

Appendix F2

Report: 2011 *Aquatic Effects Monitoring Program: Core Receiving Environment Monitoring Program*

FINAL

**Aquatic Effects Monitoring Program –
Core Receiving Environment Monitoring Program 2011**

Meadowbank Mine

Prepared for:

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- Gary Mann (Azimuth) – Gary was responsible for overall management of this project. He also provided oversight and logistical support for the field crew, collaborated on approach development and implementation of the trends assessment, and coauthored and reviewed the CREMP report.
- Maggie McConnell (Azimuth) – Maggie was responsible for overall coordination of the CREMP. She organized and led the CREMP field monitoring program in 2011. In addition, Maggie coordinated and collaborated in data collation, analysis, interpretation and reporting.
- Randy Baker (Azimuth) – Randy collaborated on approach development and implementation of the trends assessment, and coauthored and reviewed the CREMP report.
- Brian Pyper (Azimuth Associate) – Brian prepared the graphs used to conduct the trends assessment.
- Jennifer Trowell (Azimuth) – Jennifer collaborated in developing and implementing the trends assessment.
- Morgan Finley (Azimuth) – Morgan was responsible for on-site logistics for and participation in the 2011 field monitoring program.



PROFESSIONAL LIABILITY STATEMENT

This report has been prepared by Azimuth Consulting Group (Azimuth), for the use of Agnico-Eagle Mines Ltd. (AEM), who has been party to the development of the scope of work for this project and understands its limitations. The extent to which previous investigations were relied on is detailed in the report.

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ACRONYMS

AEMP – Aquatic Effects Monitoring Program¹
ANOVA – Analysis of Variance
AWPAR – All Weather Private Access Road
BACI – Before/After Control/Impact
BAP – Baker Lake – Akilahaarjuk Point
BBD – Baker Lake – barge dock
BES – Baker Lake – east shore
BPJ – Baker Lake – proposed jetty
CREMP – Core Receiving Environment Monitoring Program
DFO – Department of Fisheries and Oceans
DLs – Detection limits
DQO – Data Quality Objective
EAS – Effects Assessment Strategy
EEM – Environmental Effects Monitoring
EIA – Environmental Impact Assessment
GPS – Global Positioning System
HEPH – Heavy Extractable Petroleum Hydrocarbons
INUG – Inuggugayualik Lake
ISQG – Interim Sediment Quality Guidelines
LEPH – Light Extractable Petroleum Hydrocarbons
MDL – Method detection limit
MMER – Metal Mining Effluent Regulations
PAHs – Polycyclic Aromatic Hydrocarbons
PDL – Pipedream Lake
PEL – Probable Effect Level

¹ See text box in **Section 1.1**.



QA/QC – Quality Assurance / Quality Control

RPD – Relative percent difference

SOP – Standard Operating Procedure

SQG – Sediment Quality Guidelines

SP – Second Portage Lake

TE – Tehek Lake

TEFF – Tehek Lake Farfield

TPE, TPN, TPS – Third Portage Lake – East, North, and South Basins

UTM – Universal Transverse Mercator

WAL – Wally Lake



EXECUTIVE SUMMARY

The CREMP focuses on identifying changes in basic limnological parameters, water and sediment chemistry, or changes to zooplankton and benthic community structure associated with major mine development activities. CREMP reporting changed substantially in 2011, with an emphasis on assessing temporal/spatial trends in the data.

Meadowbank Study Lakes

CREMP monitoring started in 2006, two years prior to the onset of mine construction. Key mine development activities that could result in changes to the aquatic receiving environment include: East Dike construction (2008), Bay-Goose Dike construction (2009-10), dewatering of both impoundments (2009-11), and general site-related mining activities that mostly generate dust (e.g., rock crushing, blasting, ore and waste hauling; 2008 to present). Key findings to date are:

- *Dike Construction* – As documented previously, dike construction resulted in changes to water chemistry, sediment chemistry and some biological parameters (e.g., short-term effects to phytoplankton and possibly benthic invertebrates); detailed follow-up studies were initiated immediately to address potential ecological effects and water quality improved after the dikes were completed. The only follow-up management action for the 2012 CREMP is the implementation of sediment coring at all areas.
- *Dewatering* – Monitoring to date has shown only minor changes potentially associated with this activity; these will continue to be monitored in 2012. TSS, the major effluent constituent of concern, was rarely found above detection limits in TPN. In May 2011, a change in conductivity was measured at depth in TPN near the dewatering discharge point, possibly indicating the presence of a submerged plume. However, no evidence of this was found in July 2011, suggesting that it was temporally and spatially limited. Sampling protocols will be revised in 2012 to ensure more thorough assessment of water quality associated with anomalous profiles in the future. As TPN will be included in the sediment coring study in 2012, no additional follow-up management actions are required for 2012.
- *General Site-Related Activities* – No changes have been directly attributable to these activities. No follow-up management actions needed for 2012.

Baker Lake

CREMP monitoring started in 2008. Key mine-related activities include barge/shipping traffic and general land-based activities associated with the tank farm area. To our knowledge, no spills of fuels, hydrocarbons or any other materials have occurred in the vicinity of the barge dock and jetty. No changes in the aquatic receiving environment were observed that were attributable to AEM's activities in Baker Lake. No follow-up management actions are required for 2012.

1. INTRODUCTION

1.1. Background

Agnico-Eagle Mines (AEM) Ltd.'s Meadowbank Mine is situated approximately 75 km north of the hamlet of Baker Lake, Nunavut. The Aquatic Effects Management Program (AEMP, 2005) was developed to address issues identified during the Environmental Impact Assessment (EIA) process that could potentially impact the aquatic receiving environments surrounding the development. Building from earlier baseline monitoring (BAER, 2005), the 2005 AEMP describes the general monitoring strategy designed to detect impacts to the aquatic environment. This strategy relies on two primary components (discussed further in **Section 1.3**): the core monitoring program and targeted studies. Monitoring following the 2005 AEMP strategy has been implemented as follows:

- 2006 and 2007 – The core monitoring program is implemented over two complete cycles (Azimuth, 2008a, 2008b) prior to construction of the mine (i.e., baseline conditions).
- 2008 – 2011 – Mine construction starts in 2008, with dike construction activities occurring directly in the receiving environment. Core receiving environment monitoring (Azimuth, 2009c, 2010a, 2011b, this report) was complemented by targeted studies on dike construction monitoring (Azimuth, 2009a,

“AEMP” Terminology

The term “AEMP” was first used in the 2005 report *Aquatic Effects Management Program*, which described the rationale, framework, strategy, methods, and scope of receiving environment monitoring for the Meadowbank Mine. Receiving environment monitoring conducted in 2006 and 2007 use this term in the annual report titles.

The Nunavut Water Board A Licence, issued in 2008, defines “AEMP” as the “Aquatic Effects Monitoring Program”; annual receiving environment monitoring reports since 2008 reflect this subtle change.

AEM has a number of monitoring programs (e.g., effluent monitoring, ground water monitoring, air quality monitoring) relevant to tracking potential changes to the aquatic receiving environment surrounding the Meadowbank Mine. One of the requirements of the NWB A Licence is to revise the AEMP to consider the results of all these programs; these revisions are currently underway. Previously, the term “AEMP” was essentially synonymous with receiving environment monitoring. However, given the AEMP’s broadened scope, more specific terminology is needed to minimize confusion. To that end, we use the following terms in this report:

CREMP – refers to the “core receiving environment monitoring program”; this is synonymous with “core monitoring program”. While this term was first used for the 2009 annual report, it is meant to encompass the entire core receiving environment monitoring program since 2006.

2005 AEMP – refers to the original AEMP, which is essentially the plan for the CREMP; this plan is currently under revision.

AEMP – is used generically when not referring to either of the first two definitions.

2010b; AEM, 2011) and effects assessment studies for total suspended solids (TSS) (Azimuth, 2009b, 2010c, 2011a, 2012a).

