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**DATA USABILITY AND SUMMARY REPORT  
EVALUATION OF NITRATE ADDITION TO  
CONTROL METHYLMERCURY PRODUCTION  
IN ONONDAGA LAKE:  
2007 STUDY**

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## ACRONYMS AND ABBREVIATIONS

CCB	continuing calibration blank
CCV	continuing calibration verification
COC	chain-of-custody
CVAFS	cold-vapor atomic fluorescence spectrometer
DOC	dissolved organic carbon
DUSR	Data Usability and Assessment Report
Fe <sup>2+</sup>	ferrous iron
Hg	mercury
Hg(NO <sub>3</sub> ) <sub>2</sub>	mercuric nitrate
ICB	initial calibration blank
ICV	initial calibration verification
ISE	ion-selective electrode
ISUS	high resolution rapid profiling ultraviolet spectrophotometer
LCS	laboratory control sample
mL	milliliter
National Functional Guidelines	<i>Contract Laboratory Program National Functional Guidelines for Inorganic Data Review</i>
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
nm	nanometer
NO <sub>x</sub>	nitrate+nitrite
NYSDEC	New York State Department of Environmental Conservation
OPR	ongoing precision and recovery
ppm	parts per million
QAPP	quality assurance project plan
SM	standard method
S <sup>2-</sup>	sulfide
SO <sub>4</sub> <sup>2-</sup>	sulfate
SOP	standard operating procedure
SU	Syracuse University
T-NH <sub>3</sub>	ammonia
TIC	total inorganic carbon
TOC	total organic carbon
UFI	Upstate Freshwater Institute
USEPA	U.S. Environmental Protection Agency
μL	microliters
μm	micron
UV	ultraviolet

## SECTION 1

### PROJECT BACKGROUND AND OBJECTIVES

This report presents a summary of the data collected by the Upstate Freshwater Institute (UFI) and Syracuse University (SU) in 2007 on behalf of Honeywell, Inc., (Honeywell) to support the evaluation of nitrate addition to the waters of Onondaga Lake as a means to control methylmercury production (UFI and SU, 2007b). This report presents a summary of the field sampling and analytical methods, the findings from the data validation and usability assessment, and the final validated sample results. The report consists of the following sections:

- Background and Objectives
- Field Sampling and Analytical Methods
- Data Verification and Validation
- Data Usability Assessment
- References
- Appendix A - Data Validation Summary Tables
- Appendix B - Analytical Result Summary Tables
- Appendix C - Analytical Result Graphs
- Appendix D - Analytical Quality Control Results
- Appendix E - Chain-of-Custody Documents
- Appendix F - Field Measurements Summary

#### 1.1 BACKGROUND

Mercury cycling in Onondaga Lake is influenced by metabolic activity, including primary production and decomposition processes. Currently, a remediation initiative under the Amended Consent Judgment between Onondaga County and the U.S. Environmental Protection Agency (USEPA) (aimed at abating the impacts of domestic waste discharged to the lake) has greatly altered lake metabolism by 1) changing the level of primary production, and thereby the supply of organic carbon delivered to the lake sediments, and 2) shifting the metabolic pathways by which this organic matter is decomposed. These effects have diminished the role of sulfate ( $\text{SO}_4^{2-}$ ) reduction in the decomposition of organic matter. This is important because sulfate-reducing bacteria are responsible for the methylation of ionic mercury. Recent mercury

measurements from the water column of the lake suggest that noteworthy changes in the cycling of mercury may have occurred since detailed measurements were made in the early 1990s.

In September and October 2005, UFI and SU made presentations to the regulatory community (including the New York State Department of Environmental Conservation [NYSDEC] and USEPA) and Honeywell concerning changes in the oxygen resources and decomposition pathways of the lake. As part of those presentations, a new approach was suggested to potentially abate the accumulation of methylmercury in the hypolimnion of the lake. In this approach, nitrate would be added to the hypolimnion of the lake to inhibit sulfate reduction and control production of methylmercury. This study was designed to provide a basis for the evaluation of nitrate addition to control methylmercury production in Onondaga Lake. It builds upon a similar study conducted in 2006 by UFI and SU (UFI and SU 2007a) and funded by Honeywell.

Results of the 2006 study were presented previously in a data usability and summary report (DUSR; Exponent, 2007), with one exception. Nitrate, nitrite, and ammonia data from October 23, 2006 were inadvertently omitted from the 2006 DUSR and were provided to NYSDEC by e-mail on November 6, 2007 (Henry, 2007, pers. comm.). The validation results for these sample data are included in Appendix A and the validated results are summarized in Appendix B.

## 1.2 PROJECT OBJECTIVES

The following were the objectives of the 2007 Nitrate Evaluation Study:

- continue to stay apprised of the role of nitrate in controlling methylmercury production in Onondaga Lake;
- continue to investigate the interaction between methylmercury production and related metabolic and redox processes, with particular emphasis on oxygen and nitrate;
- assess spatial differences in water chemistry based on five paired profiles from the north and south basins of the lake collected over the spring to fall interval and the collection of 10 samples on two occasions from multiple locations in the lake;
- assess spatial patterns of nitrate, bisulfide, and ancillary parameters through collection and interpretation of weekly gridding data from the high resolution rapid profiling ultraviolet spectrophotometer (ISUS);
- specify mercury concentrations and taxonomy of the pelagic zooplankton community, including seasonal patterns.

## 1.3 PROJECT DESCRIPTION

The nitrate/methylmercury monitoring program for 2007 was partitioned into four components: 1) water column sampling; 2) zooplankton monitoring; 3) ISUS; and 4)

quantification of the flux of ebullitive gas from the sediments. The water column-sampling component consisted of 12 sampling events that took place from April 23 to November 19 (Table 1). The lake was sampled at two locations (North Deep and South Deep), at variable depths (depending on parameter). North Deep and South Deep were sampled on 5 and 12 occasions, respectively. Sample collection was conducted according to National Environmental Laboratory Accreditation Program (NELAP) and USEPA specifications, as documented in the quality assurance project plan (QAPP) (UFI and SU 2008), except where noted in this report. The parameters and analytes measured are listed in Table 2. Many samples have additional aliquots indicated on the chain-of-custody (COC) forms for analytical parameters that are not discussed or included in this DUSR. These analyses were performed concurrently with the Nitrate Evaluation Study samples, but were not funded by Honeywell and are not covered in this report. The work plan contains additional details on the sampling design, scope of work, field sampling procedures, station locations, and sample depths.

Zooplankton samples were collected from the North Deep and South Deep sampling locations on three dates between May and September and from the South Deep location on three sampling dates in October and November. Zooplankton samples were analyzed for total and methyl mercury and the results are represented in Appendix B.

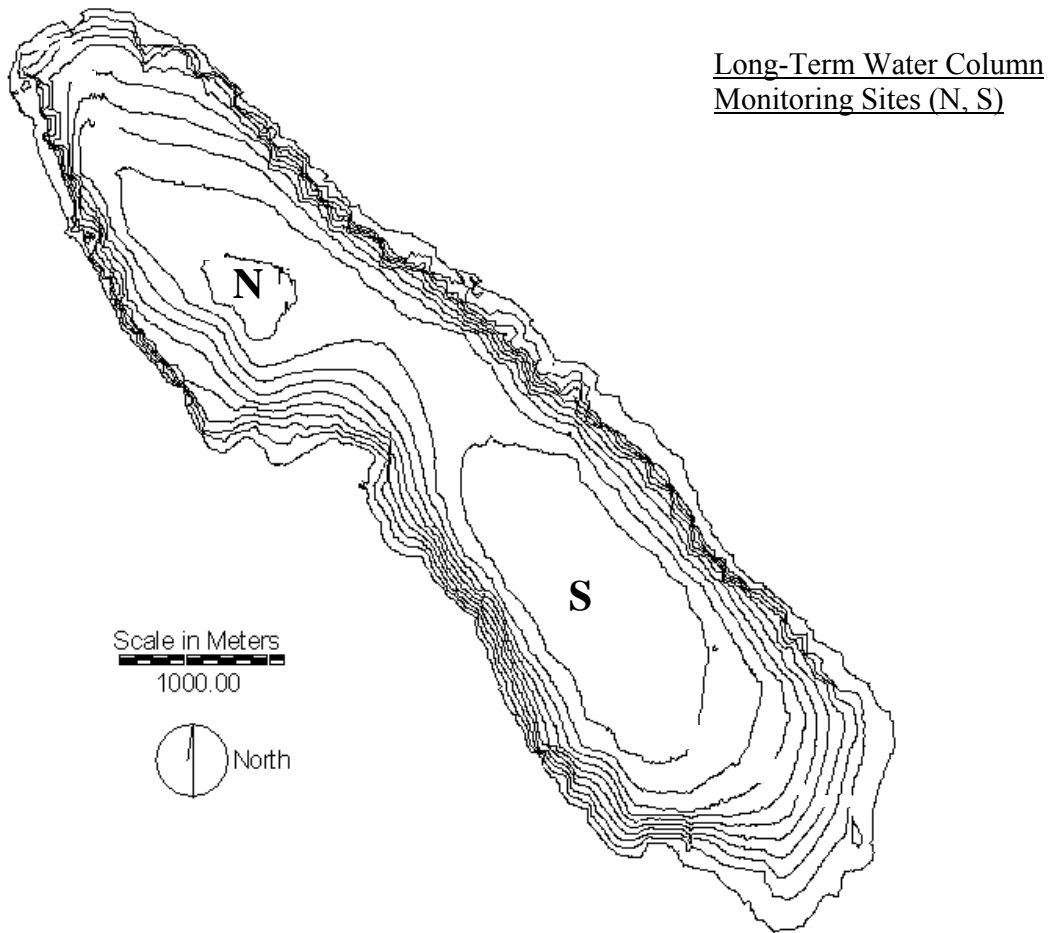
*In situ* ISUS measurements were made in the field weekly along numerous transects in the lake. ISUS measurements included nitrate, bisulfide, temperature, specific conductance, beam attenuation coefficient at 660 nanometers (nm), optical backscattering, chlorophyll fluorescence, and photosynthetically active irradiance. The only available quality control was instrument calibration. These data are presented in Appendix F. These data were not validated, and they are not discussed further in this report, but the data are usable as screening-level data.

Stationary *in situ* robotic measurements of dissolved oxygen, temperature, specific conductance, pH, fluorometric chlorophyll, and turbidity were made at one meter depth interval profiles at South Deep (Figure 1), at least daily during the April-October interval. These data are available at [www.ourlake.org](http://www.ourlake.org), a public website.

The sediment gas-monitoring component had a single element, the assessment of gas ebullition (gas bubbles released from the sediment). The ebullition samples were collected in the field using inverted 0.75-m diameter cones fitted with inverted graduated separatory funnels. One cone was deployed at South Deep, and one cone at North Deep (Figure 1). The cones were deployed approximately 2 m above the sediments and weekly measurements of gas volume were made from May through November. These data are presented in Appendix F. They were not validated and are not discussed further in this report, but these data are usable as screening-level data.



## Bathymetric Map of Onondaga Lake



**Figure 1. Bathymetric map of Onondaga Lake.**

## SECTION 2

### FIELD SAMPLING AND ANALYTICAL METHODS

This section provides information on materials and methods used in the field and laboratory for this project. Additional details related to data generation and acquisition are available in the QAPP (UFI and SU 2008).

#### 2.1 SCOPE OF WORK SUMMARY

The overall goal of the field sampling efforts was to collect data that would support the intended uses of the data as described in the work plan. A summary of the laboratory analyses conducted is provided in Table 2. Vertical profiles of these parameters were collected at South Deep on 12 sampling occasions in 2007 (April 23, May 21, July 16, July 30, August 27, September 24, October 1, October 15, October 29, November 5, November 12, November 19). Vertical profiles of these parameters were collected at North Deep on 5 sampling occasions in 2007 (April 23, May 21, July 30, September 24, November 12). Sampling for reduced chemical species (sulfide [ $S^{2-}$ ], ferrous iron [ $Fe^{2+}$ ], and methane) focused on anoxic depths. A map showing the sampling locations is presented in Figure 1. The rationale for the sampling design is provided in the work plan (UFI and SU 2007b).

#### 2.2 SAMPLING METHODS

Field sampling consisted of water and zooplankton sample collection and *in situ* instrument profiles. Field standard operating procedures (SOPs) for this project were submitted with the QAPP. Sample containers were typically purchased from Fisher Scientific. Sample containers were cleaned in the laboratory and preservation added as necessary. A “clean hands – dirty hands” SOP was used during collection of all mercury samples. All filtering for dissolved constituents was done in the laboratory (i.e., no field filtering was done as part of this project).

The field team leader evaluated all samples and applicable field quality control samples for acceptability for transport/submission to the laboratory. Samples and applicable field quality control samples were stored in the field on ice or at the laboratory in a refrigerator at  $4 \pm 2^{\circ}C$  until analyzed. Table 3 summarizes the number of samples collected and analyzed for each analytical method. The projected number of analyses for each analyte was estimated for planning purposes and not intended as a goal of this study. For most parameters, the number of samples analyzed was dictated by the conditions of the lake (i.e., the depth and duration of anoxia), which could only be estimated in the work plan. In most cases, the number of analyses exceeded the number estimated in the work plan.

## 2.2.1 Mercury and Methylmercury Field Blanks

For mercury and methylmercury, the types of blanks used to verify the contamination-free sampling procedure are more extensive and include bottle blanks (laboratory control for acid-washed bottles), field blanks, equipment blanks for continuous flow, hose blanks, and container blanks. Field blanks were sample bottles that were filled in the laboratory, transported to the field, and then poured into a second sample bottle that was taken back to the laboratory for analysis.

Equipment blanks for continuous flow were introduced instead of the USEPA Method 1669 defined “field blank.” The pump used for sampling operates at a rate of 2,000 gallons per hour. In order to satisfy the requirement for a field blank and perform the test in the field, enough de-ionized water to run the pump for 10 minutes was needed. A simple calculation shows that a 300-gallon container would be needed to perform the test on the field, which was not feasible. As an alternative, the equipment blank was run in the laboratory in a pre-filled container and under continuously running de-ionized water. A container blank was introduced to verify a contamination-free container.

Hose blanks were generated during sample collection. Initially, a Teflon<sup>®</sup> hose was used for sample collection. Due to low durability, this hose was changed to a Tygon<sup>®</sup> SE -200 (GE Polymershapes), a Teflon<sup>®</sup>-lined hose. A replacement of the Tygon<sup>®</sup> SE-200 hose was necessitated one more time during the sampling season. Every change in sampling hose was verified by additional equipment blanks and the associated container blanks, referred as “new equipment blanks” and “new container blanks.”

For the container and equipment blanks generated in the laboratory, samples were collected in duplicates for internal use, and were reported for completeness. These samples have been noted as duplicates on the data summary tables.

## 2.3 SAMPLE HANDLING AND CUSTODY

A continuous record of the possession and proper handling of samples must be kept, so that sample custody and handling are traceable from the time of sample collection until the analytical data have been validated and accepted for use. This is done through forms documenting the COC. All COC forms for this study are available in Appendix E of this report.

All field measurements and sample collections followed approved SOPs as noted in the QAPP (UFI and SU 2008). The general procedure was as follows:

- Water samples were collected by UFI personnel with an approved submersible pump, for the purpose of determining chemical concentrations in the water column. Mercury samples were collected using a suitable submersible pump and a Teflon<sup>®</sup> or Teflon<sup>®</sup>-lined Tygon<sup>®</sup> hose.

- Appropriate field notes were taken throughout the sampling process, and sample locations, depths, and types were checked/verified against the work plan.
- Samples were kept on ice and stored in the dark while in the field.
- Samples were delivered to the appropriate laboratory (UFI or SU) with a fully documented COC form.
- Field personnel were responsible for making sure all documentation was completed and turned over to the laboratory and/or other support personnel.

The laboratory logged in the samples, verified the sample containers/labels against the COC, and assigned a unique sample identification number to each sample for laboratory tracking purposes. Laboratory personnel verified that field personnel completed all required documentation. Laboratory records related to sample handling and analysis were maintained through all stages of the analytical process. All laboratory processes, activities, and SOPs comply with National Environmental Laboratory Accreditation Conference (NELAC) standards and are fully documented in the UFI document, *Environmental Testing Laboratory Quality Assurance Manual* (UFI 2006), and the SU document, *Laboratory Quality Manual* (SU 2005).

## 2.4 ANALYTICAL METHODS

A listing of analytical methods used for this project is provided in Table 2 and a brief summary of each method is included below. SOPs used in the routine analysis of environmental samples by UFI and SU are adopted from well-documented official methods, such as USEPA-approved methods, *Standard Methods for the Examination of Water and Wastewater* (18th and 20th Editions [APHA 1992, 1998]), and other methods referenced in Table 2. Analytical SOPs are documented and maintained by UFI and SU for each method and attached to the QAPP (UFI and SU 2008).

### 2.4.1 Chloride

**Test Method:** Chloride, High Range >100 milligrams/liter (mg/L), Standard Method (SM) 18–20th edition 4500 Cl<sup>-</sup> C

**Summary of Test Method:** Chloride can be titrated with mercuric nitrate [Hg(NO<sub>3</sub>)<sub>2</sub>], because of the formation of soluble, slightly dissociated mercuric chloride. In the pH range 2.3 to 2.8, diphenylcarbazone indicates the titration endpoint by formation of a purple complex with excess mercuric ions. Increasing the strength of the titrant and modifying the indicator mixtures extends the range of measurable concentrations.

### 2.4.2 Chlorophyll *a*

**Test Method:** Chlorophyll, USEPA Method 445.0

**Summary of Test Method:** Chlorophyll-containing particulate matter is concentrated by filtering samples through membrane filters. Pigments are extracted from the filter using acetone and their concentration is measured fluorometrically.

### 2.4.3 Dissolved Organic Carbon

**Test Method:** Total Dissolved Organic Carbon/Total Organic Carbon (DOC/TOC), SM 18–20th edition 5310B

**Summary of Test Method:** In the TOC mode, inorganic carbon is removed by acidification and sparging. TOC measurement involves the oxidation of organic carbon in a sample. In the Phoenix 8000 carbon analyzer, organic carbon oxidation occurs first by oxidation of persulfate. The sample is simultaneously exposed to persulfate ions and to ultraviolet (UV) radiation. Carrier gas is swept through the UV reactor to carry CO<sub>2</sub> out of the UV chamber. The remaining carbon in the sample is measured as TOC by an infrared detector in parts per million (ppm). DOC is operationally defined as the organic carbon remaining in a sample after the sample has been filtered through a 0.45-micron ( $\mu$ m) glass fiber filter.

### 2.4.4 Total Inorganic Carbon

**Test Method:** Total Inorganic Carbon (TIC), SM 18–20th edition 5310C

**Summary of Test Method:** The sample is injected into an acid-filled reaction chamber. Under acidic conditions, all inorganic carbon is converted to CO<sub>2</sub>. The CO<sub>2</sub> is removed, along with dissolved CO<sub>2</sub>, by a stream of inert nitrogen gas. The CO<sub>2</sub> levels are measured by infrared detector. Under these conditions organic carbon is not oxidized and only inorganic carbon is measured.

### 2.4.5 Nitrate+Nitrite, Nitrite

**Test Method:** Nitrate and Nitrite, USEPA Method 353.2

**Summary of Test Method:** A filtered sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. The nitrite (that is originally present plus reduced nitrate) is determined by de-ionizing with sulfanilamide and coupling with *N*-(1-naphyl)-ethylenediamine dihydrochloride to form a highly colored azo dye, which is measured colorimetrically. Separate, rather than combined nitrate+nitrite, values are obtained by carrying out the procedure without the copper-cadmium reduction step. This is done simultaneously in a separate channel.

### 2.4.6 Ammonia

**Test Method:** Ammonia (T-NH<sub>3</sub>), USEPA Method 350.1

**Summary of Test Method:** Alkaline phenol and hypochlorite react with ammonia to form indophenol blue that is proportional to the ammonia concentration. The blue color formed is intensified with sodium nitroprusside.

#### 2.4.7 Sulfide (by Titration)

**Test Method:** Hydrogen Sulfide > 1.0 mg/L, SM 18th edition 4500 S<sup>2-</sup> E

**Summary of Test Method:** Excess iodine is added to a sample that has been treated with zinc acetate to produce zinc sulfide. The iodine oxidizes the sulfide to sulfate under acidic conditions. The excess iodine is back titrated with sodium thiosulfate.

#### 2.4.8 Sulfide (by Electrode)

**Test Method:** Sulfide, SM 20th edition 4500-Sulfide G-Ion-Selective Electrode Method.

**Summary of Test Method:** The potential of a silver/sulfide ion-selective electrode (ISE) is related to the sulfide ion activity. An alkaline antioxidant reagent is added to samples and standards to inhibit oxidation of sulfide by oxygen and to provide a constant ionic strength and pH. Use of the alkaline antioxidant reagent allows calibration in terms of total dissolved sulfide concentration. All samples and standards must be at the same temperature. Sulfide concentrations between 0.032 mg/L and 100 mg/L can be measured without pre-concentration. For lower concentration measurements, pre-concentration is required.

#### 2.4.9 Ferrous Iron

**Test Method:** Ferrous Iron, Heaney and Davison (1977)

**Summary of Test Method:** Bipyridyl reacts with ferrous iron in an acid medium to form a ferrous-bipyridyl complex that is pink in color and can be measured with a spectrophotometer.

#### 2.4.10 Methane and Nitrogen Gas

**Test Method:** Dissolved Methane and Nitrogen Gas, Address (1990)

**Summary of Test Method:** Gas chromatography is used for the isolation and quantification of dissolved gases in water. The low solubility of methane and nitrogen allows for an efficient partitioning of the species from the dissolved phase to an overlying gaseous headspace in the gas of interest. Helium is used as both the headspace and carrier gas. Dissolved gases are partitioned from the liquid phase to the gas phase using a modified syringe stripping technique. The gas phase is injected into a gas chromatograph for quantification.

#### 2.4.11 Total Mercury

**Test Method:** Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry, USEPA Method 1631E

**Summary of Test Method:** All of the mercury in a sample aliquot is oxidized. The mercury is separated from solution either by purging with nitrogen, helium, or argon, or by vapor/liquid separation. The mercury is collected onto a gold trap and then thermally desorbed from the gold trap into an inert gas stream that carries the released mercury to a second gold (analytical) trap. The mercury is desorbed from the analytical trap into a gas stream that carries the mercury into the cell of a cold-vapor atomic fluorescence spectrometer (CVAFS) for detection.

#### 2.4.12 Methylmercury

**Test Method:** Methylmercury in Water by Distillation, Aqueous Ethylation, Purge and Trap, and CVAFS, USEPA Method 1630, Draft

**Summary of Test Method:** Prior to analysis, a 50-milliliter (mL) sample aliquot is placed in a specially designed fluoropolymer distillation vessel, 95% of the water is distilled into the receiving vessel at 125°C under constant nitrogen flow. After distillation, the sample is adjusted to pH 4.9 with an acetate buffer, and ethylated in a closed purge vessel by the addition of sodium tetraethyl borate. The ethyl analog of methylmercury, methylethyl mercury, is separated from solution by purging with nitrogen onto a Tenax™ TA adsorbent resin trap. The trapped methylethyl mercury is thermally desorbed from the trap into an inert gas stream that carries it to a gas chromatogram where methylethyl mercury is separated from the other mercury species. All mercury species pass through a pyrolytic decomposition column, which converts organo mercury forms to elemental mercury, and then into the cell of a CVAFS for detection.

#### 2.4.13 Total Mercury in Biota

**Test Method:** Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrometry, USEPA SW-846 Method 7473

**Summary of Test Method:** Mercury from solid or aqueous solution is liberated under controlled heating conditions in a decomposition furnace. The sample is dried and then thermally decomposed. The decomposed product undergoes chemical oxidation for removal of halogens and nitrogen/sulfur oxides. The remaining product is carried to an amalgamator that selectively traps mercury. After an additional flush with oxygen for removal of any remaining gasses or decomposition products, the amalgamator is rapidly heated, releasing mercury vapor. An oxygen gas stream carries the mercury vapor to a single-wavelength (253.65 nm) atomic absorption spectrometer for detection.

#### 2.4.14 Methylmercury in Biota

**Test Method:** USEPA Method 1630 and Bloom 1989, Methylmercury in Biomass by Digestion, Aqueous Ethylation, Purge and Trap, and CVAFS, Draft, January 2001

**Summary of Test Method:** Sample is freeze-dried and digested for 24 hour with 25% KOH methanol solution under 60°C. A 300 microliter ( $\mu\text{L}$ ) aliquot of the digestion solution is



added to 50 mL deionized water. The sample is adjusted to pH 4.9 with an acetate buffer, and ethylated in a closed purge vessel by the addition of sodium tetraethyl borate. The ethyl analog of methylmercury, methylethyl mercury, is separated from solution by purging with nitrogen onto a Tenax-TA trap. The trapped methylethyl mercury is thermally desorbed from the trap into an inert gas stream that carries it to a gas chromatogram where methylethyl mercury is separated from the other mercury species. All mercury species pass through a pyrolytic decomposition column, which converts organo mercury forms to elemental mercury, and then into the cell of a CVAFS for detection.



## **SECTION 3**

### **DATA VERIFICATION AND VALIDATION**

Data verification and validation were conducted to document the quality and usability of the overall data set. Data verification is the process of determining whether samples have been collected and analyzed according to procedures prescribed in the field and laboratory SOPs and the project-specific QAPP. Data validation is the process of evaluating the technical quality of the data with respect to the project data quality objectives. Data usability combines the verification of the field sampling and analytical procedures with the results of the data validation to provide a summary for data users regarding any limitations in the data set.

#### **3.1 DATA VERIFICATION**

Verification of sampling information and chemical data occurred at several levels throughout the course of sample collection and analysis. Data verification included checking procedures for compliance with the project plan, correctness of protocols used in the field and at the laboratory, comparability of the data collection and analysis procedures, and completeness of the data set and supporting documentation. The specific verification activities and project personnel are summarized in Table 4; deviations from the work plan and QAPP are noted below.

##### **3.1.1 Deviations From the Work Plan and QAPP**

The following modifications/deviations were made to the lake water sampling strategy described in the work plan and analytical procedures described in the QAPP. All samples were collected during the 2007 field season.

1. The work plan called for nine sampling events in 2007 that were intended to represent five water quality regimes. Water quality conditions changed markedly from 2006 to 2007, which resulted in significant changes to the original sampling plan. Delays in hypolimnetic oxygen and nitrate depletion, relative to 2006, resulted in sampling dates being moved later in the year. Three sampling events at South Deep were added in order to collect additional information during the critical fall turnover period. The inclusion of additional sampling event was discussed with and approved by NYSDEC.
2. During April and May 2007, samples for total mercury and methylmercury were collected using a Teflon® hose. The hose was replaced with Tygon® SE-200 (GE Polymershapes), and a Teflon®-lined hose on July 16, 2007 and September 24, 2007.
3. The work plan called for a total of 60 gas ebullition measurements, 30 each at South Deep and North Deep. As a result of equipment limitations, forty-nine gas ebullition measurements were made in total.

## 3.2 DATA VALIDATION

The goal of data validation is to determine the quality of each data point and to identify data points that do not meet the project data quality objectives. Exponent staff performed data validation prior to finalization and release of the analytical data. The data were validated in accordance with the general guidance specified by the *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (National Functional Guidelines) (USEPA 2002). USEPA has not published data validation guidelines for any of the project-specific analytes included in this program (i.e., low-level total mercury, methylmercury, and the conventional parameters). Therefore, chemical data for these analytes were validated following the general evaluation procedures described in the National Functional Guidelines. Specifically, the following quality control indicators were evaluated when available: holding times, calibration check standards, method and field blanks, laboratory control samples, matrix spike samples, reference samples, laboratory duplicate analyses, and field replicate analyses. For these data quality indicators, method-specific quality control requirements and laboratory-established control limits were used to validate the data. Instrument calibrations, calculations, and transcriptions were not assessed during validation because the laboratories were responsible for 100-percent verification of these results and procedures. Unless otherwise noted, the laboratories confirmed that the initial calibrations were acceptable.

Data validation qualifiers were applied to the results consistent with procedures described in the National Functional Guidelines and with modifications to accommodate method- and laboratory-specific quality control requirements. Nonconforming data were qualified as estimated or rejected as unusable during data validation if acceptance criteria were not met. Rejected data were flagged as unusable and the reported values were removed from the project database. An explanation of the rejected data is included in the data validation and result summary tables. Data qualified as estimated are less precise or less accurate than unqualified data, but are still acceptable for use. Data users are responsible for assessing the effect of the inaccuracy or imprecision of the qualified data on statistical procedures and other data uses. When possible, the data validation summary tables include information regarding the direction or magnitude of bias or the degree of imprecision for qualified data.

Data validation findings are summarized in Appendix A. The data validation summary tables are designed with four columns: 1) the name of the quality control indicator (e.g., holding time), 2) the evaluation criteria for each quality control indicator, 3) summary of the quality control exceedances, and 4) the data validation actions and their impact to data quality. One data validation summary table was produced for each analytical method.

Individual sample results, with applied data validation qualifiers, are presented in Appendix B. The sample result tables presented include columns for sample ID, date and time sampled, date and time analyzed, analyte concentration, data validation qualifier, and data validation comment. The data validation comment briefly describes why a specific result was qualified during validation.

Graphs of the analytical results with depth are presented in Appendix C.

## SECTION 4

### DATA USABILITY ASSESSMENT

The goal of the data usability assessment is to combine the results from the verification of the field sampling and analytical procedures with the results of the data validation to provide a summary for data users regarding any limitations in the data set. Exponent staff performed the data usability assessment.

#### 4.1 GENERAL DATA USABILITY

In accordance with NYSDEC's draft *Voluntary Cleanup Program Guide* (NYSDEC 2002), the first step of the data usability assessment was to address the questions presented and discussed in the following sections.

##### 4.1.1 Is The Data Package Complete As Defined By The Work Plan And QAPP?

UFI and SU provided the field sample and quality control results in spreadsheet format to Exponent for data validation. The laboratories also submitted summary tables noting any analytical deficiencies. The quality control result spreadsheets are included in Appendix D. The data submission from the laboratory was acceptable for the needs of this project.

##### 4.1.2 Have All Holding Times Been Met?

The majority of the samples were analyzed within the method-required holding times. However, some sample holding times were exceeded for the following analyses: total mercury, total mercury in zooplankton, nitrate+nitrite, nitrogen, nitrite, methane, and chlorophyll *a*. Holding time exceedances for total mercury, nitrate+nitrite, nitrite, nitrogen, and methane were caused by instrument limitations. Holding time exceedances for chlorophyll *a* were caused by laboratory scheduling errors. These deviations and the necessary data validation actions are noted in the data validation summary tables presented in Appendix A, and the result summary tables presented in Appendix B.

##### 4.1.3 Do All The Quality Control Data Fall Within The Quality Control Acceptance Limits Defined In The QAPP?

The majority of the quality sample results were within acceptance limits. However, each analytical method (with the exception of chloride) had quality control result exceedances. These exceedances are noted in the data validation summary tables presented in Appendix A and the result summary tables presented in Appendix B. The laboratory quality control summary tables are provided in Appendix D.

#### 4.1.4 Have All Of The Data Been Generated Using Established And Agreed Upon Analytical Protocols?

Samples were analyzed in accordance with the methods presented in the QAPP. Deviations from the sampling and/or analytical methods were previously described in Section 3 of this report.

#### 4.1.5 Does An Evaluation Of The Raw Data Confirm The Results Provided In The Data Summary Sheets And Quality Control Verification Forms?

Raw data were not provided with the data submissions. UFI and SU laboratory staff were responsible for confirming the accuracy of the reported field sample and quality control results.

#### 4.1.6 Have The Correct Data Qualifiers Been Used?

Data validation qualifiers were applied to the results consistent with procedures described in the National Functional Guidelines and with modifications to accommodate method- and laboratory-specific quality control requirements.

### 4.2 TEST-SPECIFIC DATA USABILITY SUMMARIES

This section presents summaries of the data usability findings for each test. More detailed data assessment information is provided in Appendix A and validated results are summarized in Appendix B. An index of the Appendix A and B tables are presented in Table 5 by method. Result counts included in this section are based on the sum of both the field samples and field blank samples.

#### 4.2.1 Chlorophyll *a*

All of the chlorophyll *a* analytical results are usable as reported by the laboratory with 34 of the 99 chlorophyll *a* results qualified as estimated (*J*, *J+*, or *UJ*). Fourteen of the estimated results were qualified as a result of holding time exceedances; these results may be biased low. The remaining results were qualified as estimated as a result of exceedance of laboratory duplicate precision criteria, exceedance of continuing calibration verification (CCV) criteria, or because the result concentration was less than the method reporting limit. One result was qualified as estimated (*J+*) because the sample concentration was less than five times the associated method, field or instrument blank concentrations; this result may be biased high. See Tables 7, A-1, and B-1 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

#### 4.2.2 Nitrite+Nitrate

All of the nitrite+nitrate analytical results are usable as reported by the laboratory with 46 of the 156 nitrite+nitrate results qualified as estimated (*J* or *UJ*). Thirty-four of the estimated results were qualified as a result of holding time exceedances; these results may be biased low. The remaining results were qualified as estimated as a result of exceedance of CCV criteria or because the result concentration was less than the method reporting limit. Two results were

negated (*U*) and considered to be nondetect because the sample concentrations were less than five times the associated method, field, or instrument blank concentrations; these results were likely false positives. See Tables 7, A-2, and B-2 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

### 4.2.3 Nitrite

All of the nitrite analytical results are usable as reported by the laboratory, with 25 of the 156 nitrite results qualified as estimated (*J*). Nine results were qualified as estimated as a result of holding time exceedances; these results may be biased low. The remaining results were qualified as estimated as a result of exceedance of LCS criteria or because the result concentration was less than the method reporting limit. Three results were negated (*U*) and considered to be nondetect because the sample concentrations were less than five times the associated method, field, or instrument blank concentrations; these results were likely false positives. See Tables 7, A-3, and B-3 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

### 4.2.4 Ammonia

All of the ammonia analytical results are usable as reported by the laboratory, with 21 of the 156 ammonia results qualified as estimated (*J*). All 21 of these results were qualified as estimated because the result concentration was less than the method reporting limit. Five results were negated (*U*) and considered to be nondetect because the sample concentrations were less than five times the associated method, field, or instrument blank concentrations; these results were likely false positives. See Tables 7, A-4, and B-4 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

### 4.2.5 Dissolved Organic Carbon (DOC)

All of the DOC analytical results are usable as reported by the laboratory, with 1 of the 136 DOC results qualified as estimated (*J*). The lone qualified result was estimated because the result concentration was less than the method reporting limit. See Tables 7, A-5, and B-5 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

### 4.2.6 Total Inorganic Carbon (TIC)

All of the TIC analytical results are usable as reported by the laboratory, with 12 of the 136 TIC results qualified as estimated (*J*). All 12 of these results were qualified as estimated because the result concentration was less than the method reporting limit. One TIC sample could not be analyzed due to sample loss prior to analysis. See Tables 7, A-6, and B-6 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

## 4.2.7 Chloride

All of the 138 chloride results are usable as reported by the laboratory, without qualification. No quality control exceedances were noted for the chloride analyses. See Tables 7, A-7, and B-7 for a summary of the data validation findings and to review the individual sample results.

## 4.2.8 Ferrous Iron

All of the ferrous iron analytical results are usable as reported by the laboratory, with 6 of the 109 ferrous iron results qualified as estimated (*J* or *UJ*). All 6 of these results were qualified as estimated as a result of exceedance of field triplicate precision criterion and one of these results was also qualified as estimated because the result concentration was less than the method reporting limit. One ferrous iron sample could not be analyzed due to sample loss prior to analysis. See Tables 7, A-8, and B-8 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

## 4.2.9 Dissolved Methane

All of the methane analytical results are usable as reported by the laboratory, with 40 of the 103 methane results qualified as estimated (*J* or *UJ*). Twenty-seven results were qualified as estimated as a result of holding time exceedances; these results may be biased low. The remaining results were qualified as estimated because of exceedance of field triplicate precision criterion and/or because the result concentration was less than the method reporting limit. Two methane samples could not be analyzed due to sample loss prior to analysis. See Tables 7, A-9, and B-9 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

## 4.2.10 Dissolved Nitrogen

Most of the nitrogen gas analytical results are usable as reported by the laboratory, with 67 of the 103 nitrogen gas results qualified as estimated (*J* or *J+*) and 22 results qualified as rejected (*R*). Nineteen results were qualified as a result of holding time exceedances; these results may be biased low. The remaining results were qualified as estimated as a result of exceedance of laboratory duplicate precision criterion and/or because the result concentration was less than the method reporting limit. Twenty-three results were qualified as estimated (*J+*) because the sample concentrations were less than five times the associated instrument blank concentrations; these results may be biased high. Twenty-two results were rejected (*R*) and considered to be unusable due to dissolved nitrogen concentrations at levels greater than what is physically possible (i.e., result concentrations ranging greater than 40 mg/L were rejected). Field trip blank concentrations ranged from 14 to 152 mg/L while the field sample nitrogen results ranged from 3 to 856 mg/L, and were not significantly different from the field trip blank results. Based on Henry's Law, at 1 atmosphere and 25°C the dissolved nitrogen concentration in water would be approximately 20 mg/L. No data validation action was taken other than to note this issue; data users should consider this issue when evaluating these data.



Two nitrogen samples could not be analyzed due to sample loss prior to analysis. See Tables 7, A-10, and B-10 for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

#### 4.2.11 Sulfide by Titration

The sulfide data generated from the titration method were not validated because of the lack of associated quality control analyses, and should be considered draft. The accuracy and precision of these draft results could not be determined and thus these data cannot be considered definitive and should be used as screening-level data. UFI has been working on adding quality control analyses for the sulfide by titration method and will run a reference in 2008.

UFI has measured sulfide in Onondaga Lake since 1980, using the titration method (SM 18 4500 Sulfide E). Despite the high detection limit of this method, it was adequate given the high concentrations present in the lake. Because sulfide concentrations in the lake have decreased substantially since 2004, UFI felt that it was necessary to achieve a lower detection limit through the use of an ISE (SM 20 4500 Sulfide G). UFI ran samples by both methods in 2007 because of uncertainties associated with comparability of the two methods, and to maintain consistency with the long-term data set. The results from both sulfide methods are reported because the titration method data are necessary for assessing long-term changes in Onondaga Lake. Data users should clearly state which method is being used. See Table B-11a to review the individual sample results.

The sulfide by titration data are reported in units of mg/L to be consistent with historical sulfide measurements from this site. The ISE method is more sensitive and the sulfide concentrations appear to be decreasing in the lake, thus the sulfide by ISE data are presented in units of  $\mu\text{g/L}$ .

#### 4.2.12 Sulfide by Ion Selective Electrode

Most of the sulfide analytical results (analyzed by ISE) are usable as reported by the laboratory, with 13 of the 113 sulfide results qualified as estimated (*J* or *UJ*) and 49 results considered draft. Thirteen results were qualified as estimated because of low reference standard recovery; these results may be biased low. Forty-nine results were considered draft because not all of the required quality control analyses were performed for these samples. Missing quality control analyses included calibrations, blanks, control samples, matrix spikes, and/or reference samples. Exponent was not able to fully validate the results due to the missing quality control. The accuracy and precision of these results could not be determined and thus these data cannot be considered definitive. However, these data are useable as screening-level data. Detectable levels of sulfide were measured only on October 15 at 19 meters depth. In these samples the titration method produced sulfide concentrations approximately 4 times higher than the ISE method. A definitive explanation for this discrepancy has not been established.

See Tables 7, A-11, and B-11b for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

#### 4.2.13 Total Mercury

All of the total mercury analytical results are usable as reported by the laboratory with 21 of the 216 results qualified as estimated (*J* or *UJ*). Sixteen sample results were qualified as estimated as a result of holding time exceedances; these results may be biased low. The remaining results were qualified as estimated because the result concentration was less than the method reporting limit. See Tables 7, A-12a, and B-12a for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

#### 4.2.14 Total Mercury in Zooplankton

All of the total mercury in zooplankton analytical results are usable as reported by the laboratory with 10 of the 18 results qualified as estimated (*J*). Of those, 2 sample results were qualified as estimated as a result of holding time exceedances and laboratory and field replicate precision exceedances; these results may be biased low. The remaining results were qualified as estimated due to low LCS recovery or field duplicate precision criteria. Results associated with low LCS recoveries maybe biased low. See Tables 7, A-12b, and B-12b for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

#### 4.2.15 Methylmercury

All of the methylmercury analytical results are usable as reported by the laboratory, with 29 of the 216 results qualified as estimated (*J*). All 29 of the results were qualified as estimated (*J*) as a result of high LCS recoveries, exceedance of field triplicate precision criteria, and/or because the result concentrations were less than the method reporting limit. Results associated with the high LCS recoveries maybe biased high. See Tables 7, A-13a, and B-13a for a summary of the data validation findings and actions and to review the individual sample results that required qualification.

#### 4.2.16 Methylmercury in Zooplankton

All of the methylmercury in zooplankton analytical results are usable as reported by the laboratory with 11 of the 18 results qualified as estimated (*J*). All 11 of the results were qualified as estimated (*J*) as a result of low LCS recoveries, exceedance of field duplicate precision criterion, and/or the result concentrations less than the method reporting limit. Results associated with the low LCS recoveries maybe biased low. See Tables 7, A-13b, and B-13b for a summary of the data validation findings and actions and to review the individual sample results that required qualification.



## SECTION 5

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**Table 1. Sampling Schedule**

Sampling conducted in 2007, based on five water quality regimes: (1) spring turnover; (2) stratified conditions with both DO and NO<sub>3</sub><sup>-</sup> present throughout the hypolimnion; (3) stratified conditions with NO<sub>3</sub><sup>-</sup> present and DO depleted from the hypolimnion; (4) stratified conditions with both DO and NO<sub>3</sub><sup>-</sup> depleted from the hypolimnion; and (5) fall turnover.

