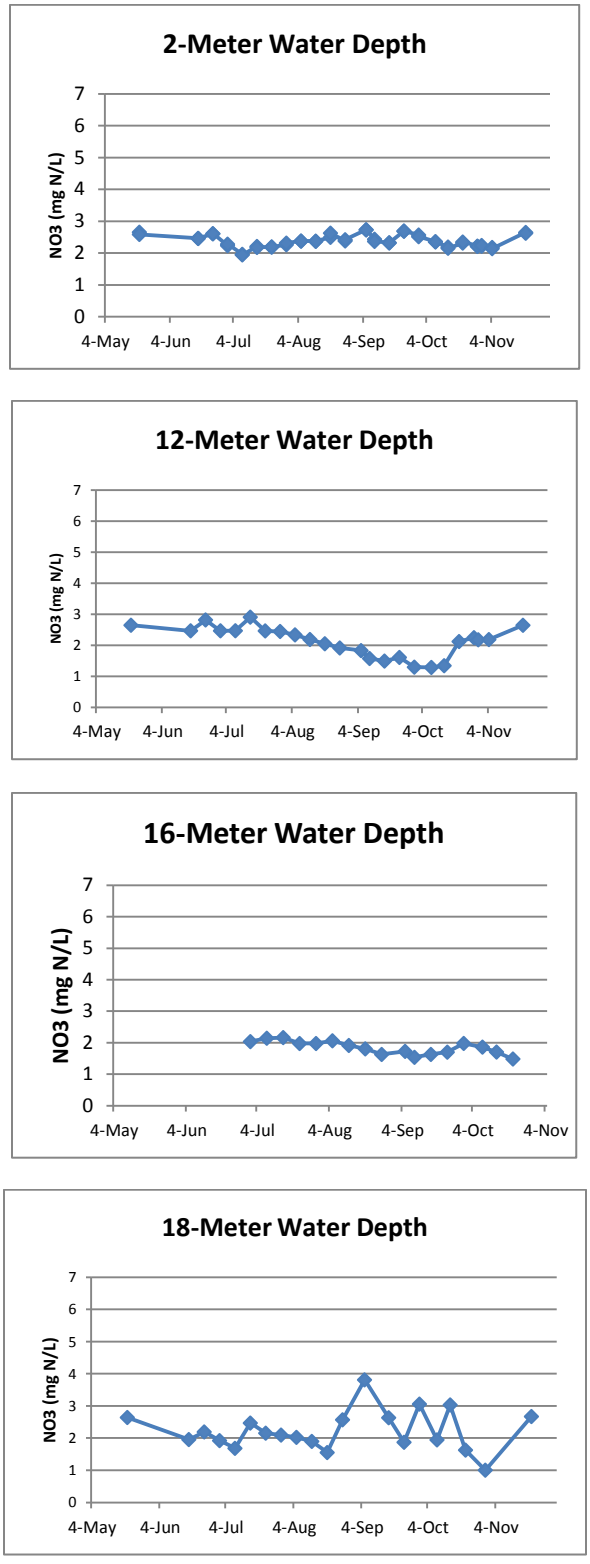


Figure 8 2013 Nitrate Concentrations at 2, 12, 16 and 18-Meter Water Depths at South Deep

Figure 9
Dissolved Oxygen Mass in Hypolimnion During 2013 Summer Stratification

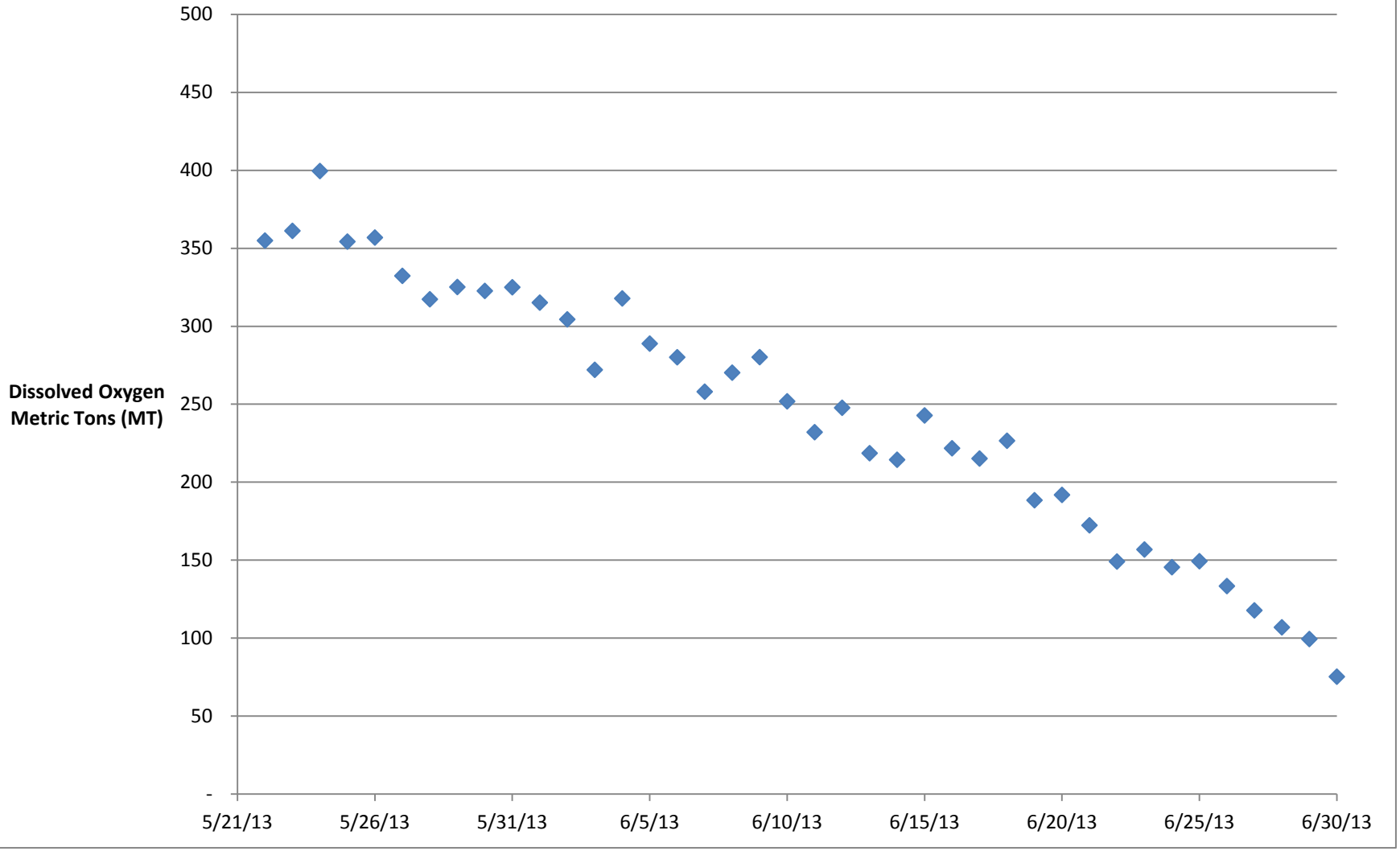
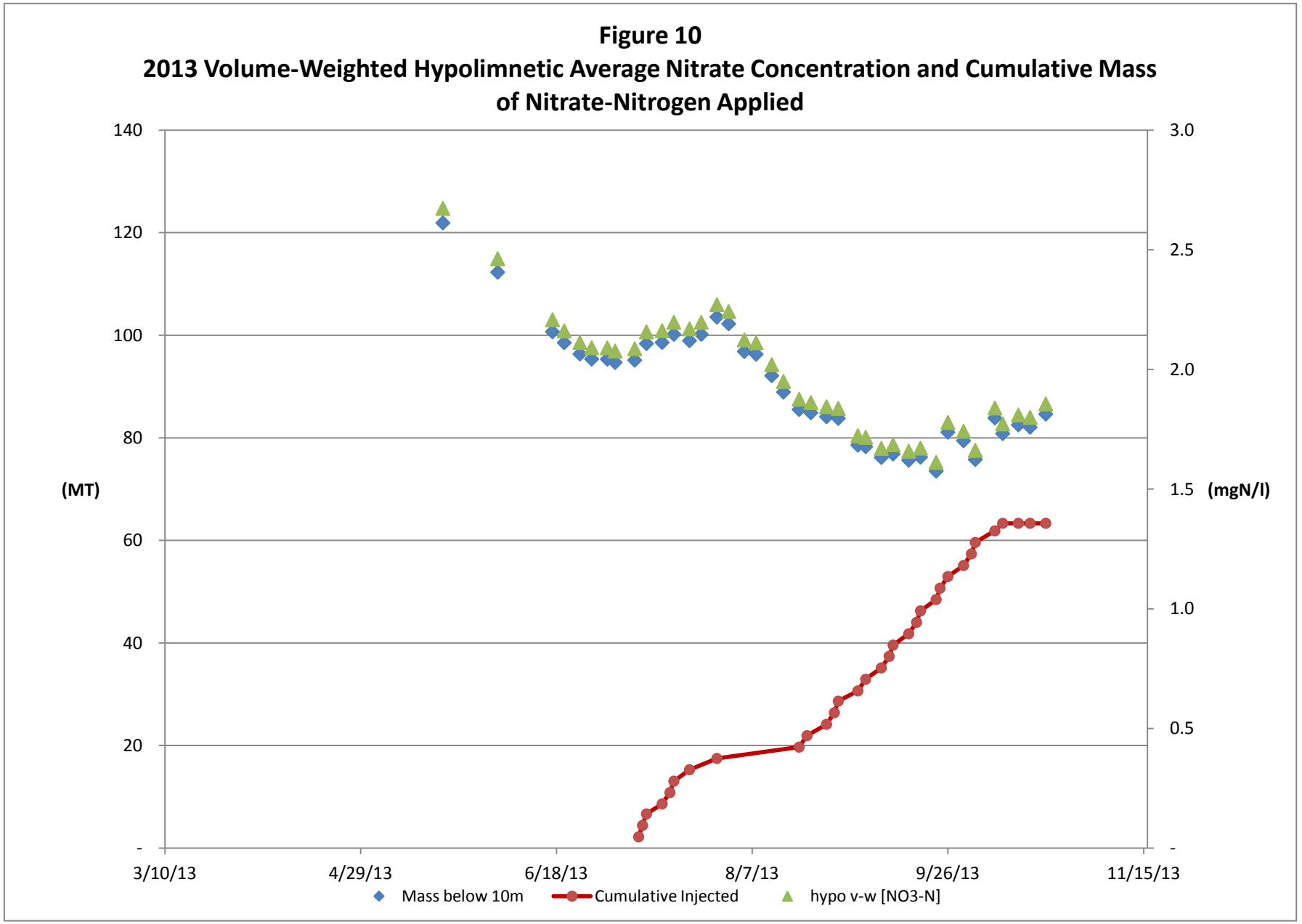
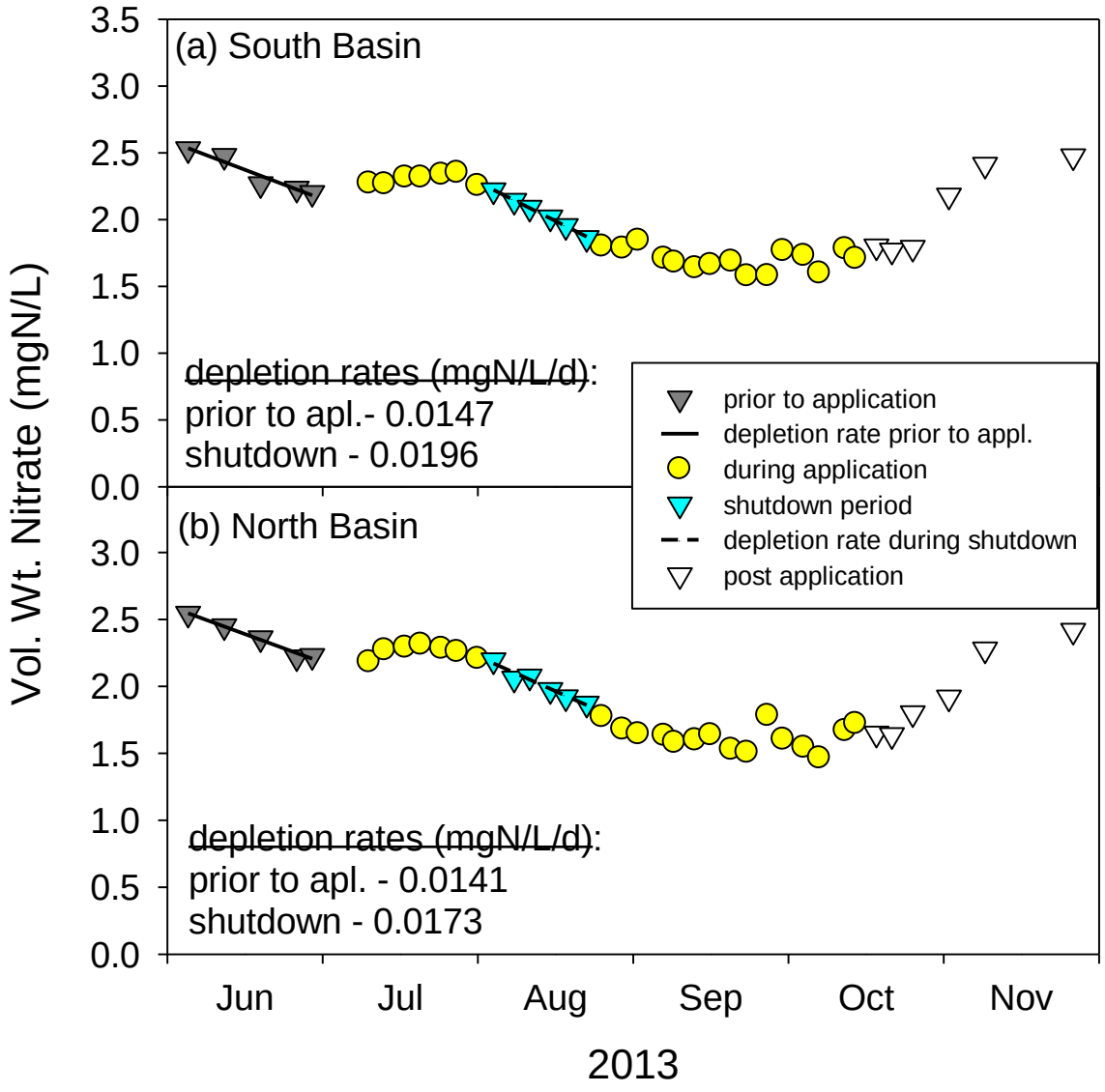


Figure 10
2013 Volume-Weighted Hypolimnetic Average Nitrate Concentration and Cumulative Mass of Nitrate-Nitrogen Applied

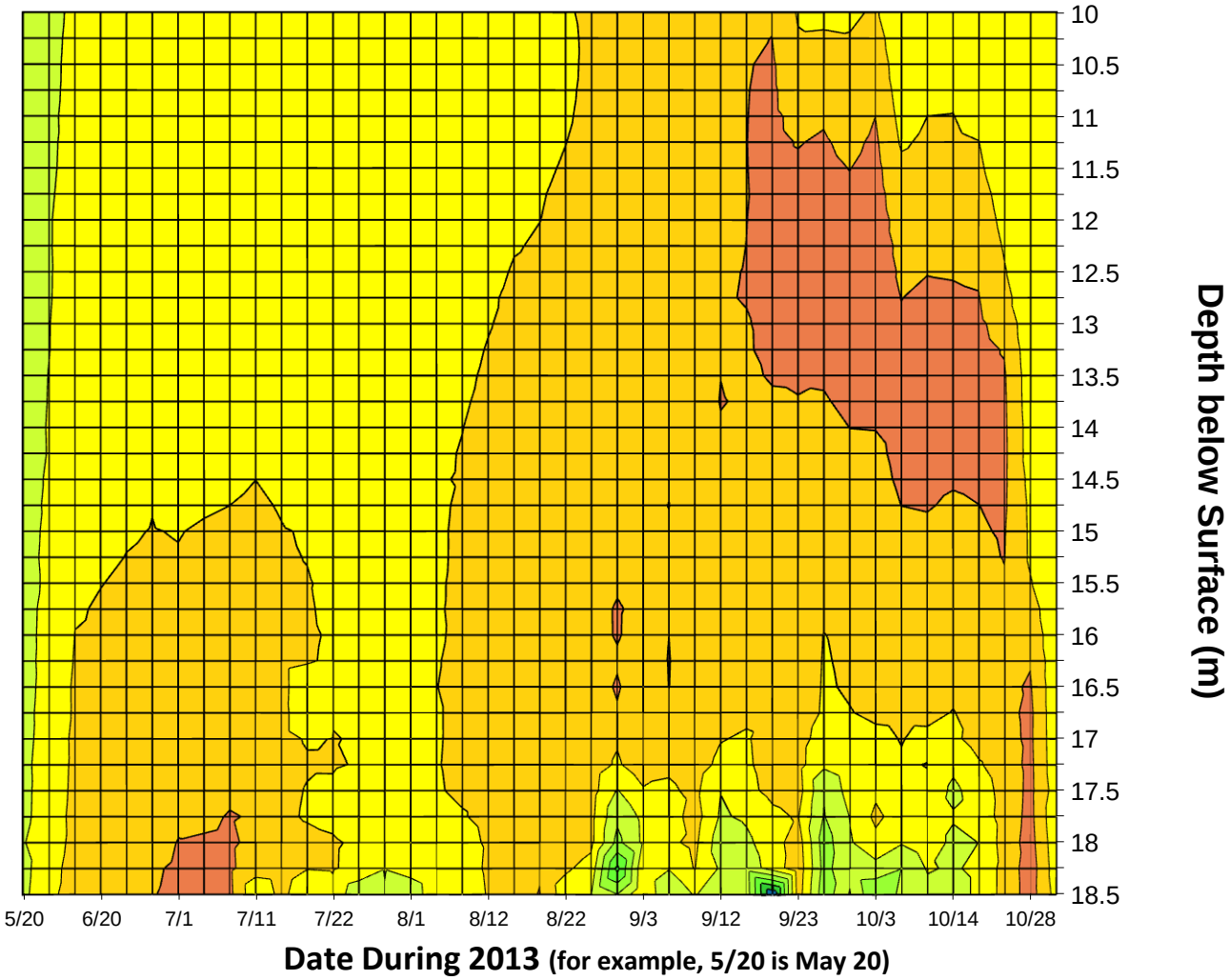




Note: Volume-weighted concentrations for the north and south basins were determined from ISUS profiles and the respective water volumes of the basins.

Figure 11 2013 Nitrate Depletion Rates in the Hypolimnion (10 to 19-Meter Water Depths)

Figure 12
Hypolimnetic Nitrate Profile (mgN/L) Througout the 2013 Application Season



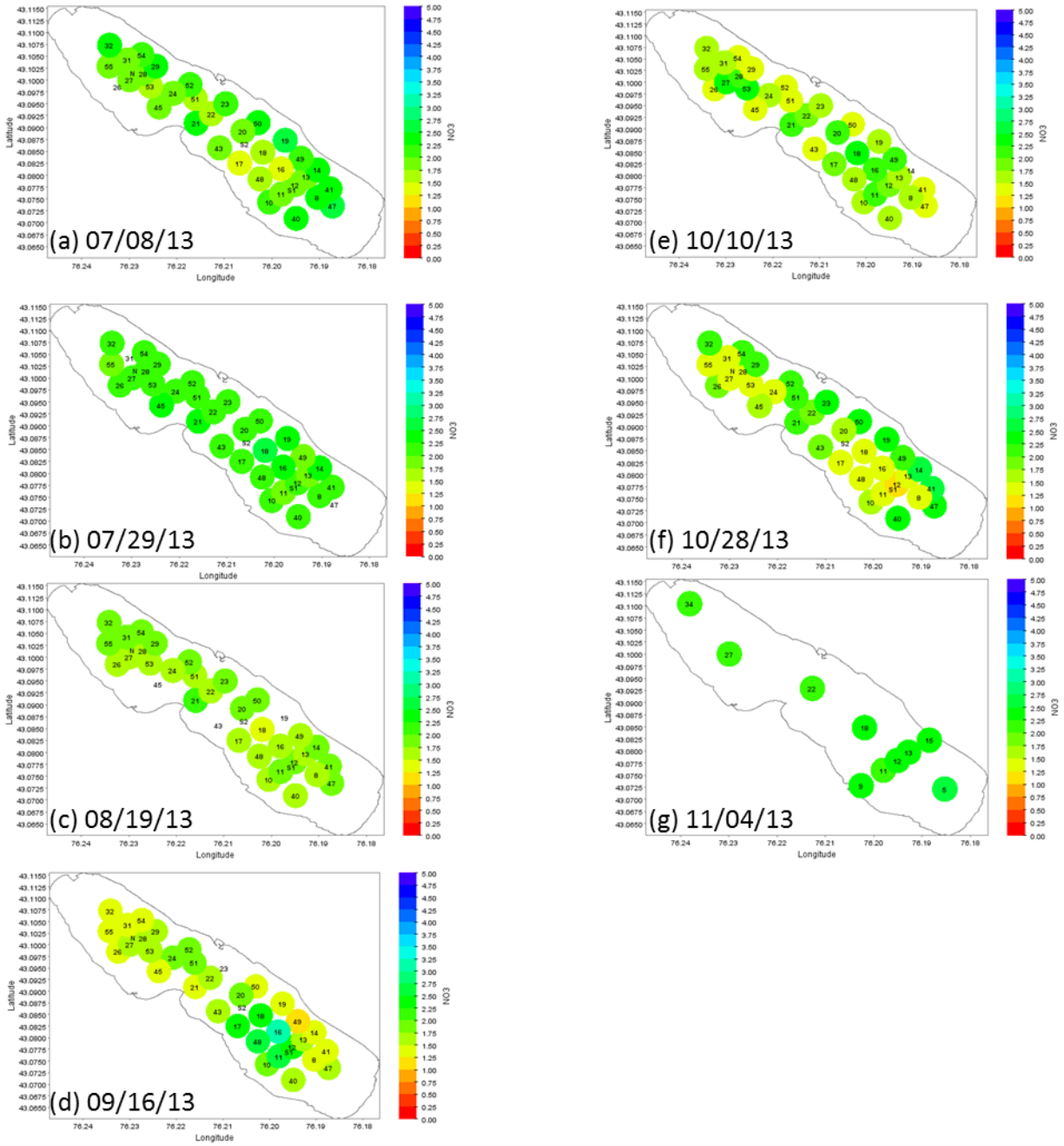
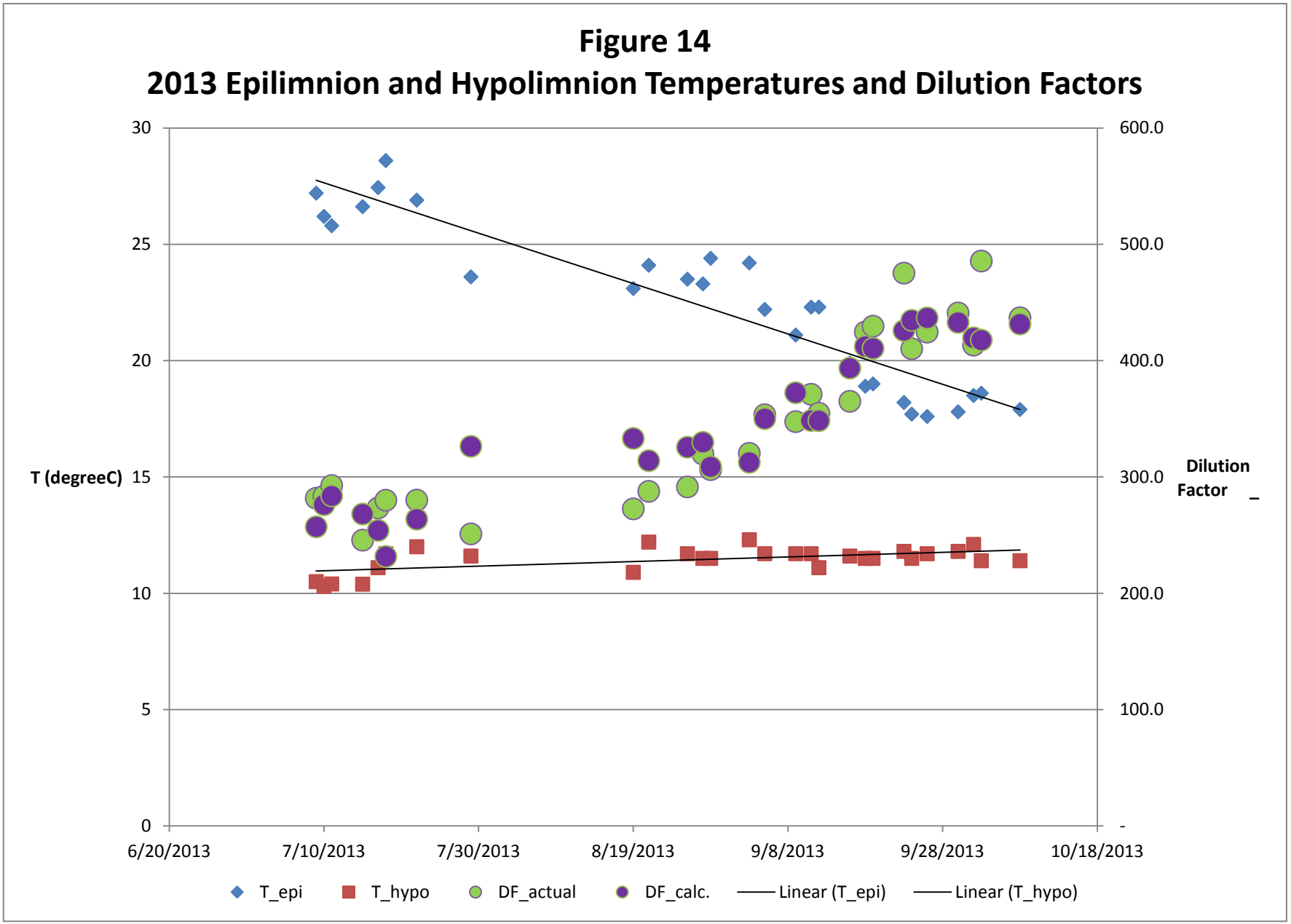
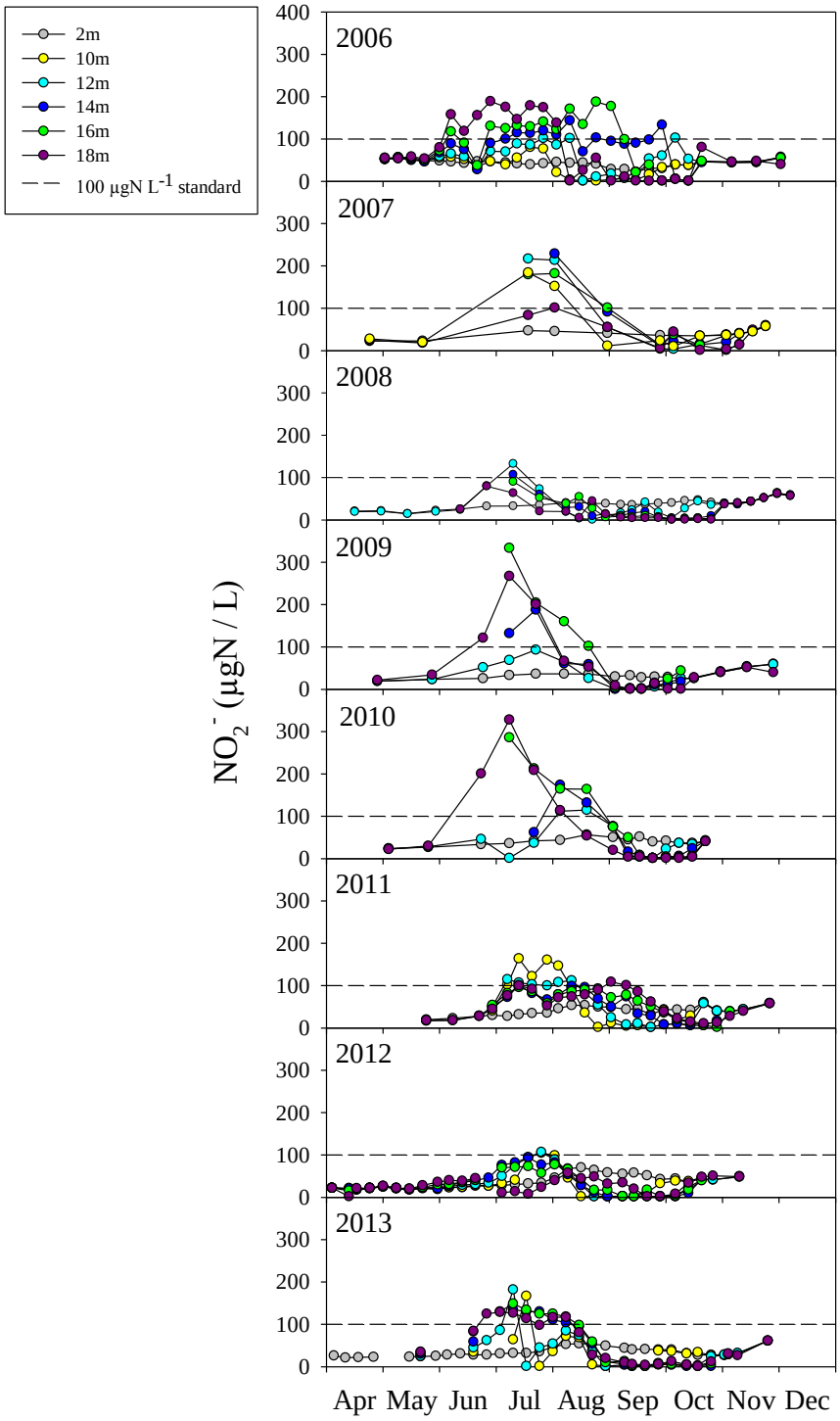


Figure 13 Representative Plan-View Plots of Nitrate Concentrations (mgN/L) One Meter above the Lake Bottom: July 8 Through November 4, 2013

Figure 14
2013 Epilimnion and Hypolimnion Temperatures and Dilution Factors





Note: The NYSDEC surface water quality standard for nitrite applicable to warm-water fisheries is 100 micrograms per liter (µg/L) as nitrogen.

Figure 15 2006 Through 2013 Time Series of Nitrite-Nitrogen (NO_2^--N) at South Deep for Six Different Water Depths

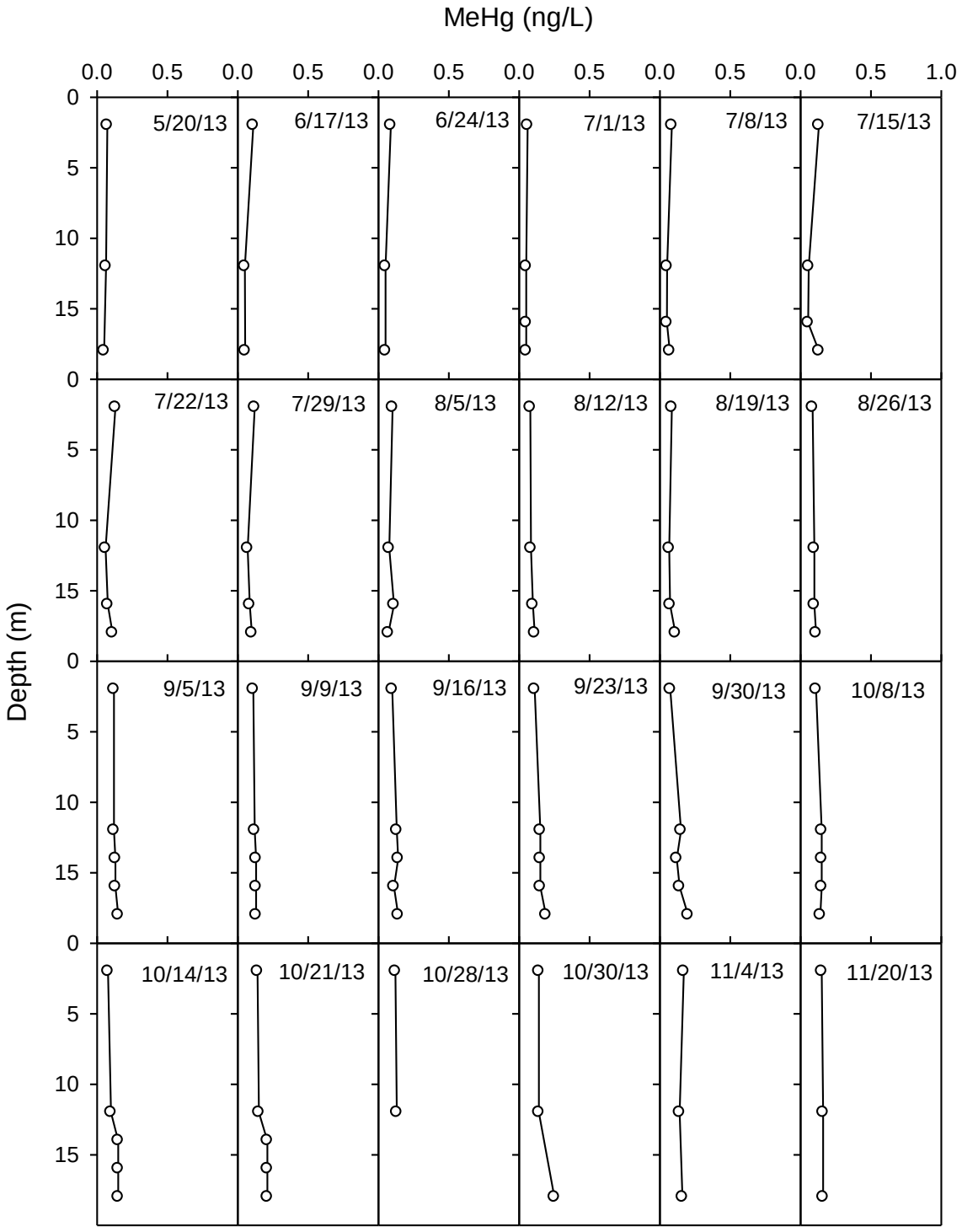


Figure 16 Vertical Profiles of Methylmercury (MeHg) Concentrations Measured at South Deep: May 20 to November 20, 2013

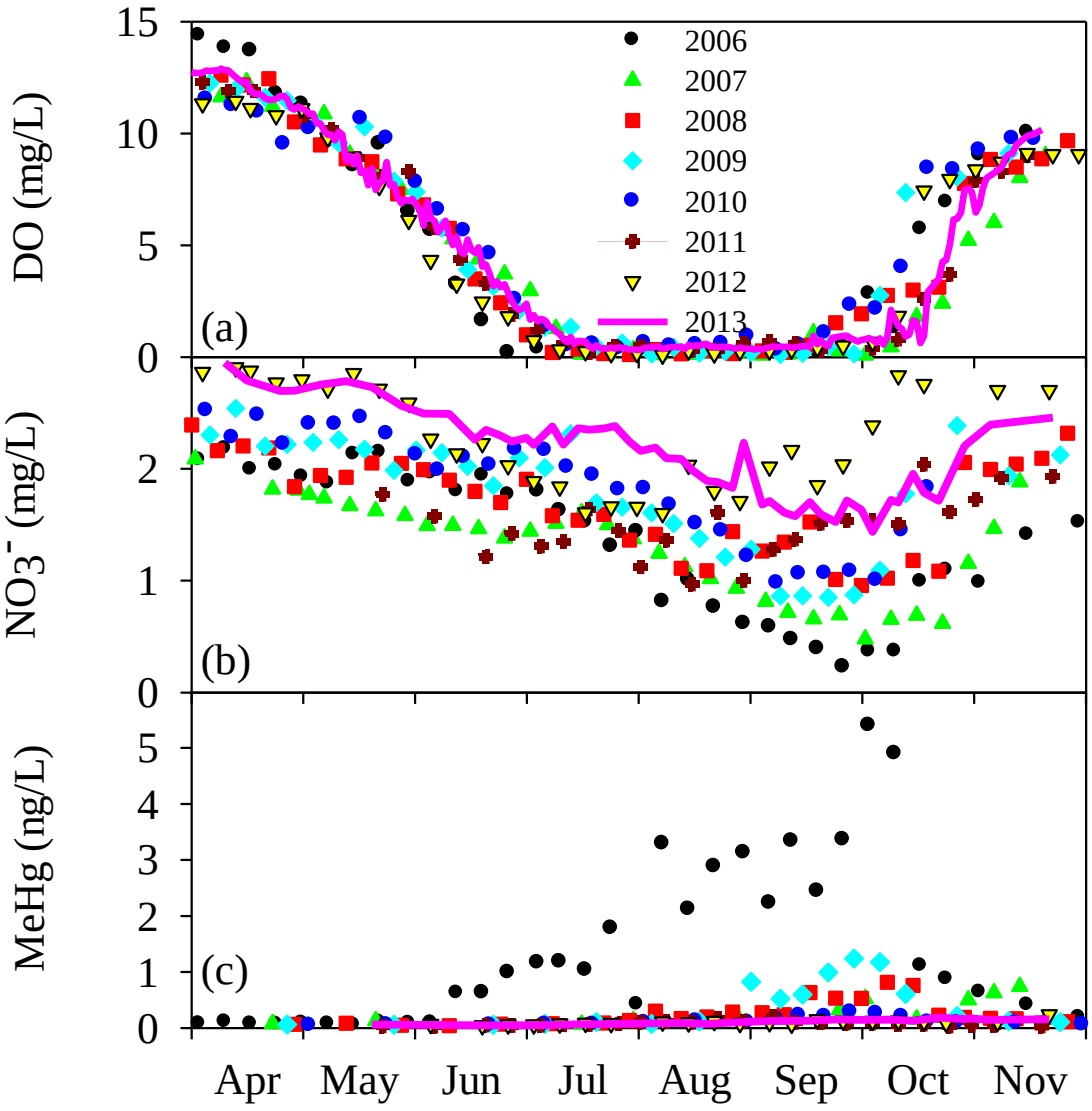


Figure 17 2006-2013 Volume-weighted concentrations of (a) dissolved oxygen (DO), (b) nitrate (NO3-), and (c) methylmercury (MeHg) in the hypolimnion (10-19 meter water depths) of Onondaga Lake

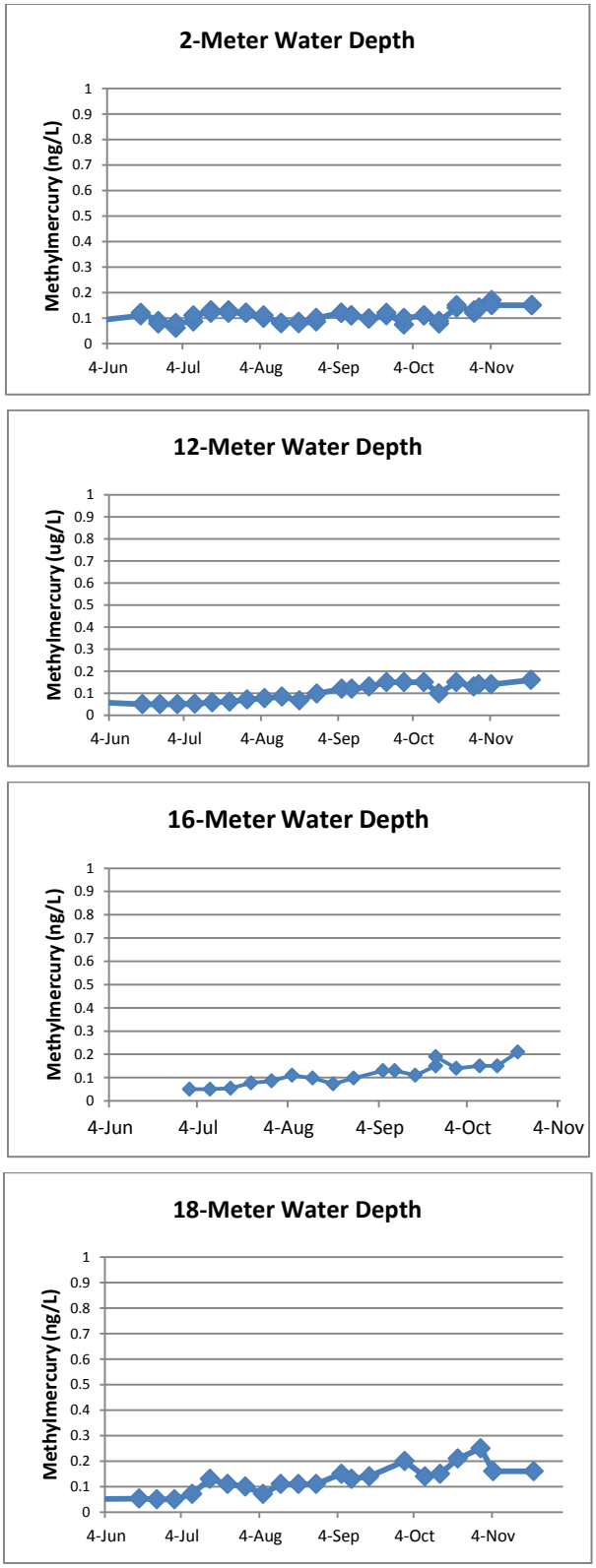


Figure 18 2013 Methylmercury Concentrations at 2, 12, 16 and 18-Meter Water Depths at South Deep

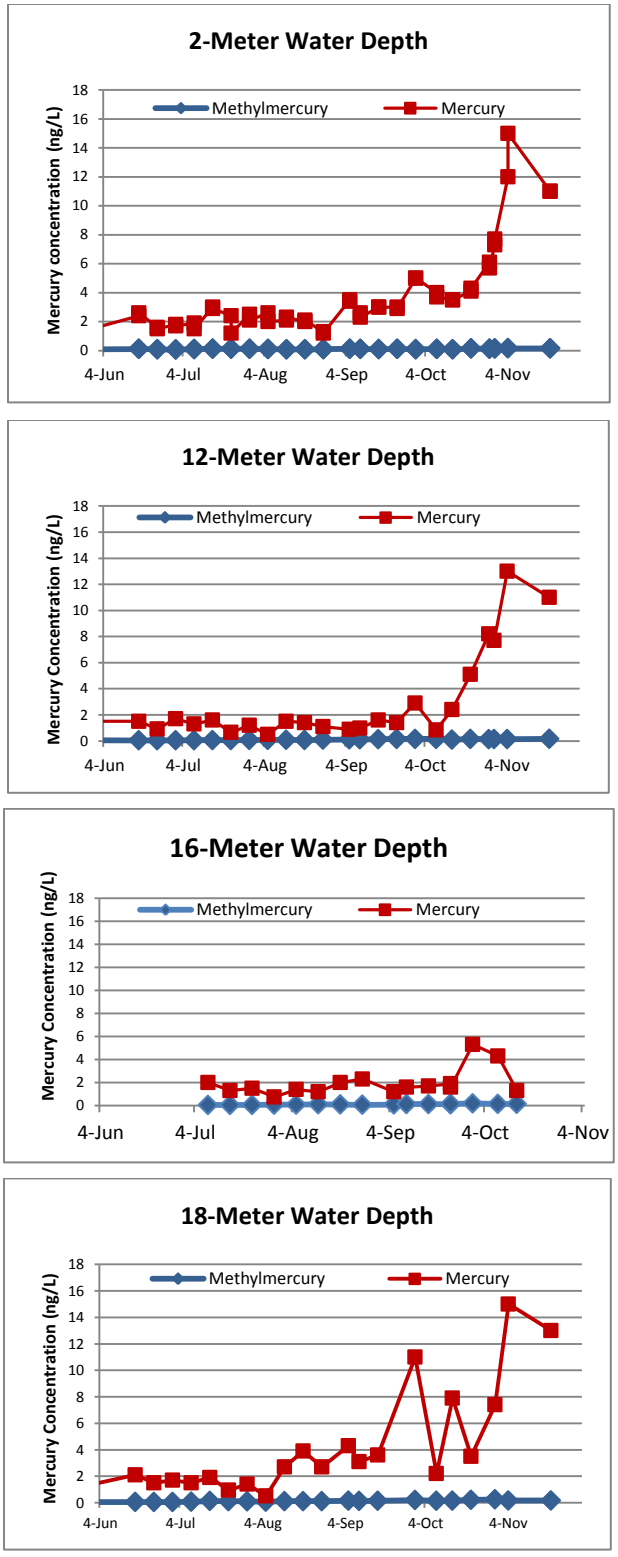


Figure 19 2013 Mercury and Methylmercury Concentrations at 2, 12, 16 and 18-Meter Water Depths at South Deep

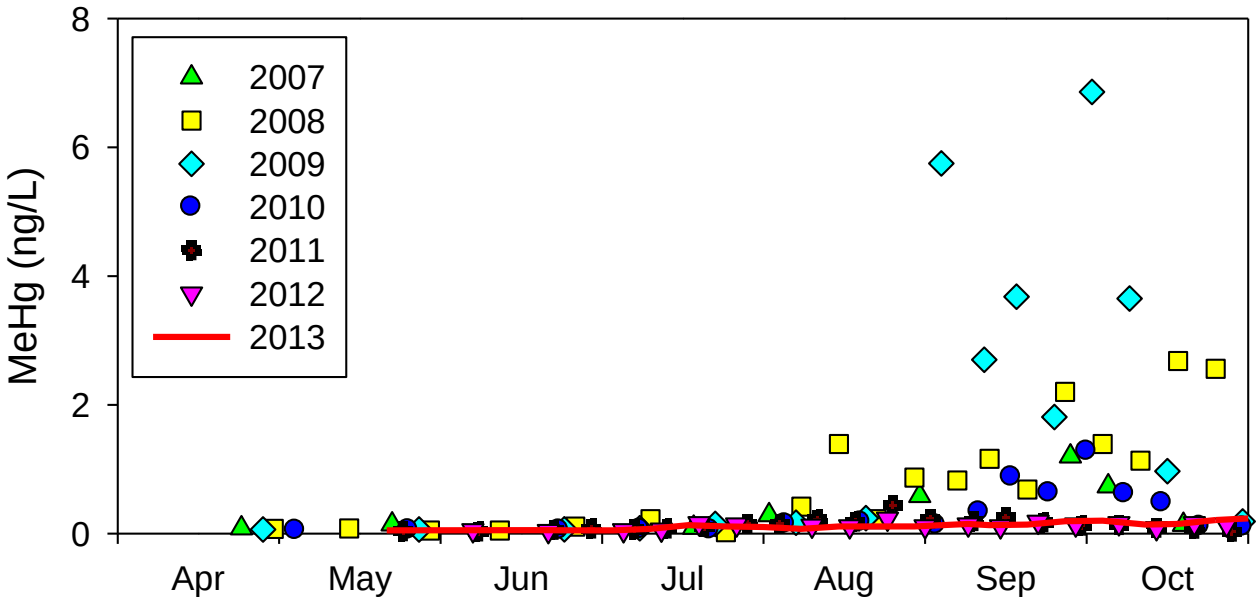


Figure 20 2007-2013 Time series of methylmercury (MeHg) concentrations measured at the 18-meter water depth of Onondaga Lake

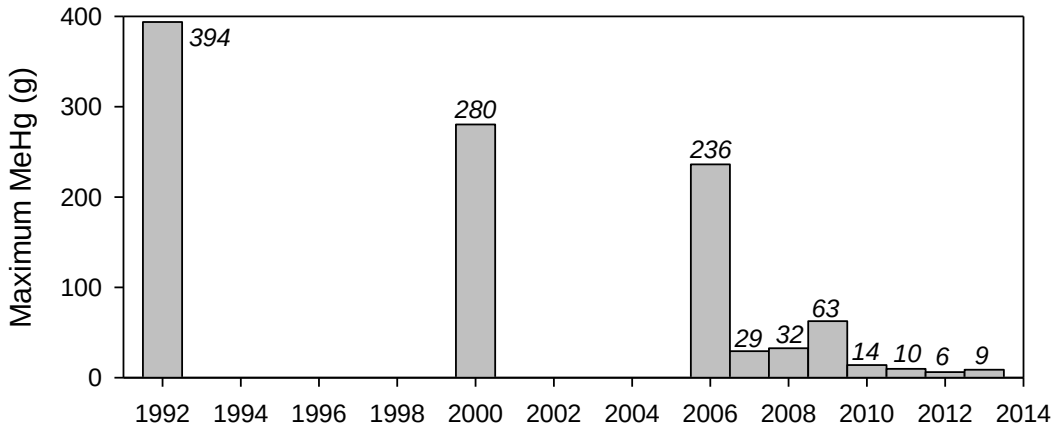
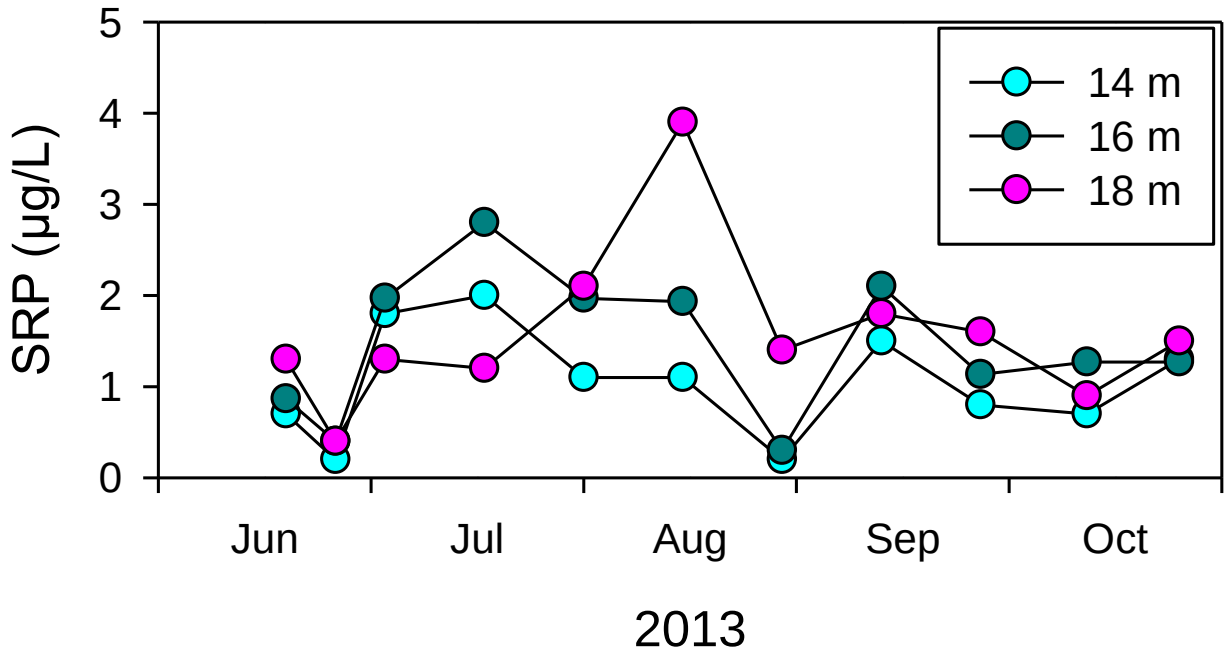


Figure 21 Annual Maximum Mass of Methylmercury (MeHg) in the Hypolimnion (10 to 19-meter water depth) of Onondaga Lake from 1992 through 2013.



Note: The three water depths with SRP data are 14 meters (14 m or 46 ft), 16 meters (16 m or 52 ft) and 18 meters (18 m or 59 ft)

Figure 22 Mid-June through Mid-October 2013 Time Series of Soluble Reactive Phosphorus (SRP) Concentrations at Three Water Depths in the Hypolimnion of Onondaga Lake

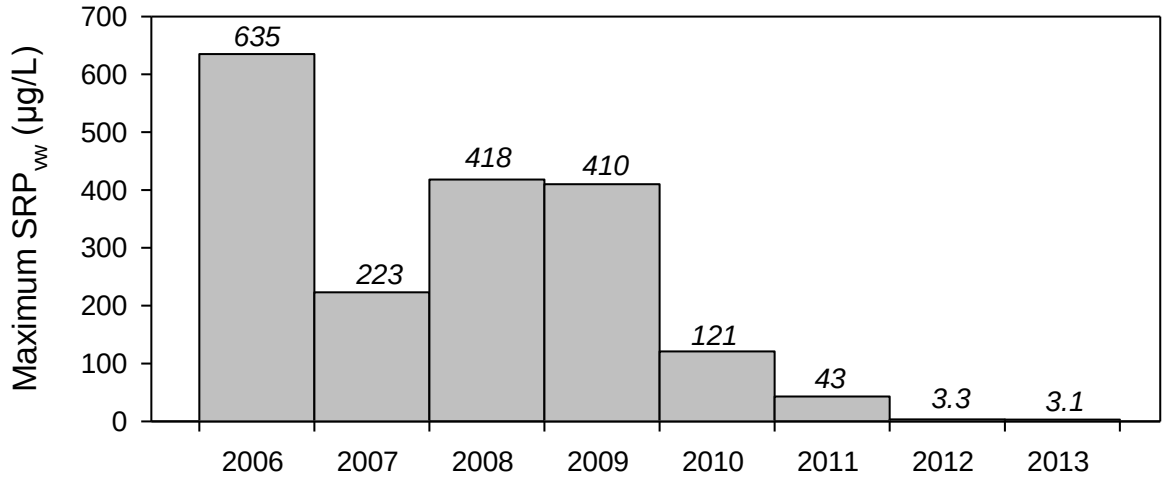


Figure 23 Annual Maximum Volume-Weighted Concentrations of Soluble Reactive Phosphorus (SRP) in the Lower Hypolimnion of Onondaga Lake (14 to 19-meter water depth) from 2006 through 2013

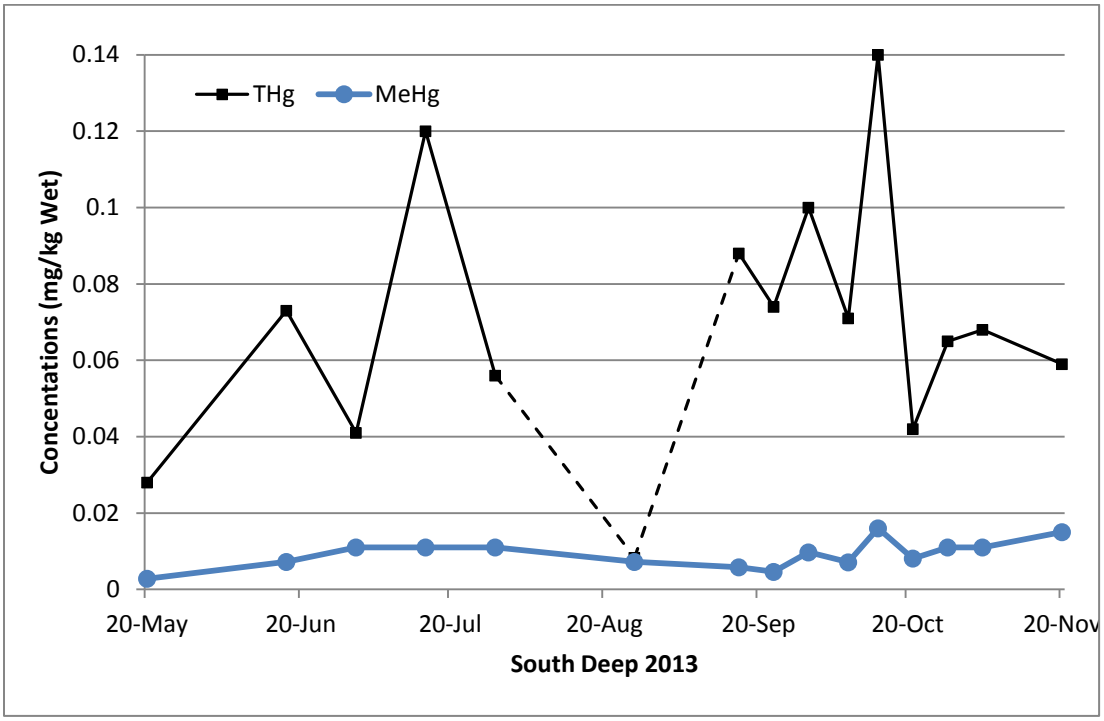


Figure 24A Total Mercury (Hg) and Methylmercury (MeHg) Concentrations in Zooplankton at South Deep in 2013

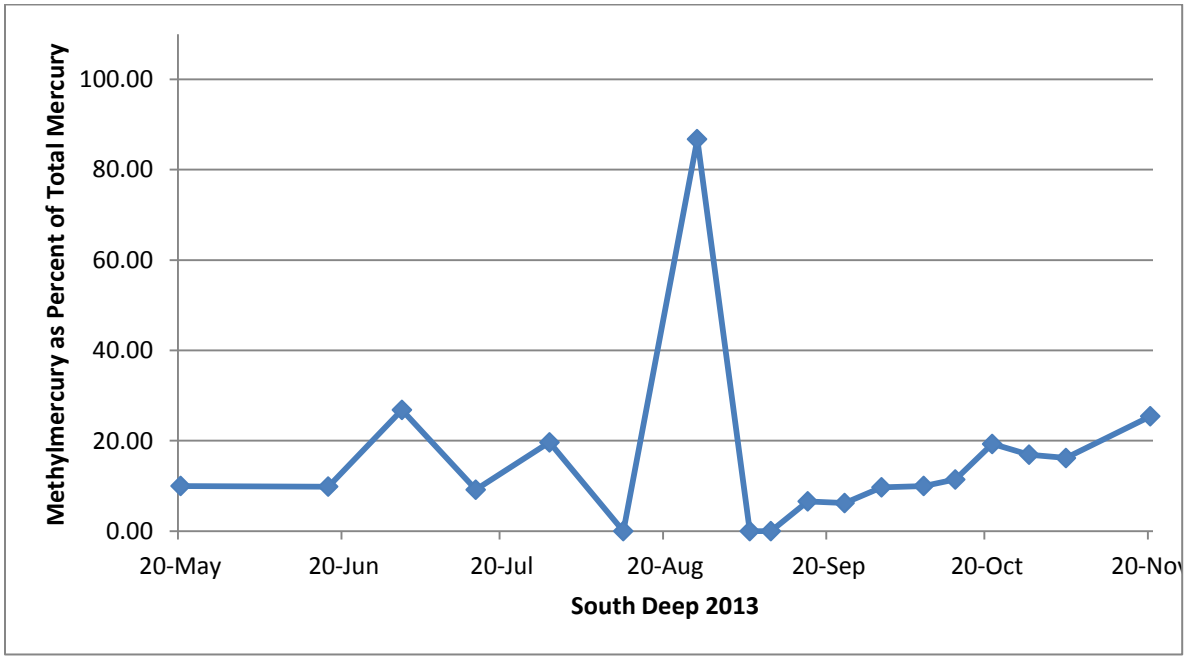


Figure 24B Percent Contribution of Methylmercury (MeHg) to total Mercury (THg) in Zooplankton at South Deep in 2013

APPENDIX A

2013 PHOTO LOG OF NITRATE APPLICATION PROCEDURES

APPENDIX A

PHOTO LOG: 2013 NITRATE ADDITION

PROJECT: Honeywell Nitrate Pilot Test (2013) LOCATION: Syracuse, New York
PROJECT #: 448314 CLIENT: Honeywell

Status as of: July 2013
Description: View of the front of the barge looking towards the back showing: (a) the front 2,500 gallon (white) tank carrying calcium nitrate (CN-8), (b) both dilution water pumps (green), (c) the crane used to maneuver the 6-inch flexible discharge lines, (d) the discharge manifold with the option to have up to eight discharge lines operating at one time.
Photo by: AJ

Status as of: July 2013
Description: The barge as shown from the starboard side showing: (a) one dilution water pump (green), (b) one of the two flexible 10-inch suction lines (orange dropped in water), (c) the crane raised in the air, (d) the shed/office and (e) one spud in "up" position (front behind Honeywell sign).
Photo by: AJ

PROJECT: Honeywell Nitrate Pilot Test (2013) LOCATION: Syracuse, New York
PROJECT #: 448314 CLIENT: Honeywell

Status as of: July 2013
Description: The crew assembles the 6-inch diameter dosing pipe with a diffuser on the bottom section and connects them to the manifold using the crane. Six of the eight available ports on the manifold were used during nitrate applications. The pontoon boat is tied up to the front of the barge to assist in connecting the pipe sections together and then to the manifold.
Photo by: AJ

Status as of: July 2013
Description: View of the starboard side of the barge deck showing: (a) dilution water pump, (b) calcium nitrate tank, (c) deck dilution water connections, and (d) stairs to back of barge.
Photo by: AJ

PROJECT: Honeywell Nitrate Pilot Test (2013)
PROJECT #: 448314

LOCATION: Syracuse, New York
CLIENT: Honeywell

Status as of: July 2013
Description: View of the port side of the barge deck showing: (a) dilution water pump, (b) two calcium nitrate tanks, (c) deck dilution water connections, and (d) water suction line (orange).
Photo by: AJ