This CREMP monitoring report documents the methods and results of aquatic receiving environment monitoring activities undertaken during 2011. In contrast to previous CREMP reports, this report integrates the results since 2006 to facilitate the identification of changes in limnological or water chemistry parameters, sediment chemistry, phytoplankton biomass and zooplankton and benthic community structure associated with mine-related activities at Meadowbank Mine or in Baker Lake.

1.2. Environmental Setting

Understanding the environmental setting of the project lakes is integral to understanding the design of the CREMP. The Meadowbank project lakes are situated in the barren-ground central Arctic region of Nunavut within an area of continuous permafrost. These are headwater ultra-oligotrophic/oligotrophic (nutrient poor and unproductive) lakes, situated on the watershed boundary that separates two main drainages – the Arctic and Hudson Bay drainages. Only a few hundred meters to the north of Second and Third Portage lakes is the divide between water that flows north to the Arctic Ocean (via the Meadowbank and Back River system) or to Chesterfield Inlet and Hudson Bay (via the Quoich River system).

The landscape consists of rolling hills and relief with low-growing vegetative cover and poor soil development. Numerous lakes are interspersed among boulder fields, eskers and bedrock outcrops, with indistinct and complex drainages. The main lakes in the Meadowbank project area include: Third Portage Lake (TP), Second Portage Lake (SP), Tehek Lake (TE), and the Vault Lake system – Vault, Wally (WAL) and Drilltrail lakes. As is common of headwater lakes, all of the project lakes have small drainage areas relative to the surface area of the lakes themselves. Local inflow from surrounding terrain is the predominant influence on water movement within the system. Small channels connect the project area lakes, although there is little flow between lakes except during freshet and possibly none during winter months. The ice-free season on these lakes is very short, with ice break-up in late-June to mid-July and ice-up beginning in late September or early October. Maximum ice thickness is at least 2 m by March/April.

Overall, the Meadowbank project lakes support healthy communities of plankton, benthos and fish that are typical of oligotrophic Arctic lakes (BAER, 2005). Biological productivity of the lakes is limited by nutrient availability, cold water and a short growing season.

1.3. Overall Program Objectives

The 2005 AEMP took an integrated, ecosystem-based approach that linked mitigation and monitoring of physical/chemical effects on key ecological receptors in the receiving environment. At its core, the 2005 AEMP was designed to address key issues identified

in the Meadowbank EIA (i.e., mining-related activities with the potential to affect water quality, fish habitat and fish populations). Monitoring results are intended to inform the adaptive management process, supporting the early identification of potential problems and development of mitigation options to address them. Consistent with the principles of adaptive management, the 2005 AEMP (which is the plan for the CREMP) is currently under review to refine and optimize the program. The Meadowbank 2005 AEMP has two primary components, which are described below.

1.3.1. Core Monitoring Program (CREMP)

Under the 2005 AEMP framework, the core monitoring program (CREMP; the focus of this annual monitoring report) consists of a general strategy to monitor water and sediment quality, phytoplankton, periphyton and benthic invertebrates. The core program is tailored based on our understanding of mine construction, operation and infrastructure (e.g., dikes, effluents, stream crossings, roads, etc.) and has been developed to detect mine-related impacts at temporal and spatial scales that are ecologically relevant. The core program initially focused solely on the project lakes, but was expanded to include Baker Lake in 2008 to ensure that monitoring was also in place to track project-related activities in that area, once barge traffic and shipping intensified in that area. In 2009, as dike construction and mineral exploration continued to expand, two additional reference areas were added; one far-field reference well downstream of the maximum extent of observed water quality effects within Tehek Lake (Tehek Farfield: TEFF) and another remote external reference in Pipedream Lake (PDL). Also in 2011, a second reference location was added in Baker Lake for some key parameters.

In 2009 and 2010, limnological and water sampling was expanded to be conducted on a monthly basis throughout the year where ice conditions permitted and thus was expanded to include May, November–December (2009) and January–April (2010) in addition to the routine July, August and September sampling (requirements of license). Following from the recommendation in the 2008 CREMP (Azimuth, 2009c) to cease periphyton sampling, these organisms were not collected in 2009 and are no longer part of the CREMP. This decision was based on having collected several years of baseline periphyton data; enough data with which to compare periphyton growth on habitat compensation features, satisfying the purpose of this sampling component. In 2010, zooplankton sampling was added to the CREMP monitoring strategy which included sampling at all Meadowbank areas during August of the open-water season. Zooplankton sampling intensity was increased in 2011 for statistical robustness. Zooplankton sampling is not conducted in Baker Lake.

The study design is based on a before-after-control-impact (BACI) approach (see text box), but has also incorporated the concept of gradients in exposure. To this end, the 2011 program consisted of 13 sampling areas (see **Figures 1.3-1 to 1.3-3**), each categorized into one of the four² main types of areas described below:

- *Near-field (NF) areas* – Areas are situated in close proximity to the development (planned or constructed), in particular near dikes, dewatering discharge, and proposed effluent sources (**Figures 1.3-2 and 1.3-3**). These areas provide the first line of early-warning for introductions of stressors into the receiving environment. In the Meadowbank study lakes, these areas include: Third Portage Lake North (TPN), Third Portage Lake East (TPE), Second Portage (SP), and Wally Lake (WAL; note that the planned mining activity has not started in proximity to this area). For Baker Lake, there are two NF areas, one targeting the hamlet’s barge landing area (Baker Barge Dock [BBD]) and the other AEM’s fuel storage facility (Baker Proposed Jetty [BPJ]).
- *Mid-field (MF) area* – This area designation has been added to be consistent with the area categorizations used in the CREMP design review (Azimuth, 2012b) and includes Tehek Lake (TE) and Third Portage Lake South (TPS). TE is adjacent to the inlet from Second Portage

CREMP Sampling Area Categorization

Tracking spatial and temporal differences related to mining activities relied on categorizing areas using two factors:

- *Type* –, this concept (as described in **Section 1.3.1**) relates to an area’s spatial proximity to the planned mine development, whether built or not; categories include near-field, mid-field, far-field, and reference (see text for more details).
- *Status* – this concept (as described in **Section 1.4.2**) is temporal and has two levels: control (not exposed to mine-related activity) or impact (exposed to mine-related activity). The term “impact” is taken from the BACI statistical study design approach and does not mean that an actual impact has taken place; rather, it designates a time period when potential mine-related impacts may occur for an area.

For example, the status of baseline (i.e., pre-construction) monitoring conducted at all areas, regardless of category, would be “control”. This status would change to “impact” once construction activities started that had the potential to affect an area (e.g., SP changed from control to impact status in August 2008 with the onset of construction for the East Dike; TE followed suit based on actual exposure to TSS from that event). WAL (a near-field lake) is still “control” status because that phase of mine construction has not yet been initiated.

Together, area categorization by type and status provide a logical framework to facilitate the identification of real mining-related changes (as opposed to natural regional changes due to climate or other factors) to the aquatic receiving environment (described in **Section 1.5**).

² Note that three main area types were initially envisioned in the 2005 AEMP: NF, FF and Ref. However, area designations were modified during the CREMP design review (Azimuth, 2012b) to more accurately reflect the realities of potential exposure to mine-related activities following dike construction; a mid-field (MF) category was added that includes Tehek Lake (TE) and Third Portage Lake South (TPS).

Lake (**Figure 1.3-1**) and was exposed to elevated TSS during construction of the East Dike in 2008, prompting the addition of a new far-field area (Tehek Farfield) in 2009. Consequently, MF designation is more accurate for TE. TPS was initially envisioned as an internal reference area in the 2005 AEMP. However, given the possibility for exposure to a large-scale event, it is more appropriately considered a MF area. This change in categorization does not necessarily prevent the use of TPS data to make inferences regarding regional conditions (i.e., as long as its status is “control” [see text box above and **Section 1.4.2**] it remains relevant as an internal reference area), but it does mean that such use would need to be cognizant as discussed in **Section 1.5**.