Regime	Approximate Date (week of)	Water Column			Zooplankton	
		South Deep	North Deep	ISUS Gridding	South Deep	North Deep
1	April 23	•	•			
2	May 21	•	•		○	○
3	July 16	▲				
	July 30	▲	▲		○	○
	August 27	▲				
	September 24	▲	▲	◇	○	○
	October 1	▲				
4	October 15	▲				
	October 29	▲			○	
5	November 5	▲		◇		
	November 12	•	•		○	
	November 19	•			○	

Notes:

- 3-depth event (South Deep and North Deep)
- ▲ 8-depth event at South Deep, 7-depth event at North Deep
- ◇ locations and depths for samples associated with ISUS gridding were determined with NYSDEC (2 events with 10 samples each)
- zooplankton sampling

**Table 2. Target analyte list, methods, and method detection and reporting limits**

Analyte	Method	Method Detection Limit	Method Reporting Limit
<b>UFI Laboratory</b>			
Chlorophyll a	EPA 445	0.2 µg/L	0.5 µg/L
Nitrate and nitrite	EPA 353.2	5 µg/L	16 µg/L
Nitrite	EPA 353.2	3 µg/L	9 µg/L
Ammonia	EPA 350.1	12 µg/L	41 µg/L
Dissolved organic carbon	SM 18-20 5310B	0.3 mg/L	0.9 mg/L
Total inorganic carbon	SM 18-20 5310C	0.5 mg/L	1.8 mg/L
Chloride	SM 18-20 4500 Cl <sup>-</sup> C	2.2 mg/L	100 mg/L
Ferrous Iron	Heaney and Davison (1977)	2 µg/L	6 µg/L
Sulfide(1) <sup>a</sup>	SM 18 4500 S <sup>2-</sup> E	0.5 mg/L	1 mg/L
Sulfide(2) <sup>b</sup>	SM 20 4500 S G	18 µg/L	65 µg/L
Dissolved methane	Address (1990)	0.2 mg/L	0.5 mg/L
Dissolved nitrogen gas	Address (1990)	2 mg/L	6 mg/L
<b>Syracuse University Laboratory</b>			
Total Mercury in Water	EPA Method 1631E (U.S. EPA 2002)	0.2 ng/L	0.5 ng/L
Methylmercury in Water	EPA Method 1630 (U.S. EPA 2001)	0.02 ng/L	0.05 ng/L
Total Mercury in Biota	EPA Method 7473 (U.S. EPA 2007)	3 ng/g	9 ng/g
Methylmercury in Biota	Bloom (1989) and EPA Method 1630 (U.S. EPA 2001)	3 ng/g	9 ng/g

**Note:** NA - not applicable

UFI - Upstate Freshwater Institute

<sup>a</sup> Sulfide analysis by titration.

<sup>b</sup> Sulfide analysis by ion selective electrode.

**Table 3. Listing of study analytes and projected and actual analyses**

Analyte	Projected Number of Analyses <sup>a</sup>	Number of Field Samples Analyzed	Number of Field Blanks Analyzed
<b>UFI Laboratory</b>			
Chlorophyll a	76	85	14
Nitrate and nitrite	124	142	14
Nitrite	124	142	14
Ammonia	124	142	14
Dissolved organic carbon	102	122	14
Total inorganic carbon	102	123	13
Chloride	102	124	14
Ferrous Iron	78	100	9
Sulfide(1) <sup>b</sup>	78	100	9
Sulfide(2) <sup>c</sup>	123	104	9
Dissolved methane	78	95	8
Dissolved nitrogen gas	78	94	9
<b>Syracuse University Laboratory</b>			
Total Mercury	123	170	46 <sup>d</sup>
Methylmercury	123	170	46 <sup>d</sup>
Total Mercury zooplankton	12	18	0
Methylmercury zooplankton	12	18	0

**Note:** UFI - Upstate Freshwater Institute

<sup>a</sup> The number of analyses for each analyte was estimated for planning purposes and not intended as a goal of this study. For most parameters the number of samples analyzed was dictated by the conditions of the lake (i.e., the depth and duration of anoxia), which could only be estimated in the work plan. In most cases the number of analyses exceeded the number estimated in the work plan.

<sup>b</sup> Sulfide analysis by titration.

<sup>c</sup> Sulfide analysis by ion selective electrode.

<sup>d</sup> Number includes count for all field, container, equipment, net, filter, and bottle blanks.

**Table 4. Responsibilities for verification of data and sampling activities**

Project Personnel	Verification Activity
UFI Field Manager/ UFI QA Officer	<p>Assign appropriate staff to perform the work and ensure that all field personnel are familiar with the field SOPs</p> <p>Verify that the proper sampling protocols, including sample preservation, handling, and storage are performed during field work</p> <p>Track samples sent to the laboratories; verify that chain-of-custody forms are filled out correctly and samples were received in good condition at the appropriate laboratory</p> <p>Verify that the appropriate number of field blanks and sample duplicates/triplicates are collected</p> <p>Conduct field data collection audit to ensure that the proper field procedures are followed</p>
UFI QA Officer/ SU QA Officer	<p>Verify that the laboratory instruments are calibrated, and quality control samples are analyzed (e.g., blanks, duplicates, MS/MSD, LCS)</p> <p>Verify that the laboratory conducted proper calibration and quality control sample procedures (i.e., the laboratory followed the contract scope of work)</p> <p>Confirm that the analytical data meet specified detection limits in analytical SOPs</p> <p>Inspect and ensure that the field and analytical equipment are calibrated and properly functioning in accordance with field instrument user manuals and laboratory QA manuals</p>
UFI QA Officer SU QA Officer Scientific/Technical Manager	<p>Review data reduction process, examine the raw data to verify that the correct calculations of sample results were reported by the laboratory or transferred from field logs, examine the raw data for any anomalies, and verify that there are no transcription or reduction errors</p>
UFI QA Officer	<p>Ensure that proper data-handling procedures were followed (e.g., the SOPs and contract scope of work are followed consistently throughout the project); recheck any handwritten data in field logs for transcription errors</p> <p>Review data transfer procedures and make all efforts to minimize data problems</p>
UFI Field Manager	<p>Verify proper documentation of chain-of-custody and sample handling/transfer procedures, document any problems encountered during sample collection, identify any problems with damaged samples, and confirm with laboratory that all samples have been received</p>
UFI Field Manager UFI QA Officer	<p>Ensure that an accurate record was maintained during sample collection and analysis</p>
UFI/SU Laboratory Personnel UFI/SU QA Officers	<p>Document that general quality control measures were conducted (e.g., instrument calibration, routine monitoring of analytical performance, calibration verification)</p> <p>Ensure that a unique sample number was assigned to each sample</p> <p>Document deviations from scope of work (e.g., analytical procedures), document any corrective actions taken if QC checks identify a problem, ensure that the appropriate analytical method was used.</p>

**Note:** LCS - laboratory control sample      SOP - standard operating procedure  
 MS - matrix spike                                      SU - Syracuse University  
 MSD - matrix spike duplicate                      UFI - Upstate Freshwater Institute  
 QA - quality assurance  
 QC - quality control

**Table 5. Water column and zooplankton analytical components and associated appendix tables**

Component/Subcomponent	Analysis	Validation Summary Table	Analytical Result Summary Table
Water Column Sampling	Chlorophyll a	A-1	B-1
	Nitrate and nitrite	A-2	B-2a
	Nitrite	A-3	B-3a
	Ammonia	A-4	B-4a
	Dissolved organic carbon	A-5	B-5
	Total inorganic carbon	A-6	B-6
	Chloride	A-7	B-7
	Ferrous Iron	A-8	B-8
	Dissolved methane	A-9	B-9
	Dissolved nitrogen gas	A-10	B-10
	Sulfide(1) <sup>a</sup>	NA	B-11a
	Sulfide(2) <sup>b</sup>	A-11	B-11b
	Total Mercury	A-12a	B-12a
	Methylmercury	A-13a	B-13a
Zooplankton Sampling	Total Mercury in zooplankton	A-12b	B-12b
	Methylmercury in zooplankton	A-13b	B-13b

**Notes:**

<sup>a</sup> Sulfide analysis by titration.

<sup>b</sup> Sulfide analysis by ion selective electrode.

**Table 6. Sample analysis summary count by event**

Event Date	Ammonia	Chloride	Chlorophyll a	Dissolved Organic Carbon	Ferrous Iron	Methane - Dissolved	Nitrogen - Dissolved	Nitrate + nitrite	Nitrite	Sulfide by Electrode	Sulfide by Titration	Total Inorganic Carbon	Total Mercury in Zooplankton	Total Mercury	Methylmercury in Zooplankton	Methylmercury
04/20/07														1		1
04/22/07														1		
04/23/07	9	9	9	9				9	9			9		9		10
05/21/07	9	9	8	9				9	9			9	4	9	4	9
06/13/07														1		1
07/13/07														4		4
07/16/07	10	12	7	10	14	15	15	10	10	15	15	11		12		12
07/18/07														4		4
07/25/07														1		1
07/30/07	19	19	12	19	28	28	28	19	19	20	28	19	4	24	4	24
07/31/07														1		1
08/02/07																2
08/10/07														1		1
08/27/07	11	11	7	11	13	7	7	11	11	13	13	11		14		13
08/28/07														2		1
09/05/07														1		2
09/15/07														2		
09/20/07														1		1
09/24/07	28	18	12	18	19	19	19	28	28	29	19	18	4	36	4	36
09/25/07														2		2
10/01/07	11	11		11	12	12	12	11	11	12	12	11		12		13
10/15/07	11	11	14	11	11	11	11	11	11	11	11	11		13		13
10/16/07														1		1
10/26/07														1		1
10/29/07	11	11	7	11	7	7	7	11	11	7	5	11	2	12	2	12
10/30/07														5		5
11/05/07	21	11	7	11	6	6	6	21	21	6	6	11		24		24
11/12/07	10	10	10	10				10	10			10	2	11	2	11
11/19/07	6	6	6	6				6	6			6	2	6	2	6
11/20/07														5		5



**Table 7. Data usability summary by parameter**

Compound	Usable			Rejected	% Complete
	Not Qualified	Estimated	Total Usable		
Ammonia	135	21	156		100%
Chloride	138	0	138		100%
Chlorophyll a	65	34	99		100%
Dissolved Organic Carbon	135	1	136		100%
Ferrous Iron	103	6	109		100%
Methane - Dissolved	63	40	103		100%
Nitrogen - Dissolved	14	67	81	22	79%
Nitrate and nitrite	110	46	156		100%
Nitrite	131	25	156		100%
Sulfide by Electrode	100	13	113		100%
Total Inorganic Carbon	124	12	136		100%
Total Mercury in Zooplankton	8	10	18		100%
Total Mercury	195	21	216		100%
Methyl mercury in Zooplankton	7	11	18		100%
Methyl mercury	187	29	216		100%

**Notes:**

Percent usable = (total usable/[total usable + rejected]) x 100

October 23, 2006 result counts are not presented in this summary table

The count of samples in the "Not Qualified" column includes both detect and nondetect results that required no qualification during data assessment.

**APPENDIX A**

**DATA VALIDATION SUMMARY TABLES**

## **Appendix A**

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### **Data Validation Summary Tables**

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## Acronyms and Abbreviations

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CCB	continuing calibration blank
CCV	continuing calibration verification
DOC	dissolved organic carbon
ICB	initial calibration blank
ICV	initial calibration verification
<i>J</i>	estimated
LCS	laboratory control sample
LOD	limit of detection
LOQ	limit of quantitation
MRL	method reporting limit
MS/MSD	matrix spike/matrix spike duplicate
OPR	ongoing precision and recover
QAPP	quality assurance project plan
<i>R</i>	rejected
RPD	relative percent difference
RSD	relative standard deviation
TIC	total inorganic carbon
<i>U</i>	nondetect result
UFI	Upstate Freshwater Institute

**Table A-1. Chlorophyll a data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 21 days of collection.	All criteria were met with the exception of 14 samples collected on 10/15/2007, which exceeded holding time by 1 day.	All associated detect and nondetect sample results were qualified as estimated ( <i>J</i> and <i>UJ</i> , respectively) and may be biased low.
Initial Calibration Verification	Percent recovery within 93 and 106.	All criteria were met.	None.
Continuing Calibration Verification	Percent recovery within 93.3 and 105.7.	All criteria were met with two exceptions. The CCV analyzed on 11/13/2007 recovered below criteria (92.9%) and the CCV analyzed on 11/20/2007 recovered above criteria (105.9%)	Associated sample results from 11/13/2007 were qualified as estimated ( <i>J</i> ) and may be biased low. Associated detect sample results from 11/20/2007 were qualified as estimated ( <i>J</i> ) and may be biased high.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All ICB results were less than the reporting limit.	No action was taken because the associated field sample results were greater than the concentration detected in the blanks.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All CCB results were less than the reporting limit.	No action was taken because the associated field sample results were greater than the concentration detected in the blanks.
Method blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All method blank results were less than the reporting limit.	No action was taken because the associated field sample results were greater than the concentration detected in the blanks.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met with the exception of two laboratory duplicate pairs analyzed on 11/20/2007 and 11/28/2007.	Associated sample results from 11/20/2007 and 11/28/2007 were qualified as estimated ( <i>J</i> and <i>UJ</i> ).
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria met with one exception. The concentration of the field trip blank collected on 10/29/2007 was equal to the reporting limit.	One result was less than 5 times the blank level and was qualified as estimated ( <i>J+</i> ) and may be biased high. No additional action was necessary since the other associated field sample results were greater than 5 times the concentration detected in the blank.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.

Table A-1. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Other issues	--	Nondetect sample results were reported as "<LOD."	The terms reported for the nondetect results were changed to the method reporting limit of 0.5 $\mu\text{g/L}$ and qualified with a ( <i>U</i> ) indicating that the results were not detected.
		One detect result was reported at a concentration less than the method reporting limit.	Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-2. Nitrite + nitrate data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 48 hours of collection.	All criteria were met with the exception of 34 samples analyzed 49–96 hours after sample collection.  All 10/23/2006 samples were analyzed 49-96 hours after sample collection.	The detect and nondetect results in samples analyzed 49–96 hours after sample collection were qualified as estimated ( <i>J</i> and <i>UJ</i> , respectively) and may be biased low.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 92–108%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 88–112%.	All criteria were met with one exception. The closing CCV analyzed on 11/20/2007 recovered above criteria.	All detect results for the associated samples were qualified ( <i>J</i> ) as estimated and may be biased high.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	ICB concentrations ranged from –4 to 4 $\mu\text{g/L}$ .	One sample had a concentration less than 5 times the associated blank level, all other results were either not detected or greater than 5 times the associated blank value and thus required no action. The result for client ID sample “ONL SD 17M” collected on 11/5/2007 was negated ( <i>U</i> ), as it may be a false positive result.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	CCB concentrations ranged from –5 to 9 $\mu\text{g/L}$ .	Two samples had concentrations less than 5 times the associated blank level, all other results were greater than 5 times the associated blank values and thus required no action. The results for client ID samples “ONL SD 17M” and “ISUS 18” collected on 11/5/2007 were negated ( <i>U</i> ), as they may be false positive results.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 82–115%.	All criteria were met.	None.



Table A-2. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 69–125%.	All criteria were with two exceptions. The MS analyzed on 4/25/2007 was improperly prepared and the MS analyzed on 9/25/2007 is an anomaly with a negative concentration reported; these MS samples were not used to assess the data.	None.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 81–129%.	All criteria were.	None.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	Field trip blank concentrations ranged from nondetect to 14 µg/L.	Two samples had concentrations less than 5 times the associated field trip blank concentration; all other results were greater than 5 times the associated blank values and thus required no action. The results for client ID samples "ONL SD 17M" and "ISUS 18" collected on 11/5/2007 were negated ( <i>U</i> ), as they may be false positive results.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.
Other Issues	--	Nondetect sample results were reported as "<LOD."	The terms reported for the nondetect results were changed to the method reporting limit of 16 µg/L and qualified with a ( <i>U</i> ) indicating that the results were not detected.
		Several detect results were reported at concentrations less than the method reporting limit.	Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-3. Nitrite data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 48 hours of collection.	All criteria were met with the exception of 9 samples analyzed 49–96 hours after sample collection.  All 10/23/2006 samples were analyzed 49-96 hours after sample collection.	The detect results in the affected samples were qualified as estimated ( <i>J</i> ) and may be biased low.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 84–118%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 90–116%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All blank concentrations were less than the detection limit, however, three samples had concentrations within 5 times the blank concentrations.	Three results with low-level concentrations less than the method reporting limit were negated ( <i>U</i> ) based on ICB and CCB trace level concentrations.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All blank concentrations were less than the detection limit, however, three samples had concentrations within 5 times the blank concentrations.	Three results with low-level concentrations less than the method reporting limit were negated ( <i>U</i> ) based on ICB and CCB trace level concentrations.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 83–108%.	All criteria were met with one exception. The LCS analyzed on 11/20/2007 recovered high (112%).	The detect results in the associated samples were qualified as estimated ( <i>J</i> ) and may be biased high.

Table A-3. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 87–109%.	All criteria were met with two exceptions. The MS performed on client ID sample “ONL ND 17m” collected on 4/23/2007 recovered below criteria (76%). Another MS recovered above criteria however, this analysis was performed on a sample from another client.	The result in client ID sample “ONL ND 17m” collected on 4/23/2007 was qualified as estimated ( <i>J</i> ) and may be biased low.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 90–113%.	All criteria were met.	None.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Field trip blank	Blank concentration less than reporting limit and/or <1/5 sample concentrations.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.
Other issues	--	Nondetect sample results were reported as “<LOD.”	The terms reported for the nondetect results were changed to the method reporting limit of 9 µg/L and qualified with a ( <i>U</i> ) indicating that the results were not detected.
		Several detect results were reported at concentrations less than the method reporting limit.	Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-4. Ammonia data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 48 hours of collection.	All criteria were met for the 2007 samples.  All 10/23/2006 samples were analyzed 49-96 hours after sample collection.	The detected 10/23/2006 sample results were qualified as estimated ( <i>J</i> ) and may be biased low.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 91–117%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 92–119%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All blank concentrations were less than the detection limit, however, five samples had concentrations within 5 times the blank concentrations.	Five results with low-level concentrations less than the method reporting limit were negated ( <i>U</i> ) based on ICB and CCB trace level concentrations.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All blank concentrations were less than the detection limit, however, five samples had concentrations within 5 times the blank concentrations.	Five results with low-level concentrations less than the method reporting limit were negated ( <i>U</i> ) based on ICB and CCB trace level concentrations.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 51–143%.	All criteria were met.	None.
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 66–121%.	All criteria were met.	None.

Table A-4. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 81–129%.	All criteria were met.	None.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Field trip blank	Blank concentration less than reporting limit or <1/5 sample concentrations.	Field trip blank concentrations ranged from nondetect to 24 $\mu\text{g/L}$ .	None. The associated field sample results were above the associated blank values or previously negated due to CCB and ICB contamination.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.
Other issues	--	Results were reported at concentrations less than the level of detection or as "<LOD."  Several detect results were reported at concentrations less than the MRL.	These results were changed to the method reporting limit of 41 $\mu\text{g/L}$ and qualified as nondetect ( <i>U</i> ) as a result of uncertainty in detection below the level of detection.  Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-5. Dissolved organic carbon data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 28 days of collection.	All criteria were met.	None.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 83–117%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 85–112%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All ICB results were less than the reporting limit.	No action was required because all of the associated sample results were greater than five times the concentration detected in the blank.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All CCB results were less than the reporting limit.	No action was required because all of the associated sample results were greater than five times the concentration detected in the blank.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 81–124%.	All criteria were met.	None.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 79–138%.	All criteria were met.	None.
Laboratory duplicate	RPD <15% for results greater than MRL.	All criteria were met.	None.

Table A-5. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 58–135%.	All criteria were met.	None.
Field trip blank	Blank concentrations less than the reporting limit or <1/5 sample concentrations.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.
Other issues	--	Results were reported at concentrations less than the level of detection or as "<LOD."  One detect result was reported at a concentration less than the method reporting limit.	These results were changed to the method reporting limit of 0.9 mg/L and qualified as nondetect ( <i>U</i> ) as a result of uncertainty in detection below the level of detection.  Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-6. Total inorganic carbon data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 48 hours of collection.	All criteria were met.	None.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 92–104%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 90–109%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	ICB results ranged from 0.5 to 1.0 mg/L and were less than the reporting limit.	No action was required because all of the associated field sample results were greater than five times the concentration detected in the blanks. The field trip blank sample results were in the same range as the ICBs; no action was taken on these quality control blank samples.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	CCB results ranged from 0.6 to 1.5 mg/L and were less than the reporting limit.	No action was required because all of the associated field sample results were greater than five times the concentration detected in the blanks. The field trip blank sample results were in the same range as the CCB; no action was taken on these quality control blank samples.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 93–108%.	All criteria were met.	None.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 88–109%.	All criteria were met.	None.



Table A-6. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	Field trip blank results ranged from 0.5 to 1.5 mg/L and were less than the reporting limit.	No action was required because all of the associated field sample results were greater than five times the concentration detected in the field trip blanks.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.
Other issues	--	Results were reported at concentrations less than the level of detection or as "<LOD."	These results were changed to the method reporting limit of 1.8 mg/L and qualified as nondetect ( <i>U</i> ) as a result of uncertainty in detection below the level of detection.
		Several detect results were reported at concentrations less than the MRL.	Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-7. Chloride data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 28 days of collection.	All criteria were met.	None.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values). Current limits 94–106%.	All criteria were met.	None.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values). Current limits 74–140%.	All criteria were met.	None.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values). Current limits 70–128%.	All criteria were met.	None.
Method blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.

**Table A-8. Ferrous iron data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 7 days of collection.	All criteria were met.	None.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 88–109%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 81–115%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 88–128%.	All criteria were met.	None.
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 42–173%.	All criteria were met.	None.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 88–114%.	All criteria were met.	None.

Table A-8. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met with the exception of two field triplicate sets performed on samples with client ID "ONL SD 19M" and collected on 7/30/2007 and 10/1/2007.	The ferrous iron results in these samples were qualified as estimated ( <i>J</i> ) because of poor precision.
Other issues	--	Nondetect sample results were reported as "<LOD".	The terms reported for the nondetect results were changed to the method reporting limit of 40 µg/L and qualified with a ( <i>U</i> ) indicating that the results were not detected.
		One detect result was reported at a concentration less than the method reporting limit.	Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-9. Methane data validation summary table**

Data quality indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 48 hours of collection.	All criteria were met with the exception of 27 samples analyzed 49–96 hours after sample collection.	The detect and nondetect results in the affected samples were qualified as estimated ( <i>J</i> and <i>UJ</i> , respectively) and may be biased low.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 79–115%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 79–115%	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 82–118%	All criteria were met.	None.
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met with the exception of two field triplicate sets performed on samples with client ID “ONL SD 19M” collected on 7/16/2007 and 10/15/2007.	The methane results in these samples were qualified as estimated ( <i>J</i> ) because of poor precision.

**Table A-9. (cont.)**

Data quality indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Other issues	--	Nondetect sample results were reported as "<LOD".	The terms reported for the nondetect results were changed to the method reporting limit of 0.5 mg/L and qualified with a ( <i>U</i> ) indicating that the results were not detected.
		Several detect results were reported at concentrations less than the method reporting limit.	Results reported at concentrations less than the reporting limit were qualified as estimated ( <i>J</i> ) because of increased variability at low concentrations.

**Table A-10. Nitrogen data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 48 hours of collection.	All criteria were met with the exception of 19 samples analyzed 49-96 hours after sample collection.	The detect results in the affected samples were qualified as estimated (J) and may be biased low.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 62–122%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 62–122%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	ICB concentrations ranged up to 8 mg/L.	Twenty-three (23) results were within 5 times of the associated instrument blank results were qualified as estimated (J+) and may be biased high.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	CCB concentrations ranged up to 5 mg/L.	Twenty-three (23) results were within 5 times of the associated instrument blank results were qualified as estimated (J+) and may be biased high.
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met with the exception of six laboratory duplicate pairs analyzed on 7/31, 9/26, 10/2, 10/16, 10/31, and 11/7/2007 with RPDs ranging from 17 to 64%.	The associated nitrogen results were qualified as estimated (J) as a result of poor laboratory duplicate precision.
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	Field trip blank results ranged from 14 to 152 mg/L.	Based on Henry's Law, at 1 atmosphere and 25°C dissolved nitrogen concentration in water would be approximately 20 mg/L. The nitrogen sample results ranged in concentration from 3 to 856 mg/L and were not significantly different from the field trip blank results. No action was taken other than to note this issue.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met with the exception of two field triplicate sets performed on samples with client ID "ONL SD 19M" and collected on 10/15/2007 and 10/29/2007.	The nitrogen results for the samples collected on 10/29 were qualified as estimated (J) because of poor precision. The results from 10/15/2007 were rejected for another cause thus, no further action was taken.

Table A-10. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Other Issues		Dissolved N <sub>2</sub> concentrations up to ~40 mg/L are entirely possible, but higher concentrations are not physically possible.	Twenty-two dissolved N <sub>2</sub> concentrations ranging in concentration from 55 to 856 mg/L were rejected (R) and are considered unusable.
		One detect result was reported at a concentration less than the method reporting limit.	Results reported at concentrations less than the reporting limit were qualified as estimated (J) because of increased variability at low concentrations.



**Table A-11. Sulfide by electrode data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 7 days of collection.	All criteria were met.	None.
Initial calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 64–141%.	All criteria were met.	None.
Continuing calibration verification	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 56–152%.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory control sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 61–148%.	All criteria were met.	None.
Matrix spike	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 61–137%.	All criteria were met.	None.
Reference sample	Percent recovery within 3 standard deviations of the mean value based on a monthly moving average (with a minimum of 10 values).  Current limits 80–160%.	All criteria were met with one exception. The Reference sample analyzed on 8/29/2007 recovered below criteria.	All associated results were qualified as estimated (J) and maybe biased low.

Table A-11. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Laboratory duplicate	RPD <15% for results greater than MRL	All criteria were met.	None.
Field trip blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL	All criteria were met.	None.
Other issues	--	Nondetect sample results were reported as "<LOQ".	The terms reported for the nondetect results were changed to the method reporting limit of 65 µg/L and qualified with a (U) indicating that the results were not detected.
		Not all of the required QC samples were analyzed along with the sulfide electrode analyses performed on 7/17, 7/31, 8/1, and 9/26/2007, thus the associated sample data cannot be validated.	The sulfide by electrode data analyzed on 7/17/2007, 7/31/2007, 8/1/2007, and 9/26/2007 should be considered draft.
		The sulfide data generated from the titration method were not validated because of the lack of associated quality control analyses.	The sulfide by titration data should be considered draft.

**Table A-12a. Total mercury data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 90 days of collection.	All criteria were met with the exception of 16 samples analyzed between 91 and 180 days after sample collection.	The detect and nondetect results associated with exceeded analytical holding times were qualified as estimated ( <i>J</i> and <i>UJ</i> , respectively) and may be biased low.
Initial calibration	Five standards with the RSD <15%, Low standard recovery 75–125%.	The laboratory reported that all initial calibration criteria were met.	None.
Initial calibration verification	90–110 % of expected value.	All criteria were met.	None.
Continuing calibration verification	90–110 % of expected value.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory control sample	90–110 % of expected value.	Not analyzed.	None.
Method blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Matrix spike/matrix spike duplicate sample	Recovery (76–128%) and RPD (<20%) or as specified in QAPP.	All criteria were met.	None.
Laboratory duplicate	RPD <20%.	All criteria were met with one exception. Sample W070352 (ISUS site #32 13m) collected on 11/5/2007 exceeded criteria (RPD 53%).	The detect result in this sample was qualified as estimated ( <i>J</i> ) because of poor laboratory duplicate precision.
Ongoing precision and recover	82–122%.	All criteria were met.	None.
Field and other mercury specific blanks	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.

**Table A-12a. (cont.)**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Field triplicate	RSD <30% for results greater than MRL.	All criteria were met.	None.
Field duplicate	RPD <35% for results greater than MRL.	All criteria were met.	None.
Other issues	--	Several detect results were reported at concentrations less than the quantitation limit.	Results reported at concentrations less than the quantitation limit were qualified as estimated (J) because of increased variability at low concentrations.

**Table A-12b. Total mercury in zooplankton data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 90 days of collection.	All criteria were met with the exception of 2 samples collected from South Deep on 11/12/2007. These samples were analyzed 95 days after sample collection.	The detect results in these samples were qualified as estimated (J) and may be biased low.
Initial calibration	Five standards with the RSD <15%, Low standard recovery 75–125%.	The laboratory reported that all initial calibration criteria were met.	None.
Initial calibration verification	80–120% of expected value.	All criteria were met.	None.
Continuing calibration verification	80–120% of expected value.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory control sample	80–120 % of expected value.	All criteria were met with one exception. Total mercury recovered low (59%) in the LCS-070713.	The detect results in the associated samples were qualified as estimated (J) and may be biased low.
Method blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Matrix spike/matrix spike duplicate sample	Recovery (76–125%) and RPD (<20%) or as specified in QAPP.	All criteria were met.	None.
Laboratory duplicate	RPD <20%.	All criteria were met with two exceptions. The samples collected from South Deep on 11/12/2007 exceeded criteria (RPDs 27% and 52%).	The detect results in these samples were qualified as estimated (J) because of poor laboratory duplicate precision.
Ongoing precision and recover	80–120%.	All criteria were met.	None.

Table A-12. (cont.)

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Field duplicate	RPD <35% for results greater than MRL.	All criteria were met with three exceptions. The samples collected from South Deep on 9/24/2007 and 11/12/2007 and from North Deep on 7/30/2007 exceeded criteria (RPDs 27%, 52%, and 43%).	The detect results in these samples were qualified as estimated (J) because of poor field duplicate precision.

**Table A-13a. Methylmercury data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 6 months of collection.	All criteria were met.	None.
Initial calibration	Five standards with the RSD <15%, low standard recovery 65–135%.	The laboratory reported that all initial calibration criteria were met.	None.
Initial calibration verification	85–115% of expected value.	All criteria were met.	None.
Continuing calibration verification	85–115% of expected value.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory control sample	67–133% of expected value.	All criteria were met with one exception. LCS analyzed on 9/27/2007 recovered high (135%).	The detect results for associated samples analyzed on 9/27/2007 and 9/28/2007 were qualified as estimated (J) and may be biased high.
Method blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Matrix spike/matrix spike duplicate sample	Recovery (65–135%) and RPD (<35%) or as specified in QAPP.	All criteria were met.	None.
Laboratory duplicate	RPD <20%.	All criteria were met.	None.
Ongoing precision and recover	69–131%.	All criteria were met.	None.
Field and other mercury specific blanks	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Field triplicate	RSD <30% for results greater than MRL.	All criteria were met with one exception. The field triplicate precision criterion was exceeded for sample ISUS Site#29 15m collected 11/5/2007.	The detect results in these samples were qualified as estimated (J) because of poor replicate precision.

**Table A-13. (cont.)**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Field duplicate	RPD <35% for results greater than MRL.	All criteria were met.	None.
Other issues	--	Several detect results were reported at concentrations less than the quantitation limit.	Results reported at concentrations less than the quantitation limit were qualified as estimated (J) because of increased variability at low concentrations.



**Table A-13b. Methylmercury zooplankton data validation summary table**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Holding time	Samples run within 6 months of collection.	All criteria were met.	None.
Initial calibration	Five standards with the RSD <15%, low standard recovery 65–135%.	The laboratory reported that all initial calibration criteria were met.	None.
Initial calibration verification	85–115% of expected value.	All criteria were met.	None.
Continuing calibration verification	85–115% of expected value.	All criteria were met.	None.
Initial calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Continuing calibration blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Laboratory control sample	67–133% of expected value.	All criteria were met with two exceptions. LCSs analyzed on 1/16/2008 and 2/17/2008 recovered below criteria – 20% and 23%.	The detect results for associated samples analyzed on 1/16 and 2/17/2008 were qualified as estimated (J) and may be biased low.
Method blank	Blank concentrations less than the reporting limit and/or <1/5 the sample concentration.	All criteria were met.	None.
Matrix spike/matrix spike duplicate sample	Recovery (65–135%) and RPD (<20%) or as specified in QAPP.	All criteria were met with the following exception. The MS/MSD RPD criterion was exceeded for the samples collected from South Deep on 10/29/2008 (29% RPD).	The detect results for the samples collected from South Deep on 10/29/2008 were qualified as estimated (J) due to poor replicate precision.
Laboratory duplicate	RPD <20%.	All criteria were met.	None.
Ongoing precision and recover	69–131%.	All criteria were met.	None.

**Table A-13. (cont.)**

Data Quality Indicator	Evaluation Criteria	Quality Control Result Summary	Data Validation Actions and Impact to Data Usability
Field duplicate	RPD <35% for results greater than MRL.	All criteria were met with three exceptions. The samples collected from South Deep on 10/29/2007 and 11/12/2007 and from North Deep on 9/24/2007 exceeded criteria (RPDs 54, 160, and 120%).	The detect results in these samples were qualified as estimated (J) because of poor field duplicate precision.

**APPENDIX B**

**ANALYTICAL RESULT SUMMARY TABLES**

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**Table B-1. Summary of chlorophyll a analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chlorophyll (µg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD Field Trip Blank		4/23/2007	7:20	5/8/2007	9:56	0.5	U	
7113006	ONL ND 2m		4/23/2007	9:30	5/8/2007	9:37	28.2		
7113007	ONL ND 10m		4/23/2007	9:37	5/8/2007	9:45	2.0		
7113008	ONL ND 17m		4/23/2007	9:45	5/8/2007	9:49	2.0		
7113015	ONL SD 2M	A	4/23/2007	11:42	5/8/2007	10:12	15.6		
7113016	ONL SD 2M	B	4/23/2007	11:44	5/8/2007	10:15	16.0		
7113017	ONL SD 2M	C	4/23/2007	11:48	5/8/2007	10:19	14.9		
7113025	ONL SD 10M		4/23/2007	12:26	5/8/2007	10:46	5.6		
7113031	ONL SD 16M		4/23/2007	12:53	5/8/2007	10:50	4.7		
7141036	ONL ND 2M		5/21/2007	10:05	5/31/2007	11:51	13.0		
7141037	ONL ND 10M		5/21/2007	10:20	5/31/2007	11:53	4.5		
7141038	ONL ND 17M		5/21/2007	10:30	5/31/2007	11:55	4.0		
7141008	ONL SD Field Trip Blank		5/21/2007	11:50	5/31/2007	11:10	0.5	U	
7141014	ONL SD 2M	A	5/21/2007	12:10	5/31/2007	11:22	15.9		
7141015	ONL SD 2M	B	5/21/2007	12:14	5/31/2007	11:25	15.5		
7141016	ONL SD 2M	C	5/21/2007	12:17	5/31/2007	11:27	15.5		
7141024	ONL SD 10M		5/21/2007	13:00	5/31/2007	11:36	4.8		
7197011	ONL SD Field Trip Blank		7/16/2007	07:30	7/24/2007	15:10	0.5	U	
7197017	ONL SD 2M	A	7/16/2007	09:41	7/24/2007	15:23	11.3		
7197018	ONL SD 2M	B	7/16/2007	09:41	7/24/2007	15:25	11.9		
7197019	ONL SD 2M	C	7/16/2007	09:41	7/24/2007	15:28	11.6		
7197023	ONL SD 6M		7/16/2007	10:07	7/24/2007	15:33	8.0		
7197027	ONL SD 10M		7/16/2007	10:43	7/25/2007	15:38	3.1		
7197037	ONL SD 18M		7/16/2007	12:05	7/25/2007	15:47	0.6		
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	8/3/2007	11:54	0.5	U	
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	8/3/2007	11:10	0.5	U	
7211022	ONL SD 2M	B	7/30/2007	09:15	8/3/2007	11:28	5.6		
7211023	ONL SD 2M	C	7/30/2007	09:15	8/3/2007	11:31	6.0		
7211021	ONL SD 2M	A	7/30/2007	09:15	8/3/2007	11:25	6.0		
7211027	ONL SD 6M		7/30/2007	09:40	8/3/2007	11:33	7.1		
7211031	ONL SD 10M		7/30/2007	10:05	8/3/2007	11:38	4.7		
7211041	ONL SD 18M		7/30/2007	11:00	8/3/2007	11:43	0.5	J	Result less than method reporting limit.
7211044	ONL ND 2m		7/30/2007	12:35	8/3/2007	11:56	5.2		
7211045	ONL ND 6m		7/30/2007	12:45	8/3/2007	11:59	7.2		
7211046	ONL ND 10m		7/30/2007	12:52	8/3/2007	12:02	4.7		
7211050	ONL ND 17m		7/30/2007	13:15	8/3/2007	12:07	0.6		
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/30/2007	09:56	0.5	U	
7239013	ONL SD 2M	C	8/27/2007	09:25	8/30/2007	10:11	9.3		
7239011	ONL SD 2M	A	8/27/2007	09:25	8/30/2007	10:06	10.4		

**Table B-1. Summary of chlorophyll a analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chlorophyll (µg/L)	Data Validation Qualifier	Data Validation Comment
7239012	ONL SD 2M	B	8/27/2007	09:25	8/30/2007	10:08	10.5		
7239017	ONL SD 6M		8/27/2007	10:09	8/30/2007	10:18	5.2		
7239021	ONL SD 10M		8/27/2007	10:40	8/30/2007	10:23	4.9		
7239031	ONL SD 18M		8/27/2007	12:00	8/30/2007	10:27	0.6		
7267006	ONL SD Field Trip Blank		9/24/2007	07:30	10/3/2007	11:34	0.5	U	
7267013	ONL SD 2M	B	9/24/2007	09:17	10/3/2007	11:39	8.3		
7267014	ONL SD 2M	C	9/24/2007	09:17	10/3/2007	11:41	8.5		
7267012	ONL SD 2M	A	9/24/2007	09:17	10/3/2007	11:38	8.9		
7267018	ONL SD 6M		9/24/2007	09:47	10/3/2007	11:44	8.8		
7267022	ONL SD 10M		9/24/2007	10:15	10/3/2007	11:46	3.0		
7267032	ONL SD 18M		9/24/2007	10:50	10/3/2007	11:48	1.0		
7267042	ONL ND 2M		9/24/2007	13:30	10/3/2007	11:49	13.9		
7267043	ONL ND 6M		9/24/2007	13:35	10/3/2007	11:52	7.3		
7267044	ONL ND 10M		9/24/2007	13:40	10/3/2007	11:53	3.1		
7267047	ONL ND 16M		9/24/2007	13:55	10/3/2007	11:54	1.2		
7267048	ONL ND 17M		9/24/2007	14:00	10/3/2007	11:56	1.0		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	11/6/2007	9:41	0.5	UJ	Sample analyzed between 22-42 days after sample collection.
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	11/6/2007	9:41	0.5	UJ	Sample analyzed between 22-42 days after sample collection.
7288012	ONL SD 2M	B	10/15/2007	10:16	11/6/2007	9:59	12.1	J	Sample analyzed between 22-42 days after sample collection.
7288012	ONL SD 2M	B	10/15/2007	10:16	11/6/2007	9:59	12.1	J	Sample analyzed between 22-42 days after sample collection.
7288013	ONL SD 2M	C	10/15/2007	10:16	11/6/2007	10:01	12.3	J	Sample analyzed between 22-42 days after sample collection.
7288013	ONL SD 2M	C	10/15/2007	10:16	11/6/2007	10:01	12.3	J	Sample analyzed between 22-42 days after sample collection.
7288011	ONL SD 2M	A	10/15/2007	10:16	11/6/2007	9:56	12.5	J	Sample analyzed between 22-42 days after sample collection.
7288011	ONL SD 2M	A	10/15/2007	10:16	11/6/2007	9:56	12.5	J	Sample analyzed between 22-42 days after sample collection.
7288017	ONL SD 6M		10/15/2007	10:48	11/6/2007	10:10	12.2	J	Sample analyzed between 22-42 days after sample collection.
7288017	ONL SD 6M		10/15/2007	10:48	11/6/2007	10:10	12.2	J	Sample analyzed between 22-42 days after sample collection.
7288021	ONL SD 10M		10/15/2007	11:12	11/6/2007	10:16	10.2	J	Sample analyzed between 22-42 days after sample collection.

**Table B-1. Summary of chlorophyll a analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chlorophyll (µg/L)	Data Validation Qualifier	Data Validation Comment
7288021	ONL SD 10M		10/15/2007	11:12	11/6/2007	10:16	10.2	J	Sample analyzed between 22-42 days after sample collection.
7288031	ONL SD 18M		10/15/2007	11:55	11/6/2007	10:25	0.9	J	Sample analyzed between 22-42 days after sample collection.
7288031	ONL SD 18M		10/15/2007	11:55	11/6/2007	10:25	0.9	J	Sample analyzed between 22-42 days after sample collection.
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	11/13/2007	13:23	0.5	J	Associated CCV(s) recovered below criteria.
7302012	ONL SD 2M	C	10/29/2007	09:35	11/13/2007	13:44	6.1	J	Associated CCV(s) recovered below criteria.
7302010	ONL SD 2M	A	10/29/2007	09:35	11/13/2007	13:39	6.3	J	Associated CCV(s) recovered below criteria.
7302011	ONL SD 2M	B	10/29/2007	09:35	11/13/2007	13:41	6.4	J	Associated CCV(s) recovered below criteria.
7302016	ONL SD 6M		10/29/2007	10:02	11/13/2007	13:52	6.0	J	Associated CCV(s) recovered below criteria.
7302020	ONL SD 10M		10/29/2007	10:30	11/13/2007	13:57	5.6	J	Associated CCV(s) recovered below criteria.
7302030	ONL SD 18M		10/29/2007	11:25	11/13/2007	14:02	0.7	J+	Associated CCV(s) recovered low, result within a factor of five of associated blank and may be biased high.
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/20/2007	9:28	0.5	U	
7309007	ONL SD 2M	A	11/5/2007	10:00	11/20/2007	9:42	5.2	J	Associated CCV(s) recovered above criteria.
7309008	ONL SD 2M	B	11/5/2007	10:00	11/20/2007	9:45	5.7	J	Associated CCV(s) recovered above criteria.
7309009	ONL SD 2M	C	11/5/2007	10:00	11/20/2007	9:48	6.5	J	Associated CCV(s) recovered above criteria.
7309013	ONL SD 6M		11/5/2007	10:16	11/20/2007	10:02	5.4	J	Duplicate precision criterion was exceeded, associated CCV(s) recovered above criteria.
7309017	ONL SD 10M		11/5/2007	10:35	11/20/2007	10:09	5.4	J	Duplicate precision criterion was exceeded, associated CCV(s) recovered above criteria.
7309027	ONL SD 18M		11/5/2007	11:16	11/20/2007	10:16	0.8	J	Duplicate precision criterion was exceeded, associated CCV(s) recovered above criteria.
7316001	ONL SD Field Trip Blank		11/12/2007	07:30	11/28/2007	13:17	0.5	U	
7316009	ONL ND Field Trip Blank		11/12/2007	07:30	11/28/2007	13:39	0.5	U	
7316010	ONL ND 2M		11/12/2007	09:08	11/28/2007	13:42	7.4		
7316011	ONL ND 10M		11/12/2007	09:16	11/28/2007	13:47	6.7		
7316012	ONL ND 17M		11/12/2007	09:25	11/28/2007	13:50	2.1		

**Table B-1. Summary of chlorophyll a analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chlorophyll (µg/L)	Data Validation Qualifier	Data Validation Comment
7316004	ONL SD 2M	A	11/12/2007	10:00	11/28/2007	13:20	5.8		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/28/2007	13:25	5.8		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/28/2007	13:28	5.6		
7316007	ONL SD 10M		11/12/2007	10:25	11/28/2007	13:31	5.5		
7316008	ONL SD 18M		11/12/2007	10:35	11/28/2007	13:33	1.4		
7323018	ONL SD Field Trip Blank		11/19/2007	07:15	11/28/2007	12:50	0.5	UJ	Duplicate precision criterion was exceeded.
7323021	ONL SD 2M	A	11/19/2007	09:00	11/28/2007	12:52	4.9	J	Duplicate precision criterion was exceeded.
7323022	ONL SD 2M	B	11/19/2007	09:00	11/28/2007	12:55	4.0	J	Duplicate precision criterion was exceeded.
7323023	ONL SD 2M	C	11/19/2007	09:00	11/28/2007	12:58	4.7	J	Duplicate precision criterion was exceeded.
7323024	ONL SD 10M		11/19/2007	09:25	11/28/2007	13:00	2.8	J	Duplicate precision criterion was exceeded.
7323025	ONL SD 18M		11/19/2007	09:55	11/28/2007	13:06	4.1	J	Duplicate precision criterion was exceeded.