Status as of: July 2013
Description: View of front of barge during application with 6 discharge lines connected from the manifold into the water to the desired depth in the hypolimnion.
Photo by: AJ

PROJECT: Honeywell Nitrate Pilot Test (2013) LOCATION: Syracuse, New York
PROJECT #: 448314 CLIENT: Honeywell

Status as of: September 2013
Description: Upstate Freshwater Institute (UFI) monitors the nitrate plume at locations surrounding the barge during applications using an ISUS.
Photo by: AJ

Status as of: October 2013
Description: Chemical feed pump and controls, pumps calcium nitrate from white storage tanks to the discharge lines and into the water lines..
Photo by: HMP

PROJECT: Honeywell Nitrate Pilot Test (2012)
PROJECT #: 446625

LOCATION: Syracuse, New York
CLIENT: Honeywell

Status as of: October 2013
Description: System 'A' chemical feed system with air relief valves, chemical meter (rotometer) and with nitrate injection line to the water discharge lines.
Photo by: HMP

APPENDIX B

EXAMPLE 2013 DAILY ISUS-SUNA DATA REPORT

Appendix B
Onondaga Lake Gridding Summary Using an In-Situ Ultraviolet Spectrophotometer (ISUS):

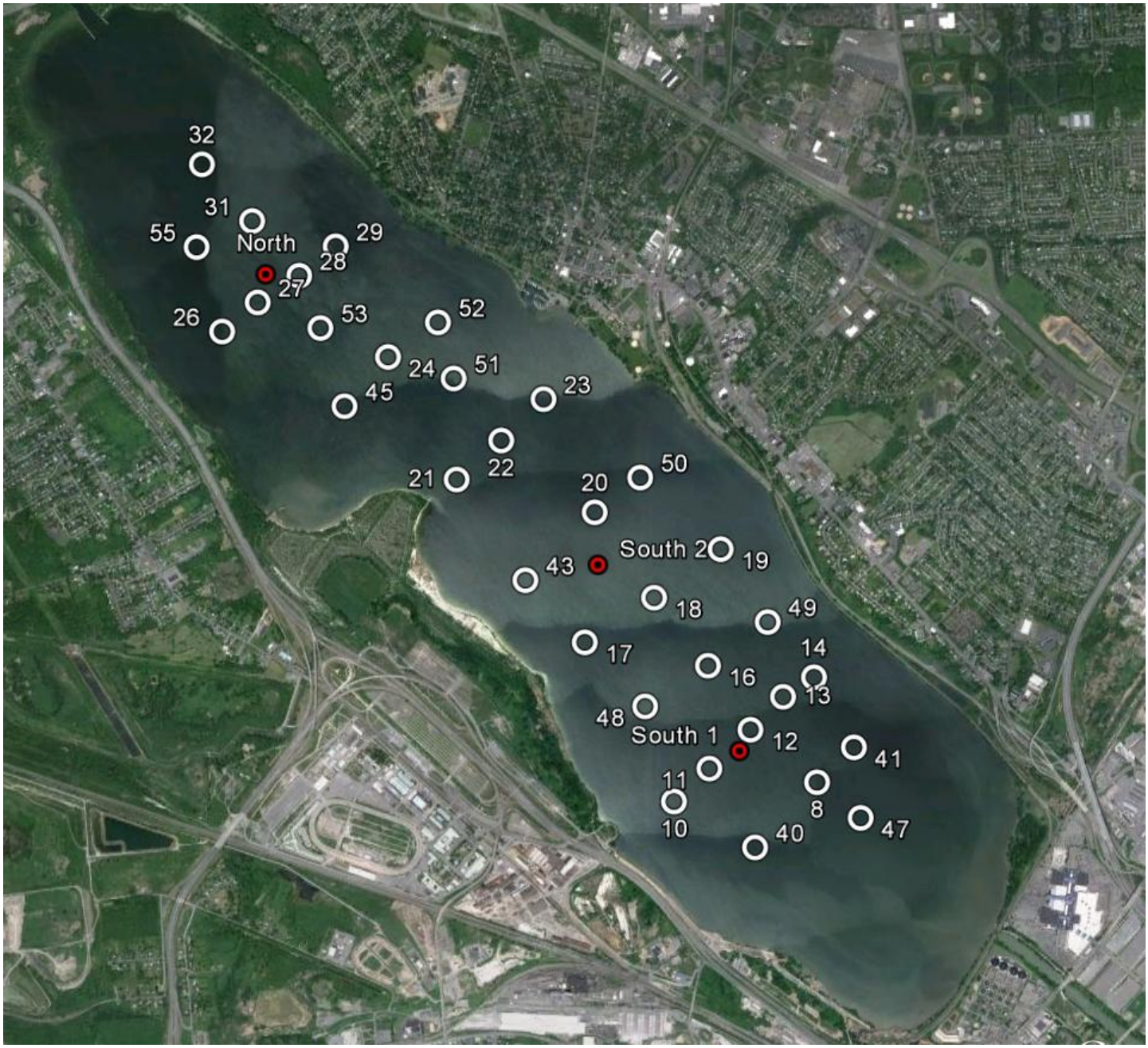
Nitrate Addition Pilot Monitoring

September 16, 2013

Provisional Data Summary

Anthony R. Prestigiacomo
Research Scientist

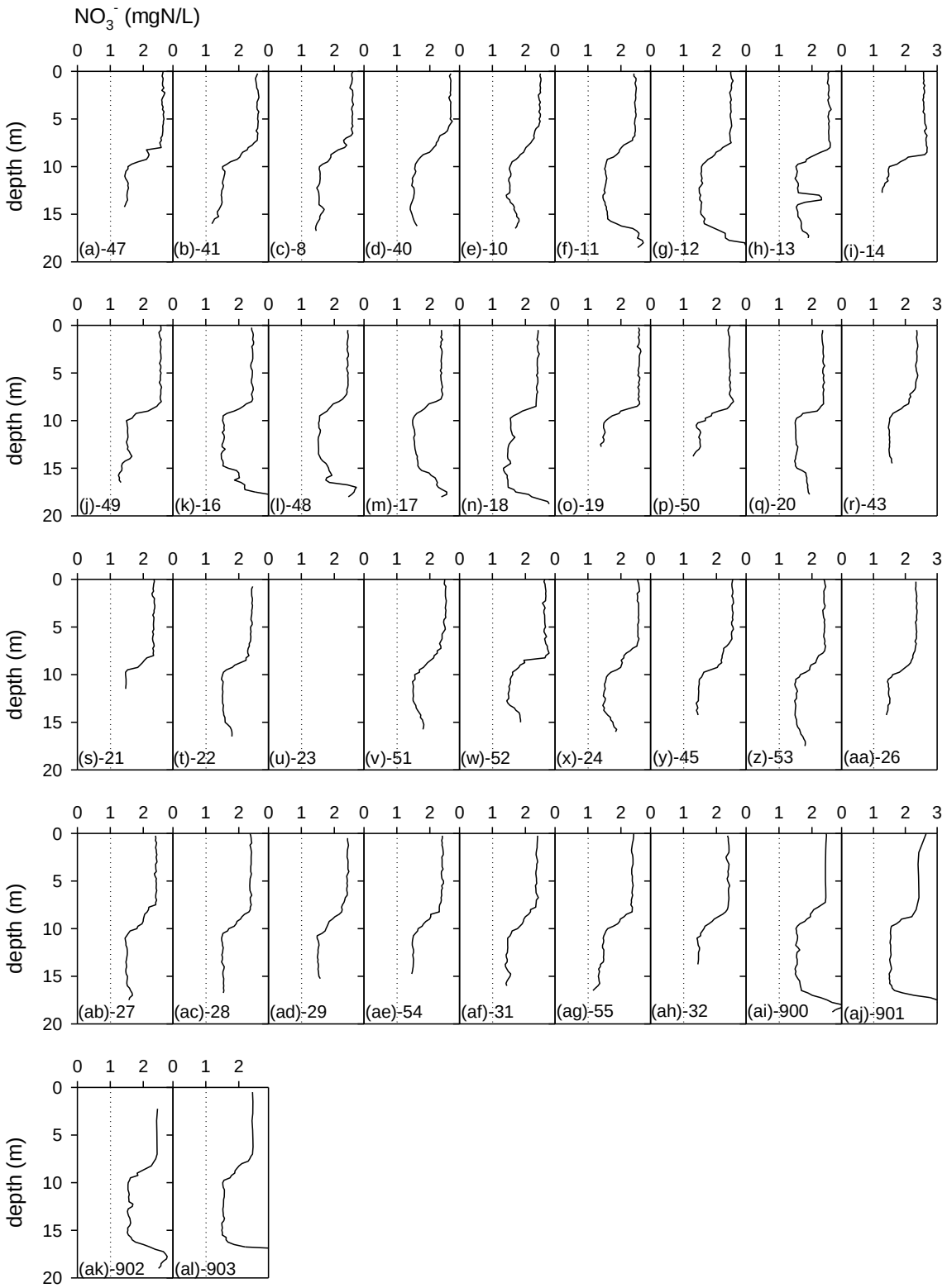
Gridding Locations



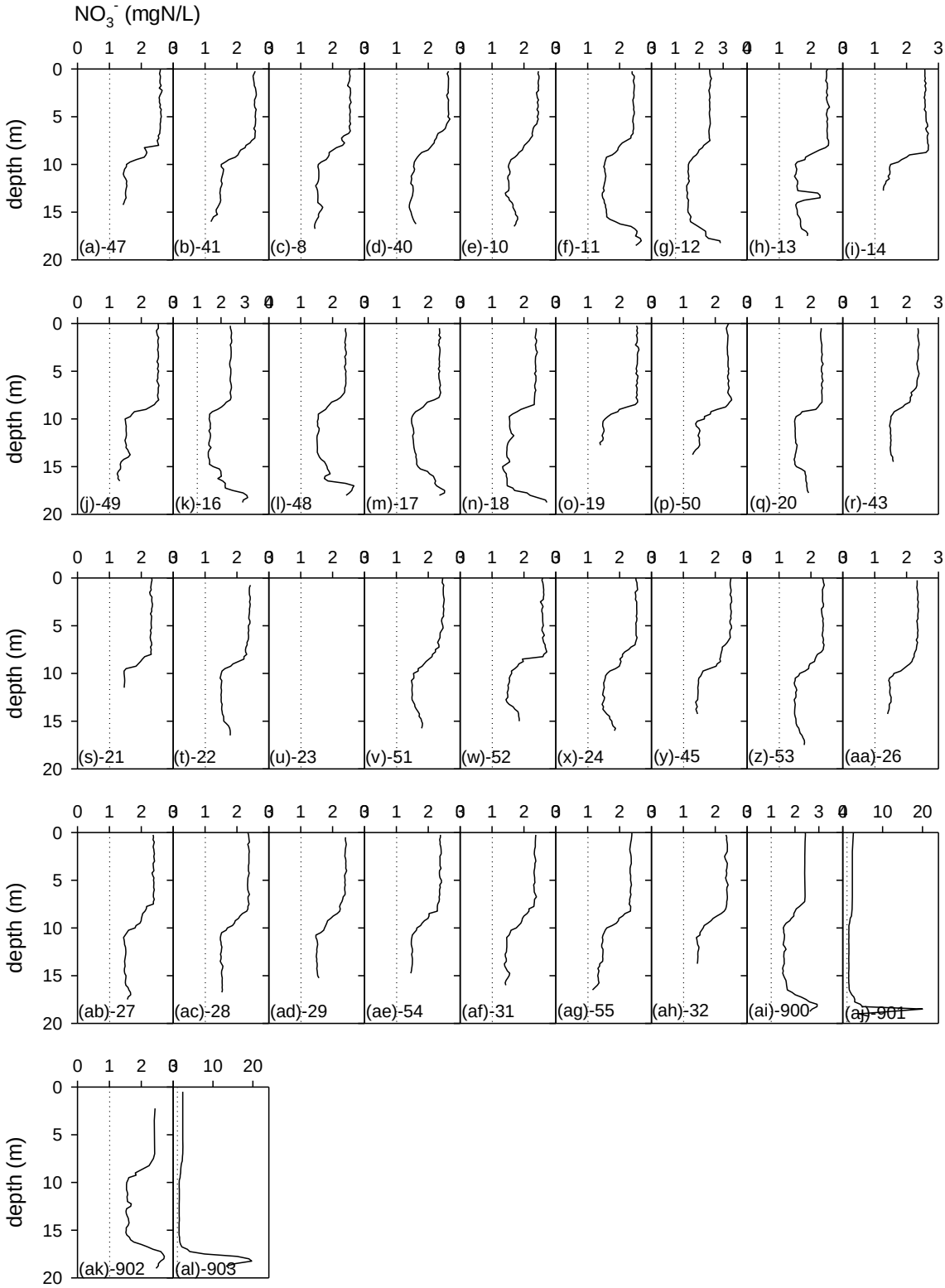
Today's injection: **S1**

white circle: gridding loocation
red circle: injection site

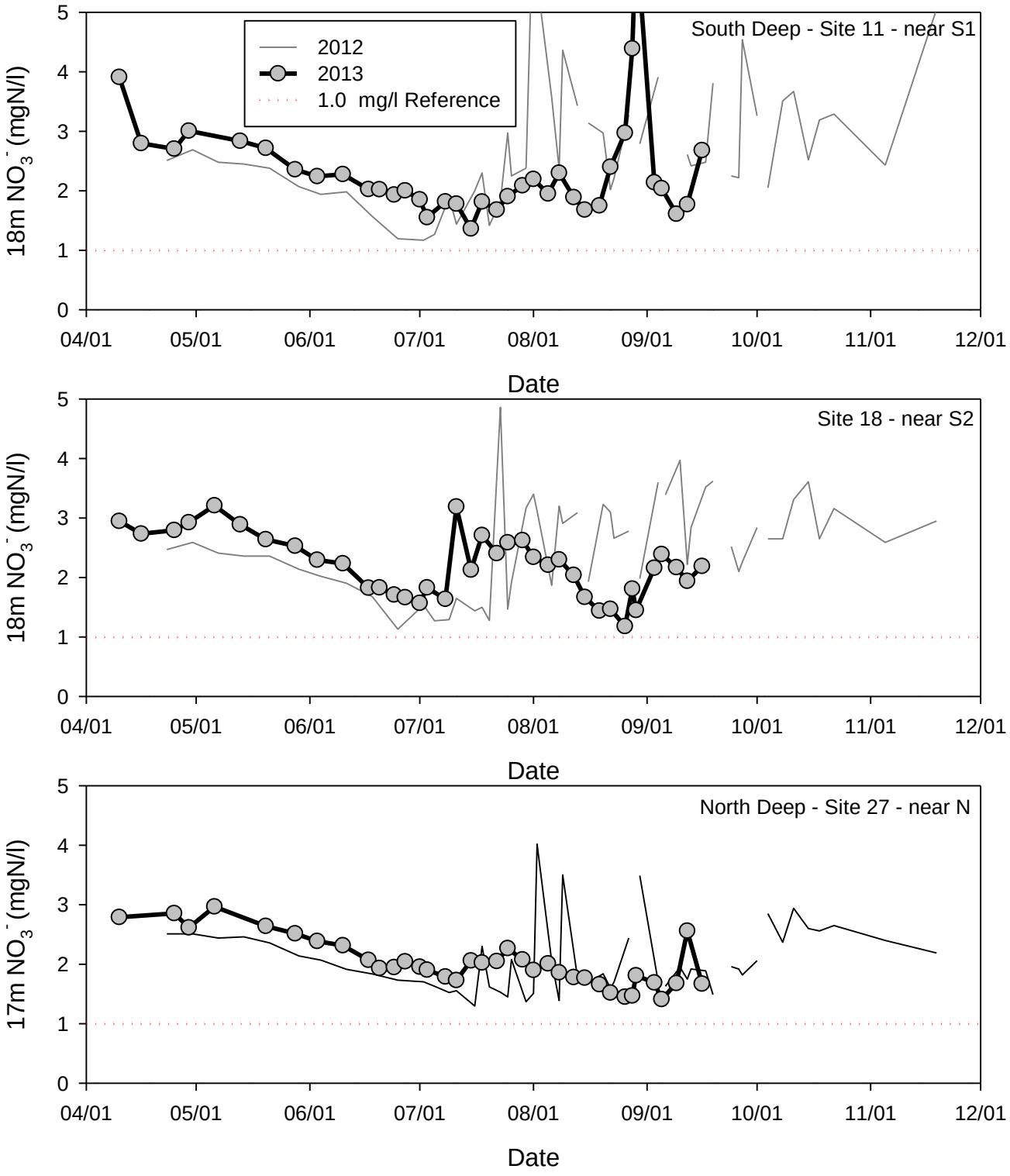
Nitrate Profiles at Each Gridding Location (0-3 mgN/L)



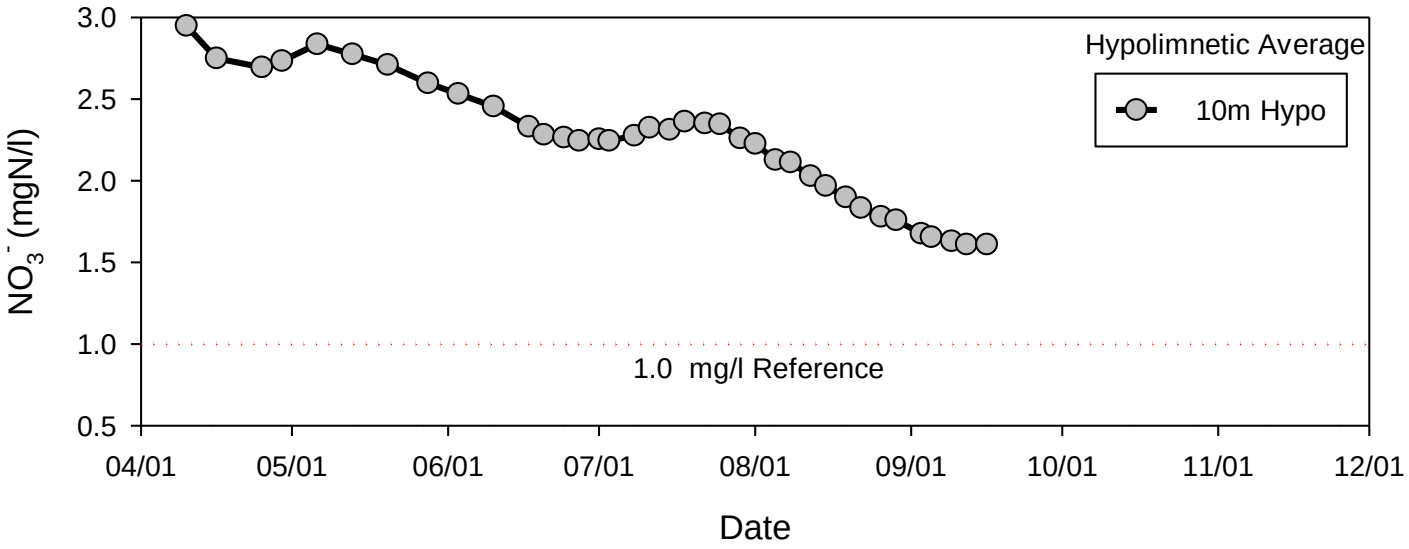
Nitrate Profiles at Each Gridding Location (Autoscale mgN/L)



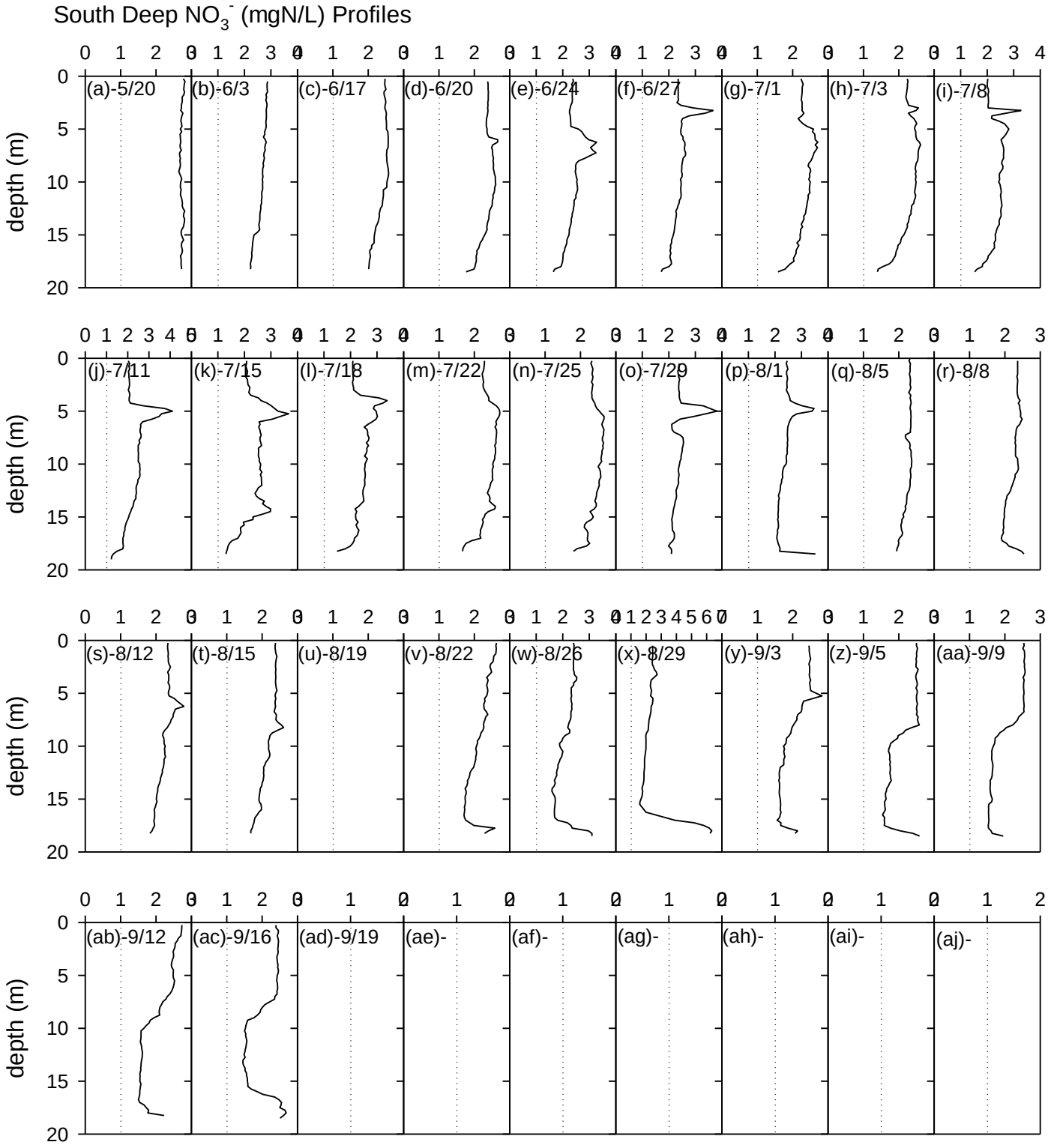
Nitrate Time Series at South Deep - 18m, Site 18 - 18m, North Deep - 17m



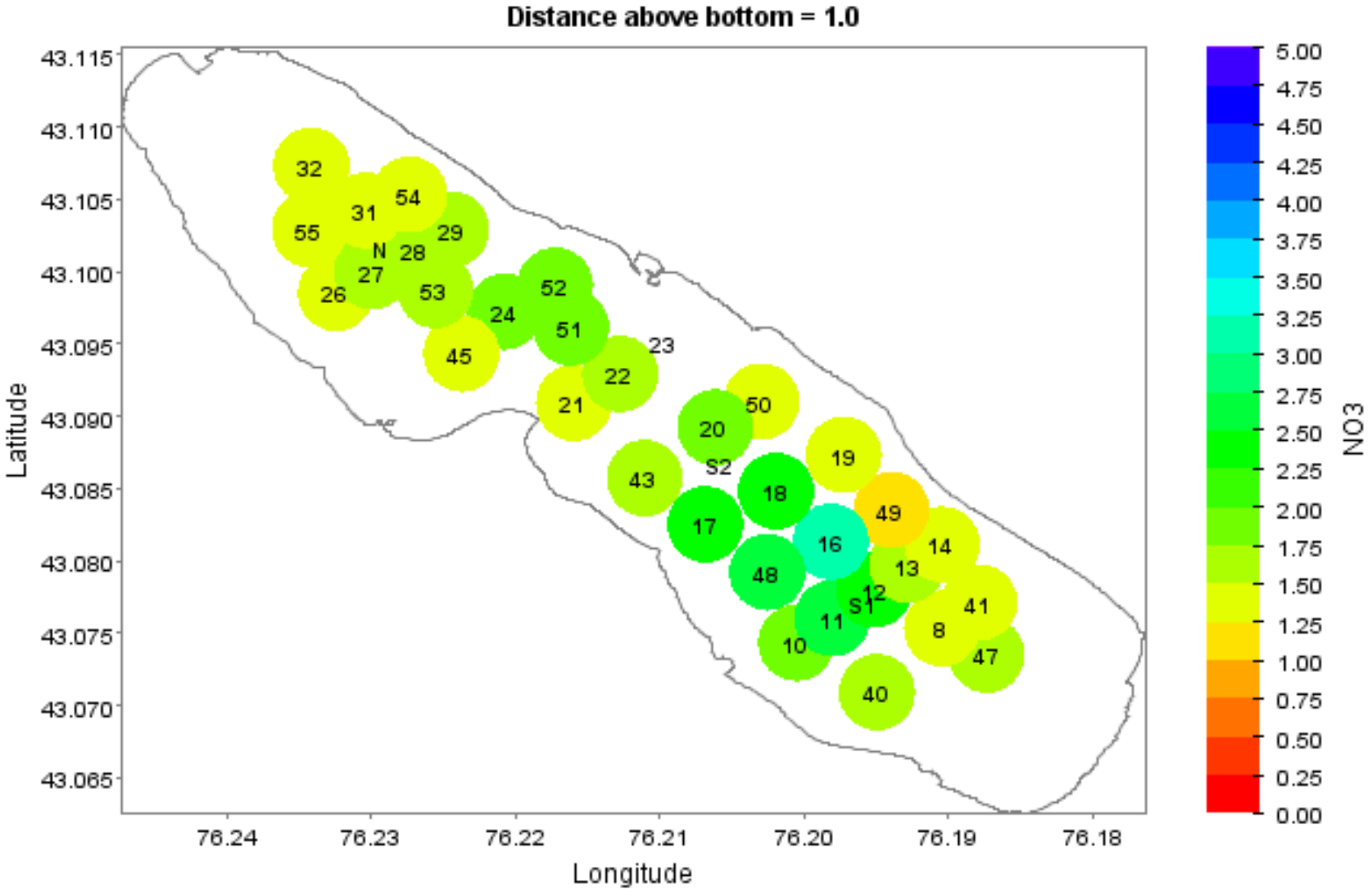
Hypolimnetic Lake-Wide Average Nitrate Concentration Time Series



Nitrate Profiles at South Deep



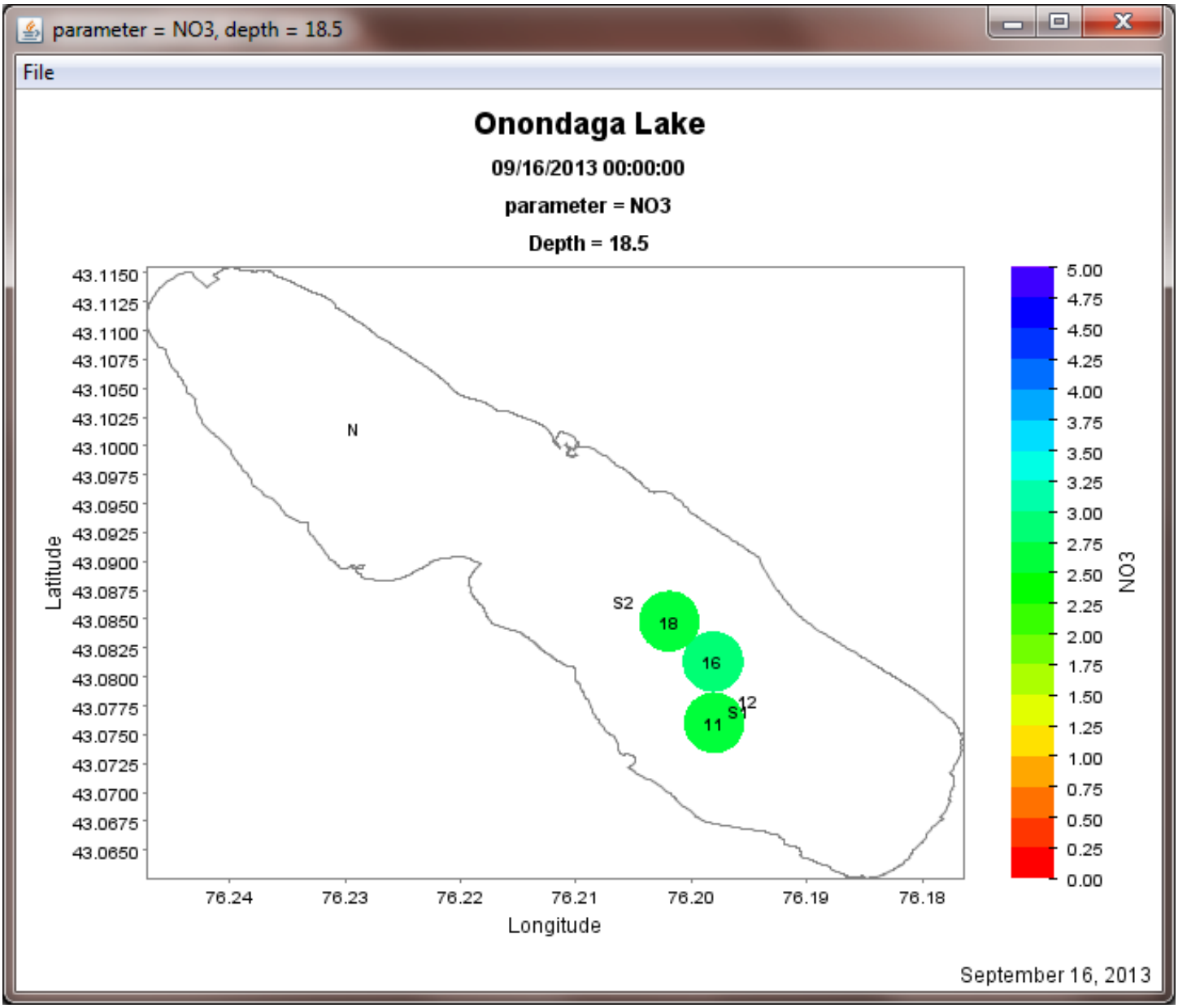
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)



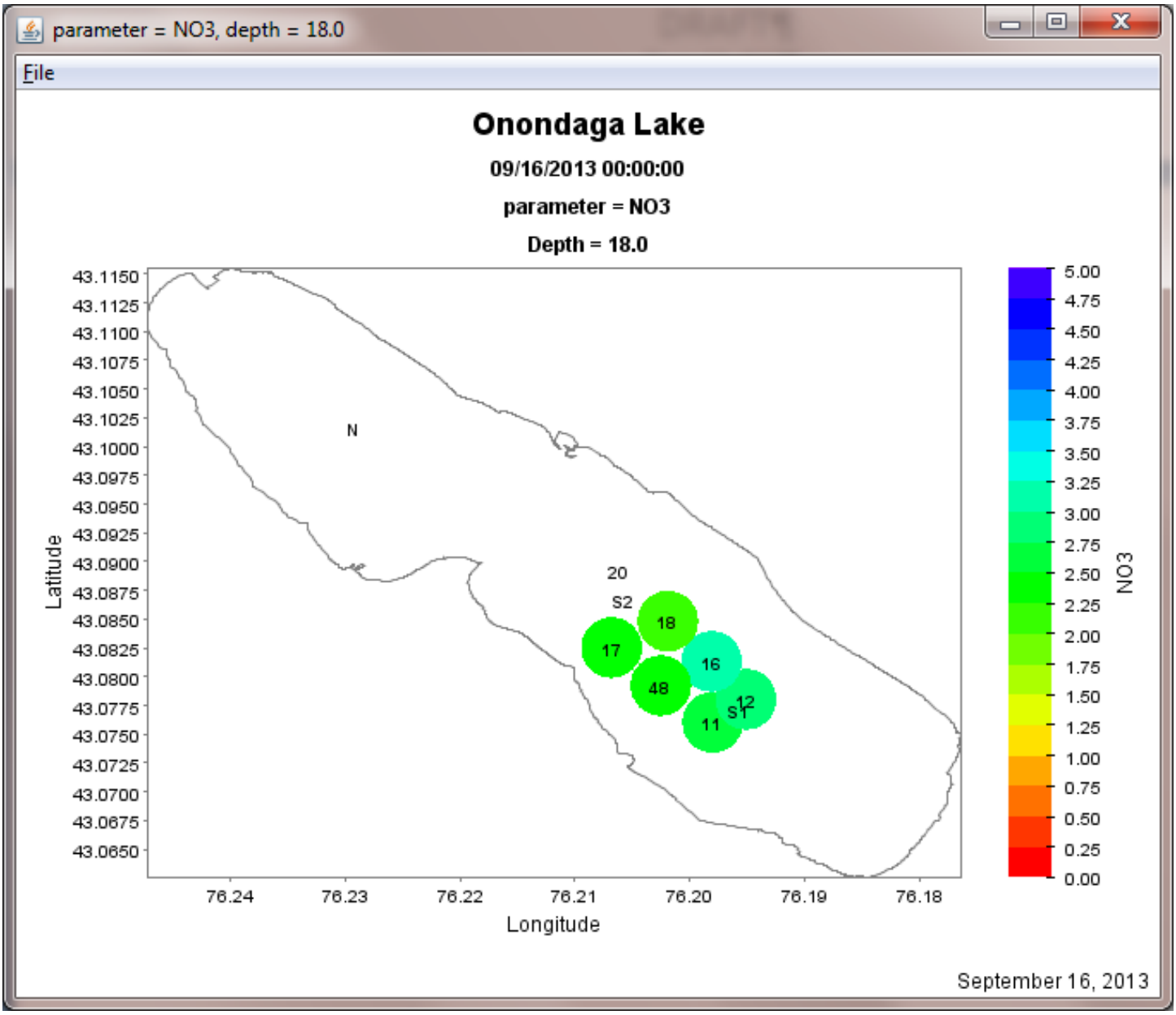
Color Bubble Plots at 19m, Nitrate (mgN/L)

no data available

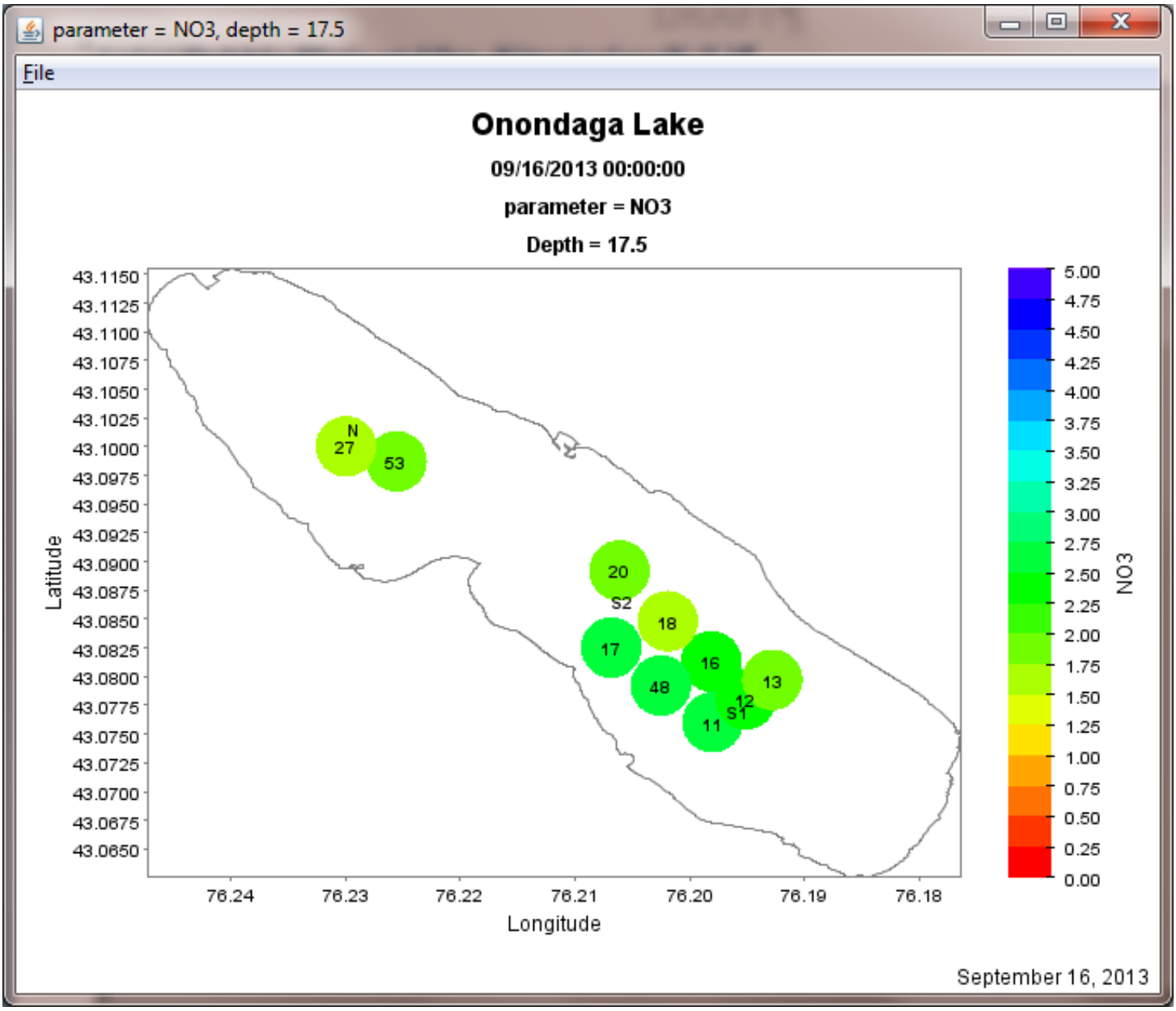
Color Bubble Plots at 18.5m, Nitrate (mgN/L)



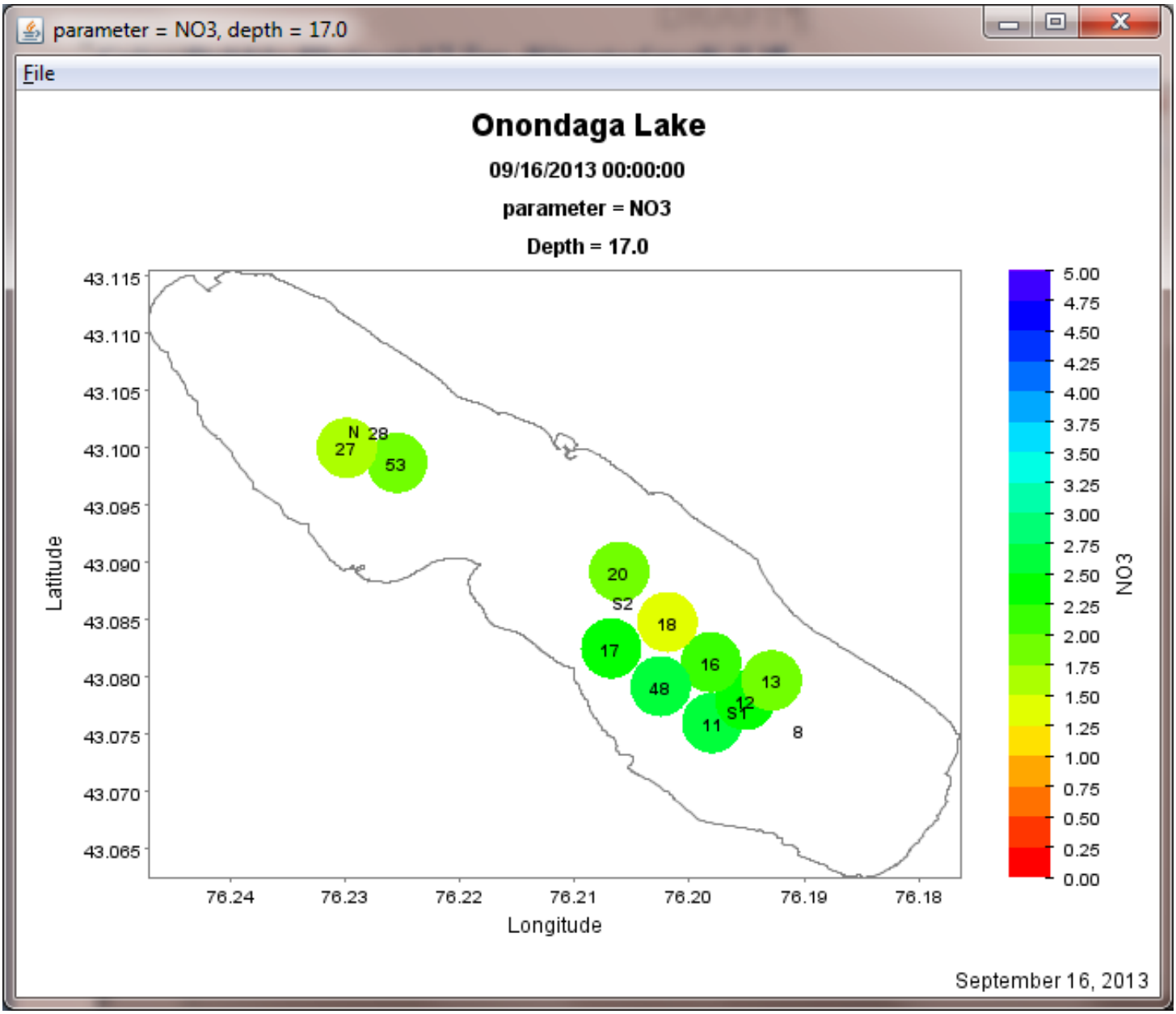
Color Bubble Plots at 18m, Nitrate (mgN/L)



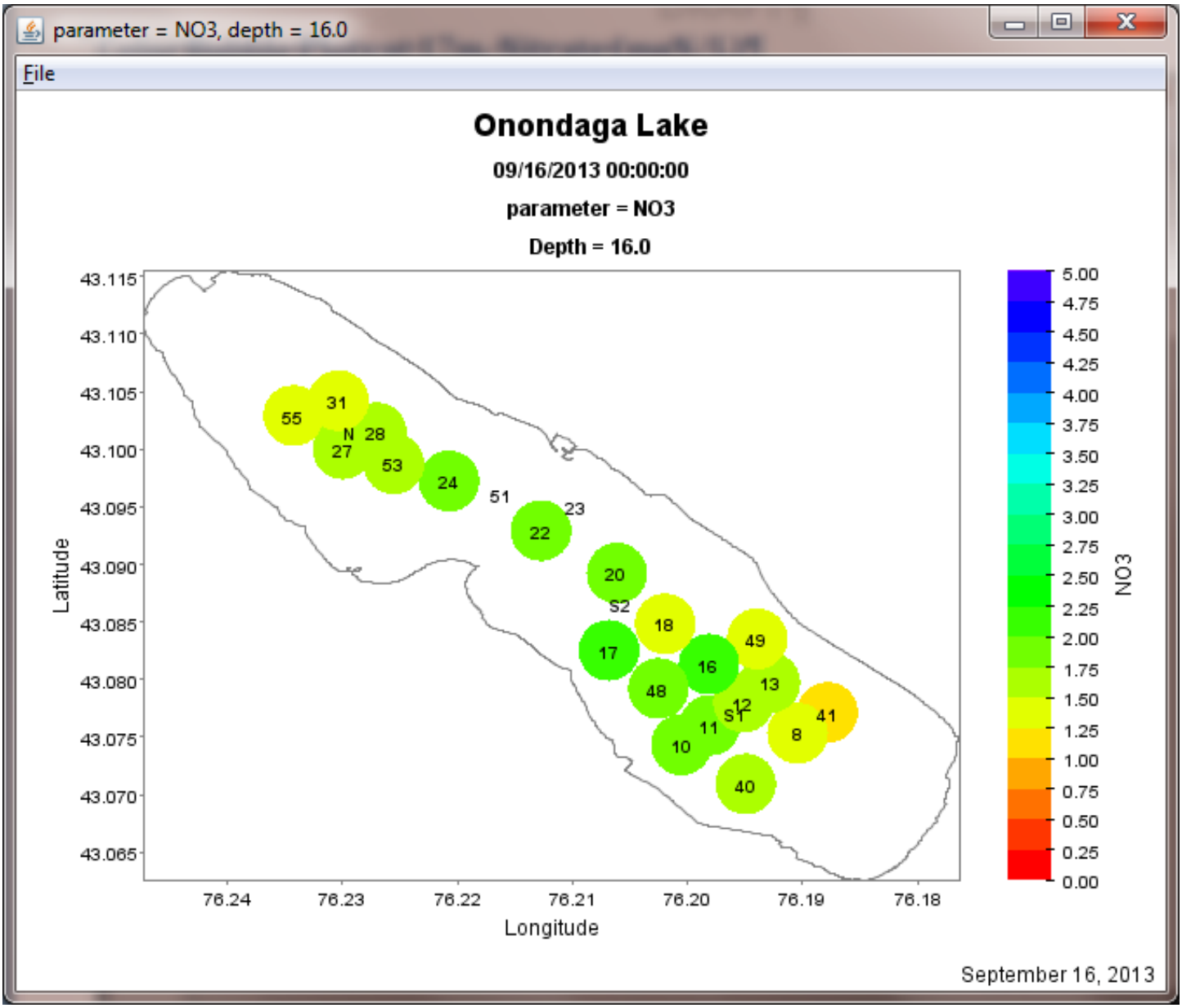
Color Bubble Plots at 17.5m, Nitrate (mgN/L)



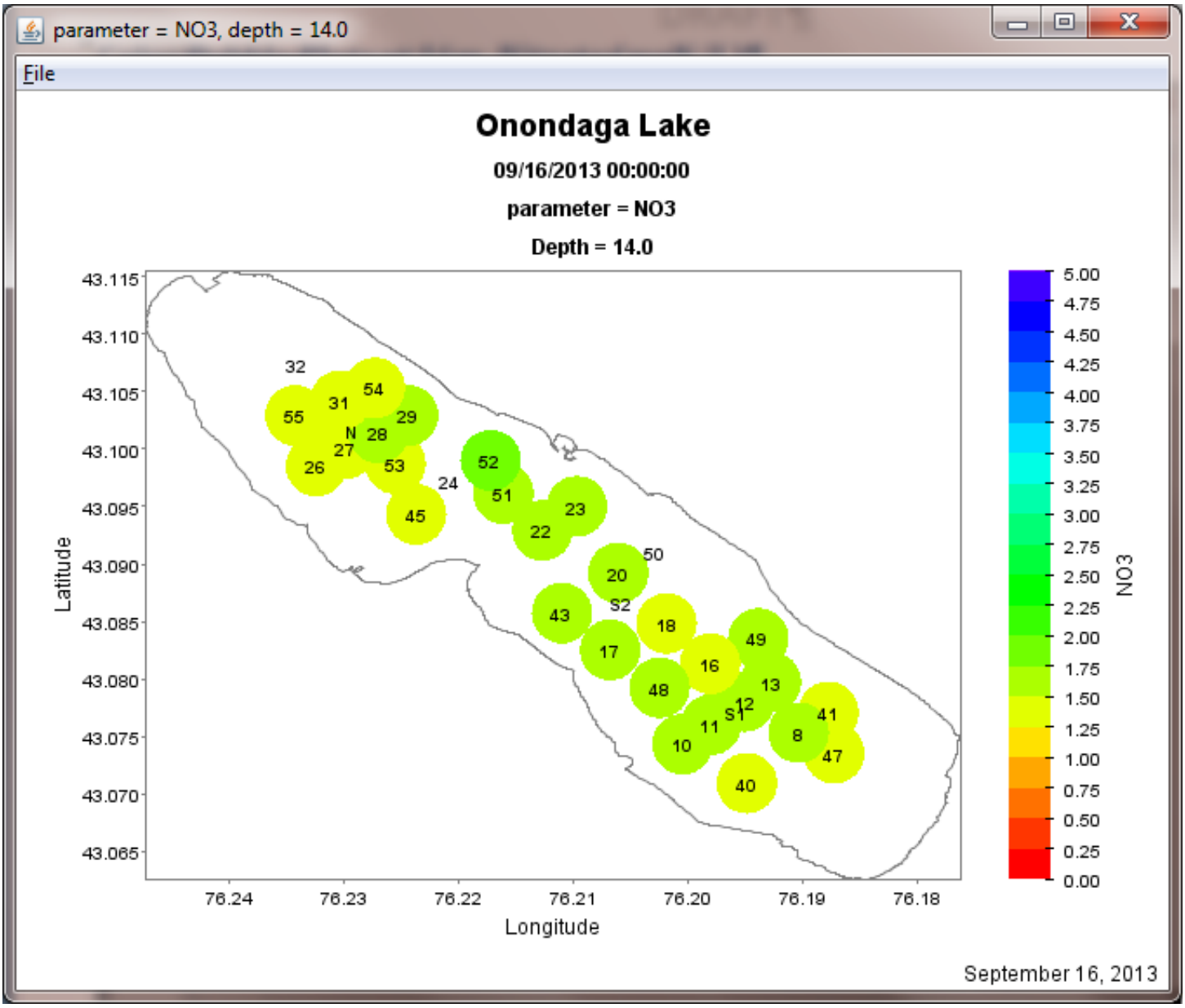
Color Bubble Plots at 17m, Nitrate (mgN/L)



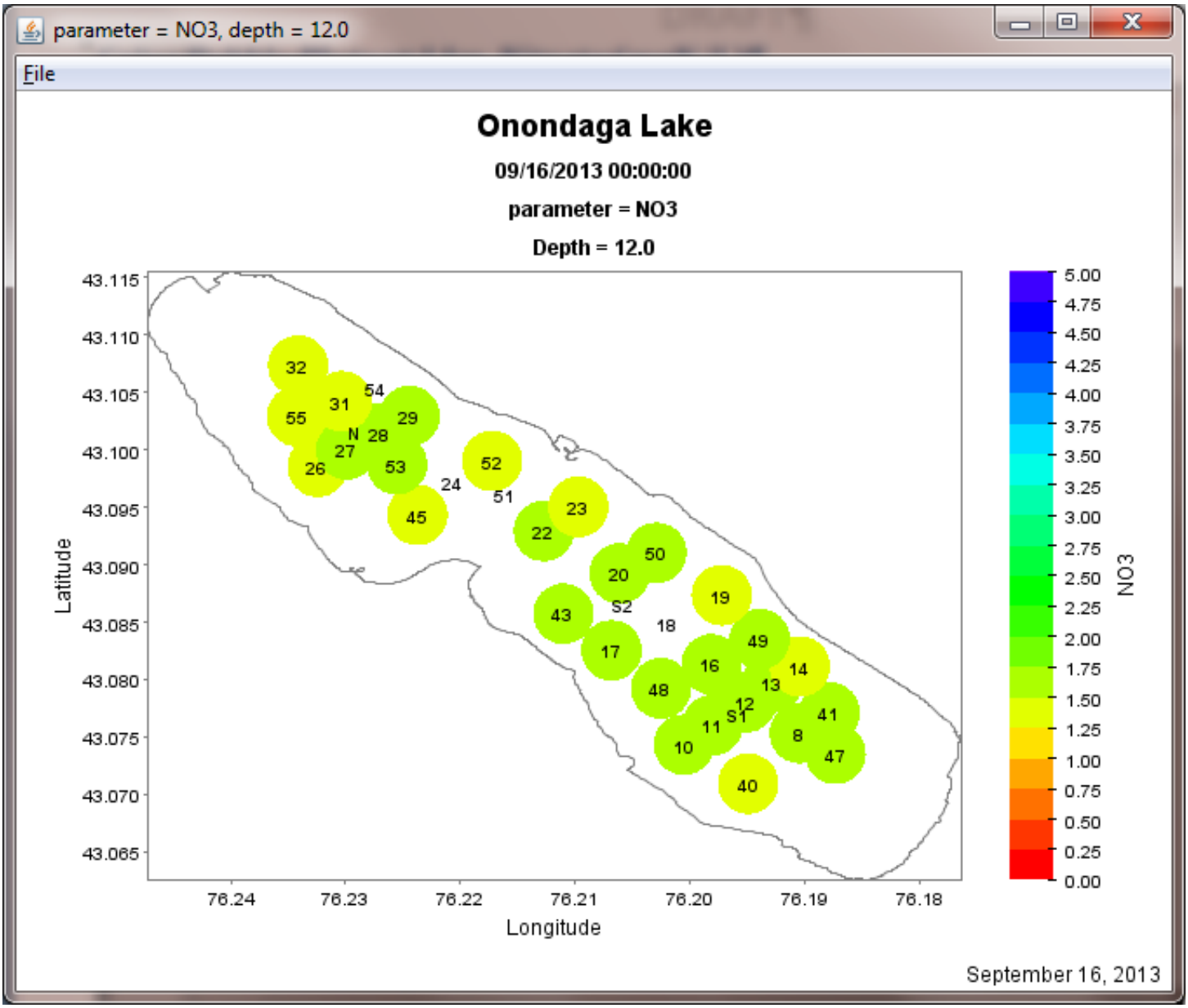
Color Bubble Plots at 16m, Nitrate (mgN/L)



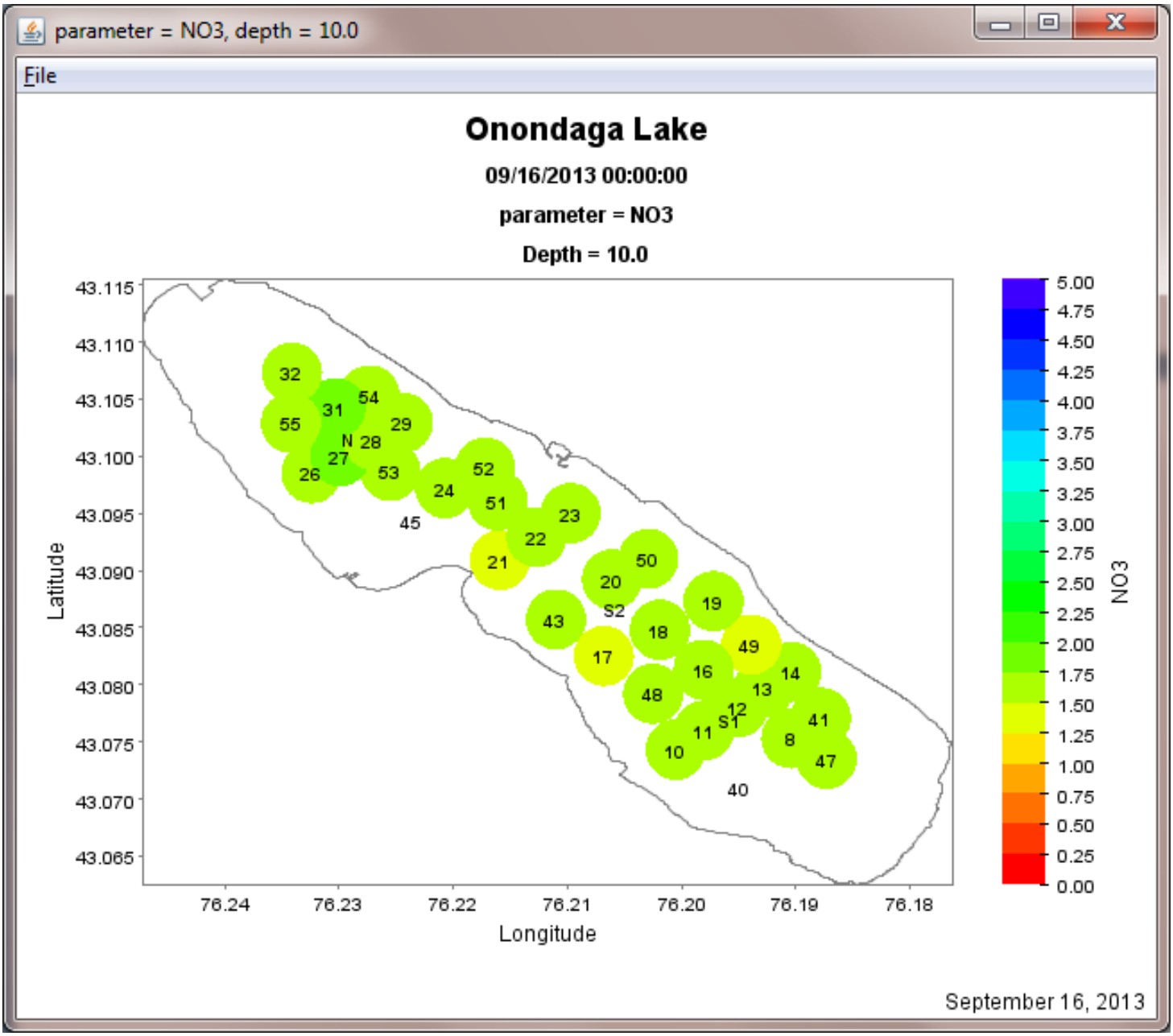
Color Bubble Plots at 14m, Nitrate (mgN/L)



Color Bubble Plots at 12m, Nitrate (mgN/L)



Color Bubble Plots at 10m, Nitrate (mgN/L)



APPENDIX C

2013 NITRATE DATA SUMMARIES FOR ONE METER ABOVE THE LAKE BOTTOM

Appendix C
Onondaga Lake Gridding Summary Using an In-Situ Ultraviolet Spectrophotometer (ISUS):

Nitrate Addition Pilot Monitoring

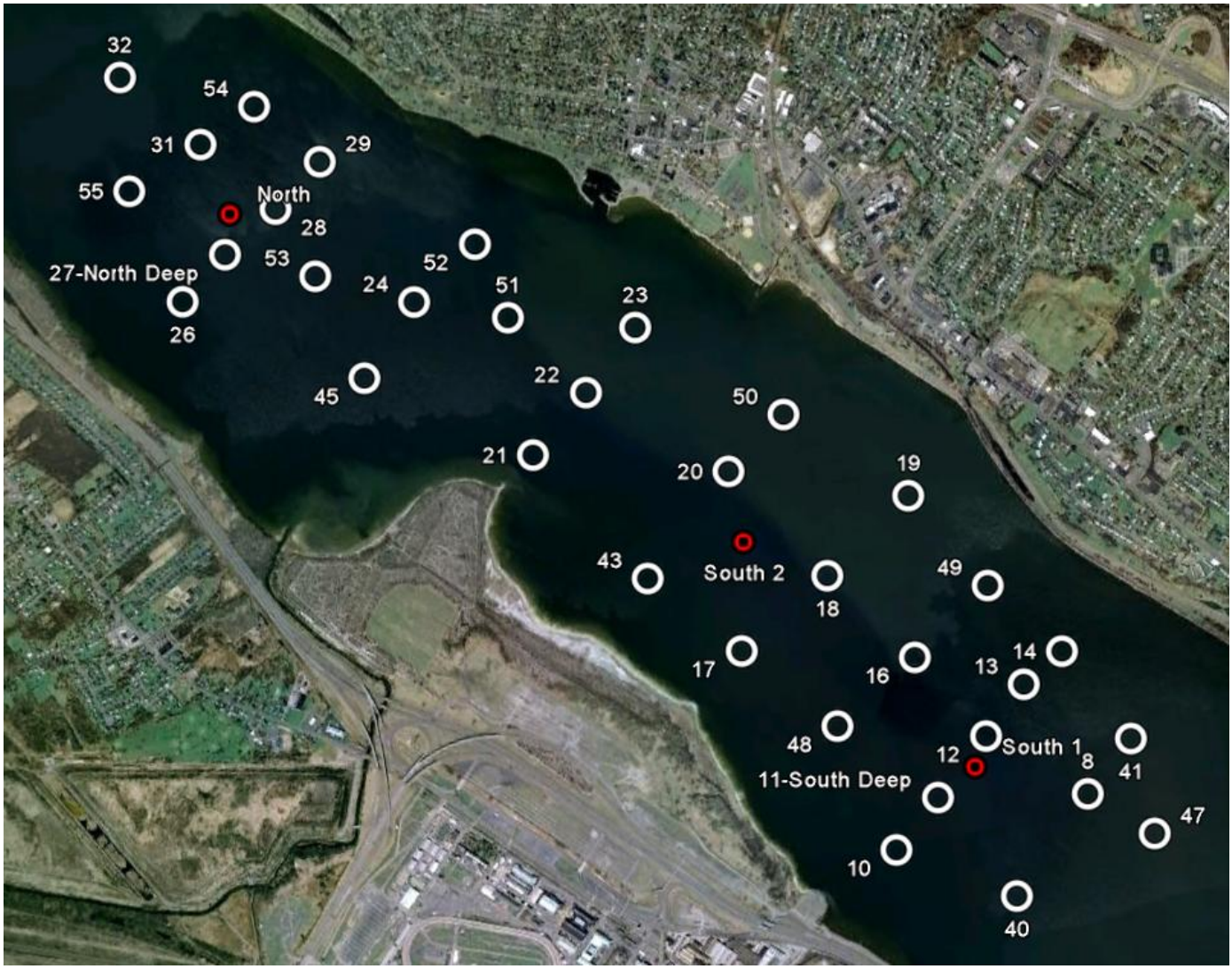
One Meter Off Bottom Weekly Summary:

June 17 through November 4, 2013

Provisional Data Summary

Submitted January 2014
Anthony R. Prestigiacomo
Research Scientist

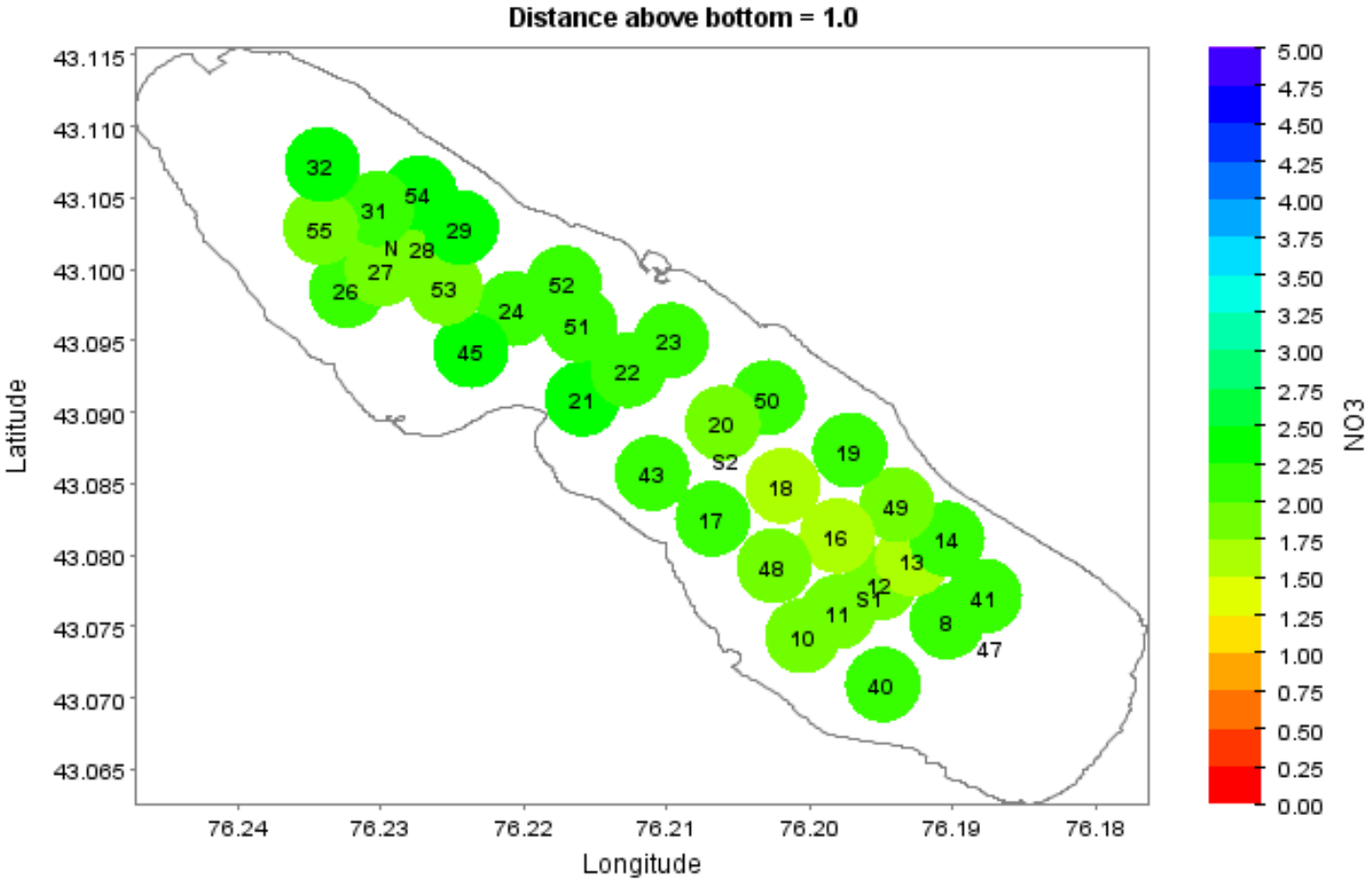
Gridding Locations



white circle: gridding loocation
red circle: injection site

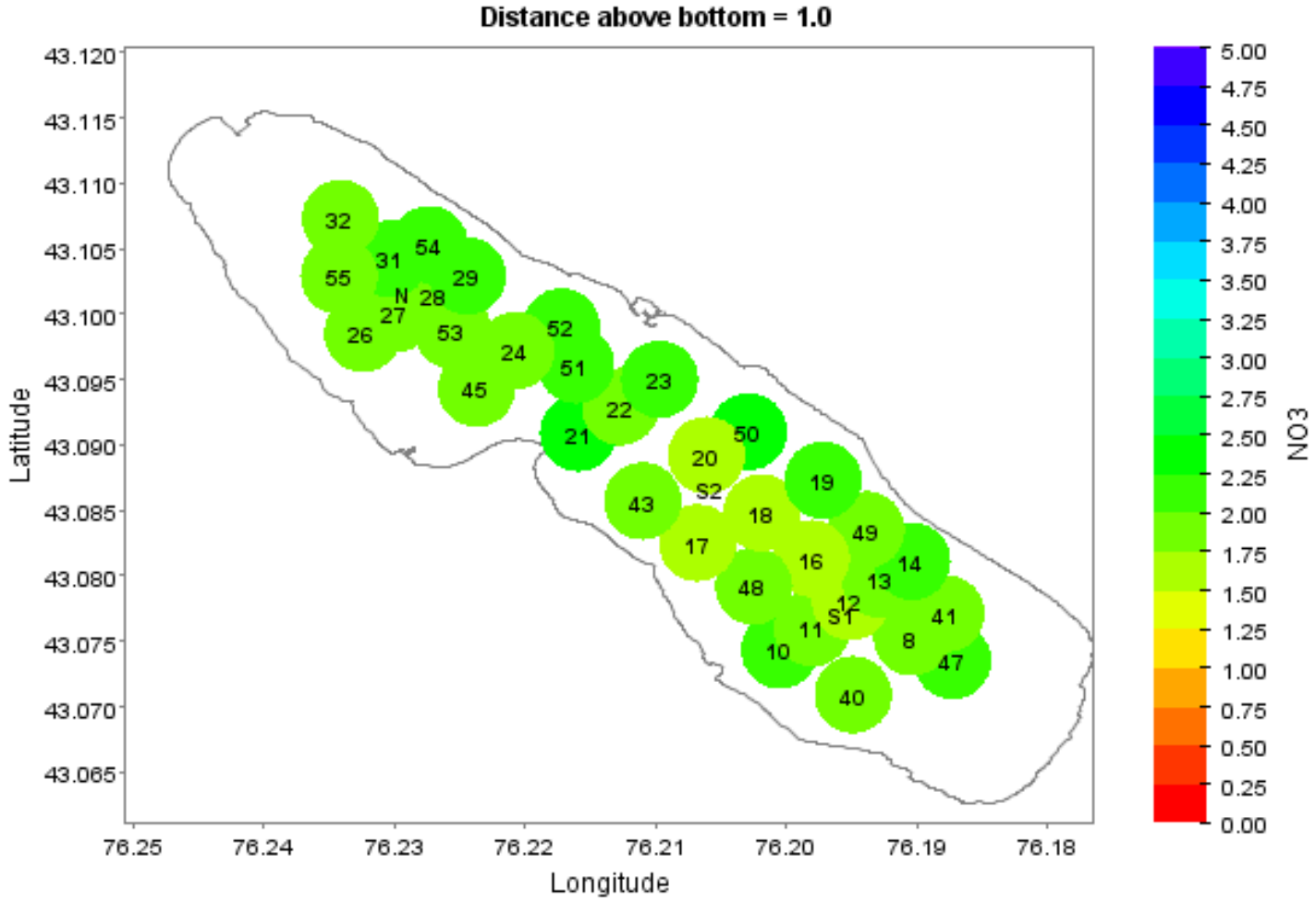
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

June 17, 2013



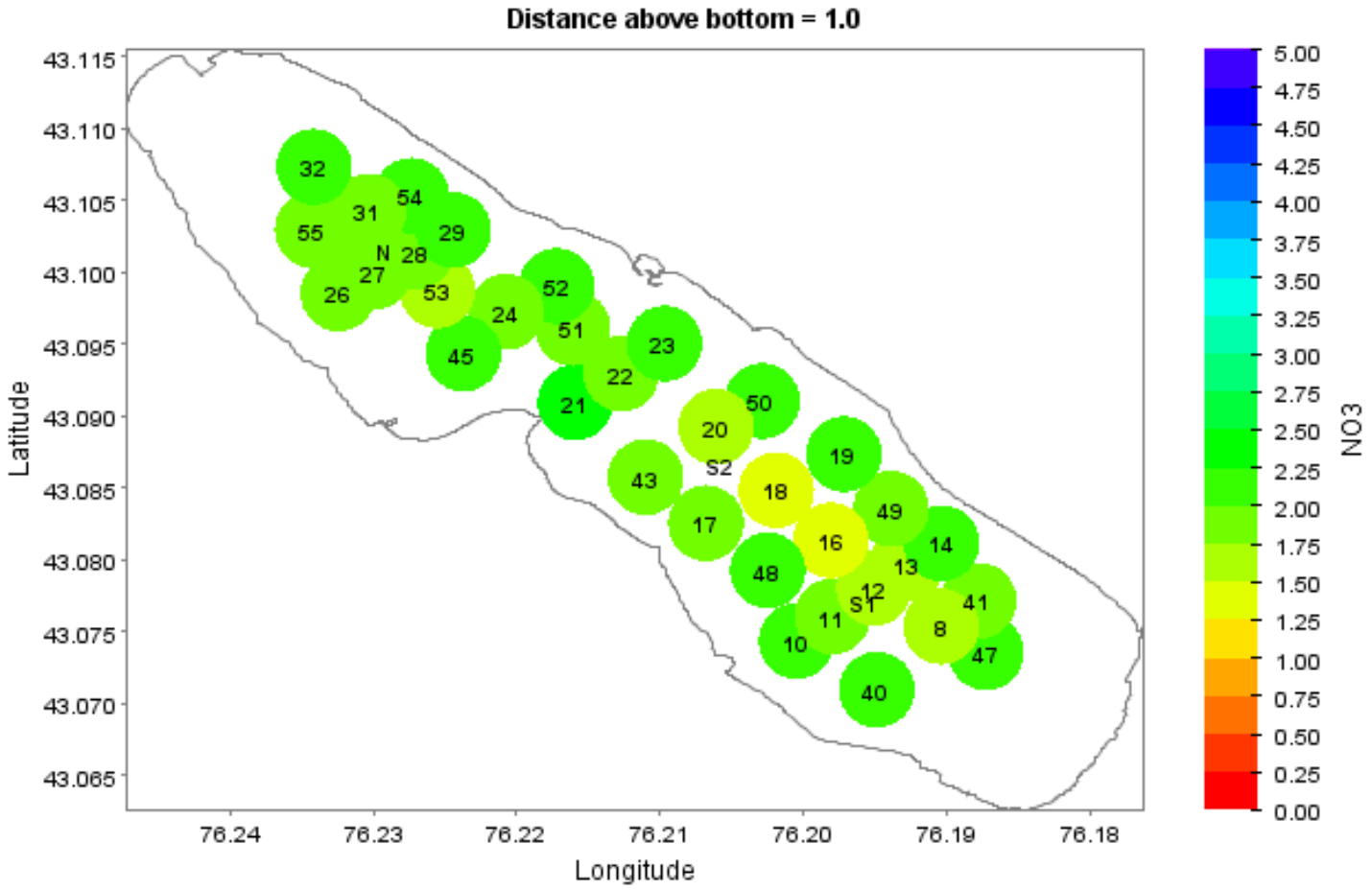
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

June 24, 2013



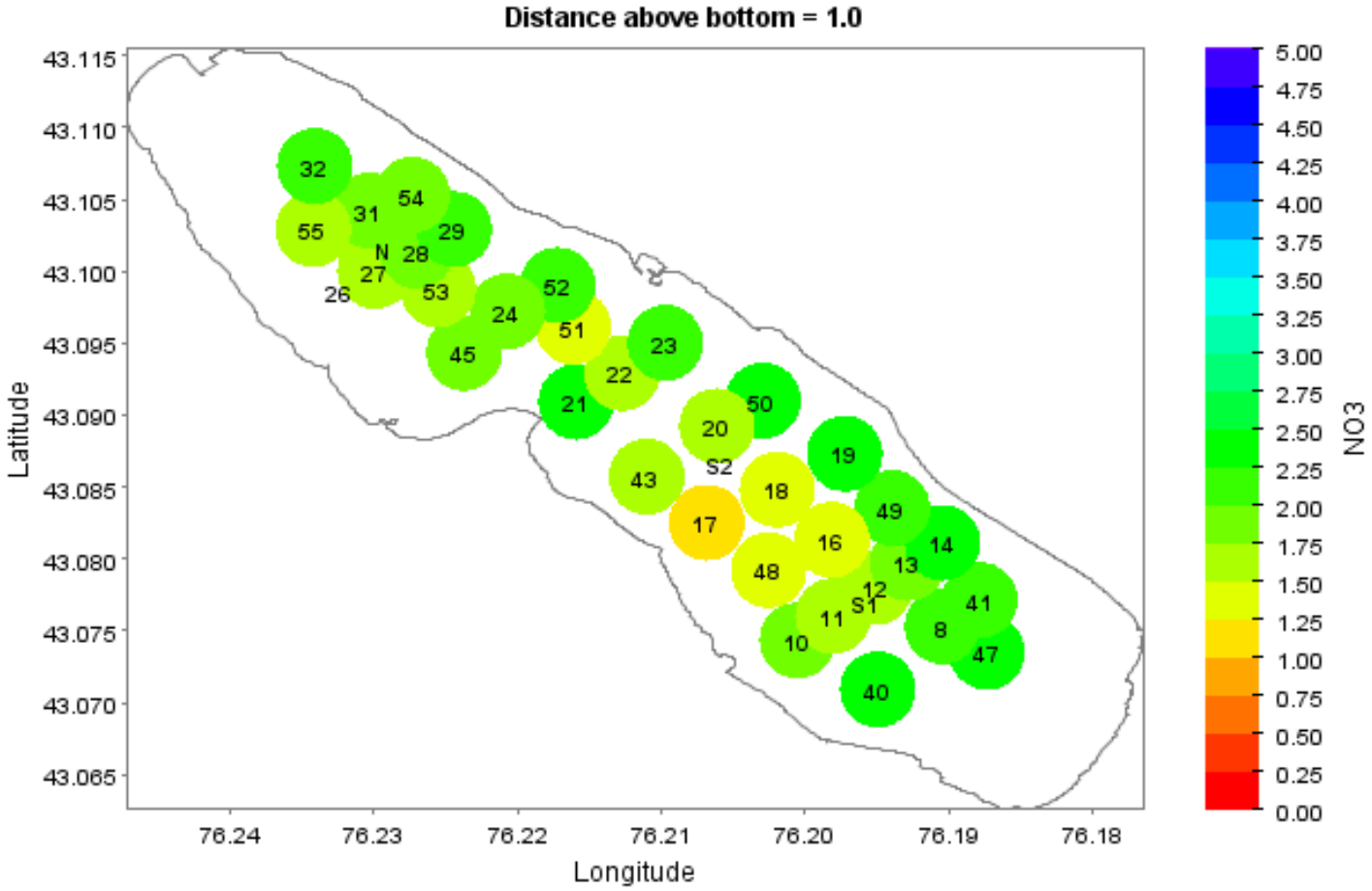
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

July 1, 2013



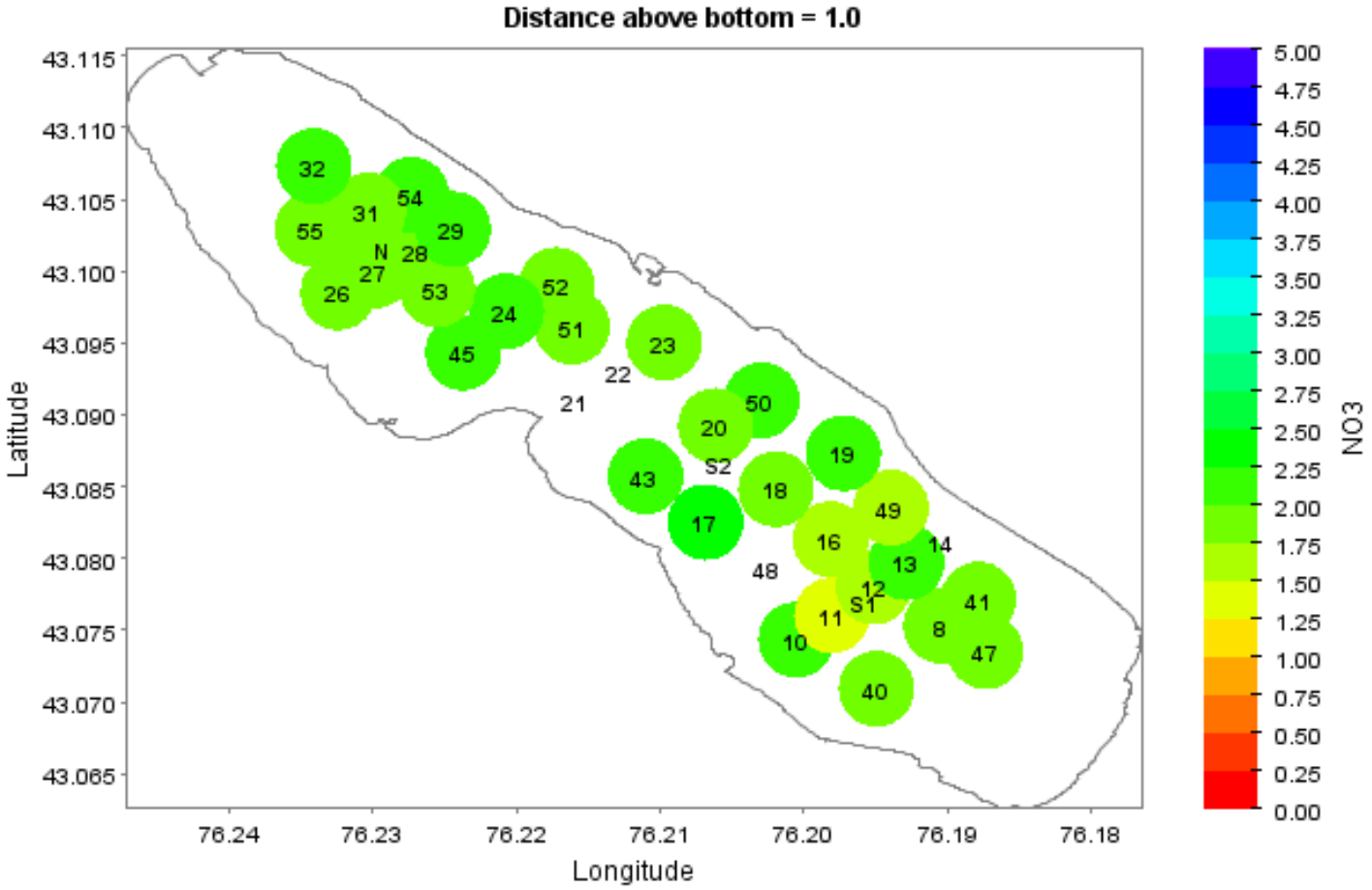
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

July 8, 2013



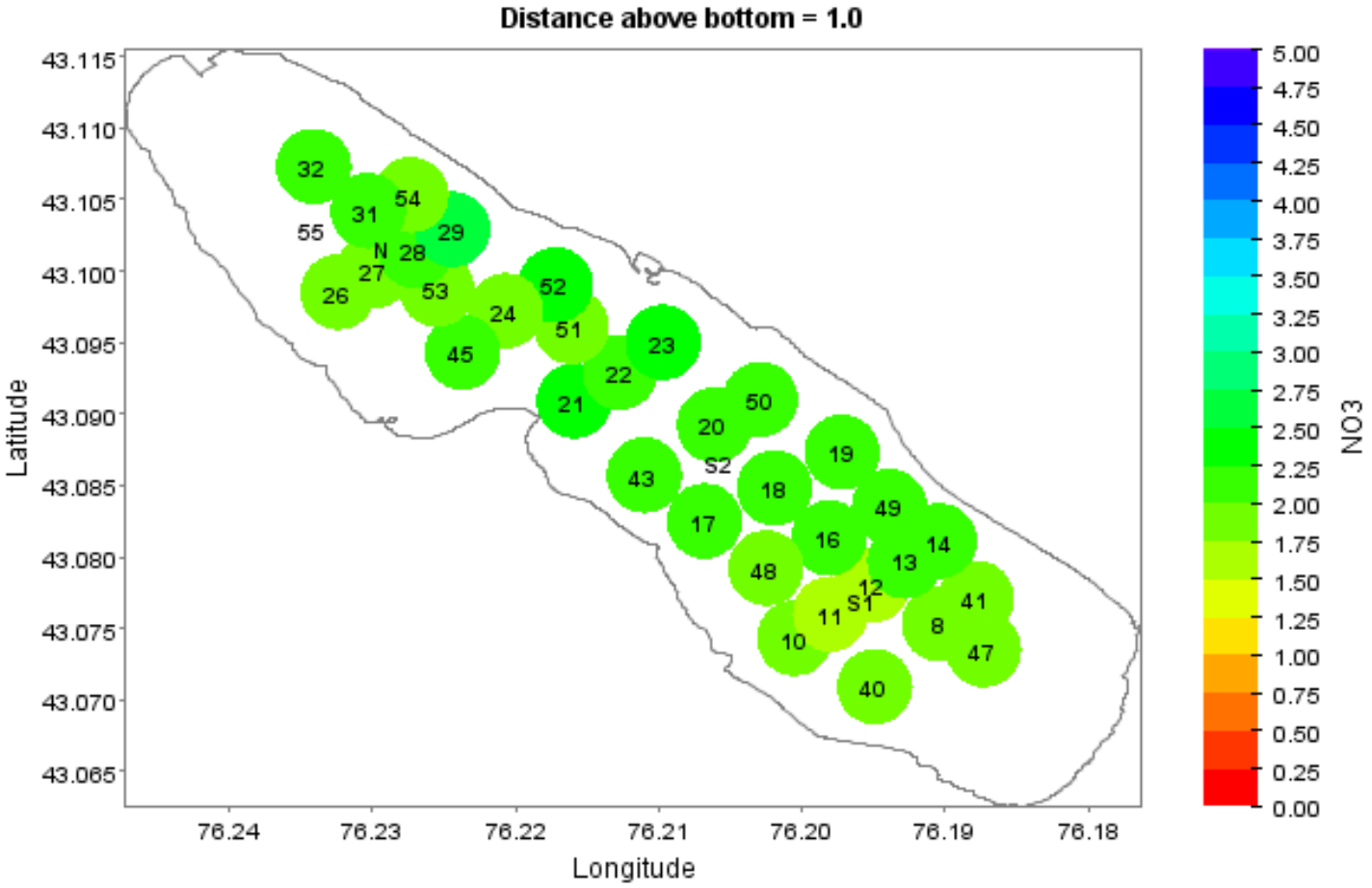
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

July 15, 2013



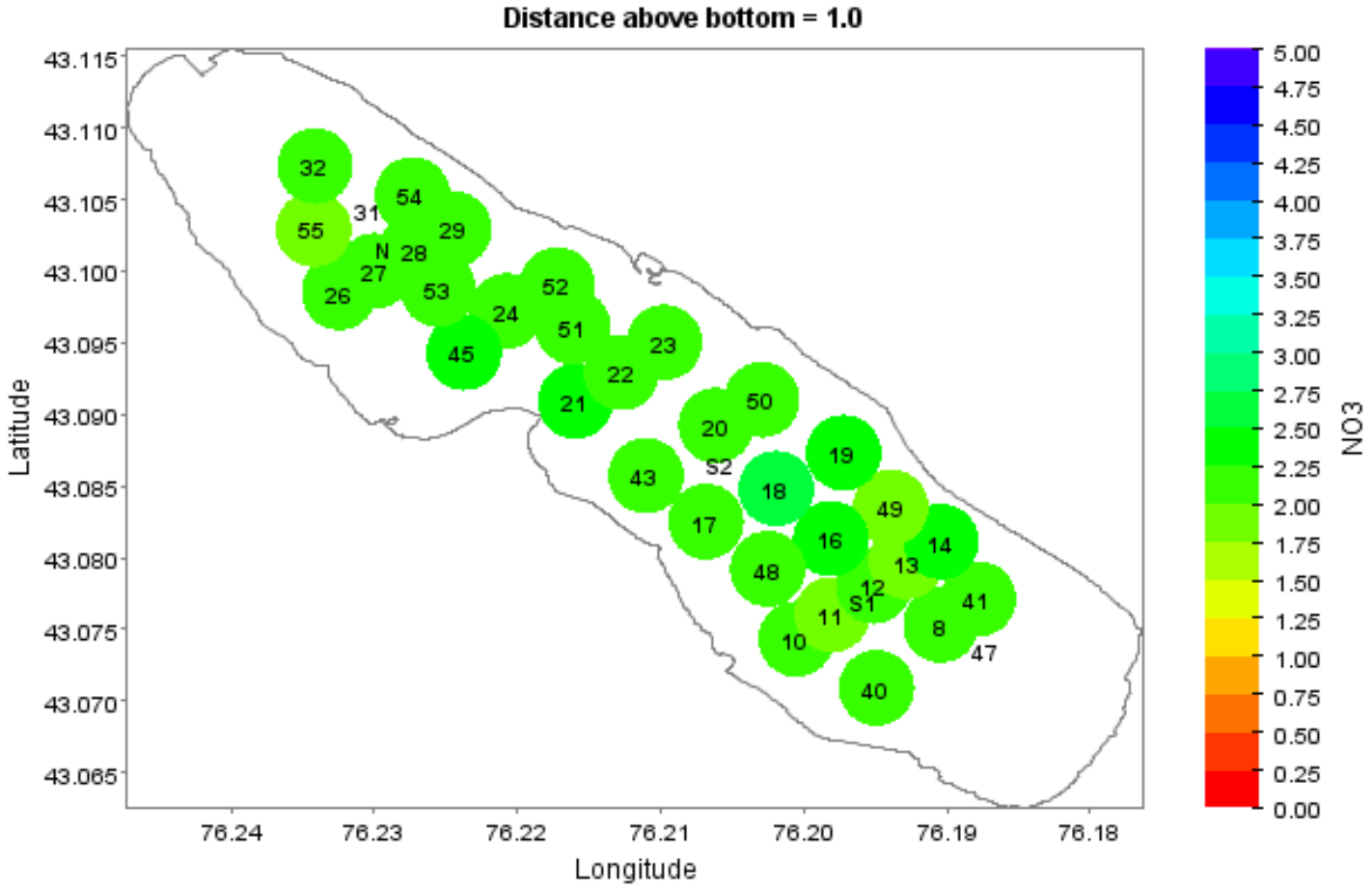
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

July 22, 2013



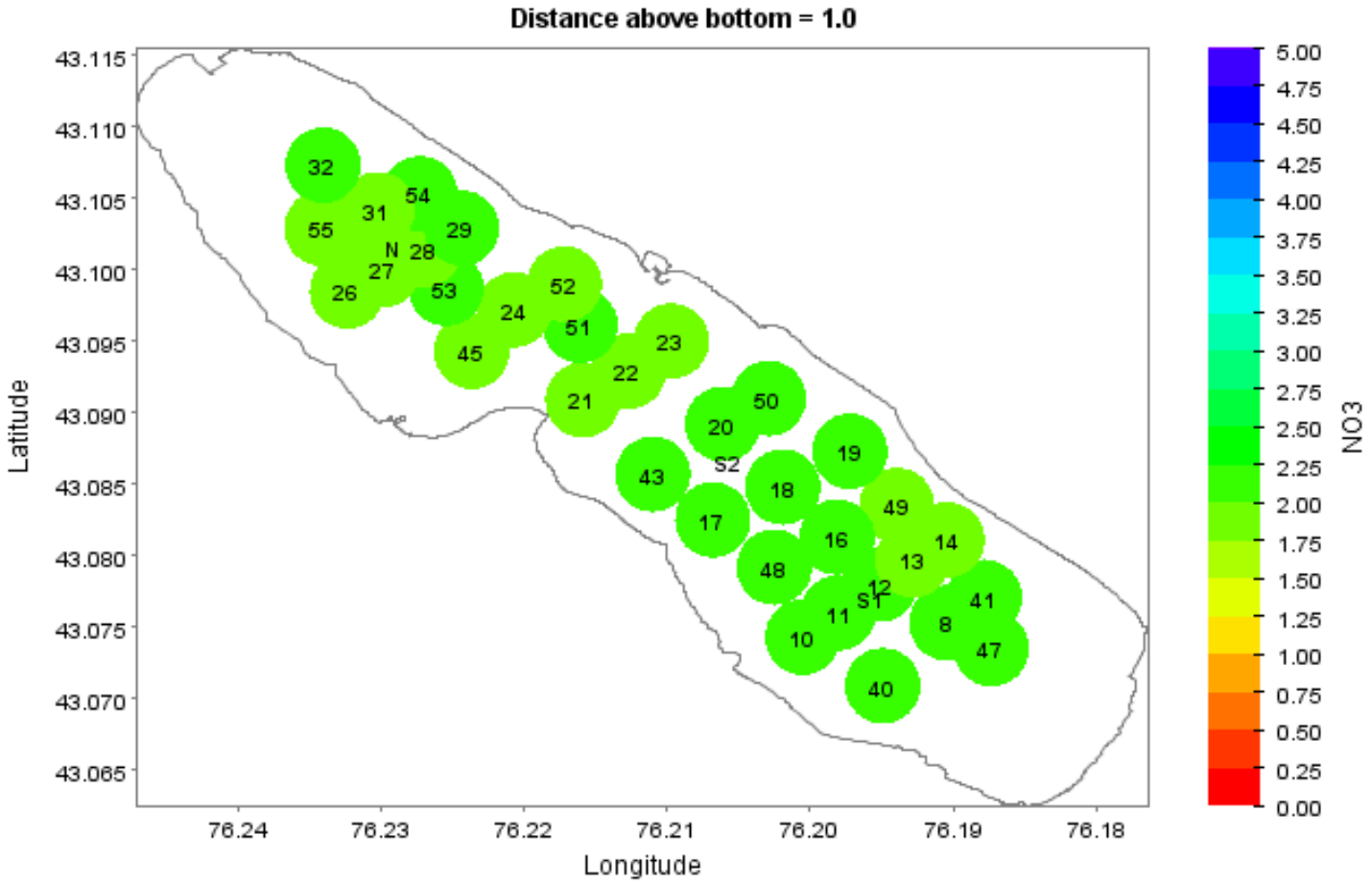
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

July 29, 2013



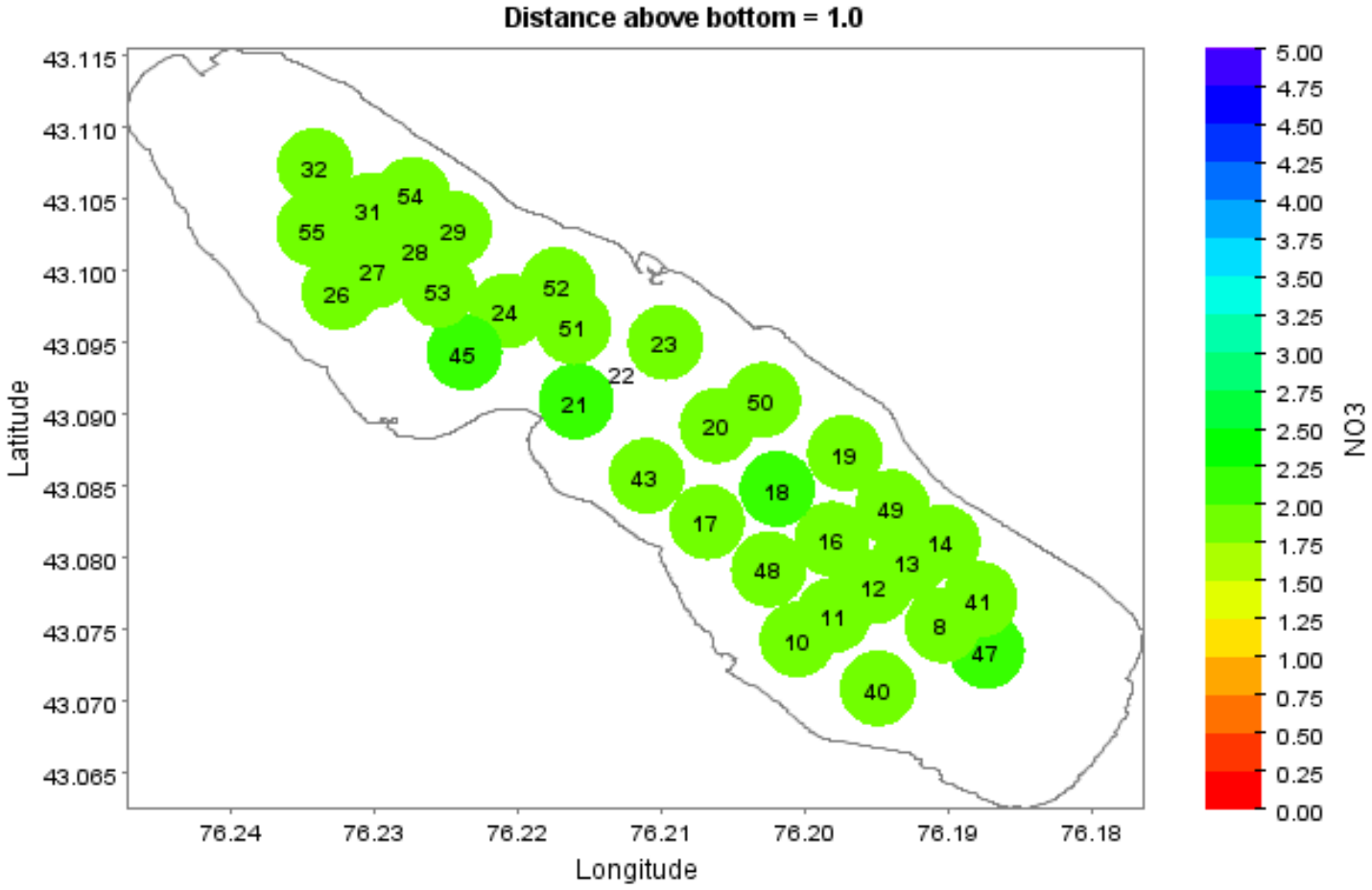
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

August 5, 2013



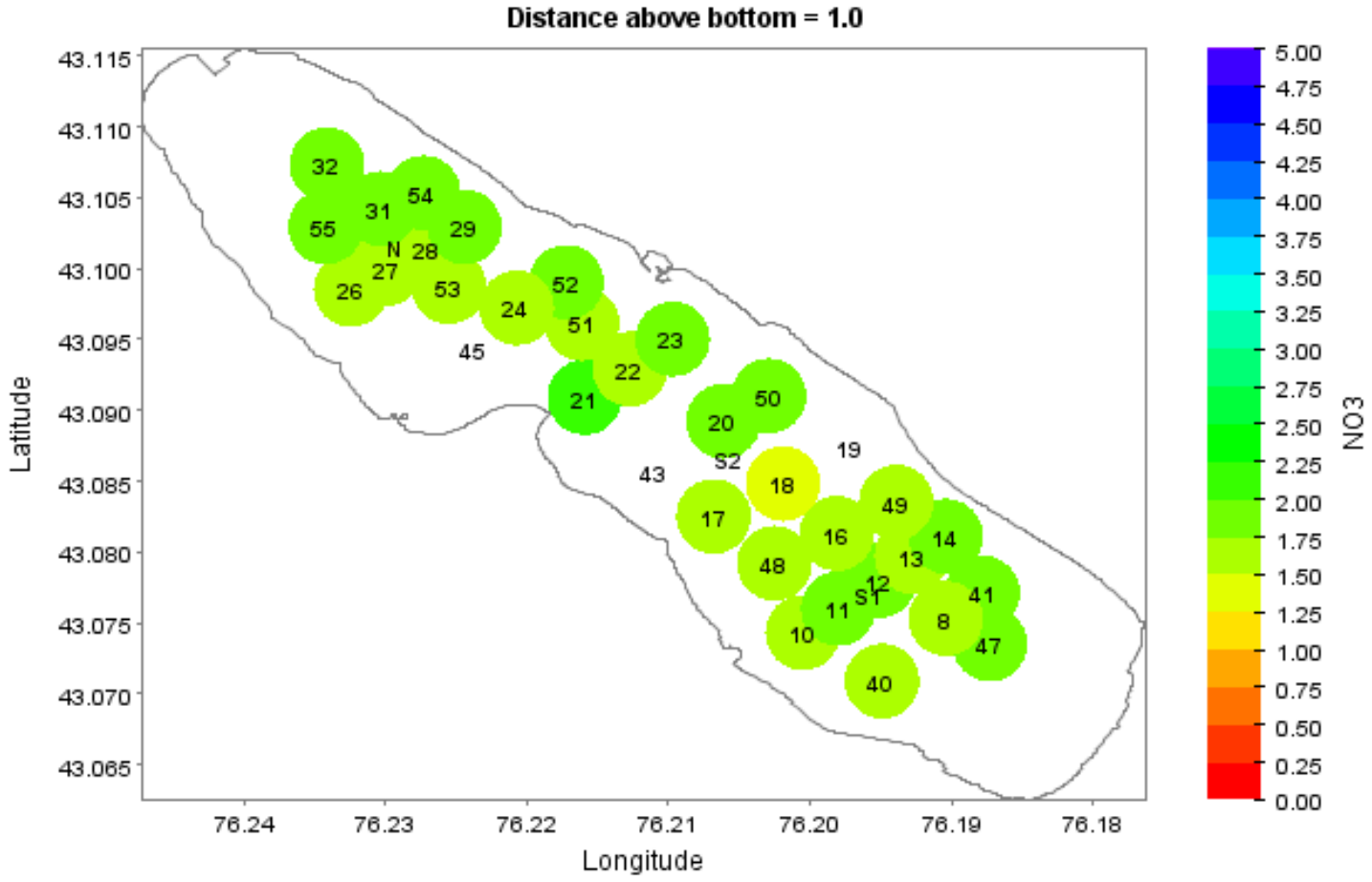
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

August 12, 2013



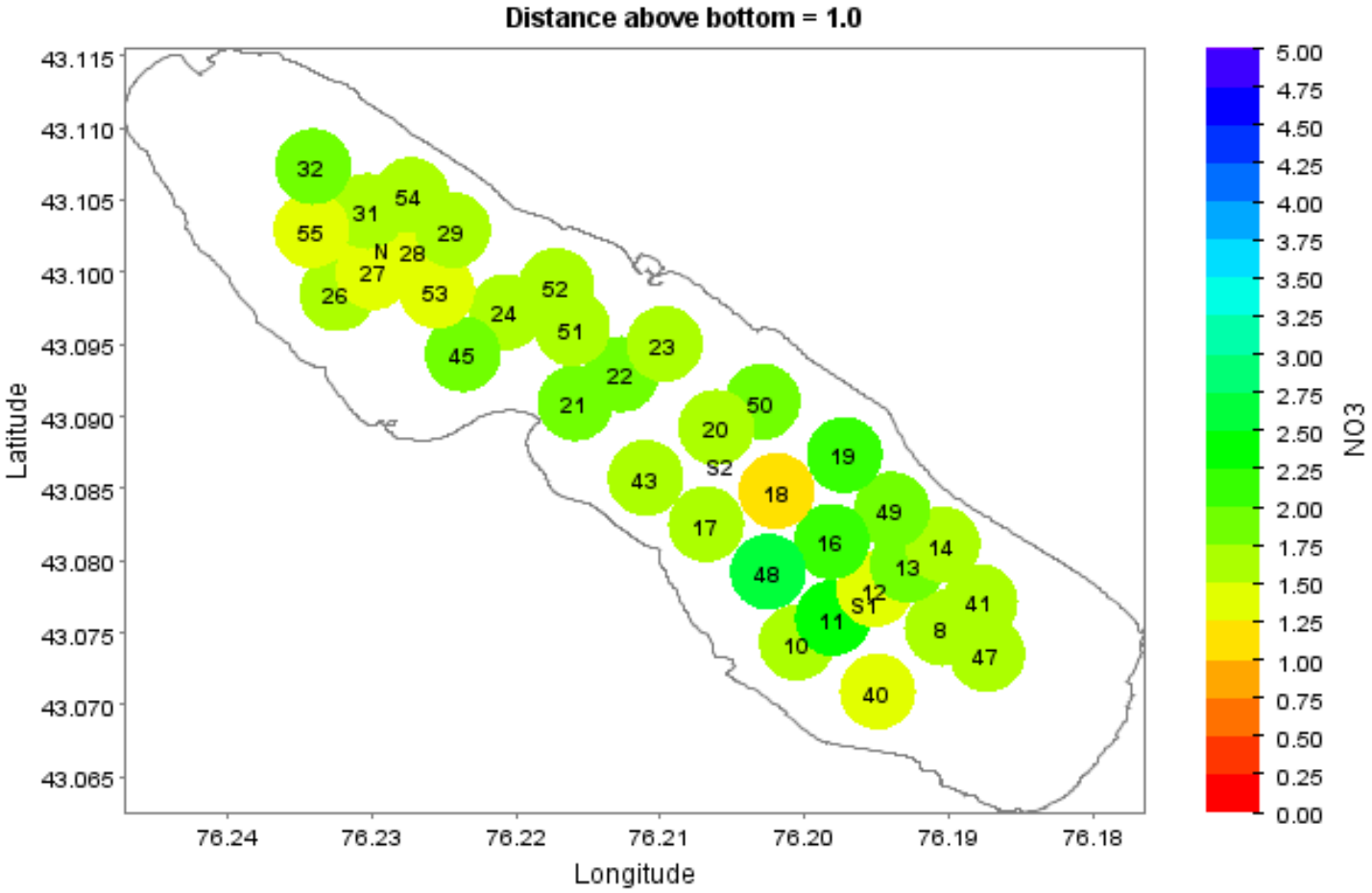
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

August 19, 2013



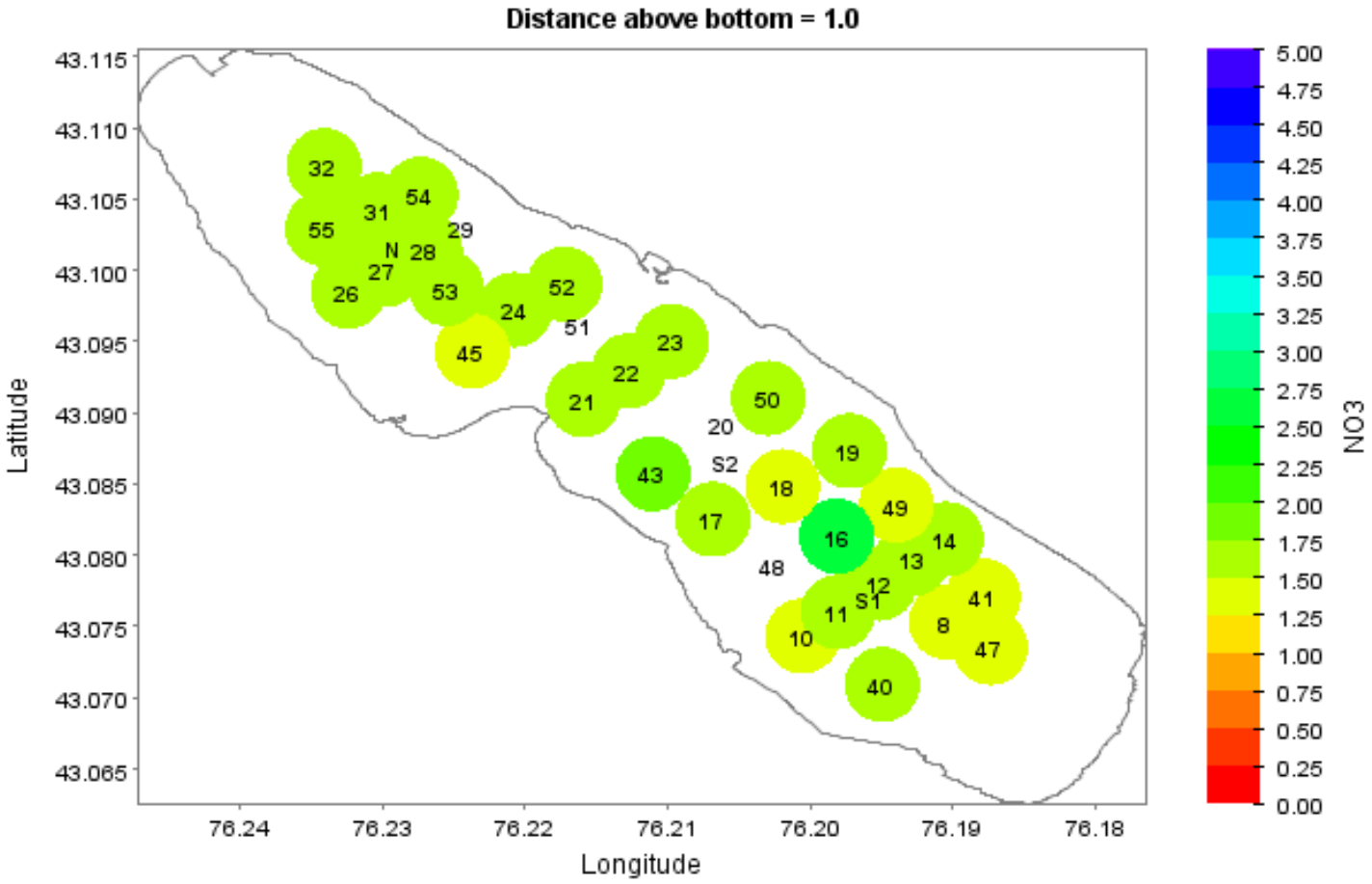
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

August 26, 2013



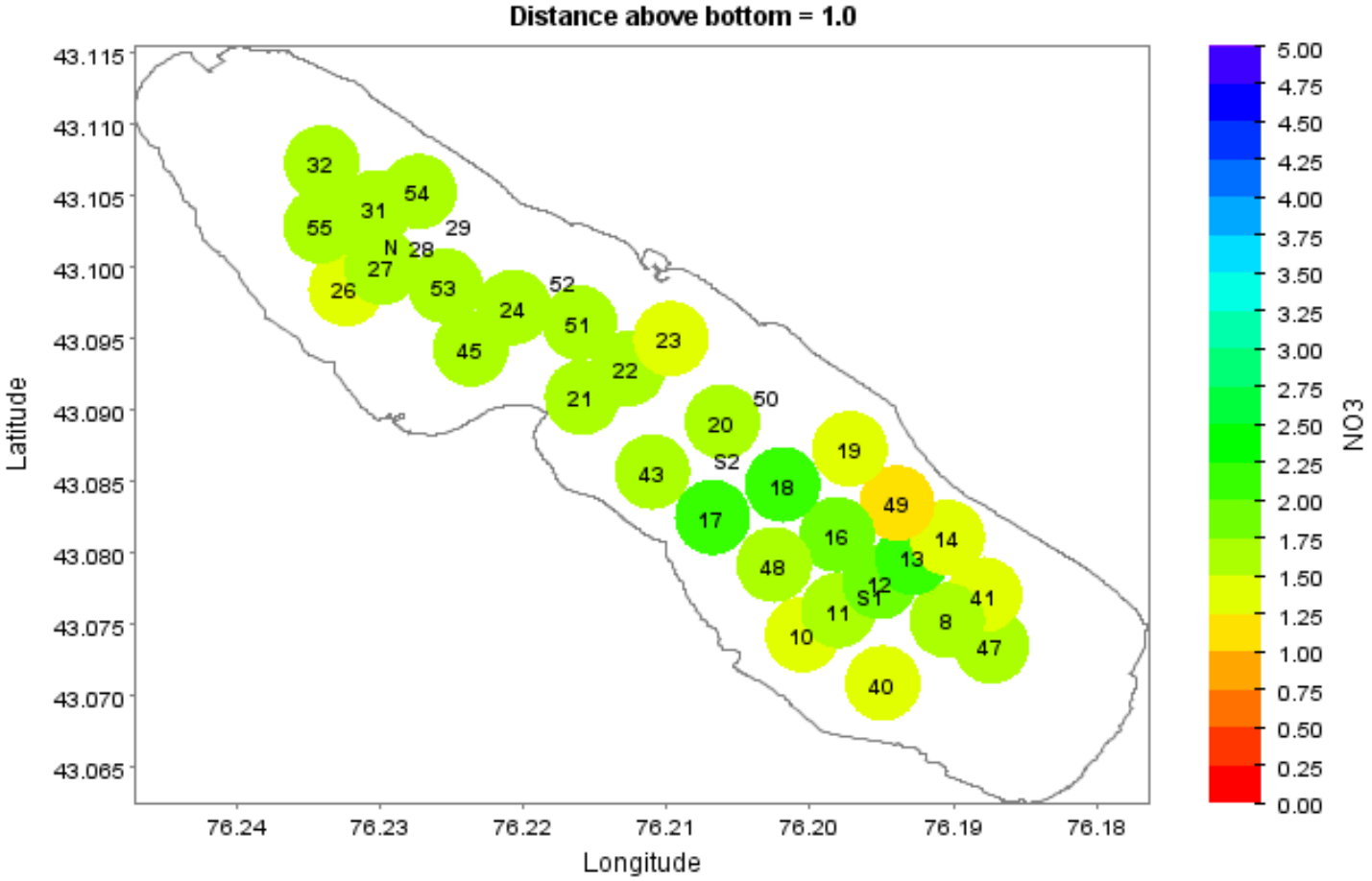
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

September 3, 2013



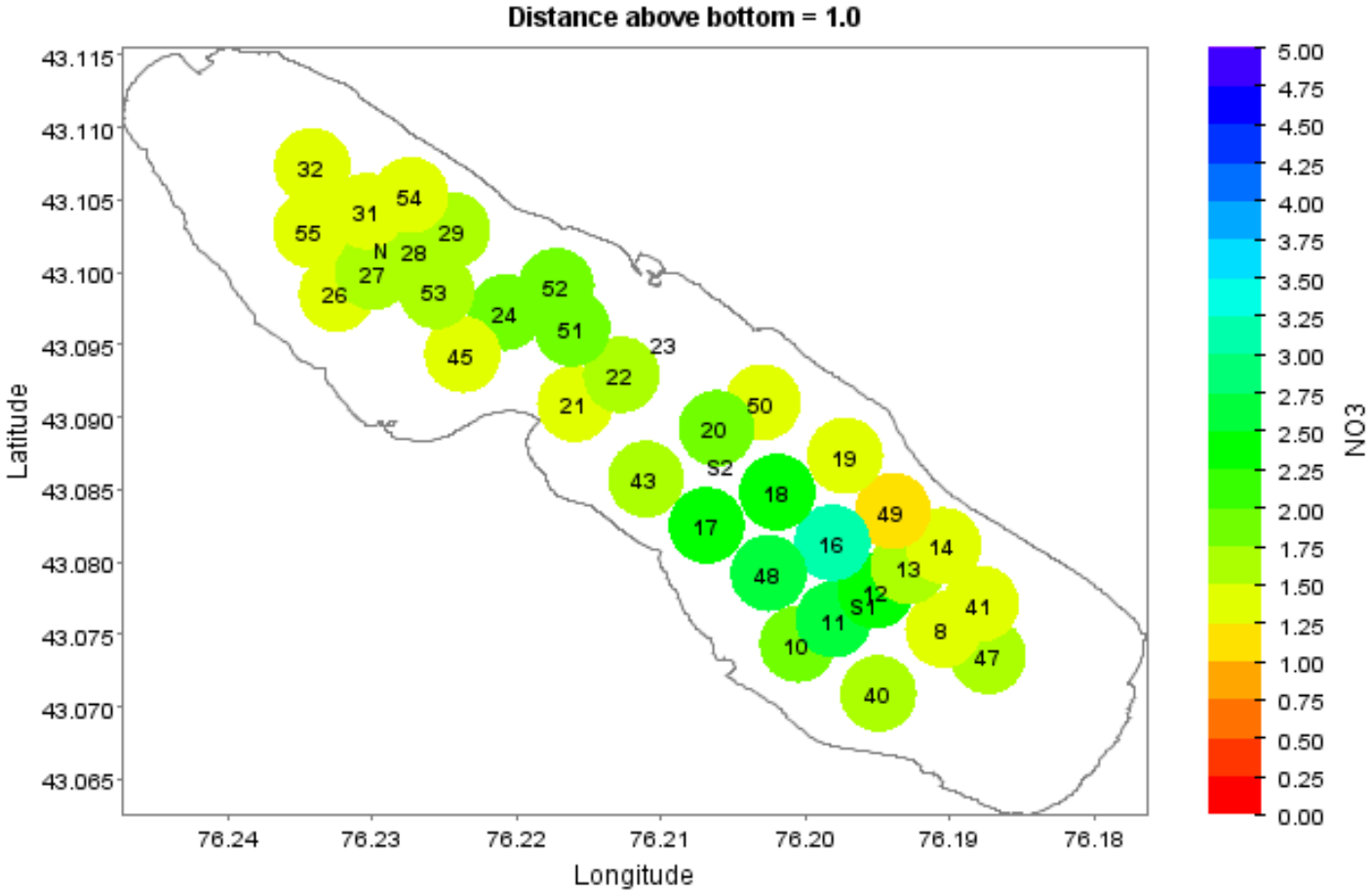
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

September 9, 2013



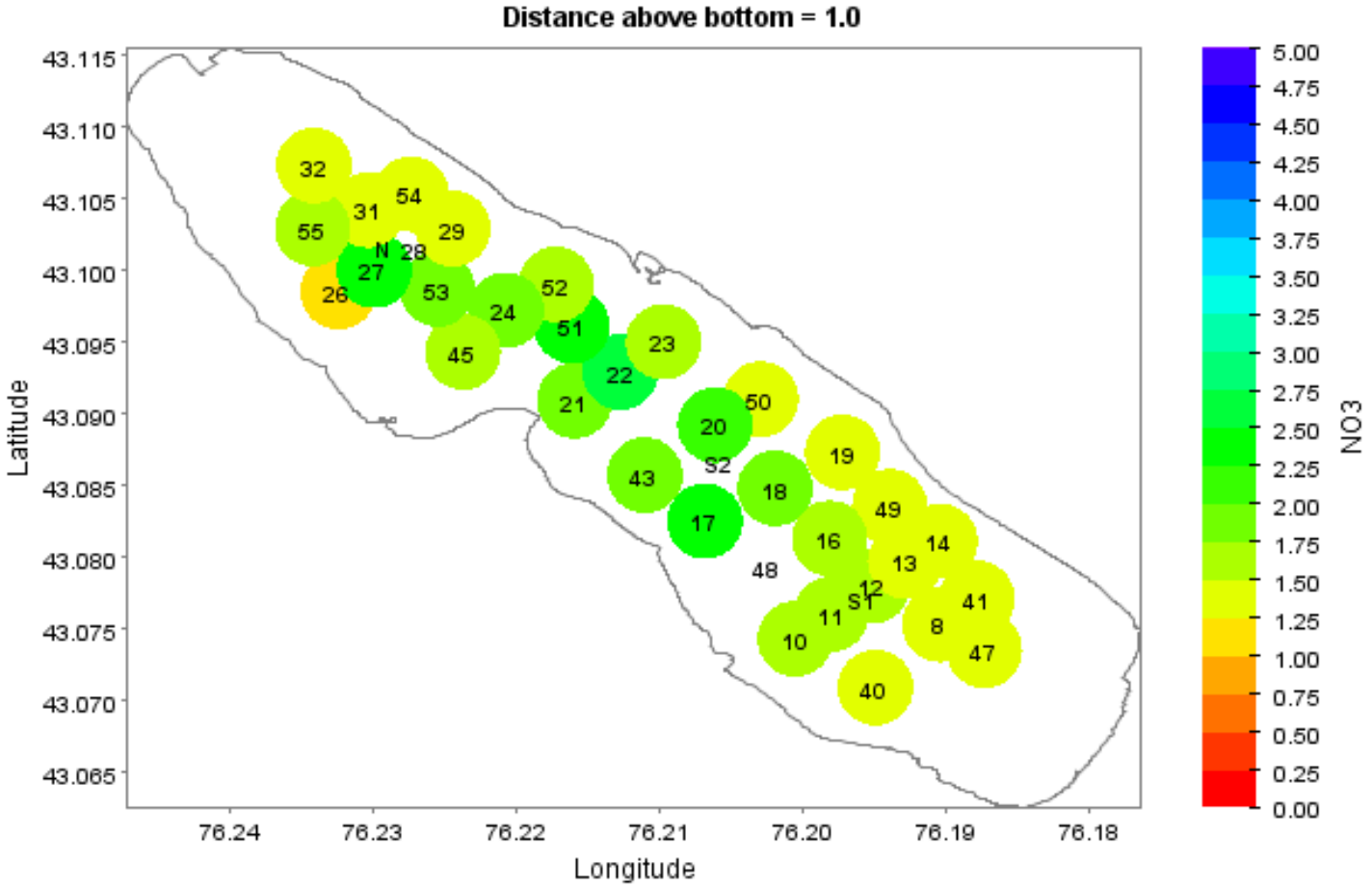
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

September 16, 2013



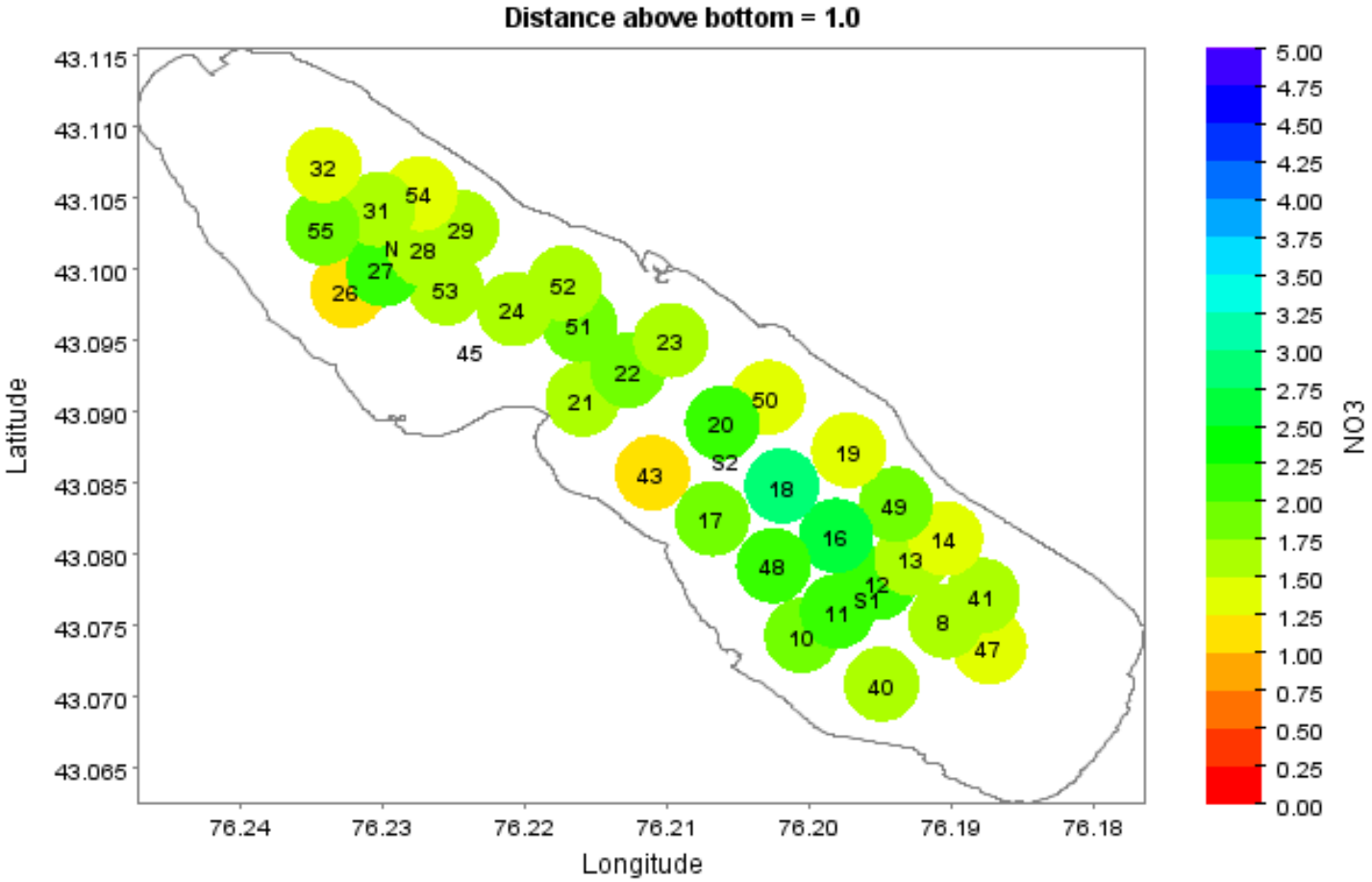
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