- *Far-field (FF) area* – The intent of this area is to monitor water and sediment quality downstream of project infrastructure to provide insights into the spatial extent of any effects observed at the near-field areas. The Tehek Farfield (TEFF) area is a key location that will ultimately determine whether or not contaminants are detectable downstream of the entire mine development. Lake waters from Second and Third Portage Lakes and the Vault Lakes (Vault, Wally, Drilltrail) meet at the southern end of Second Portage Lake and discharge via a single channel into Tehek Lake (**Figure 1.3-1**). Monitoring the water and sediment quality and the health of the benthic invertebrate community in the basin adjoining the discharge point from Second Portage Lake will help determine if any effects identified at SP are extending into TE and beyond into TEFF.
- *Reference (Ref) areas* – By definition, reference areas are sufficiently removed from the mine that they are presumed to be unaffected by any infrastructure (roads, dikes, runways) and point sources (aerial and aquatic) associated with mine development. Inuggugayualik Lake (INUG) and Pipedream Lake (PDL) are external reference areas chosen for the purposes of making comparisons with the project lakes (EVS, 1999; BAER, 2005). Monitoring of reference areas is important in order to distinguish between possible mine-related changes in water quality or ecological parameters and natural changes, unrelated to the mine. The reference areas are situated about 16 km west at INUG and 12 km northwest at PDL of the mine site (**Figures 1.3-1 and 1.3-2**). They are both headwater lakes and flow north into the Arctic Ocean. Despite the different drainage basin, both these lakes satisfy the requirements of an external reference lake from a physical/chemical perspective because they are at similar in latitude, have similar geology, relief and climate, do not have any significant inflows and has generally similar limnological features, water chemistry and aquatic biological community structure to the project lakes (BAER, 2005). Pipedream Lake, added to the CREMP in 2009, was originally investigated as a candidate reference area in 1998 (EVS, 1999) from a fisheries perspective. The fish community of this lake differed somewhat from the other lakes in that there was a preponderance of lake trout, very few Arctic char and no round whitefish captured from the 113 fish

caught. Further examination of the fish community was conducted in 2011 as part of EEM (see Azimuth, 2010f); reporting is scheduled for completion in June 2012. For Baker Lake, an internal reference area is located several kilometers to the east of the hamlet along the north shore of the lake (Baker Akilahaarjuk Point [BAP]) and a second reference area was added in 2011 based on a recommendation from additional analysis and interpretation of the historical Baker Lake data (see technical memorandum **Appendix A**), which is located on the same shoreline, east of BPJ and west of BAP (Baker East Shore [BES]; see **Figure 1.3-3**).

Thus, the core monitoring program is intended to detect changes and help define the extent (both spatially and temporally) of any adverse effects. Information on the status of each site (i.e., control or impact designation as per the text box) is provided in **Section 1.4.2**.

1.3.2. Targeted Monitoring Studies

Under the 2005 AEMP, targeted studies are specific studies that typically have narrower temporal or spatial bounds and are designed to address specific questions related to particular components of mine development during construction or operation (AEMP, 2005). In previous years, targeted studies addressed dike construction monitoring (Azimuth, 2009a, 2010b; AEM, 2011), the ecological effects of construction-related sedimentation events (Azimuth, 2009b, 2010c, 2011s, 2012a), habitat compensation monitoring (Azimuth, 2010d; AEM, 2012), and detailed habitat mapping of the northwest arm of Second Portage Lake (Azimuth, 2010e).

Key targeted monitoring studies conducted in 2011 that complement the CREMP include:

- *Total Suspended Solids (TSS) Effects Assessment Study (EAS)* – In response to elevated TSS concentrations related to construction of the East Dike and the Bay-Goose Dike, the TSS EAS was initiated in 2008 (Azimuth, 2009b) to determine the physical and ecological extent and magnitude of these events. Conducted annually since then (Azimuth, 2010c, 2011a), the fourth year of study was completed in 2011 (Azimuth, 2012a).
- *Environmental Effects Monitoring (EEM)* – This targeted study is a requirement of the Metal Mining Effluent Regulations (MMER) and assesses the potential effects of dewatering effluent in TPN to fish and benthic invertebrates. Field investigations were conducted in August 2011; data are currently being analyzed and an interpretive report will be submitted to Environment Canada in June 2012.

Data from these studies are complementary to the CREMP; results these studies are referenced throughout this report where they provide additional context to help put CREMP results into context.

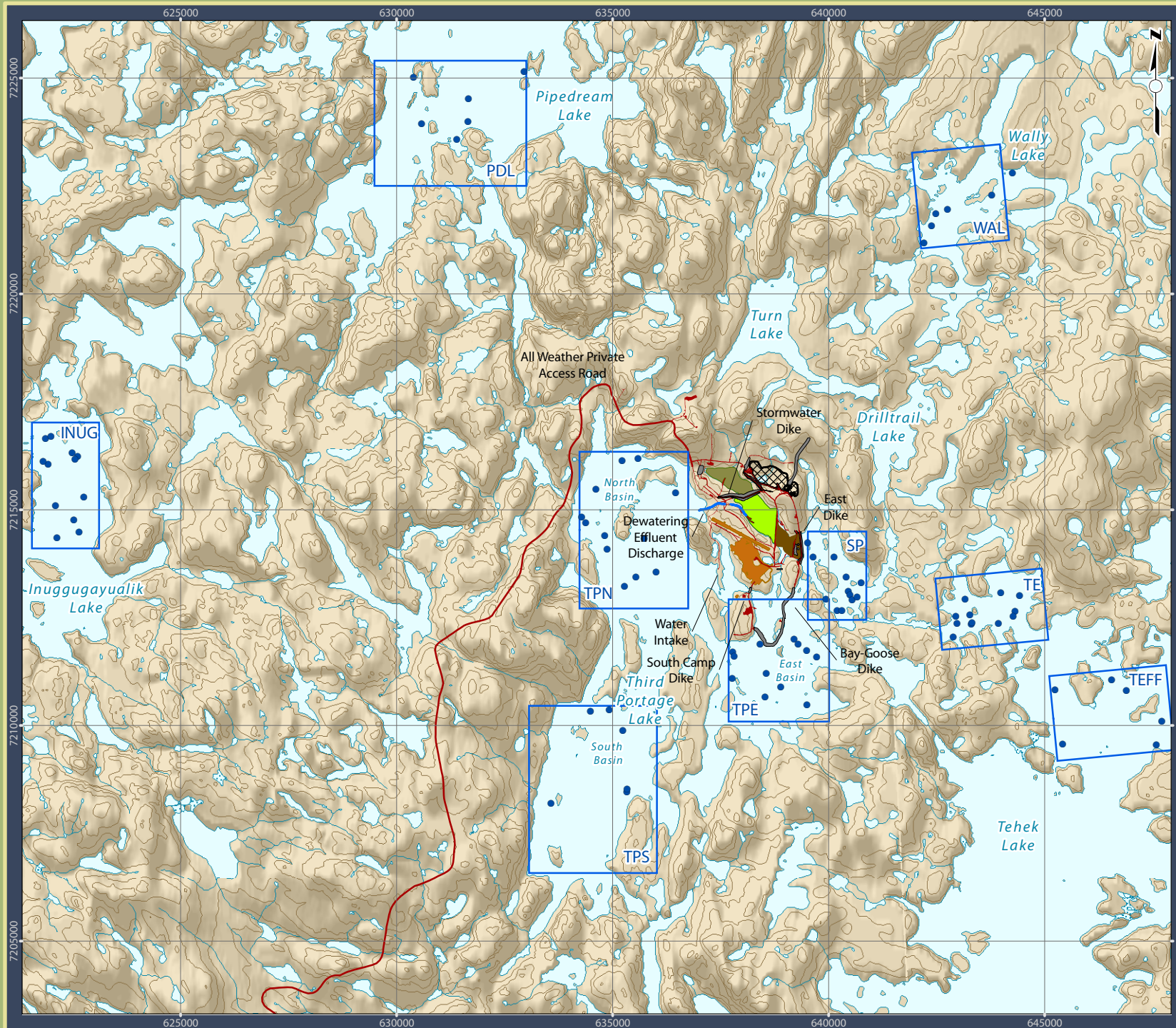
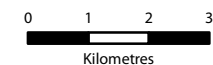


Figure 1.3-1: Water Quality Monitoring and Sampling Areas - 2011

- Legend**
- Water Sampling Point
 - Water Sampling Area
 - All Weather Private Access Road
- Mine Features**
- Effluent Discharge (Dewatering Pipeline)
 - Facilities
 - Road
 - Dike
 - Waste Dump
 - Dewatered Lake
 - Portage Attenuation Facility
 - Tailings Storage Facility



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited.
 Azimuth Consulting Group Inc.