**Table B-2a. Summary of nitrite+nitrate analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD Field Trip Blank		4/23/2007	7:20	04/24/2007	11:23:00	6	J	Result less than method reporting limit.
7113006	ONL ND 2m		4/23/2007	9:30	04/25/2007	11:50:00	1466	J	Sample analyzed between 49-96 hours after sample collection.
7113007	ONL ND 10m		4/23/2007	9:37	04/25/2007	11:59:00	1691	J	Sample analyzed between 49-96 hours after sample collection.
7113008	ONL ND 17m		4/23/2007	9:45	04/25/2007	12:00:00	1500	J	Sample analyzed between 49-96 hours after sample collection.
7113015	ONL SD 2M	A	4/23/2007	11:42	04/25/2007	11:45:00	1539	J	Sample analyzed between 49-96 hours after sample collection.
7113016	ONL SD 2M	B	4/23/2007	11:44	04/25/2007	11:46:00	1525	J	Sample analyzed between 49-96 hours after sample collection.
7113017	ONL SD 2M	C	4/23/2007	11:48	04/25/2007	11:47:00	1484		
7113025	ONL SD 10M		4/23/2007	12:26	04/25/2007	11:48:00	1715		
7113035	ONL SD 18M		4/23/2007	13:05	04/25/2007	11:49:00	1652		
7141036	ONL ND 2M		5/21/2007	10:05	05/22/2007	13:29:00	2048		
7141037	ONL ND 10M		5/21/2007	10:20	05/22/2007	13:37:00	1688		
7141038	ONL ND 17M		5/21/2007	10:30	05/22/2007	13:38:00	1642		
7141008	ONL SD Field Trip Blank		5/21/2007	11:50	05/22/2007	11:40:00	6	J	Result less than method reporting limit.
7141014	ONL SD 2M	A	5/21/2007	12:10	05/22/2007	13:03:00	2261		
7141015	ONL SD 2M	B	5/21/2007	12:14	05/22/2007	13:06:00	2404		
7141016	ONL SD 2M	C	5/21/2007	12:17	05/22/2007	13:07:00	2153		
7141024	ONL SD 10M		5/21/2007	13:00	05/22/2007	13:20:00	1710		
7141034	ONL SD 18M		5/21/2007	13:45	05/22/2007	13:28:00	1602		
7197011	ONL SD Field Trip Blank		7/16/2007	07:30	7/17/2007	13:26	16	U	
7197017	ONL SD 2M	A	7/16/2007	09:41	7/17/2007	14:51	2525		
7197018	ONL SD 2M	B	7/16/2007	09:41	7/17/2007	14:52	2513		
7197019	ONL SD 2M	C	7/16/2007	09:41	7/17/2007	14:53	2524		
7197023	ONL SD 6M		7/16/2007	10:07	7/17/2007	15:03	2689		
7197027	ONL SD 10M		7/16/2007	10:43	7/17/2007	15:06	2007		
7197029	ONL SD 12M		7/16/2007	11:11	7/17/2007	15:07	2020		
7197033	ONL SD 16M		7/16/2007	11:45	7/17/2007	15:09	1602		
7197036	ONL SD 17M		7/16/2007	11:55	7/17/2007	15:13	1608		
7197037	ONL SD 18M		7/16/2007	12:05	7/17/2007	15:22	1142		

**Table B-2a. Summary of nitrite+nitrate analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7211043	ONL ND	Field Trip Blank	7/30/2007	06:30	7/31/2007	16:20	16	U	
7211015	ONL SD	Field Trip Blank	7/30/2007	06:45	7/31/2007	14:45	16	U	
7211021	ONL SD	2M	7/30/2007	09:15	7/31/2007	16:27	2184		
7211022	ONL SD	2M	7/30/2007	09:15	7/31/2007	16:29	2143		
7211023	ONL SD	2M	7/30/2007	09:15	7/31/2007	16:30	2327		
7211027	ONL SD	6M	7/30/2007	09:40	7/31/2007	16:33	2244		
7211031	ONL SD	10M	7/30/2007	10:05	7/31/2007	16:36	1602		
7211033	ONL SD	12M	7/30/2007	10:11	7/31/2007	16:37	1595		
7211035	ONL SD	14M	7/30/2007	10:30	7/31/2007	16:39	1525		
7211037	ONL SD	16M	7/30/2007	10:45	7/31/2007	16:40	1446		
7211040	ONL SD	17M	7/30/2007	10:50	7/31/2007	16:44	1311		
7211041	ONL SD	18M	7/30/2007	11:00	7/31/2007	16:46	1125		
7211044	ONL ND	2m	7/30/2007	12:35	7/31/2007	16:47	2178		
7211045	ONL ND	6m	7/30/2007	12:45	7/31/2007	16:49	2352		
7211046	ONL ND	10m	7/30/2007	12:52	7/31/2007	16:50	1538		
7211047	ONL ND	12m	7/30/2007	13:00	7/31/2007	16:52	1554		
7211048	ONL ND	14m	7/30/2007	13:05	7/31/2007	16:53	1324		
7211049	ONL ND	16m	7/30/2007	13:10	7/31/2007	16:54	1254		
7211050	ONL ND	17m	7/30/2007	13:15	7/31/2007	17:41	1218		
7239005	ONL SD	Field Trip Blank	8/27/2007	07:15	8/29/2007	10:50	16	UJ	Sample analyzed between 49-96 hours after sample collection.
7239011	ONL SD	2M	8/27/2007	09:25	8/29/2007	12:17	2312	J	Sample analyzed between 49-96 hours after sample collection.
7239012	ONL SD	2M	8/27/2007	09:25	8/29/2007	12:19	2210	J	Sample analyzed between 49-96 hours after sample collection.
7239013	ONL SD	2M	8/27/2007	09:25	8/29/2007	12:20	2333	J	Sample analyzed between 49-96 hours after sample collection.
7239017	ONL SD	6M	8/27/2007	10:09	8/29/2007	12:30	2359	J	Sample analyzed between 49-96 hours after sample collection.
7239021	ONL SD	10M	8/27/2007	10:40	8/29/2007	12:33	1149	J	Sample analyzed between 49-96 hours after sample collection.
7239023	ONL SD	12M	8/27/2007	10:55	8/29/2007	12:34	941	J	Sample analyzed between 49-96 hours after sample collection.
7239025	ONL SD	14M	8/27/2007	11:15	8/29/2007	12:36	992	J	Sample analyzed between 49-96 hours after sample collection.

**Table B-2a. Summary of nitrite+nitrate analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7239027	ONL SD 16M		8/27/2007	11:32	8/29/2007	12:37	898	J	Sample analyzed between 49-96 hours after sample collection.
7239030	ONL SD 17M		8/27/2007	11:52	8/29/2007	12:48	950	J	Sample analyzed between 49-96 hours after sample collection.
7239031	ONL SD 18M		8/27/2007	12:00	8/29/2007	12:11	690	J	Sample analyzed between 49-96 hours after sample collection.
7267006	ONL SD Field Trip Blank		9/24/2007	07:30	9/25/2007	14:55	5	J	Result less than method reporting limit.
7267012	ONL SD 2M	A	9/24/2007	09:17	9/25/2007	16:52	2199		
7267013	ONL SD 2M	B	9/24/2007	09:17	9/25/2007	16:53	2046		
7267014	ONL SD 2M	C	9/24/2007	09:17	9/25/2007	16:55	2184		
7267018	ONL SD 6M		9/24/2007	09:47	9/25/2007	16:58	2114		
7267022	ONL SD 10M		9/24/2007	10:15	9/25/2007	17:00	1428		
7267024	ONL SD 12M		9/24/2007	10:22	9/25/2007	15:14	703		
7267026	ONL SD 14M		9/24/2007	10:32	9/25/2007	15:15	527		
7267028	ONL SD 16M		9/24/2007	10:38	9/25/2007	15:16	570		
7267031	ONL SD 17M		9/24/2007	10:48	9/25/2007	15:21	566		
7267032	ONL SD 18M		9/24/2007	10:50	9/25/2007	15:22	191		
7267052	isus site 9		9/24/2007	11:05	9/26/2007	13:18	1043	J	Sample analyzed between 49-96 hours after sample collection.
7267053	isus site 14		9/24/2007	11:25	9/26/2007	12:23	651	J	Sample analyzed between 49-96 hours after sample collection.
7267051	isus site 4		9/24/2007	11:25	9/26/2007	13:17	1540	J	Sample analyzed between 49-96 hours after sample collection.
7267054	isus site 18		9/24/2007	11:37	9/26/2007	12:24	466	J	Sample analyzed between 49-96 hours after sample collection.
7267055	isus site 21		9/24/2007	12:03	9/26/2007	13:22	2005	J	Sample analyzed between 49-96 hours after sample collection.
7267056	isus site 22		9/24/2007	12:17	9/26/2007	12:28	562	J	Sample analyzed between 49-96 hours after sample collection.
7267057	isus site 23		9/24/2007	12:45	9/26/2007	12:29	809		
7267058	isus site 26		9/24/2007	13:00	9/26/2007	13:26	1012	J	Sample analyzed between 49-96 hours after sample collection.
7267042	ONL ND 2M		9/24/2007	13:30	9/25/2007	17:13	1992		
7267043	ONL ND 6M		9/24/2007	13:35	9/25/2007	17:14	2000		

**Table B-2a. Summary of nitrite+nitrate analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7267044	ONL ND 10M		9/24/2007	13:40	9/25/2007	17:15	1615		
7267045	ONL ND 12M		9/24/2007	13:46	9/25/2007	15:33	595		
7267046	ONL ND 14M		9/24/2007	13:50	9/25/2007	15:34	512		
7267047	ONL ND 16M		9/24/2007	13:55	9/25/2007	15:35	381		
7267048	ONL ND 17M		9/24/2007	14:00	9/25/2007	15:36	356		
7267059	isus site 29		9/24/2007	14:49	9/26/2007	12:31	541		
7267060	isus site 32		9/24/2007	15:00	9/26/2007	12:33	605		
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/2/2007	14:40	14	J	Result less than method reporting limit.
7274016	ONL SD 2M	A	10/1/2007	10:03	10/2/2007	16:14	2428		
7274017	ONL SD 2M	B	10/1/2007	10:03	10/2/2007	16:16	2476		
7274018	ONL SD 2M	C	10/1/2007	10:03	10/2/2007	16:46	2544		
7274022	ONL SD 6M		10/1/2007	10:36	10/2/2007	16:47	2474		
7274026	ONL SD 10M		10/1/2007	10:55	10/2/2007	16:28	1334		
7274028	ONL SD 12M		10/1/2007	11:10	10/2/2007	15:00	554		
7274030	ONL SD 14M		10/1/2007	11:27	10/2/2007	15:01	390		
7274032	ONL SD 16M		10/1/2007	11:43	10/2/2007	15:03	372		
7274035	ONL SD 17M		10/1/2007	11:57	10/2/2007	15:07	433		
7274036	ONL SD 18M		10/1/2007	12:00	10/2/2007	15:08	394		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/17/2007	16:33	6	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7288011	ONL SD 2M	A	10/15/2007	10:16	10/17/2007	17:48	2405	J	Sample analyzed between 49-96 hours after sample collection.
7288012	ONL SD 2M	B	10/15/2007	10:16	10/17/2007	17:51	2430	J	Sample analyzed between 49-96 hours after sample collection.
7288013	ONL SD 2M	C	10/15/2007	10:16	10/17/2007	17:52	2425	J	Sample analyzed between 49-96 hours after sample collection.
7288017	ONL SD 6M		10/15/2007	10:48	10/17/2007	18:01	2436	J	Sample analyzed between 49-96 hours after sample collection.
7288021	ONL SD 10M		10/15/2007	11:12	10/17/2007	18:05	2398	J	Sample analyzed between 49-96 hours after sample collection.
7288023	ONL SD 12M		10/15/2007	11:21	10/17/2007	16:52	632	J	Sample analyzed between 49-96 hours after sample collection.

**Table B-2a. Summary of nitrite+nitrate analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7288025	ONL SD 14M		10/15/2007	11:32	10/17/2007	16:54	231	J	Sample analyzed between 49-96 hours after sample collection.
7288027	ONL SD 16M		10/15/2007	11:44	10/17/2007	16:55	131	J	Sample analyzed between 49-96 hours after sample collection.
7288030	ONL SD 17M		10/15/2007	11:50	10/17/2007	16:59	48	J	Sample analyzed between 49-96 hours after sample collection.
7288031	ONL SD 18M		10/15/2007	11:55	10/17/2007	17:01	16	UJ	Sample analyzed between 49-96 hours after sample collection.
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	10/30/2007	12:24	16	UJ	
7302010	ONL SD 2M	A	10/29/2007	09:35	10/30/2007	13:48	2323		
7302011	ONL SD 2M	B	10/29/2007	09:35	10/30/2007	13:50	2306		
7302012	ONL SD 2M	C	10/29/2007	09:35	10/30/2007	13:52	2334		
7302016	ONL SD 6M		10/29/2007	10:02	10/30/2007	14:01	2337		
7302020	ONL SD 10M		10/29/2007	10:30	10/30/2007	14:04	2276		
7302022	ONL SD 12M		10/29/2007	10:38	10/30/2007	14:06	2287		
7302024	ONL SD 14M		10/29/2007	10:48	10/30/2007	14:07	1067		
7302026	ONL SD 16M		10/29/2007	10:52	10/30/2007	12:46	44		
7302029	ONL SD 17M		10/29/2007	11:14	10/30/2007	12:51	34		
7302030	ONL SD 18M		10/29/2007	11:25	10/30/2007	12:52	31		
7309001	ONL SD Field Trip Blank		11/5/2007	7:00	11/6/2007	14:37	8	J	Result less than method reporting limit.
7309007	ONL SD 2M	A	11/5/2007	10:00	11/6/2007	16:19	2175		
7309008	ONL SD 2M	B	11/5/2007	10:00	11/6/2007	16:21	2220		
7309009	ONL SD 2M	C	11/5/2007	10:00	11/6/2007	16:23	2210		
7309013	ONL SD 6M		11/5/2007	10:16	11/6/2007	16:25	2063		
7309017	ONL SD 10M		11/5/2007	10:35	11/6/2007	16:28	2065		
7309019	ONL SD 12M		11/5/2007	10:44	11/6/2007	16:30	2038		
7309021	ONL SD 14M		11/5/2007	10:51	11/6/2007	16:31	2088		
7309023	ONL SD 16M		11/5/2007	11:00	11/6/2007	15:00	343		
7309026	ONL SD 17M		11/5/2007	11:05	11/6/2007	15:04	11	U	Result negated due to concentration <5x field and instrument blank levels.
7309027	ONL SD 18M		11/5/2007	11:16	11/6/2007	15:05	210		
7309037	ISUS 4		11/5/2007	12:25	11/6/2007	16:39	2092		
7309038	ISUS 9		11/5/2007	12:45	11/6/2007	16:40	2140		

**Table B-2a. Summary of nitrite+nitrate analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7309039	ISUS 14		11/5/2007	13:10	11/6/2007	16:41	2001		
7309040	ISUS 18		11/5/2007	13:20	11/6/2007	15:15	26	U	Result negated due to concentration <5x field and instrument blank levels.
7309041	ISUS 21		11/5/2007	13:40	11/6/2007	16:44	2010		
7309042	ISUS 22		11/5/2007	13:55	11/6/2007	16:45	1467		
7309043	ISUS 23		11/5/2007	14:10	11/6/2007	16:46	1933		
7309044	ISUS 26		11/5/2007	14:30	11/7/2007	10:19	1239		
7309045	ISUS 24		11/5/2007	14:50	11/7/2007	10:20	1049		
7309046	ISUS 32		11/5/2007	15:15	11/7/2007	10:22	1970		
7316001	ONL SD Field Trip Blank		11/12/2007	7:30	11/13/2007	12:55	16	U	
7316009	ONL ND Field Trip Blank		11/12/2007	7:30	11/13/2007	13:42	6	J	Result less than method reporting limit.
7316010	ONL ND 2M		11/12/2007	9:08	11/13/2007	13:51	1903		
7316011	ONL ND 10M		11/12/2007	9:16	11/13/2007	13:52	1924		
7316012	ONL ND 17M		11/12/2007	9:25	11/13/2007	13:53	1908		
7316004	ONL SD 2M	A	11/12/2007	10:00	11/13/2007	13:44	2085		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/13/2007	13:45	2058		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/13/2007	13:46	2061		
7316007	ONL SD 10M		11/12/2007	10:25	11/13/2007	13:47	2067		
7316008	ONL SD 18M		11/12/2007	10:35	11/13/2007	13:49	2321		
7323018	ONL SD Field Trip Blank		11/19/2007	7:15	11/20/2007	16:24	16	U	
7323021	ONL SD 2M	A	11/19/2007	9:00	11/20/2007	17:07	2287	J	Associated CCV(s) recovered above criteria.
7323022	ONL SD 2M	B	11/19/2007	9:00	11/20/2007	17:08	2234	J	Associated CCV(s) recovered above criteria.
7323023	ONL SD 2M	C	11/19/2007	9:00	11/20/2007	17:09	2257	J	Associated CCV(s) recovered above criteria.
7323024	ONL SD 10M		11/19/2007	9:25	11/20/2007	17:10	2225	J	Associated CCV(s) recovered above criteria.
7323025	ONL SD 18M		11/19/2007	9:55	11/20/2007	17:13	2210	J	Associated CCV(s) recovered above criteria.

**Table B-2b. Summary of nitrite+nitrate analytical results for October 23, 2006 sampling event**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Nitrate+nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
6296001	ONL SD	Field Trip Blank	10/23/2006	7:15	10/25/2006	13:57	3	J	Sample analyzed between 49-96 hours after sample collection.
6296002	ONL SD	0M	10/23/2006	9:30	10/25/2006	15:17	1209	J	Sample analyzed between 49-96 hours after sample collection.
6296003	ONL SD	0M	10/23/2006	9:30	10/25/2006	15:18	1218	J	Sample analyzed between 49-96 hours after sample collection.
6296004	ONL SD	0M	10/23/2006	9:30	10/25/2006	15:19	1236	J	Sample analyzed between 49-96 hours after sample collection.
6296006	ONL SD	2M	10/23/2006	9:38	10/25/2006	15:20	1158	J	Sample analyzed between 49-96 hours after sample collection.
6296011	ONL SD	4M	10/23/2006	9:56	10/25/2006	15:23	1216	J	Sample analyzed between 49-96 hours after sample collection.
6296013	ONL SD	6M	10/23/2006	10:03	10/25/2006	15:24	1194	J	Sample analyzed between 49-96 hours after sample collection.
6296015	ONL SD	8M	10/23/2006	10:12	10/25/2006	15:32	1151	J	Sample analyzed between 49-96 hours after sample collection.
6296017	ONL SD	10M	10/23/2006	10:20	10/25/2006	15:33	1179	J	Sample analyzed between 49-96 hours after sample collection.
6296019	ONL SD	12M	10/23/2006	10:28	10/25/2006	15:34	1138	J	Sample analyzed between 49-96 hours after sample collection.
6296021	ONL SD	14M	10/23/2006	10:44	10/25/2006	15:37	1211	J	Sample analyzed between 49-96 hours after sample collection.
6296023	ONL SD	16M	10/23/2006	10:54	10/25/2006	15:38	1145	J	Sample analyzed between 49-96 hours after sample collection.
6296024	ONL SD	16M	10/23/2006	10:54	10/25/2006	15:39	1148	J	Sample analyzed between 49-96 hours after sample collection.
6296025	ONL SD	16M	10/23/2006	10:54	10/25/2006	15:40	1140	J	Sample analyzed between 49-96 hours after sample collection.
6296026	ONL SD	17M	10/23/2006	11:03	10/25/2006	15:41	1086	J	Sample analyzed between 49-96 hours after sample collection.
6296027	ONL SD	18M	10/23/2006	11:14	10/25/2006	15:51	959	J	Sample analyzed between 49-96 hours after sample collection.
6296028	ONL SD	19M	10/23/2006	11:22	10/25/2006	15:52	794	J	Sample analyzed between 49-96 hours after sample collection.

**Table B-3a. Summary of nitrite analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD	Field Trip Blank	4/23/2007	7:20	4/24/2007	11:23	3	U	Result negated due to concentration <5x instrument blank levels.
7113006	ONL ND	2m	4/23/2007	9:30	4/25/2007	10:37	21	J	Sample analyzed between 49-96 hours after sample collection.
7113007	ONL ND	10m	4/23/2007	9:37	4/25/2007	10:38	26	J	Sample analyzed between 49-96 hours after sample collection.
7113008	ONL ND	17m	4/23/2007	9:45	4/25/2007	10:39	22	J	Sample analyzed between 49-96 hours after sample collection, associated recovered below criteria.
7113015	ONL SD	2M	A	4/23/2007	11:42	4/25/2007	10:30	23	
7113016	ONL SD	2M	B	4/23/2007	11:44	4/25/2007	10:31	24	
7113017	ONL SD	2M	C	4/23/2007	11:48	4/25/2007	10:32	21	
7113025	ONL SD	10M		4/23/2007	12:26	4/25/2007	10:34	28	
7113035	ONL SD	18M		4/23/2007	13:05	4/25/2007	10:36	25	
7141036	ONL ND	2M		5/21/2007	10:05	5/22/2007	12:08	22	
7141037	ONL ND	10M		5/21/2007	10:20	5/22/2007	12:09	21	
7141038	ONL ND	17M		5/21/2007	10:30	5/22/2007	12:11	20	
7141008	ONL SD	Field Trip Blank		5/21/2007	11:50	5/22/2007	11:40	9	U
7141014	ONL SD	2M	A	5/21/2007	12:10	5/22/2007	11:45	23	
7141015	ONL SD	2M	B	5/21/2007	12:14	5/22/2007	11:47	24	
7141016	ONL SD	2M	C	5/21/2007	12:17	5/22/2007	11:48	23	
7141024	ONL SD	10M		5/21/2007	13:00	5/22/2007	11:59	20	
7141034	ONL SD	18M		5/21/2007	13:45	5/22/2007	12:07	18	
7197011	ONL SD	Field Trip Blank		7/16/2007	07:30	7/17/2007	13:26	9	U
7197017	ONL SD	2M	A	7/16/2007	09:41	7/17/2007	13:32	48	
7197018	ONL SD	2M	B	7/16/2007	09:41	7/17/2007	13:33	47	
7197019	ONL SD	2M	C	7/16/2007	09:41	7/17/2007	13:34	48	
7197023	ONL SD	6M		7/16/2007	10:07	7/17/2007	13:36	57	
7197027	ONL SD	10M		7/16/2007	10:43	7/17/2007	13:45	184	
7197029	ONL SD	12M		7/16/2007	11:11	7/17/2007	13:46	217	
7197033	ONL SD	16M		7/16/2007	11:45	7/17/2007	13:47	180	
7197036	ONL SD	17M		7/16/2007	11:55	7/17/2007	13:52	128	
7197037	ONL SD	18M		7/16/2007	12:05	7/17/2007	13:53	84	
7211043	ONL ND	Field Trip Blank		7/30/2007	06:30	7/31/2007	15:14	9	U
7211015	ONL SD	Field Trip Blank		7/30/2007	06:45	7/31/2007	14:45	9	U
7211021	ONL SD	2M	A	7/30/2007	09:15	7/31/2007	14:50	46	
7211022	ONL SD	2M	B	7/30/2007	09:15	7/31/2007	14:52	45	



**Table B-3a. Summary of nitrite analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7211023	ONL SD 2M	C	7/30/2007	09:15	7/31/2007	14:53	46		
7211027	ONL SD 6M		7/30/2007	09:40	7/31/2007	14:55	49		
7211031	ONL SD 10M		7/30/2007	10:05	7/31/2007	15:04	152		
7211033	ONL SD 12M		7/30/2007	10:11	7/31/2007	15:05	214		
7211035	ONL SD 14M		7/30/2007	10:30	7/31/2007	15:06	229		
7211037	ONL SD 16M		7/30/2007	10:45	7/31/2007	15:07	182		
7211040	ONL SD 17M		7/30/2007	10:50	7/31/2007	15:12	150		
7211041	ONL SD 18M		7/30/2007	11:00	7/31/2007	15:13	101		
7211044	ONL ND 2m		7/30/2007	12:35	7/31/2007	15:15	45		
7211045	ONL ND 6m		7/30/2007	12:45	7/31/2007	15:22	45		
7211046	ONL ND 10m		7/30/2007	12:52	7/31/2007	15:24	126		
7211047	ONL ND 12m		7/30/2007	13:00	7/31/2007	16:52	245		
7211048	ONL ND 14m		7/30/2007	13:05	7/31/2007	15:26	187		
7211049	ONL ND 16m		7/30/2007	13:10	7/31/2007	15:27	153		
7211050	ONL ND 17m		7/30/2007	13:15	7/31/2007	15:29	149		
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/28/2007	13:20	9	U	
7239011	ONL SD 2M	A	8/27/2007	09:25	8/28/2007	13:24	43		
7239012	ONL SD 2M	B	8/27/2007	09:25	8/28/2007	13:27	42		
7239013	ONL SD 2M	C	8/27/2007	09:25	8/28/2007	13:28	40		
7239017	ONL SD 6M		8/27/2007	10:09	8/28/2007	13:30	41		
7239021	ONL SD 10M		8/27/2007	10:40	8/28/2007	13:38	12		
7239023	ONL SD 12M		8/27/2007	10:55	8/28/2007	13:40	55		
7239025	ONL SD 14M		8/27/2007	11:15	8/28/2007	13:41	92		
7239027	ONL SD 16M		8/27/2007	11:32	8/28/2007	13:42	101		
7239030	ONL SD 17M		8/27/2007	11:52	8/28/2007	13:47	116		
7239031	ONL SD 18M		8/27/2007	12:00	8/28/2007	13:48	56		
7267006	ONL SD Field Trip Blank		9/24/2007	07:30	9/25/2007	14:55	9	U	
7267012	ONL SD 2M	A	9/24/2007	09:17	9/25/2007	14:59	37		
7267013	ONL SD 2M	B	9/24/2007	09:17	9/25/2007	15:00	35		
7267014	ONL SD 2M	C	9/24/2007	09:17	9/25/2007	15:02	37		
7267018	ONL SD 6M		9/24/2007	09:47	9/25/2007	15:05	35		
7267022	ONL SD 10M		9/24/2007	10:15	9/25/2007	15:07	24		
7267024	ONL SD 12M		9/24/2007	10:22	9/25/2007	15:14	4	J	Result less than method reporting limit.
7267026	ONL SD 14M		9/24/2007	10:32	9/25/2007	15:15	11		
7267028	ONL SD 16M		9/24/2007	10:38	9/25/2007	15:16	13		
7267031	ONL SD 17M		9/24/2007	10:48	9/25/2007	15:21	11		

**Table B-3a. Summary of nitrite analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7267032	ONL SD 18M		9/24/2007	10:50	9/25/2007	15:22	6	J	Result less than method reporting limit.
7267052	ISUS Site 9		9/24/2007	11:05	9/26/2007	12:22	18	J	Sample analyzed between 49-96 hours after sample collection.
7267053	ISUS Site 14		9/24/2007	11:25	9/26/2007	12:23	5	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7267051	ISUS Site 4		9/24/2007	11:25	9/26/2007	12:21	25	J	Sample analyzed between 49-96 hours after sample collection.
7267054	ISUS Site 18		9/24/2007	11:37	9/26/2007	12:24	18	J	Sample analyzed between 49-96 hours after sample collection.
7267055	ISUS Site 21		9/24/2007	12:03	9/26/2007	12:26	39	J	Sample analyzed between 49-96 hours after sample collection.
7267056	ISUS Site 22		9/24/2007	12:17	9/26/2007	12:28	14	J	Sample analyzed between 49-96 hours after sample collection.
7267057	ISUS Site 23		9/24/2007	12:45	9/26/2007	12:29	6	J	Result less than method reporting limit.
7267058	ISUS Site 26		9/24/2007	13:00	9/26/2007	12:30	16		
7267042	ONL ND 2M		9/24/2007	13:30	9/25/2007	15:25	36		
7267043	ONL ND 6M		9/24/2007	13:35	9/25/2007	15:26	35		
7267044	ONL ND 10M		9/24/2007	13:40	9/25/2007	15:32	29		
7267045	ONL ND 12M		9/24/2007	13:46	9/25/2007	15:33	5	J	Result less than method reporting limit.
7267046	ONL ND 14M		9/24/2007	13:50	9/25/2007	15:34	9		
7267047	ONL ND 16M		9/24/2007	13:55	9/25/2007	15:35	7	J	Result less than method reporting limit.
7267048	ONL ND 17M		9/24/2007	14:00	9/25/2007	15:36	5	J	Result less than method reporting limit.
7267059	ISUS Site 29		9/24/2007	14:49	9/26/2007	12:31	5	J	Result less than method reporting limit.
7267060	ISUS Site 32		9/24/2007	15:00	9/26/2007	12:33	5	J	Result less than method reporting limit.
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/2/2007	14:40	9	U	
7274016	ONL SD 2M	A	10/1/2007	10:03	10/2/2007	14:45	36		
7274017	ONL SD 2M	B	10/1/2007	10:03	10/2/2007	14:47	35		
7274018	ONL SD 2M	C	10/1/2007	10:03	10/2/2007	15:27	36		
7274022	ONL SD 6M		10/1/2007	10:36	10/2/2007	15:28	36		

**Table B-3a. Summary of nitrite analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7274026	ONL SD 10M		10/1/2007	10:55	10/2/2007	14:59	10		
7274028	ONL SD 12M		10/1/2007	11:10	10/2/2007	15:00	4	J	Result less than method reporting limit.
7274030	ONL SD 14M		10/1/2007	11:27	10/2/2007	15:01	22		
7274032	ONL SD 16M		10/1/2007	11:43	10/2/2007	15:03	39		
7274035	ONL SD 17M		10/1/2007	11:57	10/2/2007	15:07	49		
7274036	ONL SD 18M		10/1/2007	12:00	10/2/2007	15:08	45		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/16/2007	12:10	9	U	
7288011	ONL SD 2M	A	10/15/2007	10:16	10/16/2007	12:15	35		
7288012	ONL SD 2M	B	10/15/2007	10:16	10/16/2007	12:17	35		
7288013	ONL SD 2M	C	10/15/2007	10:16	10/16/2007	12:19	35		
7288017	ONL SD 6M		10/15/2007	10:48	10/16/2007	12:21	33		
7288021	ONL SD 10M		10/15/2007	11:12	10/16/2007	12:29	35		
7288023	ONL SD 12M		10/15/2007	11:21	10/16/2007	12:30	15		
7288025	ONL SD 14M		10/15/2007	11:32	10/16/2007	12:31	14		
7288027	ONL SD 16M		10/15/2007	11:44	10/16/2007	12:33	13		
7288030	ONL SD 17M		10/15/2007	11:50	10/16/2007	12:37	5	J	Result less than method reporting limit.
7288031	ONL SD 18M		10/15/2007	11:55	10/16/2007	12:38	9	U	
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	10/30/2007	12:24	9	U	
7302010	ONL SD 2M	A	10/29/2007	09:35	10/30/2007	12:29	38		
7302011	ONL SD 2M	B	10/29/2007	09:35	10/30/2007	12:31	38		
7302012	ONL SD 2M	C	10/29/2007	09:35	10/30/2007	12:32	38		
7302016	ONL SD 6M		10/29/2007	10:02	10/30/2007	12:35	37		
7302020	ONL SD 10M		10/29/2007	10:30	10/30/2007	12:43	36		
7302022	ONL SD 12M		10/29/2007	10:38	10/30/2007	12:44	36		
7302024	ONL SD 14M		10/29/2007	10:48	10/30/2007	12:45	20		
7302026	ONL SD 16M		10/29/2007	10:52	10/30/2007	12:46	9	U	
7302029	ONL SD 17M		10/29/2007	11:14	10/30/2007	12:51	9	U	
7302030	ONL SD 18M		10/29/2007	11:25	10/30/2007	12:52	3	J	Result less than method reporting limit.
7309001	ONL SD Field Trip Blank		11/5/2007	7:00	11/6/2007	14:37	9	U	
7309007	ONL SD 2M	A	11/5/2007	10:00	11/6/2007	14:42	40		
7309008	ONL SD 2M	B	11/5/2007	10:00	11/6/2007	14:44	42		
7309009	ONL SD 2M	C	11/5/2007	10:00	11/6/2007	14:46	41		
7309013	ONL SD 6M		11/5/2007	10:16	11/6/2007	14:48	41		
7309017	ONL SD 10M		11/5/2007	10:35	11/6/2007	14:56	40		

**Table B-3a. Summary of nitrite analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
7309019	ONL SD 12M		11/5/2007	10:44	11/6/2007	14:57	40		
7309021	ONL SD 14M		11/5/2007	10:51	11/6/2007	14:58	40		
7309023	ONL SD 16M		11/5/2007	11:00	11/6/2007	15:00	15		
7309026	ONL SD 17M		11/5/2007	11:05	11/6/2007	15:04	3	U	Result negated due to concentration <5x instrument blank levels.
7309027	ONL SD 18M		11/5/2007	11:16	11/6/2007	15:05	14		
7309037	ISUS 4		11/5/2007	12:25	11/6/2007	15:07	43		
7309038	ISUS 9		11/5/2007	12:45	11/6/2007	15:08	42		
7309039	ISUS 14		11/5/2007	13:10	11/6/2007	15:14	40		
7309040	ISUS 18		11/5/2007	13:20	11/6/2007	15:15	3	U	Result negated due to concentration <5x instrument blank levels.
7309041	ISUS 21		11/5/2007	13:40	11/6/2007	15:16	40		
7309042	ISUS 22		11/5/2007	13:55	11/6/2007	15:17	35		
7309043	ISUS 23		11/5/2007	14:10	11/6/2007	15:18	39		
7309044	ISUS 26		11/5/2007	14:30	11/6/2007	15:21	36		
7309045	ISUS 24		11/5/2007	14:50	11/6/2007	15:22	32		
7309046	ISUS 32		11/5/2007	15:15	11/6/2007	15:23	40		
7316001	ONL SD Field Trip Blank		11/12/2007	7:30	11/13/2007	12:55	9	U	
7316009	ONL ND Field Trip Blank		11/12/2007	7:30	11/13/2007	13:42	9	U	
7316010	ONL ND 2M		11/12/2007	9:08	11/13/2007	13:04	44		
7316011	ONL ND 10M		11/12/2007	9:16	11/13/2007	13:05	45		
7316012	ONL ND 17M		11/12/2007	9:25	11/13/2007	13:06	44		
7316004	ONL SD 2M	A	11/12/2007	10:00	11/13/2007	12:56	46		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/13/2007	12:57	45		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/13/2007	12:58	46		
7316007	ONL SD 10M		11/12/2007	10:25	11/13/2007	12:59	45		
7316008	ONL SD 18M		11/12/2007	10:35	11/13/2007	13:02	49		
7323018	ONL SD Field Trip Blank		11/19/2007	7:15	11/20/2007	16:24	9	U	
7323021	ONL SD 2M	A	11/19/2007	9:00	11/20/2007	16:25	60	J	Associated LCS recovered above criteria.
7323022	ONL SD 2M	B	11/19/2007	9:00	11/20/2007	16:27	60	J	Associated LCS recovered above criteria.
7323023	ONL SD 2M	C	11/19/2007	9:00	11/20/2007	16:28	60	J	Associated LCS recovered above criteria.
7323024	ONL SD 10M		11/19/2007	9:25	11/20/2007	16:29	58	J	Associated LCS recovered above criteria.

**Table B-3a. Summary of nitrite analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite ( $\mu\text{g/L}$ )	Data Validation Qualifier	Data Validation Comment
7323025	ONL SD 18M		11/19/2007	9:55	11/20/2007	16:31	57	J	Associated LCS recovered above criteria.

**Table B-3b. Summary of nitrite analytical results for October 23, 2006 sampling event**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time (HH:MM)	Analysis Date	Analysis Time (HH:MM)	Nitrite (µg/L)	Data Validation Qualifier	Data Validation Comment
6296001	ONL SD Field Trip Blank		10/23/2006	7:15	10/25/2006	13:57	2	J	Sample analyzed between 49-96 hours after sample collection.
6296002	ONL SD 0M	A	10/23/2006	9:30	10/25/2006	13:58	49	J	Sample analyzed between 49-96 hours after sample collection.
6296003	ONL SD 0M	B	10/23/2006	9:30	10/25/2006	13:59	48	J	Sample analyzed between 49-96 hours after sample collection.
6296004	ONL SD 0M	C	10/23/2006	9:30	10/25/2006	14:00	50	J	Sample analyzed between 49-96 hours after sample collection.
6296006	ONL SD 2M		10/23/2006	9:38	10/25/2006	14:01	47	J	Sample analyzed between 49-96 hours after sample collection.
6296011	ONL SD 4M		10/23/2006	9:56	10/25/2006	14:04	48	J	Sample analyzed between 49-96 hours after sample collection.
6296013	ONL SD 6M		10/23/2006	10:03	10/25/2006	14:05	48	J	Sample analyzed between 49-96 hours after sample collection.
6296015	ONL SD 8M		10/23/2006	10:12	10/25/2006	14:06	46	J	Sample analyzed between 49-96 hours after sample collection.
6296017	ONL SD 10M		10/23/2006	10:20	10/25/2006	14:07	47	J	Sample analyzed between 49-96 hours after sample collection.
6296019	ONL SD 12M		10/23/2006	10:28	10/25/2006	14:08	48	J	Sample analyzed between 49-96 hours after sample collection.
6296021	ONL SD 14M		10/23/2006	10:44	10/25/2006	14:15	48	J	Sample analyzed between 49-96 hours after sample collection.
6296023	ONL SD 16M	A	10/23/2006	10:54	10/25/2006	14:17	51	J	Sample analyzed between 49-96 hours after sample collection.
6296024	ONL SD 16M	B	10/23/2006	10:54	10/25/2006	14:18	50	J	Sample analyzed between 49-96 hours after sample collection.
6296025	ONL SD 16M	C	10/23/2006	10:54	10/25/2006	14:19	50	J	Sample analyzed between 49-96 hours after sample collection.
6296026	ONL SD 17M		10/23/2006	11:03	10/25/2006	14:20	56	J	Sample analyzed between 49-96 hours after sample collection.
6296027	ONL SD 18M		10/23/2006	11:14	10/25/2006	14:22	64	J	Sample analyzed between 49-96 hours after sample collection.
6296028	ONL SD 19M		10/23/2006	11:22	10/25/2006	14:24	78	J	Sample analyzed between 49-96 hours after sample collection.

**Table B-4a. Summary of ammonia analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD	Field Trip Blank	4/23/2007	7:20	4/24/2007	11:23	13	J	Result less than method reporting limit.
7113006	ONL ND	2m	4/23/2007	9:30	4/24/2007	11:51	168		
7113007	ONL ND	10m	4/23/2007	9:37	4/24/2007	13:20	386		
7113008	ONL ND	17m	4/23/2007	9:45	4/24/2007	13:21	649		
7113015	ONL SD	2M	4/23/2007	11:42	4/24/2007	11:28	160	A	
7113016	ONL SD	2M	4/23/2007	11:44	4/24/2007	11:30	153	B	
7113017	ONL SD	2M	4/23/2007	11:48	4/24/2007	11:31	149	C	
7113025	ONL SD	10M	4/23/2007	12:26	4/24/2007	13:02	367		
7113035	ONL SD	18M	4/23/2007	13:05	4/24/2007	13:11	428		
7141036	ONL ND	2M	5/21/2007	10:05	5/22/2007	12:08	136		
7141037	ONL ND	10M	5/21/2007	10:20	5/22/2007	12:09	288		
7141038	ONL ND	17M	5/21/2007	10:30	5/22/2007	13:38	380		
7141008	ONL SD	Field Trip Blank	5/21/2007	11:50	5/22/2007	11:40	41	U	
7141014	ONL SD	2M	5/21/2007	12:10	5/22/2007	11:45	89	A	
7141015	ONL SD	2M	5/21/2007	12:14	5/22/2007	11:47	92	B	
7141016	ONL SD	2M	5/21/2007	12:17	5/22/2007	11:48	91	C	
7141024	ONL SD	10M	5/21/2007	13:00	5/22/2007	11:59	362		
7141034	ONL SD	18M	5/21/2007	13:45	5/22/2007	13:28	509		
7197011	ONL SD	Field Trip Blank	7/16/2007	07:30	7/17/2007	13:26	17	J	Result less than method reporting limit.
7197017	ONL SD	2M	7/16/2007	09:41	7/17/2007	13:32	35	U	Result negated due to concentration <5x instrument blank levels.
7197018	ONL SD	2M	7/16/2007	09:41	7/17/2007	13:33	34	U	Result negated due to concentration <5x instrument blank levels.
7197019	ONL SD	2M	7/16/2007	09:41	7/17/2007	13:34	36	U	Result negated due to concentration <5x instrument blank levels.
7197023	ONL SD	6M	7/16/2007	10:07	7/17/2007	13:36	50		
7197027	ONL SD	10M	7/16/2007	10:43	7/17/2007	13:45	19	U	Result negated due to concentration <5x instrument blank levels.