September 23, 2013



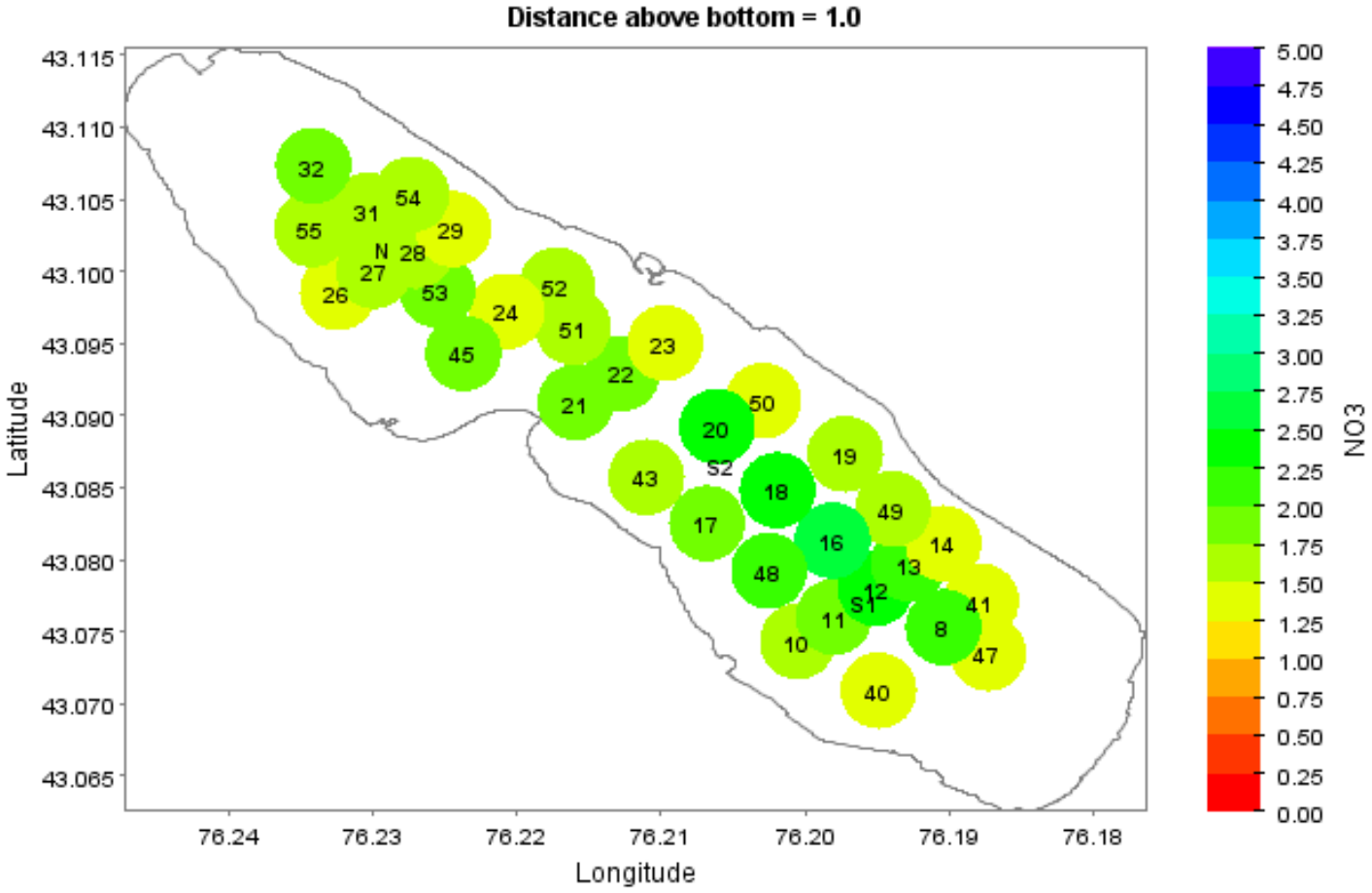
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

September 30, 2013



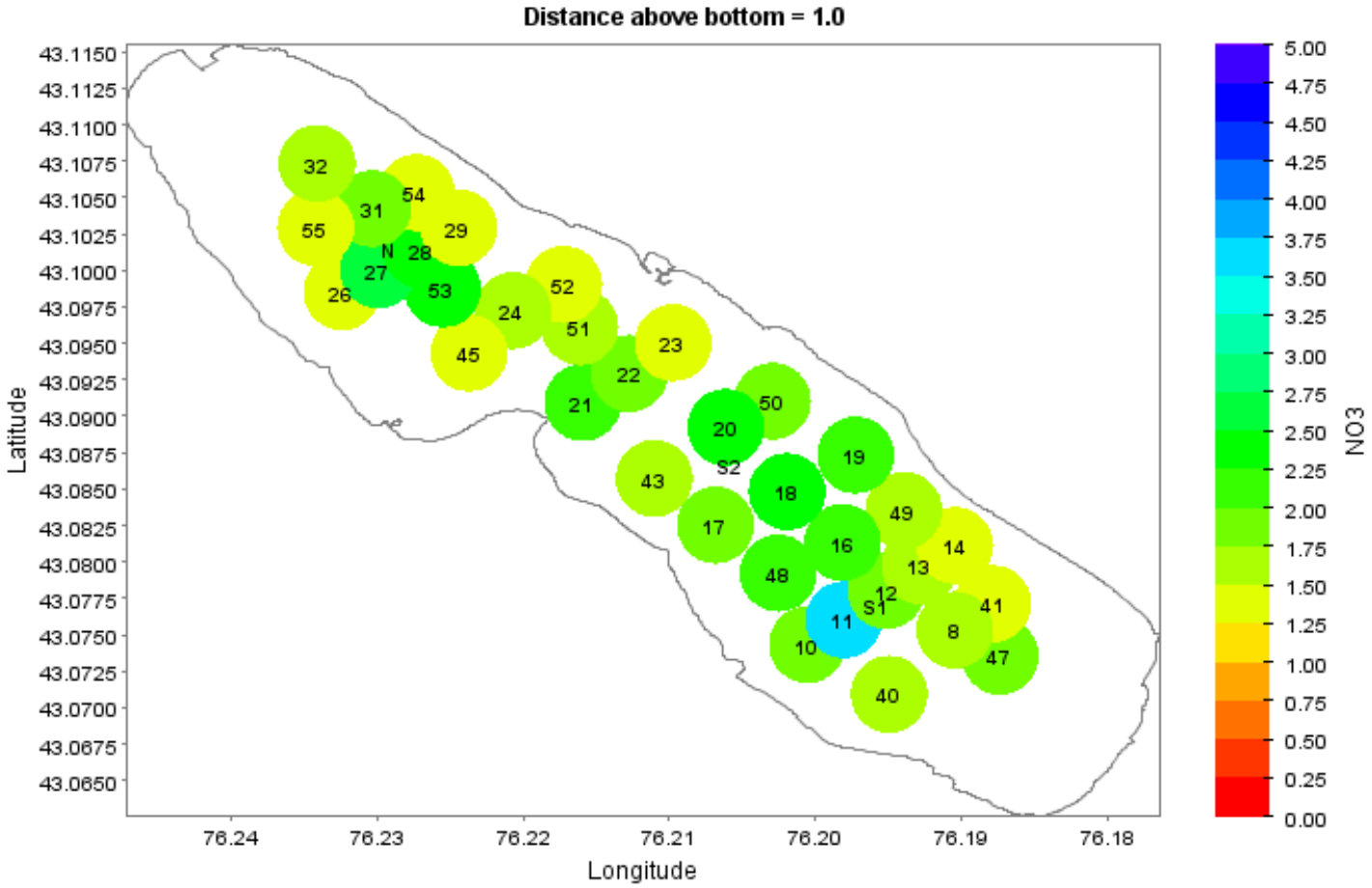
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

October 8, 2013



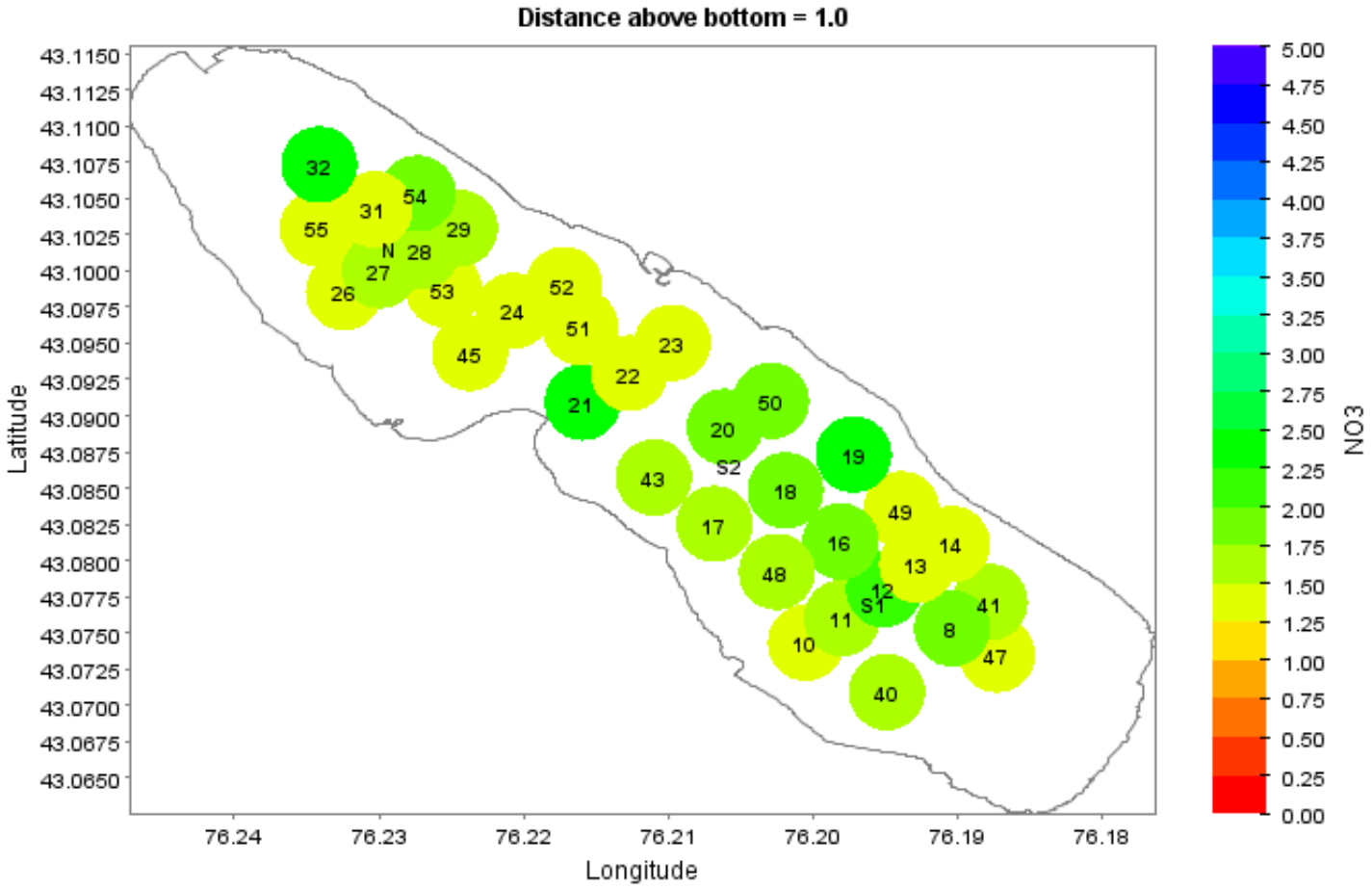
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

October 14, 2013



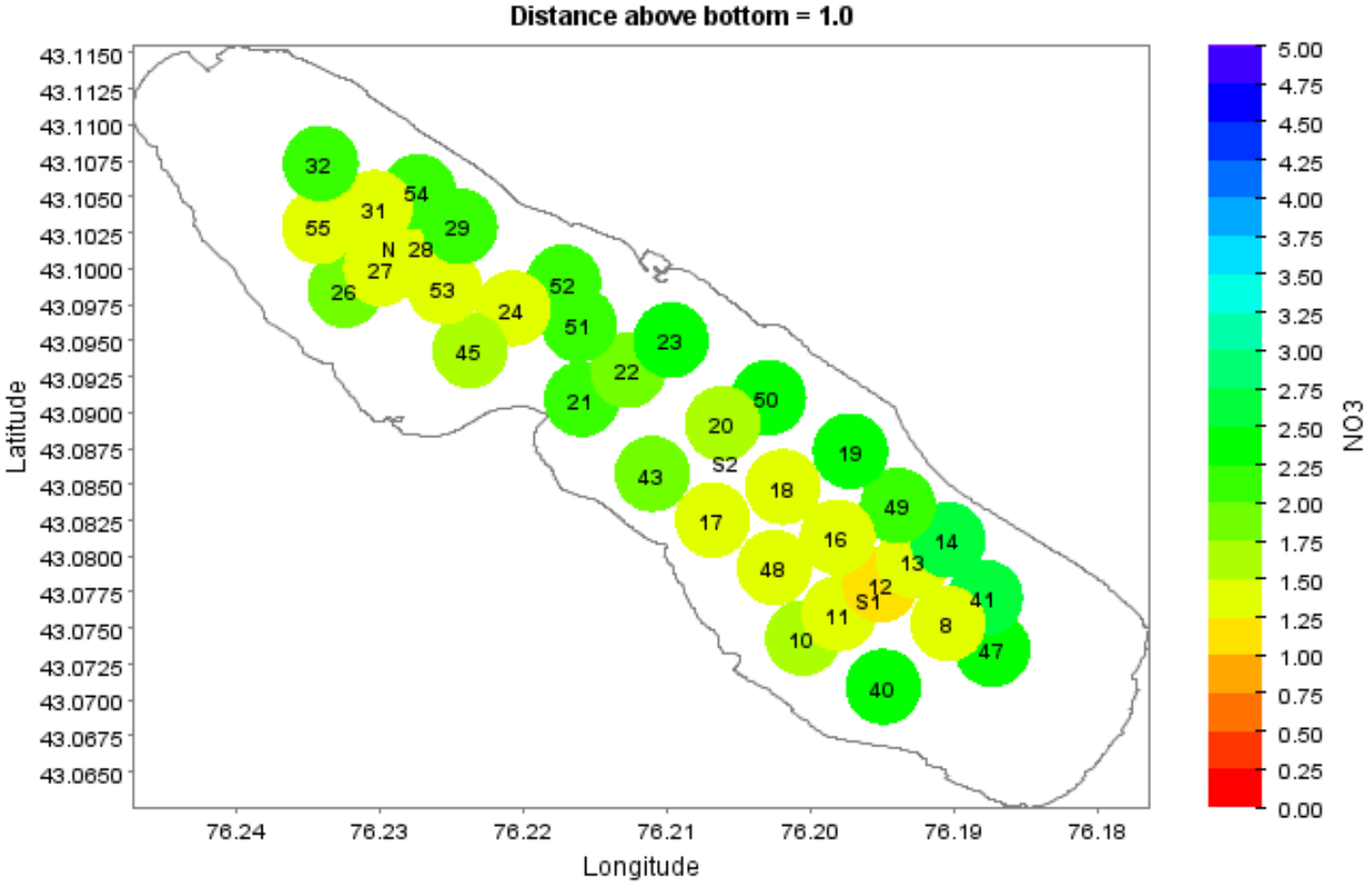
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

October 21, 2013



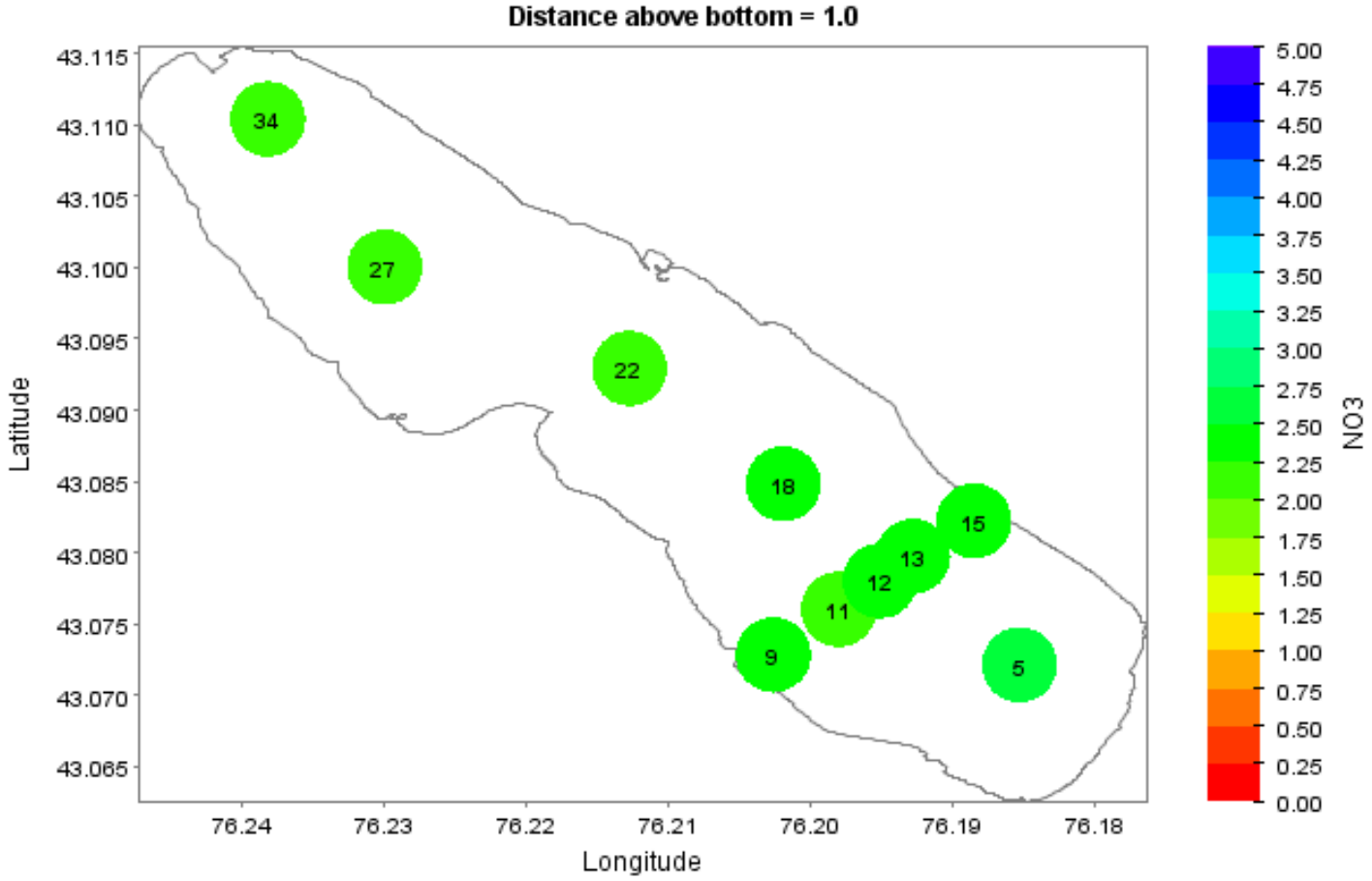
Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

October 28, 2013



Color Bubble Plots at ~1.0 m off Bottom, Nitrate (mgN/L)

November 4, 2013



APPENDIX D

DATA USABILITY AND SUMMARY REPORT: ONONDAGA LAKE 2013 SURFACE WATER MONITORING ASSOCIATED WITH NITRATE ADDITION AND 2013 PROFUNDAL ZONE SEDIMENT TRAP RESULTS

APPENDIX D:

DATA USABILITY SUMMARY REPORT

ONONDAGA LAKE 2013 SURFACE WATER MONITORING FOR THE THIRD YEAR (2013) OF THE NITRATE ADDITION PILOT TEST AND 2013 PROFUNDAL ZONE SEDIMENT TRAPS

Prepared For:

Honeywell

Prepared By:

PARSONS

301 Plainfield Road, Suite 350
Syracuse, New York 13212
Phone: (315) 451-9560
Fax: (315) 451-9570

JANUARY 2014

TABLE OF CONTENTS

LIST OF ATTACHMENTS

SECTION D1

DATA USABILITY SUMMARY

Surface water and sediment trap samples were collected as part of the 2013 nitrate addition pilot (NAP) test in the hypolimnion efforts for Onondaga Lake from May 20, 2013 through November 20, 2013. Analytical results from these samples were validated and reviewed by Parsons for usability with respect to the following requirements:

- Work Plan for Pilot Test to Add Nitrate to the Hypolimnion of Onondaga Lake (Parsons and UFI, 2011) and Addendum 2 (2013);
- Draft Onondaga Lake Remedial Goal and Construction Water Quality Monitoring Quality Assurance Project Plan (QAPP) (Parsons, Anchor QEA and UFI, 2012); and
- USEPA Region II Standard Operating Procedures (SOPs) for inorganic data review (see Section D2 for citations).

Upstate Freshwater Institute (UFI) in Syracuse, New York collected all of the samples reported herein.

The analytical laboratories for this project were Test America Laboratories (TAL) in North Canton, OH and Pittsburgh, PA; and UFI. These laboratories are certified by the State of New York to conduct laboratory analyses for this project through the National Environmental Laboratory Accreditation Conference (NELAC) and the New State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP).

D1.1 LABORATORY DATA PACKAGES

The laboratory data package turnaround time, defined as the time from sample receipt by the laboratory to receipt of the analytical data packages by Parsons, was 8 to 43 days for the samples.

The data packages received from the laboratories were paginated, complete, and overall were of good quality. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report which is summarized by sample media in Section D2.

D1.2 SAMPLING AND CHAIN-OF-CUSTODY

The samples were collected, properly preserved, shipped under a chain-of-custody (COC) record, and received at the laboratories within one to two days of sampling. All samples were received intact and in good condition at the laboratories.

D1.3 LABORATORY ANALYTICAL METHODS

The surface water samples were collected from the site and analyzed for total and/or dissolved low level mercury, methyl mercury, ferrous iron, total calcium, nitrite, nitrate-nitrite, reactive phosphate, and/or ammonia. Sediment trap samples were collected from the site and analyzed for low level mercury, total suspended solids (TSS), and total fixed solids. Summaries of deviations from the Work Plan, QAPP, or USEPA Region II SOPs concerning these laboratory analyses are presented in Subsections D1.3.1 through D1.3.4. The data qualifications resulting from the data validation review and statements on the laboratory analytical precision, accuracy, representativeness, completeness, and comparability (PARCC) are discussed for each analytical method by media in Section D2. The laboratory data were reviewed and may be qualified with the following validation flags:

"U" - not detected at the value given

"UJ" - estimated and not detected at the value given

"J" - estimated at the value given

"N" - presumptive evidence at the value given

"R" - unusable value

The validated laboratory data were tabulated and are presented in Attachment A.

D1.3.1 Low Level Mercury Analysis

Surface water and sediment trap sample results reported herein were analyzed by TAL for low level mercury using the USEPA 1631E analytical method. Certain reported results for the low level mercury samples were qualified as estimated based upon matrix spike recoveries and field duplicate precision. The reported low level mercury analytical results were considered 100% complete (i.e., usable) for the data presented by TAL. PARCC requirements were met.

D1.3.2 Methyl Mercury Analysis

Surface water sample results reported herein were analyzed by TAL for methyl mercury using the USEPA 1630 analytical method. Certain reported results for the methyl mercury samples were qualified as estimated based upon laboratory control sample recoveries and matrix spike recoveries. The reported methyl mercury analytical results were considered 100% complete (i.e., usable) for the data presented by TAL. PARCC requirements were met.

D1.3.3 Other Sediment Trap Analyses

Sediment trap sample results reported herein were also analyzed by UFI using analytical SOPs for TSS and total fixed solids. Sample results for these parameters did not require qualification resulting from data validation. The reported analytical results for these parameters

were considered 100% complete (i.e., usable) for the data presented by UFI. PARCC requirements were met.

D1.3.4 Other Surface Water Analyses

Surface water sample results for other parameters reported herein were analyzed by UFI using analytical SOPs for ferrous iron, total calcium, nitrite, nitrate-nitrite, reactive phosphate, and/or ammonia. Total calcium was analyzed by TAL beginning with the August 2013 surface water samples using the USEPA SW-846 6010C analytical method because of failing instrumentation at UFI. Certain reported results for these parameters were qualified as estimated based upon holding times and instrument calibrations. The reported analytical results for these parameters were considered 100% complete (i.e., usable) for the data presented by UFI and TAL. PARCC requirements were met.

SECTION D2

DATA VALIDATION REPORTS

D2.1 SURFACE WATER SAMPLES

Data review has been completed for data packages generated by TAL and UFI containing surface water samples collected from the site. The specific samples contained in these data packages, the analyses performed, and the validated laboratory data were tabulated and are presented in Attachment A-1. All of these samples were properly preserved, shipped under a COC record, and received intact by the analytical laboratory.

Data validation was performed for all samples in accordance with the project work plan and QAPP as well as the USEPA Region II SOP HW-2, Revision 13 "Evaluation of Metals Data for the CLP Program". This data validation and usability report is presented by analysis type.

D2.1.1 Total and Dissolved Low Level Mercury

The following items were reviewed for compliancy in the low level mercury analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration verifications
- Initial and continuing calibration, laboratory preparation blank, field blank contamination
- Matrix spike / matrix spike duplicate (MS/MSD) recoveries
- Laboratory duplicate precision
- Laboratory control sample (LCS) recoveries
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of blank contamination, MS/MSD recoveries, and field duplicate precision as discussed below.

Blank Contamination

Initial and continuing calibration blanks and laboratory preparation blanks associated with project samples contained total mercury at a concentration below the reporting limit ranging 0.176 – 0.285 ng/L and dissolved mercury at a concentration ranging 0.180 – 0.426 ng/L. Field and equipment blanks associated with project samples contained total mercury at a concentration below the reporting limit ranging 0.016 – 0.3 ng/L and dissolved mercury at a concentration below the reporting limit ranging 0.31 – 0.45 ng/L. Therefore, associated sample results less than validation action concentrations were considered not detected and qualified "U" for the associated samples.

MS/MSD Recoveries

All MS/MSD mercury recoveries were considered acceptable and within the 71-125%R QC limit with the exception of the low total mercury MS/MSD recoveries (66%R/37%R) associated with samples collected on 7/22/13; and the low total mercury MSD recovery (30%R) associated with samples collected on 8/5/13. Therefore, the total mercury results were considered estimated, possibly biased low, with positive results qualified "J" and nondetected results qualified "UJ" for the affected samples.

Field Duplicate Precision

All field duplicate precision results were considered acceptable with the exception of the precision of total mercury for the field duplicate pairs OL-1929-02/-03 (67%RPD). Therefore, the total mercury results for these samples were considered estimated and qualified "J".

Usability

All total and dissolved mercury sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The total and dissolved low level mercury data presented by TAL were 100% complete (i.e., usable). The validated low level mercury laboratory data are tabulated and presented in Attachment A-1.

D2.1.2 Methyl Mercury

The following items were reviewed for compliancy in the methyl mercury analysis:

- Custody documentation

- Holding times
- Surrogate recoveries
- Initial and continuing calibration verifications
- Initial and continuing calibration, laboratory preparation blank, and field blank contamination
- Matrix spike / matrix spike duplicate (MS/MSD) recoveries
- Laboratory duplicate precision
- Laboratory control sample (LCS) recoveries
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of blank contamination, MS/MSD recoveries, and LCS recoveries as discussed below.

Blank Contamination

Initial and continuing calibration blanks and laboratory preparation blanks associated with project samples contained methyl mercury at a concentration below the reporting limit ranging 0.0137 – 0.027 ng/L. Field and equipment blanks associated with project samples contained methyl mercury at a concentration ranging 0.013 – 0.085 ng/L. Therefore, associated sample results less than validation action concentrations were considered not detected and qualified "U" for the associated samples.

MS/MSD Recoveries

All MS/MSD methyl mercury recoveries were considered acceptable and within the 12-135%R QC limit with the exception of the high methyl mercury MSD recovery (149%R) associated with samples collected on 8/26/13. Therefore, the positive methyl mercury results were considered estimated, possibly biased high, and qualified "J" for the affected samples.

LCS Recoveries

All LCS recoveries were considered acceptable and within the 44-128%R QC limit with the exception of the high methyl mercury LCS recovery (131%R) associated with samples collected

on 8/26/13. Therefore, positive methyl mercury results were considered estimated, possibly biased high, and qualified "J" for the affected samples.

Usability

All methyl mercury sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The methyl mercury data presented by TAL were 100% complete (i.e., usable). The validated methyl mercury laboratory data are tabulated and presented in Attachment A-1.

D2.1.3 Total Calcium, Ferrous Iron, Nitrite, Nitrate-Nitrite, Reactive Phosphate, and Ammonia

All custody documentation, holding times, matrix spike recoveries, laboratory duplicate precision, laboratory control sample recoveries, laboratory method blank contamination, QC field blank contamination, initial and continuing calibration verifications, field duplicate precision, and quantitation limits were reviewed for compliance. Validation qualification of the sample results for these parameters was not required with the exception of the following:

- The ammonia result for sample OL-1913-05 and the reactive phosphate results for samples collected 7/15/13 were considered estimated and qualified "J" based upon high continuing calibration verification recoveries.

- The nitrite and nitrate-nitrite results for samples collected 9/5/13, 10/14/13, and 10/28/13 were considered estimated, possibly biased low, and qualified "J" based upon an exceedance of the 48-hour analytical holding time by one to five days.

- The nitrate-nitrite results for samples OL-1913-01 and OL-1976-01; the ammonia results for samples OL-1927-01, -02, -03, -04, OL-1934-01, -02, -03, OL-1943-01, -02, -03, OL-1950-02, -03, OL-1961-01, -02, -03, OL-1966-01, -02, -03, OL-1971-01, -02, -03, OL-1976-01, OL-1980-02, -03, and OL-1999-01; the total calcium results for samples OL-1958-01, OL-1959-01, OL-1965-01, OL-1970-01, OL-1980-01, OL-1995-01, and OL-1984-01; and the reactive phosphate results for samples collected on 10/8/13 and 10/21/13 were considered not detected and qualified "U" based upon similar concentrations detected in the associated laboratory blanks and/or field blanks.

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The data for these parameters presented by UFI and TAL were 100% complete (i.e., usable). The validated laboratory data are tabulated and presented in Attachment A-1.

D2.2 SEDIMENT TRAP SAMPLES

Data review has been completed for data packages generated by TAL and UFI containing sediment trap samples collected from the site. The specific samples contained in these data packages, the analyses performed, and the validated laboratory data were tabulated and are presented in Attachment A-2. All of these samples were properly preserved, shipped under a COC record, and received intact by the analytical laboratory.

Data validation was performed for all samples in accordance with the project work plan and QAPP as well as the USEPA Region II SOP HW-2, Revision 13 "Evaluation of Metals Data for the CLP Program". This data validation and usability report is presented by analysis type.

D2.2.1 Low Level Mercury

The following items were reviewed for compliancy in the low level mercury analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration verifications
- Initial and continuing calibration, and laboratory preparation blank contamination
- Matrix spike / matrix spike duplicate (MS/MSD) recoveries
- Laboratory duplicate precision
- Laboratory control sample (LCS) recoveries
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols.

Usability

All low level mercury results for the sediment trap samples were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The low level mercury data presented by TAL were 100% complete (i.e., usable). The validated low level mercury laboratory data are tabulated and presented in Attachment A-2.

D2.2.2 TSS and Total Fixed Solids

All custody documentation, holding times, matrix spike recoveries, laboratory duplicate precision, laboratory control sample recoveries, laboratory method blank contamination, initial and continuing calibration verifications, field duplicate precision, and quantitation limits were reviewed for compliance. Validation qualification of the sample results for these parameters was not required.

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The data for these parameters presented by UFI were 100% complete (i.e., usable). The validated laboratory data are tabulated and presented in Attachment A-2.

ATTACHMENT A

VALIDATED LABORATORY DATA

ATTACHMENT A-1

VALIDATED LABORATORY DATA FOR 2013 NITRATE ADDITION SURFACE WATER SAMPLES

							Parameter	MERCURY		TOTAL FIXED SOLIDS		Total Suspended Solids	
							Units	ug/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Date	Sample Delivery Group	Sample Depth	Matrix	Purpose	Samp Type						
OL-1902-01	DEEP_S	5/20/2013	UFI CHM 2013-015	33-33 ft	WATER	REG	SLURRY			1336		1684	
OL-1902-02	DEEP_S	5/20/2013	UFI CHM 2013-015	33-33 ft	WATER	FD	SLURRY			1264		1572	
OL-1902-03	DEEP_S	5/20/2013	UFI CHM 2013-015	33-33 Ft	WATER	FD2	SLURRY			1304		1640	
OL-1941-01	DEEP_S	5/20/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.1					
OL-1905-01	DEEP_S	5/28/2013	UFI CHM 2013-020	33-33 ft	WATER	REG	SLURRY			2816		3376	
OL-1905-02	DEEP_S	5/28/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			2904		3488	
OL-1905-03	DEEP_S	5/28/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			3012		3636	
OL-1941-02	DEEP_S	5/28/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	2.6					
OL-1906-01	DEEP_S	6/3/2013	UFI CHM 2013-020	33-33 ft	WATER	REG	SLURRY			1456		1900	
OL-1906-02	DEEP_S	6/3/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			1344		1752	
OL-1906-03	DEEP_S	6/3/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			1400		1828	
OL-1941-03	DEEP_S	6/3/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.2					
OL-1907-01	DEEP_S	6/10/2013	UFI CHM 2013-020	33-33 ft	WATER	REG	SLURRY			2384		2784	
OL-1907-02	DEEP_S	6/10/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			2588		3020	
OL-1907-03	DEEP_S	6/10/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			3084		3580	
OL-1941-04	DEEP_S	6/10/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.3					
OL-1909-01	DEEP_S	6/17/2013	UFI CHM 2013-020	33-33 ft	WATER	REG	SLURRY			3376		3868	
OL-1909-02	DEEP_S	6/17/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			3376		3840	
OL-1909-03	DEEP_S	6/17/2013	UFI CHM 2013-020	33-33 ft	WATER	FD	SLURRY			3032		3444	
OL-1941-05	DEEP_S	6/17/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.1					
OL-1914-01	DEEP_S	6/24/2013	UFI CHM 2013-022	33-33 ft	WATER	REG	SLURRY			1072		1400	
OL-1914-02	DEEP_S	6/24/2013	UFI CHM 2013-022	33-33 ft	WATER	FD	SLURRY			1120		1460	
OL-1914-03	DEEP_S	6/24/2013	UFI CHM 2013-022	33-33 ft	WATER	FD	SLURRY			1268		1644	
OL-1941-06	DEEP_S	6/24/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	0.55					
OL-1917-01	DEEP_S	7/1/2013	UFI CHM 2013-024	33-33 ft	WATER	REG	SLURRY			1304		1580	
OL-1917-02	DEEP_S	7/1/2013	UFI CHM 2013-024	33-33 ft	WATER	FD	SLURRY			1244		1496	
OL-1917-03	DEEP_S	7/1/2013	UFI CHM 2013-024	33-33 ft	WATER	FD	SLURRY			1264		1516	
OL-1941-07	DEEP_S	7/1/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	0.72					
OL-1921-01	DEEP_S	7/8/2013	UFI CHM 2013-026	33-33 ft	WATER	REG	SLURRY			2876		3256	
OL-1921-02	DEEP_S	7/8/2013	UFI CHM 2013-026	33-33 ft	WATER	FD	SLURRY			2220		2524	
OL-1921-03	DEEP_S	7/8/2013	UFI CHM 2013-026	33-33 Ft	WATER	FD	SLURRY			2504		2812	
OL-1941-08	DEEP_S	7/8/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	0.78					
OL-1924-01	DEEP_S	7/15/2013	UFI CHM 2013-028	33-33 ft	WATER	REG	SLURRY			1716		1968	
OL-1924-02	DEEP_S	7/15/2013	UFI CHM 2013-028	33-33 ft	WATER	FD	SLURRY			2072		2388	
OL-1924-03	DEEP_S	7/15/2013	UFI CHM 2013-028	33-33 ft	WATER	FD	SLURRY			1792		2056	
OL-1941-09	DEEP_S	7/15/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.3					
OL-1928-01	DEEP_S	7/22/2013	UFI CHM 2013-031	33-33 ft	WATER	REG	SLURRY			3856		4252	
OL-1928-02	DEEP_S	7/22/2013	UFI CHM 2013-031	33-33 ft	WATER	FD	SLURRY			3960		4376	
OL-1928-03	DEEP_S	7/22/2013	UFI CHM 2013-031	33-33 ft	WATER	FD	SLURRY			4964		5488	
OL-1941-10	DEEP_S	7/22/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.2					
OL-1931-01	DEEP_S	7/29/2013	UFI CHM 2013-032	33-33 ft	WATER	REG	SLURRY			3260		2640	
OL-1931-02	DEEP_S	7/29/2013	UFI CHM 2013-032	33-33 ft	WATER	FD	SLURRY			3000		2816	
OL-1931-03	DEEP_S	7/29/2013	UFI CHM 2013-032	33-33 ft	WATER	FD	SLURRY			3080		3024	
OL-1941-11	DEEP_S	7/29/2013	240-27884-1	33-33 ft	WATER	REG	SLURRY	1.3					
OL-1935-01	DEEP_S	8/5/2013	UFI CHM 2013-034	33-33 ft	WATER	REG	SLURRY			3472		4156	
OL-1935-02	DEEP_S	8/5/2013	UFI CHM 2013-034	33-33 ft	WATER	FD	SLURRY			2620		3160	
OL-1935-03	DEEP_S	8/5/2013	UFI CHM 2013-034	33-33 ft	WATER	FD	SLURRY			2812		3372	
OL-2031-01	DEEP_S	8/5/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	0.12					
OL-1938-01	DEEP_S	8/12/2013	UFI CHM 2013-035	33-33 ft	WATER	REG	SLURRY			2348		2840	
OL-1938-02	DEEP_S	8/12/2013	UFI CHM 2013-035	33-33 ft	WATER	FD	SLURRY			1876		2280	
OL-1938-03	DEEP_S	8/12/2013	UFI CHM 2013-035	33-33 ft	WATER	FD	SLURRY			1828		2264	

							Parameter	MERCURY		TOTAL FIXED SOLIDS		Total Suspended Solids	
							Units	ug/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Date	Sample Delivery Group	Sample Depth	Matrix	Purpose	Samp Type						
OL-1944-01	DEEP_S	8/19/2013	UFI CHM 2013-037	33-33 ft	WATER	REG	SLURRY			2812		3340	
OL-1944-02	DEEP_S	8/19/2013	UFI CHM 2013-037	33-33 ft	WATER	FD	SLURRY			2800		3312	
OL-1944-03	DEEP_S	8/19/2013	UFI CHM 2013-037	33-33 ft	WATER	FD	SLURRY			2388		2836	
OL-2031-02	DEEP_S	8/19/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	1.5					
OL-1947-01	DEEP_S	8/26/2013	UFI CHM 2013-041	33-33 ft	WATER	REG	SLURRY			4116		4572	
OL-1947-02	DEEP_S	8/26/2013	UFI CHM 2013-041	33-33 ft	WATER	FD	SLURRY			3212		3584	
OL-1947-03	DEEP_S	8/26/2013	UFI CHM 2013-041	33-33 ft	WATER	FD	SLURRY			3504		3888	
OL-1951-01	DEEP_S	9/5/2013	UFI CHM 2013-041	33-33 ft	WATER	REG	SLURRY			4272		4848	
OL-1951-02	DEEP_S	9/5/2013	UFI CHM 2013-041	33-33 ft	WATER	FD	SLURRY			3976		4492	
OL-1951-03	DEEP_S	9/5/2013	UFI CHM 2013-041	33-33 ft	WATER	FD	SLURRY			3552		4040	
OL-1955-01	DEEP_S	9/9/2013	UFI CHM 2013-044	33-33 ft	WATER	REG	SLURRY			2104		2440	
OL-1955-02	DEEP_S	9/9/2013	UFI CHM 2013-044	33-33 ft	WATER	FD	SLURRY			1932		2240	
OL-1955-03	DEEP_S	9/9/2013	UFI CHM 2013-044	33-33 ft	WATER	FD	SLURRY			2516		2928	
OL-2031-03	DEEP_S	9/9/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	0.59					
OL-1962-01	DEEP_S	9/16/2013	UFI CHM 2013-045	33-33 ft	WATER	REG	SLURRY			1544		2016	
OL-1962-02	DEEP_S	9/16/2013	UFI CHM 2013-045	33-33 ft	WATER	FD	SLURRY			1576		2036	
OL-1962-03	DEEP_S	9/16/2013	UFI CHM 2013-045	33-33 ft	WATER	FD	SLURRY			1320		1684	
OL-2031-04	DEEP_S	9/16/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	0.16					
OL-1967-01	DEEP_S	9/23/2013	UFI CHM 2013-048	33-33 ft	WATER	REG	SLURRY			1656		2048	
OL-1967-02	DEEP_S	9/23/2013	UFI CHM 2013-048	33-33 ft	WATER	FD	SLURRY			1992		2428	
OL-1967-03	DEEP_S	9/23/2013	UFI CHM 2013-048	33-33 ft	WATER	FD	SLURRY			1652		2052	
OL-2031-05	DEEP_S	9/23/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	1.7					
OL-1972-01	DEEP_S	9/30/2013	UFI CHM 2013-051	33-33 ft	WATER	REG	SLURRY			1248		1572	
OL-1972-02	DEEP_S	9/30/2013	UFI CHM 2013-051	33-33 ft	WATER	FD	SLURRY			1260		1528	
OL-1972-03	DEEP_S	9/30/2013	UFI CHM 2013-051	33-33 ft	WATER	FD	SLURRY			1236		1496	
OL-2031-06	DEEP_S	9/30/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	2					
OL-1977-01	DEEP_S	10/8/2013	UFI CHM 2013-052	33-33 ft	WATER	REG	SLURRY			1604		1964	
OL-1977-02	DEEP_S	10/8/2013	UFI CHM 2013-052	33-33 ft	WATER	FD	SLURRY			1712		2056	
OL-1977-03	DEEP_S	10/8/2013	UFI CHM 2013-052	33-33 ft	WATER	FD	SLURRY			1340		1596	
OL-2031-07	DEEP_S	10/8/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	1.8					
OL-1981-01	DEEP_S	10/14/2013	UFI CHM 2013-054	33-33 ft	WATER	REG	SLURRY			1312		1596	
OL-1981-02	DEEP_S	10/14/2013	UFI CHM 2013-054	33-33 ft	WATER	FD	SLURRY			1248		1532	
OL-1981-03	DEEP_S	10/14/2013	UFI CHM 2013-054	33-33 ft	WATER	FD	SLURRY			1376		1676	
OL-2031-08	DEEP_S	10/14/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	1.4					
OL-1986-01	DEEP_S	10/21/2013	UFI CHM 2013-056	33-33 ft	WATER	REG	SLURRY			1328		1624	
OL-1986-02	DEEP_S	10/21/2013	UFI CHM 2013-056	33-33 ft	WATER	FD	SLURRY			1508		1808	
OL-1986-03	DEEP_S	10/21/2013	UFI CHM 2013-056	33-33 ft	WATER	FD	SLURRY			692		1800	
OL-2031-09	DEEP_S	10/21/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	0.91					
OL-1992-01	DEEP_S	10/28/2013	UFI CHM 2013-059	33-33 ft	WATER	REG	SLURRY			3220		3728	
OL-1992-02	DEEP_S	10/28/2013	UFI CHM 2013-059	33-33 ft	WATER	FD	SLURRY			3148		3708	
OL-1992-03	DEEP_S	10/28/2013	UFI CHM 2013-059	33-33 Ft	WATER	FD	SLURRY			2672		3096	
OL-2031-10	DEEP_S	10/28/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	3					
OL-2023-01	DEEP_S	11/4/2013	UFI CHM 2013-062	33-33 ft	WATER	REG	SLURRY			5312		6092	
OL-2023-02	DEEP_S	11/4/2013	UFI CHM 2013-062	33-33 ft	WATER	FD	SLURRY			5484		6356	
OL-2023-03	DEEP_S	11/4/2013	UFI CHM 2013-062	33-33 ft	WATER	FD	SLURRY			4584		5248	
OL-2031-11	DEEP_S	11/4/2013	240-31721-1	33-33 ft	WATER	REG	SLURRY	7.1					

ATTACHMENT A-2

VALIDATED LABORATORY DATA FOR SEDIMENT TRAP SAMPLES ANALYZED IN 2013

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1901-01	FIELD QC	NA	5/20/2013	UFI CHM 2013-015	WATER	FB	BLKWATER	0.6	U									0.013	U	0.043	U	0.048	U		
OL-1901-02	DEEP_S	6.6-6.6 Ft	5/20/2013	UFI CHM 2013-015	WATER	REG	W-SW	152.3										0.024		0.033	J	2.681			
OL-1901-03	DEEP_S	6.6-6.6 Ft	5/20/2013	UFI CHM 2013-015	WATER	FD	W-SW	161										0.023		0.029	J	2.61			
OL-1901-04	DEEP_S	39.6-39.6 Ft	5/20/2013	UFI CHM 2013-015	WATER	REG	W-SW	149.5										0.025		0.114		2.668			
OL-1901-05	DEEP_S	59.4-59.4 Ft	5/20/2013	UFI CHM 2013-015	WATER	REG	W-SW	147										0.035		0.293		2.677			
OL-1903-01	FIELD QC	NA	5/20/2013	240-24667-1	WATER	FB	BLKWATER					0.00016	U			1.30E-05	U								
OL-1903-02	DEEP_S	6.6-6.6 ft	5/20/2013	240-24667-1	WATER	REG	W-SW					0.0013		0.0005	U	7.30E-05									
OL-1903-03	DEEP_S	6.6-6.6 ft	5/20/2013	240-24667-1	WATER	FD	W-SW					0.001				7.80E-05									
OL-1903-04	DEEP_S	39.6-39.6 ft	5/20/2013	240-24667-1	WATER	REG	W-SW					0.0015				6.40E-05									
OL-1903-05	DEEP_S	59.4-59.4 ft	5/20/2013	240-24667-1	WATER	REG	W-SW					0.00087				5.00E-05	U								
OL-1908-01	FIELD QC	NA	6/17/2013	UFI CHM 2013-020	Water	FB	BLKWATER	0.1	U									0.0015	U	0.006	U	0.006	U	0.0002	U
OL-1908-02	DEEP_S	6.6-6.6 ft	6/17/2013	UFI CHM 2013-020	Water	REG	W-SW	138.7										0.029		0.018	J	2.494			
OL-1908-03	DEEP_S	6.6-6.6 ft	6/17/2013	UFI CHM 2013-020	Water	FD	W-SW	136.2										0.028		0.027	J	2.487			
OL-1908-04	DEEP_S	39.6-39.6 ft	6/17/2013	UFI CHM 2013-020	Water	REG	W-SW	147.6										0.045		0.232		2.508		0.0007	J
OL-1908-05	DEEP_S	59.4-59.4 ft	6/17/2013	UFI CHM 2013-020	Water	REG	W-SW	143.9										0.084		0.517		2.041		0.0013	J
OL-1910-01	FIELD QC	NA	6/17/2013	240-25811-1	Water	FB	BLKWATER					0.00016	U			5.00E-05	U								
OL-1910-02	DEEP_S	6.6-6.6 Ft	6/17/2013	240-25811-1	WATER	REG	W-SW					0.0024		0.0007		0.00011									
OL-1910-03	DEEP_S	6.6-6.6 Ft	6/17/2013	240-25811-1	WATER	FD	W-SW					0.0026				0.00012									
OL-1910-04	DEEP_S	39.6-39.6 Ft	6/17/2013	240-25811-1	WATER	REG	W-SW					0.0015				5.00E-05	U								
OL-1910-05	DEEP_S	59.4-59.4 Ft	6/17/2013	240-25811-1	WATER	REG	W-SW					0.0021				5.30E-05	U								
OL-1912-01	FIELD QC	NA	6/19/2013	240-25936-1	Water	FB	BLKWATER					0.0003	J	0.0005	U	5.00E-05	U								
OL-1912-02	FIELD QC	NA	6/19/2013	240-25936-1	Water	EB	W-SW					0.00027	J	0.0005	U	5.00E-05	U								
OL-1912-03	FIELD QC	NA	6/19/2013	240-25936-1	Water	EB	W-SW					0.00016	U	0.0005	U	5.00E-05	U								
OL-1913-01	FIELD QC	NA	6/24/2013	UFI CHM 2013-022	Water	FB	BLKWATER	0.2	J	22	U							0.013	U	0.043	U	0.048	U	0.0014	U
OL-1913-02	DEEP_S	6.6-6.6 ft	6/24/2013	UFI CHM 2013-022	Water	REG	W-SW	130.8										0.028		0.017	J	2.635			
OL-1913-03	DEEP_S	6.6-6.6 ft	6/24/2013	UFI CHM 2013-022	Water	FD	W-SW	129.5										0.028		0.02	J	2.64			
OL-1913-04	DEEP_S	39.6-39.6 ft	6/24/2013	UFI CHM 2013-022	Water	REG	W-SW	144.3		22	U							0.062		0.214		2.875		0.0014	U
OL-1913-05	DEEP_S	59.4-59.4 ft	6/24/2013	UFI CHM 2013-022	Water	REG	W-SW	158.9										0.125		0.539	J	2.318		0.0004	J
OL-1913-06	DEEP_S	59.4-59.4 ft	6/24/2013	UFI CHM 2013-022	Water	REG	W-SW			22	U														
OL-1913-07	DEEP_S	59.4-59.4 ft	6/24/2013	UFI CHM 2013-022	Water	FD	W-SW			22	U														
OL-1915-01	FIELD QC	NA	6/24/2013	240-26112-1	WATER	FB	BLKWATER					0.00016	U			8.50E-05									
OL-1915-02	DEEP_S	6.6-6.6 Ft	6/24/2013	240-26112-1	WATER	REG	W-SW					0.0016		0.00085		8.80E-05	U								
OL-1915-03	DEEP_S	6.6-6.6 Ft	6/24/2013	240-26112-1	WATER	FD	W-SW					0.0015				7.80E-05	U								
OL-1915-04	DEEP_S	39.6-39.6 Ft	6/24/2013	240-26112-1	WATER	REG	W-SW					0.00092				5.00E-05	U								
OL-1915-05	DEEP_S	59.4-59.4 Ft	6/24/2013	240-26112-1	WATER	REG	W-SW					0.0015				5.00E-05	U								
OL-1916-01	FIELD QC	NA	7/1/2013	UFI CHM 2013-024	Water	FB	BLKWATER	0.6	J	22	U							0.013	U	0.043	U	0.048	U	0.0014	U
OL-1916-02	DEEP_S	6.6-6.6 ft	7/1/2013	UFI CHM 2013-024	Water	REG	W-SW	141.8										0.031		0.027	J	2.267			
OL-1916-03	DEEP_S	6.6-6.6 ft	7/1/2013	UFI CHM 2013-024	Water	FD	W-SW	144.5										0.031		0.029	J	2.313			
OL-1916-04	DEEP_S	39.6-39.6 ft	7/1/2013	UFI CHM 2013-024	Water	REG	W-SW	158.1		22	U							0.086		0.185		2.549		0.0021	
OL-1916-05	DEEP_S	52.8-52.8 ft	7/1/2013	UFI CHM 2013-024	Water	REG	W-SW	145.1		22	U							0.13		0.364		2.165		0.0021	
OL-1916-06	DEEP_S	59.4-59.4 ft	7/1/2013	UFI CHM 2013-024	Water	REG	W-SW	154.7										0.129		0.473		2.053		0.0013	J
OL-1916-07	DEEP_S	59.4-59.4 ft	7/1/2013	UFI CHM 2013-024	Water	REG	W-SW			22	U														
OL-1916-08	DEEP_S	59.4-59.4 ft	7/1/2013	UFI CHM 2013-024	Water	FD	W-SW			22	U														
OL-1918-01	FIELD QC	NA	7/1/2013	240-26386-1	Water	FB	BLKWATER					0.00016	U			1.30E-05	J								
OL-1918-02	DEEP_S	6.6-6.6 ft	7/1/2013	240-26386-1	Water	REG	W-SW					0.0018		0.00089		6.10E-05									
OL-1918-03	DEEP_S	6.6-6.6 ft	7/1/2013	240-26386-1	Water	FD	W-SW					0.0017				8.00E-05									
OL-1918-04	DEEP_S	39.6-39.6 ft	7/1/2013	240-26386-1	Water	REG	W-SW					0.0017				5.00E-05	U								
OL-1918-05	DEEP_S	52.8-52.8 ft	7/1/2013	240-26386-1	Water	REG	W-SW					0.002				5.00E-05	U								
OL-1918-06	DEEP_S	59.4-59.4 ft	7/1/2013	240-26386-1	Water	REG	W-SW					0.0017				5.00E-05	U								
OL-1920-01	FIELD QC	NA	7/8/2013	UFI CHM 2013-026	Water	FB	BLKWATER	0.6	U	22	U							0.013	U	0.043	U	0.048	U		

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1920-02	DEEP_S	6.6-6.6 ft	7/8/2013	UFI CHM 2013-026	Water	REG	W-SW	126										0.031		0.034	J	1.994			
OL-1920-03	DEEP_S	6.6-6.6 ft	7/8/2013	UFI CHM 2013-026	Water	FD	W-SW	125										0.033		0.034	J	1.978			
OL-1920-04	DEEP_S	39.6-39.6 ft	7/8/2013	UFI CHM 2013-026	Water	REG	W-SW	185		22	U							0.182		0.016	J	2.647			
OL-1920-05	DEEP_S	52.8-52.8 ft	7/8/2013	UFI CHM 2013-026	Water	REG	W-SW	178		22	U							0.149		0.266		2.291			
OL-1920-06	DEEP_S	59.4-59.4 ft	7/8/2013	UFI CHM 2013-026	Water	REG	W-SW	183										0.127		0.606		1.811			
OL-1920-07	DEEP_S	59.4-59.4 ft	7/8/2013	UFI CHM 2013-026	Water	REG	W-SW			22	U														
OL-1920-08	DEEP_S	59.4-59.4 ft	7/8/2013	UFI CHM 2013-026	Water	FD	W-SW			22	U														
OL-1922-01	FIELD QC	NA	7/8/2013	240-26580-1	Water	FB	BLKWATER					0.00016	U			1.30E-05	U								
OL-1922-02	DEEP_S	6.6-6.6 ft	7/8/2013	240-26580-1	Water	REG	W-SW					0.0019		0.00063		8.60E-05									
OL-1922-03	DEEP_S	6.6-6.6 ft	7/8/2013	240-26580-1	Water	FD	W-SW					0.0015				0.00011									
OL-1922-04	DEEP_S	39.6-39.6 ft	7/8/2013	240-26580-1	Water	REG	W-SW					0.0013				5.20E-05									
OL-1922-05	DEEP_S	52.8-52.8 ft	7/8/2013	240-26580-1	Water	REG	W-SW					0.0013				5.00E-05	U								
OL-1922-06	DEEP_S	59.4-59.4 ft	7/8/2013	240-26580-1	Water	REG	W-SW					0.0015				7.10E-05									
OL-1923-01	FIELD QC	NA	7/15/2013	UFI CHM 2013-028	Water	FB	BLKWATER	0.6	J	22	U							0.013	U	0.043	U	0.048	U	0.0014	U
OL-1923-02	DEEP_S	6.6-6.6 ft	7/15/2013	UFI CHM 2013-028	Water	REG	W-SW	167										0.032		0.041	J	2.242			
OL-1923-03	DEEP_S	6.6-6.6 ft	7/15/2013	UFI CHM 2013-028	Water	FD	W-SW	170										0.032		0.037	J	2.21			
OL-1923-04	DEEP_S	39.6-39.6 ft	7/15/2013	UFI CHM 2013-028	Water	REG	W-SW	173		22	U							0.013	U	0.011	J	2.916		0.0019	J
OL-1923-05	DEEP_S	52.8-52.8 ft	7/15/2013	UFI CHM 2013-028	Water	REG	W-SW	180		22	U							0.134		0.372		2.297			
OL-1923-06	DEEP_S	52.8-52.8 ft	7/15/2013	UFI CHM 2013-028	Water	REG	W-SW																	0.0028	J
OL-1923-07	DEEP_S	52.8-52.8 ft	7/15/2013	UFI CHM 2013-028	Water	FD	W-SW																	0.0028	J
OL-1923-08	DEEP_S	59.4-59.4 ft	7/15/2013	UFI CHM 2013-028	Water	REG	W-SW	173										0.114		0.704		2.583		0.0012	J
OL-1923-09	DEEP_S	59.4-59.4 ft	7/15/2013	UFI CHM 2013-028	Water	REG	W-SW			22	U														
OL-1923-10	DEEP_S	59.4-59.4 ft	7/15/2013	UFI CHM 2013-028	Water	FD	W-SW			22	U														
OL-1925-01	FIELD QC	NA	7/15/2013	240-26897-1	Water	FB	BLKWATER					0.00018	J			1.30E-05	U								
OL-1925-02	DEEP_S	6.6-6.6 ft	7/15/2013	240-26897-1	Water	REG	W-SW					0.003		0.001		0.00013									
OL-1925-03	DEEP_S	6.6-6.6 ft	7/15/2013	240-26897-1	Water	FD	W-SW					0.0029				0.00012									
OL-1925-04	DEEP_S	39.6-39.6 ft	7/15/2013	240-26897-1	Water	REG	W-SW					0.0016				5.80E-05									
OL-1925-05	DEEP_S	52.8-52.8 ft	7/15/2013	240-26897-1	Water	REG	W-SW					0.0015				5.40E-05									
OL-1925-06	DEEP_S	59.4-59.4 ft	7/15/2013	240-26897-1	Water	REG	W-SW					0.0019				0.00013									
OL-1927-01	FIELD QC	NA	7/22/2013	UFI CHM 2013-031	Water	FB	BLKWATER	0.6	J	22	U							0.013	U	0.043	U	0.048	U		
OL-1927-02	DEEP_S	6.6-6.6 ft	7/22/2013	UFI CHM 2013-031	Water	REG	W-SW	181										0.036		0.043	U	2.227			
OL-1927-03	DEEP_S	6.6-6.6 ft	7/22/2013	UFI CHM 2013-031	Water	FD	W-SW	133										0.036		0.043	U	2.229			
OL-1927-04	DEEP_S	39.6-39.6 ft	7/22/2013	UFI CHM 2013-031	Water	REG	W-SW	169		22	U							0.045		0.091	U	2.505			
OL-1927-05	DEEP_S	52.8-52.8 ft	7/22/2013	UFI CHM 2013-031	Water	REG	W-SW	184		22	U							0.125		0.564		2.1			
OL-1927-06	DEEP_S	59.4-59.4 ft	7/22/2013	UFI CHM 2013-031	Water	REG	W-SW	169										0.098		1.025		2.253			
OL-1927-07	DEEP_S	59.4-59.4 ft	7/22/2013	UFI CHM 2013-031	Water	REG	W-SW			22	U														
OL-1927-08	DEEP_S	59.4-59.4 ft	7/22/2013	UFI CHM 2013-031	Water	FD	W-SW			22	U														
OL-1929-01	FIELD QC	NA	7/22/2013	240-27133-1	Water	FB	BLKWATER					0.00016	UJ			1.30E-05	U								
OL-1929-02	DEEP_S	6.6-6.6 ft	7/22/2013	240-27133-1	Water	REG	W-SW					0.0024	J			0.00013									
OL-1929-03	DEEP_S	6.6-6.6 ft	7/22/2013	240-27133-1	Water	FD	W-SW					0.0012	J			0.00012									
OL-1929-04	DEEP_S	39.6-39.6 ft	7/22/2013	240-27133-1	Water	REG	W-SW					0.00066	J			6.10E-05	U								
OL-1929-05	DEEP_S	52.8-52.8 ft	7/22/2013	240-27133-1	Water	REG	W-SW					0.00075	J			7.70E-05									
OL-1929-06	DEEP_S	59.4-59.4 ft	7/22/2013	240-27133-1	Water	REG	W-SW					0.00095	J			0.00011									
OL-1930-01	FIELD QC	NA	7/29/2013	UFI CHM 2013-032	Water	FB	BLKWATER	0.6	J	22	U							0.013	U	0.043	U	0.048	J	0.0014	U
OL-1930-02	DEEP_S	6.6-6.6 ft	7/29/2013	UFI CHM 2013-032	Water	REG	W-SW	125										0.046		0.035	J	2.309			
OL-1930-03	DEEP_S	6.6-6.6 ft	7/29/2013	UFI CHM 2013-032	Water	FD	W-SW	131										0.046		0.036	J	2.361			
OL-1930-04	DEEP_S	39.6-39.6 ft	7/29/2013	UFI CHM 2013-032	Water	REG	W-SW	75		22	U							0.054		0.092		2.496		0.0007	J
OL-1930-05	DEEP_S	52.8-52.8 ft	7/29/2013	UFI CHM 2013-032	Water	REG	W-SW	138		22	U							0.125		0.481		2.1			
OL-1930-06	DEEP_S	52.8-52.8 ft	7/29/2013	UFI CHM 2013-032	Water	REG	W-SW																	0.0021	
OL-1930-07	DEEP_S	52.8-52.8 ft	7/29/2013	UFI CHM 2013-032	Water	FD	W-SW																	0.0019	