Meadowbank Gold Project

Prepared for:



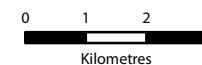
By: **CASLYS CONSULTING**

**Figure 1.3-2:
Sediment Quality,
Benthic Invertebrate,
and Zooplankton
Sampling Areas - 2011**

Legend

- Zooplankton Sampling Points
 - Benthic Invertebrate / Sediment Quality Sampling Area
 - All Weather Private Access Road
- Mine Features**
- Effluent Discharge (Dewatering Pipeline)
 - Facilities
 - Road
 - Dike
 - Waste Dump
 - Dewatered Lake
 - Portage Attenuation Facility
 - Tailings Storage Facility

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:

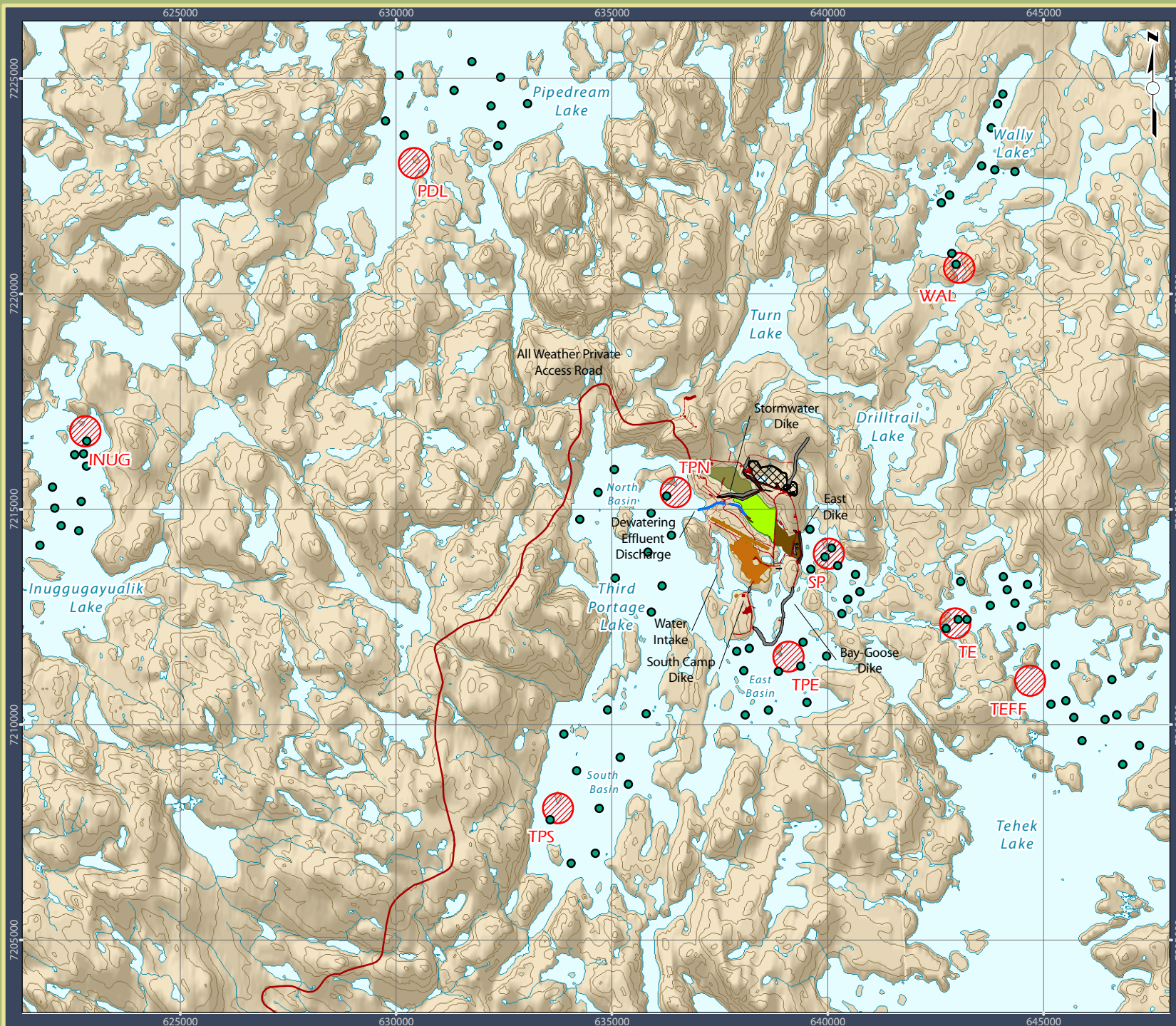
Natural Resources Canada, GeoBase®
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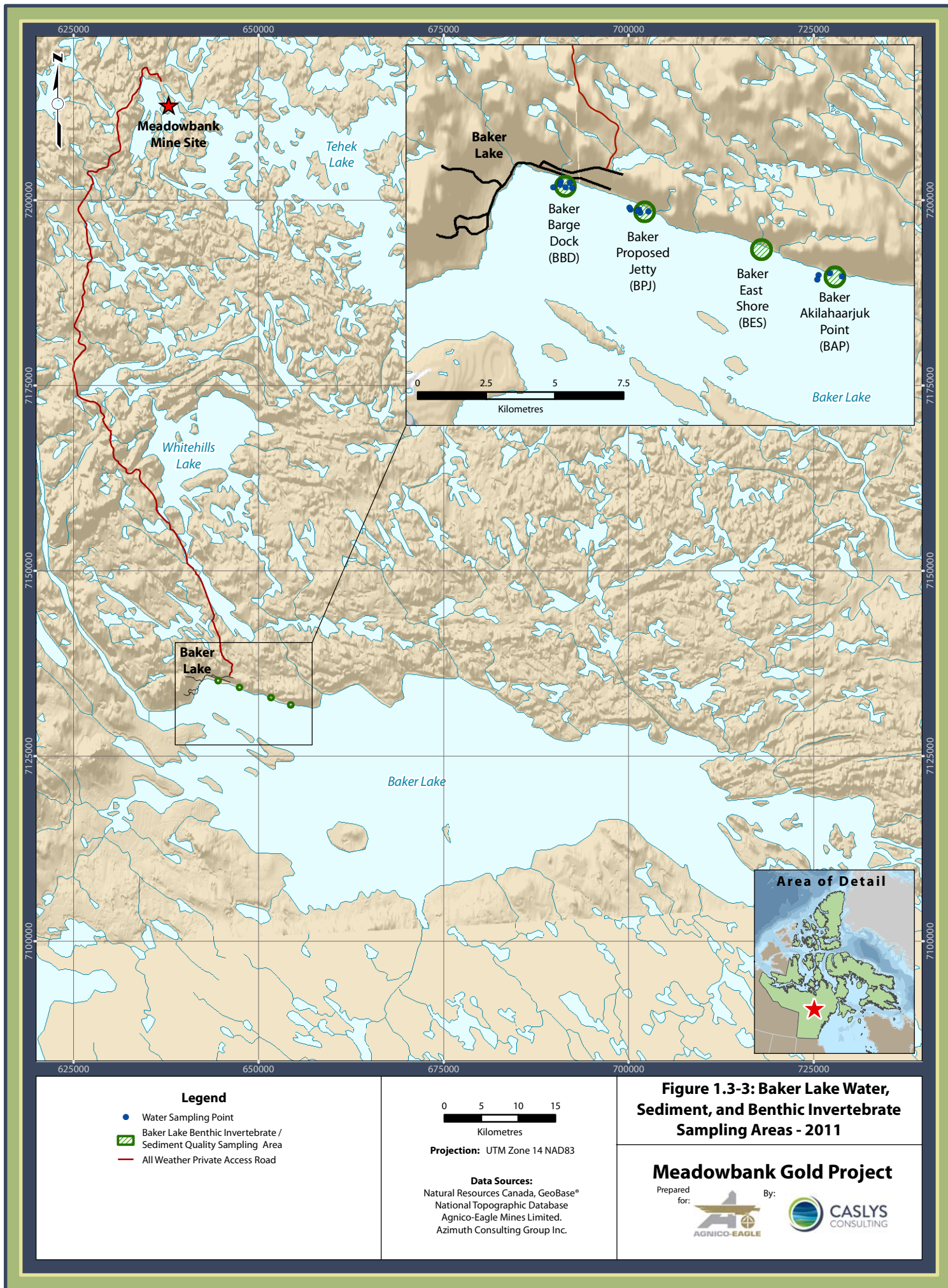
Meadowbank Gold Project