**Table B-4a. Summary of ammonia analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
7197029	ONL SD 12M		7/16/2007	11:11	7/17/2007	13:46	24	U	Result negated due to concentration <5x instrument blank levels.
7197033	ONL SD 16M		7/16/2007	11:45	7/17/2007	15:09	434		
7197036	ONL SD 17M		7/16/2007	11:55	7/17/2007	15:13	527		
7197037	ONL SD 18M		7/16/2007	12:05	7/17/2007	15:22	1078		
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	7/31/2007	16:20	41	U	
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	7/31/2007	14:45	41	U	
7211021	ONL SD 2M	A	7/30/2007	09:15	7/31/2007	14:50	14	J	Result less than method reporting limit.
7211022	ONL SD 2M	B	7/30/2007	09:15	7/31/2007	14:52	16	J	Result less than method reporting limit.
7211023	ONL SD 2M	C	7/30/2007	09:15	7/31/2007	14:53	20	J	Result less than method reporting limit.
7211027	ONL SD 6M		7/30/2007	09:40	7/31/2007	14:55	93		
7211031	ONL SD 10M		7/30/2007	10:05	7/31/2007	15:04	31	J	Result less than method reporting limit.
7211033	ONL SD 12M		7/30/2007	10:11	7/31/2007	15:05	78		
7211035	ONL SD 14M		7/30/2007	10:30	7/31/2007	15:06	327		
7211037	ONL SD 16M		7/30/2007	10:45	7/31/2007	16:40	446		
7211040	ONL SD 17M		7/30/2007	10:50	7/31/2007	16:44	611		
7211041	ONL SD 18M		7/30/2007	11:00	7/31/2007	16:46	826		
7211044	ONL ND 2m		7/30/2007	12:35	7/31/2007	15:15	17	J	Result less than method reporting limit.
7211045	ONL ND 6m		7/30/2007	12:45	7/31/2007	15:22	71		
7211046	ONL ND 10m		7/30/2007	12:52	7/31/2007	15:24	69		
7211047	ONL ND 12m		7/30/2007	13:00	7/31/2007	15:25	162		
7211048	ONL ND 14m		7/30/2007	13:05	7/31/2007	16:53	458		
7211049	ONL ND 16m		7/30/2007	13:10	7/31/2007	16:54	611		
7211050	ONL ND 17m		7/30/2007	13:15	7/31/2007	17:41	641		
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/28/2007	13:20	41	U	
7239011	ONL SD 2M	A	8/27/2007	09:25	8/28/2007	13:24	31	J	Result less than method reporting limit.
7239012	ONL SD 2M	B	8/27/2007	09:25	8/28/2007	13:27	31	J	Result less than method reporting limit.



**Table B-4a. Summary of ammonia analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
7239013 ONL SD 2M		C	8/27/2007	09:25	8/28/2007	13:28	20	J	Result less than method reporting limit.
7239017 ONL SD 6M			8/27/2007	10:09	8/28/2007	13:30	80		
7239021 ONL SD 10M			8/27/2007	10:40	8/28/2007	13:38	238		
7239023 ONL SD 12M			8/27/2007	10:55	8/28/2007	15:32	401		
7239025 ONL SD 14M			8/27/2007	11:15	8/28/2007	15:33	509		
7239027 ONL SD 16M			8/27/2007	11:32	8/28/2007	15:34	717		
7239030 ONL SD 17M			8/27/2007	11:52	8/28/2007	15:46	755		
7239031 ONL SD 18M			8/27/2007	12:00	8/28/2007	15:47	1147		
7267006 ONL SD Field Trip Blank			9/24/2007	07:30	9/25/2007	14:55	41	U	
7267013 ONL SD 2M		A	9/24/2007	09:17	9/25/2007	15:00	39	J	Result less than method reporting limit.
7267012 ONL SD 2M		B	9/24/2007	09:17	9/25/2007	14:59	47		
7267014 ONL SD 2M		C	9/24/2007	09:17	9/25/2007	15:02	46		
7267018 ONL SD 6M			9/24/2007	09:47	9/25/2007	15:05	38	J	Result less than method reporting limit.
7267022 ONL SD 10M			9/24/2007	10:15	9/25/2007	15:07	328		
7267024 ONL SD 12M			9/24/2007	10:22	9/25/2007	17:02	563		
7267026 ONL SD 14M			9/24/2007	10:32	9/25/2007	17:03	877		
7267028 ONL SD 16M			9/24/2007	10:38	9/25/2007	17:05	864		
7267031 ONL SD 17M			9/24/2007	10:48	9/25/2007	17:09	924		
7267032 ONL SD 18M			9/24/2007	10:50	9/25/2007	17:10	1652		
7267052 isus site 9			9/24/2007	11:05	9/26/2007	13:18	436		
7267051 isus site 4			9/24/2007	11:25	9/26/2007	12:21	358		
7267053 isus site 14			9/24/2007	11:25	9/26/2007	13:19	890		
7267054 isus site 18			9/24/2007	11:37	9/26/2007	13:20	1410		
7267055 isus site 21			9/24/2007	12:03	9/26/2007	12:26	144		
7267056 isus site 22			9/24/2007	12:17	9/26/2007	13:24	1129		
7267057 isus site 23			9/24/2007	12:45	9/26/2007	13:25	679		
7267058 isus site 26			9/24/2007	13:00	9/26/2007	13:26	450		
7267042 ONL ND 2M			9/24/2007	13:30	9/25/2007	15:25	35	J	Result less than method reporting limit.
7267043 ONL ND 6M			9/24/2007	13:35	9/25/2007	15:26	71		
7267044 ONL ND 10M			9/24/2007	13:40	9/25/2007	15:32	253		
7267045 ONL ND 12M			9/24/2007	13:46	9/25/2007	17:16	720		

**Table B-4a. Summary of ammonia analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
7267046	ONL ND 14M		9/24/2007	13:50	9/25/2007	17:17	972		
7267047	ONL ND 16M		9/24/2007	13:55	9/25/2007	17:19	1184		
7267048	ONL ND 17M		9/24/2007	14:00	9/25/2007	17:20	1226		
7267059	isus site 29		9/24/2007	14:49	9/26/2007	13:27	983		
7267060	isus site 32		9/24/2007	15:00	9/26/2007	13:36	709		
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/2/2007	14:40	41	U	
7274016	ONL SD 2M	A	10/1/2007	10:03	10/2/2007	14:45	37	J	Result less than method reporting limit.
7274017	ONL SD 2M	B	10/1/2007	10:03	10/2/2007	14:47	22	J	Result less than method reporting limit.
7274018	ONL SD 2M	C	10/1/2007	10:03	10/2/2007	15:27	24	J	Result less than method reporting limit.
7274022	ONL SD 6M		10/1/2007	10:36	10/2/2007	15:28	28	J	Result less than method reporting limit.
7274026	ONL SD 10M		10/1/2007	10:55	10/2/2007	14:59	361		
7274028	ONL SD 12M		10/1/2007	11:10	10/2/2007	16:29	714		
7274030	ONL SD 14M		10/1/2007	11:27	10/2/2007	16:30	1033		
7274032	ONL SD 16M		10/1/2007	11:43	10/2/2007	16:31	1174		
7274035	ONL SD 17M		10/1/2007	11:57	10/2/2007	16:43	1252		
7274036	ONL SD 18M		10/1/2007	12:00	10/2/2007	16:44	1209		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/17/2007	16:33	41	U	
7288011	ONL SD 2M	A	10/15/2007	10:16	10/17/2007	16:37	102		
7288012	ONL SD 2M	B	10/15/2007	10:16	10/17/2007	16:40	101		
7288013	ONL SD 2M	C	10/15/2007	10:16	10/17/2007	16:41	101		
7288017	ONL SD 6M		10/15/2007	10:48	10/17/2007	16:43	106		
7288021	ONL SD 10M		10/15/2007	11:12	10/17/2007	16:51	100		
7288023	ONL SD 12M		10/15/2007	11:21	10/17/2007	18:06	684		
7288025	ONL SD 14M		10/15/2007	11:32	10/17/2007	18:07	1104		
7288027	ONL SD 16M		10/15/2007	11:44	10/17/2007	18:08	1327		
7288030	ONL SD 17M		10/15/2007	11:50	10/17/2007	18:20	1403		
7288031	ONL SD 18M		10/15/2007	11:55	10/17/2007	18:21	1566		
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	10/30/2007	12:24	41	U	
7302010	ONL SD 2M	A	10/29/2007	09:35	10/30/2007	12:29	242		
7302011	ONL SD 2M	B	10/29/2007	09:35	10/30/2007	12:31	238		
7302012	ONL SD 2M	C	10/29/2007	09:35	10/30/2007	12:32	245		

**Table B-4a. Summary of ammonia analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
7302016	ONL SD 6M		10/29/2007	10:02	10/30/2007	14:01	889		
7302020	ONL SD 10M		10/29/2007	10:30	10/30/2007	12:43	241		
7302022	ONL SD 12M		10/29/2007	10:38	10/30/2007	12:44	256		
7302024	ONL SD 14M		10/29/2007	10:48	10/30/2007	14:07	891		
7302026	ONL SD 16M		10/29/2007	10:52	10/30/2007	14:08	1686		
7302029	ONL SD 17M		10/29/2007	11:14	10/30/2007	14:20	1594		
7302030	ONL SD 18M		10/29/2007	11:25	10/30/2007	14:21	1634		
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/6/2007	14:37	24	J	Result less than method reporting limit.
7309007	ONL SD 2M	A	11/5/2007	10:00	11/6/2007	14:42	342		
7309008	ONL SD 2M	B	11/5/2007	10:00	11/6/2007	14:44	361		
7309009	ONL SD 2M	C	11/5/2007	10:00	11/6/2007	14:46	340		
7309013	ONL SD 6M		11/5/2007	10:16	11/6/2007	14:48	353		
7309017	ONL SD 10M		11/5/2007	10:35	11/6/2007	14:56	335		
7309019	ONL SD 12M		11/5/2007	10:44	11/6/2007	14:57	333		
7309021	ONL SD 14M		11/5/2007	10:51	11/6/2007	14:58	336		
7309023	ONL SD 16M		11/5/2007	11:00	11/6/2007	16:32	1378		
7309026	ONL SD 17M		11/5/2007	11:05	11/6/2007	16:37	1698		
7309027	ONL SD 18M		11/5/2007	11:16	11/6/2007	16:38	1853		
7309037	ISUS 4		11/5/2007	12:25	11/6/2007	15:07	324		
7309038	ISUS 9		11/5/2007	12:45	11/6/2007	15:08	310		
7309039	ISUS 14		11/5/2007	13:10	11/6/2007	15:14	322		
7309040	ISUS 18		11/5/2007	13:20	11/6/2007	16:42	1764		
7309041	ISUS 21		11/5/2007	13:40	11/6/2007	15:16	328		
7309042	ISUS 22		11/5/2007	13:55	11/6/2007	16:45	662		
7309043	ISUS 23		11/5/2007	14:10	11/6/2007	15:18	322		
7309044	ISUS 26		11/5/2007	14:30	11/7/2007	10:19	799		
7309045	ISUS 24		11/5/2007	14:50	11/7/2007	10:20	876		
7309046	ISUS 32		11/5/2007	15:15	11/6/2007	15:23	318		
7316009	ONL ND Field Trip Blank		11/12/2007	07:30	11/13/2007	13:42	17	J	Result less than method reporting limit.
7316001	ONL SD Field Trip Blank		11/12/2007	07:30	11/13/2007	12:55	18	J	Result less than method reporting limit.
7316010	ONL ND 2M		11/12/2007	09:08	11/13/2007	13:51	428		
7316011	ONL ND 10M		11/12/2007	09:16	11/13/2007	13:52	441		

**Table B-4a. Summary of ammonia analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
7316012	ONL ND 17M		11/12/2007	09:25	11/13/2007	13:53	451		
7316004	ONL SD 2M	A	11/12/2007	10:00	11/13/2007	13:44	458		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/13/2007	13:45	462		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/13/2007	13:46	447		
7316007	ONL SD 10M		11/12/2007	10:25	11/13/2007	13:47	451		
7316008	ONL SD 18M		11/12/2007	10:35	11/13/2007	13:49	454		
7323018	ONL SD Field Trip Blank		11/19/2007	07:15	11/20/2007	16:24	13	J	Result less than method reporting limit.
7323021	ONL SD 2M	A	11/19/2007	09:00	11/20/2007	17:07	426		
7323022	ONL SD 2M	B	11/19/2007	09:00	11/20/2007	17:08	412		
7323023	ONL SD 2M	C	11/19/2007	09:00	11/20/2007	17:09	421		
7323024	ONL SD 10M		11/19/2007	09:25	11/20/2007	17:10	418		
7323025	ONL SD 18M		11/19/2007	09:55	11/20/2007	17:13	412		

**Table B-4b. Summary of ammonia analytical results for October 23, 2006 sampling event**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	T-NH <sub>3</sub> (µg/L)	Data Validation Qualifier	Data Validation Comment
6296001	ONL SD Field Trip Blank		10/23/2006	7:15	10/25/2006	13:57	18	J	Sample analyzed between 49-96 hours after sample collection.
6296002	ONL SD 0M	A	10/23/2006	9:30	10/25/2006	15:17	498	J	Sample analyzed between 49-96 hours after sample collection.
6296003	ONL SD 0M	B	10/23/2006	9:30	10/25/2006	15:18	481	J	Sample analyzed between 49-96 hours after sample collection.
6296004	ONL SD 0M	C	10/23/2006	9:30	10/25/2006	15:19	482	J	Sample analyzed between 49-96 hours after sample collection.
6296006	ONL SD 2M		10/23/2006	9:38	10/25/2006	15:20	472	J	Sample analyzed between 49-96 hours after sample collection.
6296011	ONL SD 4M		10/23/2006	9:56	10/25/2006	15:23	499	J	Sample analyzed between 49-96 hours after sample collection.
6296013	ONL SD 6M		10/23/2006	10:03	10/25/2006	15:24	500	J	Sample analyzed between 49-96 hours after sample collection.
6296015	ONL SD 8M		10/23/2006	10:12	10/25/2006	15:32	493	J	Sample analyzed between 49-96 hours after sample collection.
6296017	ONL SD 10M		10/23/2006	10:20	10/25/2006	15:33	495	J	Sample analyzed between 49-96 hours after sample collection.
6296019	ONL SD 12M		10/23/2006	10:28	10/25/2006	15:34	491	J	Sample analyzed between 49-96 hours after sample collection.
6296021	ONL SD 14M		10/23/2006	10:44	10/25/2006	15:37	536	J	Sample analyzed between 49-96 hours after sample collection.
6296023	ONL SD 16M	A	10/23/2006	10:54	10/25/2006	15:38	544	J	Sample analyzed between 49-96 hours after sample collection.
6296024	ONL SD 16M	B	10/23/2006	10:54	10/25/2006	15:39	526	J	Sample analyzed between 49-96 hours after sample collection.
6296025	ONL SD 16M	C	10/23/2006	10:54	10/25/2006	15:40	530	J	Sample analyzed between 49-96 hours after sample collection.
6296026	ONL SD 17M		10/23/2006	11:03	10/25/2006	15:41	583	J	Sample analyzed between 49-96 hours after sample collection.
6296027	ONL SD 18M		10/23/2006	11:14	10/25/2006	15:51	752	J	Sample analyzed between 49-96 hours after sample collection.
6296028	ONL SD 19M		10/23/2006	11:22	10/25/2006	15:52	895	J	Sample analyzed between 49-96 hours after sample collection.

**Table B-5. Summary of dissolved organic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	DOC (mg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD Field Trip Blank		4/23/2007	7:20	5/3/2007	17:12	0.9	U	
7113006	ONL ND 2m		4/23/2007	9:30	5/3/2007	16:47	2.7		
7113007	ONL ND 10m		4/23/2007	9:37	5/3/2007	16:57	2.6		
7113008	ONL ND 17m		4/23/2007	9:45	5/3/2007	17:06	2.6		
7113015	ONL SD 2M	A	4/23/2007	11:42	5/3/2007	17:50	2.8		
7113016	ONL SD 2M	B	4/23/2007	11:44	5/3/2007	17:59	2.8		
7113017	ONL SD 2M	C	4/23/2007	11:48	5/3/2007	18:08	2.7		
7113025	ONL SD 10M		4/23/2007	12:26	5/3/2007	19:08	2.6		
7113035	ONL SD 18M		4/23/2007	13:05	5/3/2007	20:04	2.7		
7141036	ONL ND 2M		5/21/2007	10:05	5/23/2007	19:39	2.5		
7141037	ONL ND 10M		5/21/2007	10:20	5/23/2007	19:49	2.4		
7141038	ONL ND 17M		5/21/2007	10:30	5/23/2007	19:58	2.4		
7141008	ONL SD Field Trip Blank		5/21/2007	11:50	5/23/2007	16:06	0.9	U	
7141014	ONL SD 2M	A	5/21/2007	12:10	5/23/2007	16:43	2.8		
7141015	ONL SD 2M	B	5/21/2007	12:14	5/23/2007	16:52	2.9		
7141016	ONL SD 2M	C	5/21/2007	12:17	5/23/2007	17:02	2.9		
7141024	ONL SD 10M		5/21/2007	13:00	5/23/2007	18:02	2.6		
7141034	ONL SD 18M		5/21/2007	13:45	5/23/2007	19:30	2.4		
7197011	ONL SD Field Trip Blank		7/16/2007	07:30	7/19/2007	19:08	0.9	U	
7197017	ONL SD 2M	A	7/16/2007	09:41	7/19/2007	19:54	3.3		
7197018	ONL SD 2M	B	7/16/2007	09:41	7/19/2007	20:27	3.2		
7197019	ONL SD 2M	C	7/16/2007	09:41	7/19/2007	20:36	3.2		
7197023	ONL SD 6M		7/16/2007	10:07	7/19/2007	20:55	3.2		
7197027	ONL SD 10M		7/16/2007	10:43	7/19/2007	21:13	2.5		
7197029	ONL SD 12M		7/16/2007	11:11	7/19/2007	21:23	2.4		
7197033	ONL SD 16M		7/16/2007	11:45	7/19/2007	21:32	2.4		
7197036	ONL SD 17M		7/16/2007	11:55	7/19/2007	22:23	2.5		
7197037	ONL SD 18M		7/16/2007	12:05	7/19/2007	22:32	2.6		
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	8/8/2007	17:35	0.9	U	
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	8/8/2007	14:15	0.9	U	
7211021	ONL SD 2M	A	7/30/2007	09:15	8/8/2007	14:52	3.4		
7211022	ONL SD 2M	B	7/30/2007	09:15	8/8/2007	15:01	3.4		
7211023	ONL SD 2M	C	7/30/2007	09:15	8/8/2007	15:11	3.4		
7211027	ONL SD 6M		7/30/2007	09:40	8/8/2007	15:29	3.0		

**Table B-5. Summary of dissolved organic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	DOC (mg/L)	Data Validation Qualifier	Data Validation Comment
7211031	ONL SD 10M		7/30/2007	10:05	8/8/2007	16:13	1.4		
7211033	ONL SD 12M		7/30/2007	10:11	8/8/2007	16:23	1.4		
7211035	ONL SD 14M		7/30/2007	10:30	8/8/2007	16:32	1.5		
7211037	ONL SD 16M		7/30/2007	10:45	8/8/2007	16:41	1.5		
7211040	ONL SD 17M		7/30/2007	10:50	8/8/2007	17:19	1.5		
7211041	ONL SD 18M		7/30/2007	11:00	8/8/2007	17:28	1.5		
7211044	ONL ND 2m		7/30/2007	12:35	8/8/2007	17:44	1.9		
7211045	ONL ND 6m		7/30/2007	12:45	8/8/2007	18:18	1.8		
7211046	ONL ND 10m		7/30/2007	12:52	8/8/2007	18:28	1.5		
7211047	ONL ND 12m		7/30/2007	13:00	8/8/2007	18:37	1.5		
7211048	ONL ND 14m		7/30/2007	13:05	8/8/2007	18:46	1.5		
7211049	ONL ND 16m		7/30/2007	13:10	8/8/2007	18:56	1.6		
7211050	ONL ND 17m		7/30/2007	13:15	8/8/2007	19:05	1.5		
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/29/2007	17:21	0.9	U	
7239011	ONL SD 2M	A	8/27/2007	09:25	8/29/2007	17:59	3.3		
7239012	ONL SD 2M	B	8/27/2007	09:25	8/29/2007	18:08	3.3		
7239013	ONL SD 2M	C	8/27/2007	09:25	8/29/2007	18:17	3.4		
7239017	ONL SD 6M		8/27/2007	10:09	8/29/2007	18:36	3.2		
7239021	ONL SD 10M		8/27/2007	10:40	8/29/2007	19:17	2.6		
7239023	ONL SD 12M		8/27/2007	10:55	8/29/2007	19:27	2.5		
7239025	ONL SD 14M		8/27/2007	11:15	8/29/2007	19:36	2.5		
7239027	ONL SD 16M		8/27/2007	11:32	8/29/2007	19:45	2.6		
7239030	ONL SD 17M		8/27/2007	11:52	8/29/2007	20:43	2.6		
7239031	ONL SD 18M		8/27/2007	12:00	8/29/2007	22:10	3		
7267006	ONL SD Field Trip Blank		9/24/2007	07:30	9/27/2007	19:35	0.3	J	Result less than method reporting limit.
7267012	ONL SD 2M	A	9/24/2007	09:17	9/27/2007	20:45	3.4		
7267013	ONL SD 2M	B	9/24/2007	09:17	9/27/2007	20:54	3.3		
7267014	ONL SD 2M	C	9/24/2007	09:17	9/27/2007	21:04	3.4		
7267018	ONL SD 6M		9/24/2007	09:47	9/27/2007	21:22	3.4		
7267022	ONL SD 10M		9/24/2007	10:15	9/27/2007	21:41	2.9		
7267024	ONL SD 12M		9/24/2007	10:22	9/27/2007	21:50	2.7		
7267026	ONL SD 14M		9/24/2007	10:32	9/27/2007	22:00	2.8		
7267028	ONL SD 16M		9/24/2007	10:38	9/27/2007	22:32	2.7		

**Table B-5. Summary of dissolved organic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	DOC (mg/L)	Data Validation Qualifier	Data Validation Comment
7267031	ONL SD 17M		9/24/2007	10:48	9/27/2007	23:00	2.8		
7267032	ONL SD 18M		9/24/2007	10:50	9/27/2007	23:19	2.9		
7267042	ONL ND 2M		9/24/2007	13:30	10/11/2007	18:24	3.3		
7267043	ONL ND 6M		9/24/2007	13:35	10/11/2007	18:33	3.2		
7267044	ONL ND 10M		9/24/2007	13:40	10/11/2007	18:43	2.9		
7267045	ONL ND 12M		9/24/2007	13:46	10/11/2007	18:52	2.5		
7267046	ONL ND 14M		9/24/2007	13:50	10/11/2007	19:01	2.6		
7267047	ONL ND 16M		9/24/2007	13:55	10/11/2007	19:11	2.7		
7267048	ONL ND 17M		9/24/2007	14:00	10/11/2007	19:20	2.7		
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/16/2007	17:42	0.9	U	
7274016	ONL SD 2M	A	10/1/2007	10:03	10/16/2007	18:19	3.5		
7274017	ONL SD 2M	B	10/1/2007	10:03	10/16/2007	18:28	3.5		
7274018	ONL SD 2M	C	10/1/2007	10:03	10/16/2007	18:37	3.6		
7274022	ONL SD 6M		10/1/2007	10:36	10/16/2007	18:56	3.5		
7274026	ONL SD 10M		10/1/2007	10:55	10/16/2007	19:38	2.8		
7274028	ONL SD 12M		10/1/2007	11:10	10/16/2007	19:47	2.6		
7274030	ONL SD 14M		10/1/2007	11:27	10/16/2007	19:56	2.7		
7274032	ONL SD 16M		10/1/2007	11:43	10/16/2007	20:06	2.7		
7274035	ONL SD 17M		10/1/2007	11:57	10/16/2007	20:43	2.7		
7274036	ONL SD 18M		10/1/2007	12:00	10/16/2007	20:53	2.8		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/30/2007	13:46	0.9	U	
7288011	ONL SD 2M	A	10/15/2007	10:16	10/30/2007	14:23	3.2		
7288012	ONL SD 2M	B	10/15/2007	10:16	10/30/2007	14:33	3.2		
7288013	ONL SD 2M	C	10/15/2007	10:16	10/30/2007	14:42	3.2		
7288017	ONL SD 6M		10/15/2007	10:48	10/30/2007	15:01	3.1		
7288021	ONL SD 10M		10/15/2007	11:12	10/30/2007	15:43	3.1		
7288023	ONL SD 12M		10/15/2007	11:21	10/30/2007	15:52	2.6		
7288025	ONL SD 14M		10/15/2007	11:32	10/30/2007	16:01	2.6		
7288027	ONL SD 16M		10/15/2007	11:44	10/30/2007	16:11	2.6		
7288030	ONL SD 17M		10/15/2007	11:50	10/30/2007	16:48	2.7		
7288031	ONL SD 18M		10/15/2007	11:55	10/30/2007	16:57	2.7		
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	11/8/2007	21:10	0.9	U	
7302010	ONL SD 2M	A	10/29/2007	09:35	11/8/2007	22:10	3.1		
7302011	ONL SD 2M	B	10/29/2007	09:35	11/8/2007	22:19	3.1		



**Table B-5. Summary of dissolved organic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	DOC (mg/L)	Data Validation Qualifier	Data Validation Comment
7302012	ONL SD 2M	C	10/29/2007	09:35	11/8/2007	22:29	3.2		
7302016	ONL SD 6M		10/29/2007	10:02	11/8/2007	22:47	3.2		
7302020	ONL SD 10M		10/29/2007	10:30	11/8/2007	23:06	3.1		
7302022	ONL SD 12M		10/29/2007	10:38	11/8/2007	23:15	3.2		
7302024	ONL SD 14M		10/29/2007	10:48	11/8/2007	23:34	2.9		
7302026	ONL SD 16M		10/29/2007	10:52	11/9/2007	00:06	2.8		
7302029	ONL SD 17M		10/29/2007	11:14	11/9/2007	00:34	2.8		
7302030	ONL SD 18M		10/29/2007	11:25	11/9/2007	00:43	2.9		
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/20/2007	17:54	0.9	U	
7309009	ONL SD 2M	A	11/5/2007	10:00	11/20/2007	19:13	3.0		
7309007	ONL SD 2M	B	11/5/2007	10:00	11/20/2007	18:54	3.1		
7309008	ONL SD 2M	C	11/5/2007	10:00	11/20/2007	19:03	3.1		
7309013	ONL SD 6M		11/5/2007	10:16	11/20/2007	19:41	3.2		
7309017	ONL SD 10M		11/5/2007	10:35	11/20/2007	19:59	3.2		
7309019	ONL SD 12M		11/5/2007	10:44	11/20/2007	20:09	3.2		
7309021	ONL SD 14M		11/5/2007	10:51	11/20/2007	20:18	3.2		
7309023	ONL SD 16M		11/5/2007	11:00	11/20/2007	20:50	3.0		
7309026	ONL SD 17M		11/5/2007	11:05	11/20/2007	21:18	2.8		
7309027	ONL SD 18M		11/5/2007	11:16	11/20/2007	21:27	2.9		
7316001	ONL SD Field Trip Blank		11/12/2007	07:30	11/26/2007	15:54	0.9	U	
7316009	ONL ND Field Trip Blank		11/12/2007	07:30	11/20/2007	23:29	0.9	U	
7316010	ONL ND 2M		11/12/2007	09:08	11/20/2007	23:38	3.0		
7316011	ONL ND 10M		11/12/2007	09:16	11/20/2007	23:48	2.9		
7316012	ONL ND 17M		11/12/2007	09:25	11/20/2007	23:57	2.9		
7316004	ONL SD 2M	A	11/12/2007	10:00	11/26/2007	16:03	3.1		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/26/2007	16:13	3.2		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/26/2007	16:22	3.0		
7316007	ONL SD 10M		11/12/2007	10:25	11/26/2007	16:31	3.1		
7316008	ONL SD 18M		11/12/2007	10:35	11/26/2007	16:41	3.1		
7323018	ONL SD Field Trip Blank		11/19/2007	07:15	11/26/2007	17:51	0.9	U	
7323021	ONL SD 2M	A	11/19/2007	09:00	11/26/2007	18:00	3.0		
7323022	ONL SD 2M	B	11/19/2007	09:00	11/26/2007	18:09	3.0		
7323023	ONL SD 2M	C	11/19/2007	09:00	11/26/2007	18:28	3.1		
7323024	ONL SD 10M		11/19/2007	09:25	11/26/2007	18:37	3.1		

**Table B-5. Summary of dissolved organic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	DOC (mg/L)	Data Validation Qualifier	Data Validation Comment
7323025	ONL SD 18M		11/19/2007	09:55	11/26/2007	18:47	3.2		

**Table B-6. Summary of total inorganic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	TIC (mg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD	Field Trip Blank	4/23/2007	7:20	4/23/2007	17:04	0.7	J	Result less than method reporting limit.
7113006	ONL ND	2m	4/23/2007	9:30	4/23/2007	18:37	47.4		
7113007	ONL ND	10m	4/23/2007	9:37	4/23/2007	18:42	49.4		
7113008	ONL ND	17m	4/23/2007	9:45	4/23/2007	18:46	53.1		
7113015	ONL SD	2M	A	4/23/2007	11:42	4/23/2007	17:25	46.4	
7113016	ONL SD	2M	B	4/23/2007	11:44	4/23/2007	17:30	46.2	
7113017	ONL SD	2M	C	4/23/2007	11:48	4/23/2007	17:34	46.3	
7113025	ONL SD	10M		4/23/2007	12:26	4/23/2007	18:03	48.8	
7113035	ONL SD	18M		4/23/2007	13:05	4/23/2007	18:29	50.1	
7141036	ONL ND	2M		5/21/2007	10:05	5/21/2007	18:41	47.0	
7141037	ONL ND	10M		5/21/2007	10:20	5/21/2007	18:45	48.0	
7141038	ONL ND	17M		5/21/2007	10:30	5/21/2007	19:02	49.4	
7141008	ONL SD	Field Trip Blank	5/21/2007	11:50	5/21/2007	17:14	1.8	U	
7141014	ONL SD	2M	A	5/21/2007	12:10	5/21/2007	17:32	45.4	
7141015	ONL SD	2M	B	5/21/2007	12:14	5/21/2007	17:36	44.8	
7141016	ONL SD	2M	C	5/21/2007	12:17	5/21/2007	17:40	44.8	
7141024	ONL SD	10M		5/21/2007	13:00	5/21/2007	18:10	49.0	
7141034	ONL SD	18M		5/21/2007	13:45	5/21/2007	18:37	49.7	
7197011	ONL SD	Field Trip Blank	7/16/2007	07:30	7/16/2007	17:22	1.0	J	Result less than method reporting limit.
7197017	ONL SD	2M	A	7/16/2007	09:41	7/16/2007	17:39	38.2	
7197018	ONL SD	2M	B	7/16/2007	09:41	7/16/2007	17:43	38.6	
7197019	ONL SD	2M	C	7/16/2007	09:41	7/16/2007	17:47	38.9	
7197023	ONL SD	6M		7/16/2007	10:07	7/16/2007	17:56	41.4	
7197027	ONL SD	10M		7/16/2007	10:43	7/16/2007	18:17	53.8	
7197029	ONL SD	12M		7/16/2007	11:11	7/16/2007	18:21	53.7	
7197031	ONL SD	14M		7/16/2007	11:29	7/16/2007	18:26	55.5	
7197033	ONL SD	16M		7/16/2007	11:45	7/16/2007	18:30	56.4	
7197036	ONL SD	17M		7/16/2007	11:55	7/16/2007	18:43	57.2	
7197037	ONL SD	18M		7/16/2007	12:05	7/16/2007	18:48	59.3	
7211043	ONL ND	Field Trip Blank	7/30/2007	06:30	7/30/2007	19:16	1.4	J	Result less than method reporting limit.

**Table B-6. Summary of total inorganic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	TIC (mg/L)	Data Validation Qualifier	Data Validation Comment
7211015	ONL SD	Field Trip Blank	7/30/2007	06:45	7/30/2007	17:46	1.0	J	Result less than method reporting limit.
7211021	ONL SD	2M	7/30/2007	09:15	7/30/2007	18:03	34.7		
7211022	ONL SD	2M	7/30/2007	09:15	7/30/2007	18:07	34.3		
7211023	ONL SD	2M	7/30/2007	09:15	7/30/2007	18:12	34.3		
7211027	ONL SD	6M	7/30/2007	09:40	7/30/2007	18:20	40.6		
7211031	ONL SD	10M	7/30/2007	10:05	7/30/2007	18:41	53.3		
7211033	ONL SD	12M	7/30/2007	10:11	7/30/2007	18:45	55.0		
7211035	ONL SD	14M	7/30/2007	10:30	7/30/2007	18:50	55.4		
7211037	ONL SD	16M	7/30/2007	10:45	7/30/2007	18:54	56.7		
7211040	ONL SD	17M	7/30/2007	10:50	7/30/2007	19:08	56.6		
7211041	ONL SD	18M	7/30/2007	11:00	7/30/2007	19:12	57.4		
7211044	ONL ND	2m	7/30/2007	12:35	7/30/2007	19:20	34.8		
7211045	ONL ND	6m	7/30/2007	12:45	7/30/2007	19:36	39.9		
7211046	ONL ND	10m	7/30/2007	12:52	7/30/2007	19:41	53.4		
7211047	ONL ND	12m	7/30/2007	13:00	7/30/2007	19:45	55.2		
7211048	ONL ND	14m	7/30/2007	13:05	7/30/2007	19:50	55.5		
7211049	ONL ND	16m	7/30/2007	13:10	7/30/2007	19:54	56.9		
7211050	ONL ND	17m	7/30/2007	13:15	7/30/2007	19:58	56.8		
7239005	ONL SD	Field Trip Blank	8/27/2007	07:15	8/27/2007	15:36	1.0	J	Result less than method reporting limit.
7239011	ONL SD	2M	8/27/2007	09:25	8/27/2007	15:54	34.5		
7239012	ONL SD	2M	8/27/2007	09:25	8/27/2007	15:58	34.3		
7239013	ONL SD	2M	8/27/2007	09:25	8/27/2007	16:03	35.6		
7239017	ONL SD	6M	8/27/2007	10:09	8/27/2007	16:11	37.5		
7239021	ONL SD	10M	8/27/2007	10:40	8/27/2007	16:32	48.4		
7239023	ONL SD	12M	8/27/2007	10:55	8/27/2007	16:37	52.2		
7239025	ONL SD	14M	8/27/2007	11:15	8/27/2007	16:41	53.9		
7239027	ONL SD	16M	8/27/2007	11:32	8/27/2007	16:46	55.6		
7239030	ONL SD	17M	8/27/2007	11:52	8/27/2007	16:59	55.7		
7239031	ONL SD	18M	8/27/2007	12:00	8/27/2007	17:04	57.1		
7267006	ONL SD	Field Trip Blank	9/24/2007	07:30	9/24/2007	17:16	0.9	J	Result less than method reporting limit.
7267013	ONL SD	2M	9/24/2007	09:17	9/24/2007	17:38	34.5		

**Table B-6. Summary of total inorganic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	TIC (mg/L)	Data Validation Qualifier	Data Validation Comment
7267012	ONL SD 2M	B	9/24/2007	09:17	9/24/2007	17:33	35.1		
7267014	ONL SD 2M	C	9/24/2007	09:17	9/24/2007	17:42	33.7		
7267018	ONL SD 6M		9/24/2007	09:47	9/24/2007	17:51	33.9		
7267022	ONL SD 10M		9/24/2007	10:15	9/24/2007	18:12	45.7		
7267024	ONL SD 12M		9/24/2007	10:22	9/24/2007	18:16	52.8		
7267026	ONL SD 14M		9/24/2007	10:32	9/24/2007	18:21	55.0		
7267028	ONL SD 16M		9/24/2007	10:38	9/24/2007	18:25	54.6		
7267031	ONL SD 17M		9/24/2007	10:48	9/24/2007	18:39	54.2		
7267032	ONL SD 18M		9/24/2007	10:50	9/24/2007	18:43	58.8		
7267042	ONL ND 2M		9/24/2007	13:30	9/24/2007	18:47	33.9		
7267043	ONL ND 6M		9/24/2007	13:35	9/24/2007	18:52	35.3		
7267044	ONL ND 10M		9/24/2007	13:40	9/24/2007	19:08	42.7		
7267045	ONL ND 12M		9/24/2007	13:46	9/24/2007	19:13	53.5		
7267046	ONL ND 14M		9/24/2007	13:50	9/24/2007	19:17	55.5		
7267047	ONL ND 16M		9/24/2007	13:55	9/24/2007	19:22	55.8		
7267048	ONL ND 17M		9/24/2007	14:00	9/24/2007	19:26	55.8		
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/1/2007	16:27	0.5	J	Result less than method reporting limit.
7274016	ONL SD 2M	A	10/1/2007	10:03	10/1/2007	16:45	33.3		
7274017	ONL SD 2M	B	10/1/2007	10:03	10/1/2007	16:49	33.6		
7274018	ONL SD 2M	C	10/1/2007	10:03	10/1/2007	16:54	33.2		
7274022	ONL SD 6M		10/1/2007	10:36	10/1/2007	17:03	33.9		
7274026	ONL SD 10M		10/1/2007	10:55	10/1/2007	17:24	46.4		
7274028	ONL SD 12M		10/1/2007	11:10	10/1/2007	17:28	55.5		
7274030	ONL SD 14M		10/1/2007	11:27	10/1/2007	17:33	54.9		
7274032	ONL SD 16M		10/1/2007	11:43	10/1/2007	17:37	55.6		
7274035	ONL SD 17M		10/1/2007	11:57	10/1/2007	17:51	58.4		
7274036	ONL SD 18M		10/1/2007	12:00	10/1/2007	17:56	60.0		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15					No sample available for analysis.
7288011	ONL SD 2M	A	10/15/2007	10:16	10/15/2007	16:32	35.9		
7288012	ONL SD 2M	B	10/15/2007	10:16	10/15/2007	16:36	36.2		
7288013	ONL SD 2M	C	10/15/2007	10:16	10/15/2007	16:40	34.6		
7288017	ONL SD 6M		10/15/2007	10:48	10/15/2007	16:49	36.7		
7288021	ONL SD 10M		10/15/2007	11:12	10/15/2007	16:58	37.1		

**Table B-6. Summary of total inorganic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	TIC (mg/L)	Data Validation Qualifier	Data Validation Comment
7288023	ONL SD 12M		10/15/2007	11:21	10/15/2007	17:14	53.0		
7288025	ONL SD 14M		10/15/2007	11:32	10/15/2007	17:19	56.4		
7288027	ONL SD 16M		10/15/2007	11:44	10/15/2007	17:23	58.7		
7288030	ONL SD 17M		10/15/2007	11:50	10/15/2007	17:37	60.4		
7288031	ONL SD 18M		10/15/2007	11:55	10/15/2007	17:42	60.7		
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	10/29/2007	18:26	0.8	J	Result less than method reporting limit.
7302010	ONL SD 2M	A	10/29/2007	09:35	10/29/2007	18:44	39.0		
7302011	ONL SD 2M	B	10/29/2007	09:35	10/29/2007	18:48	39.7		
7302012	ONL SD 2M	C	10/29/2007	09:35	10/29/2007	18:52	39.8		
7302016	ONL SD 6M		10/29/2007	10:02	10/29/2007	19:02	39.7		
7302020	ONL SD 10M		10/29/2007	10:30	10/29/2007	19:23	40.4		
7302022	ONL SD 12M		10/29/2007	10:38	10/29/2007	19:27	39.7		
7302024	ONL SD 14M		10/29/2007	10:48	10/29/2007	19:32	49.5		
7302026	ONL SD 16M		10/29/2007	10:52	10/29/2007	19:37	59.9		
7302029	ONL SD 17M		10/29/2007	11:14	10/29/2007	19:51	61.0		
7302030	ONL SD 18M		10/29/2007	11:25	10/29/2007	19:55	60.8		
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/5/2007	15:51	0.8	J	Result less than method reporting limit.
7309007	ONL SD 2M	A	11/5/2007	10:00	11/5/2007	16:09	39.9		
7309008	ONL SD 2M	B	11/5/2007	10:00	11/5/2007	16:14	41.5		
7309009	ONL SD 2M	C	11/5/2007	10:00	11/5/2007	16:18	40.3		
7309013	ONL SD 6M		11/5/2007	10:16	11/5/2007	16:27	40.1		
7309017	ONL SD 10M		11/5/2007	10:35	11/5/2007	16:48	39.1		
7309019	ONL SD 12M		11/5/2007	10:44	11/5/2007	16:53	40.5		
7309021	ONL SD 14M		11/5/2007	10:51	11/5/2007	16:57	40.9		
7309023	ONL SD 16M		11/5/2007	11:00	11/5/2007	17:02	55.4		
7309026	ONL SD 17M		11/5/2007	11:05	11/5/2007	17:16	58.3		
7309027	ONL SD 18M		11/5/2007	11:16	11/5/2007	17:20	58.1		
7316001	ONL SD Field Trip Blank		11/12/2007	07:30	11/13/2007	13:07	0.7	J	Result less than method reporting limit.
7316009	ONL ND Field Trip Blank		11/12/2007	07:30	11/13/2007	13:32	1.5	J	Result less than method reporting limit.
7316010	ONL ND 2M		11/12/2007	09:08	11/13/2007	13:36	40.7		

**Table B-6. Summary of total inorganic carbon analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	TIC (mg/L)	Data Validation Qualifier	Data Validation Comment
7316011	ONL ND 10M		11/12/2007	09:16	11/13/2007	13:41	41.0		
7316012	ONL ND 17M		11/12/2007	09:25	11/13/2007	13:45	40.5		
7316004	ONL SD 2M	A	11/12/2007	10:00	11/13/2007	13:11	41.0		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/13/2007	13:16	40.4		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/13/2007	13:20	42.1		
7316007	ONL SD 10M		11/12/2007	10:25	11/13/2007	13:24	41.5		
7316008	ONL SD 18M		11/12/2007	10:35	11/13/2007	13:28	42.0		
7323018	ONL SD Field Trip Blank		11/19/2007	07:15	11/19/2007	15:57	0.8	J	Result less than method reporting limit.
7323021	ONL SD 2M	A	11/19/2007	09:00	11/19/2007	16:01	41.3		
7323022	ONL SD 2M	B	11/19/2007	09:00	11/19/2007	16:06	41.4		
7323023	ONL SD 2M	C	11/19/2007	09:00	11/19/2007	16:10	41.1		
7323024	ONL SD 10M		11/19/2007	09:25	11/19/2007	16:14	42.8		
7323025	ONL SD 18M		11/19/2007	09:55	11/19/2007	16:19	42.1		