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1930-08	DEEP_S	59.4-59.4 ft	7/29/2013	UFI CHM 2013-032	Water	REG	W-SW	165										0.117		0.81		2.213		0.0021	
OL-1930-09	DEEP_S	59.4-59.4 ft	7/29/2013	UFI CHM 2013-032	Water	REG	W-SW			22	U														
OL-1930-10	DEEP_S	59.4-59.4 ft	7/29/2013	UFI CHM 2013-032	Water	FD	W-SW			22	U														
OL-1932-01	FIELD QC	NA	7/29/2013	240-27350-1	Water	FB	BLKWATER					0.00016	U			1.30E-05	U								
OL-1932-02	DEEP_S	6.6-6.6 ft	7/29/2013	240-27350-1	Water	REG	W-SW					0.0025		0.002		0.00012									
OL-1932-03	DEEP_S	6.6-6.6 ft	7/29/2013	240-27350-1	Water	FD	W-SW					0.0021				0.00012									
OL-1932-04	DEEP_S	39.6-39.6 ft	7/29/2013	240-27350-1	Water	REG	W-SW					0.0012				7.10E-05	U								
OL-1932-05	DEEP_S	52.8-52.8 ft	7/29/2013	240-27350-1	Water	REG	W-SW					0.0014				8.60E-05									
OL-1932-06	DEEP_S	59.4-59.4 ft	7/29/2013	240-27350-1	Water	REG	W-SW					0.0014				0.0001									
OL-1934-01	FIELD QC	NA	8/5/2013	UFI CHM 2013-034	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048	U		
OL-1934-02	DEEP_S	6.6-6.6 ft	8/5/2013	UFI CHM 2013-034	Water	REG	W-SW											0.053		0.043	U	2.432			
OL-1934-03	DEEP_S	6.6-6.6 ft	8/5/2013	UFI CHM 2013-034	Water	FD	W-SW											0.054		0.043	U	2.432			
OL-1934-04	DEEP_S	39.6-39.6 ft	8/5/2013	UFI CHM 2013-034	Water	REG	W-SW			22	U							0.085		0.144		2.417			
OL-1934-05	DEEP_S	52.8-52.8 ft	8/5/2013	UFI CHM 2013-034	Water	REG	W-SW			22	U							0.118		0.421		2.179			
OL-1934-07	DEEP_S	59.4-59.4 ft	8/5/2013	UFI CHM 2013-034	Water	REG	W-SW			22	U							0.117		0.601		2.142			
OL-1934-08	DEEP_S	59.4-59.4 ft	8/5/2013	UFI CHM 2013-034	Water	FD	W-SW			22	U														
OL-1936-01	FIELD QC	NA	8/5/2013	240-27587-1	Water	FB	BLKWATER					0.00018	J			0.000019	J								
OL-1936-02	DEEP_S	6.6-6.6 ft	8/5/2013	240-27587-1	Water	REG	W-SW					0.0026	J			0.0001									
OL-1936-03	DEEP_S	6.6-6.6 ft	8/5/2013	240-27587-1	Water	FD	W-SW					0.002	J			0.00011									
OL-1936-04	DEEP_S	39.6-39.6 ft	8/5/2013	240-27587-1	Water	REG	W-SW					0.0005	UJ			0.000077	U								
OL-1936-05	DEEP_S	52.8-52.8 ft	8/5/2013	240-27587-1	Water	REG	W-SW					0.0012	J			0.00011									
OL-1936-06	DEEP_S	59.4-59.4 ft	8/5/2013	240-27587-1	Water	REG	W-SW					0.00051	UJ			0.000071	U								
OL-1937-01	FIELD QC	NA	8/12/2013	UFI CHM 2013-035	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.038	J	0.0014	U
OL-1937-02	DEEP_S	6.6-6.6 ft	8/12/2013	UFI CHM 2013-035	Water	REG	W-SW											0.054		0.012	J	2.428			
OL-1937-03	DEEP_S	6.6-6.6 ft	8/12/2013	UFI CHM 2013-035	Water	FD	W-SW											0.054		0.014	J	2.426			
OL-1937-04	DEEP_S	39.6-39.6 ft	8/12/2013	UFI CHM 2013-035	Water	REG	W-SW			22	U							0.074		0.147		2.257		0.0008	J
OL-1937-05	DEEP_S	52.8-52.8 ft	8/12/2013	UFI CHM 2013-035	Water	REG	W-SW			22	U							0.098		0.465		2.011			
OL-1937-06	DEEP_S	52.8-52.8 ft	8/12/2013	UFI CHM 2013-035	Water	REG	W-SW																	0.0019	
OL-1937-07	DEEP_S	52.8-52.8 ft	8/12/2013	UFI CHM 2013-035	Water	FD	W-SW																	0.002	
OL-1937-08	DEEP_S	59.4-59.4 ft	8/12/2013	UFI CHM 2013-035	Water	REG	W-SW											0.081		0.779		1.98		0.0039	
OL-1937-09	DEEP_S	59.4-59.4 ft	8/12/2013	UFI CHM 2013-035	Water	REG	W-SW			22	U														
OL-1937-10	DEEP_S	59.4-59.4 ft	8/12/2013	UFI CHM 2013-035	Water	FD	W-SW			22	U														
OL-1939-01	FIELD QC	NA	8/12/2013	240-27880-1	Water	FB	BLKWATER					0.00016	U			0.000013	U								
OL-1939-02	DEEP_S	6.6-6.6 ft	8/12/2013	240-27880-1	Water	REG	W-SW					0.0021		0.00052		0.000079									
OL-1939-03	DEEP_S	6.6-6.6 ft	8/12/2013	240-27880-1	Water	FD	W-SW					0.0023				0.000081									
OL-1939-04	DEEP_S	39.6-39.6 ft	8/12/2013	240-27880-1	Water	REG	W-SW					0.0015				0.000084									
OL-1939-05	DEEP_S	52.8-52.8 ft	8/12/2013	240-27880-1	Water	REG	W-SW					0.002				0.000098									
OL-1939-06	DEEP_S	59.4-59.4 ft	8/12/2013	240-27880-1	Water	REG	W-SW					0.0027				0.00011									
OL-1942-01	Field QC	NA	8/14/2013	240-27984-1	WATER	FB	BLKWATER					0.00016	U	0.00016	U	0.000025	J								
OL-1942-02	Field QC	NA	8/14/2013	240-27984-1	WATER	EB	W-SW					0.00019	J	0.00031	J	0.000013	U								
OL-1942-03	Field QC	NA	8/14/2013	240-27984-1	WATER	EB	W-SW					0.00016	J	0.00034	J	0.000023	J								
OL-1943-01	FIELD QC	NA	8/19/2013	UFI CHM 2013-037	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048			
OL-1943-02	DEEP_S	6.6-6.6 ft	8/19/2013	UFI CHM 2013-037	Water	REG	W-SW											0.054		0.043	U	2.55			
OL-1943-03	DEEP_S	6.6-6.6 ft	8/19/2013	UFI CHM 2013-037	Water	FD	W-SW											0.054		0.043	U	2.682			
OL-1943-04	DEEP_S	39.6-39.6 ft	8/19/2013	UFI CHM 2013-037	Water	REG	W-SW			22	U							0.037		0.241		2.083			
OL-1943-05	DEEP_S	52.8-52.8 ft	8/19/2013	UFI CHM 2013-037	Water	REG	W-SW			22	U							0.059		0.663		1.863			
OL-1943-07	DEEP_S	59.4-59.4 ft	8/19/2013	UFI CHM 2013-037	Water	REG	W-SW			22	U							0.028		1.078		1.581			
OL-1943-08	DEEP_S	59.4-59.4 ft	8/19/2013	UFI CHM 2013-037	Water	FD	W-SW			22	U														
OL-1945-01	FIELD QC	NA	8/19/2013	240-28131-1	Water	FB	BLKWATER					0.00021	J			0.000013	U								
OL-1945-02	DEEP_S	6.6-6.6 ft	8/19/2013	240-28131-1	Water	REG	W-SW					0.002				0.000085									

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1945-03	DEEP_S	6.6-6.6 ft	8/19/2013	240-28131-1	Water	FD	W-SW					0.0021				0.000079									
OL-1945-04	DEEP_S	39.6-39.6 ft	8/19/2013	240-28131-1	Water	REG	W-SW					0.0014				0.000067	U								
OL-1945-05	DEEP_S	52.8-52.8 ft	8/19/2013	240-28131-1	Water	REG	W-SW					0.0023				0.000073	U								
OL-1945-06	DEEP_S	59.4-59.4 ft	8/19/2013	240-28131-1	Water	REG	W-SW					0.0039				0.00011									
OL-1946-01	FIELD QC	NA	8/26/2013	UFI CHM 2013-041	Water	FB	BLKWATER			22	U							0.013	U	0.011	J	0.014	J	0.0014	U
OL-1946-02	DEEP_S	6.6-6.6 ft	8/26/2013	UFI CHM 2013-041	Water	REG	W-SW											0.049		0.043	U	2.432			
OL-1946-03	DEEP_S	6.6-6.6 ft	8/26/2013	UFI CHM 2013-041	Water	FD	W-SW											0.051		0.043	U	2.472			
OL-1946-04	DEEP_S	39.6-39.6 ft	8/26/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U							0.013	U	0.295		1.923		0.0005	J
OL-1946-05	DEEP_S	52.8-52.8 ft	8/26/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U							0.01	J	0.601		1.637			
OL-1946-06	DEEP_S	52.8-52.8 ft	8/26/2013	UFI CHM 2013-041	Water	REG	W-SW																	0.0014	U
OL-1946-07	DEEP_S	52.8-52.8 ft	8/26/2013	UFI CHM 2013-041	Water	FD	W-SW																	0.0014	U
OL-1946-08	DEEP_S	59.4-59.4 ft	8/26/2013	UFI CHM 2013-041	Water	REG	W-SW											0.02		1.226		2.59		0.0014	
OL-1946-09	DEEP_S	59.4-59.4 ft	8/26/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U														
OL-1946-10	DEEP_S	59.4-59.4 ft	8/26/2013	UFI CHM 2013-041	Water	FD	W-SW			22	U														
OL-1948-01	FIELD QC	NA	8/26/2013	240-28385-1	Water	FB	BLKWATER					0.00016	U			0.00005	UJ								
OL-1948-02	DEEP_S	6.6-6.6 ft	8/26/2013	240-28385-1	Water	REG	W-SW					0.0013		0.00053		0.000086	UJ								
OL-1948-03	DEEP_S	6.6-6.6 ft	8/26/2013	240-28385-1	Water	FD	W-SW					0.0012				0.0001	UJ								
OL-1948-04	DEEP_S	39.6-39.6 ft	8/26/2013	240-28385-1	Water	REG	W-SW					0.0011				0.000098	UJ								
OL-1948-05	DEEP_S	52.8-52.8 ft	8/26/2013	240-28385-1	Water	REG	W-SW					0.0012				0.000098	UJ								
OL-1948-06	DEEP_S	59.4-59.4 ft	8/26/2013	240-28385-1	Water	REG	W-SW					0.0027				0.00011	UJ								
OL-1950-01	FIELD QC	NA	9/5/2013	UFI CHM 2013-041	Water	FB	BLKWATER			22	U							0.013	UJ	0.043	U	0.048	UJ		
OL-1950-02	DEEP_S	6.6-6.6 ft	9/5/2013	UFI CHM 2013-041	Water	REG	W-SW											0.044	J	0.043	U	2.777	J		
OL-1950-03	DEEP_S	6.6-6.6 ft	9/5/2013	UFI CHM 2013-041	Water	FD	W-SW											0.044	J	0.043	U	2.776	J		
OL-1950-04	DEEP_S	39.6-39.6 ft	9/5/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U							0.004	J	0.193		1.83	J		
OL-1950-05	DEEP_S	46.2-46.2 ft	9/5/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U							0.006	J	0.672		1.681	J		
OL-1950-06	DEEP_S	52.8-52.8 ft	9/5/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U							0.013	J	0.884		1.738	J		
OL-1950-08	DEEP_S	59.4-59.4 ft	9/5/2013	UFI CHM 2013-041	Water	REG	W-SW			22	U							0.01	J	1.833	U	3.821	J		
OL-1950-09	DEEP_S	59.4-59.4 ft	9/5/2013	UFI CHM 2013-041	Water	FD	W-SW			22	U														
OL-1952-01	FIELD QC	NA	9/5/2013	240-28750-1	WATER	FB	BLKWATER					0.00016	U			0.000017	J								
OL-1952-02	DEEP_S	6.6-6.6 Ft	9/5/2013	240-28750-1	WATER	REG	W-SW					0.0035				0.00012									
OL-1952-03	DEEP_S	6.6-6.6 Ft	9/5/2013	240-28750-1	WATER	FD	W-SW					0.0034				0.00012									
OL-1952-04	DEEP_S	39.6-39.6 Ft	9/5/2013	240-28750-1	WATER	REG	W-SW					0.00089				0.00012									
OL-1952-05	DEEP_S	46.2-46.2 Ft	9/5/2013	240-28750-1	WATER	REG	W-SW					0.0013				0.00013									
OL-1952-06	DEEP_S	52.8-52.8 Ft	9/5/2013	240-28750-1	WATER	REG	W-SW					0.0016				0.00013									
OL-1952-07	DEEP_S	59.4-59.4 Ft	9/5/2013	240-28750-1	WATER	REG	W-SW					0.0043				0.00015									
OL-1954-01	FIELD QC	NA	9/9/2013	UFI CHM 2013-044	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048	U	0.0005	J
OL-1954-02	DEEP_S	6.6-6.6 ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW											0.041		0.043	U	2.479			
OL-1954-03	DEEP_S	6.6-6.6 ft	9/9/2013	UFI CHM 2013-044	Water	FD	W-SW											0.04		0.043	U	2.408			
OL-1954-04	DEEP_S	39.6-39.6 ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW			22	U							0.013	U	0.428		1.584		0.0012	J
OL-1954-05	DEEP_S	46.2-46.2 Ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW			22	U							0.013	U	0.619		1.612		0.0015	
OL-1954-06	DEEP_S	52.8-52.8 ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW			22	U							0.003	J	0.811		1.539			
OL-1954-07	DEEP_S	52.8-52.8 ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW																	0.0026	
OL-1954-08	DEEP_S	52.8-52.8 ft	9/9/2013	UFI CHM 2013-044	Water	FD	W-SW																	0.0019	
OL-1954-09	DEEP_S	59.4-59.4 ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW																	0.0018	
OL-1954-10	DEEP_S	59.4-59.4 ft	9/9/2013	UFI CHM 2013-044	Water	REG	W-SW			22	U							0.006	J	1.216		1.588			
OL-1954-11	DEEP_S	59.4-59.4 ft	9/9/2013	UFI CHM 2013-044	Water	FD	W-SW			22	U														
OL-1956-01	FIELD QC	NA	9/9/2013	240-28818-1	Water	FB	BLKWATER					0.00016	U			0.00005	U								
OL-1956-02	DEEP_S	6.6-6.6 ft	9/9/2013	240-28818-1	Water	REG	W-SW					0.0026		0.00068		0.00011	U								
OL-1956-03	DEEP_S	6.6-6.6 ft	9/9/2013	240-28818-1	Water	FD	W-SW					0.0023				0.00011	U								
OL-1956-04	DEEP_S	39.6-39.6 ft	9/9/2013	240-28818-1	Water	REG	W-SW					0.00098				0.00012	U								

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1956-05	DEEP_S	46.2-46.2 ft	9/9/2013	240-28818-1	Water	REG	W-SW					0.0013		0.00026	J	0.00013	U								
OL-1956-06	DEEP_S	52.8-52.8 ft	9/9/2013	240-28818-1	Water	REG	W-SW					0.0017				0.00013	U								
OL-1956-07	DEEP_S	59.4-59.4 ft	9/9/2013	240-28818-1	Water	REG	W-SW					0.0031				0.00013	U								
OL-1958-01	FIELD QC	NA	9/9/2013	180-24931-1	Water	FB	BLKWATER	10	U																
OL-1958-02	DEEP_S	6.6-6.6 ft	9/9/2013	180-24931-1	Water	REG	W-SW	130																	
OL-1958-03	DEEP_S	6.6-6.6 ft	9/9/2013	180-24931-1	Water	FD	W-SW	120																	
OL-1958-04	DEEP_S	39.6-39.6 ft	9/9/2013	180-24931-1	Water	REG	W-SW	140																	
OL-1958-05	DEEP_S	46.2-46.2 ft	9/9/2013	180-24931-1	Water	REG	W-SW	140																	
OL-1958-06	DEEP_S	52.8-52.8 ft	9/9/2013	180-24931-1	Water	REG	W-SW	140																	
OL-1958-07	DEEP_S	59.4-59.4 ft	9/9/2013	180-24931-1	Water	REG	W-SW	140																	
OL-1959-01	FIELD QC	NA	8/5/2013	180-24931-2	Water	FB	BLKWATER	0.019	U																
OL-1959-02	DEEP_S	6.6-6.6 ft	8/5/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-03	DEEP_S	6.6-6.6 ft	8/5/2013	180-24931-2	Water	FD	W-SW	120																	
OL-1959-04	DEEP_S	39.6-39.6 ft	8/5/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-05	DEEP_S	52.8-52.8 ft	8/5/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-06	DEEP_S	59.4-59.4 ft	8/5/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-07	FIELD QC	NA	8/12/2013	180-24931-2	Water	FB	BLKWATER	10	U																
OL-1959-08	DEEP_S	6.6-6.6 ft	8/12/2013	180-24931-2	Water	REG	W-SW	120																	
OL-1959-09	DEEP_S	6.6-6.6 ft	8/12/2013	180-24931-2	Water	FD	W-SW	130																	
OL-1959-10	DEEP_S	39.6-39.6 ft	8/12/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-11	DEEP_S	52.8-52.8 ft	8/12/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-12	DEEP_S	59.4-59.4 ft	8/12/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-13	FIELD QC	NA	8/19/2013	180-24931-2	Water	FB	BLKWATER	0.019	U																
OL-1959-14	DEEP_S	6.6-6.6 ft	8/19/2013	180-24931-2	Water	REG	W-SW	130																	
OL-1959-15	DEEP_S	6.6-6.6 ft	8/19/2013	180-24931-2	Water	FD	W-SW	130																	
OL-1959-16	DEEP_S	39.6-39.6 ft	8/19/2013	180-24931-2	Water	REG	W-SW	150																	
OL-1959-17	DEEP_S	52.8-52.8 ft	8/19/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1959-18	DEEP_S	59.4-59.4 ft	8/19/2013	180-24931-2	Water	REG	W-SW	140																	
OL-1960-01	FIELD QC	NA	8/26/2013	180-24931-3	Water	FB	BLKWATER	0.051	J																
OL-1960-02	DEEP_S	6.6-6.6 ft	8/26/2013	180-24931-3	Water	REG	W-SW	130																	
OL-1960-03	DEEP_S	6.6-6.6 ft	8/26/2013	180-24931-3	Water	FD	W-SW	120																	
OL-1960-04	DEEP_S	39.6-39.6 ft	8/26/2013	180-24931-3	Water	REG	W-SW	140																	
OL-1960-05	DEEP_S	52.8-52.8 ft	8/26/2013	180-24931-3	Water	REG	W-SW	140																	
OL-1960-06	DEEP_S	59.4-59.4 ft	8/26/2013	180-24931-3	Water	REG	W-SW	150																	
OL-1960-07	FIELD QC	NA	9/5/2013	180-24931-3	Water	FB	BLKWATER	0.019	U																
OL-1960-08	DEEP_S	6.6-6.6 ft	9/5/2013	180-24931-3	Water	REG	W-SW	130																	
OL-1960-09	DEEP_S	6.6-6.6 ft	9/5/2013	180-24931-3	Water	FD	W-SW	120																	
OL-1960-10	DEEP_S	39.6-39.6 ft	9/5/2013	180-24931-3	Water	REG	W-SW	140																	
OL-1960-11	DEEP_S	46.2-46.2 ft	9/5/2013	180-24931-3	Water	REG	W-SW	150																	
OL-1960-12	DEEP_S	52.8-52.8 ft	9/5/2013	180-24931-3	Water	REG	W-SW	140																	
OL-1960-13	DEEP_S	59.4-59.4 ft	9/5/2013	180-24931-3	Water	REG	W-SW	150																	
OL-1961-01	FIELD QC	NA	9/16/2013	UFI CHM 2013-045	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048	U		
OL-1961-02	DEEP_S	6.6-6.6 ft	9/16/2013	UFI CHM 2013-045	Water	REG	W-SW											0.041		0.043	U	2.367			
OL-1961-03	DEEP_S	6.6-6.6 ft	9/16/2013	UFI CHM 2013-045	Water	FD	W-SW											0.042		0.043	U	2.363			
OL-1961-04	DEEP_S	39.6-39.6 ft	9/16/2013	UFI CHM 2013-045	Water	REG	W-SW			22	U							0.013	U	0.512		1.501			
OL-1961-05	DEEP_S	46.2-46.2 ft	9/16/2013	UFI CHM 2013-045	Water	REG	W-SW			22	U							0.013	U	0.652		1.475			
OL-1961-06	DEEP_S	52.8-52.8 ft	9/16/2013	UFI CHM 2013-045	Water	REG	W-SW			22	U							0.013	U	0.913		1.641			
OL-1961-08	DEEP_S	59.4-59.4 ft	9/16/2013	UFI CHM 2013-045	Water	REG	W-SW			22	U							0.004	J	1.596		2.639			
OL-1961-09	DEEP_S	59.4-59.4 ft	9/16/2013	UFI CHM 2013-045	Water	FD	W-SW			22	U														
OL-1963-01	FIELD QC	NA	9/16/2013	240-29082-1	Water	FB	BLKWATER					0.00016	U			0.000014	J								

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1963-02	DEEP_S	6.6-6.6 ft	9/16/2013	240-29082-1	Water	REG	W-SW					0.003				0.000098									
OL-1963-03	DEEP_S	6.6-6.6 ft	9/16/2013	240-29082-1	Water	FD	W-SW					0.003				0.000097									
OL-1963-04	DEEP_S	39.6-39.6 ft	9/16/2013	240-29082-1	Water	REG	W-SW					0.0016				0.00013									
OL-1963-05	DEEP_S	46.2-46.2 ft	9/16/2013	240-29082-1	Water	REG	W-SW					0.0014				0.00014									
OL-1963-06	DEEP_S	52.8-52.8 ft	9/16/2013	240-29082-1	Water	REG	W-SW					0.0019				0.00011									
OL-1963-07	DEEP_S	59.4-59.4 ft	9/16/2013	240-29082-1	Water	REG	W-SW					0.0036				0.00014									
OL-1965-01	FIELD QC	NA	9/16/2013	180-25201-1	Water	FB	BLKWATER	5	U																
OL-1965-02	DEEP_S	6.6-6.6 ft	9/16/2013	180-25201-1	Water	REG	W-SW	130																	
OL-1965-03	DEEP_S	6.6-6.6 ft	9/16/2013	180-25201-1	Water	FD	W-SW	130																	
OL-1965-04	DEEP_S	39.6-39.6 ft	9/16/2013	180-25201-1	Water	REG	W-SW	140																	
OL-1965-05	DEEP_S	46.2-46.2 ft	9/16/2013	180-25201-1	Water	REG	W-SW	150																	
OL-1965-06	DEEP_S	52.8-52.8 ft	9/16/2013	180-25201-1	Water	REG	W-SW	140																	
OL-1965-07	DEEP_S	59.4-59.4 ft	9/16/2013	180-25201-1	Water	REG	W-SW	140																	
OL-1966-01	FIELD QC	NA	9/23/2013	UFI CHM 2013-048	Water	FB	BLKWATER			22	U							0.003	J	0.043	U	0.048	U	0.0014	U
OL-1966-02	DEEP_S	6.6-6.6 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW											0.04		0.068	U	2.736			
OL-1966-03	DEEP_S	6.6-6.6 ft	9/23/2013	UFI CHM 2013-048	Water	FD	W-SW											0.043		0.07	U	2.729			
OL-1966-04	DEEP_S	39.6-39.6 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW			22	U							0.008	J	0.335		1.613		0.001	J
OL-1966-05	DEEP_S	46.2-46.2 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW			22	U							0.005	J	0.682		1.651		0.0008	J
OL-1966-06	DEEP_S	52.8-52.8 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW			22	U							0.005	J	0.788		1.704			
OL-1966-07	DEEP_S	52.8-52.8 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW																	0.0012	J
OL-1966-08	DEEP_S	52.8-52.8 ft	9/23/2013	UFI CHM 2013-048	Water	FD	W-SW																	0.0012	J
OL-1966-09	DEEP_S	59.4-59.4 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW																	0.0016	
OL-1966-10	DEEP_S	59.4-59.4 ft	9/23/2013	UFI CHM 2013-048	Water	REG	W-SW			22	U							0.006	J	1.126		1.878			
OL-1966-11	DEEP_S	59.4-59.4 ft	9/23/2013	UFI CHM 2013-048	Water	FD	W-SW			22	U														
OL-1968-01	FIELD QC	NA	9/23/2013	240-29359-1	Water	FB	BLKWATER					0.00016	U			0.000014	J								
OL-1968-02	DEEP_S	6.6-6.6 ft	9/23/2013	240-29359-1	Water	REG	W-SW					0.003		0.00085		0.00011									
OL-1968-03	DEEP_S	6.6-6.6 ft	9/23/2013	240-29359-1	Water	FD	W-SW					0.0029				0.00012									
OL-1968-04	DEEP_S	39.6-39.6 ft	9/23/2013	240-29359-1	Water	REG	W-SW					0.0014				0.00015									
OL-1968-05	DEEP_S	46.2-46.2 ft	9/23/2013	240-29359-1	Water	REG	W-SW					0.0015		0.00021	J	0.00015									
OL-1968-06	DEEP_S	52.8-52.8 ft	9/23/2013	240-29359-1	Water	REG	W-SW					0.0016				0.00015									
OL-1968-07	DEEP_S	59.4-59.4 ft	9/23/2013	240-29359-1	Water	REG	W-SW					0.0053				0.00019									
OL-1970-01	FIELD QC	NA	9/23/2013	180-25402-1	Water	FB	BLKWATER	5	U																
OL-1970-02	DEEP_S	6.6-6.6 ft	9/23/2013	180-25402-1	Water	REG	W-SW	140																	
OL-1970-03	DEEP_S	6.6-6.6 ft	9/23/2013	180-25402-1	Water	FD	W-SW	140																	
OL-1970-04	DEEP_S	39.6-39.6 ft	9/23/2013	180-25402-1	Water	REG	W-SW	150																	
OL-1970-05	DEEP_S	46.2-46.2 ft	9/23/2013	180-25402-1	Water	REG	W-SW	140																	
OL-1970-06	DEEP_S	52.8-52.8 ft	9/23/2013	180-25402-1	Water	REG	W-SW	150																	
OL-1970-07	DEEP_S	59.4-59.4 ft	9/23/2013	180-25402-1	Water	REG	W-SW	150																	
OL-1971-01	FIELD QC	NA	9/30/2013	UFI CHM 2013-051	Water	FB	BLKWATER			22	U							0.003	J	0.043	U	0.048	U		
OL-1971-02	DEEP_S	6.6-6.6 ft	9/30/2013	UFI CHM 2013-051	Water	REG	W-SW											0.041		0.063	U	2.61			
OL-1971-03	DEEP_S	6.6-6.6 ft	9/30/2013	UFI CHM 2013-051	Water	FD	W-SW											0.04		0.065	U	2.557			
OL-1971-04	DEEP_S	39.6-39.6 ft	9/30/2013	UFI CHM 2013-051	Water	REG	W-SW			22	U							0.004	J	0.53		1.296			
OL-1971-05	DEEP_S	46.2-46.2 ft	9/30/2013	UFI CHM 2013-051	Water	REG	W-SW			22	U							0.006	J	0.858		1.713			
OL-1971-06	DEEP_S	52.8-52.8 ft	9/30/2013	UFI CHM 2013-051	Water	REG	W-SW			22	U							0.006	J	1.201		1.983			
OL-1971-08	DEEP_S	59.4-59.4 ft	9/30/2013	UFI CHM 2013-051	Water	REG	W-SW			22	U							0.013		1.894		3.071			
OL-1971-09	DEEP_S	59.4-59.4 ft	9/30/2013	UFI CHM 2013-051	Water	FD	W-SW			22	U														
OL-1973-01	FIELD QC	NA	9/30/2013	240-29656-1	Water	FB	BLKWATER					0.00016	U			0.000013	U								
OL-1973-02	DEEP_S	6.6-6.6 ft	9/30/2013	240-29656-1	Water	REG	W-SW					0.005				0.000074									
OL-1973-03	DEEP_S	6.6-6.6 ft	9/30/2013	240-29656-1	Water	FD	W-SW					0.005				0.0001									
OL-1973-04	DEEP_S	39.6-39.6 ft	9/30/2013	240-29656-1	Water	REG	W-SW					0.0029				0.00015									

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1973-05	DEEP_S	46.2-46.2 ft	9/30/2013	240-29656-1	Water	REG	W-SW					0.002				0.00012									
OL-1973-06	DEEP_S	52.8-52.8 ft	9/30/2013	240-29656-1	Water	REG	W-SW					0.0043				0.00014									
OL-1973-07	DEEP_S	59.4-59.4 ft	9/30/2013	240-29656-1	Water	REG	W-SW					0.011				0.0002									
OL-1975-01	FIELD QC	NA	9/30/2013	180-25613-1	Water	FB	BLKWATER	0.013	J																
OL-1975-02	DEEP_S	6.6-6.6 ft	9/30/2013	180-25613-1	Water	REG	W-SW	130																	
OL-1975-03	DEEP_S	6.6-6.6 ft	9/30/2013	180-25613-1	Water	FD	W-SW	130																	
OL-1975-04	DEEP_S	39.6-39.6 ft	9/30/2013	180-25613-1	Water	REG	W-SW	150																	
OL-1975-05	DEEP_S	46.2-46.2 ft	9/30/2013	180-25613-1	Water	REG	W-SW	150																	
OL-1975-06	DEEP_S	52.8-52.8 ft	9/30/2013	180-25613-1	Water	REG	W-SW	150																	
OL-1975-07	DEEP_S	59.4-59.4 ft	9/30/2013	180-25613-1	Water	REG	W-SW	150																	
OL-1976-01	FIELD QC	NA	10/8/2013	UFI CHM 2013-052	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048	U	0.0004	J
OL-1976-02	DEEP_S	6.6-6.6 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW											0.032		0.099		2.393			
OL-1976-03	DEEP_S	6.6-6.6 ft	10/8/2013	UFI CHM 2013-052	Water	FD	W-SW											0.032		0.101		2.384			
OL-1976-04	DEEP_S	39.6-39.6 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW			22	U							0.003	J	0.714		1.286		0.0014	U
OL-1976-05	DEEP_S	46.2-46.2 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW			22	U							0.013	U	0.858		1.369		0.0014	U
OL-1976-06	DEEP_S	52.8-52.8 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW			22	U							0.005	J	1.243		1.865			
OL-1976-07	DEEP_S	52.8-52.8 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW																	0.0014	U
OL-1976-08	DEEP_S	52.8-52.8 ft	10/8/2013	UFI CHM 2013-052	Water	FD	W-SW																	0.0014	U
OL-1976-09	DEEP_S	59.4-59.4 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW																	0.0014	U
OL-1976-10	DEEP_S	59.4-59.4 ft	10/8/2013	UFI CHM 2013-052	Water	REG	W-SW			22	U							0.005	J	1.553		1.951			
OL-1976-11	DEEP_S	59.4-59.4 ft	10/8/2013	UFI CHM 2013-052	Water	FD	W-SW			22	U														
OL-1978-01	FIELD QC	NA	10/8/2013	240-29989-1	Water	FB	BLKWATER					0.00016	U			0.000013	U								
OL-1978-02	DEEP_S	6.6-6.6 ft	10/8/2013	240-29989-1	Water	REG	W-SW					0.004		0.0016		0.00011									
OL-1978-03	DEEP_S	6.6-6.6 ft	10/8/2013	240-29989-1	Water	FD	W-SW					0.0037				0.00011									
OL-1978-04	DEEP_S	39.6-39.6 ft	10/8/2013	240-29989-1	Water	REG	W-SW					0.00084				0.00015									
OL-1978-05	DEEP_S	46.2-46.2 ft	10/8/2013	240-29989-1	Water	REG	W-SW					0.00073		0.00024	J	0.00015									
OL-1978-06	DEEP_S	52.8-52.8 ft	10/8/2013	240-29989-1	Water	REG	W-SW					0.0013				0.00015									
OL-1978-07	DEEP_S	59.4-59.4 ft	10/8/2013	240-29989-1	Water	REG	W-SW					0.0022				0.00014									
OL-1980-01	FIELD QC	NA	10/8/2013	180-25885-1	Water	FB	BLKWATER	5	U																
OL-1980-02	DEEP_S	6.6-6.6 ft	10/8/2013	180-25885-1	Water	REG	W-SW	140																	
OL-1980-03	DEEP_S	6.6-6.6 ft	10/8/2013	180-25885-1	Water	FD	W-SW	140																	
OL-1980-04	DEEP_S	39.6-39.6 ft	10/8/2013	180-25885-1	Water	REG	W-SW	150																	
OL-1980-05	DEEP_S	46.2-46.2 ft	10/8/2013	180-25885-1	Water	REG	W-SW	150																	
OL-1980-06	DEEP_S	52.8-52.8 ft	10/8/2013	180-25885-1	Water	REG	W-SW	150																	
OL-1980-07	DEEP_S	59.4-59.4 ft	10/8/2013	180-25885-1	Water	REG	W-SW	150																	
OL-1980A-01	FIELD QC	NA	10/14/2013	UFI CHM 2013-054	Water	FB	BLKWATER			22	U							0.013	UJ	0.02	J	0.048	UJ		
OL-1980A-02	DEEP_S	6.6-6.6 ft	10/14/2013	UFI CHM 2013-054	Water	REG	W-SW											0.026	J	0.046	U	2.218	J		
OL-1980A-03	DEEP_S	6.6-6.6 ft	10/14/2013	UFI CHM 2013-054	Water	FD	W-SW											0.026	J	0.047	U	2.179	J		
OL-1980A-04	DEEP_S	39.6-39.6 ft	10/14/2013	UFI CHM 2013-054	Water	REG	W-SW			22	U							0.003	J	0.462		1.342	J		
OL-1980A-05	DEEP_S	46.2-46.2 ft	10/14/2013	UFI CHM 2013-054	Water	REG	W-SW			22	U							0.013	UJ	0.736		1.23	J		
OL-1980A-06	DEEP_S	52.8-52.8 ft	10/14/2013	UFI CHM 2013-054	Water	REG	W-SW			22	U							0.013	UJ	1.01		1.717	J		
OL-1980A-08	DEEP_S	59.4-59.4 ft	10/14/2013	UFI CHM 2013-054	Water	REG	W-SW			22	U							0.013	UJ	1.516		3.045	J		
OL-1980A-09	DEEP_S	59.4-59.4 ft	10/14/2013	UFI CHM 2013-054	Water	FD	W-SW			22	U														
OL-1982-01	FIELD QC	NA	10/14/2013	240-30230-1	Water	FB	BLKWATER					0.00016	U			0.00005	U								
OL-1982-02	DEEP_S	6.6-6.6 ft	10/14/2013	240-30230-1	Water	REG	W-SW					0.0035				0.000078	U								
OL-1982-03	DEEP_S	6.6-6.6 ft	10/14/2013	240-30230-1	Water	FD	W-SW					0.0035				0.000088	U								
OL-1982-04	DEEP_S	39.6-39.6 ft	10/14/2013	240-30230-1	Water	REG	W-SW					0.0024				0.000099	U								
OL-1982-05	DEEP_S	46.2-46.2 ft	10/14/2013	240-30230-1	Water	REG	W-SW					0.0023				0.00015									
OL-1982-06	DEEP_S	52.8-52.8 ft	10/14/2013	240-30230-1	Water	REG	W-SW					0.0035				0.00015									
OL-1982-07	DEEP_S	59.4-59.4 ft	10/14/2013	240-30230-1	Water	REG	W-SW					0.0079				0.00015									

							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1984-01	FIELD QC	NA	10/14/2013	180-26054-1	Water	FB	BLKWATER	5	U																
OL-1984-02	DEEP_S	2-2 ft	10/14/2013	180-26054-1	Water	REG	W-SW	130																	
OL-1984-03	DEEP_S	2-2 ft	10/14/2013	180-26054-1	Water	FD	W-SW	130																	
OL-1984-04	DEEP_S	12-12 ft	10/14/2013	180-26054-1	Water	REG	W-SW	130																	
OL-1984-05	DEEP_S	14-14 ft	10/14/2013	180-26054-1	Water	REG	W-SW	140																	
OL-1984-06	DEEP_S	16-16 ft	10/14/2013	180-26054-1	Water	REG	W-SW	140																	
OL-1984-07	DEEP_S	18-18 ft	10/14/2013	180-26054-1	Water	REG	W-SW	140																	
OL-1985-01	FIELD QC	NA	10/21/2013	UFI CHM 2013-056	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048	U	0.0015	
OL-1985-02	DEEP_S	6.6-6.6 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW											0.028		0.091		2.344			
OL-1985-03	DEEP_S	6.6-6.6 ft	10/21/2013	UFI CHM 2013-056	Water	FD	W-SW											0.028		0.089		2.377			
OL-1985-04	DEEP_S	39.6-39.6 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW			22	U							0.024		0.334		2.141		0.0014	U
OL-1985-05	DEEP_S	46.2-46.2 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW			22	U							0.013	U	0.893		1.287		0.0014	U
OL-1985-06	DEEP_S	52.8-52.8 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW			22	U							0.007	J	1.192		1.49			
OL-1985-07	DEEP_S	52.8-52.8 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW																	0.0014	U
OL-1985-08	DEEP_S	52.8-52.8 ft	10/21/2013	UFI CHM 2013-056	Water	FD	W-SW																	0.0014	U
OL-1985-09	DEEP_S	59.4-59.4 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW																	0.0015	U
OL-1985-10	DEEP_S	59.4-59.4 ft	10/21/2013	UFI CHM 2013-056	Water	REG	W-SW			22	U							0.012	J	1.47		1.641			
OL-1985-11	DEEP_S	59.4-59.4 ft	10/21/2013	UFI CHM 2013-056	Water	FD	W-SW			22	U														
OL-1987-01	FIELD QC	NA	10/21/2013	240-30462-1	Water	FB	BLKWATER					0.00016	U			0.00005	U								
OL-1987-02	DEEP_S	6.6-6.6 ft	10/21/2013	240-30462-1	Water	REG	W-SW					0.0041		0.0011		0.00014									
OL-1987-03	DEEP_S	6.6-6.6 ft	10/21/2013	240-30462-1	Water	FD	W-SW					0.0043				0.00015									
OL-1987-04	DEEP_S	39.6-39.6 ft	10/21/2013	240-30462-1	Water	REG	W-SW					0.0051				0.00015									
OL-1987-05	DEEP_S	46.2-46.2 ft	10/21/2013	240-30462-1	Water	REG	W-SW					0.002		0.00021	J	0.00021									
OL-1987-06	DEEP_S	52.8-52.8 ft	10/21/2013	240-30462-1	Water	REG	W-SW					0.0024				0.00021									
OL-1987-07	DEEP_S	59.4-59.4 ft	10/21/2013	240-30462-1	Water	REG	W-SW					0.0035				0.00021									
OL-1989-01	FIELD QC	NA	10/21/2013	180-26277-1	Water	FB	BLKWATER	0.081	J																
OL-1989-02	DEEP_S	6.6-6.6 ft	10/21/2013	180-26277-1	Water	REG	W-SW	130																	
OL-1989-03	DEEP_S	6.6-6.6 ft	10/21/2013	180-26277-1	Water	FD	W-SW	130																	
OL-1989-04	DEEP_S	39.6-39.6 ft	10/21/2013	180-26277-1	Water	REG	W-SW	140																	
OL-1989-05	DEEP_S	46.2-46.2 ft	10/21/2013	180-26277-1	Water	REG	W-SW	160																	
OL-1989-06	DEEP_S	52.8-52.8 ft	10/21/2013	180-26277-1	Water	REG	W-SW	150																	
OL-1989-07	DEEP_S	59.4-59.4 ft	10/21/2013	180-26277-1	Water	REG	W-SW	160																	
OL-1990-01	FIELD QC	NA	10/23/2013	240-30557-1	Water	FB	BLKWATER					0.00016	U	0.00016	U	0.00005	U								
OL-1990-02	FIELD QC	NA	10/23/2013	240-30557-1	Water	EB	BLKWATER					0.00016	U	0.00016	U	0.00005	U								
OL-1990-03	FIELD QC	NA	10/23/2013	240-30557-1	Water	EB	BLKWATER					0.00016	U	0.00016	U	0.000013	U								
OL-1991-01	FIELD QC	NA	10/28/2013	UFI CHM 2013-059	Water	FB	BLKWATER											0.013	UJ	0.043	U	0.048	UJ		
OL-1991-02	DEEP_S	6.6-6.6 ft	10/28/2013	UFI CHM 2013-059	Water	REG	W-SW											0.028	J	0.249		2.247	J		
OL-1991-03	DEEP_S	6.6-6.6 ft	10/28/2013	UFI CHM 2013-059	Water	FD	W-SW											0.028	J	0.246		2.239	J		
OL-1991-04	DEEP_S	39.6-39.6 ft	10/28/2013	UFI CHM 2013-059	Water	REG	W-SW											0.028	J	0.248		2.27	J		
OL-1993-01	FIELD QC	NA	10/28/2013	240-30757-1	Water	FB	BLKWATER					0.00016	U			0.00005	U								
OL-1993-02	DEEP_S	6.6-6.6 ft	10/28/2013	240-30757-1	Water	REG	W-SW					0.0061				0.00012									
OL-1993-03	DEEP_S	6.6-6.6 ft	10/28/2013	240-30757-1	Water	FD	W-SW					0.0057				0.00013									
OL-1993-04	DEEP_S	39.6-39.6 ft	10/28/2013	240-30757-1	Water	REG	W-SW					0.0082				0.00013									
OL-1995-01	FIELD QC	NA	10/28/2013	180-26590-1	Water	FB	BLKWATER	5	U																
OL-1995-02	DEEP_S	6.6-6.6 ft	10/28/2013	180-26590-1	Water	REG	W-SW	130																	
OL-1995-03	DEEP_S	6.6-6.6 ft	10/28/2013	180-26590-1	Water	FD	W-SW	130																	
OL-1995-04	DEEP_S	39.6-39.6 ft	10/28/2013	180-26590-1	Water	REG	W-SW	130																	
OL-1996-01	FIELD QC	NA	10/30/2013	UFI CHM 2013-060	Water	FB	BLKWATER			22	U							0.013	U	0.043	U	0.048	U		
OL-1996-02	DEEP_S	6.6-6.6 ft	10/30/2013	UFI CHM 2013-060	Water	REG	W-SW											0.029		0.267		2.246			
OL-1996-03	DEEP_S	6.6-6.6 ft	10/30/2013	UFI CHM 2013-060	Water	FD	W-SW											0.029		0.261		2.269			

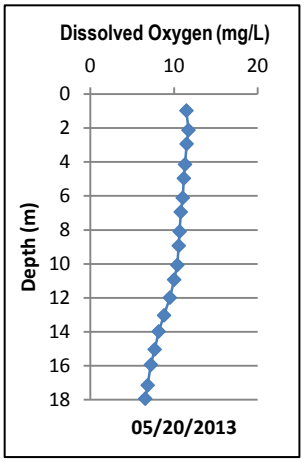
							Parameter	CALCIUM		FERROUS IRON (II)		MERCURY		DISSOLVED MERCURY		METHYL MERCURY		NITRITE [(1)]		NITROGEN, AMMONIA (AS N) [(1)]		NITROGEN, NITRATE-NITRITE [(1)]		REACTIVE PHOSPHATE [(1)]	
							Units	mg/l		ug/l		ug/l		ug/l		ug/l		mg/l		mg/l		mg/l		mg/l	
Field Sample ID	Location ID	Sample Depth	Sample Date	Sample Delivery Group	Matrix	Purpose	Samp Type																		
OL-1996-04	DEEP_S	39.6-39.6 ft	10/30/2013	UFI CHM 2013-060	Water	REG	W-SW			22	U							0.029		0.269		2.203			
OL-1996-06	DEEP_S	59.4-59.4 ft	10/30/2013	UFI CHM 2013-060	Water	REG	W-SW			22	U							0.031		1.867		1.036			
OL-1996-07	DEEP_S	59.4-59.4 ft	10/30/2013	UFI CHM 2013-060	Water	FD	W-SW			22	U														
OL-1997-01	FIELD QC	NA	10/30/2013	240-30848-1	Water	FB	BLKWATER					0.00016	U			0.00005	U								
OL-1997-02	DEEP_S	6.6-6.6 ft	10/30/2013	240-30848-1	Water	REG	W-SW					0.0073				0.00014									
OL-1997-03	DEEP_S	6.6-6.6 ft	10/30/2013	240-30848-1	Water	FD	W-SW					0.0077				0.00014									
OL-1997-04	DEEP_S	39.6-39.6 ft	10/30/2013	240-30848-1	Water	REG	W-SW					0.0077				0.00014									
OL-1997-05	DEEP_S	59.4-59.4 ft	10/30/2013	240-30848-1	Water	REG	W-SW					0.0074				0.00025									
OL-1998-01	FIELD QC	NA	10/30/2013	180-26668-1	Water	FB	BLKWATER	0.0097	U																
OL-1998-02	DEEP_S	6.6-6.6 ft	10/30/2013	180-26668-1	Water	REG	W-SW	130																	
OL-1998-03	DEEP_S	6.6-6.6 ft	10/30/2013	180-26668-1	Water	FD	W-SW	130																	
OL-1998-04	DEEP_S	39.6-39.6 ft	10/30/2013	180-26668-1	Water	REG	W-SW	130																	
OL-1998-05	DEEP_S	59.4-59.4 ft	10/30/2013	180-26668-1	Water	REG	W-SW	140																	
OL-1999-01	FIELD QC	NA	11/4/2013	UFI CHM 2013-062	Water	FB	BLKWATER											0.013	U	0.043	U	0.048	U		
OL-1999-02	DEEP_S	6.6-6.6 ft	11/4/2013	UFI CHM 2013-062	Water	REG	W-SW											0.031		0.354		2.21			
OL-1999-03	DEEP_S	6.6-6.6 ft	11/4/2013	UFI CHM 2013-062	Water	FD	W-SW											0.031		0.339		2.172			
OL-1999-04	DEEP_S	39.6-39.6 ft	11/4/2013	UFI CHM 2013-062	Water	REG	W-SW											0.032		0.34		2.213			
OL-1999-05	DEEP_S	46.2-46.2 ft	11/4/2013	UFI CHM 2013-062	Water	REG	W-SW											0.027		0.295		1.918			
OL-2024-01	FIELD QC	NA	11/4/2013	240-31024-1	Water	FB	BLKWATER					0.00016	U			0.000013	J								
OL-2024-02	DEEP_S	6.6-6.6 ft	11/4/2013	240-31024-1	Water	REG	W-SW					0.012				0.00017									
OL-2024-03	DEEP_S	6.6-6.6 ft	11/4/2013	240-31024-1	Water	FD	W-SW					0.015				0.00015									
OL-2024-04	DEEP_S	39.6-39.6 ft	11/4/2013	240-31024-1	Water	REG	W-SW					0.013				0.00014									
OL-2024-05	DEEP_S	59.4-59.4 ft	11/4/2013	240-31024-1	Water	REG	W-SW					0.015				0.00016									
OL-2026-01	FIELD QC	NA	11/4/2013	180-26807-1	Water	FB	BLKWATER	0.048	J																
OL-2026-02	DEEP_S	6.6-6.6 ft	11/4/2013	180-26807-1	Water	REG	W-SW	140																	
OL-2026-03	DEEP_S	6.6-6.6 ft	11/4/2013	180-26807-1	Water	FD	W-SW	140																	
OL-2026-04	DEEP_S	39.6-39.6 ft	11/4/2013	180-26807-1	Water	REG	W-SW	130																	
OL-2026-05	DEEP_S	59.4-59.4 ft	11/4/2013	180-26807-1	Water	REG	W-SW	130																	
OL-2027-01	FIELD QC	NA	11/20/2013	UFI CHM 2013-063	Water	FB	BLKWATER											0.013	U	0.043	U	0.048	U		
OL-2027-02	DEEP_S	6.6-6.6 ft	11/20/2013	UFI CHM 2013-063	Water	REG	W-SW											0.061		0.324		2.711			
OL-2027-03	DEEP_S	6.6-6.6 ft	11/20/2013	UFI CHM 2013-063	Water	FD	W-SW											0.061		0.316		2.686			
OL-2027-04	DEEP_S	39.6-39.6 ft	11/20/2013	UFI CHM 2013-063	Water	REG	W-SW											0.061		0.319		2.702			
OL-2027-05	DEEP_S	59.4-59.4 ft	11/20/2013	UFI CHM 2013-063	Water	REG	W-SW											0.061		0.318		2.733			
OL-2028-01	FIELD QC	NA	11/20/2013	240-31719-1	Water	FB	BLKWATER					0.00016	U			0.00005	U								
OL-2028-02	DEEP_S	6.6-6.6 ft	11/20/2013	240-31719-1	Water	REG	W-SW					0.011				0.00015									
OL-2028-03	DEEP_S	6.6-6.6 ft	11/20/2013	240-31719-1	Water	FD	W-SW					0.011				0.00015									
OL-2028-04	DEEP_S	39.6-39.6 ft	11/20/2013	240-31719-1	Water	REG	W-SW					0.011				0.00016									
OL-2028-05	DEEP_S	59.4-59.4 ft	11/20/2013	240-31719-1	Water	REG	W-SW					0.013				0.00016									
OL-2030-01	FIELD QC	NA	11/20/2013	180-27389-1	Water	FB	BLKWATER	0.0097	U																
OL-2030-02	DEEP_S	6.6-6.6 ft	11/20/2013	180-27389-1	Water	REG	W-SW	140																	
OL-2030-03	DEEP_S	6.6-6.6 ft	11/20/2013	180-27389-1	Water	FD	W-SW	140																	
OL-2030-04	DEEP_S	39.6-39.6 ft	11/20/2013	180-27389-1	Water	REG	W-SW	140																	
OL-2030-05	DEEP_S	59.4-59.4 ft	11/20/2013	180-27389-1	Water	REG	W-SW	140																	

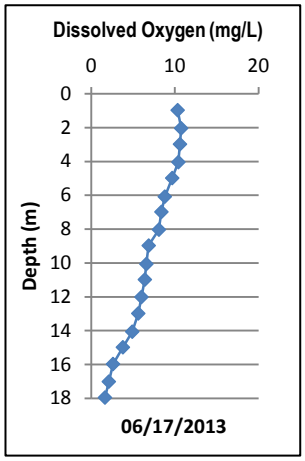
Notes: (1) - Field filtered.