Prepared for:



By:





1.4. Meadowbank Mine Development and Operation

1.4.1. Historical and Current Activities

The construction phase of the Meadowbank Mine officially started in June 2008, upon receipt of the NWB A Water License (2AM-MEA0815) for the project. The Fisheries and Oceans Canada (DFO) *Fisheries Act* Authorization (NU-03-0191) for the project was issued on July 30, 2008, thus allowing the start of in-water construction activities. Key mine-related activities by year are described below (information provided by AEM).

2008

Major in-water construction activities for 2008 included the East Dike (located in Second Portage Lake) and the Western Channel Dike (located between Third Portage Lake and Second Portage Lake); the closest CREMP sampling area to these activities was the Second Portage Lake area (SP). Other site-related activities included rock crushing, road building, pit blasting, ground preparation, and infrastructure construction.

2009

Dewatering of the northwest arm of Second Portage Lake began in March 2009 after completion of the East Dike. Dewatering discharges (i.e., impounded lake water with TSS) were directed primarily into the north basin of Third Portage Lake (TPN; discharging much of the time since March 2009), but also into Second Portage Lake (March to July and Oct to Dec, 2009).

In-water construction activities for 2009 occurred in the east basin of Third Portage Lake (TPE). Construction of the northern half of the Bay-Goose Dike, connecting the north shore to Goose Island, was initiated on July 27, 2009. The closest CREMP sampling area to the dike construction activities was the Third Portage Lake East area (TPE).

Most of the site preparation and road infrastructure was completed in 2009. North Portage Pit was the primary focus of blasting and earth moving efforts.

2010

Over winter (2009–2010), the southern half of the Bay-Goose Dike, connecting the south end of Goose Island to the mainland west of the island, began with installation of a narrow causeway that was constructed through the ice (intended to help contain sediment during dike construction). Construction of the remainder of the Bay-Goose Dike, on the inside of the causeway, continued through the 2010 open-water season. Dike construction monitoring was conducted by AEM throughout the construction period (i.e., through winter and open water).

Pit development in 2010 was focused on the North Portage and South Portage pits. The mine was officially opened on February 27, 2010, marking the start of the operations period; commercial production of gold was achieved in March 2010. Waste streams from

these operations have been directed to the tailings impoundment area and have not been discharged to the receiving environment.

Dewatering of SP continued in 2010, targeting residual water in the deep central basin of the northwest arm impoundment (formerly of Second Portage Lake) to allow eventual construction of the Central Dike (scheduled for 2011), that is required prior to extending the North Portage Pit further south. The dewatering effluent was subject to *Metal Mining Effluent Regulations* (MMER) requirements (e.g., weekly effluent quality monitoring and periodic receiving environment monitoring) from the start of 2010; this was conducted by AEM's onsite environmental staff. Another MMER requirement was the design of an Environmental Effects Monitoring (EEM) study for the discharge (Azimuth, 2010f).

2011

Commercial production of gold continued throughout 2011 with pit development focused on parts of North Portage and in South Portage Pits. As in 2010, tailings were pumped directly to the Tailings Impoundment Area (TIA), waste rock was delivered to the portage waste rock storage facility and all contact water naturally drained or was pumped into either the tailings reclaim water or storm water management pond; the water was recycled from these areas as mill process water. The following activities were completed within the mine footprint: the junction between Saddle dam 2 and Stormwater Dike, Saddle dam 2 and a coffered dam was constructed in 2011 at the foot of what will be the central dike. The coffered dam will provide additional water storage capacity in 2012 until the central dike is completely constructed. No ancillary construction outside of the mine footprint was completed in 2011.

Dewatering of SP and the cut-off wall for the Bay-Goose Dike was completed by mid-July 2011. Pumping systems and infrastructure for dewatering Bay-Goose Basin were constructed in the second quarter and dewatering began early August and continued intermittently until November 2011. Approximately 85% of the impounded water (~2.7 million m³ water) was removed and discharged into Third Portage Lake North (TPN) via surface discharge pipes located about 100 m offshore. Because this dewatering water is subject to License A limits for suspended sediments and turbidity and required some treatment to ensure acceptably concentrations of TSS. Dewatering effluent was also routinely monitored by AEM for chemistry and toxicity as per MMER requirements. In addition, the targeted EEM study of potential receiving environment effects from the dewatering effluent discharge into TPN was implemented in 2011 and reporting will be completed by June 2012 (Azimuth, 2012c *in prep*).

1.4.2. Overview of Aquatic Receiving Environment Status

This section provides a brief description, from a temporal and spatial perspective, of key activities with the greatest potential for affecting the aquatic receiving environment. The information presented comes primarily from targeted studies (i.e., dike construction monitoring and MMER effluent monitoring) intended to monitor those mining-related

activities at a higher spatial and/or temporal resolution than the CREMP. **Table 1.4-1** summarizes the state of various receiving environments basins or lakes over time. The focus is on TSS, which can be considered as a good surrogate for exposure in general. Thus, the resulting spatial-temporal matrix provides some context for interpreting the CREMP results, which are intended for making broader scale (temporal and spatial) inferences regarding potential effects. Key mining activities on their general effects on water quality are described below:

- *East Dike Construction* – Construction of the East Dike started in Second Portage Lake in late July 2008. As described in detail elsewhere (Azimuth, 2009a, 2009b), suspended sediment was generated as a result of direct introduction of fine materials from the pit area used to generate dike construction material and from re-suspension of silt/clay in the lake caused by end-dumping of rock. Eventually, much of the new and re-suspended sediments escaped from the turbidity-barrier enclosed work zone, resulting in the initial formation of two deep localized plumes in mid-August. In late August, wind-driven mixing dispersed the sediment throughout much of Second Portage Lake (TSS >10 mg/L) and eventually into the first basin of Tehek Lake just downstream of SP (**Table 1.4-1**). Effects were not observed further into Tehek Lake (e.g., near the far field location TEFF, which was formally added in 2009). Conditions improved in September after completion of the Western Channel Dike (i.e., cutting off water inflow up-gradient of the work zone) and reaching the north shore of Second Portage Lake. Ice cover through the long winter facilitated the settlement of the particulates. When monitoring was re-initiated after break-up in July, TSS concentrations in both Second Portage Lake and Tehek Lake were at baseline levels. The potential impact of construction-related sediment releases to the aquatic environment was the focus of the four-year EAS study discussed in **Section 1.3.2** (Azimuth, 2009b, 2010c, 2011a, 2012a).
- *Bay-Goose Dike Construction* – Construction of this dike in the east basin of Third Portage Lake started in 2009 (northern section) and continued in 2010 (southern section). Rock placement and sediment control methods were modified in 2009 based on lessons learned from the East Dike experience (e.g., use of double silt curtains, more judicious selection of rock, re-alignment of the dike to travel over shallower water with less potential for sediment disturbance). Despite these changes, a sedimentation event did occur in late August/early September 2009, when storm winds broke apart the turbidity barrier containment system. The TSS event was primarily restricted to TPE (TSS concentrations were 2 to 5 mg/L in the east basin [**Table 1.4-1**]) and to a minor extent into SP (TSS 1 – 1.5 mg/L) and TE (TSS 1.5 – 2 mg/L) (Azimuth, 2010b). Extensive monitoring conducted at the time showed no sediment-laden water moving into either the north or south basins of Third Portage Lake (essentially up-gradient due to the prevailing winds and lake currents).