**Table B-7. Summary of chloride analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chloride (mg/L)	Data Validation Qualifier	Data Validation Comment
7113009	ONL SD	Field Trip Blank	4/23/2007	7:20	4/24/2007	09:12:00	10		
7113006	ONL ND	2m	4/23/2007	9:30	4/24/2007	10:45:00	310		
7113007	ONL ND	10m	4/23/2007	9:37	4/24/2007	10:48:00	400		
7113008	ONL ND	17m	4/23/2007	9:45	4/24/2007	10:51:00	500		
7113015	ONL SD	2M	4/23/2007	11:42	4/24/2007	09:33:00	340		
7113016	ONL SD	2M	4/23/2007	11:44	4/24/2007	09:36:00	350		
7113017	ONL SD	2M	4/23/2007	11:48	4/24/2007	09:39:00	350		
7113025	ONL SD	10M	4/23/2007	12:26	4/24/2007	10:06:00	400		
7113035	ONL SD	18M	4/23/2007	13:05	4/24/2007	10:39:00	430		
7141036	ONL ND	2M	5/21/2007	10:05	5/22/2007	12:05:00	400		
7141037	ONL ND	10M	5/21/2007	10:20	5/22/2007	12:08:00	390		
7141038	ONL ND	17M	5/21/2007	10:30	5/22/2007	12:10:00	400		
7141008	ONL SD	Field Trip Blank	5/21/2007	11:50	5/22/2007	10:40:00	10		
7141014	ONL SD	2M	5/21/2007	12:10	5/22/2007	10:57:00	400		
7141015	ONL SD	2M	5/21/2007	12:14	5/22/2007	11:00:00	400		
7141016	ONL SD	2M	5/21/2007	12:17	5/22/2007	11:02:00	400		
7141024	ONL SD	10M	5/21/2007	13:00	5/22/2007	11:27:00	390		
7141034	ONL SD	18M	5/21/2007	13:45	5/22/2007	11:57:00	400		
7197011	ONL SD	Field Trip Blank	7/16/2007	07:30	7/18/2007	14:49	10		
7197017	ONL SD	2M	7/16/2007	09:41	7/18/2007	14:58	450		
7197018	ONL SD	2M	7/16/2007	09:41	7/18/2007	14:59	450		
7197019	ONL SD	2M	7/16/2007	09:41	7/18/2007	15:00	450		
7197023	ONL SD	6M	7/16/2007	10:07	7/18/2007	15:06	450		
7197027	ONL SD	10M	7/16/2007	10:43	7/18/2007	15:11	430		
7197029	ONL SD	12M	7/16/2007	11:11	7/18/2007	15:14	410		
7197033	ONL SD	16M	7/16/2007	11:45	7/18/2007	15:18	400		
7197034	ONL SD	16M	7/16/2007	11:45	7/18/2007	15:20	400		
7197035	ONL SD	16M	7/16/2007	11:45	7/18/2007	15:21	400		
7197036	ONL SD	17M	7/16/2007	11:55	7/18/2007	15:22	400		
7197037	ONL SD	18M	7/16/2007	12:05	7/18/2007	15:23	400		
7211043	ONL ND	Field Trip Blank	7/30/2007	06:30	7/30/2007	16:00	10		
7211015	ONL SD	Field Trip Blank	7/30/2007	06:45	7/30/2007	15:55	10		
7211021	ONL SD	2M	7/30/2007	09:15	7/30/2007	15:55	450		
7211022	ONL SD	2M	7/30/2007	09:15	7/30/2007	15:55	450		



**Table B-7. Summary of chloride analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chloride (mg/L)	Data Validation Qualifier	Data Validation Comment
7211023	ONL SD 2M	C	7/30/2007	09:15	7/30/2007	15:55	450		
7211027	ONL SD 6M		7/30/2007	09:40	7/30/2007	15:55	450		
7211031	ONL SD 10M		7/30/2007	10:05	7/30/2007	15:55	450		
7211033	ONL SD 12M		7/30/2007	10:11	7/30/2007	15:55	420		
7211035	ONL SD 14M		7/30/2007	10:30	7/30/2007	15:55	420		
7211037	ONL SD 16M		7/30/2007	10:45	7/30/2007	15:55	410		
7211040	ONL SD 17M		7/30/2007	10:50	7/30/2007	15:55	410		
7211041	ONL SD 18M		7/30/2007	11:00	7/30/2007	15:55	400		
7211044	ONL ND 2m		7/30/2007	12:35	7/30/2007	16:00	440		
7211045	ONL ND 6m		7/30/2007	12:45	7/30/2007	16:00	440		
7211046	ONL ND 10m		7/30/2007	12:52	7/30/2007	16:00	440		
7211047	ONL ND 12m		7/30/2007	13:00	7/30/2007	16:00	420		
7211048	ONL ND 14m		7/30/2007	13:05	7/30/2007	16:00	410		
7211049	ONL ND 16m		7/30/2007	13:10	7/30/2007	16:00	410		
7211050	ONL ND 17m		7/30/2007	13:15	7/30/2007	16:00	400		
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/28/2007	09:53	10		
7239011	ONL SD 2M	A	8/27/2007	09:25	8/28/2007	10:07	460		
7239012	ONL SD 2M	B	8/27/2007	09:25	8/28/2007	10:11	460		
7239013	ONL SD 2M	C	8/27/2007	09:25	8/28/2007	10:13	460		
7239017	ONL SD 6M		8/27/2007	10:09	8/28/2007	10:24	460		
7239021	ONL SD 10M		8/27/2007	10:40	8/28/2007	10:33	480		
7239023	ONL SD 12M		8/27/2007	10:55	8/28/2007	10:37	440		
7239025	ONL SD 14M		8/27/2007	11:15	8/28/2007	10:42	440		
7239027	ONL SD 16M		8/27/2007	11:32	8/28/2007	10:48	410		
7239030	ONL SD 17M		8/27/2007	11:52	8/28/2007	10:55	410		
7239031	ONL SD 18M		8/27/2007	12:00	8/28/2007	10:57	410		
7267006	ONL SD Field Trip Blank		9/24/2007	07:30	9/26/2007	15:08	10		
7267012	ONL SD 2M	A	9/24/2007	09:17	9/26/2007	15:23	494		
7267013	ONL SD 2M	B	9/24/2007	09:17	9/26/2007	15:25	494		
7267014	ONL SD 2M	C	9/24/2007	09:17	9/26/2007	15:27	494		
7267018	ONL SD 6M		9/24/2007	09:47	9/26/2007	15:37	494		
7267022	ONL SD 10M		9/24/2007	10:15	9/26/2007	15:46	494		
7267024	ONL SD 12M		9/24/2007	10:22	9/26/2007	15:50	474		
7267026	ONL SD 14M		9/24/2007	10:32	9/26/2007	15:54	474		

**Table B-7. Summary of chloride analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chloride (mg/L)	Data Validation Qualifier	Data Validation Comment
7267028	ONL SD 16M		9/24/2007	10:38	9/26/2007	16:00	474		
7267031	ONL SD 17M		9/24/2007	10:48	9/26/2007	16:09	424		
7267032	ONL SD 18M		9/24/2007	10:50	9/26/2007	16:11	424		
7267042	ONL ND 2M		9/24/2007	13:30	9/26/2007	16:15	494		
7267043	ONL ND 6M		9/24/2007	13:35	9/26/2007	16:17	494		
7267044	ONL ND 10M		9/24/2007	13:40	9/26/2007	16:19	494		
7267045	ONL ND 12M		9/24/2007	13:46	9/26/2007	16:21	424		
7267046	ONL ND 14M		9/24/2007	13:50	9/26/2007	16:23	424		
7267047	ONL ND 16M		9/24/2007	13:55	9/26/2007	16:27	424		
7267048	ONL ND 17M		9/24/2007	14:00	9/26/2007	16:30	424		
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/3/2007	10:07	10		
7274016	ONL SD 2M	C	10/1/2007	10:03	10/3/2007	10:17	500		
7274017	ONL SD 2M	A	10/1/2007	10:03	10/3/2007	10:19	500		
7274018	ONL SD 2M	B	10/1/2007	10:03	10/3/2007	10:21	500		
7274022	ONL SD 6M		10/1/2007	10:36	10/3/2007	10:31	500		
7274026	ONL SD 10M		10/1/2007	10:55	10/3/2007	10:38	500		
7274028	ONL SD 12M		10/1/2007	11:10	10/3/2007	10:42	450		
7274030	ONL SD 14M		10/1/2007	11:27	10/3/2007	10:45	450		
7274032	ONL SD 16M		10/1/2007	11:43	10/3/2007	10:51	430		
7274035	ONL SD 17M		10/1/2007	11:57	10/3/2007	10:56	400		
7274036	ONL SD 18M		10/1/2007	12:00	10/3/2007	10:58	420		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/17/2007	09:37	10		
7288011	ONL SD 2M	A	10/15/2007	10:16	10/17/2007	09:47	490		
7288012	ONL SD 2M	B	10/15/2007	10:16	10/17/2007	09:51	500		
7288013	ONL SD 2M	C	10/15/2007	10:16	10/17/2007	09:52	500		
7288017	ONL SD 6M		10/15/2007	10:48	10/17/2007	10:01	500		
7288021	ONL SD 10M		10/15/2007	11:12	10/17/2007	10:08	480		
7288023	ONL SD 12M		10/15/2007	11:21	10/17/2007	10:12	480		
7288025	ONL SD 14M		10/15/2007	11:32	10/17/2007	10:15	450		
7288027	ONL SD 16M		10/15/2007	11:44	10/17/2007	10:21	430		
7288030	ONL SD 17M		10/15/2007	11:50	10/17/2007	10:26	410		
7288031	ONL SD 18M		10/15/2007	11:55	10/17/2007	10:28	410		
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	11/19/2007	11:31	10		
7302010	ONL SD 2M	A	10/29/2007	09:35	11/19/2007	11:53	450		

**Table B-7. Summary of chloride analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chloride (mg/L)	Data Validation Qualifier	Data Validation Comment
7302011	ONL SD 2M	B	10/29/2007	09:35	11/19/2007	12:02	450		
7302012	ONL SD 2M	C	10/29/2007	09:35	11/19/2007	12:06	450		
7302016	ONL SD 6M		10/29/2007	10:02	11/19/2007	12:24	450		
7302020	ONL SD 10M		10/29/2007	10:30	11/19/2007	12:42	450		
7302022	ONL SD 12M		10/29/2007	10:38	11/19/2007	12:55	460		
7302024	ONL SD 14M		10/29/2007	10:48	11/19/2007	13:04	450		
7302026	ONL SD 16M		10/29/2007	10:52	11/19/2007	13:13	450		
7302029	ONL SD 17M		10/29/2007	11:14	11/19/2007	13:26	450		
7302030	ONL SD 18M		10/29/2007	11:25	11/19/2007	13:31	450		
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/19/2007	09:17	10		
7309007	ONL SD 2M	A	11/5/2007	10:00	11/19/2007	09:44	450		
7309008	ONL SD 2M	B	11/5/2007	10:00	11/19/2007	09:48	450		
7309009	ONL SD 2M	C	11/5/2007	10:00	11/19/2007	09:53	450		
7309013	ONL SD 6M		11/5/2007	10:16	11/19/2007	10:15	450		
7309017	ONL SD 10M		11/5/2007	10:35	11/19/2007	10:33	450		
7309019	ONL SD 12M		11/5/2007	10:44	11/19/2007	10:42	450		
7309021	ONL SD 14M		11/5/2007	10:51	11/19/2007	10:51	470		
7309023	ONL SD 16M		11/5/2007	11:00	11/19/2007	11:00	450		
7309026	ONL SD 17M		11/5/2007	11:05	11/19/2007	11:17	450		
7309027	ONL SD 18M		11/5/2007	11:16	11/19/2007	11:22	450		
7316001	ONL SD Field Trip Blank		11/12/2007	07:30	11/19/2007	13:40	10		
7316009	ONL ND Field Trip Blank		11/12/2007	07:30	11/19/2007	14:15	10		
7316010	ONL ND 2M		11/12/2007	09:08	11/19/2007	14:20	460		
7316011	ONL ND 10M		11/12/2007	09:16	11/19/2007	14:24	450		
7316012	ONL ND 17M		11/12/2007	09:25	11/19/2007	14:28	450		
7316004	ONL SD 2M	A	11/12/2007	10:00	11/19/2007	13:44	450		
7316005	ONL SD 2M	B	11/12/2007	10:00	11/19/2007	13:53	450		
7316006	ONL SD 2M	C	11/12/2007	10:00	11/19/2007	13:57	450		
7316007	ONL SD 10M		11/12/2007	10:25	11/19/2007	14:02	450		
7316008	ONL SD 18M		11/12/2007	10:35	11/19/2007	14:11	450		
7323018	ONL SD Field Trip Blank		11/19/2007	07:15	11/19/2007	16:10	10		
7323022	ONL SD 2M	B	11/19/2007	09:00	11/19/2007	16:19	450		
7323023	ONL SD 2M	C	11/19/2007	09:00	11/19/2007	16:21	450		
7323021	ONL SD 2M	A	11/19/2007	09:00	11/19/2007	16:13	460		

**Table B-7. Summary of chloride analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Chloride (mg/L)	Data Validation Qualifier	Data Validation Comment
7323024	ONL SD 10M		11/19/2007	09:25	11/19/2007	16:27	460		
7323025	ONL SD 18M		11/19/2007	09:55	11/19/2007	16:30	460		

**Table B-8. Summary of ferrous iron analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Fe2+ (ug/L)	Data Validation Qualifier	Data Validation Comment
7197045	ONL SD FIELD TRIP BLANK		7/16/2007	7:30	7/17/2007	10:18	40	U	
7197048	ONL SD 8M		7/16/2007	10:17	7/17/2007	10:31	40	U	
7197050	ONL SD 10M		7/16/2007	10:43	7/17/2007	10:44	40	U	
7197051	ONL SD 11M		7/16/2007	11:05	7/17/2007	10:57	40	U	
7197052	ONL SD 12M		7/16/2007	11:11	7/17/2007	11:10	40	U	
7197053	ONL SD 13M		7/16/2007	11:25	7/17/2007	11:23	40	U	
7197054	ONL SD 14M		7/16/2007	11:29	7/17/2007	11:36	40	U	
7197055	ONL SD 15M		7/16/2007	11:36	7/17/2007	11:49	40	U	
7197056	ONL SD 16M		7/16/2007	11:45	7/17/2007	12:02	40	U	
7197057	ONL SD 17M		7/16/2007	11:55	7/17/2007	12:41	40	U	
7197058	ONL SD 18M		7/16/2007	12:05	7/17/2007	12:54	40	U	
7197059	ONL SD 19M	A	7/16/2007	12:20	7/17/2007	13:07	40	U	
7197060	ONL SD 19M	B	7/16/2007	12:20	7/17/2007	13:20	40	U	
7197061	ONL SD 19M	C	7/16/2007	12:20	7/17/2007	13:33	40	U	
7211043	ONL ND Field Trip Blank		7/30/2007	6:30	7/31/2007	12:40	40	U	
7211015	ONL SD Field Trip Blank		7/30/2007	6:45	7/31/2007	9:04	40	U	
7211028	ONL SD 7M		7/30/2007	9:45	7/31/2007	12:29	40	U	
7211029	ONL SD 8M		7/30/2007	9:50	7/31/2007	11:56	40	U	
7211030	ONL SD 9M		7/30/2007	9:55	7/31/2007	11:46	40	U	
7211031	ONL SD 10M		7/30/2007	10:05	7/31/2007	11:35	40	U	
7211032	ONL SD 11M		7/30/2007	10:08	7/31/2007	11:24	40	U	
7211033	ONL SD 12M		7/30/2007	10:11	7/31/2007	11:13	40	U	
7211034	ONL SD 13M		7/30/2007	10:20	7/31/2007	10:41	40	U	
7211035	ONL SD 14M		7/30/2007	10:30	7/31/2007	10:30	40	U	
7211036	ONL SD 15M		7/30/2007	10:35	7/31/2007	10:20	40	U	
7211037	ONL SD 16M		7/30/2007	10:45	7/31/2007	10:09	40	U	
7211040	ONL SD 17M		7/30/2007	10:50	7/31/2007	9:58	40	U	
7211041	ONL SD 18M		7/30/2007	11:00	7/31/2007	9:47	40	U	
7211042	ONL SD 19M	A	7/30/2007	11:05	7/31/2007	9:36	80	J	Field triplicate precision criterion exceeded.
7211051	ONL SD 19M	B	7/30/2007	11:05	7/31/2007	9:26	99	J	Field triplicate precision criterion exceeded.
7211052	ONL SD 19M	C	7/30/2007	11:05	7/31/2007	9:15	32	J	Field triplicate precision criterion exceeded, result less than method reporting limit.
7211053	ONL ND 7m		7/30/2007	12:00	7/31/2007	14:38	40	U	
7211054	ONL ND 8m		7/30/2007	12:06	7/31/2007	14:27	40	U	

**Table B-8. Summary of ferrous iron analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Fe2+ (ug/L)	Data Validation Qualifier	Data Validation Comment
7211055	ONL ND 9m		7/30/2007	12:10	7/31/2007	14:16	40	U	
7211056	ONL ND 11m		7/30/2007	12:20	7/31/2007	13:55	40	U	
7211057	ONL ND 13m		7/30/2007	12:36	7/31/2007	13:33	40	U	
7211058	ONL ND 15m		7/30/2007	12:48	7/31/2007	13:12	40	U	
7211046	ONL ND 10m		7/30/2007	12:52	7/31/2007	14:06	40	U	
7211047	ONL ND 12m		7/30/2007	13:00	7/31/2007	13:44	40	U	
7211048	ONL ND 14m		7/30/2007	13:05	7/31/2007	13:23	40	U	
7211049	ONL ND 16m		7/30/2007	13:10	7/31/2007	13:01	40	U	
7211050	ONL ND 17m		7/30/2007	13:15	7/31/2007	12:50	40	U	
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/31/2007	10:41	40	U	
7239021	ONL SD 10M		8/27/2007	10:40	8/31/2007	10:53	40	U	
7239022	ONL SD 11M		8/27/2007	10:49	8/31/2007	11:05	40	U	
7239023	ONL SD 12M		8/27/2007	10:55	8/31/2007	11:18	40	U	
7239024	ONL SD 13M		8/27/2007	11:05	8/31/2007	11:30	40	U	
7239025	ONL SD 14M		8/27/2007	11:15	8/31/2007	11:43	40	U	
7239026	ONL SD 15M		8/27/2007	11:21	8/31/2007	11:55	40	U	
7239027	ONL SD 16M		8/27/2007	11:32	8/31/2007	12:08	40	U	
7239030	ONL SD 17M		8/27/2007	11:52	8/31/2007	12:20	40	U	
7239031	ONL SD 18M		8/27/2007	12:00	8/31/2007	12:45	40	U	
7239032	ONL SD 19M	A	8/27/2007	12:15	8/31/2007	13:10	40	U	
7239033	ONL SD 19M	B	8/27/2007	12:15	8/31/2007	13:22	40	U	
7239034	ONL SD 19M	C	8/27/2007	12:15	8/31/2007	13:35	40	U	
7267006	ONL SD Field Trip Blank		9/24/2007	7:30	9/27/2007	12:39	40	U	
7267023	ONL SD 11M		9/24/2007	10:18	9/27/2007	12:26	40	U	
7267024	ONL SD 12M		9/24/2007	10:22	9/27/2007	12:13	40	U	
7267025	ONL SD 13M		9/24/2007	10:26	9/27/2007	12:01	40	U	
7267026	ONL SD 14M		9/24/2007	10:32	9/27/2007	11:48	40	U	
7267027	ONL SD 15M		9/24/2007	10:36	9/27/2007	11:35	40	U	
7267028	ONL SD 16M		9/24/2007	10:38	9/27/2007	11:10	40	U	
7267031	ONL SD 17M		9/24/2007	10:48	9/27/2007	10:44	40	U	
7267032	ONL SD 18M		9/24/2007	10:50					No sample available for analysis.
7267033	ONL SD 19M	A	9/24/2007	10:53	9/27/2007	10:18	40	U	
7267034	ONL SD 19M	B	9/24/2007	10:53	9/27/2007	10:06	40	U	
7267035	ONL SD 19M	C	9/24/2007	10:53	9/27/2007	9:53	40	U	
7267048	ONL ND 17M		9/24/2007	13:36	9/27/2007	13:17	40	U	
7267047	ONL ND 16M		9/24/2007	13:40	9/27/2007	13:30	40	U	
7267050	ONL ND 15M		9/24/2007	13:43	9/27/2007	13:43	40	U	

**Table B-8. Summary of ferrous iron analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Fe2+ (ug/L)	Data Validation Qualifier	Data Validation Comment
7267046	ONL ND 14M		9/24/2007	13:47	9/27/2007	13:56	40	U	
7267049	ONL ND 13M		9/24/2007	13:55	9/27/2007	14:08	40	U	
7267045	ONL ND 12M		9/24/2007	14:00	9/27/2007	14:21	40	U	
7267061	ONL ND 11M		9/24/2007	14:05	9/27/2007	14:34	40	U	
7274010	ONL SD Field Trip Blank		10/1/2007	7:00	10/3/2007	9:16	40	U	
7274027	ONL SD 11M		10/1/2007	11:00	10/3/2007	11:38	40	U	
7274028	ONL SD 12M		10/1/2007	11:10	10/3/2007	11:27	40	U	
7274029	ONL SD 13M		10/1/2007	11:20	10/3/2007	11:16	40	U	
7274030	ONL SD 14M		10/1/2007	11:27	10/3/2007	11:05	40	U	
7274031	ONL SD 15M		10/1/2007	11:35	10/3/2007	10:54	40	U	
7274032	ONL SD 16M		10/1/2007	11:43	10/3/2007	10:43	40	U	
7274035	ONL SD 17M		10/1/2007	11:57	10/3/2007	10:21	40	U	
7274036	ONL SD 18M		10/1/2007	12:00	10/3/2007	10:00	40	U	
7274037	ONL SD 19M	A	10/1/2007	12:18	10/3/2007	9:49	40	UJ	Field triplicate precision criterion exceeded.
7274038	ONL SD 19M	B	10/1/2007	12:18	10/3/2007	9:38	141	J	Field triplicate precision criterion exceeded.
7274039	ONL SD 19M	C	10/1/2007	12:18	10/3/2007	9:27	40	UJ	Field triplicate precision criterion exceeded.
7288005	ONL SD Field Trip Blank		10/15/2007	7:15	10/17/2007	9:20	40	U	
7288023	ONL SD 12M		10/15/2007	11:21	10/17/2007	11:37	40	U	
7288024	ONL SD 13M		10/15/2007	11:25	10/17/2007	11:25	40	U	
7288025	ONL SD 14M		10/15/2007	11:32	10/17/2007	11:14	40	U	
7288026	ONL SD 15M		10/15/2007	11:38	10/17/2007	11:02	40	U	
7288027	ONL SD 16M		10/15/2007	11:44	10/17/2007	10:51	40	U	
7288030	ONL SD 17M		10/15/2007	11:50	10/17/2007	10:28	40	U	
7288031	ONL SD 18M		10/15/2007	11:55	10/17/2007	10:05	113		
7288032	ONL SD 19M	A	10/15/2007	12:00	10/17/2007	9:54	215		
7288033	ONL SD 19M	B	10/15/2007	12:00	10/17/2007	9:42	144		
7288034	ONL SD 19M	C	10/15/2007	12:00	10/17/2007	9:31	221		
7302004	ONL SD Field Trip Blank		10/29/2007	7:00	10/30/2007	9:30	40	U	
7302026	ONL SD 16M		10/29/2007	10:52	10/30/2007	11:30	40	U	
7302029	ONL SD 17M		10/29/2007	11:14	10/30/2007	11:00	40	U	
7302030	ONL SD 18M		10/29/2007	11:25	10/30/2007	10:30	40	U	
7302031	ONL SD 19M	A	10/29/2007	11:31	10/30/2007	10:15	40	U	
7302032	ONL SD 19M	B	10/29/2007	11:31	10/30/2007	10:00	40	U	
7302033	ONL SD 19M	C	10/29/2007	11:31	10/30/2007	9:45	40	U	

**Table B-8. Summary of ferrous iron analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Fe2+ (ug/L)	Data Validation Qualifier	Data Validation Comment
7309001	ONL SD Field Trip Blank		11/5/2007	7:00	11/7/2007	9:36	40	U	
7309026	ONL SD 17M		11/5/2007	11:05	11/7/2007	11:12	40	U	
7309027	ONL SD 18M		11/5/2007	11:16	11/7/2007	10:40	40	U	
7309028	ONL SD 19M	A	11/5/2007	11:20	11/7/2007	10:24	40	U	
7309029	ONL SD 19M	B	11/5/2007	11:20	11/7/2007	10:08	40	U	
7309030	ONL SD 19M	C	11/5/2007	11:20	11/7/2007	9:52	40	U	



**Table B-9. Summary methane analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methane (mg/L)	Data Validation Qualifier	Data Validation Comment
7197045	ONL SD FIELD TRIP BLANK		7/16/2007	07:30	7/18/2007	14:50	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7197048	ONL SD 8M		7/16/2007	10:17	7/18/2007	14:10	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7197049	ONL SD 9M		7/16/2007	10:25	7/18/2007	13:55	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7197050	ONL SD 10M		7/16/2007	10:43	7/18/2007	13:30	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7197051	ONL SD 11M		7/16/2007	11:05	7/18/2007	13:12	0.36	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7197052	ONL SD 12M		7/16/2007	11:11	7/17/2007	17:20	0.50	U	
7197053	ONL SD 13M		7/16/2007	11:25	7/17/2007	17:05	0.50	U	
7197054	ONL SD 14M		7/16/2007	11:29	7/17/2007	16:45	0.50	U	
7197055	ONL SD 15M		7/16/2007	11:36	7/17/2007	16:15	0.50	U	
7197056	ONL SD 16M		7/16/2007	11:45	7/17/2007	15:50	0.50	U	
7197057	ONL SD 17M		7/16/2007	11:55	7/17/2007	15:30	0.50	U	
7197058	ONL SD 18M		7/16/2007	12:05	7/17/2007	15:10	0.35	J	Result less than method reporting limit.
7197060	ONL SD 19M	B	7/16/2007	12:20	7/17/2007	14:35	0.34	J	Result less than method reporting limit, field triplicate precision criterion exceeded.
7197061	ONL SD 19M	C	7/16/2007	12:20	7/17/2007	14:20	0.44	J	Result less than method reporting limit, field triplicate precision criterion exceeded.
7197059	ONL SD 19M	A	7/16/2007	12:20	7/17/2007	14:50	0.89	J	Field triplicate precision criterion exceeded.
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	7/31/2007	16:01	0.50	U	
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	7/31/2007	15:50	0.50	U	
7211028	ONL SD 7M		7/30/2007	09:45	7/31/2007	15:29	0.50	U	
7211029	ONL SD 8M		7/30/2007	09:50	7/31/2007	15:07	0.50	U	
7211030	ONL SD 9M		7/30/2007	09:55	7/31/2007	14:53	0.50	U	
7211031	ONL SD 10M		7/30/2007	10:05	7/31/2007	14:30	0.50	U	
7211032	ONL SD 11M		7/30/2007	10:08	7/31/2007	14:18	0.50	U	
7211033	ONL SD 12M		7/30/2007	10:11	7/31/2007	14:03	0.50	U	
7211034	ONL SD 13M		7/30/2007	10:20	7/31/2007	13:42	0.50	U	
7211035	ONL SD 14M		7/30/2007	10:30	7/31/2007	13:30	0.50	U	

**Table B-9. Summary methane analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methane (mg/L)	Data Validation Qualifier	Data Validation Comment
7211036	ONL SD 15M		7/30/2007	10:35	7/31/2007	12:09	0.50	U	
7211037	ONL SD 16M		7/30/2007	10:45	7/31/2007	11:58	0.30	J	Result less than method reporting limit.
7211040	ONL SD 17M		7/30/2007	10:50	7/31/2007	11:39	0.53		
7211041	ONL SD 18M		7/30/2007	11:00	7/31/2007	11:33	0.82		
7211042	ONL SD 19M	A	7/30/2007	11:05	7/31/2007	11:26	0.98		
7211051	ONL SD 19M	B	7/30/2007	11:05	7/31/2007	11:20	1.09		
7211052	ONL SD 19M	C	7/30/2007	11:05	7/31/2007	11:14	1.52		
7211053	ONL ND 7m		7/30/2007	12:00	7/31/2007	15:42	0.50	U	
7211054	ONL ND 8m		7/30/2007	12:06	7/31/2007	15:20	0.50	U	
7211055	ONL ND 9m		7/30/2007	12:10	7/31/2007	15:03	0.50	U	
7211056	ONL ND 11m		7/30/2007	12:20	7/31/2007	14:30	0.50	U	
7211057	ONL ND 13m		7/30/2007	12:36	7/31/2007	13:50	0.50	U	
7211058	ONL ND 15m		7/30/2007	12:48	7/31/2007	12:14	0.27	J	Result less than method reporting limit.
7211046	ONL ND 10m		7/30/2007	12:52	7/31/2007	14:35	0.50	U	
7211047	ONL ND 12m		7/30/2007	13:00	7/31/2007	14:09	0.50	U	
7211048	ONL ND 14m		7/30/2007	13:05	7/31/2007	13:37	0.22	J	Result less than method reporting limit.
7211049	ONL ND 16m		7/30/2007	13:10	7/31/2007	12:03	0.30	J	Result less than method reporting limit.
7211050	ONL ND 17m		7/30/2007	13:15	7/31/2007	11:53	0.32	J	Result less than method reporting limit.
7239005	ONL SD Field Trip Blank		8/27/2007	07:15					Sample lost due to broken bottle.
7239027	ONL SD 16M		8/27/2007	11:32	8/28/2007	15:38	0.50	U	
7239030	ONL SD 17M		8/27/2007	11:52	8/28/2007	15:22	0.41	J	Result less than method reporting limit.
7239031	ONL SD 18M		8/27/2007	12:00	8/28/2007	14:55	0.89		
7239033	ONL SD 19M	B	8/27/2007	12:15	8/28/2007	14:38	1.40		
7239034	ONL SD 19M	C	8/27/2007	12:15	8/28/2007	14:15	1.43		
7239032	ONL SD 19M	A	8/27/2007	12:15	8/28/2007	14:46	1.45		
7267006	ONL SD Field Trip Blank		9/24/2007	7:30	9/26/2007	15:15	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7267023	ONL SD 11M		9/24/2007	10:18	9/26/2007	14:44	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.

**Table B-9. Summary methane analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methane (mg/L)	Data Validation Qualifier	Data Validation Comment
7267024	ONL SD 12M		9/24/2007	10:22	9/26/2007	14:18	0.37	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7267025	ONL SD 13M		9/24/2007	10:26	9/26/2007	14:08	0.49	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7267026	ONL SD 14M		9/24/2007	10:32	9/25/2007	17:24	0.66		
7267027	ONL SD 15M		9/24/2007	10:36	9/25/2007	17:07	0.82		
7267028	ONL SD 16M		9/24/2007	10:38	9/25/2007	16:44	0.75		
7267031	ONL SD 17M		9/24/2007	10:48	9/25/2007	16:27	0.82		
7267032	ONL SD 18M		9/24/2007	10:50	9/25/2007	16:10	1.41		
7267033	ONL SD 19M	A	9/24/2007	10:53	9/25/2007	16:19	1.90		
7267034	ONL SD 19M	B	9/24/2007	10:53	9/25/2007	15:50	2.02		
7267035	ONL SD 19M	C	9/24/2007	10:53					Sample lost due to broken bottle.
7267050	ONL ND 15M		9/24/2007	13:40	9/25/2007	17:15	0.94		
7267045	ONL ND 12M		9/24/2007	13:46	9/26/2007	14:29	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7267046	ONL ND 14M		9/24/2007	13:50	9/26/2007	14:04	0.90	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7267049	ONL ND 13M		9/24/2007	13:55	9/26/2007	14:13	0.72	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7267047	ONL ND 16M		9/24/2007	13:55	9/25/2007	16:53	1.14		
7267048	ONL ND 17M		9/24/2007	14:00	9/25/2007	16:33	1.23		
7267061	ONL ND 11M		9/24/2007		9/26/2007	15:10	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/2/2007	16:07	0.50	U	
7274027	ONL SD 11M		10/1/2007	11:00	10/2/2007	16:01	0.50	U	
7274028	ONL SD 12M		10/1/2007	11:10	10/2/2007	15:52	0.50	U	
7274029	ONL SD 13M		10/1/2007	11:20	10/2/2007	15:02	0.50	U	
7274030	ONL SD 14M		10/1/2007	11:27	10/2/2007	14:55	0.50	U	
7274031	ONL SD 15M		10/1/2007	11:35	10/2/2007	14:35	0.50	U	
7274032	ONL SD 16M		10/1/2007	11:43	10/2/2007	14:26	0.50	U	
7274035	ONL SD 17M		10/1/2007	11:57	10/2/2007	14:09	1.13		
7274036	ONL SD 18M		10/1/2007	12:00	10/2/2007	13:52	1.55		
7274039	ONL SD 19M	C	10/1/2007	12:18	10/2/2007	13:17	1.54		

**Table B-9. Summary methane analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methane (mg/L)	Data Validation Qualifier	Data Validation Comment
7274037	ONL SD 19M	A	10/1/2007	12:18	10/2/2007	13:37	1.57		
7274038	ONL SD 19M	B	10/1/2007	12:18	10/2/2007	13:28	1.61		
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/17/2007	18:21	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7288023	ONL SD 12M		10/15/2007	11:21	10/17/2007	18:13	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7288024	ONL SD 13M		10/15/2007	11:25	10/17/2007	17:50	0.51	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7288025	ONL SD 14M		10/15/2007	11:32	10/17/2007	17:33	0.75	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7288026	ONL SD 15M		10/15/2007	11:38	10/17/2007	17:21	0.93	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7288027	ONL SD 16M		10/15/2007	11:44	10/16/2007	17:15	1.06		
7288030	ONL SD 17M		10/15/2007	11:50	10/17/2007	17:03	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7288031	ONL SD 18M		10/15/2007	11:55	10/16/2007	16:29	1.62		
7288034	ONL SD 19M	C	10/15/2007	12:00	10/16/2007	16:10	0.97	J	Field triplicate precision criterion exceeded.
7288033	ONL SD 19M	B	10/15/2007	12:00	10/16/2007	16:16	2.43	J	Field triplicate precision criterion exceeded.
7288032	ONL SD 19M	A	10/15/2007	12:00	10/16/2007	16:23	2.45	J	Field triplicate precision criterion exceeded.
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	10/31/2007	16:06	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7302026	ONL SD 16M		10/29/2007	10:52	10/31/2007	15:59	1.43	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7302029	ONL SD 17M		10/29/2007	11:14	10/31/2007	15:53	1.42	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7302030	ONL SD 18M		10/29/2007	11:25	10/31/2007	15:37	1.68	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.

**Table B-9. Summary methane analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methane (mg/L)	Data Validation Qualifier	Data Validation Comment
7302033	ONL SD 19M	C	10/29/2007	11:31	10/31/2007	15:29	2.07	J	Sample analyzed between 49-96 hours after sample collection, result less than method reporting limit.
7302032	ONL SD 19M	B	10/29/2007	11:31	10/31/2007	15:24	2.09	J	
7302031	ONL SD 19M	A	10/29/2007	11:31	10/31/2007	15:18	2.15	J	
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/7/2007	11:22	0.50	UJ	Sample analyzed between 49-96 hours after sample collection.
7309026	ONL SD 17M		11/5/2007	11:05	11/7/2007	10:56	1.19		
7309027	ONL SD 18M		11/5/2007	11:16	11/7/2007	10:36	1.60		
7309028	ONL SD 19M	A	11/5/2007	11:20	11/7/2007	10:24	2.38		
7309029	ONL SD 19M	B	11/5/2007	11:20	11/7/2007	10:18	2.44		
7309030	ONL SD 19M	C	11/5/2007	11:20	11/7/2007	10:11	2.61		

**Table B-10. Summary of nitrogen analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	N2 (mg/L)	Data Validation Qualifier	Data Validation Comment
7197045	ONL SD FIELD TRIP BLANK		7/16/2007	07:30	7/18/2007	14:50	15.0	J	Sample analyzed between 49-96 hours after sample collection.
7197048	ONL SD 8M		7/16/2007	10:17	7/18/2007	14:10	24.7	J	Sample analyzed between 49-96 hours after sample collection.
7197049	ONL SD 9M		7/16/2007	10:25	7/18/2007	13:55	24.0	J	Sample analyzed between 49-96 hours after sample collection.
7197050	ONL SD 10M		7/16/2007	10:43	7/18/2007	13:30	22.2	J	Sample analyzed between 49-96 hours after sample collection.
7197051	ONL SD 11M		7/16/2007	11:05	7/18/2007	13:12	30.8	J	Sample analyzed between 49-96 hours after sample collection.
7197052	ONL SD 12M		7/16/2007	11:11	7/17/2007	17:20	26.2	J+	Result within a factor of five of associated blank and may be biased high.
7197053	ONL SD 13M		7/16/2007	11:25	7/17/2007	17:05	26.9	J+	Result within a factor of five of associated blank and may be biased high.
7197054	ONL SD 14M		7/16/2007	11:29	7/17/2007	16:45	32.8	J+	Result within a factor of five of associated blank and may be biased high.
7197055	ONL SD 15M		7/16/2007	11:36	7/17/2007	16:15	24.9	J+	Result within a factor of five of associated blank and may be biased high.
7197056	ONL SD 16M		7/16/2007	11:45	7/17/2007	15:50	21.0	J+	Result within a factor of five of associated blank and may be biased high.
7197057	ONL SD 17M		7/16/2007	11:55	7/17/2007	15:30	26.4	J+	Result within a factor of five of associated blank and may be biased high.
7197058	ONL SD 18M		7/16/2007	12:05	7/17/2007	15:10	26.2	J+	Result within a factor of five of associated blank and may be biased high.
7197059	ONL SD 19M	A	7/16/2007	12:20	7/17/2007	14:50	27.7	J+	Result within a factor of five of associated blank and may be biased high.
7197060	ONL SD 19M	B	7/16/2007	12:20	7/17/2007	14:35	27.3	J+	Result within a factor of five of associated blank and may be biased high.
7197061	ONL SD 19M	C	7/16/2007	12:20	7/17/2007	14:20	32.1	J+	Result within a factor of five of associated blank and may be biased high.
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	7/31/2007	16:01	23.9	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	7/31/2007	15:50	23.0	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211028	ONL SD 7M		7/30/2007	09:45	7/31/2007	15:29	22.6	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.

**Table B-10. Summary of nitrogen analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	N2 (mg/L)	Data Validation Qualifier	Data Validation Comment
7211029	ONL SD 8M		7/30/2007	09:50	7/31/2007	15:07	21.3	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211030	ONL SD 9M		7/30/2007	09:55	7/31/2007	14:53	24.4	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211031	ONL SD 10M		7/30/2007	10:05	7/31/2007	14:30	22.1	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211032	ONL SD 11M		7/30/2007	10:08	7/31/2007	14:18	27.4	J	Associated laboratory duplicate exceeded criterion.
7211033	ONL SD 12M		7/30/2007	10:11	7/31/2007	14:03	27.4	J	Associated laboratory duplicate exceeded criterion.
7211034	ONL SD 13M		7/30/2007	10:20	7/31/2007	13:42	25.9	J	Associated laboratory duplicate exceeded criterion.
7211035	ONL SD 14M		7/30/2007	10:30	7/31/2007	13:30	36.8	J	Associated laboratory duplicate exceeded criterion.
7211036	ONL SD 15M		7/30/2007	10:35	7/31/2007	12:09	32.9	J	Associated laboratory duplicate exceeded criterion.
7211037	ONL SD 16M		7/30/2007	10:45	7/31/2007	11:58	33.2	J	Associated laboratory duplicate exceeded criterion.
7211040	ONL SD 17M		7/30/2007	10:50	7/31/2007	11:39	33.9	J	Associated laboratory duplicate exceeded criterion.
7211041	ONL SD 18M		7/30/2007	11:00	7/31/2007	11:33	3.3	J+	Associated laboratory duplicate exceeded criterion, result less than method reporting limit, result within a factor of five of associated blank and may be biased high.
7211042	ONL SD 19M	A	7/30/2007	11:05	7/31/2007	11:26	27.9	J	Associated laboratory duplicate exceeded criterion.
7211051	ONL SD 19M	B	7/30/2007	11:05	7/31/2007	11:20	36.2	J	Associated laboratory duplicate exceeded criterion.
7211052	ONL SD 19M	C	7/30/2007	11:05	7/31/2007	11:14	39.7	J	Associated laboratory duplicate exceeded criterion.
7211053	ONL ND 7m		7/30/2007	12:00	7/31/2007	15:42	20.1	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211054	ONL ND 8m		7/30/2007	12:06	7/31/2007	15:20	22.2	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.

**Table B-10. Summary of nitrogen analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	N2 (mg/L)	Data Validation Qualifier	Data Validation Comment
7211055	ONL ND 9m		7/30/2007	12:10	7/31/2007	15:03	21.3	J+	Associated laboratory duplicate exceeded criterion, result within a factor of five of associated blank and may be biased high.
7211056	ONL ND 11m		7/30/2007	12:20	7/31/2007	14:30	23.6	J+	
7211057	ONL ND 13m		7/30/2007	12:36	7/31/2007	13:50	29.6	J	
7211058	ONL ND 15m		7/30/2007	12:48	7/31/2007	12:14	33.6	J	
7211046	ONL ND 10m		7/30/2007	12:52	7/31/2007	14:35	23.0	J+	
7211047	ONL ND 12m		7/30/2007	13:00	7/31/2007	14:09	6.2	J+	
7211048	ONL ND 14m		7/30/2007	13:05	7/31/2007	13:37	26.3	J	
7211049	ONL ND 16m		7/30/2007	13:10	7/31/2007	12:03	37.1	J	
7211050	ONL ND 17m		7/30/2007	13:15	7/31/2007	11:53	40.8	J	
7239005	ONL SD Field Trip Blank		8/27/2007	07:15					
7239027	ONL SD 16M		8/27/2007	11:32	8/28/2007	15:38	20.8		
7239030	ONL SD 17M		8/27/2007	11:52	8/28/2007	15:22	21.0		
7239031	ONL SD 18M		8/27/2007	12:00	8/28/2007	14:55	19.7		
7239032	ONL SD 19M	A	8/27/2007	12:15	8/28/2007	14:46	22.4		
7239033	ONL SD 19M	B	8/27/2007	12:15	8/28/2007	14:38	23.0		
7239034	ONL SD 19M	C	8/27/2007	12:15	8/28/2007	14:15	32.0		
7267006	ONL SD Field Trip Blank		9/24/2007	7:30	9/26/2007	15:15	35	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7267023	ONL SD 11M		9/24/2007	10:18	9/26/2007	14:44	38	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7267024	ONL SD 12M		9/24/2007	10:22	9/26/2007	14:18	34	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.