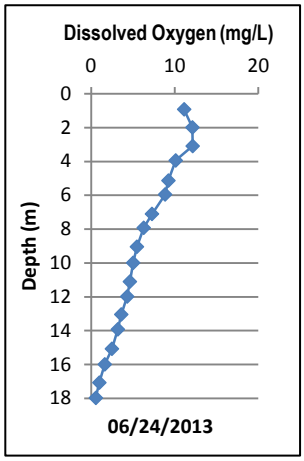
APPENDIX E

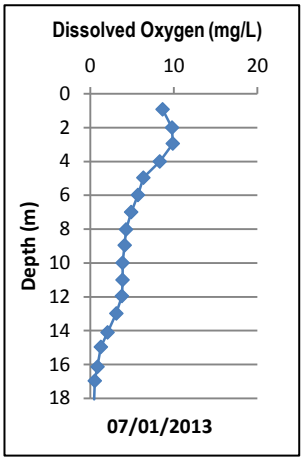
PLOTS OF DISSOLVED OXYGEN, NITRATE, TOTAL MERCURY AND METHYLMERCURY CONCENTRATIONS WITH DEPTH AT SOUTH DEEP FOR 2013

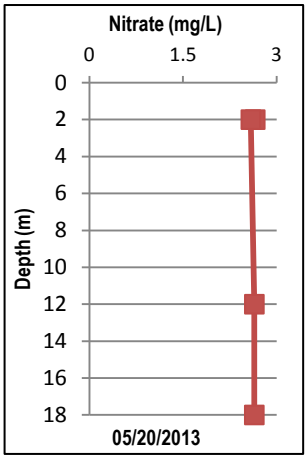
2013 Water Quality Results: South Deep

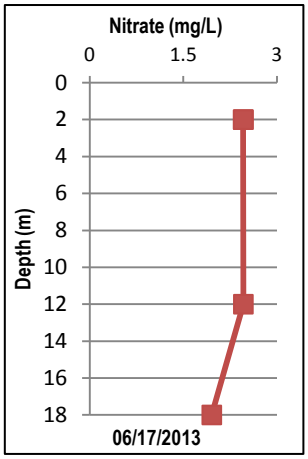


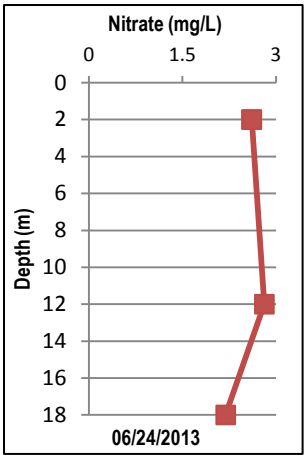


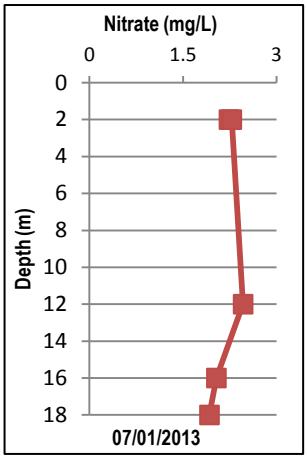


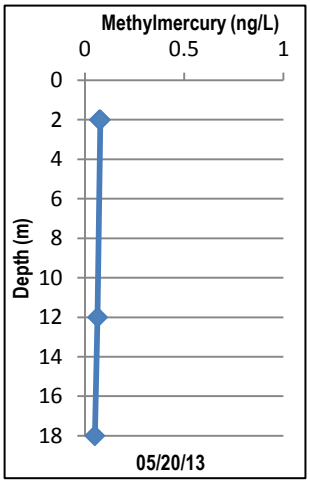


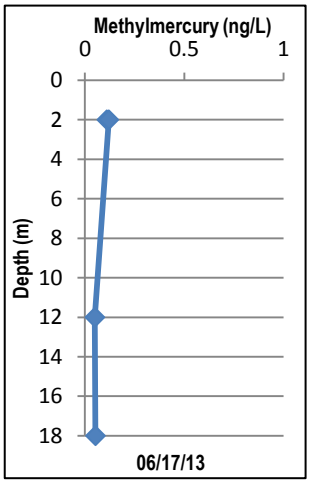


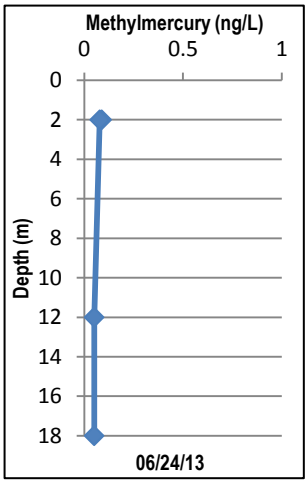


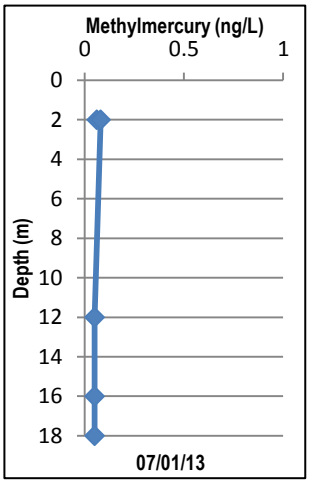


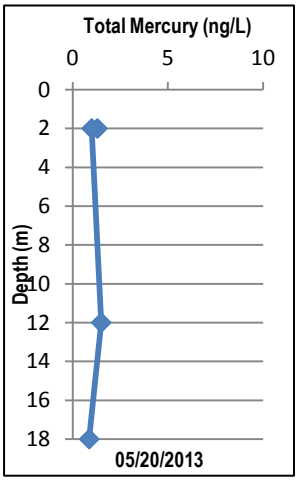


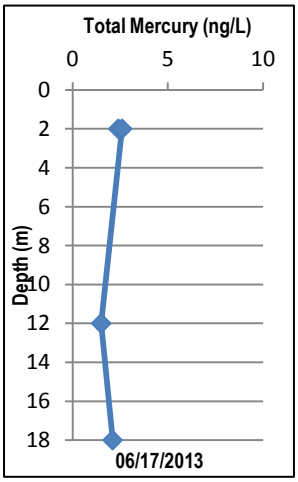


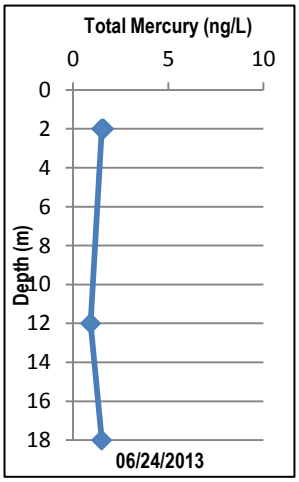


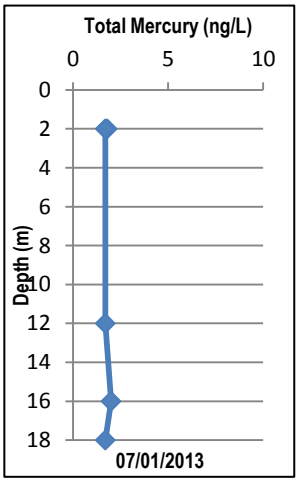




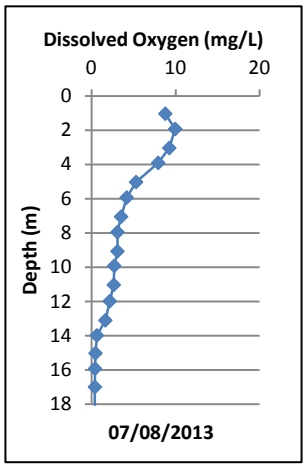


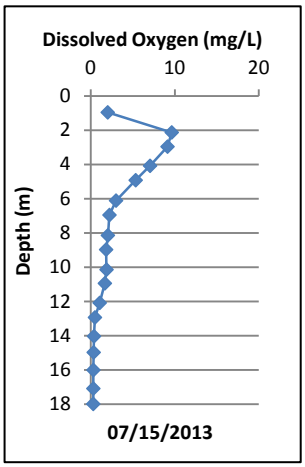


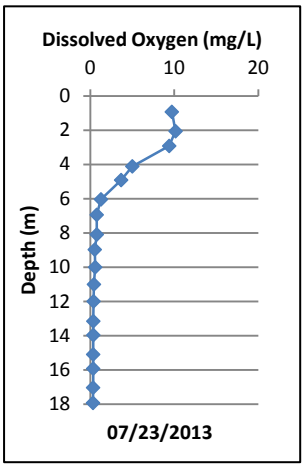


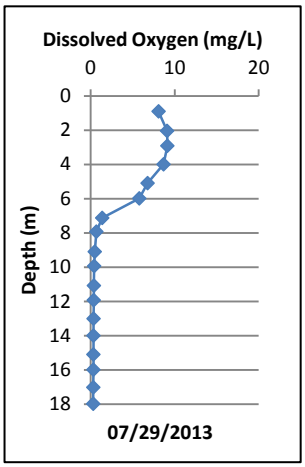


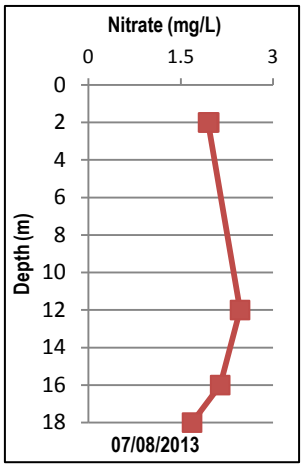
2013 Water Quality Results: South Deep

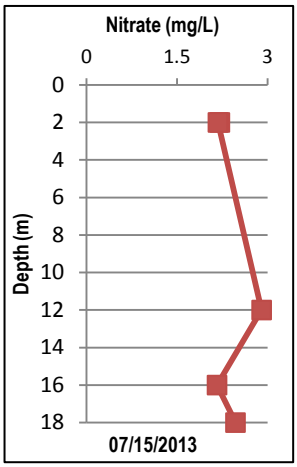


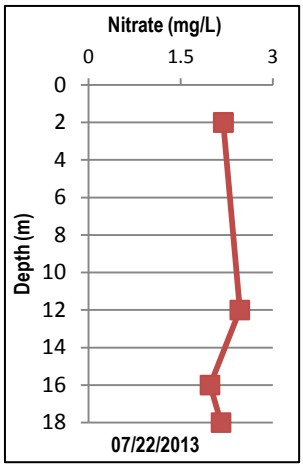


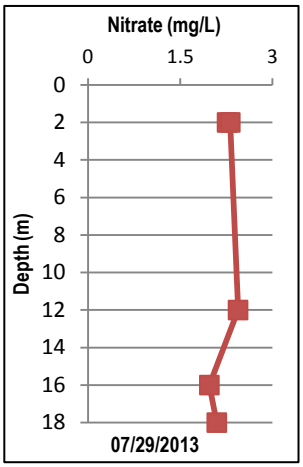


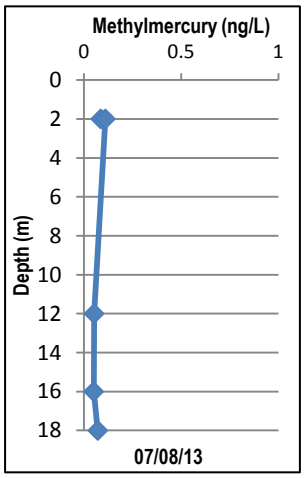


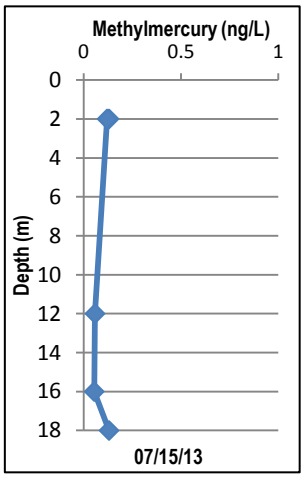


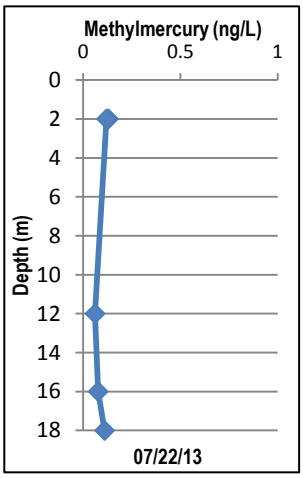


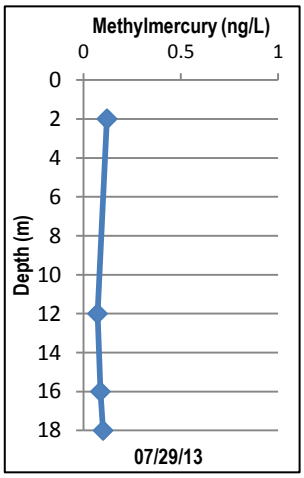


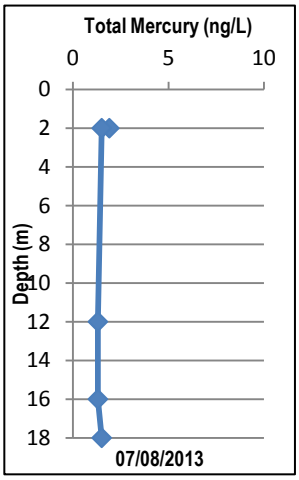


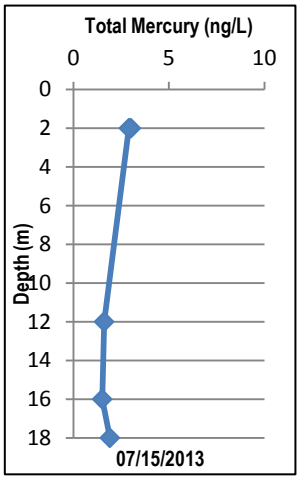


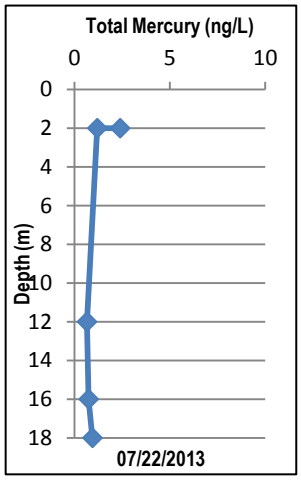


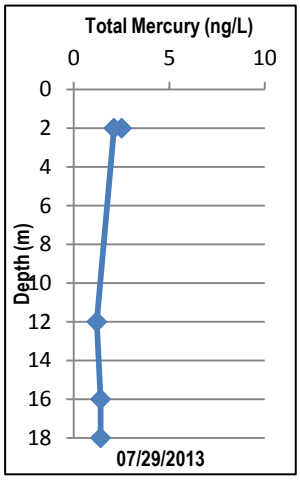




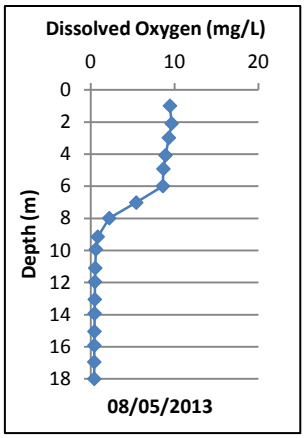


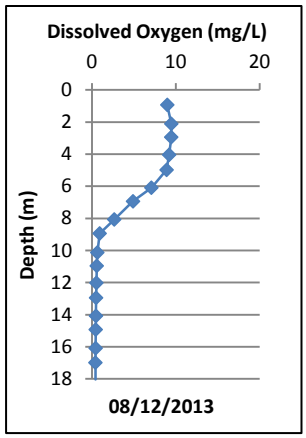


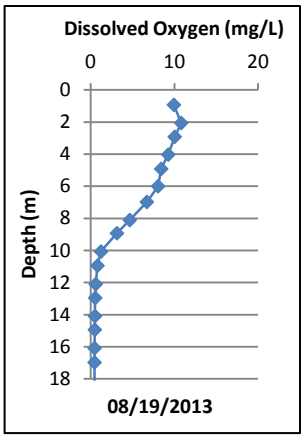


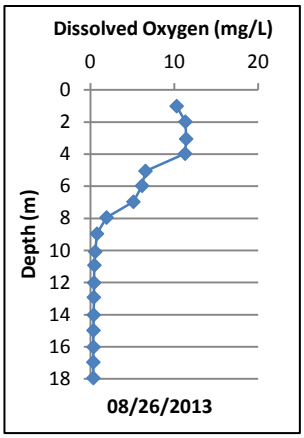


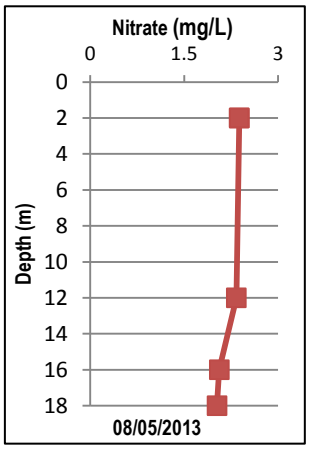
2013 Water Quality Results: South Deep

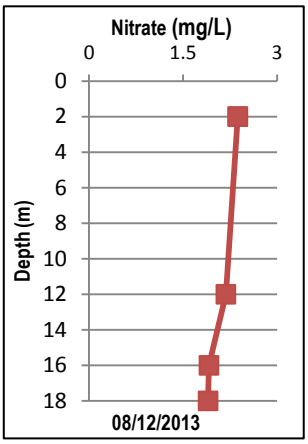


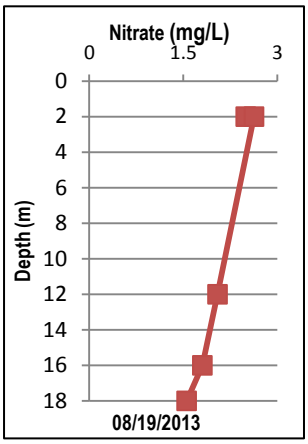


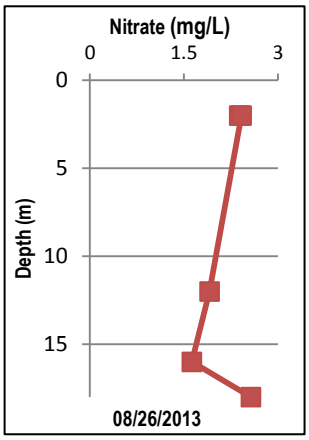


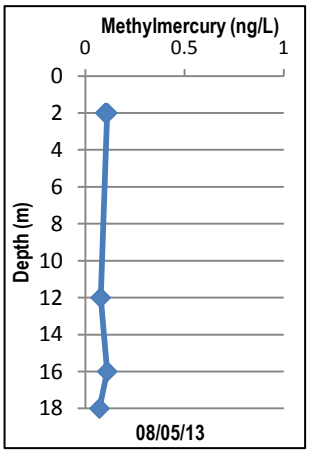


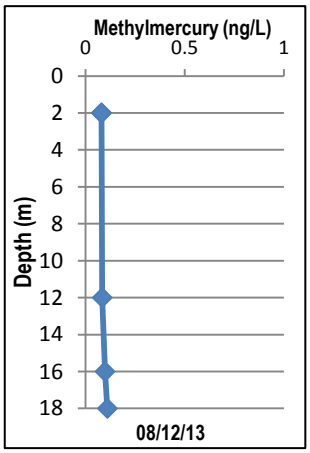


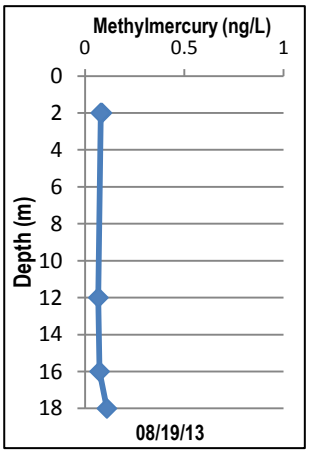


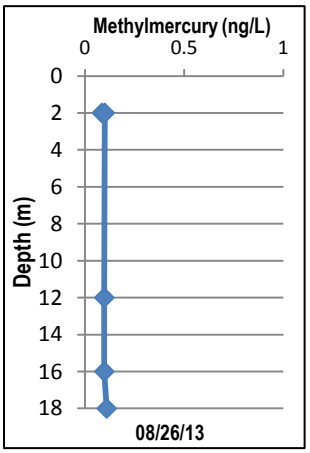


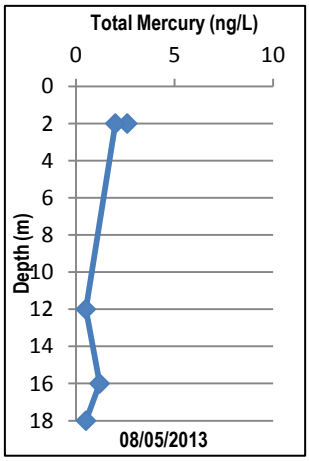


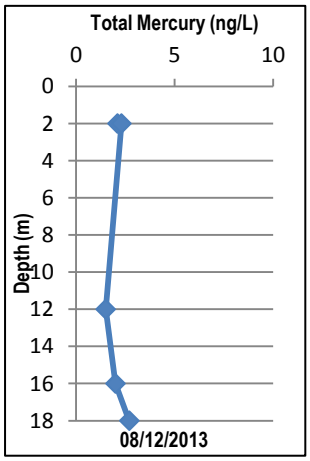


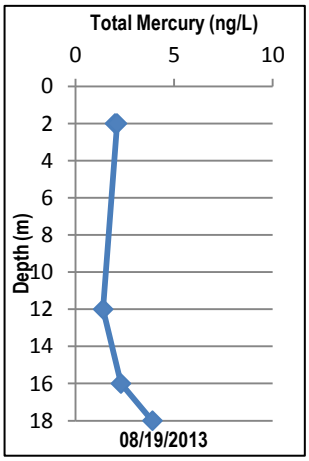


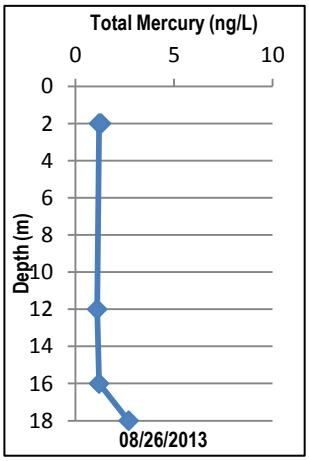




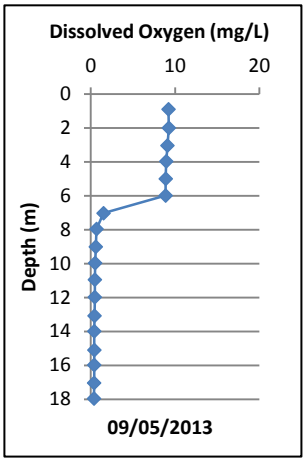


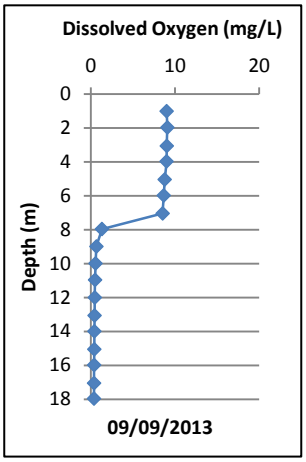


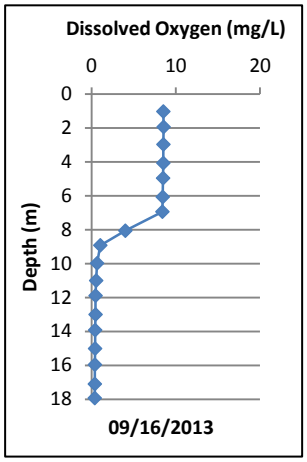


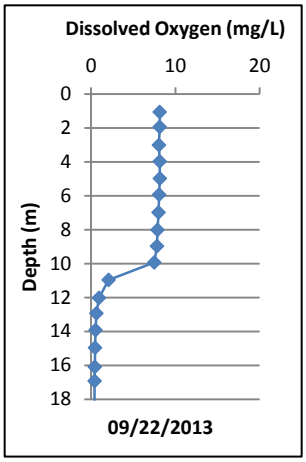


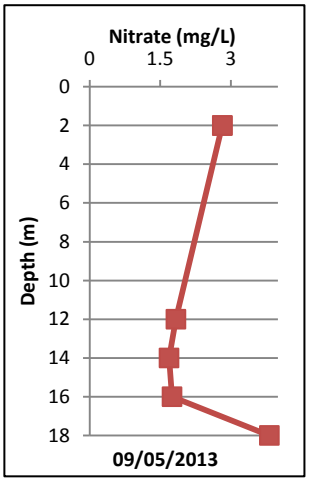
2013 Water Quality Results: South Deep

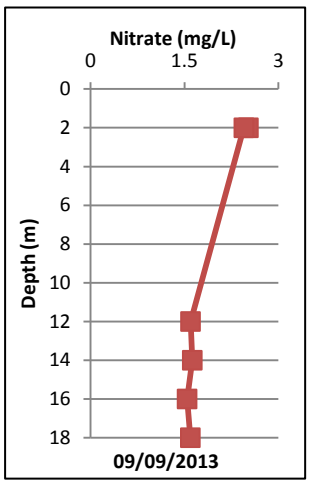


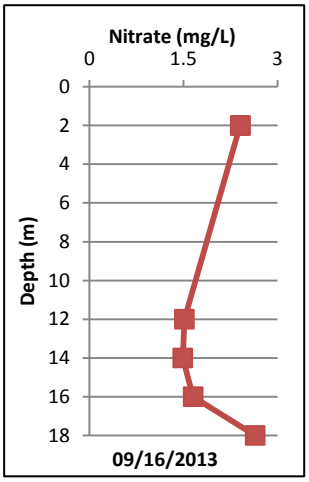


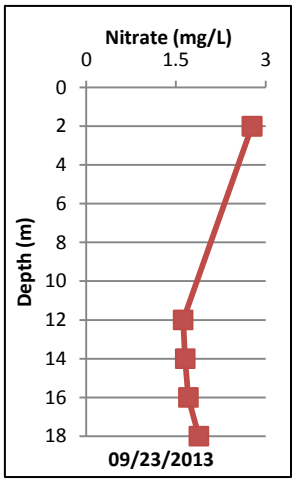


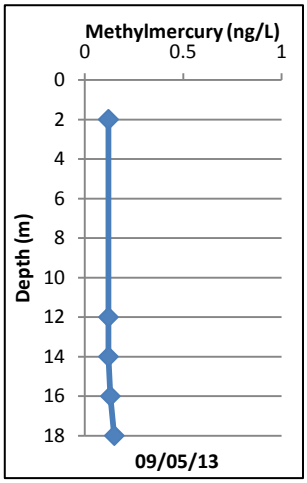


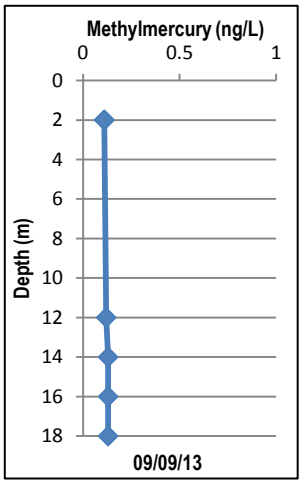


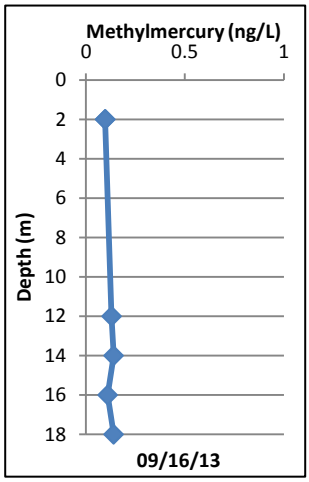


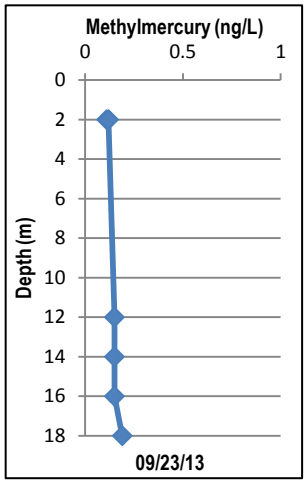


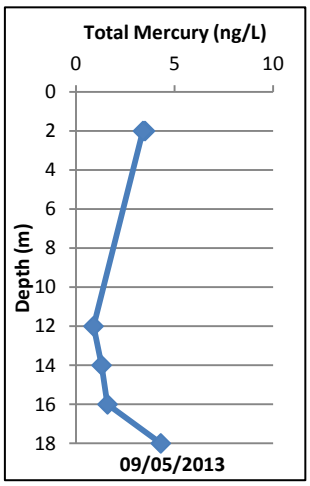


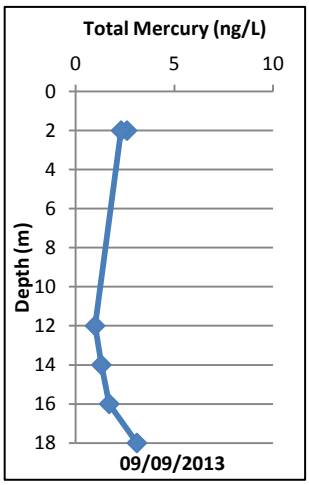


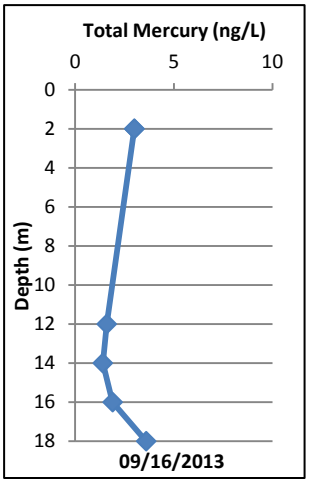


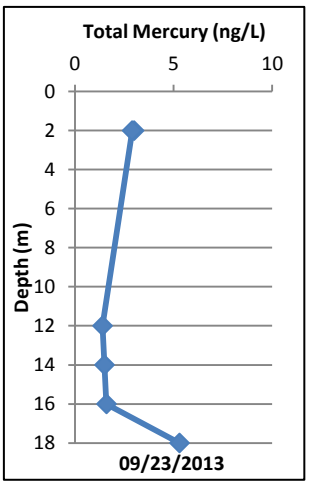




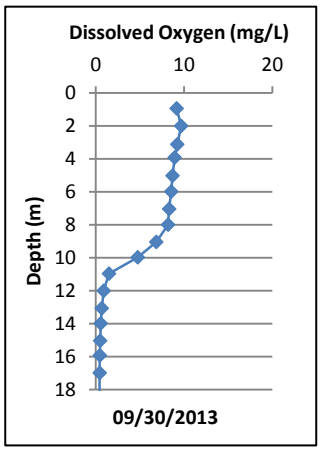


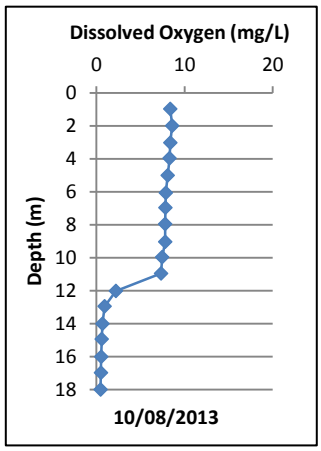


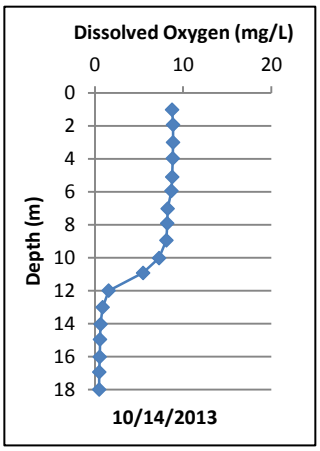


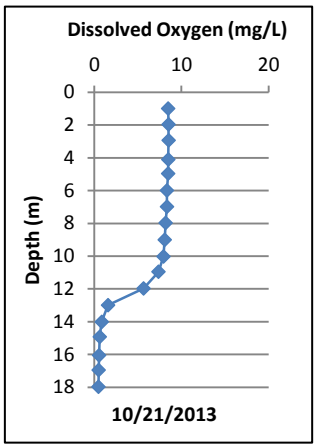


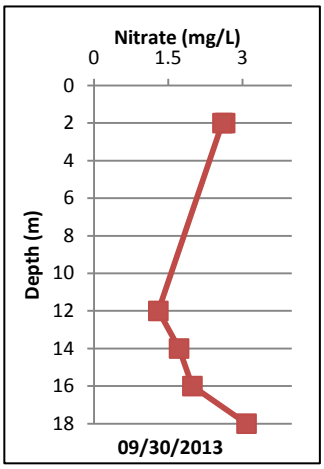
2013 Water Quality Results: South Deep

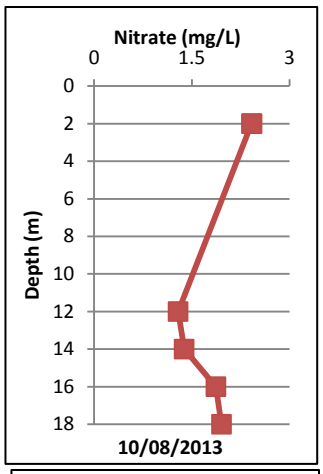


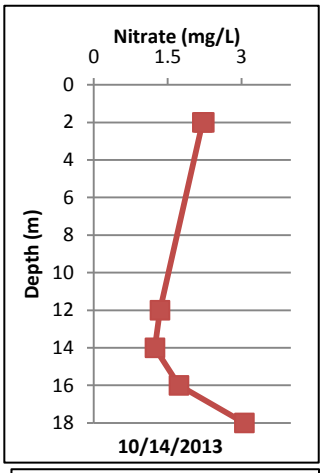


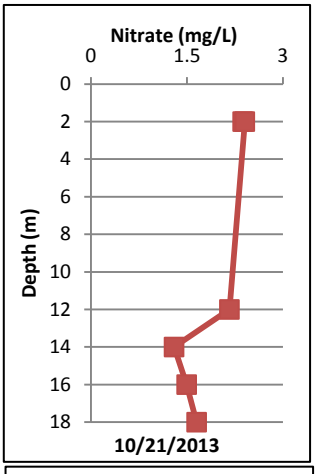


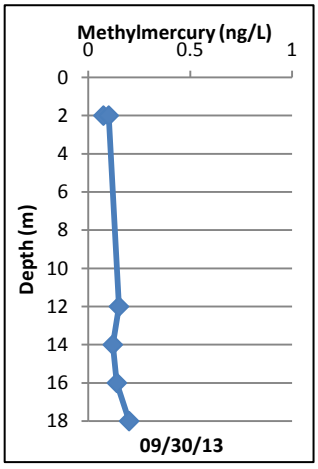


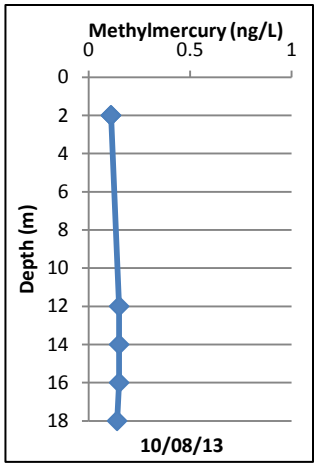


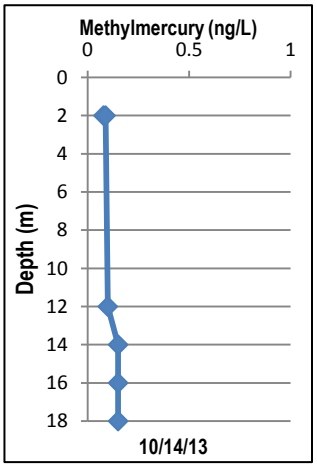


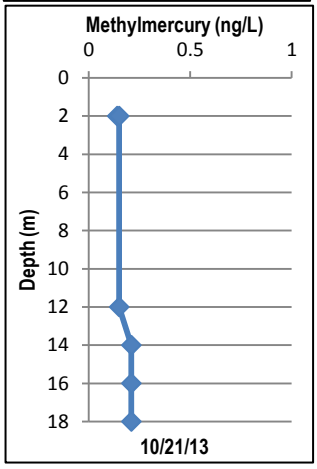


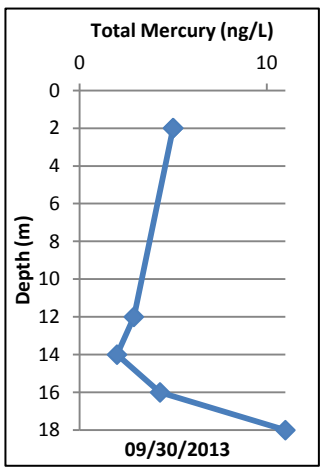


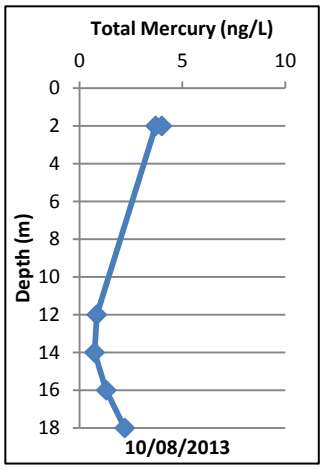


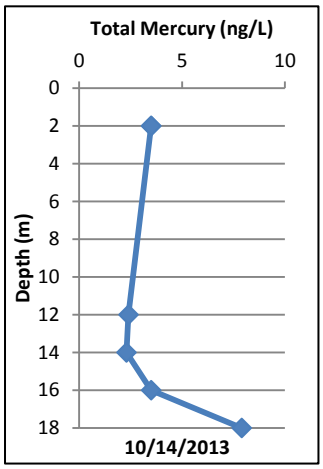


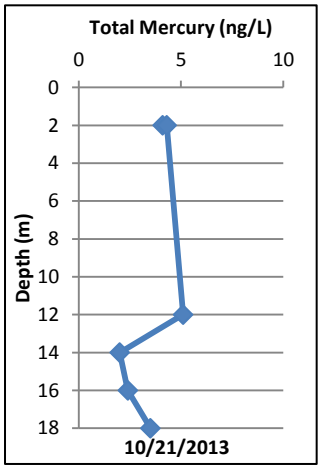




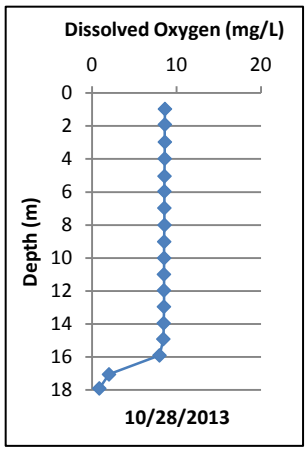


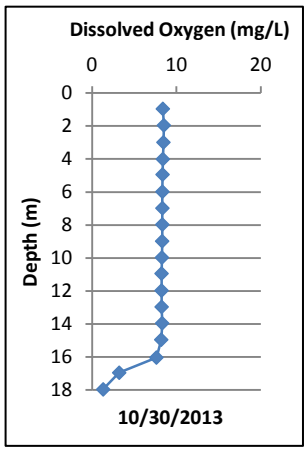


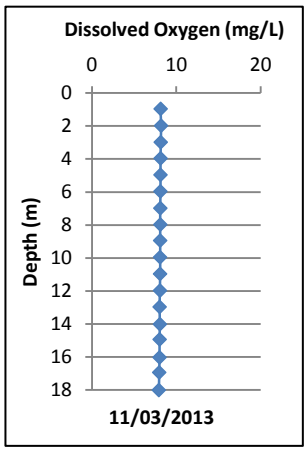


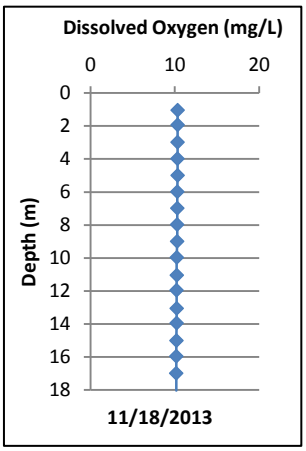


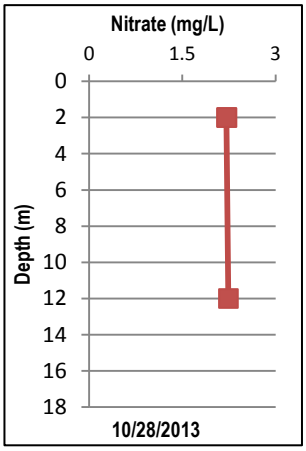
2013 Water Quality Results: South Deep

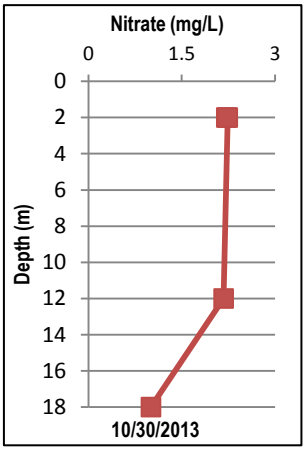


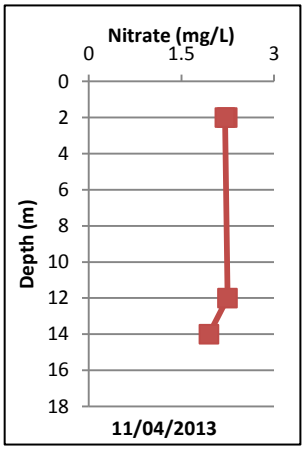


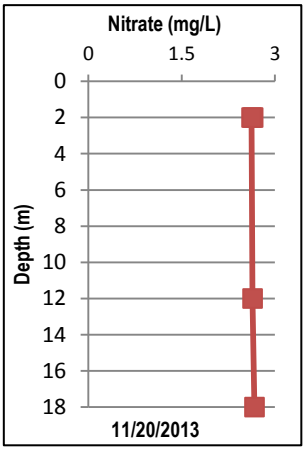


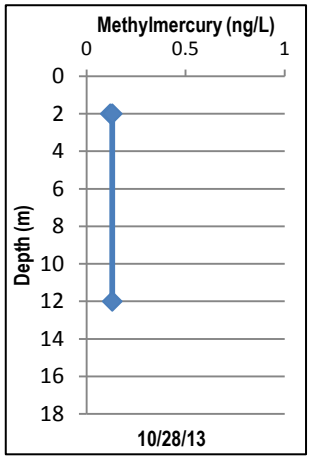


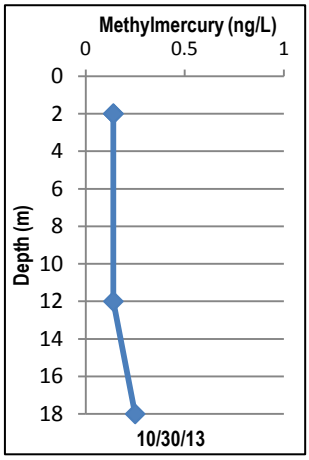


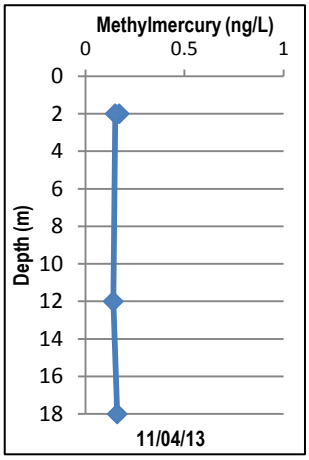


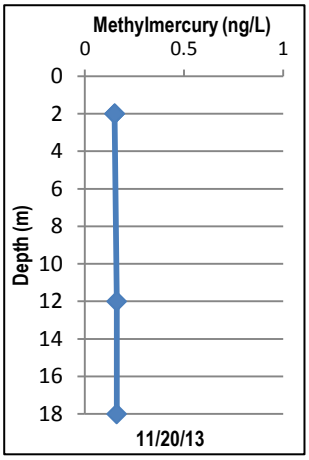


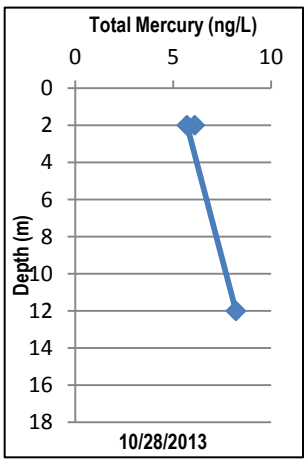


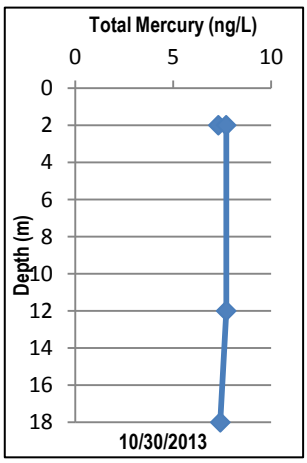


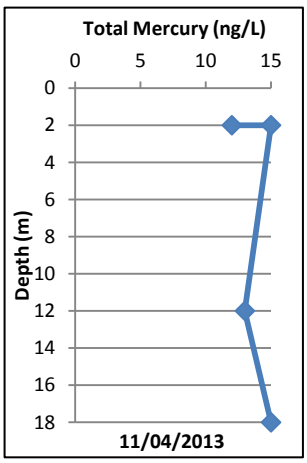


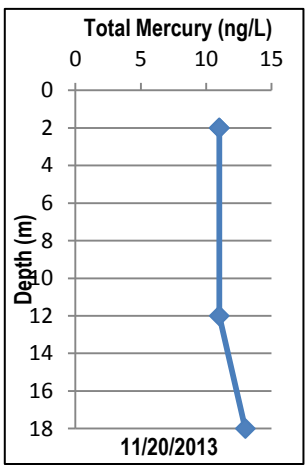










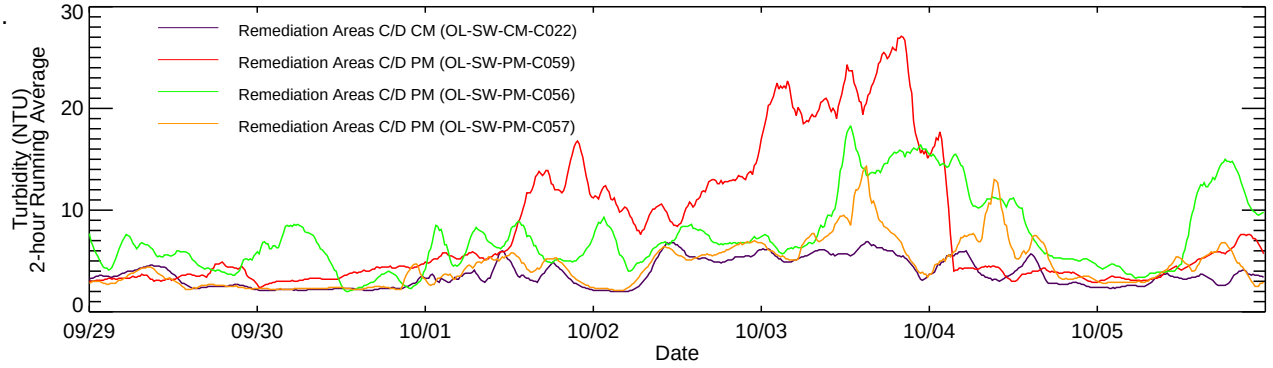


APPENDIX F

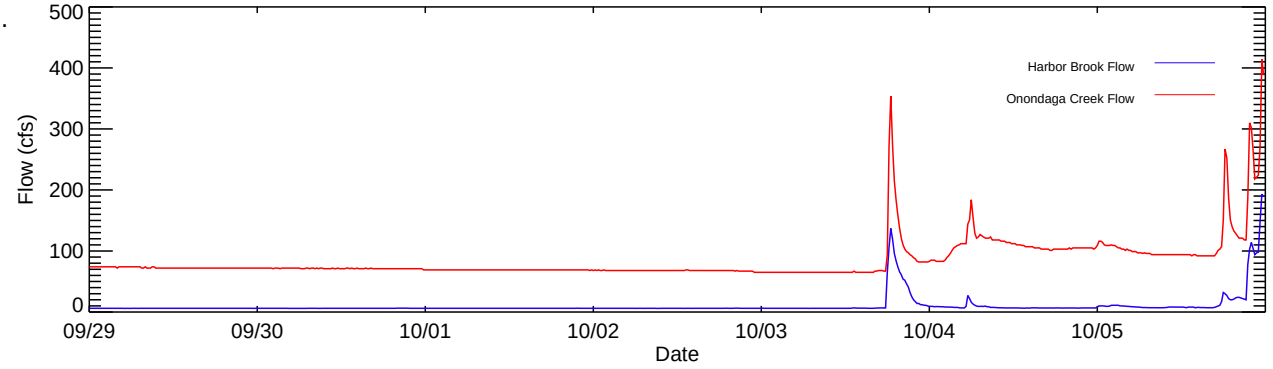
CONSTRUCTION WATER QUALITY MONITORING RESULTS FOR OCTOBER-NOVEMBER 2013

Remediation Area D Dredging
Sample week: 9/29/2013 - 10/5/2013

C).



D).



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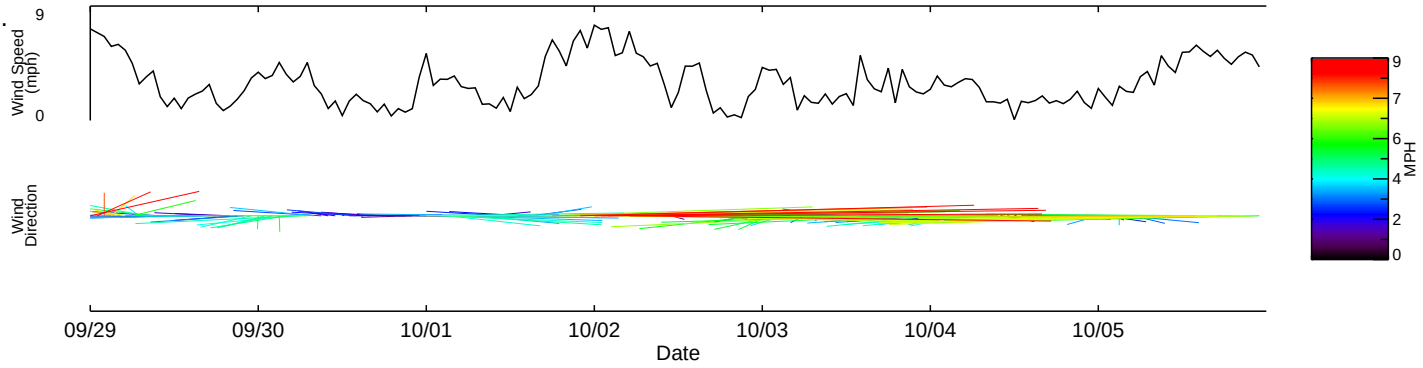

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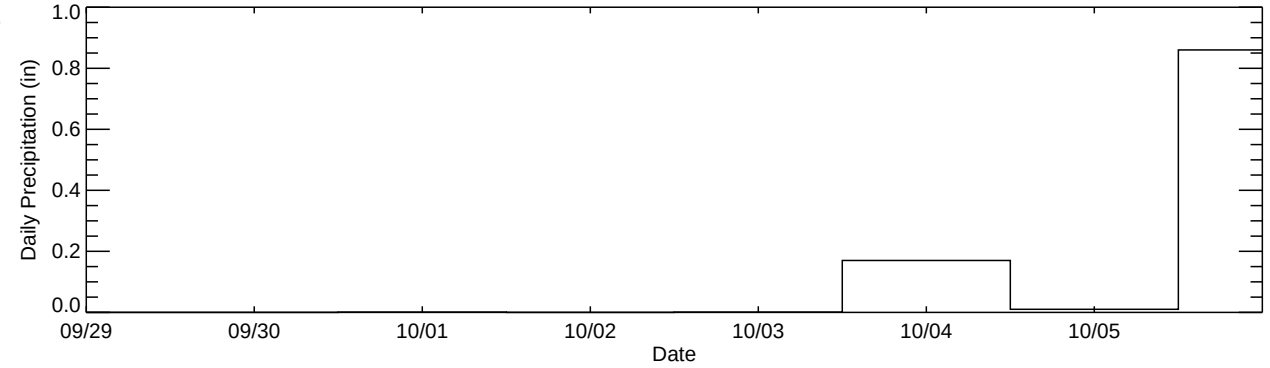


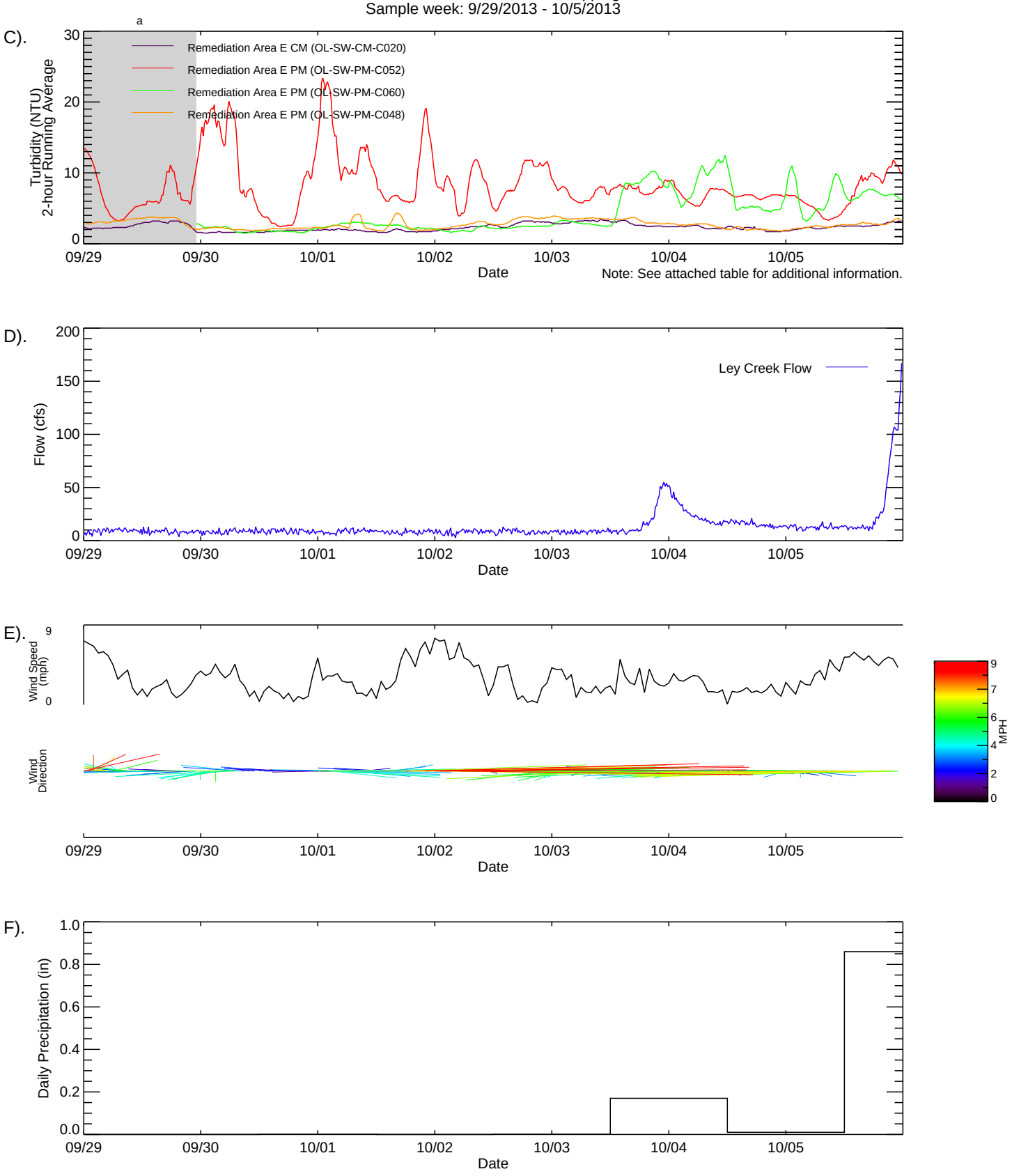
Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

Remediation Area E/SMU 8 Capping
Sample week: 9/29/2013 - 10/5/2013



Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240120 - Ley Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area E Capping
September 29 to October 5, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	9/29/2013	11	OL-SW-PM-C060	Remediation Area E PM	12:00	--	Sonde malfunction likely resulted in collection of anomalous data; data excluded. Sonde replaced 10/30/2013.
	9/30/2013				--	11:00	

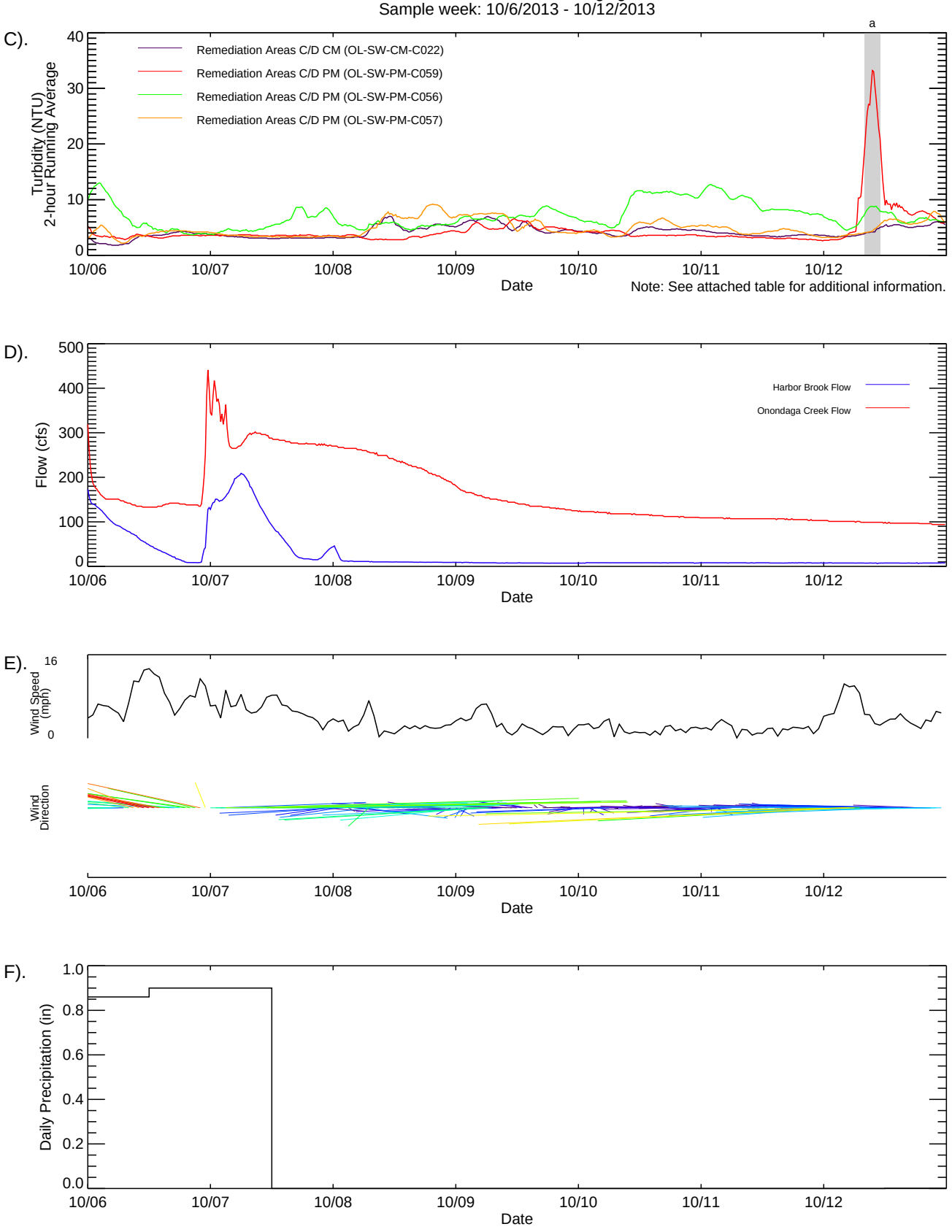
Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedances of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units

Remediation Area D Dredging
Sample week: 10/6/2013 - 10/12/2013



Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area D Dredging
October 6 to October 12, 2013

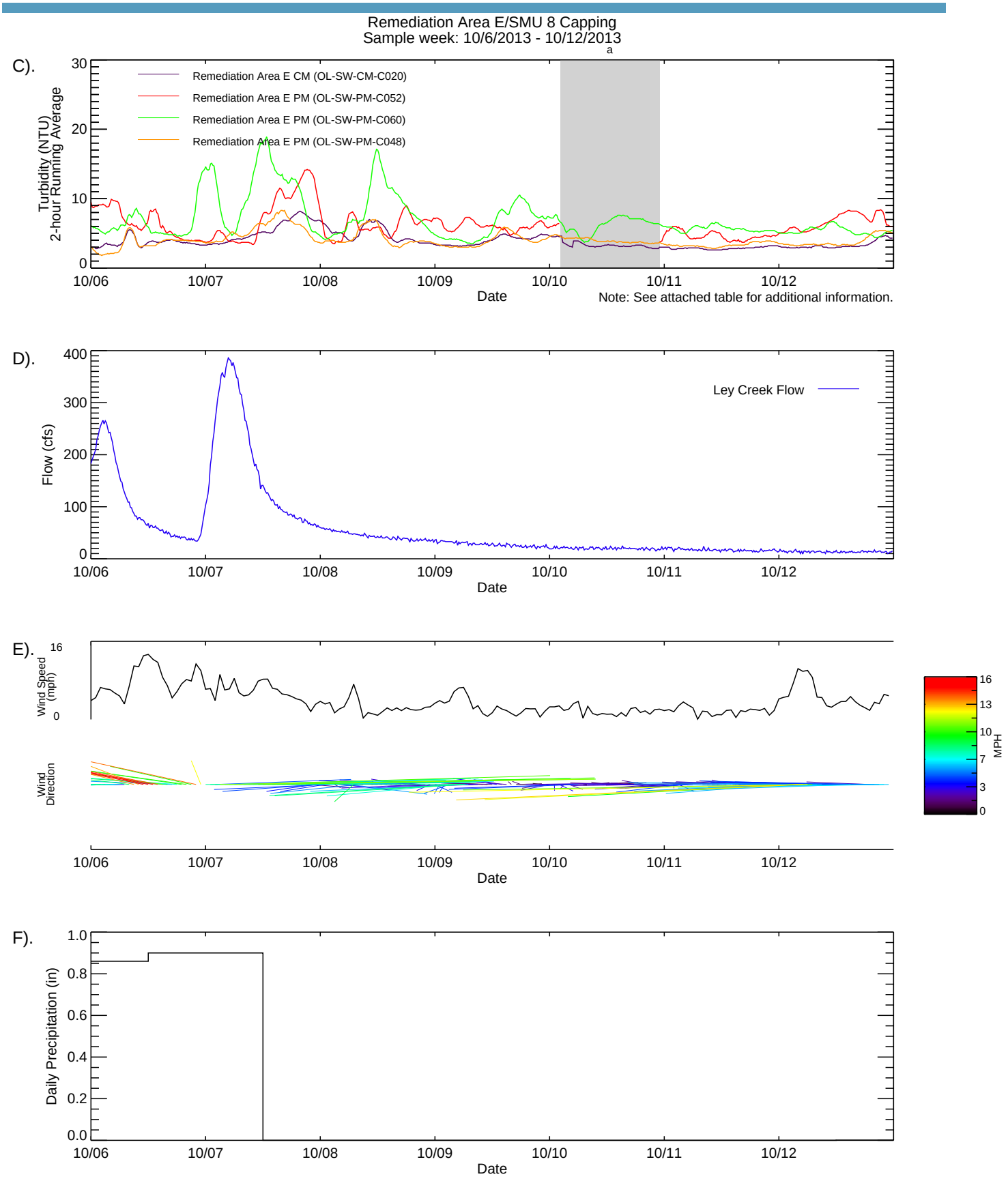
Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	10/12/2013	2	OL-SW-PM-C059	Remediation Areas C/D PM	20:00	23:00	Brief elevated turbidity values potentially a result of capping operations in the vicinity.

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedences of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units



Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240120 - Ley Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area E Capping
October 6 to October 12, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	10/10/2013	10	OL-SW-PM-C052	Remediation Area E PM	14:15	--	Sonde inadvertently left off after regular sonde maintenance.
	10/11/2013				--	11:00	

Notes:

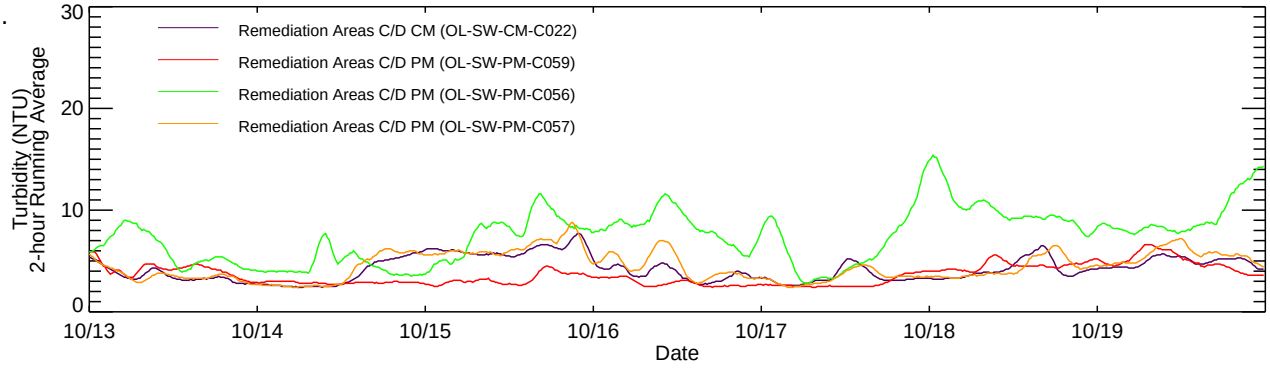
1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedances of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units

Remediation Area D Dredging
Sample week: 10/13/2013 - 10/19/2013

C).