In a further effort to reduce sedimentation in 2010, AEM constructed a narrow causeway through the ice in the winter and spring (February 18 – June 26, 2010); the intent was for the causeway to serve as a protective barrier during open water conditions when the remainder of the southern section was constructed. Water quality monitoring was conducted during causeway construction to ensure that TSS limits were not exceeded in the absence of sediment control measures; TSS concentrations did rise under the ice in the east basin (up to 2 mg/L; AEM, 2011) and low concentrations were also detected in Second Portage Lake (2 mg/L in April/May 2010). The remainder of the southern section was constructed during summer 2010. A further mitigation against TSS was to pump water from the impoundment into the central basin of the impounded northwest arm of Second Portage Lake (not completely dewatered) to create negative pressure within the impoundment, minimizing the potential for release of high TSS water into TPE. Nevertheless, TSS concentrations did increase slightly in TPE (4 mg/L) in August 2010, but did not extend into Second Portage Lake and had dropped to 2 mg/L by September and were at baseline concentrations by May 2011. The potential impact of construction-related sediment releases to the aquatic environment was the focus of the four-year EAS study discussed in **Section 1.3.2** (Azimuth, 2009b, 2010c, 2011a, 2012a).

- *Dewatering* – The Portage Attenuation Pond (formerly the central basin of the northwest arm of Second Portage Lake) primarily contains residual natural lake water (i.e., from the East Dike and Bay-Goose Dike impoundments). Localized drainage that has not contacted potentially acid generating (PAG) material is also directed to the attenuation pond. Dewatering activities started in March 2009 with the impounded area northwest of the East Dike, discharging into the north basin of Third Portage Lake (near TPN) and briefly across the East Dike and into Second Portage Lake (near SP; from April through July 2009). As dewatering progressed and water levels lowered in 2009 and 2010, newly exposed sediments along the shoreline became a source of suspended solids (i.e., total suspended solids [TSS]) and turbidity, resulting in elevated TSS and turbidity within the impoundment. In order to meet permitted discharge concentrations for TSS and turbidity, AEM installed a microsand/flocculant-based water treatment facility on October 26th, 2009.

Starting 31 December 2009, the dewatering discharge was defined as an ‘effluent’ and hence became subject to the requirements of MMER. In addition to effluent characterization (volume, chemistry and toxicity), MMER requires comprehensive receiving environment monitoring. The main contaminant of interest in this effluent is total suspended solids (TSS), which has only been detected in the TPN receiving environment in three of 20 CREMP monitoring events (at low concentrations close to 2 mg/L) since dewatering started. MMER receiving environment monitoring yielded similar results with non-detectable (<1

mg/L) TSS concentrations during all four 2010 monitoring events at TPN; however, TSS was measured at 2 mg/L in one of four 2011 monitoring events. This is also consistent with the results of the spatially-extensive “broad” dike construction surveys conducted in 2009 and 2010, where turbidity-based TSS estimates were <1 mg/L throughout the north basin (Azimuth, 2010b; AEM, 2011). These data indicate that dewatering appears to have had little impact on TPN water quality (**Table 1.4-1**).

- *General Site-Related Activities* – The temporal and spatial extent of potential changes to the aquatic receiving environment related to the previous activities were easily defined due to the nature of the activities, whereby there is a direct link between the activity and the receiving environment. The near-field CREMP areas (i.e., TPN, TPE, and SP) were situated to also provide insights into other potential impacts of mining activities that primarily involve generation of dust that is prone to wide dispersal because of the frequent high winds at site. These include rock crushing, road building, pit blasting, ore and waste hauling, ground preparation, vehicle (truck and aircraft) traffic, infrastructure construction and others. TPE and SP, given their locations downwind from the site, have the greatest potential to be impacted from dust generated by these other mining activities. With the completion of dike construction (i.e., a potential confounding factor at SP and TPE) in late 2010, 2011 is better for providing insights into whether these other activities are affecting water quality.
- *Barge Traffic (Baker Lake)* – Given the lack of road/rail options for transportation of the equipment and materials needed to construct and operate the Meadowbank Mine, it is no surprise that barge traffic to Baker Lake has increased substantially (**Figure 1.4-1**). Traffic increased steadily between 2008 and 2010, but was stable in 2011. Barge traffic has the potential to affect the aquatic environment in a variety of ways, including: propeller wash, ballast water, fuel (or other contaminants) leaks/spills, and anti-fouling paint residues.

As discussed in the text box in **Section 1.3.1**, the onset of construction activities in proximity to a CREMP monitoring area formally ends the baseline phase and changes the status of that area from “control” to “impact” (not necessarily meaning that there is an impact or effect [i.e., either positive or negative]; only that there is the potential for mining-related changes that may occur at that area after that time). Status changes are also important for any statistical analyses, as they dictate how data are grouped when assessing potential trends (see **Section 1.5**).

Note that the end of the baseline phase is specific to each area. For example, TPE would have still been in the baseline phase in August 2008 (it is up gradient of Second Portage Lake), but not in August 2009. The lack of baseline monitoring at the Baker Lake areas means that the status of areas does not change over time (i.e., near-field areas are “impact” and reference areas are “control”). The status of all CREMP areas since monitoring started is provided in **Table 1.4-2**.

Table 1.4- 1. Status of key receiving environments related to TSS from 2008 – 2011.

	2008				2009				
	July	Aug	Sept	Oct - Dec	Jan - Jun	July	Aug	Sept	Oct - Dec
Third Portage Lake									
North Basin (TPN)	Background	Background	Background	Presumed background	Dewatering - no apparent TSS increase	Dewatering stopped; background	TSS > 2 mg/L	TSS ~2 mg/L	Background
South Basin (TPS)	Background	Background	Background	Presumed background	Presumed background	Background	TSS ~2 mg/L	TSS ~1.5 mg/L	Background
East Basin (TPE)	Background	Background	Background	Presumed background	Background	BG Dike construction starts; background	TSS concentrations gradually increase, but mostly at depth (>2 mg/L)	Strong winds mix TSS throughout water column and basin; TSS source finished (~5 mg/L)	TSS drops over time; still above HVH trigger by end of October (~2 mg/L)
Second Portage Lake									
Main Basin (SP)	Background	ED construction starts; TSS rises dramatically in third week (>10 mg/L)	TSS drops over time; meets targets by end of month (~4 mg/L)	Presumed settlement under ice	TSS drops initially, then dewatering starts in March	Background	Some TSS input from BG dike construction, but low concentrations (1 mg/L)	TSS increases slightly, but limited spatially (~1-1.5 mg/L)	TSS drops over time (~1 mg/L)
NW Arm	Background	TSS rises in parallel to main basin, but lower concentrations than main basin	TSS reduced, but rises again during WC Diike construction	TSS drops	TSS drops initially, then increases due to dewatering	TSS elevated due to dewatering activities; dewatering stops in early July	Isolated	Isolated	Isolated
Drilltrail Arm	Background	Background	Background	Background	Background	Background	Background	Background	Background
Tehuk Lake									
Near-field Basin (TE)	Background	TSS rises during third week	TSS drops over time; meets targets by end of month (~3 mg/L)	Presumed settlement under ice	Background	Background	Very slight increase in TSS	TSS slightly above background (~1.5-2 mg/L)	Background; TSS ~3 mg/L in December only
Far-field Basin (TEFF)	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background	Background	Background	Background	Presumed background