**Table B-10. Summary of nitrogen analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	N2 (mg/L)	Data Validation Qualifier	Data Validation Comment
7267025	ONL SD 13M		9/24/2007	10:26	9/26/2007	14:08	28	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion. Result (R) due to concentration higher than physically possible.
7267026	ONL SD 14M		9/24/2007	10:32	9/25/2007	17:24		R	
7267027	ONL SD 15M		9/24/2007	10:36	9/25/2007	17:07	36		
7267028	ONL SD 16M		9/24/2007	10:38	9/25/2007	16:44	28		
7267031	ONL SD 17M		9/24/2007	10:48	9/25/2007	16:27	31		
7267032	ONL SD 18M		9/24/2007	10:50	9/25/2007	16:10	27		
7267033	ONL SD 19M	A	9/24/2007	10:53	9/25/2007	16:19	32		
7267034	ONL SD 19M	B	9/24/2007	10:53	9/25/2007	15:50	35		
7267035	ONL SD 19M	C	9/24/2007	10:53					Sample lost due to broken bottle.
7267048	ONL ND 17M		9/24/2007	13:36	9/25/2007	16:33	30		
7267047	ONL ND 16M		9/24/2007	13:40	9/25/2007	16:53	31		
7267050	ONL ND 15M		9/24/2007	13:43	9/25/2007	17:15		R	Result (R) due to concentration higher than physically possible.
7267046	ONL ND 14M		9/24/2007	13:47	9/26/2007	14:04	23	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7267049	ONL ND 13M		9/24/2007	13:55	9/26/2007	14:13	29	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7267045	ONL ND 12M		9/24/2007	14:00	9/26/2007	14:29		R	Result (R) due to concentration higher than physically possible.
7267061	ONL ND 11M		9/24/2007	14:05	9/26/2007	15:10	35	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7274010	ONL SD Field Trip Blank		10/1/2007	7:00	10/2/2007	16:07		R	Result (R) due to concentration higher than physically possible.
7274027	ONL SD 11M		10/1/2007	11:00	10/2/2007	16:01		R	Result (R) due to concentration higher than physically possible.
7274028	ONL SD 12M		10/1/2007	11:10	10/2/2007	15:52		R	Result (R) due to concentration higher than physically possible.
7274029	ONL SD 13M		10/1/2007	11:20	10/2/2007	15:02		R	Result (R) due to concentration higher than physically possible.
7274030	ONL SD 14M		10/1/2007	11:27	10/2/2007	14:55		R	Result (R) due to concentration higher than physically possible.
7274031	ONL SD 15M		10/1/2007	11:35	10/2/2007	14:35		R	Result (R) due to concentration higher than physically possible.

**Table B-10. Summary of nitrogen analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	N2 (mg/L)	Data Validation Qualifier	Data Validation Comment
7274032	ONL SD 16M		10/1/2007	11:43	10/2/2007	14:26		R	Result (R) due to concentration higher than physically possible.
7274035	ONL SD 17M		10/1/2007	11:57	10/2/2007	14:09	39	J	Associated laboratory duplicate exceeded criterion.
7274036	ONL SD 18M		10/1/2007	12:00	10/2/2007	13:52	28	J	Associated laboratory duplicate exceeded criterion.
7274037	ONL SD 19M	A	10/1/2007	12:18	10/2/2007	13:37	28	J	Associated laboratory duplicate exceeded criterion.
7274038	ONL SD 19M	B	10/1/2007	12:18	10/2/2007	13:28	27	J	Associated laboratory duplicate exceeded criterion.
7274039	ONL SD 19M	C	10/1/2007	12:18	10/2/2007	13:17	25	J	Associated laboratory duplicate exceeded criterion.
7288005	ONL SD Field Trip Blank		10/15/2007	7:15	10/17/2007	18:21		R	Result (R) due to concentration higher than physically possible.
7288023	ONL SD 12M		10/15/2007	11:21	10/17/2007	18:13		R	Result (R) due to concentration higher than physically possible.
7288024	ONL SD 13M		10/15/2007	11:25	10/17/2007	17:50		R	Result (R) due to concentration higher than physically possible.
7288025	ONL SD 14M		10/15/2007	11:32	10/17/2007	17:33		R	Result (R) due to concentration higher than physically possible.
7288026	ONL SD 15M		10/15/2007	11:38	10/17/2007	17:21		R	Result (R) due to concentration higher than physically possible.
7288027	ONL SD 16M		10/15/2007	11:44	10/16/2007	17:15		R	Result (R) due to concentration higher than physically possible.
7288030	ONL SD 17M		10/15/2007	11:50	10/17/2007	17:03		R	Result (R) due to concentration higher than physically possible.
7288031	ONL SD 18M		10/15/2007	11:55	10/16/2007	16:29		R	Result (R) due to concentration higher than physically possible.
7288032	ONL SD 19M	A	10/15/2007	12:00	10/16/2007	16:23		R	Result (R) due to concentration higher than physically possible.
7288033	ONL SD 19M	B	10/15/2007	12:00	10/16/2007	16:16		R	Result (R) due to concentration higher than physically possible.
7288034	ONL SD 19M	C	10/15/2007	12:00	10/16/2007	16:10		R	Result (R) due to concentration higher than physically possible.
7302004	ONL SD Field Trip Blank		10/29/2007	7:00	10/31/2007	16:06	35	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.

**Table B-10. Summary of nitrogen analytical results**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	N2 (mg/L)	Data Validation Qualifier	Data Validation Comment
7302026	ONL SD 16M		10/29/2007	10:52	10/31/2007	15:59	37	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7302029	ONL SD 17M		10/29/2007	11:14	10/31/2007	15:53	28	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7302030	ONL SD 18M		10/29/2007	11:25	10/31/2007	15:37		R	Result (R) due to concentration higher than physically possible.
7302031	ONL SD 19M	A	10/29/2007	11:31	10/31/2007	15:18	25	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate and field triplicate exceeded criteria.
7302032	ONL SD 19M	B	10/29/2007	11:31	10/31/2007	15:24	24	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate and field triplicate exceeded criteria.
7302033	ONL SD 19M	C	10/29/2007	11:31	10/31/2007	15:29	41	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate and field triplicate exceeded criteria.
7309001	ONL SD Field Trip Blank		11/5/2007	7:00	11/7/2007	11:22	14	J	Sample analyzed between 49-96 hours after sample collection, associated laboratory duplicate exceeded criterion.
7309026	ONL SD 17M		11/5/2007	11:05	11/7/2007	10:56	19	J	Associated laboratory duplicate exceeded criterion.
7309027	ONL SD 18M		11/5/2007	11:16	11/7/2007	10:36	22	J	Associated laboratory duplicate exceeded criterion.
7309028	ONL SD 19M	A	11/5/2007	11:20	11/7/2007	10:24	28	J	Associated laboratory duplicate exceeded criterion.
7309029	ONL SD 19M	B	11/5/2007	11:20	11/7/2007	10:18	37	J	Associated laboratory duplicate exceeded criterion.
7309030	ONL SD 19M	C	11/5/2007	11:20	11/7/2007	10:11	41	J	Associated laboratory duplicate exceeded criterion.

**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7197045	ONL SD FIELD TRIP BLANK		7/16/2007	07:30	7/18/2007	13:23	1	U	Draft data used for comparison to historical measurements.
7197048	ONL SD 8M		7/16/2007	10:17	7/18/2007	13:31	1	U	Draft data used for comparison to historical measurements.
7197049	ONL SD 9M		7/16/2007	10:25	7/18/2007	13:40	1	U	Draft data used for comparison to historical measurements.
7197050	ONL SD 10M		7/16/2007	10:43	7/18/2007	13:51	1	U	Draft data used for comparison to historical measurements.
7197051	ONL SD 11M		7/16/2007	11:05	7/18/2007	13:58	1	U	Draft data used for comparison to historical measurements.
7197052	ONL SD 12M		7/16/2007	11:11	7/18/2007	14:03	1	U	Draft data used for comparison to historical measurements.
7197053	ONL SD 13M		7/16/2007	11:25	7/18/2007	14:10	1	U	Draft data used for comparison to historical measurements.
7197054	ONL SD 14M		7/16/2007	11:29	7/18/2007	14:17	1	U	Draft data used for comparison to historical measurements.
7197055	ONL SD 15M		7/16/2007	11:36	7/18/2007	14:23	1	U	Draft data used for comparison to historical measurements.
7197056	ONL SD 16M		7/16/2007	11:45	7/18/2007	14:28	1	U	Draft data used for comparison to historical measurements.
7197057	ONL SD 17M		7/16/2007	11:55	7/18/2007	14:35	0.6	J	Draft data used for comparison to historical measurements.
7197058	ONL SD 18M		7/16/2007	12:05	7/18/2007	14:43	1	U	Draft data used for comparison to historical measurements.
7197059	ONL SD 19M	A	7/16/2007	12:20	7/18/2007	14:50	1	U	Draft data used for comparison to historical measurements.
7197060	ONL SD 19M	B	7/16/2007	12:20	7/18/2007	14:59	1	U	Draft data used for comparison to historical measurements.
7197061	ONL SD 19M	C	7/16/2007	12:20	7/18/2007	15:09	1	U	Draft data used for comparison to historical measurements.
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	8/1/2007	10:55	1	U	Draft data used for comparison to historical measurements.
7211028	ONL SD 7M		7/30/2007	09:45	8/1/2007	11:00	1	U	Draft data used for comparison to historical measurements.
7211029	ONL SD 8M		7/30/2007	09:50	8/1/2007	11:05	1	U	Draft data used for comparison to historical measurements.

**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7211030	ONL SD 9M		7/30/2007	09:55	8/1/2007	11:12	1	U	Draft data used for comparison to historical measurements.
7211031	ONL SD 10M		7/30/2007	10:05	8/1/2007	11:15	1	U	Draft data used for comparison to historical measurements.
7211032	ONL SD 11M		7/30/2007	10:08	8/1/2007	11:22	1	U	Draft data used for comparison to historical measurements.
7211033	ONL SD 12M		7/30/2007	10:11	8/1/2007	11:20	1	U	Draft data used for comparison to historical measurements.
7211034	ONL SD 13M		7/30/2007	10:20	8/1/2007	11:26	1	U	Draft data used for comparison to historical measurements.
7211035	ONL SD 14M		7/30/2007	10:30	8/1/2007	11:30	1	U	Draft data used for comparison to historical measurements.
7211036	ONL SD 15M		7/30/2007	10:35	8/1/2007	11:35	1	U	Draft data used for comparison to historical measurements.
7211037	ONL SD 16M	A	7/30/2007	10:45	8/1/2007	11:39	1	U	Draft data used for comparison to historical measurements.
7211040	ONL SD 17M		7/30/2007	10:50	8/1/2007	11:42	1	U	Draft data used for comparison to historical measurements.
7211041	ONL SD 18M		7/30/2007	11:00	8/1/2007	11:46	1	U	Draft data used for comparison to historical measurements.
7211042	ONL SD 19M	A	7/30/2007	11:05	8/1/2007	11:51	1	U	Draft data used for comparison to historical measurements.
7211051	ONL SD 19M	B	7/30/2007	11:05	8/1/2007	11:53	1	U	Draft data used for comparison to historical measurements.
7211052	ONL SD 19M	C	7/30/2007	11:05	8/1/2007	13:05	1	U	Draft data used for comparison to historical measurements.
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	8/1/2007	13:10	1	U	Draft data used for comparison to historical measurements.
7211053	ONL ND 7m		7/30/2007	12:00	8/1/2007	13:13	1	U	Draft data used for comparison to historical measurements.
7211054	ONL ND 8m		7/30/2007	12:06	8/1/2007	13:19	1	U	Draft data used for comparison to historical measurements.
7211055	ONL ND 9m		7/30/2007	12:10	8/1/2007	13:23	1	U	Draft data used for comparison to historical measurements.
7211046	ONL ND 10m		7/30/2007	12:52	8/1/2007	13:27	1	U	Draft data used for comparison to historical measurements.

**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7211056	ONL ND 11m		7/30/2007	12:20	8/1/2007	13:31	1	U	Draft data used for comparison to historical measurements.
7211047	ONL ND 12m		7/30/2007	13:00	8/1/2007	13:35	1	U	Draft data used for comparison to historical measurements.
7211057	ONL ND 13m		7/30/2007	12:36	8/1/2007	13:39	1	U	Draft data used for comparison to historical measurements.
7211048	ONL ND 14m		7/30/2007	13:05	8/1/2007	13:43	1	U	Draft data used for comparison to historical measurements.
7211058	ONL ND 15m		7/30/2007	12:48	8/1/2007	13:46	1	U	Draft data used for comparison to historical measurements.
7211049	ONL ND 16m		7/30/2007	13:10	8/1/2007	13:51	1	U	Draft data used for comparison to historical measurements.
7211050	ONL ND 17m		7/30/2007	13:15	8/1/2007	13:55	1	U	Draft data used for comparison to historical measurements.
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/29/2007	14:10	0.5	J	Draft data used for comparison to historical measurements.
7239021	ONL SD 10M		8/27/2007	10:40	8/29/2007	14:19	1	U	Draft data used for comparison to historical measurements.
7239022	ONL SD 11M		8/27/2007	10:49	8/29/2007	14:23	1	U	Draft data used for comparison to historical measurements.
7239023	ONL SD 12M		8/27/2007	10:55	8/29/2007	14:27	1	U	Draft data used for comparison to historical measurements.
7239024	ONL SD 13M		8/27/2007	11:05	8/29/2007	14:31	1	U	Draft data used for comparison to historical measurements.
7239025	ONL SD 14M		8/27/2007	11:15	8/29/2007	14:36	1	U	Draft data used for comparison to historical measurements.
7239026	ONL SD 15M		8/27/2007	11:21	8/29/2007	14:40	1	U	Draft data used for comparison to historical measurements.
7239027	ONL SD 16M		8/27/2007	11:32	8/29/2007	14:43	1	U	Draft data used for comparison to historical measurements.
7239030	ONL SD 17M		8/27/2007	11:52	8/29/2007	14:48	1	U	Draft data used for comparison to historical measurements.
7239031	ONL SD 18M		8/27/2007	12:00	8/29/2007	14:52	1	U	Draft data used for comparison to historical measurements.
7239032	ONL SD 19M	A	8/27/2007	12:15	8/29/2007	14:56	1	U	Draft data used for comparison to historical measurements.

**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7239033 ONL SD 19M		B	8/27/2007	12:15	8/29/2007	15:00	1	U	Draft data used for comparison to historical measurements.
7239034 ONL SD 19M		C	8/27/2007	12:15	8/29/2007	15:03	1	U	Draft data used for comparison to historical measurements.
7267006 ONL SD Field Trip Blank			9/24/2007	07:30	9/27/2007	15:01	1	U	Draft data used for comparison to historical measurements.
7267023 ONL SD 11M			9/24/2007	10:18	9/27/2007	15:06	1	U	Draft data used for comparison to historical measurements.
7267024 ONL SD 12M			9/24/2007	10:22	9/27/2007	15:10	1	U	Draft data used for comparison to historical measurements.
7267025 ONL SD 13M			9/24/2007	10:26	9/27/2007	15:15	1	U	Draft data used for comparison to historical measurements.
7267026 ONL SD 14M			9/24/2007	10:32	9/27/2007	15:20	1	U	Draft data used for comparison to historical measurements.
7267027 ONL SD 15M			9/24/2007	10:36	9/27/2007	15:25	1	U	Draft data used for comparison to historical measurements.
7267028 ONL SD 16M			9/24/2007	10:38	9/27/2007	15:29	1	U	Draft data used for comparison to historical measurements.
7267031 ONL SD 17M			9/24/2007	10:48	9/27/2007	15:32	1	U	Draft data used for comparison to historical measurements.
7267032 ONL SD 18M			9/24/2007	10:50	9/27/2007	15:35	1	U	Draft data used for comparison to historical measurements.
7267033 ONL SD 19M		A	9/24/2007	10:53	9/27/2007	15:40	1	U	Draft data used for comparison to historical measurements.
7267034 ONL SD 19M		B	9/24/2007	10:53	9/27/2007	15:44	1	U	Draft data used for comparison to historical measurements.
7267035 ONL SD 19M		C	9/24/2007	10:53	9/27/2007	15:48	1	U	Draft data used for comparison to historical measurements.
7267061 ONL ND 11M			9/24/2007	14:05	9/27/2007	15:52	1	U	Draft data used for comparison to historical measurements.
7267045 ONL ND 12M			9/24/2007	14:00	9/27/2007	15:59	1	U	Draft data used for comparison to historical measurements.
7267049 ONL ND 13M			9/24/2007	13:55	9/27/2007	16:06	1	U	Draft data used for comparison to historical measurements.
7267046 ONL ND 14M			9/24/2007	13:47	9/27/2007	16:10	1	U	Draft data used for comparison to historical measurements.

**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7267050	ONL ND 15M		9/24/2007	13:43	9/27/2007	16:13	1	U	Draft data used for comparison to historical measurements.
7267047	ONL ND 16M		9/24/2007	13:40	9/27/2007	16:16	1	U	Draft data used for comparison to historical measurements.
7267048	ONL ND 17M		9/24/2007	13:36	9/27/2007	16:20	1	U	Draft data used for comparison to historical measurements.
7274010	ONL SD Field Trip Blank		10/1/2007	07:00	10/4/2007	14:14	1	U	Draft data used for comparison to historical measurements.
7274027	ONL SD 11M		10/1/2007	11:00	10/4/2007	14:17	1	U	Draft data used for comparison to historical measurements.
7274028	ONL SD 12M		10/1/2007	11:10	10/4/2007	14:21	1	U	Draft data used for comparison to historical measurements.
7274029	ONL SD 13M		10/1/2007	11:20	10/4/2007	14:24	1	U	Draft data used for comparison to historical measurements.
7274030	ONL SD 14M		10/1/2007	11:27	10/4/2007	14:26	1	U	Draft data used for comparison to historical measurements.
7274031	ONL SD 15M		10/1/2007	11:35	10/4/2007	14:30	1	U	Draft data used for comparison to historical measurements.
7274032	ONL SD 16M		10/1/2007	11:43	10/4/2007	14:34	1	U	Draft data used for comparison to historical measurements.
7274035	ONL SD 17M		10/1/2007	11:57	10/4/2007	14:36	1	U	Draft data used for comparison to historical measurements.
7274036	ONL SD 18M		10/1/2007	12:00	10/4/2007	14:40	1	U	Draft data used for comparison to historical measurements.
7274037	ONL SD 19M	A	10/1/2007	12:18	10/4/2007	14:44	1	U	Draft data used for comparison to historical measurements.
7274038	ONL SD 19M	B	10/1/2007	12:18	10/4/2007	14:46	1	U	Draft data used for comparison to historical measurements.
7274039	ONL SD 19M	C	10/1/2007	12:18	10/4/2007	14:49	1	U	Draft data used for comparison to historical measurements.
7288005	ONL SD Field Trip Blank		10/15/2007	07:15	10/18/2007	14:32	1	U	Draft data used for comparison to historical measurements.
7288023	ONL SD 12M		10/15/2007	11:21	10/18/2007	14:36	1	U	Draft data used for comparison to historical measurements.
7288024	ONL SD 13M		10/15/2007	11:25	10/18/2007	14:40	1	U	Draft data used for comparison to historical measurements.



**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7288025	ONL SD 14M		10/15/2007	11:32	10/18/2007	14:45	1	U	Draft data used for comparison to historical measurements.
7288026	ONL SD 15M		10/15/2007	11:38	10/18/2007	14:48	1	U	Draft data used for comparison to historical measurements.
7288027	ONL SD 16M		10/15/2007	11:44	10/18/2007	14:52	1	U	Draft data used for comparison to historical measurements.
7288030	ONL SD 17M		10/15/2007	11:50	10/18/2007	14:56	1	U	Draft data used for comparison to historical measurements.
7288031	ONL SD 18M		10/15/2007	11:55	10/18/2007	14:59	1	U	Draft data used for comparison to historical measurements.
7288032	ONL SD 19M	A	10/15/2007	12:00	10/18/2007	15:04	1.5		Draft data used for comparison to historical measurements.
7288033	ONL SD 19M	B	10/15/2007	12:00	10/18/2007	15:09	1.6		Draft data used for comparison to historical measurements.
7288034	ONL SD 19M	C	10/15/2007	12:00	10/18/2007	15:12	1.3		Draft data used for comparison to historical measurements.
7302004	ONL SD Field Trip Blank		10/29/2007	07:00	11/1/2007	13:50	1	U	Draft data used for comparison to historical measurements.
7302026	ONL SD 16M		10/29/2007	10:52	11/1/2007	13:55	1	U	Draft data used for comparison to historical measurements.
7302030	ONL SD 18M		10/29/2007	11:25	11/1/2007	14:15	1	U	Draft data used for comparison to historical measurements.
7302031	ONL SD 19M	A	10/29/2007	11:31	11/1/2007	14:20	1	U	Draft data used for comparison to historical measurements.
7302033	ONL SD 19M	C	10/29/2007	11:31	11/1/2007	14:25	1	U	Draft data used for comparison to historical measurements.
7309001	ONL SD Field Trip Blank		11/5/2007	07:00	11/9/2007	16:12	1	U	Draft data used for comparison to historical measurements.
7309026	ONL SD 17M		11/5/2007	11:05	11/9/2007	16:17	1	U	Draft data used for comparison to historical measurements.
7309027	ONL SD 18M		11/5/2007	11:16	11/9/2007	16:21	1	U	Draft data used for comparison to historical measurements.
7309028	ONL SD 19M	A	11/5/2007	11:20	11/9/2007	16:26	1	U	Draft data used for comparison to historical measurements.
7309029	ONL SD 19M	B	11/5/2007	11:20	11/9/2007	16:31	1	U	Draft data used for comparison to historical measurements.

**Table B-11a. Summary of sulfide analytical results by titration**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (mg/L)	Data Validation Qualifier	Data Validation Comment
7309030	ONL SD 19M	C	11/5/2007	11:20	11/9/2007	16:35	1	U	Draft data used for comparison to historical measurements.

**Table B-11b. Summary of sulfide analytical results by ion selective electrode**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (ug/L)	Data Validation Qualifier	Data Validation Comment
7197045	ONL SD FIELD TRIP BLANK		7/16/2007	07:30	7/17/2007	09:03	65	U	Draft result due to lack of required QC analyses.
7197048	ONL SD 8M		7/16/2007	10:17	7/17/2007	09:06	65	U	Draft result due to lack of required QC analyses.
7197049	ONL SD 9M		7/16/2007	10:25	7/17/2007	09:09	65	U	Draft result due to lack of required QC analyses.
7197050	ONL SD 10M		7/16/2007	10:43	7/17/2007	09:12	65	U	Draft result due to lack of required QC analyses.
7197051	ONL SD 11M		7/16/2007	11:05	7/17/2007	09:15	65	U	Draft result due to lack of required QC analyses.
7197052	ONL SD 12M		7/16/2007	11:11	7/17/2007	09:18	65	U	Draft result due to lack of required QC analyses.
7197053	ONL SD 13M		7/16/2007	11:25	7/17/2007	09:21	65	U	Draft result due to lack of required QC analyses.
7197054	ONL SD 14M		7/16/2007	11:29	7/17/2007	09:24	65	U	Draft result due to lack of required QC analyses.
7197055	ONL SD 15M		7/16/2007	11:36	7/17/2007	09:27	65	U	Draft result due to lack of required QC analyses.
7197056	ONL SD 16M		7/16/2007	11:45	7/17/2007	09:30	65	U	Draft result due to lack of required QC analyses.
7197057	ONL SD 17M		7/16/2007	11:55	7/17/2007	09:33	65	U	Draft result due to lack of required QC analyses.
7197058	ONL SD 18M		7/16/2007	12:05	7/17/2007	09:36	65	U	Draft result due to lack of required QC analyses.
7197059	ONL SD 19M	A	7/16/2007	12:20	7/17/2007	09:40	65	U	Draft result due to lack of required QC analyses.
7197060	ONL SD 19M	B	7/16/2007	12:20	7/17/2007	09:43	65	U	Draft result due to lack of required QC analyses.
7197061	ONL SD 19M	C	7/16/2007	12:20	7/17/2007	09:46	65	U	Draft result due to lack of required QC analyses.
7211015	ONL SD Field Trip Blank		7/30/2007	06:45	7/31/2007	16:24	65	U	Draft result due to lack of required QC analyses.
7211035	ONL SD 14M		7/30/2007	10:30	7/31/2007	16:36	65	U	Draft result due to lack of required QC analyses.
7211036	ONL SD 15M		7/30/2007	10:35	7/31/2007	16:48	65	U	Draft result due to lack of required QC analyses.
7211037	ONL SD 16M	A	7/30/2007	10:45	7/31/2007	17:00	65	U	Draft result due to lack of required QC analyses.
7211040	ONL SD 17M		7/30/2007	10:50	7/31/2007	17:12	65	U	Draft result due to lack of required QC analyses.
7211041	ONL SD 18M		7/30/2007	11:00	7/31/2007	17:24	65	U	Draft result due to lack of required QC analyses.
7211042	ONL SD 19M	A	7/30/2007	11:05	7/31/2007	17:36	65	U	Draft result due to lack of required QC analyses.
7211051	ONL SD 19M	B	7/30/2007	11:05	7/31/2007	17:48	65	U	Draft result due to lack of required QC analyses.
7211052	ONL SD 19M	C	7/30/2007	11:05	7/31/2007	18:00	65	U	Draft result due to lack of required QC analyses.
7211043	ONL ND Field Trip Blank		7/30/2007	06:30	8/1/2007	10:50	65	U	Draft result due to lack of required QC analyses.
7211045	ONL ND 6m		7/30/2007	12:45	8/1/2007	11:15	65	U	Draft result due to lack of required QC analyses.
7211055	ONL ND 9m		7/30/2007	12:10	8/1/2007	11:40	65	U	Draft result due to lack of required QC analyses.
7211046	ONL ND 10m		7/30/2007	12:52	8/1/2007	12:05	65	U	Draft result due to lack of required QC analyses.
7211056	ONL ND 11m		7/30/2007	12:20	8/1/2007	12:30	65	U	Draft result due to lack of required QC analyses.
7211047	ONL ND 12m		7/30/2007	13:00	8/1/2007	12:55	65	U	Draft result due to lack of required QC analyses.
7211057	ONL ND 13m		7/30/2007	12:36	8/1/2007	13:20	65	U	Draft result due to lack of required QC analyses.
7211048	ONL ND 14m		7/30/2007	13:05	8/1/2007	13:45	65	U	Draft result due to lack of required QC analyses.
7211058	ONL ND 15m		7/30/2007	12:48	8/1/2007	14:10	65	U	Draft result due to lack of required QC analyses.
7211049	ONL ND 16m		7/30/2007	13:10	8/1/2007	14:35	65	U	Draft result due to lack of required QC analyses.
7211050	ONL ND 17m		7/30/2007	13:15	8/1/2007	15:00	65	U	Draft result due to lack of required QC analyses.
7239005	ONL SD Field Trip Blank		8/27/2007	07:15	8/29/2007	16:30	65	UJ	Reference standard recovered below criteria.
7239021	ONL SD 10M		8/27/2007	10:40	8/29/2007	16:20	65	UJ	Reference standard recovered below criteria.
7239022	ONL SD 11M		8/27/2007	10:49	8/29/2007	16:05	65	UJ	Reference standard recovered below criteria.
7239023	ONL SD 12M		8/27/2007	10:55	8/29/2007	15:42	65	UJ	Reference standard recovered below criteria.
7239024	ONL SD 13M		8/27/2007	11:05	8/29/2007	15:30	65	UJ	Reference standard recovered below criteria.
7239025	ONL SD 14M		8/27/2007	11:15	8/29/2007	15:05	65	UJ	Reference standard recovered below criteria.
7239026	ONL SD 15M		8/27/2007	11:21	8/29/2007	14:45	65	UJ	Reference standard recovered below criteria.
7239027	ONL SD 16M		8/27/2007	11:32	8/29/2007	13:55	65	UJ	Reference standard recovered below criteria.

**Table B-11b. Summary of sulfide analytical results by ion selective electrode**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (ug/L)	Data Validation Qualifier	Data Validation Comment
7239030	ONL SD 17M		8/27/2007	11:52	8/29/2007	13:38	65	UJ	Reference standard recovered below criteria.
7239031	ONL SD 18M		8/27/2007	12:00	8/29/2007	13:23	65	UJ	Reference standard recovered below criteria.
7239032	ONL SD 19M	A	8/27/2007	12:15	8/29/2007	12:47	65	UJ	Reference standard recovered below criteria.
7239033	ONL SD 19M	B	8/27/2007	12:15	8/29/2007	12:57	65	UJ	Reference standard recovered below criteria.
7239034	ONL SD 19M	C	8/27/2007	12:15	8/29/2007	13:13	65	UJ	Reference standard recovered below criteria.
7267006	ONL SD Field Trip Blank		9/24/2007	7:30	9/25/2007	15:07	65	U	
7267023	ONL SD 11M		9/24/2007	10:18	9/25/2007	14:48	65	U	
7267024	ONL SD 12M		9/24/2007	10:22	9/25/2007	14:29	65	U	
7267025	ONL SD 13M		9/24/2007	10:26	9/25/2007	14:10	65	U	
7267026	ONL SD 14M		9/24/2007	10:32	9/25/2007	13:51	65	U	
7267027	ONL SD 15M		9/24/2007	10:36	9/25/2007	13:13	65	U	
7267028	ONL SD 16M		9/24/2007	10:38	9/25/2007	12:34	65	U	
7267031	ONL SD 17M		9/24/2007	10:48	9/25/2007	12:15	65	U	
7267032	ONL SD 18M		9/24/2007	10:50	9/25/2007	11:56	65	U	
7267033	ONL SD 19M	A	9/24/2007	10:53	9/25/2007	11:37	65	U	
7267034	ONL SD 19M	B	9/24/2007	10:53	9/25/2007	11:18	65	U	
7267035	ONL SD 19M	C	9/24/2007	10:53	9/25/2007	10:59	65	U	
7267050	ONL ND 15M		9/24/2007	13:43	9/25/2007	16:05	65	U	
7267047	ONL ND 16M		9/24/2007	13:40	9/25/2007	15:45	65	U	
7267048	ONL ND 17M		9/24/2007	13:36	9/25/2007	15:26	65	U	
7267061	ONL ND 11M		9/24/2007	14:05	9/26/2007	11:14	65	U	Draft result due to lack of required QC analyses.
7267045	ONL ND 12M		9/24/2007	14:00	9/26/2007	10:20	65	U	Draft result due to lack of required QC analyses.
7267049	ONL ND 13M		9/24/2007	13:55	9/26/2007	9:26	65	U	Draft result due to lack of required QC analyses.
7267046	ONL ND 14M		9/24/2007	13:47	9/26/2007	8:59	65	U	Draft result due to lack of required QC analyses.
7267051	isus site 4		9/24/2007	11:25	9/26/2007	11:41	65	U	Draft result due to lack of required QC analyses.
7267052	isus site 9		9/24/2007	11:05	9/26/2007	12:07	65	U	Draft result due to lack of required QC analyses.
7267053	isus site 14		9/24/2007	11:25	9/26/2007	12:34	65	U	Draft result due to lack of required QC analyses.
7267054	isus site 18		9/24/2007	11:37	9/26/2007	13:01	65	U	Draft result due to lack of required QC analyses.
7267055	isus site 21		9/24/2007	12:03	9/26/2007	13:28	65	U	Draft result due to lack of required QC analyses.
7267056	isus site 22		9/24/2007	12:17	9/26/2007	13:55	65	U	Draft result due to lack of required QC analyses.
7267057	isus site 23		9/24/2007	12:45	9/26/2007	14:22	65	U	Draft result due to lack of required QC analyses.
7267058	isus site 26		9/24/2007	13:00	9/26/2007	14:49	65	U	Draft result due to lack of required QC analyses.
7267059	isus site 29		9/24/2007	14:49	9/26/2007	15:16	65	U	Draft result due to lack of required QC analyses.
7267060	isus site 32		9/24/2007	15:00	9/26/2007	15:43	65	U	Draft result due to lack of required QC analyses.
7274010	ONL SD Field Trip Blank		10/1/2007	7:00	10/2/2007	10:30	65	U	
7274027	ONL SD 11M		10/1/2007	11:00	10/2/2007	14:24	65	U	
7274028	ONL SD 12M		10/1/2007	11:10	10/2/2007	14:06	65	U	
7274029	ONL SD 13M		10/1/2007	11:20	10/2/2007	13:48	65	U	
7274030	ONL SD 14M		10/1/2007	11:27	10/2/2007	13:30	65	U	
7274031	ONL SD 15M		10/1/2007	11:35	10/2/2007	13:12	65	U	
7274032	ONL SD 16M		10/1/2007	11:43	10/2/2007	12:36	65	U	
7274035	ONL SD 17M		10/1/2007	11:57	10/2/2007	12:18	65	U	
7274036	ONL SD 18M		10/1/2007	12:00	10/2/2007	11:42	65	U	

**Table B-11b. Summary of sulfide analytical results by ion selective electrode**

UFI Lab ID	Client ID	Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Sulfide (ug/L)	Data Validation Qualifier	Data Validation Comment
7274037	ONL SD 19M	A	10/1/2007	12:18	10/2/2007	11:24	65	U	
7274038	ONL SD 19M	B	10/1/2007	12:18	10/2/2007	11:06	65	U	
7274039	ONL SD 19M	C	10/1/2007	12:18	10/2/2007	10:48	65	U	
7288005	ONL SD Field Trip Blank		10/15/2007	7:15	10/15/2007	14:22	65	U	
7288023	ONL SD 12M		10/15/2007	11:21	10/15/2007	14:03	65	U	
7288024	ONL SD 13M		10/15/2007	11:25	10/15/2007	13:44	65	U	
7288025	ONL SD 14M		10/15/2007	11:32	10/15/2007	13:25	65	U	
7288026	ONL SD 15M		10/15/2007	11:38	10/15/2007	13:06	65	U	
7288027	ONL SD 16M		10/15/2007	11:44	10/15/2007	12:47	65	U	
7288030	ONL SD 17M		10/15/2007	11:50	10/15/2007	12:28	65	U	
7288031	ONL SD 18M		10/15/2007	11:55	10/15/2007	11:50	65	U	
7288032	ONL SD 19M	A	10/15/2007	12:00	10/15/2007	11:12	306		
7288033	ONL SD 19M	B	10/15/2007	12:00	10/15/2007	10:53	425		
7288034	ONL SD 19M	C	10/15/2007	12:00	10/15/2007	10:34	404		
7302004	ONL SD Field Trip Blank		10/29/2007	7:00	10/30/2007	10:50	65	U	
7302026	ONL SD 12M		10/29/2007	10:52	10/30/2007	13:46	65	U	
7302029	ONL SD 13M		10/29/2007	11:14	10/30/2007	13:02	65	U	
7302030	ONL SD 14M		10/29/2007	11:25	10/30/2007	12:18	65	U	
7302031	ONL SD 15M	A	10/29/2007	11:31	10/30/2007	11:56	65	U	
7302032	ONL SD 16M	B	10/29/2007	11:31	10/30/2007	11:34	65	U	
7302033	ONL SD 17M	C	10/29/2007	11:31	10/30/2007	11:12	65	U	
7309001	ONL SD Field Trip Blank		11/5/2007	7:00	11/6/2007	10:25	65	U	
7309026	ONL SD 17M		11/5/2007	11:05	11/6/2007	12:08	65	U	
7309027	ONL SD 18M		11/5/2007	11:16	11/6/2007	11:34	65	U	
7309028	ONL SD 19M	A	11/5/2007	11:20	11/6/2007	11:17	65	U	
7309029	ONL SD 19M	B	11/5/2007	11:20	11/6/2007	11:00	65	U	
7309030	ONL SD 19M	C	11/5/2007	11:20	11/6/2007	10:42	65	U	

**Table B-12a. Summary of total mercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Total Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070110	Bottle blank 070420		4/20/2007		10/9/2007	20:14	0.200	UJ	Sample analyzed between 91 and 180 days after sample collection; sample generation/collection time not recorded.
W070001	Equipment blank 070422		4/22/2007		6/14/2007	14:13	0.200	U	
W070008	OL 2m depth ND		4/23/2007	9:33	6/14/2007	15:08	1.920		
W070009	OL 10m depth ND	1	4/23/2007	9:40	6/14/2007	15:13	1.631		
W070010	OL 17m depth ND		4/23/2007	9:48	6/14/2007	14:38	1.873		
W070012	OL 10m depth FD ND	2	4/23/2007	9:52	6/14/2007	14:28	1.366		
W070016	Field blank 070423		4/23/2007	11:40	6/14/2007	16:44	0.200	U	
W070004	OL 2m depth SD		4/23/2007	11:43	6/14/2007	14:08	2.057		
W070005	OL 10m depth SD		4/23/2007	12:30	6/14/2007	14:43	1.667		
W070006	OL 18m depth SD	1	4/23/2007	13:05	6/14/2007	14:33	1.648		
W070007	OL 18m depth FD SD	2	4/23/2007	13:09	6/14/2007	14:23	1.505		
W070022	OL 2m depth ND		5/21/2007	10:05	6/14/2007	15:54	1.870		
W070023	OL 10m depth ND	1	5/21/2007	10:26	6/14/2007	15:28	1.532		
W070024	OL 17m depth ND		5/21/2007	10:30	6/14/2007	16:59	2.632		
W070025	OL 10m depth FD ND	2	5/21/2007	10:35	6/14/2007	17:09	1.982		
W070026	Field blank 070521		5/21/2007	12:00	6/14/2007	15:23	0.200	U	
W070018	OL 2m depth SD	1	5/21/2007	12:05	6/14/2007	15:34	8.433		
W070019	OL 10m depth SD		5/21/2007	13:00	6/14/2007	15:39	3.256		
W070020	OL 18m depth SD		5/21/2007	13:45	6/14/2007	16:34	3.291		
W070021	OL 2m depth FD SD	2	5/21/2007	13:50	6/14/2007	16:49	8.144		
W070111	Bottle blank 070613		6/13/2007		10/9/2007	20:19	0.200	UJ	Sample analyzed between 91 and 180 days after sample collection; sample generation/collection time not recorded.
W070050	Container Blank 070713_1	1	7/13/2007		10/9/2007	16:12	0.200	U	Sample generation/collection time not recorded.
W070051	Container Blank 070713_2	2	7/13/2007		10/9/2007	16:17	0.200	U	Sample generation/collection time not recorded.
W070052	Equipment blank 070713_1	1	7/13/2007		10/9/2007	16:22	0.200	U	Sample generation/collection time not recorded.
W070053	Equipment blank 070713_2	2	7/13/2007		10/9/2007	16:27	0.200	U	Sample generation/collection time not recorded.
W070064	Field blank 070716		7/16/2007	9:30	10/9/2007		0.200	U	
W070054	OL 2m depth SD		7/16/2007	9:42	9/19/2007	13:14	3.683		
W070055	OL 2m depth filt. SD		7/16/2007	9:45	9/19/2007	13:19	0.514		
W070056	OL 6m depth SD		7/16/2007	10:03	9/19/2007	13:24	3.595		
W070057	OL 10m depth SD	1	7/16/2007	10:40	9/19/2007	13:29	2.446		
W070065	OL 10m depth FD	2	7/16/2007	10:43	9/19/2007	14:24	2.995		
W070066	OL 10m depth FT	3	7/16/2007	10:45	9/19/2007	14:29	3.095		
W070059	OL 12m depth SD		7/16/2007	11:01	9/19/2007	13:49	2.638		
W070060	OL 14m depth SD		7/16/2007	11:25	9/19/2007	13:54	2.182		
W070061	OL 16m depth SD		7/16/2007	11:35	9/19/2007	13:59	1.568		
W070062	OL 16m depth filt. SD		7/16/2007	11:38	9/19/2007	14:04	0.602		
W070063	OL 18m depth SD		7/16/2007	12:05	9/19/2007	14:09	2.039		
W070067	Container blank 070718_1	1	7/18/2007	14:45	10/9/2007	16:32	0.200	U	
W070068	Container blank 070718_2	2	7/18/2007	14:46	10/9/2007	16:37	0.200	U	
W070069	Equipment blank 070718_1	1	7/18/2007	14:51	10/9/2007	16:42	0.200	U	
W070070	Equipment blank 070718_2	2	7/18/2007	14:52	10/9/2007	16:47	0.200	U	

**Table B-12a. Summary of total mercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Total Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070112	Bottle blank 070725		7/25/2007		10/9/2007	20:24	0.200	U	Sample generation/collection time not recorded.
W070086	OL 2m depth filt. SD		7/30/2007	8:55	10/9/2007	17:12	0.905		
W070085	OL 2m depth SD		7/30/2007	8:55	10/9/2007	16:52	2.272		
W070087	OL 6m depth SD		7/30/2007	9:40	10/9/2007	17:33	1.790		
W070088	OL 10m depth SD	1	7/30/2007	10:00	10/9/2007	17:38	1.315		
W070095	OL 12m depth FD SD	2	7/30/2007	10:15	10/9/2007	18:28	1.182		
W070096	OL 12m depth FT SD	3	7/30/2007	10:15	10/9/2007	18:33	1.269		
W070089	OL 12m depth SD	1	7/30/2007	10:15	10/9/2007	17:58	1.442		
W070090	OL 14m depth SD		7/30/2007	10:30	10/9/2007	18:03	0.773		
W070092	OL 16m depth filt. SD		7/30/2007	10:45	10/9/2007	18:13	1.003		Sample was not filtered.
W070091	OL 16m depth SD		7/30/2007	10:45	10/9/2007	18:08	0.796		
W070093	OL 17m depth SD		7/30/2007	10:50	10/9/2007	18:18	1.149		
W070094	OL 18m depthm SD		7/30/2007	11:00	10/9/2007	18:23	1.099		
W070107	OL 2m depth FD ND	2	7/30/2007	12:35	10/9/2007	20:04	1.524		
W070099	OL 2m depth filt. ND		7/30/2007	12:35	10/9/2007	18:58	0.308	J	Result less than method quantitation limit.
W070108	OL 2m depth FT ND	3	7/30/2007	12:35	10/9/2007	20:09	1.329		
W070100	OL 6m depth ND		7/30/2007	12:45	10/9/2007	19:03	1.194		
W070101	OL 10m depth ND		7/30/2007	12:52	10/9/2007	19:08	1.331		
W070102	OL 12m depth ND		7/30/2007	13:00	10/9/2007	19:29	1.884		
W070103	OL 14m depth ND		7/30/2007	13:05	10/9/2007	19:34	2.080		
W070105	OL 16m depth filt. ND		7/30/2007	13:10	10/9/2007	19:44	0.942		
W070104	OL 16m depth ND		7/30/2007	13:10	10/9/2007	19:39	2.136		
W070106	OL 17m depth ND		7/30/2007	13:15	10/9/2007	19:49	1.717		
W070098	OL 2m depth ND	1	7/30/2007		10/9/2007	18:53	1.119		Sample generation/collection time not recorded.
W070097	OL Field blank		7/30/2007		10/9/2007	18:48	0.200	U	Sample generation/collection time not recorded.
W070113	Filter blank 070730		7/31/2007		10/9/2007	20:29	0.200	U	Sample generation/collection time not recorded.
W070147	Bottle blank 070810		8/10/2007		10/11/2007	13:29	0.200	U	
W070149	2m depth filt. SD		8/27/2007	9:25	10/11/2007	13:39	1.010		
W070148	2m depth SD		8/27/2007	9:25	10/11/2007	13:34	2.877		
W070159	6m depth FD SD	2	8/27/2007	10:09	10/11/2007	15:00	1.992		
W070150	6m depth SD	1	8/27/2007	10:09	10/11/2007	13:44	2.289		
W070158	10m depth FD SD	2	8/27/2007	10:40	10/11/2007	14:55	2.096		
W070151	10m depth SD	1	8/27/2007	10:40	10/11/2007	13:49	1.841		
W070152	12m depth SD		8/27/2007	10:55	10/11/2007	13:54	2.144		
W070153	14m depth SD		8/27/2007	11:15	10/11/2007	13:59	1.938		
W070154	16m depth SD		8/27/2007	11:32	10/11/2007	14:04	1.860		
W070155	16m depth filt. SD		8/27/2007	11:33	10/11/2007	14:45	0.624		
W070156	17m depth SD		8/27/2007	11:52	10/11/2007	14:50	2.364		
W070157	18m depth SD		8/27/2007	12:00	10/11/2007	14:09	3.505		
	18m depth SD MS/MSD		8/27/2007		10/11/2007	16:19	2.362		Laboratory ID not assigned
W070160	Field blank 071011		8/27/2007		10/11/2007	15:05	0.326	J	Result less than method quantitation limit.
	Equipment blank		8/28/2007		10/11/2007	15:20	0.200	U	Laboratory ID not assigned
	Filter blank 070827		8/28/2007		10/11/2007	15:25	0.200	U	Laboratory ID not assigned
	Bottle blank 070905		9/5/2007		11/5/2007	21:01	0.200	U	Sample generation/collection time not recorded.