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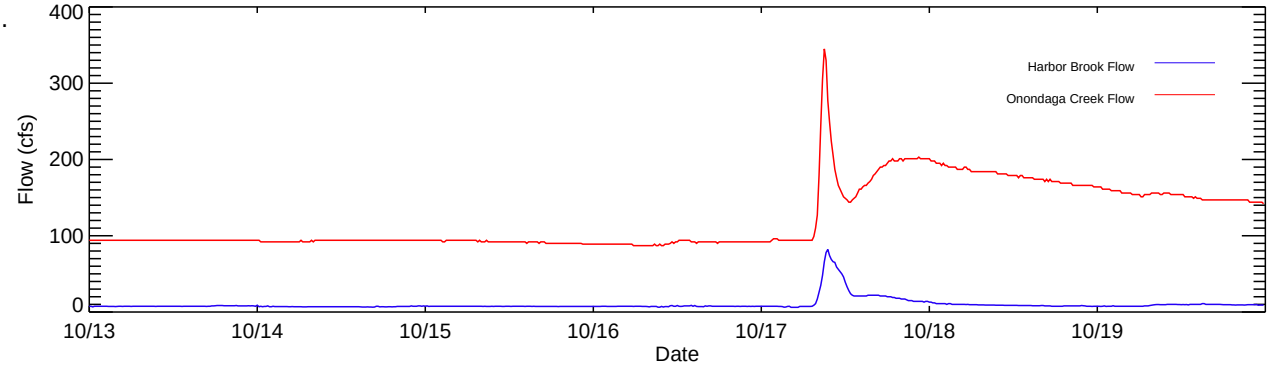

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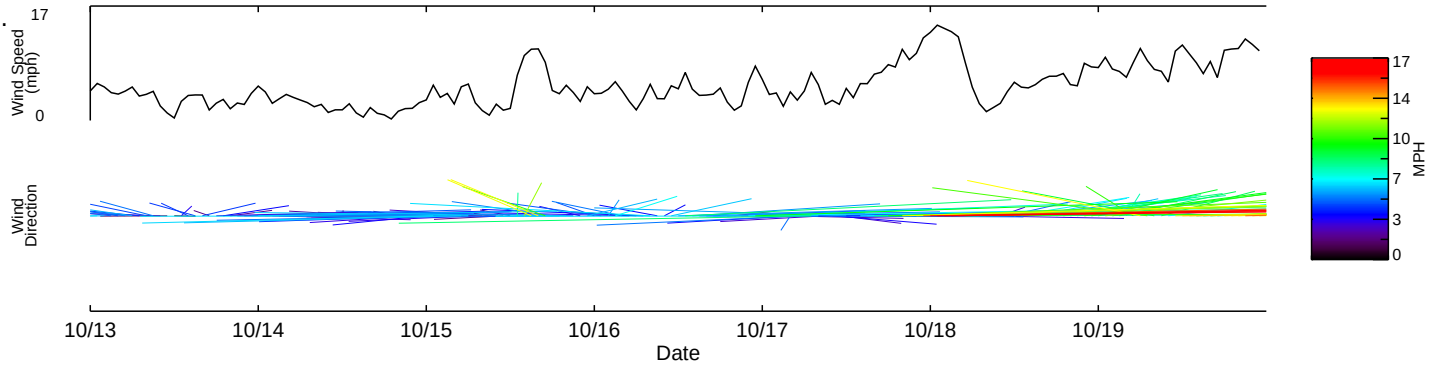

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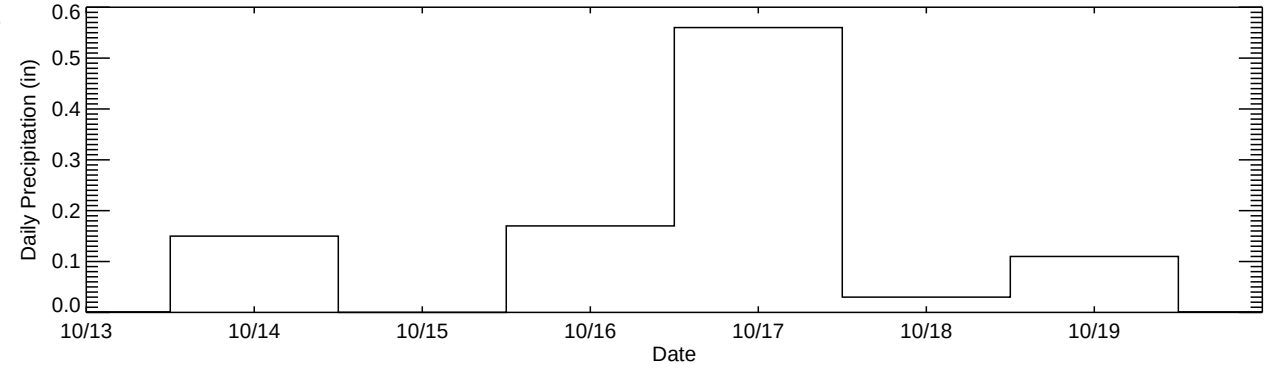
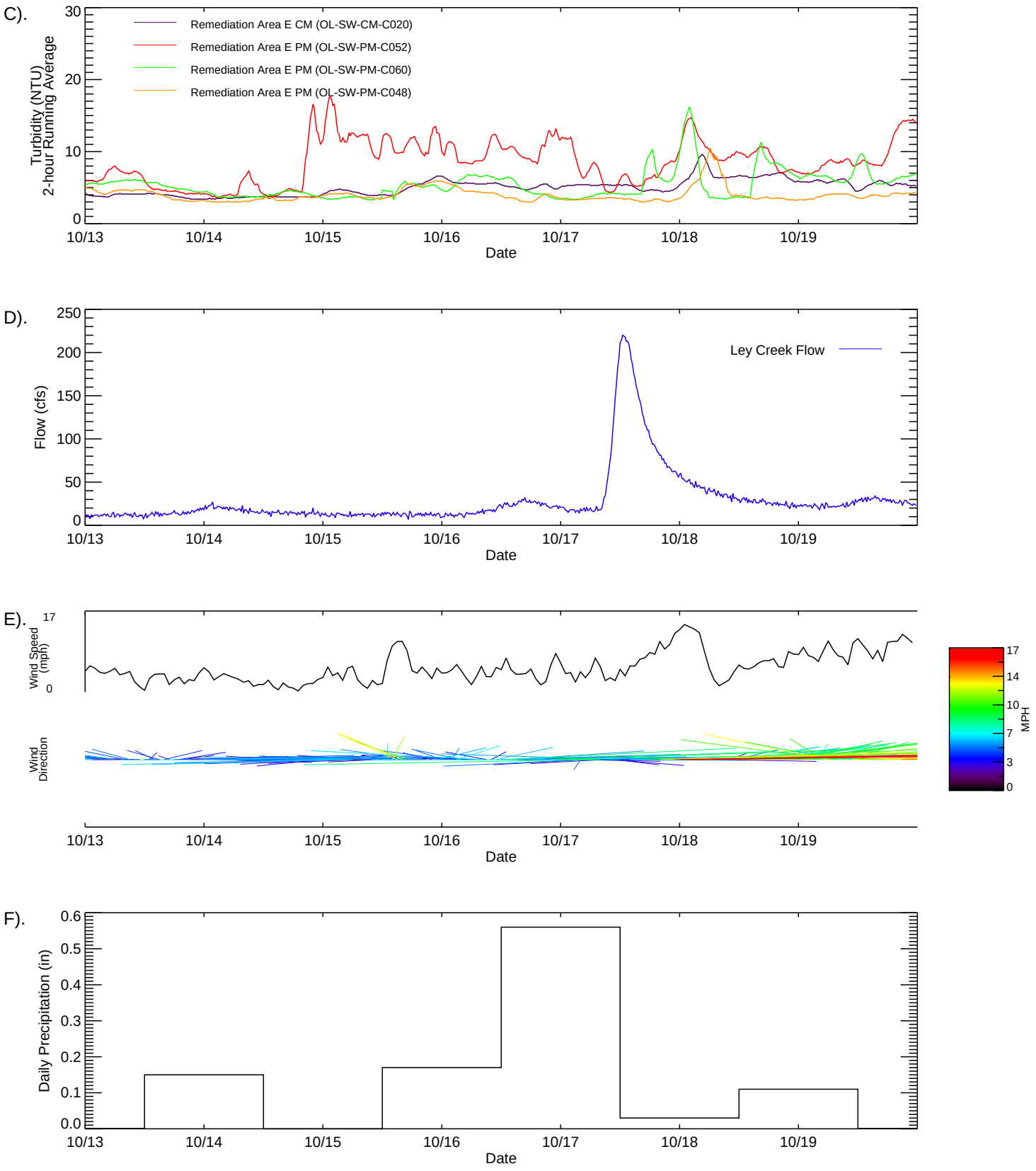


Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

Remediation Area E/SMU 8 Capping
Sample week: 10/13/2013 - 10/19/2013



Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

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Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
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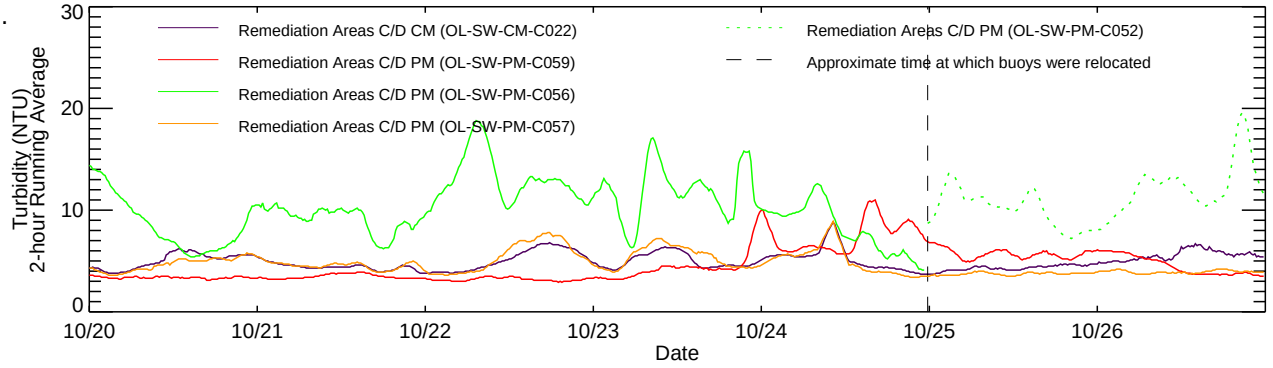
Flow data from USGS location 04240120 - Ley Creek.

Remediation Area D Dredging
Sample week: 10/20/2013 - 10/26/2013

C).



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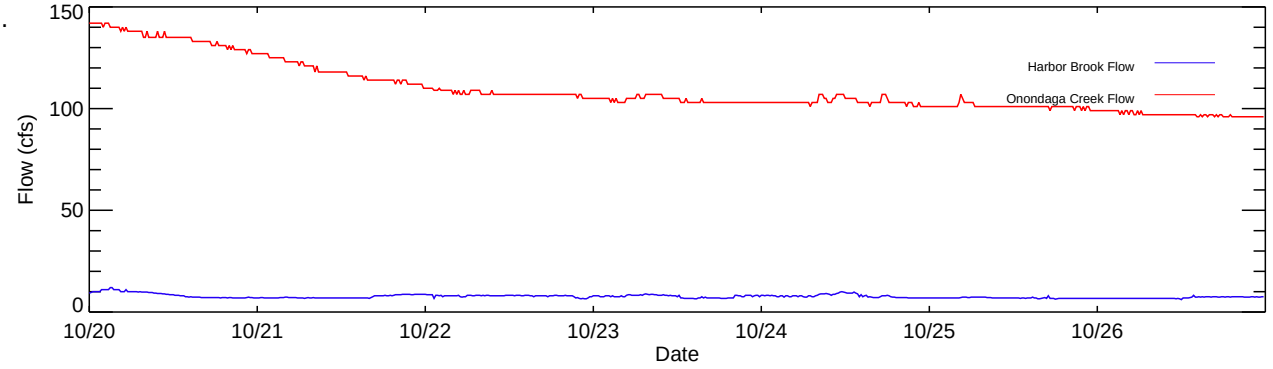

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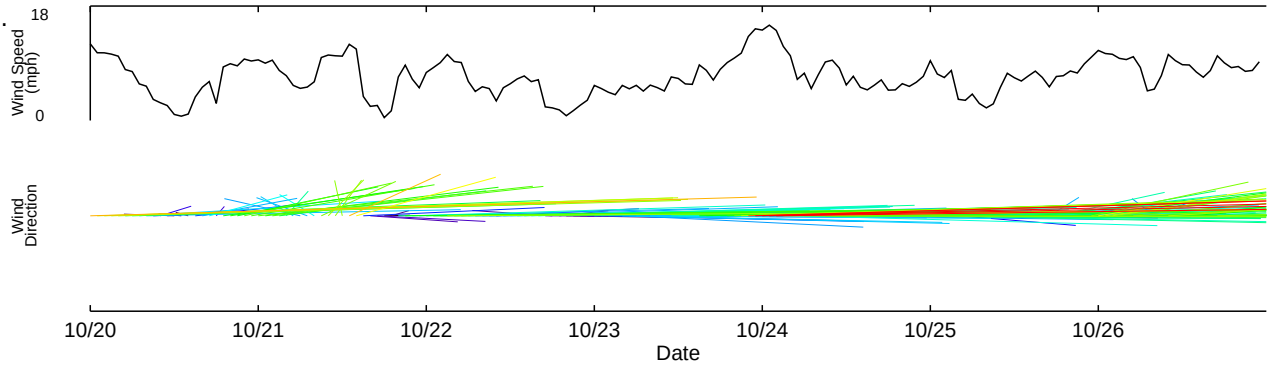

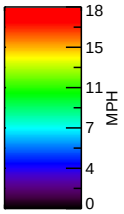

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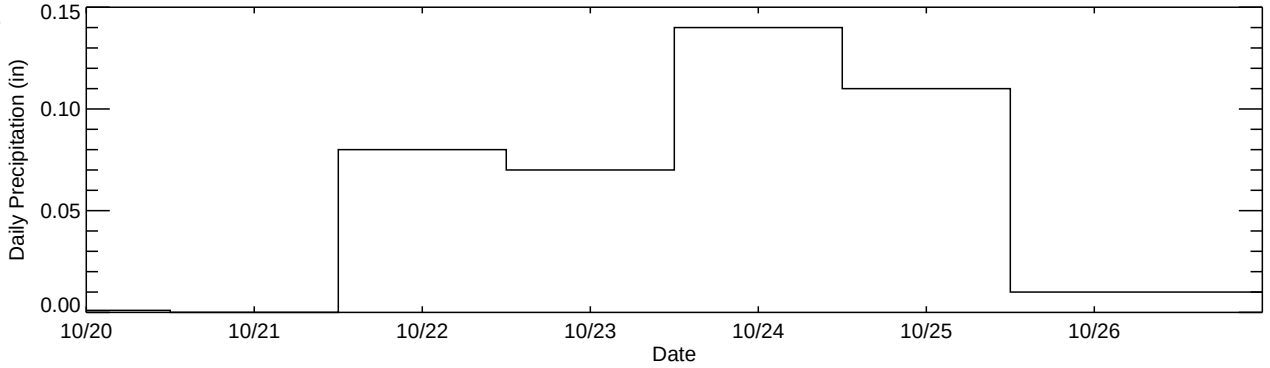

Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

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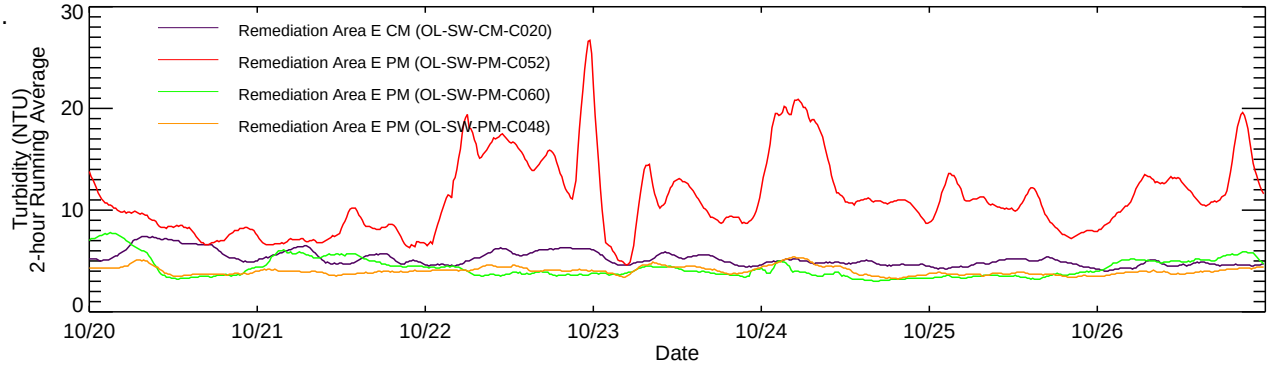
Remediation Area E/SMU 8 Capping
Sample week: 10/20/2013 - 10/26/2013

C).



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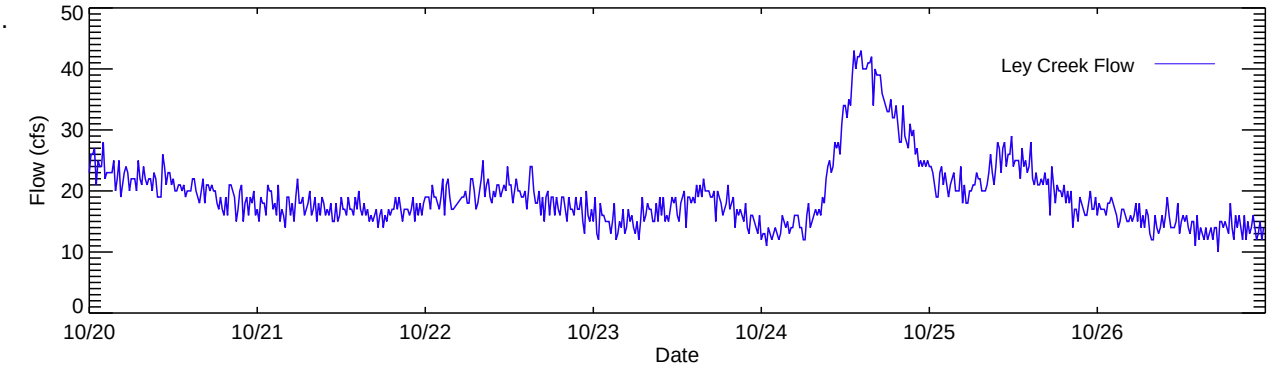

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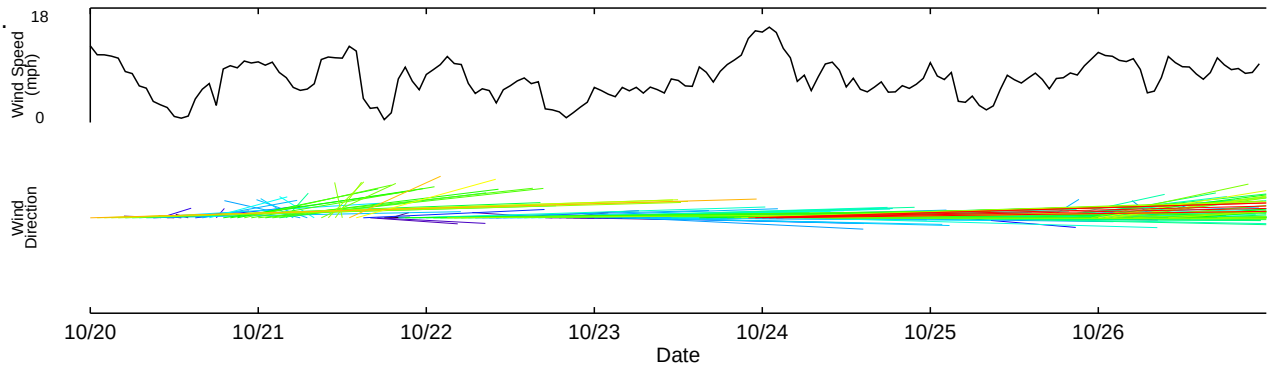

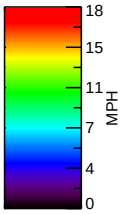

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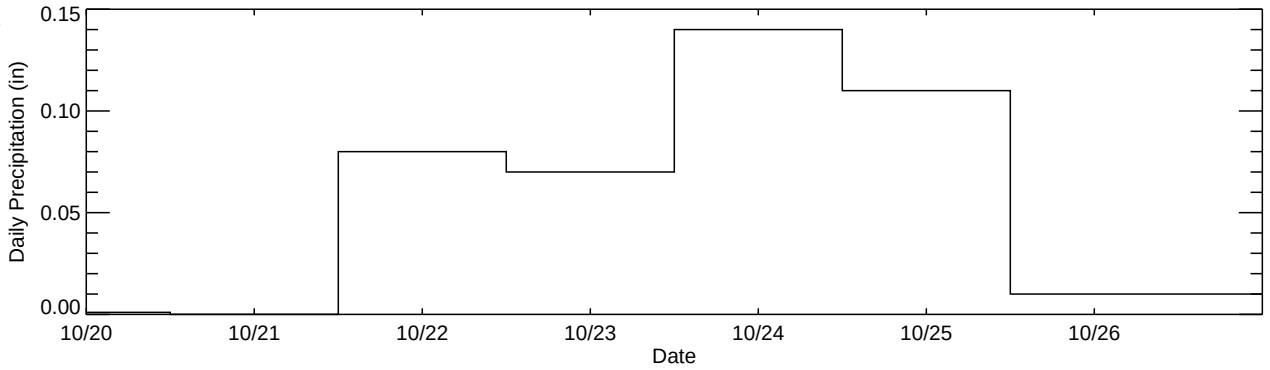

Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

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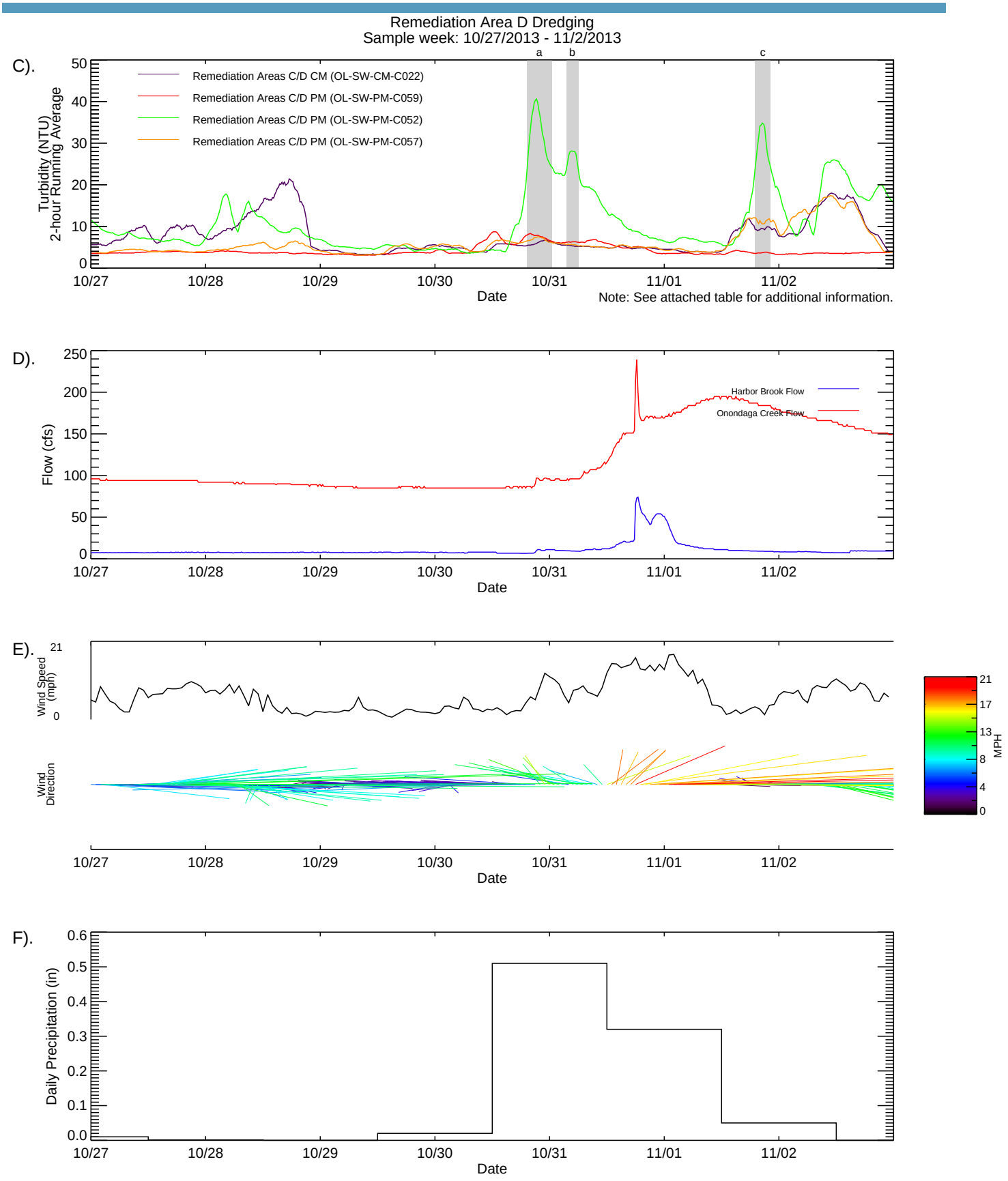
Flow data from USGS location 04240120 - Ley Creek.



Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

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Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area D Dredging
October 27 to November 2, 2013

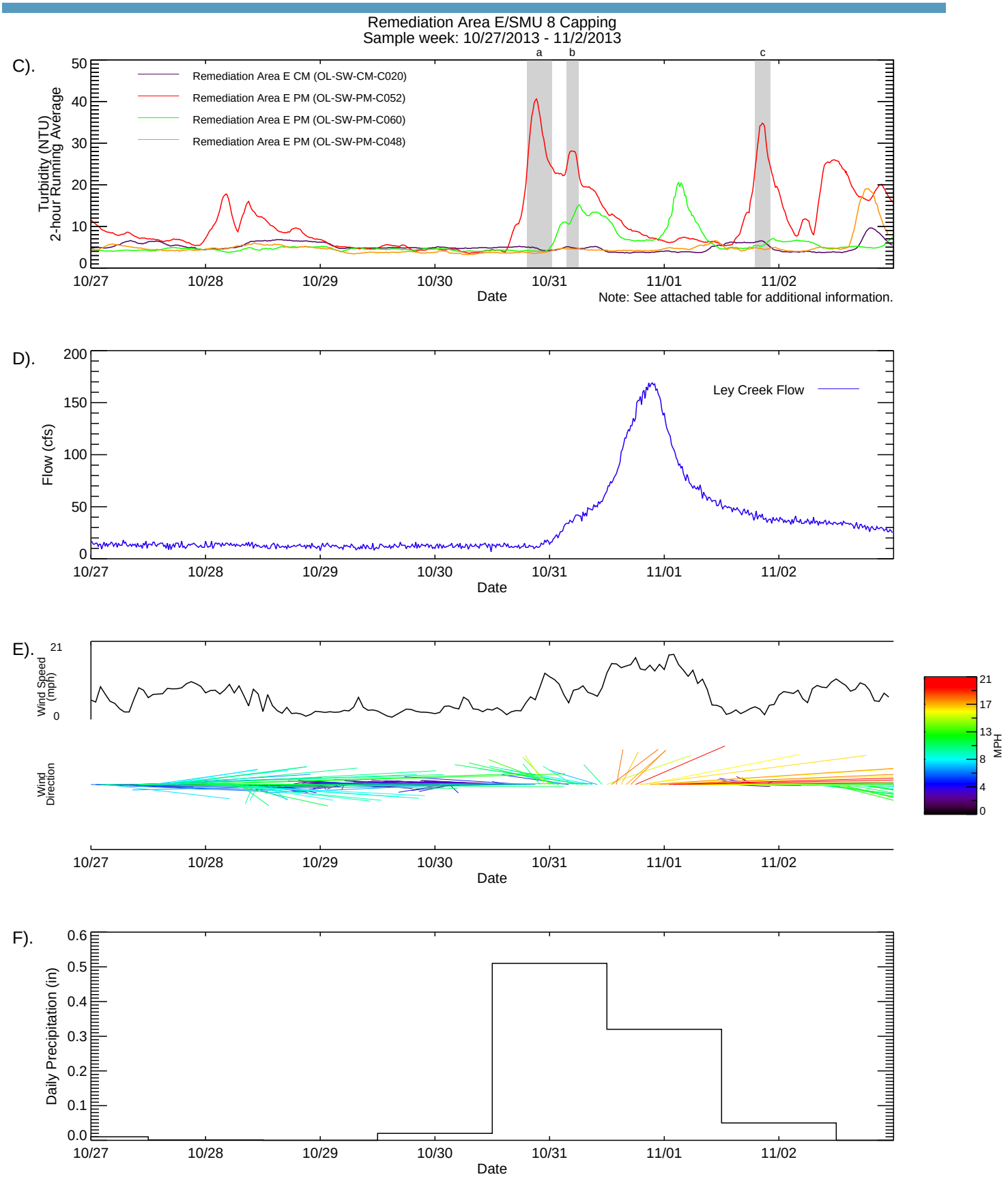
Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	10/31/2013	10	OL-SW-PM-C052	Remediation Areas C/D PM	7:15	12:30	Brief elevated turbidity values a result of hydraulic capping operations in the vicinity.
b	10/31/2013				15:30	18:00	
c	11/2/2013				7:00	10:15	

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedences of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units



Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

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Flow data from USGS location 04240120 - Ley Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area E Capping
October 27 to November 2, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	10/31/2013	10	OL-SW-PM-C052	Remediation Area E PM	7:15	12:30	Brief elevated turbidity values a result of hydraulic capping operations in the vicinity.
b	10/31/2013				15:30	18:00	
c	11/2/2013				7:00	10:15	

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedances of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

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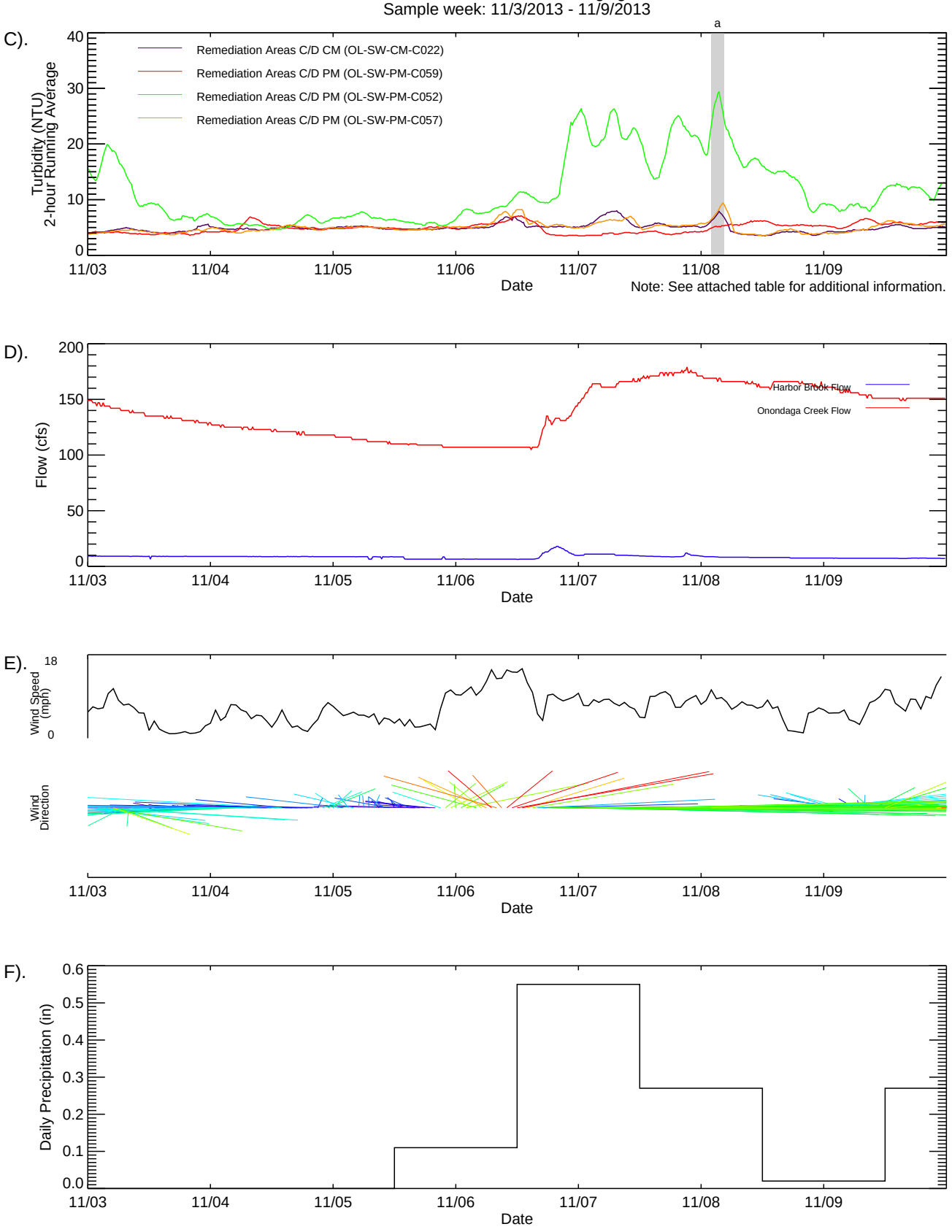
NTU - Nephelometric Turbidity Units

Remediation Area D Dredging
Sample week: 11/3/2013 - 11/9/2013



Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

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Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
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ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area D Dredging
November 3 to November 9, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/8/2013	10	OL-SW-PM-C052	Remediation Areas C/D PM	14:00	16:30	Brief elevated turbidity values likely a result of precipitation, wind and tributary inflow.

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedences of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

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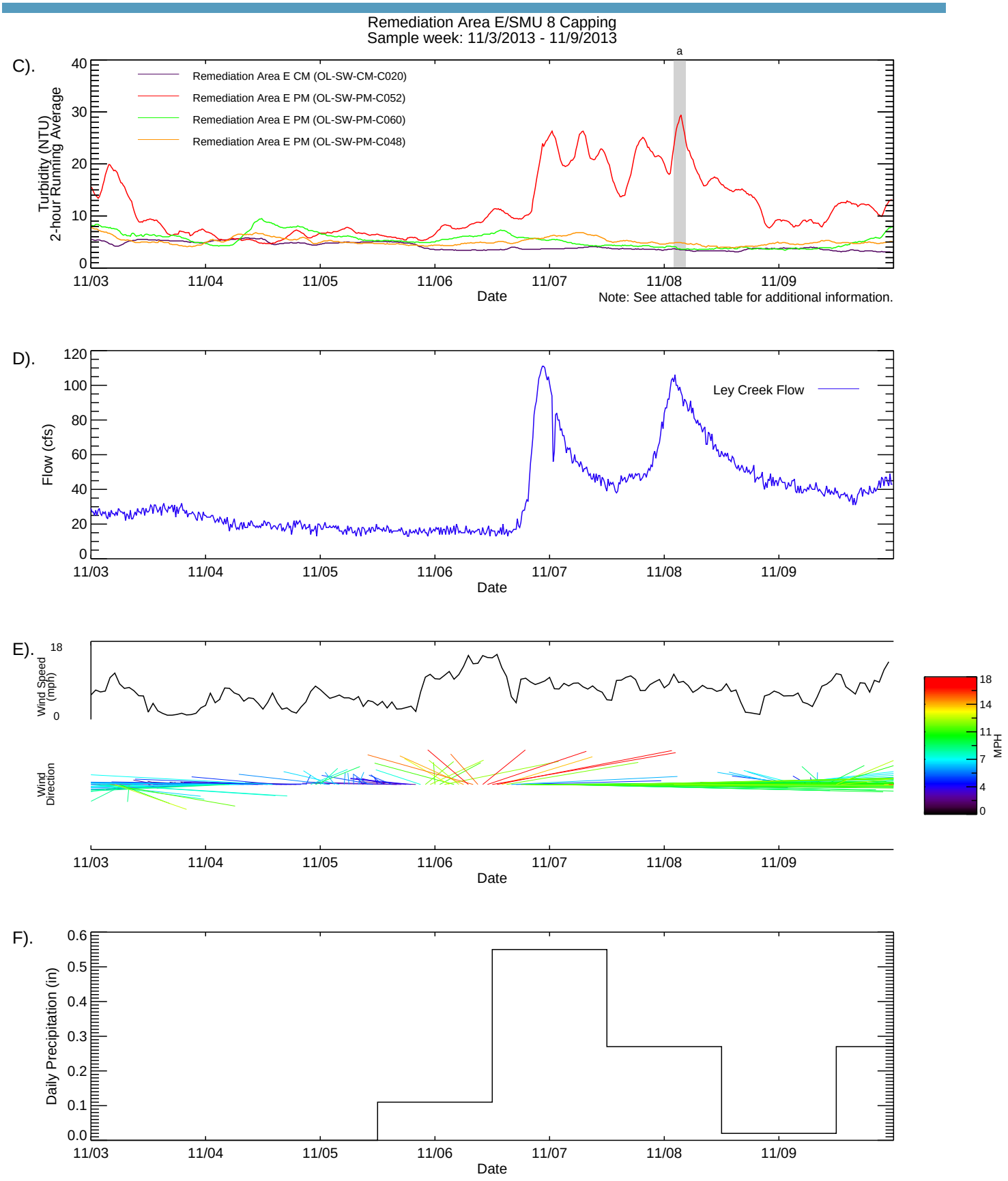

Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240120 - Ley Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area E Capping
November 3 to November 9, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/8/2013	10	OL-SW-PM-C052	Remediation Area E PM	14:00	16:30	Brief elevated turbidity values likely a result of precipitation, wind, and tributary inflow.

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedances of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

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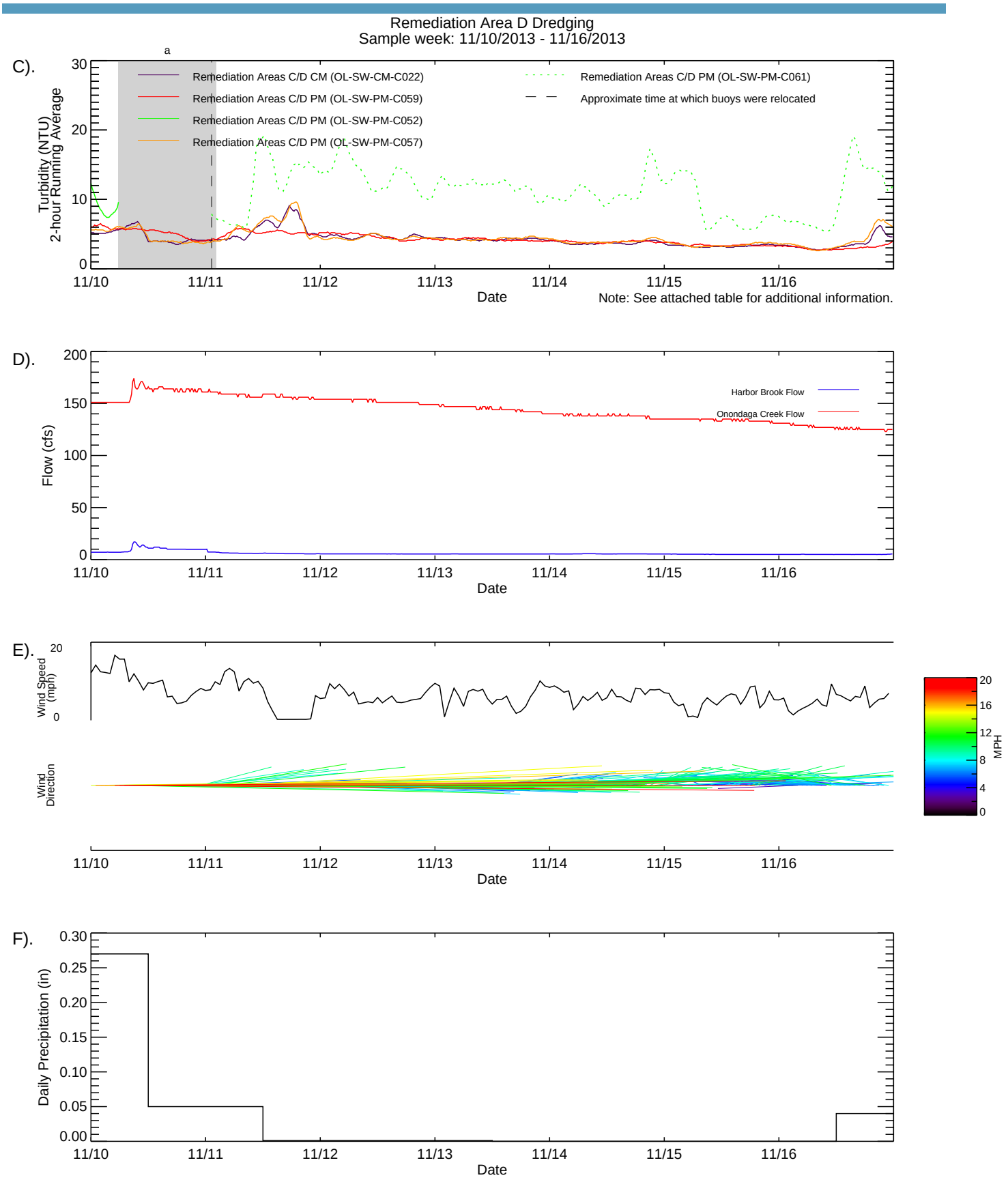

Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
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Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

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2013 Continuous Turbidity Data Notes
Remediation Area D Dredging
November 10 to November 16, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/10/2013	10	OL-SW-PM-C052	Remediation Areas C/D PM	--	17:45	Buoy submerged due to contact with equipment on the lake. Removed from water on 11/11/2013.
	11/11/2013	11	OL-SW-PM-C061	Remediation Areas C/D PM	14:15	--	Buoy 11 relocated from Remediation Area E (OL-SW-PM-C060) to fill monitoring role.

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedences of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

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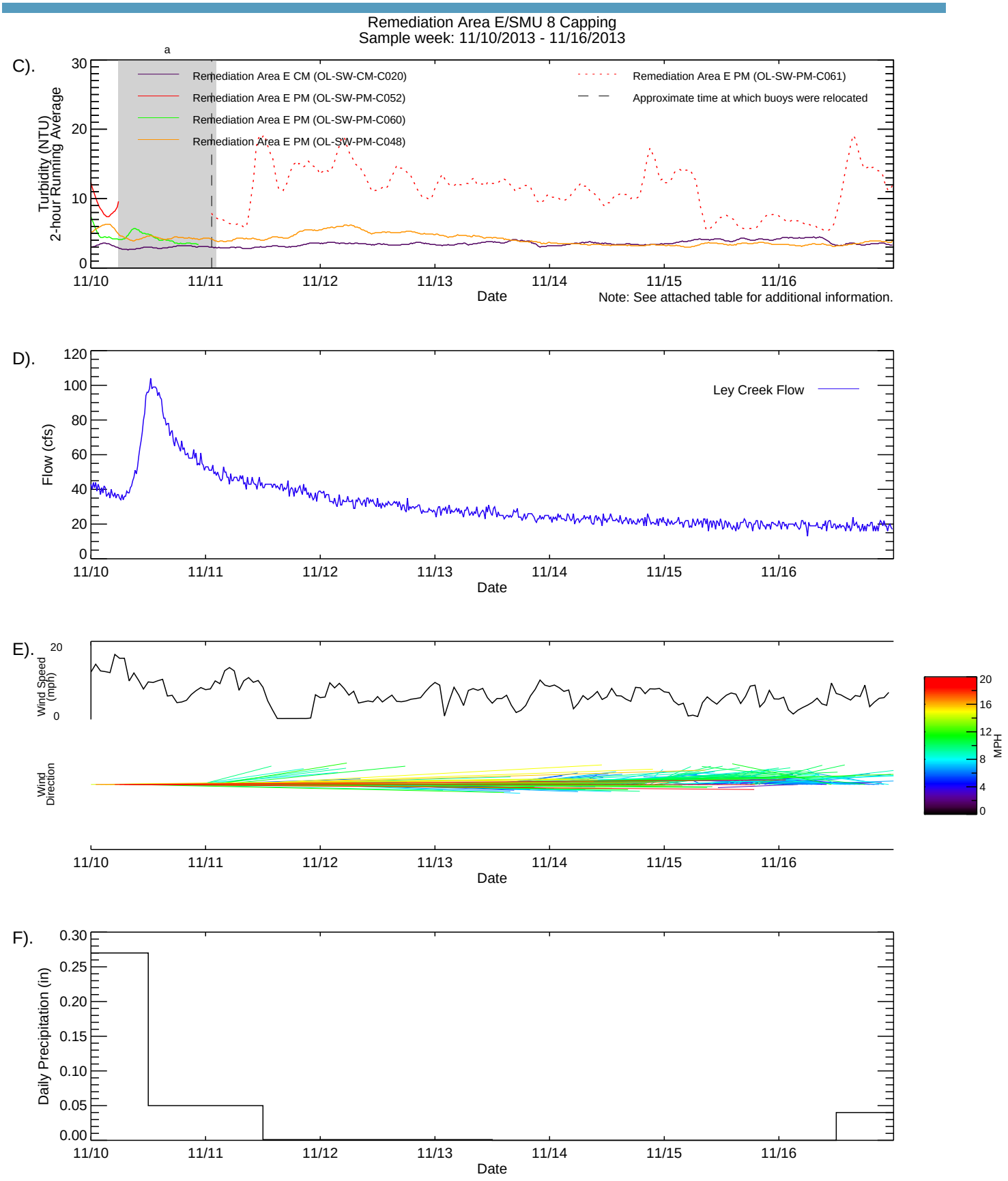

Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

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Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240120 - Ley Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area E Capping
November 10 to November 16, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/10/2013	10	OL-SW-PM-C052	Remediation Area E PM	--	17:45	Buoy submerged due to contact with equipment on the lake. Removed from water on 11/11/2013.
	11/11/2013	11	OL-SW-PM-C061	Remediation Area E PM	14:15	--	Buoy 11 relocated from OL-SW-PM-C060 to fill monitoring role.
--	11/11/2013	11	OL-SW-PM-C060	Remediation Area E PM	--	11:30	Buoy relocated to OL-SW-PM-C061.

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedances of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

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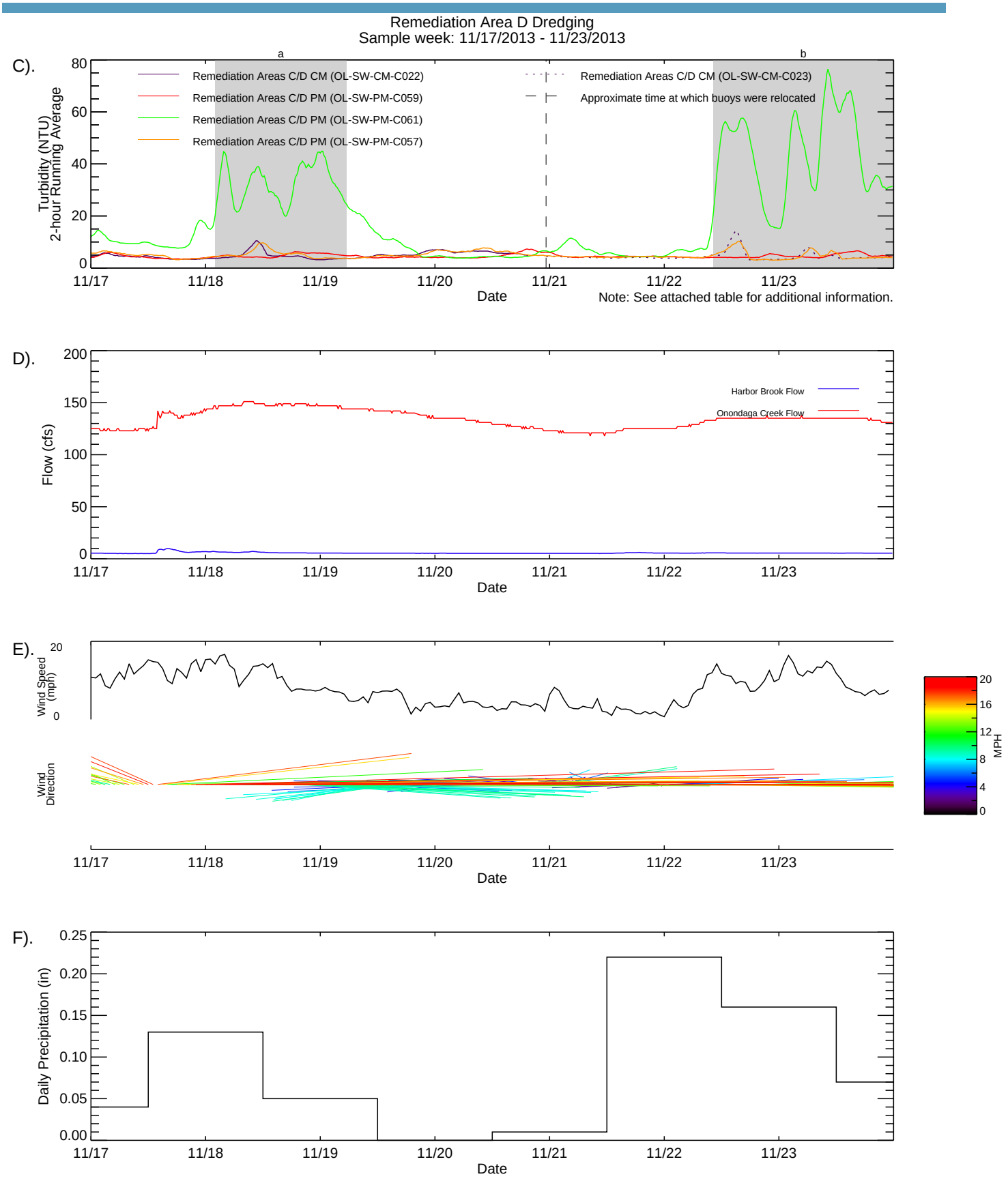
NTU - Nephelometric Turbidity Units



Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

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Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area D Dredging
November 17 to November 23, 2013

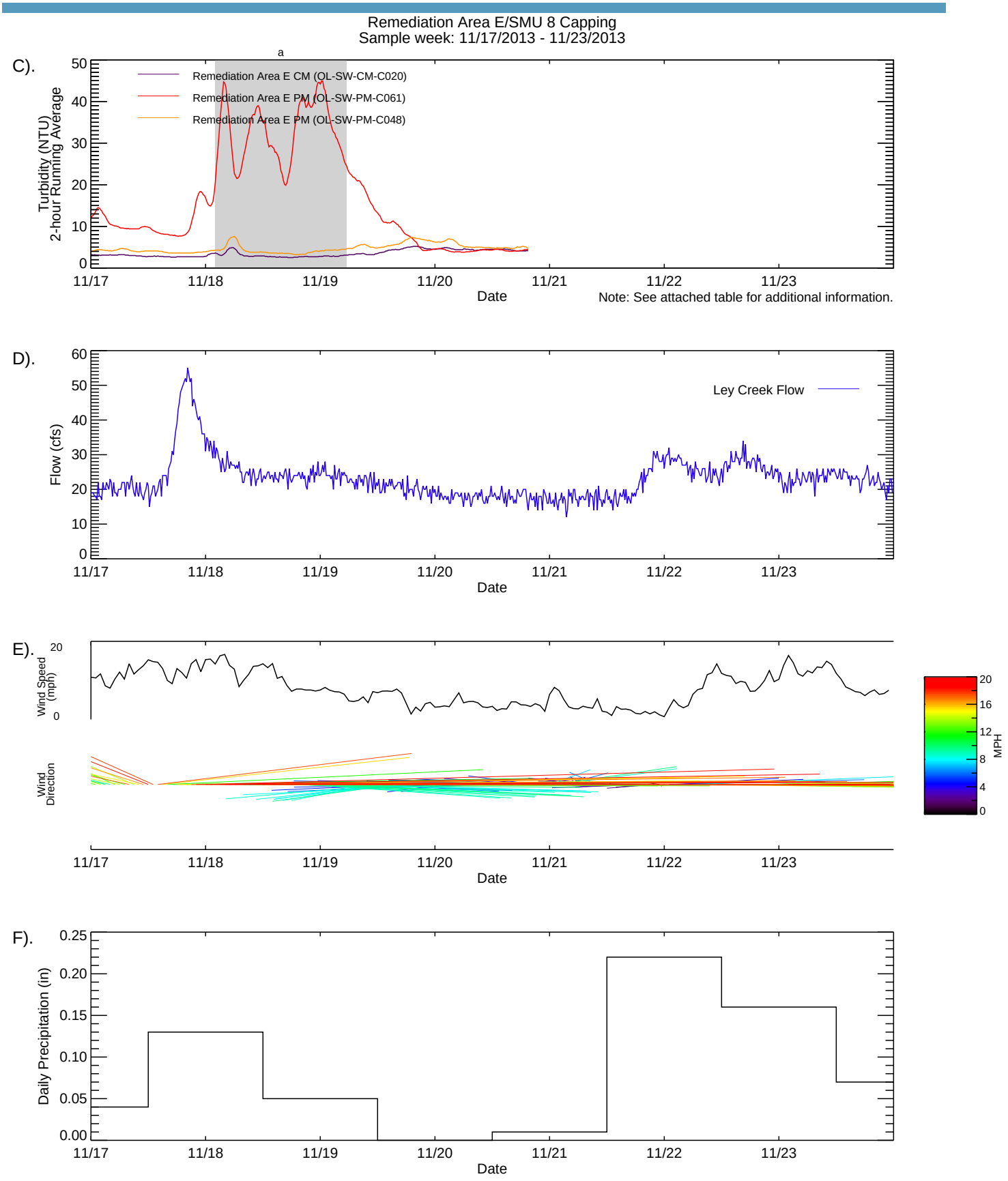
Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/18/2013	11	OL-SW-PM-C061	Remediation Areas C/D PM	14:00	--	Elevated turbidity likely a result of high winds and wave action. Visual inspection not performed due to safety concerns.
	11/19/2013				--	17:30	
b	11/22/2013	11	OL-SW-PM-C061	Remediation Areas C/D PM	22:15	--	Elevated turbidity likely a result of high winds and wave action.
	11/24/2013				--	12:00	

Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedences of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units



Real-time Turbidity - Remediation Area E/SMU 8 Capping

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240120 - Ley Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area E Capping
November 17 to November 23, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/18/2013	11	OL-SW-PM-C061	Remediation Area E PM	14:00	--	Elevated turbidity likely a result of high winds and wave action. Visual inspection not performed due to safety concerns.
	11/19/2013				--	17:30	
--	11/21/2013	9	OL-SW-CM-C020	Remediation Area E CM	--	8:30	Active operations concluded in this area; buoy removed from the water.
--	11/21/2013	12	OL-SW-PM-C048	Remediation Area E PM	--	8:30	
--	11/21/2013	11	OL-SW-PM-C061	Remediation Area E PM	--	8:30	Active operations concluded in this area; buoy now monitoring Remediation Areas C/D operations only.

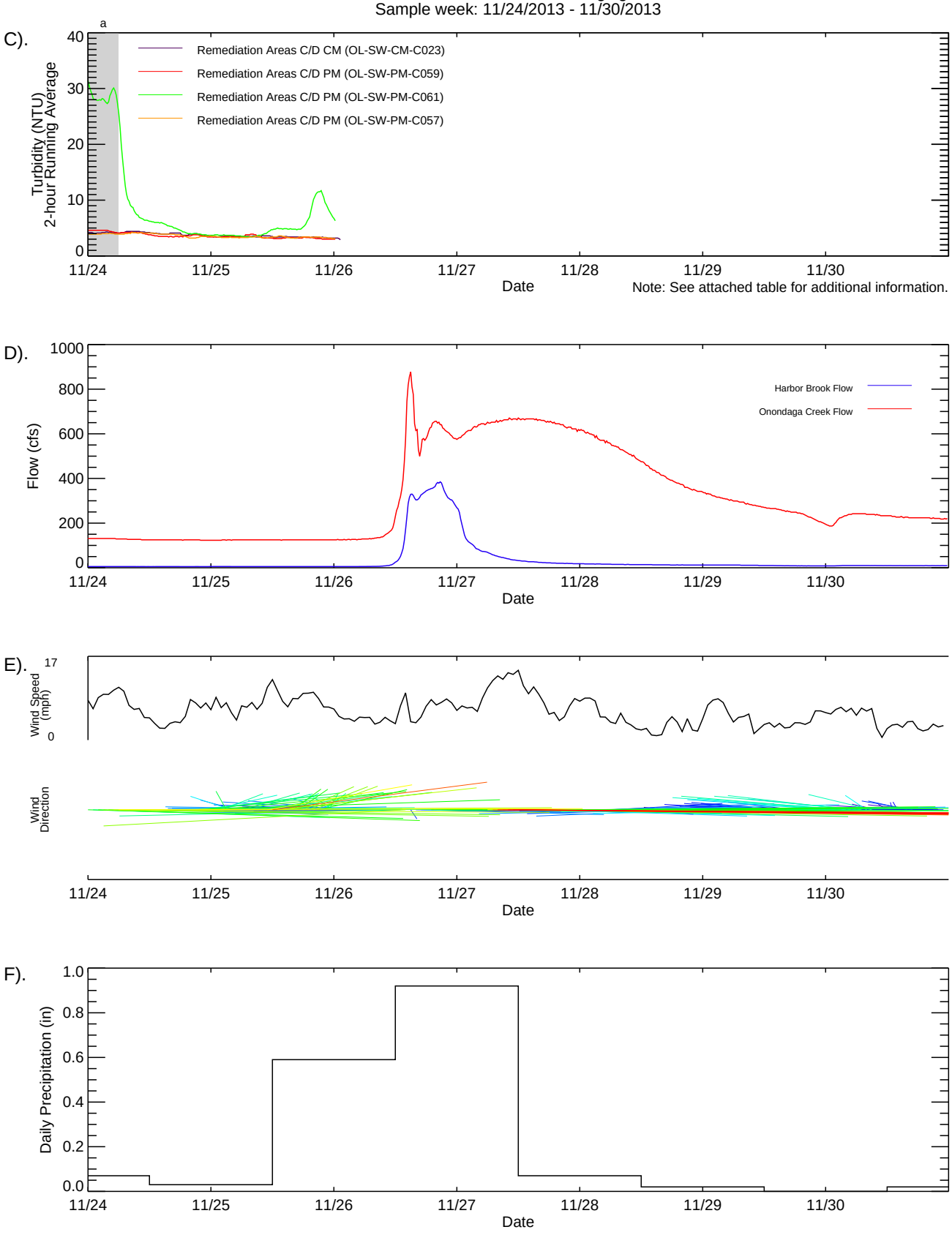
Notes:

1 This table provides explanatory notes as needed to supplement the Real-time Turbidity plots. The notations on the graph correspond to the notations shown in the table. These notes may include but are not limited to missing or anomalous data, information pertaining to exceedances of the alert levels (i.e., 25 NTU above background), water quality monitoring equipment maintenance, and correspondence with the New York State Department of Environmental Conservation.

2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units

Remediation Area D Dredging
Sample week: 11/24/2013 - 11/30/2013



Real-time Turbidity - Remediation Area D Dredging

Continuous Turbidity Data Temporal Plot Compared to Meteorological Conditions
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA

Notes: Precipitation data from Syracuse, NY, Hancock International Airport NOAA weather station.
Wind data recorded hourly at Lakeshore/Willis Ave. meteorological site (provided by Parsons).
Orientation of wind direction line indicates direction toward which wind is blowing, where up is north. Line color indicates wind speed.
Flow data from USGS location 04240105 - Harbor Brook and USGS Location 04240010 - Onondaga Creek.

ANCHOR QEA

Honeywell

2013 Continuous Turbidity Data Notes
Remediation Area D Dredging
November 24 to November 30, 2013

Notation on Graph	Date	Buoy Number	Location ID	Monitoring Role	Time Start	Time End	Notes
a	11/24/2013	11	OL-SW-PM-C061	Remediation Areas C/D PM	12:00	18:00	Elevated turbidity likely a result of high winds and wave action.
--	11/26/2013	12	OL-SW-CM-C023	Remediation Areas C/D CM	--	14:31	Buoys removed from water for the season due to icy conditions and resulting safety hazards that these conditions pose for those that maintain them.
--	11/26/2013	5	OL-SW-PM-C057	Remediation Areas C/D PM	--	13:31	
--	11/26/2013	2	OL-SW-PM-C059	Remediation Areas C/D PM	--	13:16	
--	11/26/2013	11	OL-SW-PM-C061	Remediation Areas C/D PM	--	13:46	

Notes:

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2 The 2-hour running average turbidity plot provides a depiction of turbidity trends for evaluation of alert and action levels.