	2010					2011				
	Jan - Jun	July	Aug	Sept	Oct - Dec	Jan - Jun	July	Aug	Sept	Oct - Dec
Third Portage Lake										
North Basin (TPN)	Dewatering; TSS ~2 mg/L in April only	Dewatering; background	Dewatering; background	Dewatering; background	Dewatering; presumed background	Dewatering; background	Dewatering; background	Dewatering; background	Dewatering; background	Dewatering; background
South Basin (TPS)	Background; TSS ~1.5 mg/L in April only	TSS ~1 mg/L	Background	Background	Presumed background	Presumed background	Background	Background	Background	Presumed background
East Basin (TPE)	TSS increases again during causeway construction (~1-1.5 mg/L)	TSS ~1-2 mg/L	TSS ~4 mg/L	TSS >1 mg/L	Presumed settlement under ice	Background	Background	Background	Background	Background
Second Portage Lake										
Main Basin (SP)	TSS generally < 1 mg/L; 2 mg/L in Apr/May	Background	Background	TSS ~1 mg/L	Presumed settlement under ice	Background	Background	Background	Background	Background
NW Arm	Isolated	Isolated	Isolated	Isolated	Isolated	Isolated	Isolated	Isolated	Isolated	Isolated
Drilltrail Arm	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background	Presumed background
Tehek Lake										
Near-field Basin (TE)	TSS ~1 mg/L	TSS ~2 mg/L	Background	TSS ~3 mg/L	Presumed settlement under ice	Background	Background	Background	Background	Background
Far-field Basin (TEFF)	Presumed background	Background	Background	Background	Presumed background	Presumed background	Background	Background	Background	Presumed background

Notes: Shaded months indicate ice cover on lakes; CREMP sampling areas are shown in (), where applicable; acronyms: ED = East Dike; BG = Bay-Goose Dike; TSS = total suspended solids; DCM = dike construction monitoring; "Background" = TSS < Detection Limit.

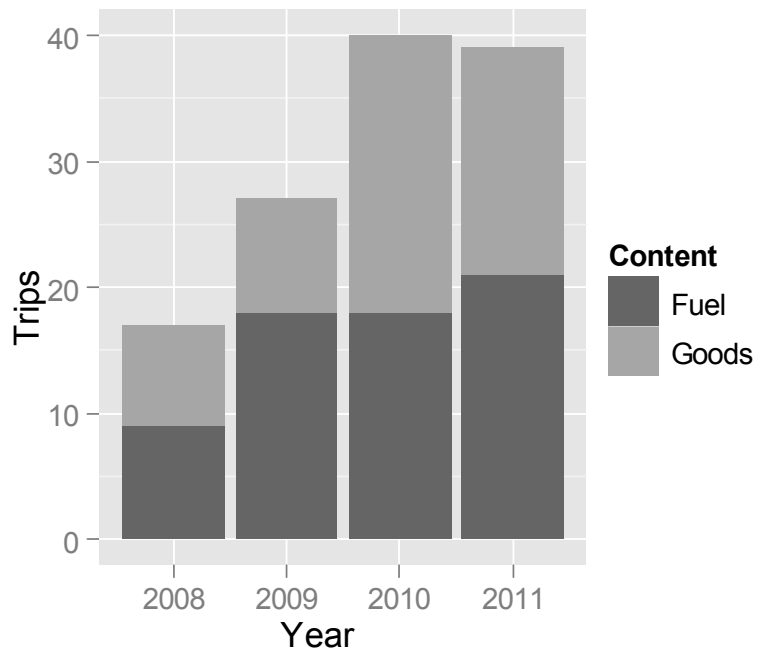
Table 1.4- 2. Status of all CREMP sampling areas since the beginning of monitoring.

	Meadowbank Sampling Areas									Baker Lake Areas			
	REF	REF	NF	NF	NF	NF	MF	MF	FF	REF	REF	NF	NF
Year	INUG	PDL	TPN	SP	TPE	WAL	TPS	TE	TEFF	BAP	BES	BBD	BPJ
2006	C		C	C	C	C	C	C					
2007	C		C	C	C	C	C	C					
2008	C		C	I (Aug)	C	C	C	I (Aug)		C		I	I
2009	C	C	I (Mar)	I	I (Aug)	C	C	I	C	C		I	I
2010	C	C	I	I	I	C	C	I	C	C		I	I
2011	C	C	I	I	I	C	C	I	C	C	C	I	I

Notes:

Area designations: C = Control; I = Impact; REF = reference; NF = near-field; MF = mid-field; FF = far-field; Blank denotes that the area was not part of the monitoring program that year.

Figure 1.4- 1. Barge traffic (number of trips/year) arriving in Baker Lake from Chesterfield Inlet since 2008.



1.5. Approach

CREMP reporting changed substantially in 2011 with a stronger focus on assessing potential temporal and spatial trends in the data related to mining activity. To this end, greater emphasis is placed on identifying changes to support the environmental management process, rather than on providing a detailed description of the 2011 results in isolation.

For 2011, the temporal and spatial trend assessments relied on visual interpretation of time-series “trend” plots, each showing the results since 2006 for all CREMP areas. The trend plots facilitate the identification of parameters showing a spatial-temporal pattern of change consistent with one or more of the mining activities described in **Section 1.4**.

Ultimately, full implementation of the approach described in the CREMP design document will also include the application of quantitative criteria for action (i.e., tailored for the site to represent a *meaningful* change) following the review and acceptance of the revised AEMP framework by regulators. The criteria for action have yet to be approved for use, therefore similar to previous CREMP reports, CCME guidelines for the protection of aquatic life will be used to place the magnitude of observed changes into context.

The general rationale for conducting the trend assessment followed these principles:

1. *Establish Expected Conditions* – Control data (i.e., combination of baseline (i.e., pre-mining) data from impact areas and data from remote reference or control areas; see **Table 1.4-2**) were examined to set expectations for a parameter (e.g., water or sediment metal concentration, zooplankton community biomass, etc.) in the absence of mining activity. Baseline data were used to infer relative spatial differences (e.g., between a NF and Ref area) and reference data were used to infer regional temporal changes (e.g., the regional decrease in benthic community abundance between 2009 and 2010).
2. *Compare Patterns of Change* – With expected conditions in mind, impact data (i.e., data collected at NF and MF areas after the onset of mining-related activity in proximity to an area; see **Table 1.4-2**) were assessed visually for spatial-temporal patterns (e.g., short-term [in any year] spikes [rapid rises that return to baseline] or longer-term trends [gradual or rapid increases that persist]) matching mining activity (e.g., rise in TSS concentrations at SP in August 2008). Where observed, the spatial and temporal extent and magnitude of the changes were characterized (i.e., do they extend to MF or FF areas, and if so, at what magnitude/duration).
3. *Provide Context for Magnitude of Change* – As discussed above, CCME guidelines were used to provide some context for observed changes to water and sediment quality parameters. In addition, where applicable and available, results

of target studies (e.g., TSS EAS studies) were used to help interpret changes in biological parameters.

4. *Identify Parameters for Management* – Identify parameters requiring management action on one of two levels: continued trend monitoring in 2012 (i.e., to follow low magnitude or weak trends), or active follow-up with more detailed quantitative assessment in 2012 (i.e., a targeted study to address a potential concern). This process will emphasize issues or concerns present in the 2011 results; changes occurring in previous years (e.g., dike construction sedimentation events) have already been identified for follow-up target studies to help understand their ecological significance.