**Table B-12a. Summary of total mercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Total Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
	New cont. bl. 070915		9/15/2007		2/16/2008	19:51	0.200	UJ	Sample analyzed between 91 and 180 days after sample collection.
	New equip. blank 070915		9/15/2007		2/16/2008	18:44	0.200	UJ	Sample analyzed between 91 and 180 days after sample collection; sample generation/collection time not recorded.
W070330	Bottle blank 070920		9/20/2007		11/5/2007	16:14	0.200	U	Sample generation/collection time not recorded.
W070226	2m depth SD		9/24/2007	7:50	11/5/2007	19:30	3.155		
W070227	2m depth filt SD		9/24/2007	7:55	11/5/2007	19:35	0.502		
W070228	6m depth SD		9/24/2007	8:00	11/5/2007	19:40	3.755		
W070238	Field blank 070924		9/24/2007	8:08	11/5/2007	19:25	0.200	U	Sample generation/collection time not recorded.
W070229	10m depth SD		9/24/2007	8:10	11/5/2007	19:45	3.719		
W070230	12m depth SD		9/24/2007	8:15	2/16/2008	17:15	2.424	J	Sample analyzed between 91 and 180 days after sample collection.
W070231	14m depth SD		9/24/2007	8:20	2/16/2008	19:43	3.266	J	Sample analyzed between 91 and 180 days after sample collection.
W070232	16m depth SD		9/24/2007	8:27	11/5/2007	20:31	1.653		
W070233	16m depth filt SD		9/24/2007	8:30	11/5/2007	20:36	0.540		
W070234	17m depth SD		9/24/2007	8:35	2/16/2008	17:27	1.900	J	Sample analyzed between 91 and 180 days after sample collection.
W070235	18m depth SD	1	9/24/2007	8:40	2/16/2008	17:32	3.785	J	Sample analyzed between 91 and 180 days after sample collection.
W070236	18m depth SD FD	2	9/24/2007	8:42	2/16/2008	17:36	4.215	J	Sample analyzed between 91 and 180 days after sample collection.
W070237	18m depth SD FT	3	9/24/2007	8:44	2/16/2008	17:40	2.758	J	Sample analyzed between 91 and 180 days after sample collection.
W070250	ISUS # 4 11m depth	1	9/24/2007	10:20	11/5/2007	16:04	5.849		
W070260	ISUS # 4 11m depth FD	2	9/24/2007	10:20	11/5/2007	16:09	5.814		
W070261	ISUS #4 11m depth FT	3	9/24/2007	10:20	11/5/2007	16:44	3.872		
W070251	ISUS # 9 12m depth		9/24/2007	11:03	11/5/2007	16:49	1.601		
W070252	ISUS #14 15m depth		9/24/2007	11:27	11/5/2007	16:54	0.768		
W070253	ISUS #18 18m depth		9/24/2007	11:40	11/5/2007	16:59	2.871		
W070254	ISUS #21 9m depth		9/24/2007	12:05	11/5/2007	17:04	9.036		
W070255	ISUS #22 16m depth		9/24/2007	12:25	11/5/2007	17:09	1.706		
W070256	ISUS #23 12m depth		9/24/2007	12:50	11/5/2007	17:14	3.375		
W070257	ISUS #26 11m depth		9/24/2007	13:09	11/5/2007	21:36	1.970		
W070247	17m depth ND	1	9/24/2007	13:30	11/5/2007	18:40	2.769		
W070248	17m depth ND FD	2	9/24/2007	13:30	11/5/2007	19:15	2.754		
W070249	17m depth ND FT	3	9/24/2007	13:30	11/5/2007	19:20	2.813		
W070246	16m depth filt. ND		9/24/2007	13:40	11/5/2007	18:35	0.701		
W070245	16m depth ND		9/24/2007	13:40	11/5/2007	18:30	2.154		
W070244	14m depth ND		9/24/2007	13:45	11/5/2007	18:45	1.952		
W070243	12m depth ND		9/24/2007	14:04	11/5/2007	18:20	1.864		
W070242	10m depth ND		9/24/2007	14:11	11/5/2007	18:15	2.238		
W070241	6m depth ND		9/24/2007	14:14	11/5/2007	19:56	1.318		
W070240	2m depth filt. ND		9/24/2007	14:20	11/5/2007	18:05	0.545		



**Table B-12a. Summary of total mercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Total Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070239	2m depth ND		9/24/2007	14:20	11/5/2007	18:00	1.459		
W070258	ISUS #29 14m depth		9/24/2007	14:52	11/5/2007	21:41	1.782		
W070259	ISUS #32 13m depth		9/24/2007	15:05	11/5/2007	21:46	1.782		
W070326	Cont. blank 070925		9/25/2007		11/5/2007	21:11	0.200	U	Sample generation/collection time not recorded.
W070327	Equip. blank 070925		9/25/2007		2/16/2008	21:16	0.200	UU	Sample analyzed between 91 and 180 days after sample collection.
W070263	2m depth filt SD		10/1/2007	10:40	12/20/2007	13:52	1.178		
W070262	2m depth SD		10/1/2007	10:40	12/20/2007	13:47	3.402		
W070264	6m depth SD		10/1/2007	10:50	12/20/2007	13:57	4.603		
W070265	10m depth SD	1	10/1/2007	10:58	12/20/2007	14:02	3.985		
W070272	10m depth SD FD	2	10/1/2007	10:58	12/20/2007	15:08	3.953		
W070266	12m depth SD		10/1/2007	11:05	12/20/2007	14:08	2.314		
W070267	14m depth SD		10/1/2007	11:10	12/20/2007	14:28	2.168		
W070269	16m depth filt SD		10/1/2007	11:20	2/16/2008	19:30	2.105	J	Sample analyzed between 91 and 180 days after sample collection.
W070268	16m depth SD		10/1/2007	11:20	2/16/2008	19:26	3.698	J	Sample analyzed between 91 and 180 days after sample collection.
W070270	17m depth SD		10/1/2007	11:27	12/20/2007	14:43	4.044		
W070271	18m depth SD		10/1/2007	11:35	12/20/2007	14:48	4.328		
W070372	Filter blank 071001		10/1/2007		12/20/2007	18:25	0.200	U	Sample generation/collection time not recorded.
W070277	2m depth filt. SD		10/15/2007	10:10	12/20/2007	15:18	1.399		
W070276	2m depth SD		10/15/2007	10:10	12/20/2007	15:13	3.440		
W070286	6m depth FD SD	2	10/15/2007	10:48	12/20/2007	19:00	3.416		
W070278	6m depth SD	1	10/15/2007	10:48	12/20/2007	15:23	3.492		
W070287	10m depth FD SD	2	10/15/2007	11:10	12/20/2007	19:05	3.625		
W070279	10m depth SD	1	10/15/2007	11:10	12/20/2007	15:28	3.529		
W070280	12m depth SD		10/15/2007	11:21	2/16/2008	17:57	3.958	J	Sample analyzed between 91 and 180 days after sample collection.
W070281	14m depth SD		10/15/2007	11:32	12/20/2007	15:38	3.478		
W070283	16m depth filt. SD		10/15/2007	11:44	12/20/2007	15:48	1.314		
W070282	16m depth SD		10/15/2007	11:44	12/20/2007	15:43	4.614		
W070284	17m depth SD		10/15/2007	11:50	12/20/2007	15:53	3.639		
W070285	18m depth SD		10/15/2007	11:55	12/20/2007	18:45	5.976		
W070288	Field blank 071015		10/15/2007		12/20/2007	16:24	0.200	U	Sample generation/collection time not recorded.
W070289	Filter blank 071016		10/16/2007		12/20/2007	19:10	0.200	U	Sample generation/collection time not recorded.
W070324	Bottle blank 071026		10/26/2007	14:35	12/20/2007	18:15	0.200	U	
W070309	2m depth filt. SD		10/29/2007	9:35	12/20/2007	16:34	0.474	J	Result less than method quantitation limit.
W070308	2m depth SD		10/29/2007	9:35	12/20/2007	16:29	6.423		
W070310	6m depth SD		10/29/2007	10:02	12/20/2007	16:39	4.005		
W070311	10m depth SD		10/29/2007	10:30	12/20/2007	16:44	3.802		
W070312	12m depth SD		10/29/2007	10:38	12/20/2007	16:49	4.164		
W070313	14m depth SD	1	10/29/2007	10:48	12/20/2007	17:09	3.829		
W070325	14m depth SD FD	2	10/29/2007	10:48	12/20/2007	18:20	3.949		
W070315	16m depth filt. SD		10/29/2007	10:52	12/20/2007	17:19	2.553		
W070314	16m depth SD		10/29/2007	10:52	12/20/2007	17:14	5.399		

**Table B-12a. Summary of total mercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Total Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070316	17m depth SD		10/29/2007		12/20/2007	17:24	5.540		Sample generation/collection time not recorded.
W070317	18m depth SD		10/29/2007		12/20/2007	17:29	5.234		Sample generation/collection time not recorded.
W070318	Field blank 071029		10/29/2007		12/20/2007	17:44	0.200	U	Sample generation/collection time not recorded.
W070323	Filter blank 071030		10/30/2007	11:45	12/20/2007	18:10	0.200	U	
W070319	Container blank 071030		10/30/2007	12:15	12/20/2007	17:49	0.200	U	
W070320	Equipment blank 071030		10/30/2007	12:17	12/20/2007	17:54	0.200	U	
W070321	Container blank 2 071030		10/30/2007	13:30	12/20/2007	17:59	0.200	U	
W070322	Net blank 071030		10/30/2007	13:35	12/20/2007	18:04	0.200	U	
W070332	2m depth filt. SD		11/5/2007	9:20	1/18/2008	10:09	0.655		
W070331	2m depth SD		11/5/2007	9:20	1/18/2008	10:05	3.338		
W070333	6m depth SD		11/5/2007	9:30	1/18/2008	10:13	3.441		
W070334	10m depth SD		11/5/2007	9:35	1/18/2008	10:17	3.529		
W070342	Field blank 071105		11/5/2007	9:35	1/18/2008	11:13	0.200	U	
W070335	12m depth SD	1	11/5/2007	9:42	1/18/2008	10:34	3.883		
W070336	12m depth SD FD	2	11/5/2007	9:42	1/18/2008	10:39	3.810		
W070337	14m depth SD		11/5/2007	9:48	1/18/2008	10:43	2.905		
W070339	16m depth filt. SD		11/5/2007	9:55	1/18/2008	10:51	0.718		
W070338	16m depth SD		11/5/2007	9:55	1/18/2008	10:47	4.955		
W070340	17m depth SD		11/5/2007	10:00	1/18/2008	10:56	5.293		
W070341	18m depth SD		11/5/2007	10:05	1/18/2008	11:09	6.906		
W070343	ISUS site #4 11m		11/5/2007	12:25	1/18/2008	11:17	5.034		
W070344	ISUS site #9 12m		11/5/2007	12:45	1/18/2008	11:21	3.869		
W070345	ISUS site #14 12m		11/5/2007	13:10	1/18/2008	11:26	3.559		
W070346	ISUS site #18 19m		11/5/2007	13:20	1/18/2008	11:30	6.489		
W070347	ISUS site #21 10m		11/5/2007	13:40	1/18/2008	11:34	4.953		
W070348	ISUS site #22 16m		11/5/2007	13:55	1/18/2008	11:38	4.664		
W070349	ISUS site #23 8m		11/5/2007	14:10	1/18/2008	11:43	3.330		
W070350	ISUS site #26 14m		11/5/2007	14:30	1/18/2008	11:47	1.436		
W070351	ISUS site #29 15m	1	11/5/2007	14:50	1/18/2008	12:13	4.277		
W070353	ISUS site #29 15m FD	2	11/5/2007	14:50	1/18/2008	12:21	4.293		
W070354	ISUS site #29 15m FT	3	11/5/2007	14:50	1/18/2008	12:25	4.126		
W070352	ISUS site #32 13m		11/5/2007	15:15	2/16/2008	19:00	1.145	J	Sample analyzed between 91 and 180 days after sample collection; laboratory duplicate precision criterion exceeded.
W070368	2m depth filt. ND		11/12/2007	9:08	1/18/2008	13:21	0.222	J	Result less than method quantitation limit.
W070367	2m depth ND		11/12/2007	9:08	1/18/2008	13:16	1.708		
W070369	10m depth ND		11/12/2007	9:16	1/18/2008	12:51	1.781		
W070371	Field blank 071112		11/12/2007	9:16	1/18/2008	13:29	0.200	U	
W070370	17m depth ND		11/12/2007	9:25	1/18/2008	13:25	2.131		
W070363	2m depth filt. SD		11/12/2007	10:00	2/16/2008	19:56	0.368	J	Sample analyzed between 91 and 180 days after sample collection; result less than method quantitation limit.
W070362	2m depth SD		11/12/2007	10:00	1/18/2008	12:30	1.709		
W070364	10m depth SD		11/12/2007	10:25	1/18/2008	12:38	1.925		
W070365	18m depth SD	1	11/12/2007	10:35	1/18/2008	12:42	3.784		

**Table B-12a. Summary of total mercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Total Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070366	18m depth SD FD	2	11/12/2007	10:35	1/18/2008	12:47	4.984		
W070394	Filter blank 071112		11/12/2007		1/18/2008	14:42	0.200	U	Sample generation/collection time not recorded.
W070379	2m depth filt. SD		11/19/2007	9:07	1/18/2008	13:42	0.440	J	Result less than method quantitation limit.
W070378	2m depth SD		11/19/2007	9:07	1/18/2008	13:38	4.003		
W070383	Field blank 071119		11/19/2007	9:10	1/18/2008	14:20	0.200	U	
W070380	10m depth SD	1	11/19/2007	9:25	1/18/2008	13:46	3.847		
W070381	10m depth SD FD	2	11/19/2007	9:25	1/18/2008	13:51	3.939		
W070382	18m depth SD		11/19/2007	9:55	1/18/2008	13:55	3.147		
W070384	Container blank 071120		11/20/2007	10:15	1/18/2008	14:25	0.200	U	
W070385	Equipment blank 071120		11/20/2007	10:27	1/18/2008	14:29	0.200	U	
W070386	Cont. blank net 071120		11/20/2007	10:40	1/18/2008	14:33	0.200	U	
W070387	Net blank 071120		11/20/2007	10:42	1/18/2008	14:38	0.200	U	
W070395	Filter blank 071120		11/20/2007		1/18/2008	14:59	0.200	U	Sample generation/collection time not recorded.

**Table B-12b. Summary of total mercury analytical results in zooplankton**

SU Lab ID	Client ID	Duplicate/ Triplicate	Sampling Date		Analysis Date		Total Hg (mg/kg)	Data Validation Qualifier	Data Validation Comments
Z070001	Zoopl ND	1	5/21/2007		7/14/2007	3:03	0.209	J	Associated LCS recovered low, sample collection time not recorded.
Z070002	Zoopl ND FD	2	5/21/2007		7/14/2007	0:58	0.154	J	Associated LCS recovered low, sample collection time not recorded.
Z070003	Zoopl SD	1	5/21/2007		7/14/2007	3:28	0.217	J	Associated LCS recovered low, sample collection time not recorded.
Z070004	Zoopl SD FD	2	5/21/2007		7/14/2007	3:53	0.233	J	Associated LCS recovered low, sample collection time not recorded.
Z070007	Zoopl ND	1	7/30/2007	11:30	10/12/2007	13:49	1.135	J	Field duplicate precision criterion exceeded.
Z070008	Zoopl ND FD	2	7/30/2007	11:40	10/12/2007	13:59	0.754	J	Field duplicate precision criterion exceeded.
Z070009	Zoopl SD	1	7/30/2007	13:30	10/12/2007	14:21	0.934		
Z070010	Zoopl SD FD	2	7/30/2007	13:30	10/12/2007	14:31	0.700		
Z070011	Zoopl SD	1	9/24/2007	8:50	10/24/2007	12:15	0.575	J	Field duplicate precision criterion exceeded.
Z070012	Zoopl SD FD	2	9/24/2007	8:55	10/24/2007	12:17	1.282	J	Field duplicate precision criterion exceeded.
Z070013	Zoopl ND	1	9/24/2007	14:20	10/24/2007	12:19	0.366		
Z070014	Zoopl ND FD	2	9/24/2007	14:25	10/24/2007	12:24	0.334		
Z070015	Zoopl SD	1	10/29/2007	9:45	1/22/2008	15:22	1.175		
Z070016	Zoopl SD FD	2	10/29/2007	9:55	1/22/2008	15:49	1.292		
Z070019	Zoopl SD	1	11/12/2007	11:30	2/15/2008	14:02	1.273	J	Sample analyzed between 91 and 180 days after sample collection; laboratory and field duplicate precision criteria exceeded.
Z070020	Zoopl SD FD	2	11/12/2007	11:35	2/15/2008	14:56	1.975	J	Sample analyzed between 91 and 180 days after sample collection; laboratory and field duplicate precision criteria exceeded.
Z070017	Zoopl SD	1	11/19/2007	10:15	1/22/2008	16:44	0.474		
Z070018	Zoopl SD FD	2	11/19/2007	10:20	1/22/2008	17:39	0.441		

**Table B-13a. Summary of methylmercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070110	Bottle blank 070420		4/20/2007		10/5/2007	3:16	0.020	U	Sample generation/collection time not recorded.
W070008	OL 2m depth ND		4/23/2007	9:33	6/21/2007	21:11	0.038	J	Result less than method quantitation limit.
W070009	OL 10m depth ND	1	4/23/2007	9:40	6/22/2007	0:33	0.127		
W070010	OL 17m depth ND		4/23/2007	9:48	6/21/2007	16:19	0.199		
W070012	OL 10m depth FD ND	2	4/23/2007	9:52	6/22/2007	0:10	0.118		
W070011	OL 4-23 FB		4/23/2007	11:40	6/21/2007	16:41	0.020	U	
W070004	OL 2m depth SD		4/23/2007	11:43	6/21/2007	17:48	0.090		
W070005	OL 10m depth SD		4/23/2007	12:30	6/21/2007	17:04	0.072		
W070006	OL 18m depth SD	1	4/23/2007	13:05	6/21/2007	18:11	0.086		
W070007	OL 18m depth FD SD	2	4/23/2007	13:09	6/21/2007	17:26	0.083		
W070001	Equipment blank 070423		4/23/2007		6/21/2007	15:56	0.020	U	Sample generation/collection time not recorded.
W070022	OL 2m depth ND		5/21/2007	10:05	7/24/2007	16:04	0.119		
W070023	OL 10m depth ND	1	5/21/2007	10:26	7/24/2007	16:27	0.121		
W070024	OL 17m depth ND		5/21/2007	10:30	7/24/2007	16:49	0.067		
W070025	OL 10m depth FD ND	2	5/21/2007	10:35	7/24/2007	19:23	0.140		
W070026	OL 5-21 FB		5/21/2007	12:00	8/14/2007	18:13	0.020	U	
W070018	OL 2m depth SD	1	5/21/2007	12:05	8/14/2007	17:28	0.087		
W070019	OL 10m depth SD		5/21/2007	13:00	7/24/2007	14:56	0.117		
W070020	OL 18m depth SD		5/21/2007	13:45	7/24/2007	15:19	0.144		
W070021	OL 2m depth FD SD	2	5/21/2007	13:50	8/14/2007	17:51	0.105		
W070111	Bottle blank 070613		6/13/2007		10/5/2007	3:42	0.020	U	Sample generation/collection time not recorded.
W070050	Container Blank 070713_1	1	7/13/2007		10/5/2007	23:49	0.020	U	Sample generation/collection time not recorded.
W070052	Equipment blank 070713_1	1	7/13/2007		10/5/2007	12:41	0.020	U	Sample generation/collection time not recorded.
W070051	Container Blank 070713_2	2	7/13/2007		10/5/2007	12:15	0.020	U	Sample generation/collection time not recorded.
W070053	Equipment blank 070713_2	2	7/13/2007		10/4/2007	13:07	0.020	U	Sample generation/collection time not recorded.
W070064	Field blank 070716		7/16/2007	9:30	9/1/2007	2:00	0.020	U	
W070054	OL 2m depth SD		7/16/2007	9:42	8/31/2007	20:37	0.173		
W070055	OL 2m depth filt. SD		7/16/2007	9:45	8/31/2007	21:01	0.069		
W070056	OL 6m depth SD		7/16/2007	10:03	8/31/2007	21:24	0.153		
W070057	OL 10m depth SD	1	7/16/2007	10:40	8/31/2007	21:47	0.070		
W070065	OL 10m depth FD	2	7/16/2007	10:43	9/1/2007	2:24	0.072		
W070066	OL 10m depth FT	3	7/16/2007	10:45	9/1/2007	2:48	0.072		
W070059	OL 12m depth SD		7/16/2007	11:01	9/1/2007	0:04	0.049	J	Result less than method quantitation limit.
W070060	OL 14m depth SD		7/16/2007	11:25	9/1/2007	0:30	0.054		
W070061	OL 16m depth SD		7/16/2007	11:35	10/4/2007	19:04	0.096		
W070062	OL 16m depth filt. SD		7/16/2007	11:38	10/4/2007	19:27	0.044	J	Result less than method quantitation limit.
W070063	OL 18m depth SD		7/16/2007	12:05	9/1/2007	1:38	0.092		
W070067	Container blank 070718_1	1	7/18/2007	14:45	10/5/2007	1:32	0.020	U	
W070068	Container blank 070718_2	2	7/18/2007	14:46	10/5/2007	1:58	0.020	U	
W070069	Equipment blank 070718_1	1	7/18/2007	14:51	10/5/2007	2:24	0.020	U	
W070070	Equipment blank 070718_2	2	7/18/2007	14:52	10/5/2007	2:50	0.020	U	
W070112	Bottle blank 070725		7/25/2007		10/5/2007	5:52	0.020	U	Sample generation/collection time not recorded.
W070086	OL 2m depth filt. SD		7/30/2007	8:55	9/27/2007	23:25	0.062	J	Associated LCS recovered above criteria.

**Table B-13a. Summary of methylmercury analytical results**

SU Lab ID	Client ID	Duplicate/ Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070085	OL 2m depth SD		7/30/2007	8:55	9/27/2007	23:02	0.129	J	Associated LCS recovered above criteria.
W070087	OL 6m depth SD		7/30/2007	9:40	9/27/2007	23:47	0.082	J	Associated LCS recovered above criteria.
W070088	OL 10m depth SD	1	7/30/2007	10:00	9/28/2007	9:12	0.095	J	Associated LCS recovered above criteria.
W070089	OL 12m depth SD	1	7/30/2007	10:15	10/4/2007	20:59	0.111		
W070095	OL 12m depth FD SD	2	7/30/2007	10:15	9/28/2007	4:20	0.080	J	Associated LCS recovered above criteria.
W070096	OL 12m depth FT SD	3	7/30/2007	10:15	9/28/2007	0:09	0.078	J	Associated LCS recovered above criteria.
W070090	OL 14m depth SD		7/30/2007	10:30	9/28/2007	2:02	0.139	J	Associated LCS recovered above criteria.
W070092	OL 16m depth filt. SD		7/30/2007	10:45	9/28/2007	3:34	0.182	J	Associated LCS recovered above criteria.
W070091	OL 16m depth SD		7/30/2007	10:45	9/28/2007	3:12	0.179	J	Associated LCS recovered above criteria.
W070093	OL 17m depth SD		7/30/2007	10:50	9/28/2007	3:57	0.167	J	Associated LCS recovered above criteria.
W070094	OL 18m depthm SD		7/30/2007	11:00	9/28/2007	4:43	0.285	J	Associated LCS recovered above criteria.
W070107	OL 2m depth FD ND	2	7/30/2007	12:35	9/27/2007	22:40	0.042	J	Result less than method quantitation limit, associated LCS recovered above criteria
W070108	OL 2m depth FT ND	3	7/30/2007	12:35	9/27/2007	21:29	0.044	J	Result less than method quantitation limit, associated LCS recovered above criteria
W070099	OL 2m depth filt. ND		7/30/2007	12:35	9/27/2007	19:58	0.035	J	Result less than method quantitation limit, associated LCS recovered above criteria
W070100	OL 6m depth ND		7/30/2007	12:45	9/27/2007	20:21	0.020	U	
W070101	OL 10m depth ND		7/30/2007	12:52	9/28/2007	9:34	0.168	J	Associated LCS recovered above criteria.
W070102	OL 12m depth ND		7/30/2007	13:00	10/4/2007	21:21	0.062		
W070103	OL 14m depth ND		7/30/2007	13:05	10/4/2007	21:44	0.069		
W070105	OL 16m depth filt. ND		7/30/2007	13:10	9/27/2007	20:44	0.026	J	Result less than method quantitation limit, associated LCS recovered above criteria
W070104	OL 16m depth ND		7/30/2007	13:10	10/4/2007	23:23	0.080		
W070106	OL 17m depth ND		7/30/2007	13:15	9/27/2007	21:07	0.195	J	Associated LCS recovered above criteria.
W070098	OL 2m depth ND	1	7/30/2007		9/27/2007	19:35	0.042	J	Result less than method quantitation limit; associated LCS recovered above criteria; sample generation/collection time not recorded.
W070097	OL Field blank		7/30/2007		9/27/2007	19:12	0.020	U	Sample generation/collection time not recorded.
W070113	Filter blank 070730		7/31/2007		10/5/2007	7:35	0.020	U	Sample generation/collection time not recorded.
W070145	Cont. blank 070802		8/2/2007		10/15/2007	7:13	0.020	U	Sample generation/collection time not recorded
W070146	Net blank 070802		8/2/2007		10/15/2007	7:38	0.020	U	Sample generation/collection time not recorded
W070147	Bottle blank 070810		8/10/2007		10/14/2007	5:10	0.020	U	Sample generation/collection time not recorded
W070149	OL 2m depth filt		8/27/2007	9:25	10/14/2007	22:09	0.020	U	Sample analyzed twice, concentration verified.
W070148	OL 2m depth		8/27/2007	9:25	10/14/2007	21:44	0.066		
W070150	OL 6m depth	1	8/27/2007	10:09	10/14/2007	22:34	0.099		
W070159	OL 6m depth FD	2	8/27/2007	10:09	10/14/2007	22:58	0.088		
W070151	OL 10m depth	1	8/27/2007	10:40	10/14/2007	23:23	0.120		
W070158	OL 10m depth FD	2	8/27/2007	10:40	10/14/2007	23:48	0.127		
W070152	OL 12m depth		8/27/2007	10:55	10/15/2007	9:17	0.129		
W070153	OL 14m depth		8/27/2007	11:15	10/15/2007	1:02	0.173		
W070154	OL 16m depth		8/27/2007	11:32	10/15/2007	1:27	0.607		
W070155	OL 16m depth filt		8/27/2007	11:33	10/15/2007	3:31	0.055		

**Table B-13a. Summary of methylmercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070156	OL 17m depth		8/27/2007	11:52	11/20/2007	20:07	0.162		Sample analyzed twice, concentration verified.
W070157	OL 18m depth		8/27/2007	12:00	10/15/2007	1:52	0.573		
W070160	OL Field Blank 070827		8/27/2007		10/14/2007	21:19	0.020	U	Sample generation/collection time not recorded.
28 FILT. BL	Filter blank 070828		8/28/2007		10/15/2007	4:46	0.020	U	Sample generation/collection time not recorded
W070273	Container blank 070905		9/5/2007		10/15/2007	5:35	0.020	U	Sample generation/collection time not recorded
W070274	Equipment blank 070905		9/5/2007		10/15/2007	6:00	0.020	U	Sample generation/collection time not recorded
W070330	Bottle blank 070920		9/20/2007		11/20/2007	23:00	0.020	U	Sample generation/collection time not recorded
W070226	2m depth SD		9/24/2007	7:50	10/19/2007	18:20	0.116		
W070227	2m depth filt SD		9/24/2007	7:55	11/20/2007	18:44	0.020	U	Sample analyzed twice, concentration verified.
W070228	6m depth SD		9/24/2007	8:00	10/19/2007	18:28	0.071		
W070238	Field blank		9/24/2007	8:08	10/20/2007	1:19	0.020	U	
W070229	10m depth SD		9/24/2007	8:10	10/19/2007	19:34	0.137		
W070230	12m depth SD		9/24/2007	8:15	10/19/2007	19:58	0.191		
W070231	14m depth SD		9/24/2007	8:20	10/19/2007	20:23	0.370		
W070232	16m depth SD		9/24/2007	8:27	11/20/2007	18:53	0.310		
W070233	16m depth filt SD		9/24/2007	8:30	11/20/2007	19:17	0.072		
W070234	17m depth SD		9/24/2007	8:35	10/19/2007	23:41	0.314		
W070235	18m depth SD	1	9/24/2007	8:40	10/20/2007	0:05	1.128		
W070236	18m depth SD FD	2	9/24/2007	8:42	10/20/2007	0:30	1.276		
W070237	18m depth SD FT	3	9/24/2007	8:44	10/20/2007	0:54	1.192		
W070250	ISUS # 4 11m depth	1	9/24/2007	10:20	10/24/2007	22:26	0.080		
W070260	ISUS # 4 11m depth FD	2	9/24/2007	10:20	10/25/2007	4:40	0.070		
W070261	ISUS #4 11m depth FT	3	9/24/2007	10:20	10/25/2007	5:05	0.066		
W070251	ISUS # 9 12m depth		9/24/2007	11:03	10/25/2007	0:08	0.099		
W070252	ISUS #14 15m depth		9/24/2007	11:27	10/25/2007	1:22	0.046	J	Result less than method quantitation limit.
W070253	ISUS #18 18m depth		9/24/2007	11:40	10/25/2007	1:47	0.410		
W070254	ISUS #21 9m depth		9/24/2007	12:05	10/25/2007	2:11	0.219		
W070255	ISUS #22 16m depth		9/24/2007	12:25	10/25/2007	2:36	0.223		
W070256	ISUS #23 12m depth		9/24/2007	12:50	10/25/2007	3:01	0.053		
W070257	ISUS #26 11m depth		9/24/2007	13:09	10/25/2007	3:26	0.124		
W070247	17m depth ND	1	9/24/2007	13:30	10/24/2007	21:12	0.737		
W070248	17m depth ND FD	2	9/24/2007	13:30	10/24/2007	21:37	0.856		
W070249	17m depth ND FT	3	9/24/2007	13:30	10/24/2007	22:02	0.756		
W070246	16m depth filt. ND		9/24/2007	13:40	10/24/2007	20:48	0.247		
W070245	16m depth ND		9/24/2007	13:40	10/24/2007	20:23	0.332		
W070244	14m depth ND		9/24/2007	13:45	10/20/2007	3:48	0.403		
W070243	12m depth ND		9/24/2007	14:04	10/20/2007	3:24	0.214		
W070242	10m depth ND		9/24/2007	14:11	10/20/2007	2:58	0.178		
W070241	6m depth ND		9/24/2007	14:14	10/20/2007	2:34	0.165		
W070240	2m depth filt. ND		9/24/2007	14:20	10/20/2007	2:09	0.026	J	Result less than method quantitation limit.
W070239	2m depth ND		9/24/2007	14:20	10/20/2007	1:44	0.086		
W070258	ISUS #29 14m depth		9/24/2007	14:52	10/25/2007	3:51	0.691		
W070259	ISUS #32 13m depth		9/24/2007	15:05	10/25/2007	4:16	0.254		

**Table B-13a. Summary of methylmercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070326	Cont. blank 070925		9/25/2007		11/20/2007	20:31	0.020	U	Sample generation/collection time not recorded.
W070327	Equip. blank 070925		9/25/2007		11/20/2007	20:56	0.020	U	Sample generation/collection time not recorded.
W070263	2m depth filt SD		10/1/2007	10:40	12/1/2007	5:58	0.049	J	Result less than method quantitation limit.
W070262	2m depth SD		10/1/2007	10:40	12/1/2007	5:33	0.078		
W070264	6m depth SD		10/1/2007	10:50	12/1/2007	6:23	0.081		
W070265	10m depth SD	1	10/1/2007	10:58	12/1/2007	6:48	0.224		
W070272	10m depth SD FD	2	10/1/2007	10:58	11/30/2007	19:10	0.232		
W070266	12m depth SD		10/1/2007	11:05	12/1/2007	7:13	0.263		
W070267	14m depth SD		10/1/2007	11:10	11/30/2007	17:05	0.695		
W070269	16m depth filt SD		10/1/2007	11:20	11/30/2007	17:55	0.453		
W070268	16m depth SD		10/1/2007	11:20	11/30/2007	17:30	0.777		
W070270	17m depth SD		10/1/2007	11:27	11/30/2007	18:19	0.675		
W070271	18m depth SD		10/1/2007	11:35	11/30/2007	18:45	0.734		
W070372	Filter blank 071001		10/1/2007		12/8/2007	6:31	0.020	U	Sample generation/collection time not recorded.
W070372	Filter blank 071001		10/1/2007		1/11/2008	23:47	0.020	U	Sample generation/collection time not recorded.
W070277	2m depth filt. SD		10/15/2007	10:10	11/30/2007	20:00	0.022	J	Result less than method quantitation limit.
W070276	2m depth SD		10/15/2007	10:10	11/30/2007	19:35	0.061		
W070278	6m depth SD	1	10/15/2007	10:48	11/30/2007	20:24	0.109		
W070286	6m depth FD SD	2	10/15/2007	10:48	12/1/2007	3:04	0.111		
W070279	10m depth SD	1	10/15/2007	11:10	11/30/2007	20:49	0.126		
W070287	10m depth FD SD	2	10/15/2007	11:10	12/1/2007	3:29	0.137		
W070280	12m depth SD		10/15/2007	11:21	11/30/2007	23:19	0.161		
W070281	14m depth SD		10/15/2007	11:32	11/30/2007	23:44	0.158		
W070283	16m depth filt. SD		10/15/2007	11:44	12/1/2007	0:33	0.068		
W070282	16m depth SD		10/15/2007	11:44	12/1/2007	0:09	0.183		
W070284	17m depth SD		10/15/2007	11:50	12/1/2007	0:59	0.127		
W070285	18m depth SD		10/15/2007	11:55	12/1/2007	2:39	0.136		
W070288	Field blank 071015		10/15/2007		12/1/2007	3:54	0.020	U	Sample generation/collection time not recorded.
W070289	Filter blank 071016		10/16/2007		12/1/2007	4:18	0.020	U	Sample generation/collection time not recorded.
W070324	Bottle blank 071026		10/26/2007	14:35	12/8/2007	6:06	0.020	U	
W070309	2m depth filt. SD		10/29/2007	9:35	12/13/2007	17:21	0.062		
W070308	2m depth SD		10/29/2007	9:35	12/13/2007	16:57	0.114		
W070310	6m depth SD		10/29/2007	10:02	12/13/2007	17:46	0.123		
W070311	10m depth SD		10/29/2007	10:30	12/13/2007	18:11	0.115		
W070312	12m depth SD		10/29/2007	10:38	12/13/2007	18:36	0.145		
W070313	14m depth SD		10/29/2007	10:48	1/12/2008	2:40	0.616		Sample analyzed twice, concentration verified.
W070325	14m depth SD FD		10/29/2007	10:48	1/12/2008	3:05	0.612		Sample analyzed twice, concentration verified.
W070315	16m depth filt. SD		10/29/2007	10:52	12/13/2007	21:54	0.239		
W070314	16m depth SD		10/29/2007	10:52	12/13/2007	20:39	0.984		
W070316	17m depth SD		10/29/2007	12/13/2007	22:19	1.419			Sample generation/collection time not recorded.
W070317	18m depth SD		10/29/2007	12/13/2007	22:44	1.912			Sample generation/collection time not recorded.
W070318	Field blank 071029		10/29/2007		12/8/2007	1:33	0.020	U	Sample generation/collection time not recorded.
W070323	Filter blank 071030		10/30/2007	11:45	12/8/2007	5:41	0.020	U	



**Table B-13a. Summary of methylmercury analytical results**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070319	Container blank 071030		10/30/2007	12:15	12/8/2007	1:58	0.020	U	
W070320	Equipment blank 071030		10/30/2007	12:17	12/8/2007	3:12	0.020	U	
W070321	Container blank 2 071030		10/30/2007	13:30	12/8/2007	3:37	0.020	U	
W070322	Net blank 071030		10/30/2007	13:35	12/8/2007	5:17	0.020	U	
W070332	2m depth filt. SD		11/5/2007	9:20	12/7/2007	18:56	0.081		
W070331	2m depth SD		11/5/2007	9:20	12/7/2007	18:32	0.138		
W070333	6m depth SD		11/5/2007	9:30	12/7/2007	19:21	0.178		
W070334	10m depth SD		11/5/2007	9:35	12/7/2007	19:46	0.145		
W070342	Filed blank 071105		11/5/2007	9:35	12/8/2007	1:08	0.020	U	
W070335	12m depth SD	1	11/5/2007	9:42	12/7/2007	22:14	0.171		
W070336	12m depth SD FD	2	11/5/2007	9:42	12/7/2007	22:39	0.163		
W070337	14m depth SD		11/5/2007	9:48	12/7/2007	23:04	0.082		
W070339	16m depth filt. SD		11/5/2007	9:55	12/7/2007	23:53	0.170		
W070338	16m depth SD		11/5/2007	9:55	12/7/2007	23:28	1.484		
W070340	17m depth SD		11/5/2007	10:00	12/8/2007	0:18	2.267		
W070341	18m depth SD		11/5/2007	10:05	12/8/2007	0:43	2.016		
W070343	ISUS site #4 11m		11/5/2007	12:25	12/20/2007	15:58	0.172		
W070344	ISUS site #9 12m		11/5/2007	12:45	12/20/2007	16:23	0.234		
W070345	ISUS site #14 12m		11/5/2007	13:10	12/20/2007	16:48	0.288		
W070346	ISUS site #18 19m		11/5/2007	13:20	12/20/2007	17:13	0.228		
W070347	ISUS site #21 10m		11/5/2007	13:40	12/20/2007	17:37	0.211		
W070348	ISUS site #22 16m		11/5/2007	13:55	12/20/2007	18:02	0.970		
W070349	ISUS site #23 8m		11/5/2007	14:10	12/20/2007	20:30	0.216		
W070350	ISUS site #26 14m		11/5/2007	14:30	12/20/2007	20:55	1.079		
W070351	ISUS site #29 15m	1	11/5/2007	14:50	12/20/2007	21:20	0.087	J	Field triplicate precision criterion exceeded.
W070353	ISUS site #29 15m FD	2	11/5/2007	14:50	12/20/2007	22:09	1.243	J	Field triplicate precision criterion exceeded.
W070354	ISUS site #29 15m FT	3	11/5/2007	14:50	1/24/2008		1.087	J	Field triplicate precision criterion exceeded.
W070352	ISUS site #32 13m		11/5/2007	15:15	12/20/2007	21:44	0.130		
W070368	2m depth filt. ND		11/12/2007	9:08	1/12/2008	5:58	0.131		
W070367	2m depth ND		11/12/2007	9:08	1/12/2008	5:33	0.267		
W070369	10m depth ND		11/12/2007	9:16	1/12/2008	6:23	0.239		
W070371	Field blank 071112		11/12/2007	9:16	1/12/2008	6:48	0.020	U	
W070370	17m depth ND		11/12/2007	9:25	1/12/2008	17:20	0.036	J	Result less than method quantitation limit.
W070363	2m depth filt. SD		11/12/2007	10:00	12/20/2007	22:59	0.143		
W070362	2m depth SD		11/12/2007	10:00	12/20/2007	22:34	0.363		
W070364	10m depth SD		11/12/2007	10:25	12/20/2007	23:24	1.227		
W070365	18m depth SD	1	11/12/2007	10:35	12/21/2007	1:52	0.201		
W070366	18m depth SD FD	2	11/12/2007	10:35	12/21/2007	2:17	0.215		
W070394	Filter blank 071112		11/12/2007		1/12/2008	0:11	0.020	U	Sample generation/collection time not recorded.
W070379	2m depth filt. SD		11/19/2007	9:07	1/12/2008	7:38	0.020	U	
W070378	2m depth SD		11/19/2007	9:07	1/12/2008	7:12	0.020	U	
W070383	Field blank 071119		11/19/2007	9:10	1/12/2008	10:43	0.020	U	
W070380	10m depth SD	1	11/19/2007	9:25	1/12/2008	8:02	0.148		

**Table B-13a. Summary of methylmercury analytical results**

SU Lab ID	Client ID	Duplicate/ Triplicate	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (ng/L)	Data Validation Qualifier	Data Validation Comments
W070381	10m depth SD FD	2	11/19/2007	9:25	1/12/2008	8:39	0.150		
W070382	18m depth SD		11/19/2007	9:55	1/12/2008	9:04	0.158		
W070384	Container blank 071120		11/20/2007	10:15	1/12/2008	14:51	0.020	U	
W070385	Equipment blank 071120		11/20/2007	10:27	1/12/2008	15:16	0.020	U	
W070386	Cont. blank net 071120		11/20/2007	10:40	1/12/2008	15:40	0.020	U	
W070387	Net blank 071120		11/20/2007	10:42	1/12/2008	16:55	0.020	U	
W070395	Filter blank 071120		11/20/2007		1/12/2008	0:36	0.020	U	Sample generation/collection time not recorded.