NTU - Nephelometric Turbidity Units

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Acenaphthene	0.018	ug/L	J	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Acenaphthene	0.2	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Acenaphthene	0.2	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Acenaphthene	0.014	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Acenaphthene	0.014	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Acenaphthene	0.014	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Acenaphthene	0.014	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Acenaphthene	0.2	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Acenaphthene	0.04	ug/L	J	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Acenaphthene	0.057	ug/L	J	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Acenaphthene	0.026	ug/L	J	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Acenaphthene	0.2	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Acenaphthene	0.2	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Acenaphthene	0.021	ug/L	J	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Acenaphthene	0.21	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Acenaphthene	0.19	ug/L	UJ	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Acenaphthene	0.2	ug/L	UJ	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Acenaphthene	0.014	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Acenaphthene	0.014	ug/L	U	FD	Y	48	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Acenaphthene	0.2	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Acenaphthene	0.2	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Acenaphthene	0.19	ug/L	U	REG	Y	48	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Acenaphthene	0.19	ug/L	U	FD	Y	48	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Anthracene	0.2	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Anthracene	0.2	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Anthracene	0.015	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Anthracene	0.015	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Anthracene	0.015	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Anthracene	0.015	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Anthracene	0.2	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Anthracene	0.016	ug/L	J	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Anthracene	0.018	ug/L	J	FD	Y	35	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Anthracene	0.2	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Anthracene	0.2	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Anthracene	0.03	ug/L	J	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Anthracene	0.21	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Anthracene	0.19	ug/L	UJ	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Anthracene	0.2	ug/L	UJ	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Anthracene	0.015	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Anthracene	0.015	ug/L	U	FD	Y	35	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Anthracene	0.2	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Anthracene	0.2	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Anthracene	0.19	ug/L	U	REG	Y	35	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Anthracene	0.19	ug/L	U	FD	Y	35	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Benzene	0.32	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Benzene	0.38	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Benzene	0.19	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Benzene	0.18	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Benzene	0.26	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Benzene	0.23	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Benzene	0.77	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Benzene	0.68	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Benzene	0.26	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Benzene	0.16	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Benzene	0.28	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Benzene	0.22	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Benzene	1.2	ug/L		REG	Y	760	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Benzene	1.5	ug/L		FD	Y	760	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Benzene	0.26	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Benzene	0.22	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Benzene	0.11	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Benzene	0.11	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Benzene	0.46	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Benzene	0.42	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Benzene	0.41	ug/L	J	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Benzene	0.43	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Benzene	0.62	ug/L	J	FD	Y	760	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Benzene	5.9	ug/L		REG	Y	760	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Benzene	6.4	ug/L		FD	Y	760	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Benzene	0.41	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Benzene	0.41	ug/L	U	FD	Y	760	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Benzene	1	ug/L	U	REG	Y	760	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Benzene	1	ug/L	U	FD	Y	760	ug/L

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Benzo(a)anthracene	0.065	ug/L	J	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Benzo(a)anthracene	0.045	ug/L	J	FD	Y	0.23	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Benzo(a)anthracene	0.2	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Benzo(a)anthracene	0.2	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Benzo(a)anthracene	0.014	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Benzo(a)anthracene	0.014	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Benzo(a)anthracene	0.1	ug/L	J	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Benzo(a)anthracene	0.014	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Benzo(a)anthracene	0.014	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Benzo(a)anthracene	0.2	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Benzo(a)anthracene	0.2	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Benzo(a)anthracene	0.2	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Benzo(a)anthracene	0.043	ug/L	J	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Benzo(a)anthracene	0.066	ug/L	J	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Benzo(a)anthracene	0.21	ug/L	J	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Benzo(a)anthracene	0.21	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Benzo(a)anthracene	0.21	ug/L	J	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Benzo(a)anthracene	0.2	ug/L	UJ	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Benzo(a)anthracene	0.092	ug/L	J	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Benzo(a)anthracene	0.014	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Benzo(a)anthracene	0.014	ug/L	U	FD	Y	0.23	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Benzo(a)anthracene	0.2	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Benzo(a)anthracene	0.2	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Benzo(a)anthracene	0.19	ug/L	U	REG	Y	0.23	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Benzo(a)anthracene	0.19	ug/L	U	FD	Y	0.23	ug/L

Notes:
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ONONDAGA LAKE WATER QUALITY MONITORING
CHEMISTRY DATA - DREDGING OPERATIONS

Honeywell

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Dissolved Mercury	0.00046	ug/L	J	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Dissolved Mercury	0.00044	ug/L	J	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Dissolved Mercury	0.0005	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Dissolved Mercury	0.0005	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Dissolved Mercury	0.00063	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Dissolved Mercury	0.00053	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Dissolved Mercury	0.00064	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Dissolved Mercury	0.00068	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Dissolved Mercury	0.0012	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Dissolved Mercury	0.00096	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Dissolved Mercury	0.0011	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Dissolved Mercury	0.001	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Dissolved Mercury	0.00078	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Dissolved Mercury	0.00071	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Dissolved Mercury	0.0005	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Dissolved Mercury	0.00089	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Dissolved Mercury	0.0011	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Dissolved Mercury	0.0011	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Dissolved Mercury	0.0013	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Dissolved Mercury	0.0018	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Dissolved Mercury	0.0013	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Dissolved Mercury	0.00093	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Dissolved Mercury	0.0015	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Dissolved Mercury	0.0012	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Dissolved Mercury	0.00082	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Dissolved Mercury	0.00085	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Dissolved Mercury	0.001	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Dissolved Mercury	0.00086	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Dissolved Mercury	0.00094	ug/L	U	REG	Y	1.4	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Dissolved Mercury	0.00074	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Dissolved Mercury	0.00081	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Dissolved Mercury	0.00057	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Dissolved Mercury	0.00052	ug/L	J	REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Dissolved Mercury	0.00038	ug/L	J	FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Dissolved Mercury	0.0031	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Dissolved Mercury	0.003	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Dissolved Mercury	0.0006	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Dissolved Mercury	0.00047	ug/L	J	FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Dissolved Mercury	0.0037	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Dissolved Mercury	0.0041	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Dissolved Mercury	0.00099	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Dissolved Mercury	0.00082	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Dissolved Mercury	0.00054	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Dissolved Mercury	0.00052	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Dissolved Mercury	0.0013	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Dissolved Mercury	0.001	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Dissolved Mercury	0.0013	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Dissolved Mercury	0.0012	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Dissolved Mercury	0.0019	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Dissolved Mercury	0.0017	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Dissolved Mercury	0.0011	ug/L	J	REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Dissolved Mercury	0.0025	ug/L	J	FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Dissolved Mercury	0.0013	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Dissolved Mercury	0.0015	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Dissolved Mercury	0.00087	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Dissolved Mercury	0.00089	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Dissolved Mercury	0.00097	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Dissolved Mercury	0.00091	ug/L		FD	Y	1.4	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Dissolved Mercury	0.0031	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Dissolved Mercury	0.0032	ug/L		FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Dissolved Mercury	0.0013	ug/L	U	REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Dissolved Mercury	0.0016	ug/L	U	FD	Y	1.4	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Dissolved Mercury	0.0033	ug/L		REG	Y	1.4	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Dissolved Mercury	0.0032	ug/L		FD	Y	1.4	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Ethylbenzene	0.26	ug/L	J	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Ethylbenzene	0.23	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Ethylbenzene	0.23	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Ethylbenzene	0.23	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Ethylbenzene	0.23	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Ethylbenzene	0.27	ug/L	J	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Ethylbenzene	0.29	ug/L	J	FD	Y	150	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Ethylbenzene	0.98	ug/L	J	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Ethylbenzene	1.1	ug/L		FD	Y	150	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Ethylbenzene	0.74	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Ethylbenzene	0.74	ug/L	U	FD	Y	150	ug/L

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Ethylbenzene	1	ug/L	U	REG	Y	150	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Ethylbenzene	1	ug/L	U	FD	Y	150	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Flourene	0.023	ug/L	J	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Flourene	0.2	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Flourene	0.2	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Flourene	0.021	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Flourene	0.021	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Flourene	0.021	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Flourene	0.021	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Flourene	0.025	ug/L	J	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Flourene	0.2	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Flourene	0.086	ug/L	J	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Flourene	0.11	ug/L	J	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Flourene	0.032	ug/L	J	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Flourene	0.034	ug/L	J	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Flourene	0.057	ug/L	J	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Flourene	0.065	ug/L	J	FD	Y	4.8	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Flourene	0.2	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Flourene	0.023	ug/L	J	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Flourene	0.038	ug/L	J	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Flourene	0.21	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Flourene	0.19	ug/L	UJ	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Flourene	0.2	ug/L	UJ	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Flourene	0.021	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Flourene	0.021	ug/L	U	FD	Y	4.8	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Flourene	0.2	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Flourene	0.2	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Flourene	0.19	ug/L	U	REG	Y	4.8	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Flourene	0.19	ug/L	U	FD	Y	4.8	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Naphthalene	0.029	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Naphthalene	0.049	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Naphthalene	0.18	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Naphthalene	0.22	ug/L		FD	Y	110	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Naphthalene	0.041	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Naphthalene	0.042	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Naphthalene	3.5	ug/L		REG	Y	110	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Naphthalene	3.5	ug/L		FD	Y	110	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Naphthalene	0.19	ug/L		REG	Y	110	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Naphthalene	0.18	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Naphthalene	0.2	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Naphthalene	0.2	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Naphthalene	0.014	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Naphthalene	0.013	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Naphthalene	0.014	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Naphthalene	0.014	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Naphthalene	0.1	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Naphthalene	0.17	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Naphthalene	0.2	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Naphthalene	0.041	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Naphthalene	2.4	ug/L		REG	Y	110	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Naphthalene	2.6	ug/L		FD	Y	110	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Naphthalene	13	ug/L		REG	Y	110	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Naphthalene	14	ug/L		FD	Y	110	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Naphthalene	0.2	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Naphthalene	0.2	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Naphthalene	0.23	ug/L		FD	Y	110	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Naphthalene	0.095	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Naphthalene	0.067	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Naphthalene	0.78	ug/L		REG	Y	110	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Naphthalene	1.8	ug/L		FD	Y	110	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Naphthalene	0.16	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Naphthalene	0.15	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Naphthalene	0.11	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Naphthalene	0.11	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Naphthalene	0.013	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Naphthalene	0.013	ug/L	U	FD	Y	110	ug/L

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Naphthalene	0.047	ug/L	J	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Naphthalene	0.59	ug/L	J	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Naphthalene	0.19	ug/L	U	REG	Y	110	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Naphthalene	0.19	ug/L	U	FD	Y	110	ug/L

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Phenanthrene	0.2	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Phenanthrene	0.2	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Phenanthrene	0.041	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Phenanthrene	0.041	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Phenanthrene	0.041	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Phenanthrene	0.041	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Phenanthrene	0.2	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Phenanthrene	0.064	ug/L	J	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Phenanthrene	0.09	ug/L	J	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Phenanthrene	0.057	ug/L	J	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Phenanthrene	0.05	ug/L	J	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Phenanthrene	0.095	ug/L	J	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Phenanthrene	0.1	ug/L	J	FD	Y	45	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Phenanthrene	0.2	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Phenanthrene	0.057	ug/L	J	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Phenanthrene	0.11	ug/L	J	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Phenanthrene	0.13	ug/L	J	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Phenanthrene	0.21	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Phenanthrene	0.19	ug/L	UJ	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Phenanthrene	0.2	ug/L	UJ	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Phenanthrene	0.041	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Phenanthrene	0.041	ug/L	U	FD	Y	45	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Phenanthrene	0.2	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Phenanthrene	0.2	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Phenanthrene	0.19	ug/L	U	REG	Y	45	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Phenanthrene	0.19	ug/L	U	FD	Y	45	ug/L

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Pyrene	0.016	ug/L	J	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Pyrene	0.018	ug/L	J	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Pyrene	0.017	ug/L	J	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Pyrene	0.2	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Pyrene	0.2	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Pyrene	0.015	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Pyrene	0.015	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Pyrene	0.015	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Pyrene	0.015	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Pyrene	0.2	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Pyrene	0.021	ug/L	J	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Pyrene	0.015	ug/L	J	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Pyrene	0.2	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Pyrene	0.2	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Pyrene	0.015	ug/L	J	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Pyrene	0.031	ug/L	J	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Pyrene	0.07	ug/L	J	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Pyrene	0.21	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Pyrene	0.056	ug/L	J	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Pyrene	0.2	ug/L	UJ	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Pyrene	0.015	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Pyrene	0.015	ug/L	U	FD	Y	42	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Pyrene	0.2	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Pyrene	0.2	ug/L	U	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Pyrene	0.19	ug/L	UJ	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Pyrene	0.19	ug/L	UJ	FD	Y	42	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Pyrene	0.19	ug/L	U	REG	Y	42	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Pyrene	0.19	ug/L	U	FD	Y	42	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Toluene	0.6	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Toluene	0.55	ug/L	J	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Toluene	0.33	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Toluene	0.39	ug/L	J	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Toluene	1.6	ug/L		REG	Y	480	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Toluene	1.5	ug/L		FD	Y	480	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Toluene	0.26	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Toluene	0.29	ug/L	J	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Toluene	0.34	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Toluene	0.32	ug/L	J	FD	Y	480	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Toluene	1.1	ug/L		REG	Y	480	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Toluene	1.2	ug/L		FD	Y	480	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Toluene	0.23	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Toluene	0.15	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Toluene	0.15	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Toluene	0.15	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Toluene	0.36	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Toluene	0.36	ug/L	J	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Toluene	0.96	ug/L	J	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Toluene	0.94	ug/L	J	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Toluene	1.3	ug/L		REG	Y	480	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Toluene	1.5	ug/L		FD	Y	480	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Toluene	3.1	ug/L		REG	Y	480	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Toluene	3.3	ug/L		FD	Y	480	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Toluene	0.51	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Toluene	0.51	ug/L	U	FD	Y	480	ug/L

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Toluene	1	ug/L	U	REG	Y	480	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Toluene	1	ug/L	U	FD	Y	480	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1860-04	4/18/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1861-03	4/25/2013	Total Xylenes	1.2	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1861-04	4/25/2013	Total Xylenes	1	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1862-02	5/1/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1862-03	5/1/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1863-03	5/8/2013	Total Xylenes	1.2	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1863-04	5/8/2013	Total Xylenes	1.5	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1864-03	5/15/2013	Total Xylenes	5.7	ug/L		REG	Y	590	ug/L
OL-SW-CM-C014	OL-1864-04	5/15/2013	Total Xylenes	5.1	ug/L		FD	Y	590	ug/L
OL-SW-CM-C014	OL-1865-03	5/22/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1865-04	5/22/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1866-03	5/31/2013	Total Xylenes	1.2	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1866-04	5/31/2013	Total Xylenes	1.5	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1867-03	6/5/2013	Total Xylenes	1.4	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1867-04	6/5/2013	Total Xylenes	1.5	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C014	OL-1868-03	6/12/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C014	OL-1868-04	6/12/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1869-03	6/19/2013	Total Xylenes	1.1	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1869-04	6/19/2013	Total Xylenes	1.2	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1870-03	6/27/2013	Total Xylenes	2.1	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1870-04	6/27/2013	Total Xylenes	2.1	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1871-03	7/2/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1871-04	7/2/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1872-03	7/11/2013	Total Xylenes	0.49	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1872-04	7/11/2013	Total Xylenes	0.49	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1873-03	7/17/2013	Total Xylenes	3	ug/L		REG	Y	590	ug/L
OL-SW-CM-C021	OL-1873-04	7/17/2013	Total Xylenes	3	ug/L		FD	Y	590	ug/L
OL-SW-CM-C021	OL-1874-03	7/24/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1875-03	7/31/2013	Total Xylenes	2.7	ug/L	J	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1875-04	7/31/2013	Total Xylenes	2.6	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1876-03	8/7/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1876-04	8/7/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1877-03	8/14/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1877-04	8/14/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C021	OL-1878-03	8/21/2013	Total Xylenes	7.1	ug/L		REG	Y	590	ug/L
OL-SW-CM-C021	OL-1878-04	8/21/2013	Total Xylenes	8.7	ug/L		FD	Y	590	ug/L
OL-SW-CM-C021	OL-1879-03	8/27/2013	Total Xylenes	18	ug/L		REG	Y	590	ug/L
OL-SW-CM-C021	OL-1879-04	8/27/2013	Total Xylenes	22	ug/L		FD	Y	590	ug/L
OL-SW-CM-C021	OL-1880-03	9/5/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C021	OL-1880-04	9/5/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1881-03	9/11/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1881-04	9/11/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1882-03	9/18/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1882-04	9/18/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1883-03	9/25/2013	Total Xylenes	3	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1883-04	9/25/2013	Total Xylenes	3	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1884-03	10/2/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1884-04	10/2/2013	Total Xylenes	2	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1885-03	10/9/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1885-04	10/9/2013	Total Xylenes	0.69	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1886-03	10/16/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1886-04	10/16/2013	Total Xylenes	2	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1887-03	10/23/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1887-04	10/23/2013	Total Xylenes	0.7	ug/L	J	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1888-03	10/30/2013	Total Xylenes	0.66	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1888-04	10/30/2013	Total Xylenes	0.66	ug/L	U	FD	Y	590	ug/L

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1889-04	11/6/2013	Total Xylenes	2	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1890-03	11/13/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1890-04	11/13/2013	Total Xylenes	2	ug/L	U	FD	Y	590	ug/L
OL-SW-CM-C022	OL-1891-03	11/20/2013	Total Xylenes	2	ug/L	U	REG	Y	590	ug/L
OL-SW-CM-C022	OL-1891-04	11/20/2013	Total Xylenes	2	ug/L	U	FD	Y	590	ug/L

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Total Mercury	0.0013	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1860-04	4/18/2013	Total Mercury	0.0015	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1861-03	4/25/2013	Total Mercury	0.0022	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1861-04	4/25/2013	Total Mercury	0.002	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1862-02	5/1/2013	Total Mercury	0.0011	ug/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1862-03	5/1/2013	Total Mercury	0.001	ug/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1863-03	5/8/2013	Total Mercury	0.0031	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1863-04	5/8/2013	Total Mercury	0.0031	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1864-03	5/15/2013	Total Mercury	0.0046	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1864-04	5/15/2013	Total Mercury	0.0046	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1865-03	5/22/2013	Total Mercury	0.0018	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1865-04	5/22/2013	Total Mercury	0.0018	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1866-03	5/31/2013	Total Mercury	0.0026	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1866-04	5/31/2013	Total Mercury	0.0027	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1867-03	6/5/2013	Total Mercury	0.0067	ug/L		REG	Y	--	--
OL-SW-CM-C014	OL-1867-04	6/5/2013	Total Mercury	0.0073	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1868-03	6/12/2013	Total Mercury	0.0025	ug/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1868-04	6/12/2013	Total Mercury	0.0074	ug/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1869-03	6/19/2013	Total Mercury	0.0024	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1869-04	6/19/2013	Total Mercury	0.0022	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1870-03	6/27/2013	Total Mercury	0.0039	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1870-04	6/27/2013	Total Mercury	0.0027	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1871-03	7/2/2013	Total Mercury	0.0044	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1871-04	7/2/2013	Total Mercury	0.0037	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1872-03	7/11/2013	Total Mercury	0.0044	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1872-04	7/11/2013	Total Mercury	0.0041	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1873-03	7/17/2013	Total Mercury	0.0042	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1873-04	7/17/2013	Total Mercury	0.0039	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1874-03	7/24/2013	Total Mercury	0.0077	ug/L		REG	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Total Mercury	0.0079	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1875-03	7/31/2013	Total Mercury	0.0054	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1875-04	7/31/2013	Total Mercury	0.0054	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1876-03	8/7/2013	Total Mercury	0.0021	ug/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1876-04	8/7/2013	Total Mercury	0.0012	ug/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1877-03	8/14/2013	Total Mercury	0.0045	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1877-04	8/14/2013	Total Mercury	0.0047	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1878-03	8/21/2013	Total Mercury	0.0038	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1878-04	8/21/2013	Total Mercury	0.003	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1879-03	8/27/2013	Total Mercury	0.015	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1879-04	8/27/2013	Total Mercury	0.018	ug/L		FD	Y	--	--
OL-SW-CM-C021	OL-1880-03	9/5/2013	Total Mercury	0.0035	ug/L		REG	Y	--	--
OL-SW-CM-C021	OL-1880-04	9/5/2013	Total Mercury	0.0032	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1881-03	9/11/2013	Total Mercury	0.0027	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1881-04	9/11/2013	Total Mercury	0.0025	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1882-03	9/18/2013	Total Mercury	0.0043	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1882-04	9/18/2013	Total Mercury	0.0039	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1883-03	9/25/2013	Total Mercury	0.0023	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1883-04	9/25/2013	Total Mercury	0.0024	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1884-03	10/2/2013	Total Mercury	0.0031	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1884-04	10/2/2013	Total Mercury	0.0031	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1885-03	10/9/2013	Total Mercury	0.0049	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1885-04	10/9/2013	Total Mercury	0.0052	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1886-03	10/16/2013	Total Mercury	0.0041	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1886-04	10/16/2013	Total Mercury	0.0043	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1887-03	10/23/2013	Total Mercury	0.011	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1887-04	10/23/2013	Total Mercury	0.011	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1888-03	10/30/2013	Total Mercury	0.0062	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1888-04	10/30/2013	Total Mercury	0.0058	ug/L		FD	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Total Mercury	0.0068	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1889-04	11/6/2013	Total Mercury	0.007	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1890-03	11/13/2013	Total Mercury	0.0061	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1890-04	11/13/2013	Total Mercury	0.0058	ug/L		FD	Y	--	--
OL-SW-CM-C022	OL-1891-03	11/20/2013	Total Mercury	0.012	ug/L		REG	Y	--	--
OL-SW-CM-C022	OL-1891-04	11/20/2013	Total Mercury	0.012	ug/L		FD	Y	--	--

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Total Phosphorus	0.0051	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1860-04	4/18/2013	Total Phosphorus	0.011	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1861-03	4/25/2013	Total Phosphorus	0.0028	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1861-04	4/25/2013	Total Phosphorus	0.004	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C014	OL-1862-02	5/1/2013	Total Phosphorus	0.0071	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1862-03	5/1/2013	Total Phosphorus	0.004	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C014	OL-1863-03	5/8/2013	Total Phosphorus	0.0085	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1863-04	5/8/2013	Total Phosphorus	0.0099	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1864-03	5/15/2013	Total Phosphorus	0.014	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1864-04	5/15/2013	Total Phosphorus	0.0093	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1865-03	5/22/2013	Total Phosphorus	0.023	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1865-04	5/22/2013	Total Phosphorus	0.019	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1866-03	5/31/2013	Total Phosphorus	0.017	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1866-04	5/31/2013	Total Phosphorus	0.009	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1867-03	6/5/2013	Total Phosphorus	0.019	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1867-04	6/5/2013	Total Phosphorus	0.021	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1868-03	6/12/2013	Total Phosphorus	0.02	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1868-04	6/12/2013	Total Phosphorus	0.023	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1869-03	6/19/2013	Total Phosphorus	0.026	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1869-04	6/19/2013	Total Phosphorus	0.021	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1870-03	6/27/2013	Total Phosphorus	0.019	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1870-04	6/27/2013	Total Phosphorus	0.016	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1871-03	7/2/2013	Total Phosphorus	0.035	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1871-04	7/2/2013	Total Phosphorus	0.036	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1872-03	7/11/2013	Total Phosphorus	0.023	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1872-04	7/11/2013	Total Phosphorus	0.018	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1873-03	7/17/2013	Total Phosphorus	0.02	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1873-04	7/17/2013	Total Phosphorus	0.025	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1874-03	7/24/2013	Total Phosphorus	0.021	mg/L	J	REG	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Total Phosphorus	0.016	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1875-03	7/31/2013	Total Phosphorus	0.0095	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1875-04	7/31/2013	Total Phosphorus	0.012	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1876-03	8/7/2013	Total Phosphorus	0.0029	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1876-04	8/7/2013	Total Phosphorus	0.0075	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1877-03	8/14/2013	Total Phosphorus	0.016	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1877-04	8/14/2013	Total Phosphorus	0.015	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1878-03	8/21/2013	Total Phosphorus	0.019	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1878-04	8/21/2013	Total Phosphorus	0.019	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1879-03	8/27/2013	Total Phosphorus	0.016	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1879-04	8/27/2013	Total Phosphorus	0.005	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1880-03	9/5/2013	Total Phosphorus	0.013	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1880-04	9/5/2013	Total Phosphorus	0.013	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1881-03	9/11/2013	Total Phosphorus	0.013	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1881-04	9/11/2013	Total Phosphorus	0.0071	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1882-03	9/18/2013	Total Phosphorus	0.0092	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1882-04	9/18/2013	Total Phosphorus	0.0067	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1883-03	9/25/2013	Total Phosphorus	0.018	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1883-04	9/25/2013	Total Phosphorus	0.017	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1884-03	10/2/2013	Total Phosphorus	0.01	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1884-04	10/2/2013	Total Phosphorus	0.013	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1885-03	10/9/2013	Total Phosphorus	0.042	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1885-04	10/9/2013	Total Phosphorus	0.043	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1886-03	10/16/2013	Total Phosphorus	0.023	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1886-04	10/16/2013	Total Phosphorus	0.0065	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1887-03	10/23/2013	Total Phosphorus	0.024	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1887-04	10/23/2013	Total Phosphorus	0.02	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1888-03	10/30/2013	Total Phosphorus	0.013	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1888-04	10/30/2013	Total Phosphorus	0.019	mg/L		FD	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Total Phosphorus	0.016	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1889-04	11/6/2013	Total Phosphorus	0.016	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1890-03	11/13/2013	Total Phosphorus	0.015	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1890-04	11/13/2013	Total Phosphorus	0.0097	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1891-03	11/20/2013	Total Phosphorus	0.015	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1891-04	11/20/2013	Total Phosphorus	0.015	mg/L	J	FD	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Dissolved Phosphorus	0.004	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1860-04	4/18/2013	Dissolved Phosphorus	0.004	mg/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1861-03	4/25/2013	Dissolved Phosphorus	0.0042	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1861-04	4/25/2013	Dissolved Phosphorus	0.0032	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1862-02	5/1/2013	Dissolved Phosphorus	0.0025	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1862-03	5/1/2013	Dissolved Phosphorus	0.0031	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1863-03	5/8/2013	Dissolved Phosphorus	0.0057	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1863-04	5/8/2013	Dissolved Phosphorus	0.0058	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1864-03	5/15/2013	Dissolved Phosphorus	0.0056	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1864-04	5/15/2013	Dissolved Phosphorus	0.0058	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1865-03	5/22/2013	Dissolved Phosphorus	5.3	ug/l		REG	Y	--	--
OL-SW-CM-C014	OL-1865-04	5/22/2013	Dissolved Phosphorus	3.6	ug/L		FD	Y	--	--
OL-SW-CM-C014	OL-1866-03	5/31/2013	Dissolved Phosphorus	0.004	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1866-04	5/31/2013	Dissolved Phosphorus	0.0045	mg/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1867-03	6/5/2013	Dissolved Phosphorus	0.004	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1867-04	6/5/2013	Dissolved Phosphorus	0.0064	mg/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1868-03	6/12/2013	Dissolved Phosphorus	0.0045	mg/L	UJ	REG	Y	--	--
OL-SW-CM-C014	OL-1868-04	6/12/2013	Dissolved Phosphorus	0.0044	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C021	OL-1869-03	6/19/2013	Dissolved Phosphorus	0.011	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1869-04	6/19/2013	Dissolved Phosphorus	0.01	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1870-03	6/27/2013	Dissolved Phosphorus	0.018	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1870-04	6/27/2013	Dissolved Phosphorus	0.014	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1871-03	7/2/2013	Dissolved Phosphorus	0.035	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1871-04	7/2/2013	Dissolved Phosphorus	0.045	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1872-03	7/11/2013	Dissolved Phosphorus	0.0036	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1872-04	7/11/2013	Dissolved Phosphorus	0.0013	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1873-03	7/17/2013	Dissolved Phosphorus	0.0035	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1873-04	7/17/2013	Dissolved Phosphorus	0.0019	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1874-03	7/24/2013	Dissolved Phosphorus	0.0038	mg/L	J	REG	Y	--	--

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Dissolved Phosphorus	0.0027	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1875-03	7/31/2013	Dissolved Phosphorus	0.004	mg/L	U	REG	Y	--	--
OL-SW-CM-C021	OL-1875-04	7/31/2013	Dissolved Phosphorus	0.004	mg/L	U	FD	Y	--	--
OL-SW-CM-C021	OL-1876-03	8/7/2013	Dissolved Phosphorus	0.004	mg/L	U	REG	Y	--	--
OL-SW-CM-C021	OL-1876-04	8/7/2013	Dissolved Phosphorus	0.004	mg/L	U	FD	Y	--	--
OL-SW-CM-C021	OL-1877-03	8/14/2013	Dissolved Phosphorus	0.0023	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1877-04	8/14/2013	Dissolved Phosphorus	0.0035	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1878-03	8/21/2013	Dissolved Phosphorus	0.0048	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1878-04	8/21/2013	Dissolved Phosphorus	0.0036	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1879-03	8/27/2013	Dissolved Phosphorus	0.0066	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1879-04	8/27/2013	Dissolved Phosphorus	0.0059	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1880-03	9/5/2013	Dissolved Phosphorus	0.0027	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1880-04	9/5/2013	Dissolved Phosphorus	0.0039	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1881-03	9/11/2013	Dissolved Phosphorus	0.004	mg/L	UJ	REG	Y	--	--
OL-SW-CM-C022	OL-1881-04	9/11/2013	Dissolved Phosphorus	0.0024	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1882-03	9/18/2013	Dissolved Phosphorus	0.0047	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1882-04	9/18/2013	Dissolved Phosphorus	0.0018	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1883-03	9/25/2013	Dissolved Phosphorus	0.022	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1883-04	9/25/2013	Dissolved Phosphorus	0.019	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1884-03	10/2/2013	Dissolved Phosphorus	0.0037	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1884-04	10/2/2013	Dissolved Phosphorus	0.0049	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1885-03	10/9/2013	Dissolved Phosphorus	0.014	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1885-04	10/9/2013	Dissolved Phosphorus	0.05	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1886-03	10/16/2013	Dissolved Phosphorus	0.0048	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1886-04	10/16/2013	Dissolved Phosphorus	0.0046	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1887-03	10/23/2013	Dissolved Phosphorus	0.0044	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1887-04	10/23/2013	Dissolved Phosphorus	0.0059	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1888-03	10/30/2013	Dissolved Phosphorus	0.006	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1888-04	10/30/2013	Dissolved Phosphorus	0.007	mg/L		FD	Y	--	--

Notes:
SWQ - surface water quality; U - not detected at detection limit
J - estimated value

Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Dissolved Phosphorus	0.0056	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1889-04	11/6/2013	Dissolved Phosphorus	0.0059	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1890-03	11/13/2013	Dissolved Phosphorus	0.012	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1890-04	11/13/2013	Dissolved Phosphorus	0.012	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1891-03	11/20/2013	Dissolved Phosphorus	0.0082	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1891-04	11/20/2013	Dissolved Phosphorus	0.018	mg/L	J	FD	Y	--	--

Notes:
SWQ - surface water quality; U - not detected at detection limit
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	Soluble Reactive Phosphate	0.002	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1860-04	4/18/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C014	OL-1861-03	4/25/2013	Soluble Reactive Phosphate	0.0014	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1861-04	4/25/2013	Soluble Reactive Phosphate	0.0014	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1862-02	5/1/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1862-03	5/1/2013	Soluble Reactive Phosphate	0.002	mg/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1863-03	5/8/2013	Soluble Reactive Phosphate	0.022	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1863-04	5/8/2013	Soluble Reactive Phosphate	0.023	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1864-03	5/15/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	REG	Y	--	--
OL-SW-CM-C014	OL-1864-04	5/15/2013	Soluble Reactive Phosphate	0.0031	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1865-03	5/22/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1865-04	5/22/2013	Soluble Reactive Phosphate	0.0016	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1866-03	5/31/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1866-04	5/31/2013	Soluble Reactive Phosphate	0.002	mg/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1867-03	6/5/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	REG	Y	--	--
OL-SW-CM-C014	OL-1867-04	6/5/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C014	OL-1868-03	6/12/2013	Soluble Reactive Phosphate	0.0025	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1868-04	6/12/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C021	OL-1869-03	6/19/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C021	OL-1869-04	6/19/2013	Soluble Reactive Phosphate	0.0019	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1870-03	6/27/2013	Soluble Reactive Phosphate	0.0064	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1870-04	6/27/2013	Soluble Reactive Phosphate	0.003	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1871-03	7/2/2013	Soluble Reactive Phosphate	0.02	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1871-04	7/2/2013	Soluble Reactive Phosphate	0.026	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1872-03	7/11/2013	Soluble Reactive Phosphate	0.02	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1872-04	7/11/2013	Soluble Reactive Phosphate	0.02	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1873-03	7/17/2013	Soluble Reactive Phosphate	0.003	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1873-04	7/17/2013	Soluble Reactive Phosphate	0.0058	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1874-03	7/24/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	Soluble Reactive Phosphate	0.002	mg/L	U	FD	Y	--	--
OL-SW-CM-C021	OL-1875-03	7/31/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	REG	Y	--	--
OL-SW-CM-C021	OL-1875-04	7/31/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C021	OL-1876-03	8/7/2013	Soluble Reactive Phosphate	0.0019	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1876-04	8/7/2013	Soluble Reactive Phosphate	0.0022	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1877-03	8/14/2013	Soluble Reactive Phosphate	0.0099	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1877-04	8/14/2013	Soluble Reactive Phosphate	0.0098	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1878-03	8/21/2013	Soluble Reactive Phosphate	0.0014	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1878-04	8/21/2013	Soluble Reactive Phosphate	0.0017	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1879-03	8/27/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C021	OL-1879-04	8/27/2013	Soluble Reactive Phosphate	0.002	mg/L	U	FD	Y	--	--
OL-SW-CM-C021	OL-1880-03	9/5/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C021	OL-1880-04	9/5/2013	Soluble Reactive Phosphate	0.002	mg/L	U	FD	Y	--	--
OL-SW-CM-C022	OL-1881-03	9/11/2013	Soluble Reactive Phosphate	0.002	mg/L	U	REG	Y	--	--
OL-SW-CM-C022	OL-1881-04	9/11/2013	Soluble Reactive Phosphate	0.0015	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1882-03	9/18/2013	Soluble Reactive Phosphate	0.0022	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1882-04	9/18/2013	Soluble Reactive Phosphate	0.0026	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1883-03	9/25/2013	Soluble Reactive Phosphate	0.002	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1883-04	9/25/2013	Soluble Reactive Phosphate	0.002	mg/L	UJ	FD	Y	--	--
OL-SW-CM-C022	OL-1884-03	10/2/2013	Soluble Reactive Phosphate	0.0025	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1884-04	10/2/2013	Soluble Reactive Phosphate	0.0025	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1885-03	10/9/2013	Soluble Reactive Phosphate	0.015	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1885-04	10/9/2013	Soluble Reactive Phosphate	0.0078	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1886-03	10/16/2013	Soluble Reactive Phosphate	0.002	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1886-04	10/16/2013	Soluble Reactive Phosphate	0.0018	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1887-03	10/23/2013	Soluble Reactive Phosphate	0.0021	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1887-04	10/23/2013	Soluble Reactive Phosphate	0.0038	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1888-03	10/30/2013	Soluble Reactive Phosphate	0.0024	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1888-04	10/30/2013	Soluble Reactive Phosphate	0.0026	mg/L		FD	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	Soluble Reactive Phosphate	0.0029	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1889-04	11/6/2013	Soluble Reactive Phosphate	0.0028	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1890-03	11/13/2013	Soluble Reactive Phosphate	0.0053	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1890-04	11/13/2013	Soluble Reactive Phosphate	0.0063	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1891-03	11/20/2013	Soluble Reactive Phosphate	0.0055	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1891-04	11/20/2013	Soluble Reactive Phosphate	0.0062	mg/L		FD	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C014	OL-1860-03	4/18/2013	TSS	5.2	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1860-04	4/18/2013	TSS	6.4	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1861-03	4/25/2013	TSS	2	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1861-04	4/25/2013	TSS	3.6	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1862-02	5/1/2013	TSS	2	mg/L	U	REG	Y	--	--
OL-SW-CM-C014	OL-1862-03	5/1/2013	TSS	2	mg/L	U	FD	Y	--	--
OL-SW-CM-C014	OL-1863-03	5/8/2013	TSS	4.8	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1863-04	5/8/2013	TSS	6	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1864-03	5/15/2013	TSS	3.6	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1864-04	5/15/2013	TSS	3.6	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1865-03	5/22/2013	TSS	2.8	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1865-04	5/22/2013	TSS	5.2	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1866-03	5/31/2013	TSS	2.4	mg/L	J	REG	Y	--	--
OL-SW-CM-C014	OL-1866-04	5/31/2013	TSS	2.8	mg/L	J	FD	Y	--	--
OL-SW-CM-C014	OL-1867-03	6/5/2013	TSS	4.4	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1867-04	6/5/2013	TSS	5.2	mg/L		FD	Y	--	--
OL-SW-CM-C014	OL-1868-03	6/12/2013	TSS	3.6	mg/L		REG	Y	--	--
OL-SW-CM-C014	OL-1868-04	6/12/2013	TSS	3.2	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1869-03	6/19/2013	TSS	2.8	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1869-04	6/19/2013	TSS	2	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1870-03	6/27/2013	TSS	3.2	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1870-04	6/27/2013	TSS	2.8	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1871-03	7/2/2013	TSS	5	mg/L	U	REG	Y	--	--
OL-SW-CM-C021	OL-1871-04	7/2/2013	TSS	2	mg/L	U	FD	Y	--	--
OL-SW-CM-C021	OL-1872-03	7/11/2013	TSS	2.8	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1872-04	7/11/2013	TSS	2.8	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1873-03	7/17/2013	TSS	8.8	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1873-04	7/17/2013	TSS	10	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1874-03	7/24/2013	TSS	8.8	mg/L	J	REG	Y	--	--

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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C021	OL-1874-04	7/24/2013	TSS	7.2	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1875-03	7/31/2013	TSS	4.4	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1875-04	7/31/2013	TSS	4.4	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1876-03	8/7/2013	TSS	4	mg/L	J	REG	Y	--	--
OL-SW-CM-C021	OL-1876-04	8/7/2013	TSS	2.4	mg/L	J	FD	Y	--	--
OL-SW-CM-C021	OL-1877-03	8/14/2013	TSS	5.2	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1877-04	8/14/2013	TSS	4.4	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1878-03	8/21/2013	TSS	9.2	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1878-04	8/21/2013	TSS	8	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1879-03	8/27/2013	TSS	3.6	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1879-04	8/27/2013	TSS	4	mg/L		FD	Y	--	--
OL-SW-CM-C021	OL-1880-03	9/5/2013	TSS	4	mg/L		REG	Y	--	--
OL-SW-CM-C021	OL-1880-04	9/5/2013	TSS	4.4	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1881-03	9/11/2013	TSS	2.8	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1881-04	9/11/2013	TSS	4	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1882-03	9/18/2013	TSS	2	mg/L	U	REG	Y	--	--
OL-SW-CM-C022	OL-1882-04	9/18/2013	TSS	2	mg/L	U	FD	Y	--	--
OL-SW-CM-C022	OL-1883-03	9/25/2013	TSS	2	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1883-04	9/25/2013	TSS	2.4	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1884-03	10/2/2013	TSS	2	mg/L	UJ	REG	Y	--	--
OL-SW-CM-C022	OL-1884-04	10/2/2013	TSS	2.4	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1885-03	10/9/2013	TSS	4.8	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1885-04	10/9/2013	TSS	4	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1886-03	10/16/2013	TSS	6	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1886-04	10/16/2013	TSS	3.2	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1887-03	10/23/2013	TSS	6	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1887-04	10/23/2013	TSS	2.8	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1888-03	10/30/2013	TSS	6	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1888-04	10/30/2013	TSS	4	mg/L		FD	Y	--	--

Notes:
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Location ID	Sample ID	Sample Date	Analyte	Result	Units	Qualifier	Sample Purpose	Validated	SWQ Standard	SWQ Standard Units
OL-SW-CM-C022	OL-1889-03	11/6/2013	TSS	2.8	mg/L	J	REG	Y	--	--
OL-SW-CM-C022	OL-1889-04	11/6/2013	TSS	16	mg/L	J	FD	Y	--	--
OL-SW-CM-C022	OL-1890-03	11/13/2013	TSS	3.2	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1890-04	11/13/2013	TSS	4	mg/L		FD	Y	--	--
OL-SW-CM-C022	OL-1891-03	11/20/2013	TSS	6.4	mg/L		REG	Y	--	--
OL-SW-CM-C022	OL-1891-04	11/20/2013	TSS	4.8	mg/L		FD	Y	--	--

Notes:
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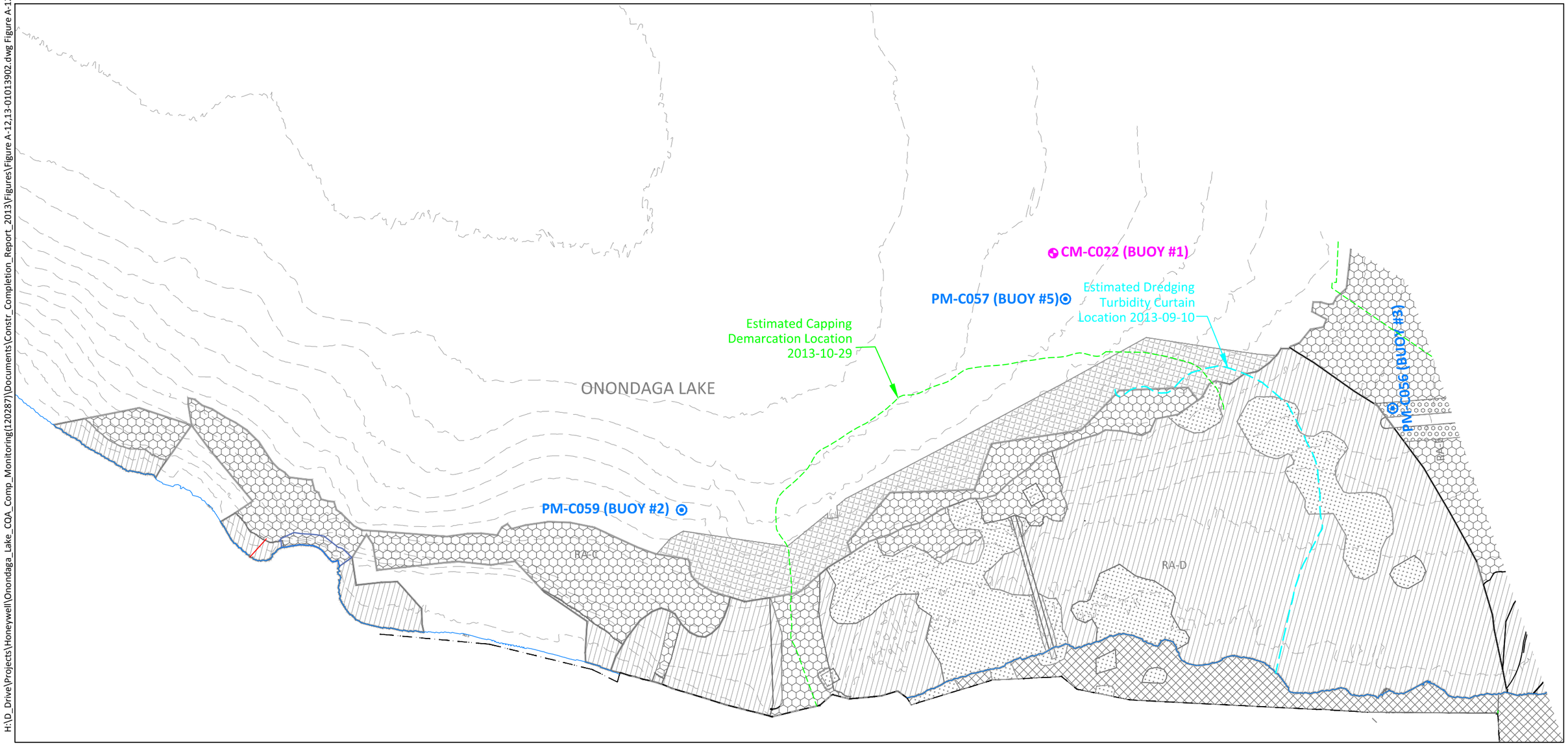

HORIZONTAL DATUM: New York State Plane, Central Zone, North American Datum of 1983 (NAD83), U.S. Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88), U.S. Feet

LEGEND:

- Performance Monitoring Station
- Compliance Monitoring Station
- Estimated Turbidity Curtain Location
- Estimated Demarcation Curtain Location
- Thin Layer Cap
- Limits of Dredging and Capping
- Limits of Cap Only
- Limits of Removal and Capping in Adjacent Areas Included in Design
- Hot Spot Dredging

0 500
Scale in Feet

H:\D_Drive\Projects\Honeywell\Onondaga_Lake_COA_Comp_Monitoring(120287)\Documents\Constr_Completion_Report_2013\Figures\Figure A-12,13-01013902.dwg Figure A-12
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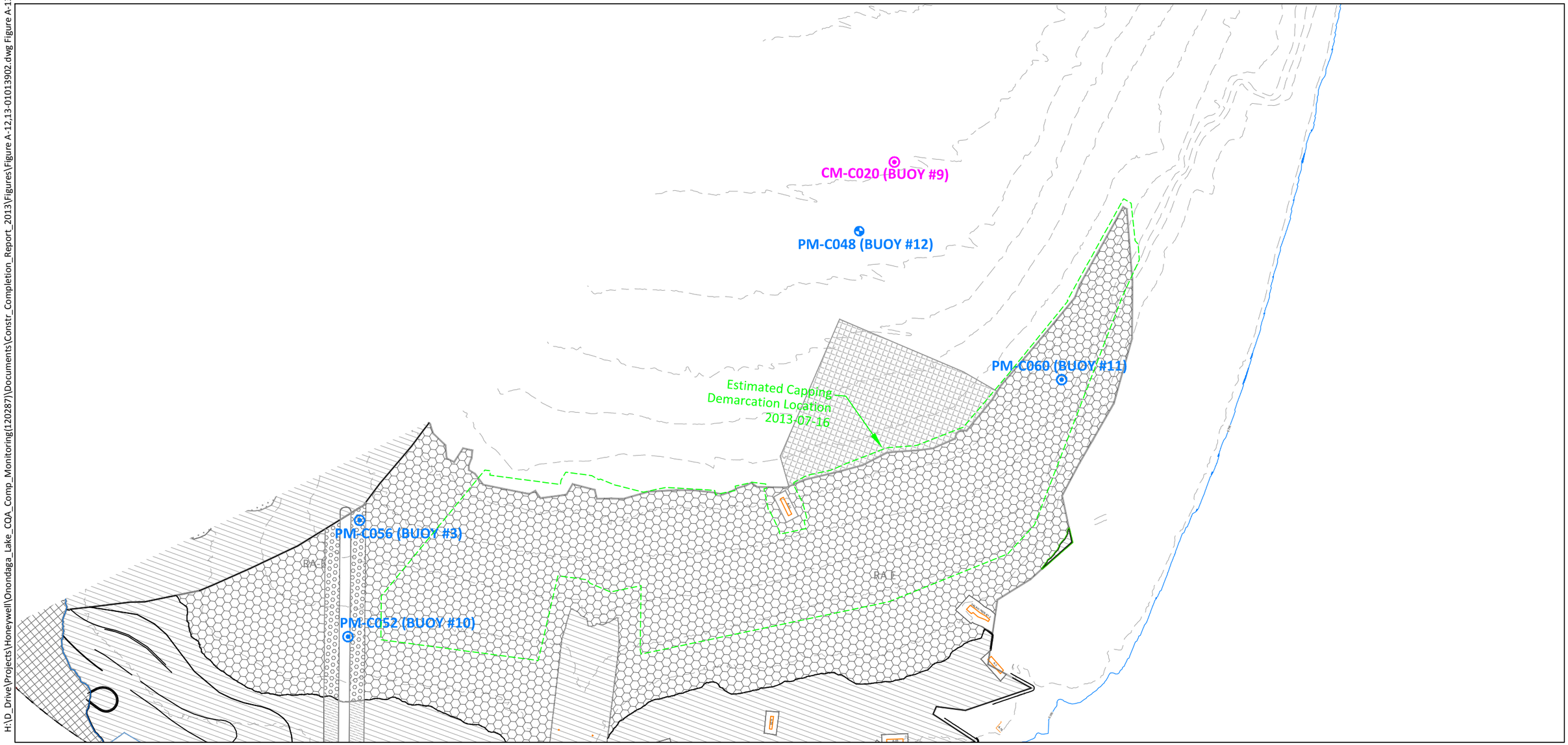
ANCHOR QEA

Figure A-12
October 2013 - Performance and Compliance Monitoring Stations during Dredging and Capping
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat



H:\D_Drive\Projects\Honeywell\Onondaga_Lake_COA_Comp_Monitoring(120287)\Documents\Constr_Completion_Report_2013\Figures\Figure A-12,13-01013902.dwg Figure A-13

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HORIZONTAL DATUM: New York State Plane, Central Zone, North American Datum of 1983 (NAD83), U.S. Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88), U.S. Feet

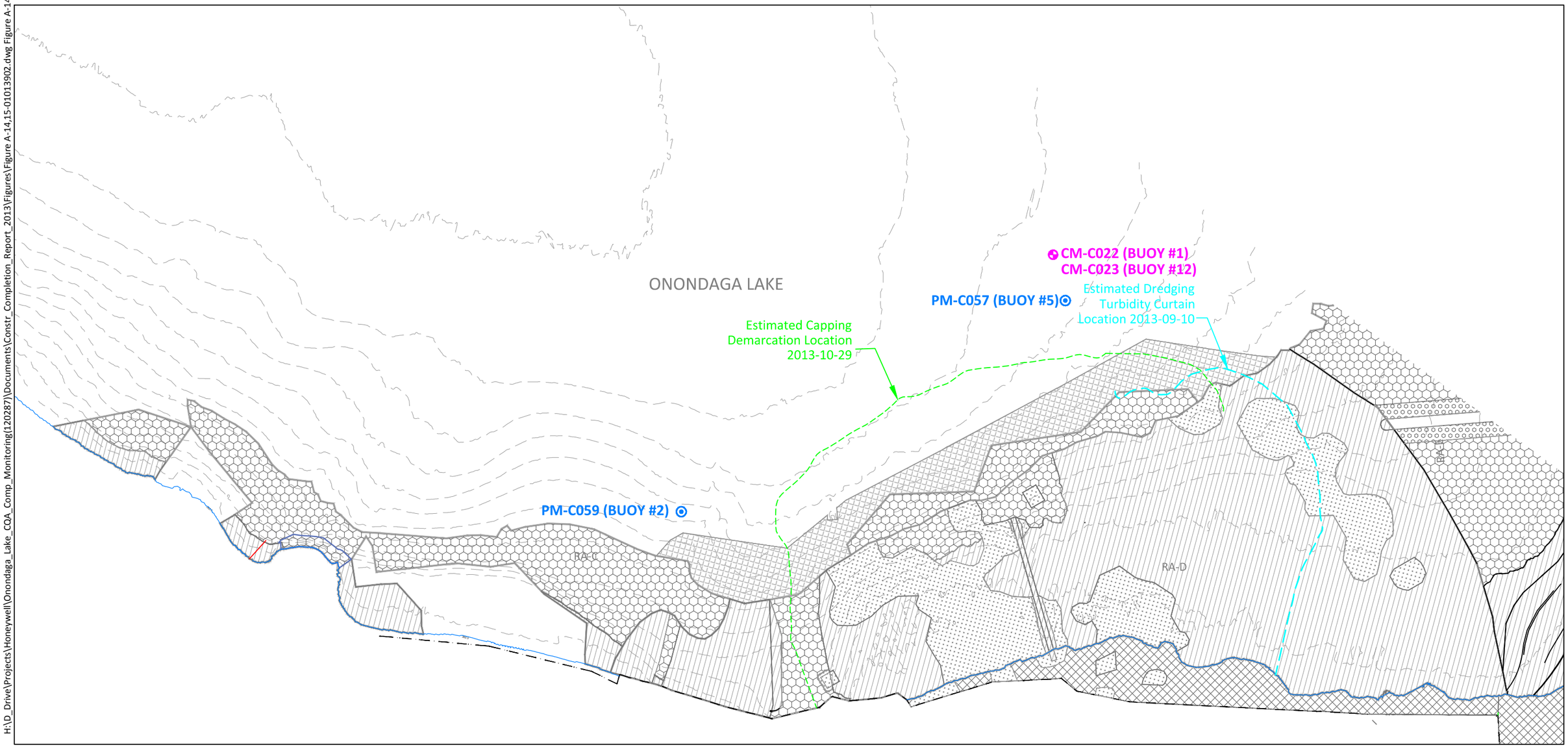
LEGEND:

- Performance Monitoring Station
- Compliance Monitoring Station
- Estimated Demarcation Curtain Location
- Thin Layer Cap
- Limits of Dredging and Capping
- Limits of Cap Only
- Limits of Removal and Capping in Adjacent Areas Included in Design
- Hot Spot Dredging

0 500
Scale in Feet

ANCHOR QEA

Figure A-13
October 2013 - Performance and Compliance Monitoring Stations during Dredging and Capping
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat



HORIZONTAL DATUM: New York State Plane, Central Zone, North American Datum of 1983 (NAD83), U.S. Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88), U.S. Feet

LEGEND:

- Performance Monitoring Station
- Compliance Monitoring Station
- Estimated Turbidity Curtain Location
- Estimated Demarcation Curtain Location
- Thin Layer Cap
- Limits of Dredging and Capping
- Limits of Cap Only
- Limits of Removal and Capping in Adjacent Areas Included in Design
- Hot Spot Dredging

0 500
Scale in Feet

H:\D_Drive\Projects\Honeywell\Onondaga_Lake_COA_Comp_Monitoring(120287)\Documents\Constr_Completion_Report_2013\Figures\Figure A-14,15-01013902.dwg Figure A-14
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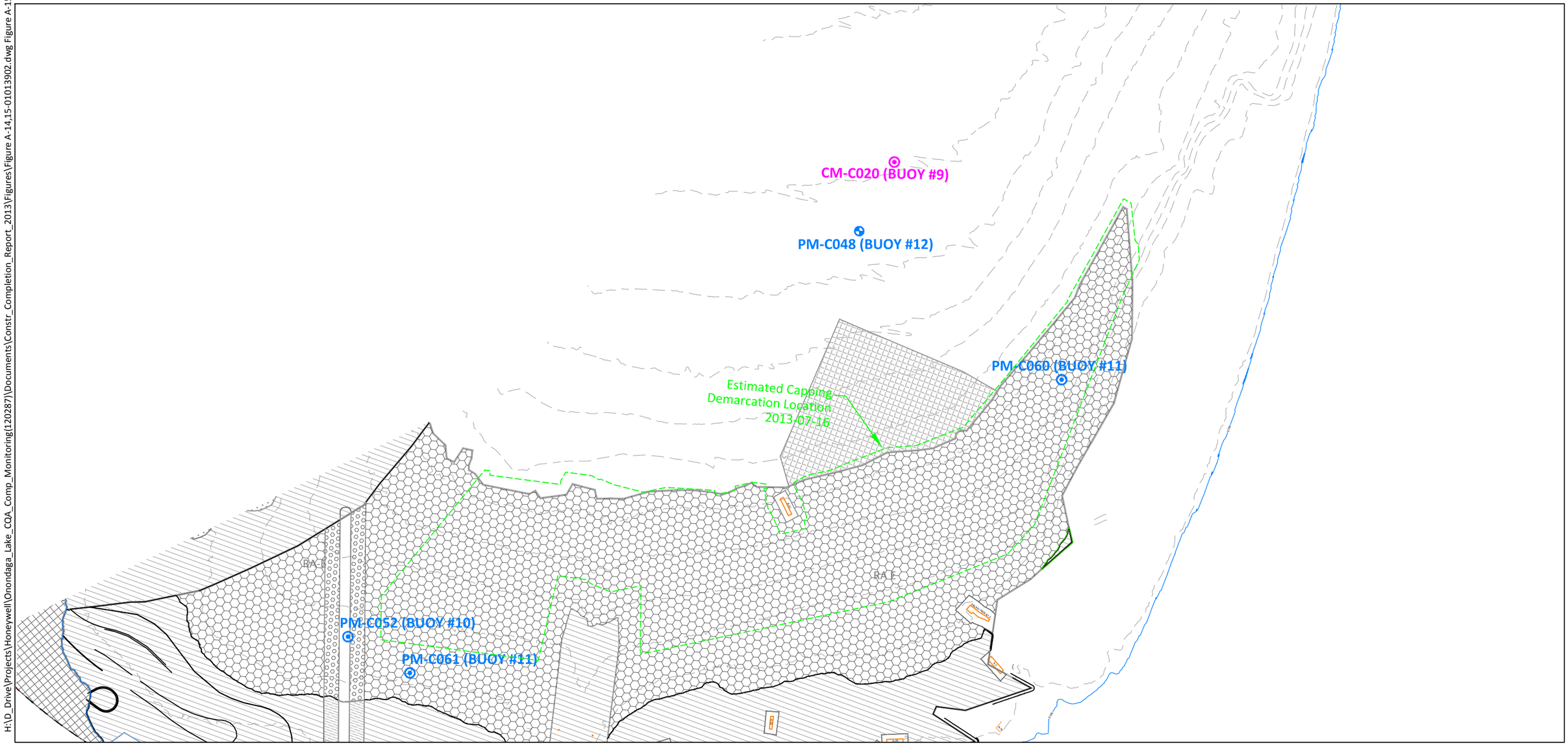
Figure A-14
November 2013 - Performance and Compliance Monitoring Stations during Dredging and Capping
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

ANCHOR QEA



HORIZONTAL DATUM: New York State Plane, Central Zone, North American Datum of 1983 (NAD83), U.S. Feet
VERTICAL DATUM: North American Vertical Datum of 1988 (NAVD88), U.S. Feet

LEGEND:

- Performance Monitoring Station
- Compliance Monitoring Station
- Estimated Demarcation Curtain Location
- Thin Layer Cap
- Limits of Dredging and Capping
- Limits of Cap Only
- Limits of Removal and Capping in Adjacent Areas Included in Design
- Hot Spot Dredging

0 500
Scale in Feet

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Figure A-15
November 2013 - Performance and Compliance Monitoring Stations during Dredging and Capping
Water Quality Monitoring 2013 Annual Report
Onondaga Lake Capping, Dredging, and Habitat

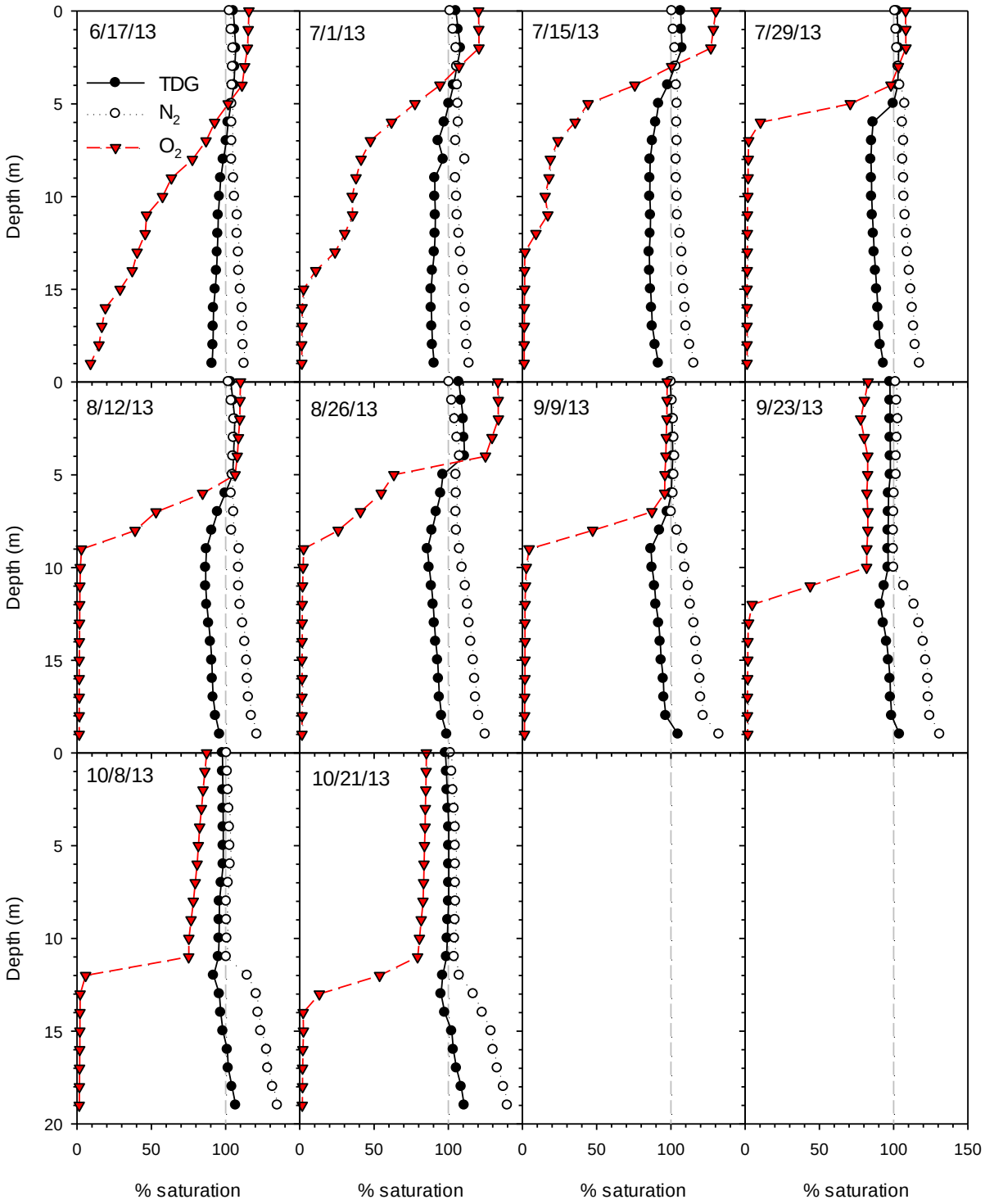
APPENDIX G

2013 TOTAL DISSOLVED GAS DATA

MEASUREMENT OF TOTAL DISSOLVED GAS (TDG) AND ITS COMPONENTS IN ONONDAGA LAKE (2007-2013)

Measurements of TDG were made as vertical profiles at the South Deep location of Onondaga Lake using an In-Situ Inc. total dissolved gas sensor. Parallel measurements of temperature and dissolved oxygen (O_2) were made with a Yellow Springs Instruments (YSI) multiprobe sonde. Nitrogen gas (N_2) was not measured directly, but was estimated as the difference between TDG and the partial pressure due to oxygen. Accordingly, the N_2 values reported here include lesser concentrations of other gases, most notably carbon dioxide (CO_2). Other gases present in smaller concentrations include argon and methane. The effect of these additional gases on percent saturation values calculated for N_2 appears to be negligible. Calculations were performed using a spreadsheet provided by In-Situ Inc. (In-Situ Inc. Extended Dissolved Gas Analysis, Version 2.0).

TDG data for 2013 are presented herein as is a summary of 2007-2013 TDG results.


6/17/13
7/1/13
7/15/13
7/29/13
8/12/13
8/26/13
9/9/13
9/23/13
10/8/13
10/21/13
TDG
N2
O2
Depth (m)
% saturation
0
5
10
15
20
50
100
150

July - September Average Hypolimnetic Saturation (South Deep)