**Table B-13b. Summary of methylmercury analytical results in zooplankton**

SU Lab ID	Client ID	Duplicate/ TriPLICATE	Sampling Date	Sampling Time	Analysis Date	Analysis Time	Methyl Hg (mg/kg)	Data Validation Qualifer	Data Validation Comments
Z070001	Zoopl ND	1	5/21/2007		7/29/2007	17:05	0.029	J	Sampling time not recorded; result less than reporting limit.
Z070003	Zoopl SD	1	5/21/2007		7/29/2007	16:19	0.009	U	Sampling time not recorded.
Z070002	Zoopl ND FD	2	5/21/2007		7/29/2007	17:27	0.017	U	Sampling time not recorded.
Z070004	Zoopl SD FD	2	5/21/2007		7/29/2007	16:42	0.016	U	Sampling time not recorded.
Z070007	Zoopl SD	1	7/30/2007	11:30	8/31/2007	18:17	0.055		
Z070008	Zoopl SD FD	2	7/30/2007	11:30	8/31/2007	18:40	0.051		
Z070009	Zoopl ND	1	7/30/2007	13:30	8/31/2007	19:47	0.048	J	Result less than reporting limit.
Z070010	Zoopl ND FD	2	7/30/2007	13:30	8/31/2007	20:10	0.040	J	Result less than reporting limit.
Z070011	Zoopl SD	1	9/24/2007	8:50	10/31/2007	20:12	0.058		
Z070012	Zoopl SD FD	2	9/24/2007	8:55	10/31/2007	21:51	0.060		
Z070013	Zoopl ND	1	9/24/2007	14:20	10/31/2007	22:16	0.045	J	Field duplicate precision criteria exceeded.
Z070014	Zoopl ND FD	2	9/24/2007	14:25	10/31/2007	22:40	0.011	J	Field duplicate precision criteria exceeded.
Z070015	Zoopl SD	1	10/29/2007	9:45	1/16/2008	6:35	0.239	J	Associated LCS recovered below criteria; MS and field duplicate precision criteria exceeded.
Z070016	Zoopl SD FD	2	10/29/2007	9:55	1/16/2008	7:43	0.137	J	Associated LCS recovered below criteria; MS and field duplicate precision criteria exceeded.
Z070019	Zoopl SD	1	11/12/2007	11:30	2/17/2008	17:37	0.026	J	Associated LCS recovered below criteria; field duplicate precision criteria exceeded.
Z070020	Zoopl SD FD	2	11/12/2007	11:35	2/17/2008	19:03	0.232	J	Associated LCS recovered below criteria; field duplicate precision criteria exceeded.
Z070017	Zoopl SD	1	11/19/2007	10:15	1/16/2008	8:18	0.332	J	Associated LCS recovered below criteria.
Z070018	Zoopl SD FD	2	11/19/2007	10:20	1/16/2008	8:52	0.328	J	Associated LCS recovered below criteria.

## APPENDIX C

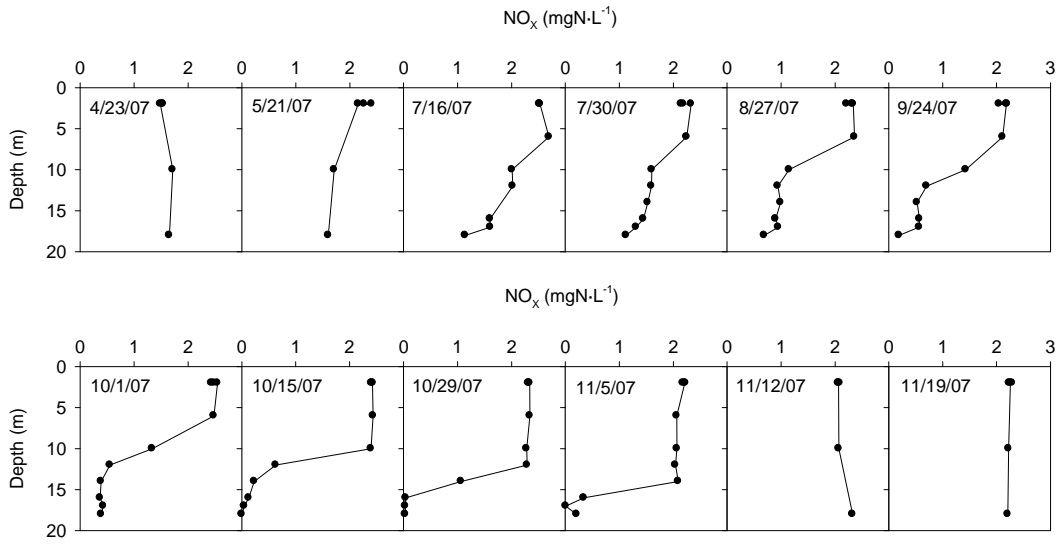
### ANALYTICAL RESULT GRAPHS

## **Appendix C**

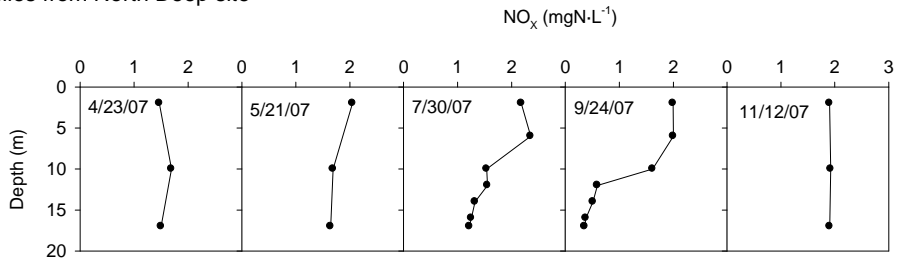
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### **Analytical Result Graphs**

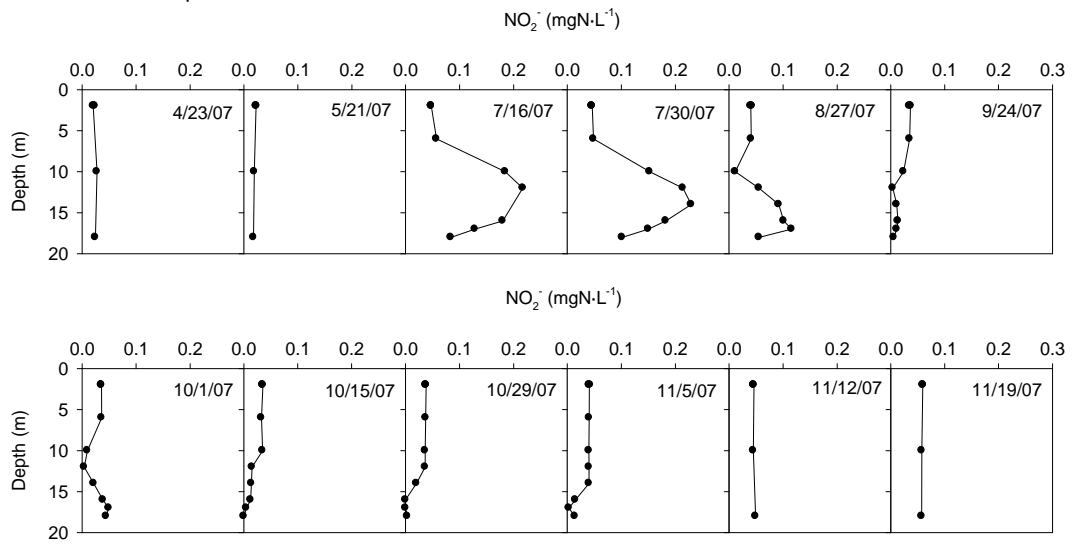
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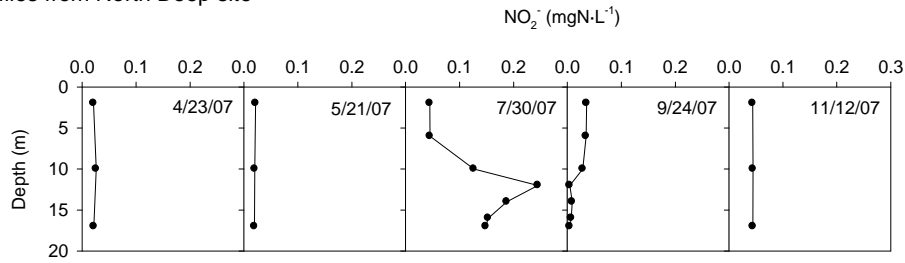
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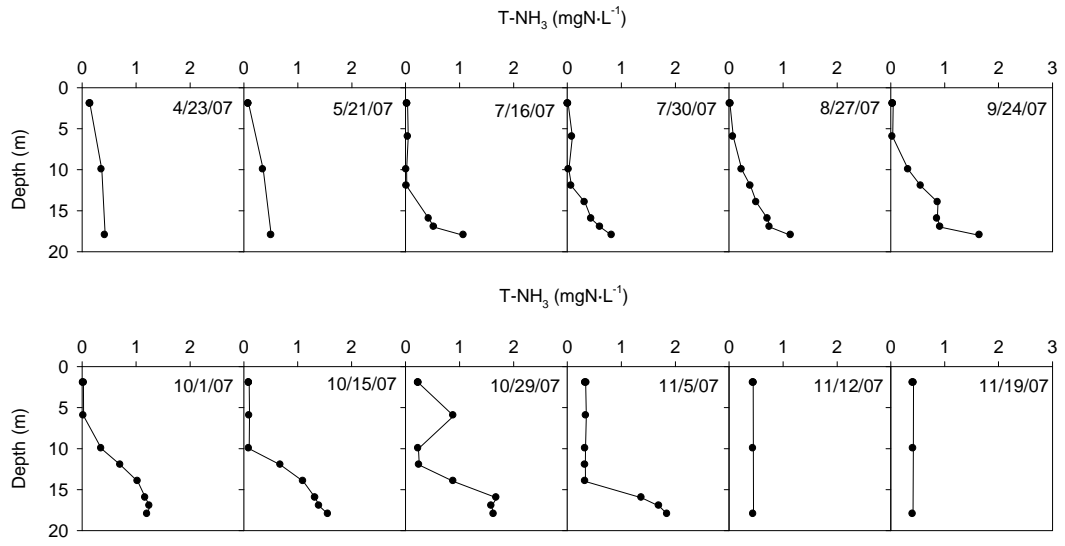
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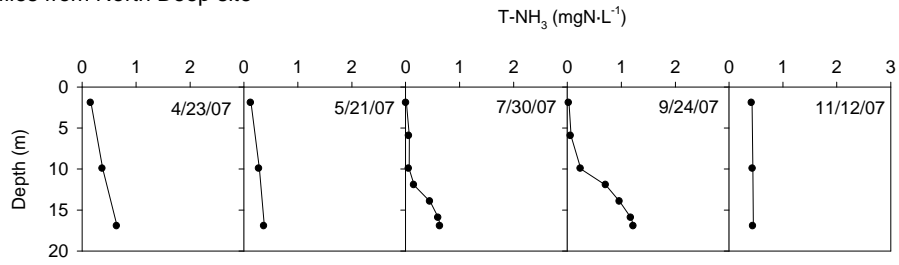
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Onondaga Lake 2007, UFI data  
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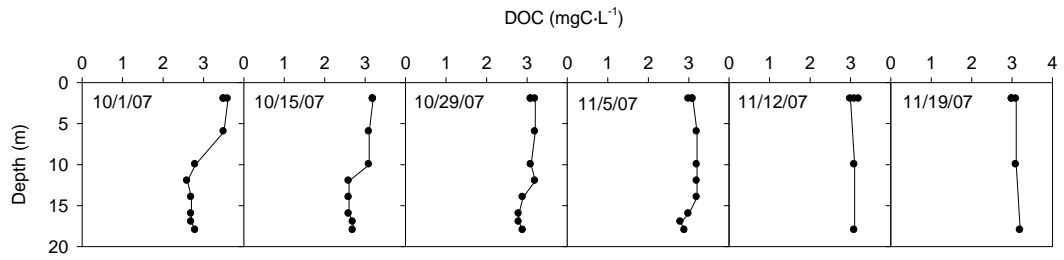
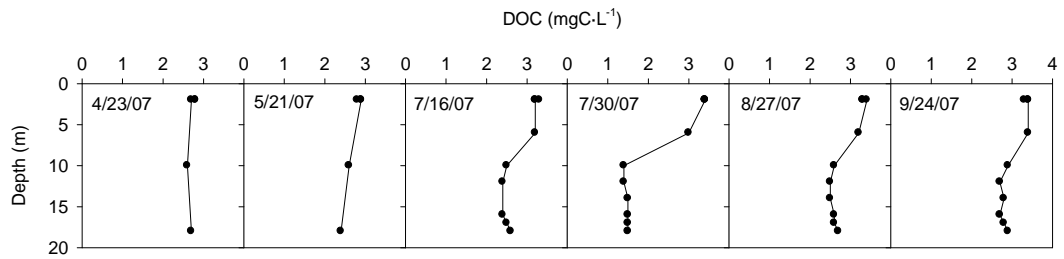


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profiles from North Deep site

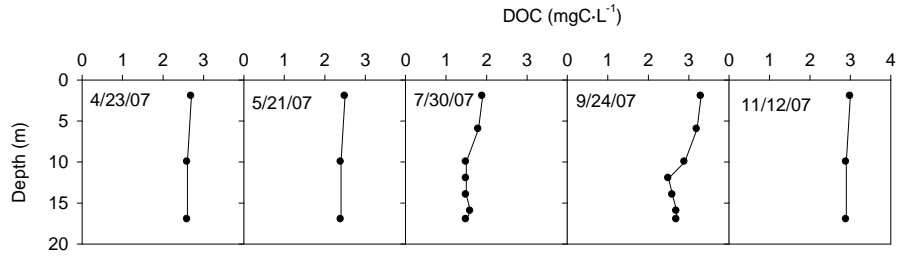




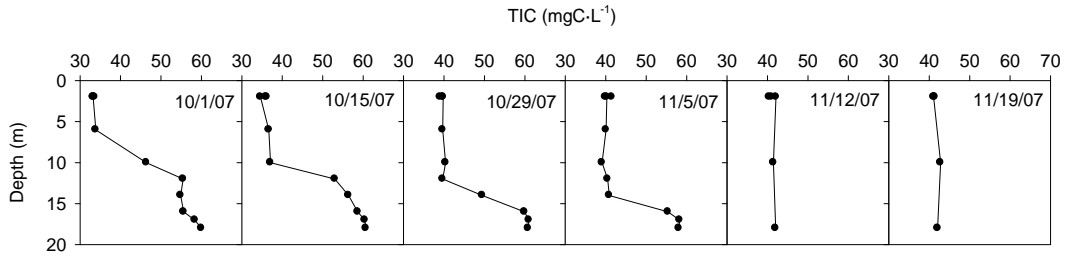
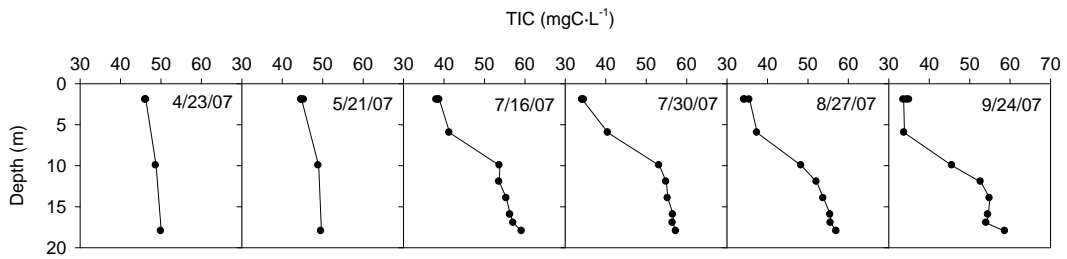
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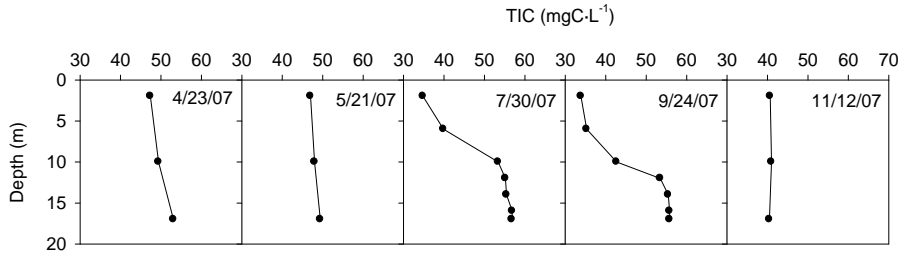
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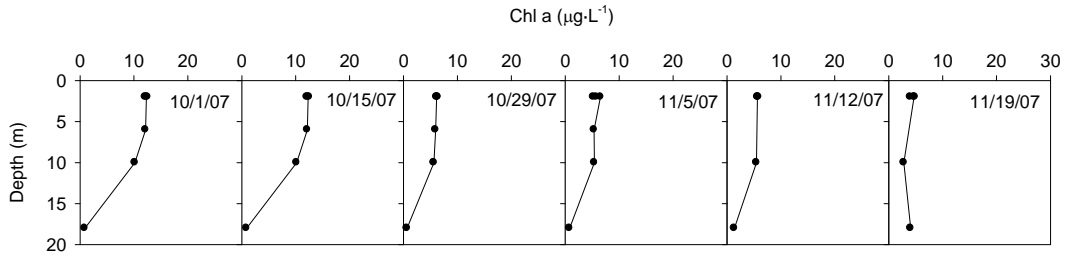
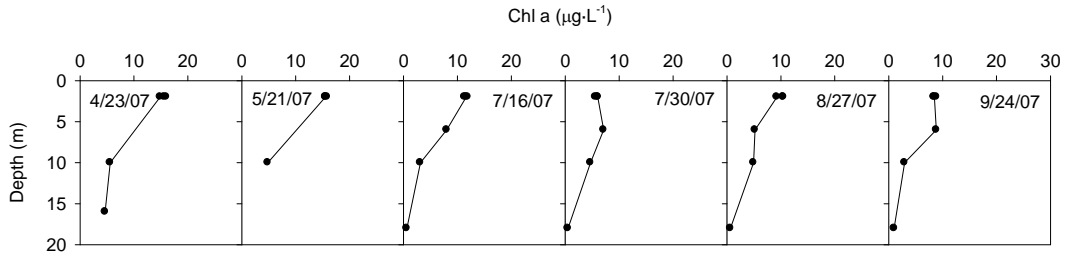
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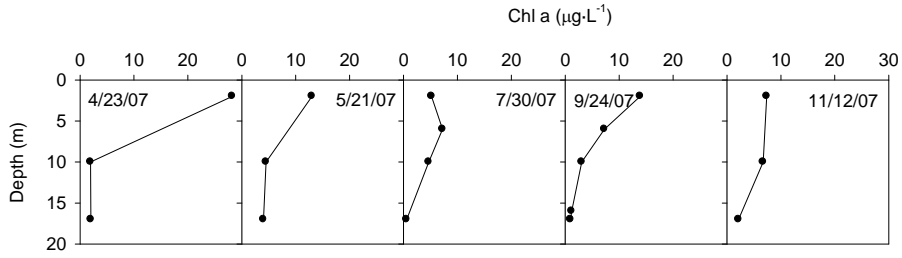
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profiles from North Deep site



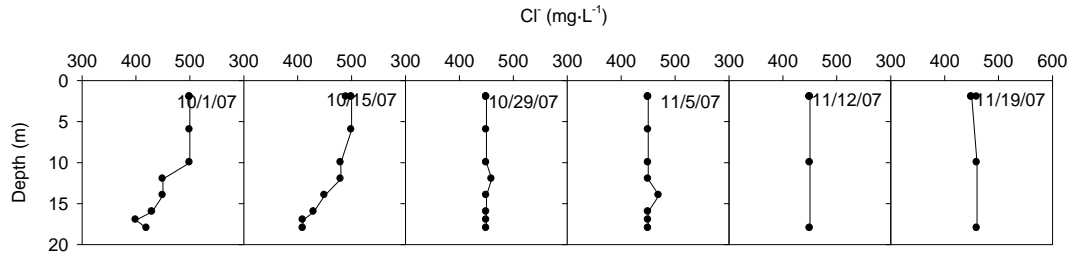
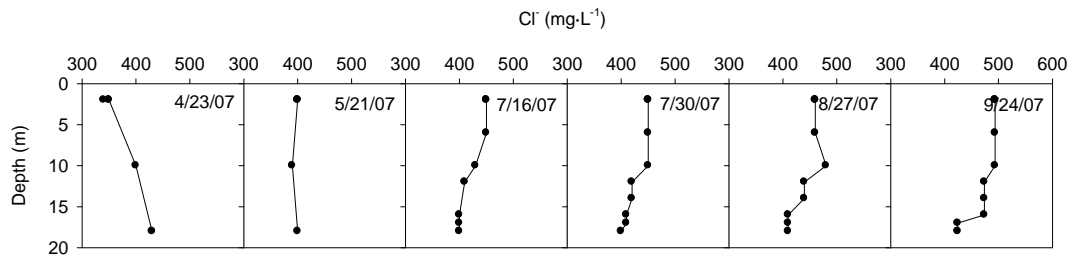
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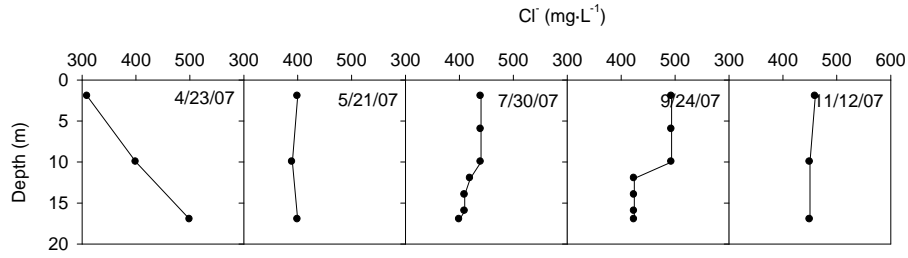
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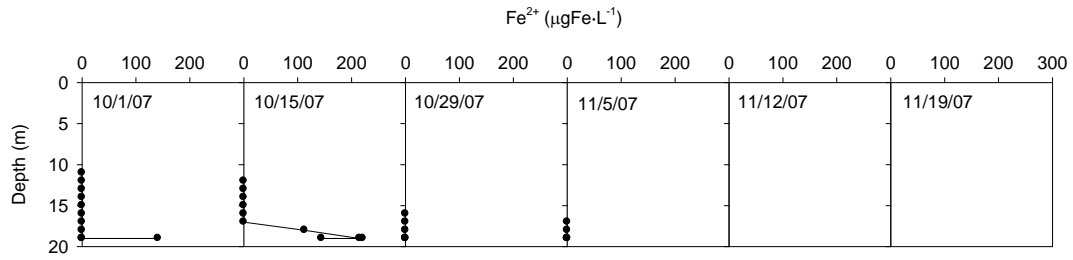
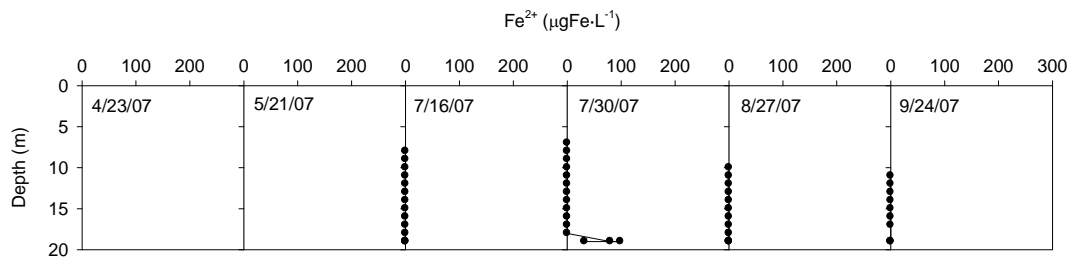
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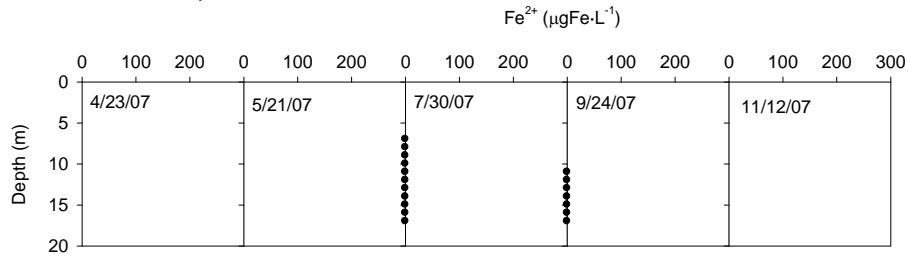
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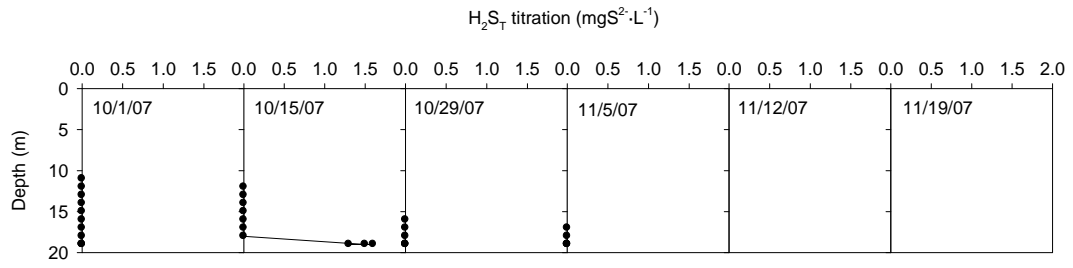
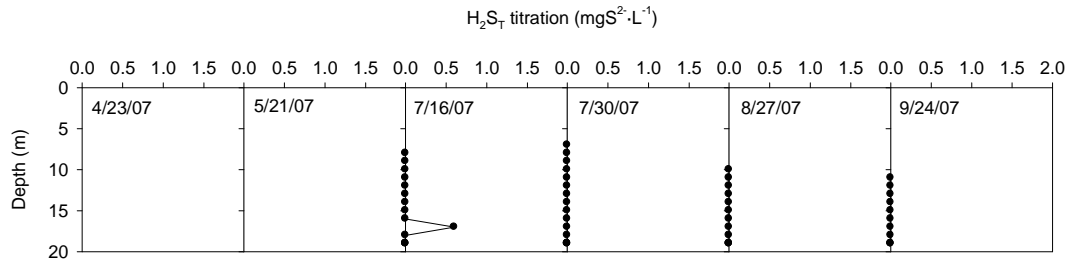
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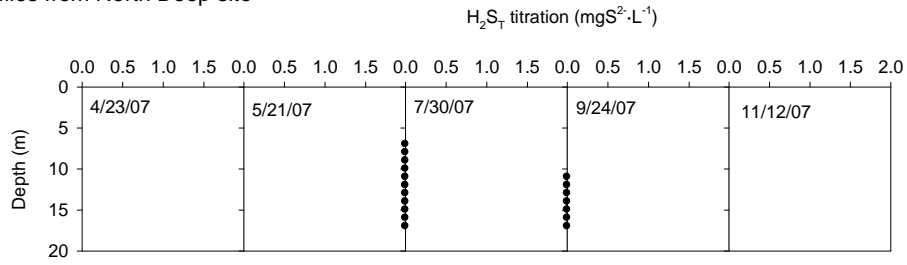
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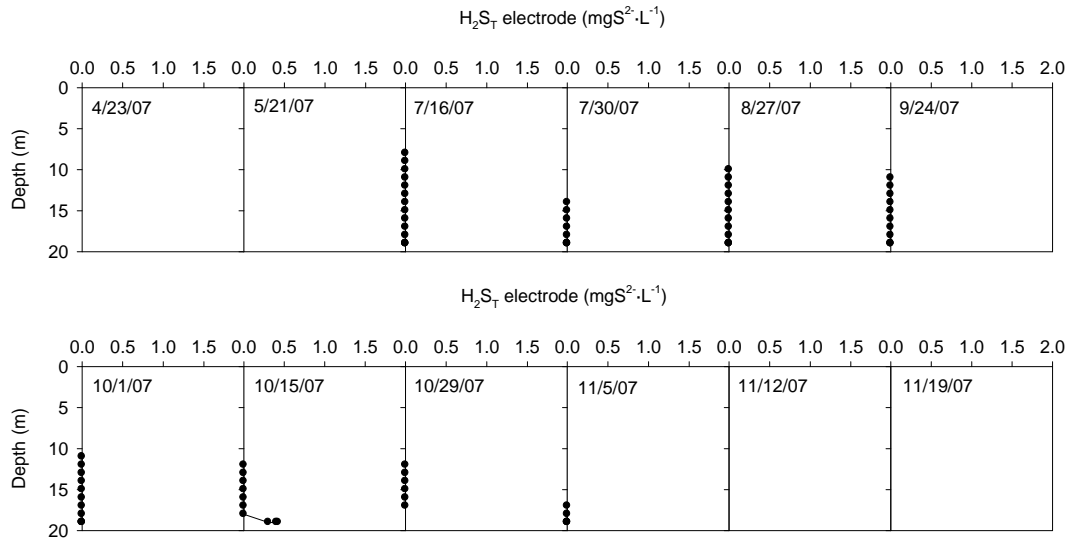
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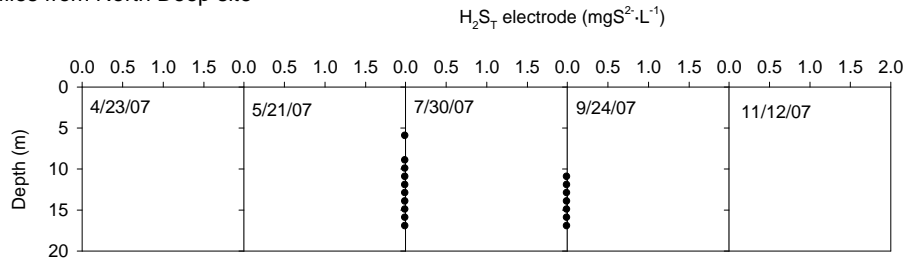
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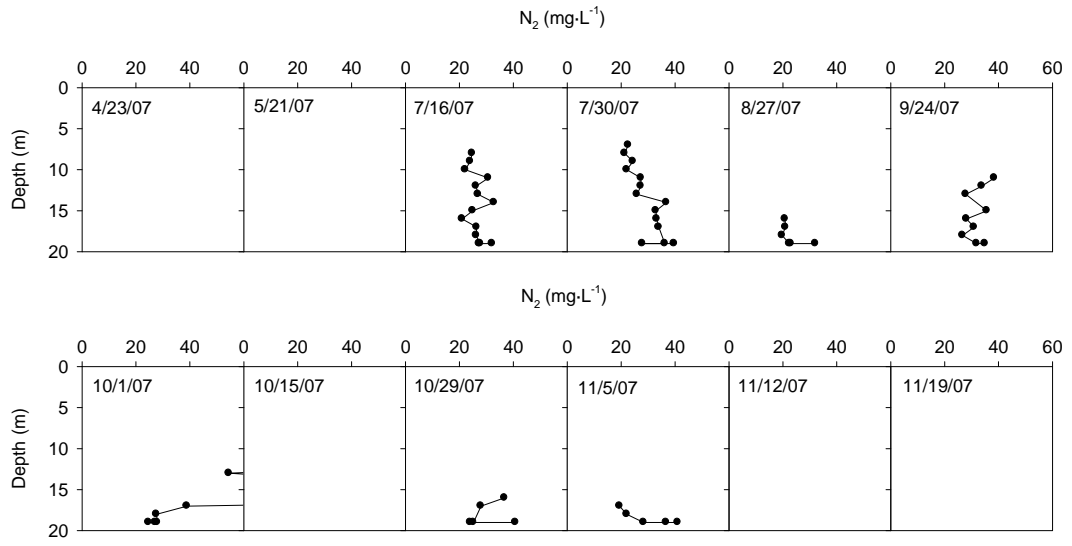
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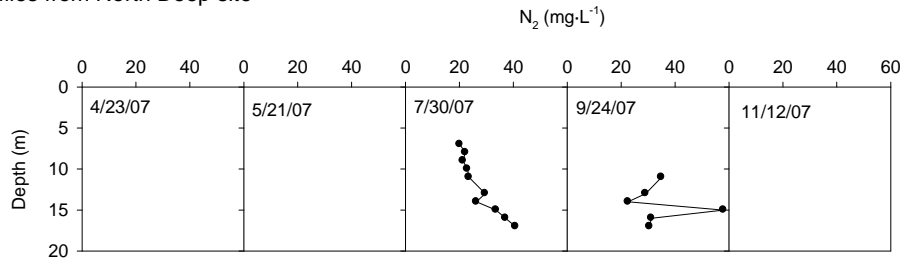
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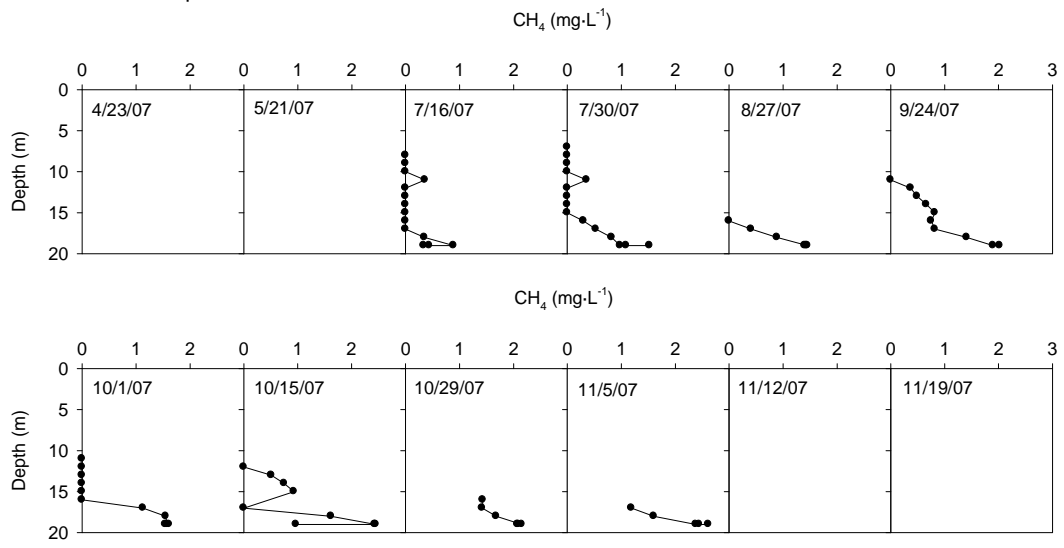


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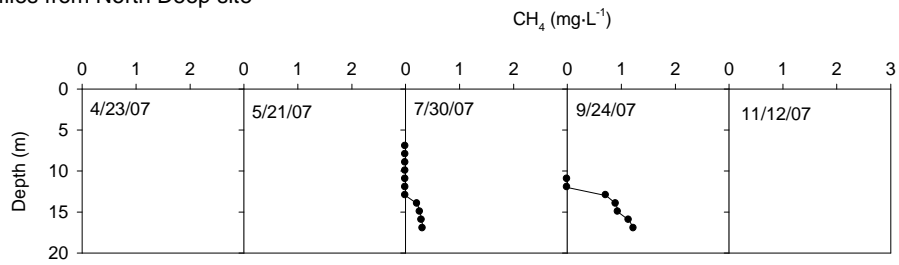




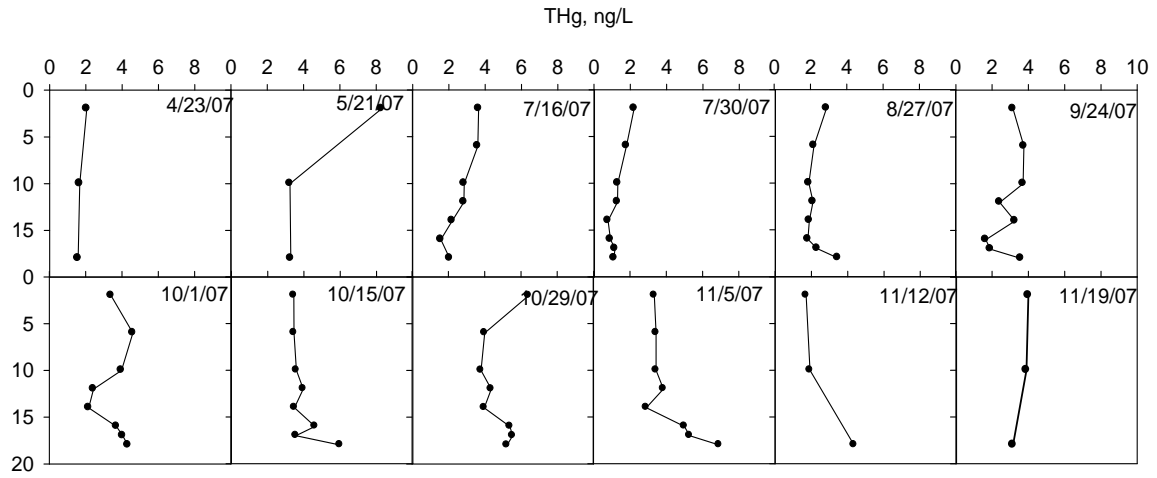
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profiles from South Deep site



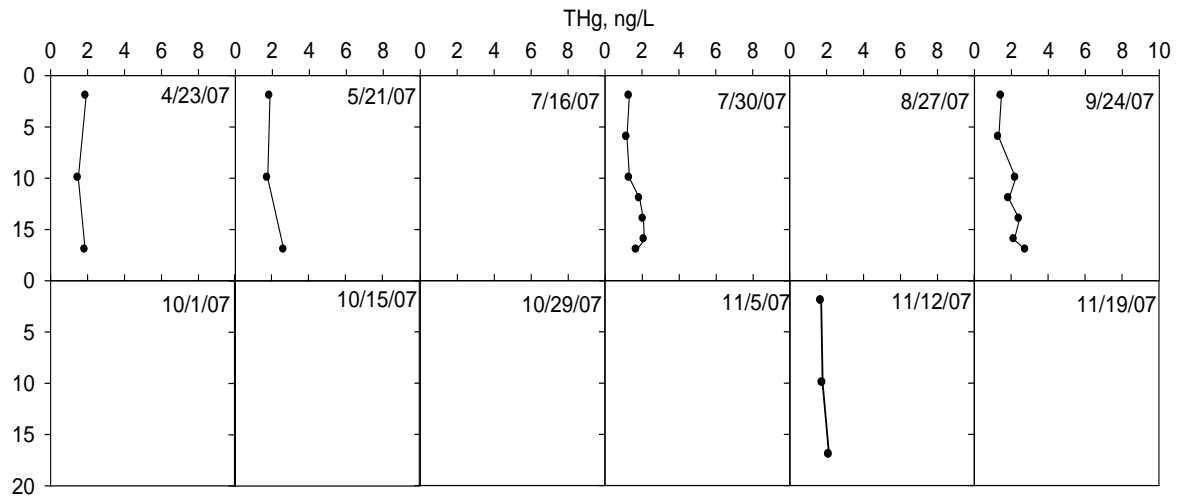
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profiles from North Deep site



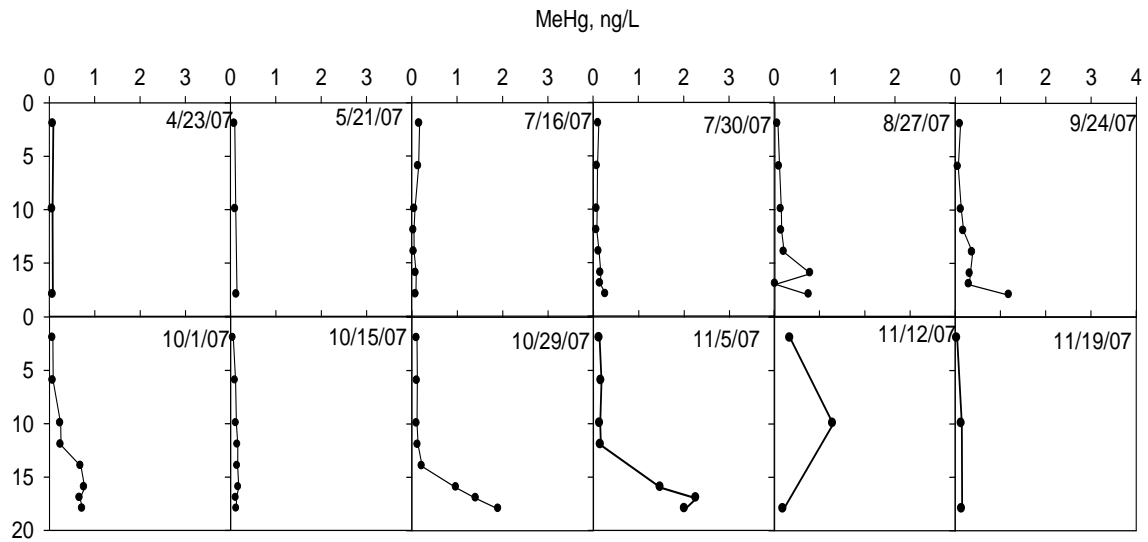
Onondaga Lake 2007, SU Data  
 Profiles from South Deep for Total Mercury



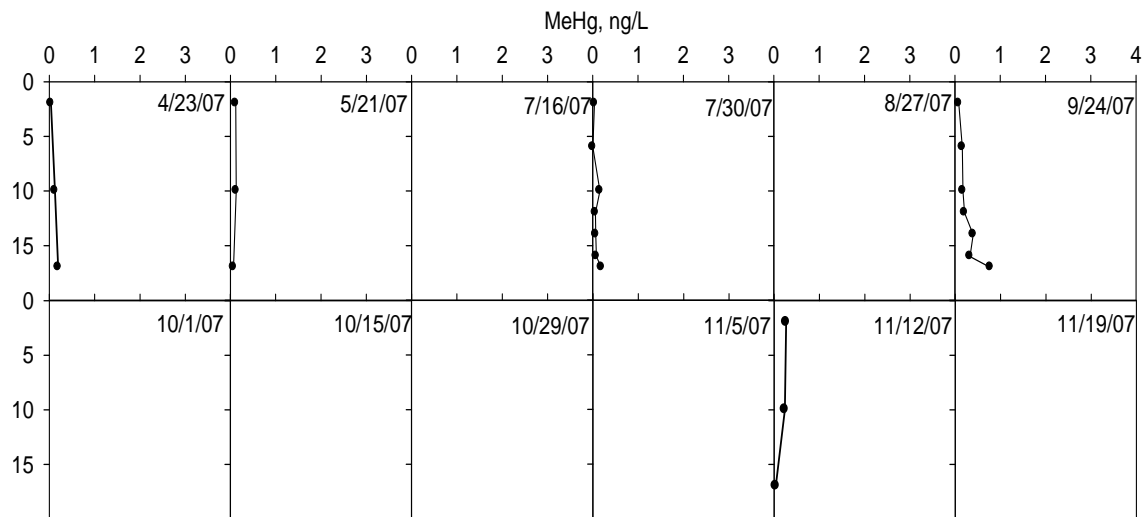
Onondaga Lake 2007, SU Data  
 Profiles from North Deep for Total Mercury



Onondaga Lake 2007, SU Data  
 Profiles from South Deep for Methyl Mercury



Onondaga Lake 2007, SU Data  
 Profiles from North Deep for Methyl Mercury



**APPENDIX D**

**ANALYTICAL QUALITY CONTROL RESULTS**

**(PROVIDED ON CD  
AT THE END OF THIS REPORT)**

**APPENDIX E**

**CHAIN-OF-CUSTODY DOCUMENTS**

**(PROVIDED ON CD  
AT THE END OF THIS REPORT)**

**APPENDIX F**

**FIELD MEASUREMENTS SUMMARY**

**(PROVIDED ON CD  
AT THE END OF THIS REPORT)**