2. METHODS

Open-water field sampling in 2011 was conducted during three time periods; spring (July 25–30), summer (August 11–24), and fall (September 13–20). The water monitoring program was expanded in 2009, to include through-ice sampling during winter months. Samples were collected in April/May (30–4), November (21–25), and December (17–24). In order to better characterize the study lakes, the spatial extent of sampling was expanded in 2009 to include the entire basin from each study lake (**Figure 1.3-1**). Individual sampling areas (for water quality and phytoplankton) were selected at random³ each month from within their respective lake basin.

General limnology, water and phytoplankton samples were collected in three seasons, while sediment, benthos, and zooplankton sampling was conducted in summer only (August).

Global Positioning System (GPS) Universal Transverse Mercator (UTM) coordinates (in NAD 83) for all monitoring components at the sampling areas are shown in **Table 2.1-1**.

³ Target locations for sampling were randomly pre-determined by bounding the sample areas and using a random number generator to select coordinates within those bounds. Coordinates were then recorded in MapSource and in the hand-held GPS units (NAD 83) before going out into the field.

Table 2.1-1. CREMP sampling location coordinates (GPS, UTM, NAD83), Meadowbank study lakes and Baker Lake, 2011.

Area-Replicate ID ¹	Area Type ²	Water & Phytoplankton (monthly)			Benthos & Sediment (August)					Zooplankton (August)			
		Date	Easting	Northing	Area-Replicate	Sample Type ³	Depth (m)	Easting	Northing	Area-Replicate	Depth (m)	Easting	Northing
TPE-34	NF	May	14W 639497	7210482	TPE-1	B & C	7.7	14 W 639126	7211571	TPE-1	10.7	14 W 638183	7211766
TPE-35		May	14W 638408	7211882	TPE-2	B & C	8.4	14 W 639109	7211540	TPE-2	11.0	14 W 638859	7211231
TPE-36		July	14W 637773	7211700	TPE-3	B & C	8.2	14 W 639089	7211517	TPE-3	13.2	14 W 639970	7211586
TPE-37		July	14W 638555	7211210	TPE-4	B	9.5	14 W 639075	7211490	TPE-4	16.1	14 W 638627	7210332
TPE-38		August	14W 639491	7211734	TPE-5	B	7.9	14 W 639029	7211511	TPE-5	13.2	14 W 639375	7211355
TPE-39		August	14W 638893	7210894						TPE-6	18.6	14 W 639427	7211908
TPE-40		September	14W 637765	7211098						TPE-7	12.4	14 W 639517	7210512
TPE-41		September	14W 639201	7211996						TPE-8	12.2	14 W 637891	7211697
TPE-42		November	14W 637811	7211609						TPE-9	10.2	14 W 638057	7211245
TPE-43		November	14W 639293	7211888						TPE-10	11.8	14 W 638088	7210220
TPE-44		December	14W 638529	7210661									
TPE-45		December	14W 639724	7211598									
TPN-34	NF	May	14W 634872	7214084	TPN-1	B & C	7.0	14 W 636389	7215547	TPN-1	13.4	14 W 636161	7213214
TPN-35		May	14W 635536	7213446	TPN-2	B & C	9.0	14 W 636385	7215525	TPN-2	11.1	14 W 634257	7214762
TPN-36		July	14W 634282	7214831	TPN-3	B & C	9.2	14 W 636417	7215511	TPN-3	12.0	14 W 636376	7214392
TPN-37		July	14W 635217	7216136	TPN-4	B & C	8.6	14 W 636514	7215438	TPN-4	13.0	14 W 635054	7215918
TPN-38		August	14W 636456	7215388	TPN-5	B & C	8.4	14 W 636607	7215409	TPN-5	11.0	14 W 636268	7215304
TPN-39		August	14W 635591	7216193						TPN-6	16.0	14 W 635831	7214000
TPN-40		September	14W 636008	7213566						TPN-7	23.0	14 W 635912	7212604
TPN-41		September	14W 634376	7214707						TPN-8	10.2	14 W 635074	7213393
TPN-42		November	14W 635270	7213235						TPN-9	24.0	14 W 634678	7215391
TPN-43		November	14W 634817	7214401						TPN-10	30.9	14 W 635905	7214910
TPN-44		December	14W 634612	7215472									
TPN-45		December	14W 635734	7214333									
TPS-27	MF	July	14W 634483	7210340	TPS-1	B & C	6.9	14 W 633728	7208024	TPS-1	11.2	14 W 634900	7210337
TPS-28		July	14W 635233	7209886	TPS-2	B & C	6.7	14 W 633709	7208017	TPS-2	37.7	14 W 634183	7208926
TPS-29		August	14W 635330	7208462	TPS-3	B & C	7.3	14 W 633690	7208012	TPS-3	50.1	14 W 635195	7209236
TPS-30		August	14W 633569	7208209	TPS-4	B	8.1	14 W 633669	7208030	TPS-4	16.5	14 W 633570	7207785
TPS-31		September	14W 635337	7208533	TPS-5	B	8.4	14 W 633646	7208046	TPS-5	16.9	14 W 634617	7207009
TPS-32		September	14W 634922	7210374						TPS-6	12.0	14 W 635793	7210246
										TPS-7	30.0	14 W 633888	7209773
										TPS-8	10.9	14 W 635376	7208613
										TPS-9	64.3	14 W 634707	7208052
										TPS-10	27.0	14 W 634057	7206773
SP-34	NF	May	14W 640199	7212663	SP-1	B & C	8.8	14 W 639998	7214066	SP-1	25.0	14 W 640644	7213482
SP-35		May	14W 640404	7213450	SP-2	B & C	7.5	14 W 640032	7214111	SP-2	10.8	14 W 639607	7213599
SP-36		July	14W 639638	7213901	SP-3	B & C	7.8	14 W 640055	7214139	SP-3	10.7	14 W 640462	7212901
SP-37		July	14W 640457	7213106	SP-4	B	8.0	14 W 640069	7214164	SP-4	11.6	14 W 640088	7214096
SP-38		August	14W 640306	7212671	SP-5	B	6.5	14 W 640064	7214197	SP-5	12.2	14 W 640324	7212567
SP-39		August	14W 640495	7213037						SP-6	10.4	14 W 640742	7213075
SP-40		September	14W 639937	7212931						SP-7	15.0	14 W 640229	7213686
SP-41		September	14W 640544	7212920						SP-8	10.6	14 W 639772	7213298
SP-42		November	14W 640752	7213309						SP-9	18.0	14 W 639934	7213888
SP-43		November	14W 640124	7213896						SP-10	11.4	14 W 639583	7214525
SP-44		December	14W 639509	7214244									
SP-45		December	14W 640657	7212978									
TE-34	MF	May	15W 361232	7212835	TE-1	B & C	7.2	15 W 360014	7212183	TE-1	11.0	15 W 360358	7213152
TE-35		May	15W 361663	7212724	TE-2	B & C	8.3	15 W 360006	7212220	TE-2	11.3	15 W 359919	7212100
TE-36		July	15W 360472	7212390	TE-3	B & C	7.7	15 W 360055	7212236	TE-3	10.7	15 W 360422	7212263
TE-37		July	15W 361527	7212374	TE-4	B	7.3	15 W 360057	7212260	TE-4	14.7	15 W 361350	7213169
TE-38		August	15W 361113	7212128	TE-5	B	6.5	15 W 360068	7212287	TE-5	10.8	15 W 361564	7212531
TE-39		August	15W 360044	7211917						TE-6	12.1	15 W 360213	7212283
TE-40		September	15W 361473	7212260						TE-7	14.1	15 W 360988	7212533
TE-41		September	15W 360144	7212383						TE-8	16.1	15 W 361891	7212940
TE-42		November	15W 360488	7212170						TE-9	13.6	15 W 361658	7211984
TE-43		November	15W 360398	7212768						TE-10	14.1	15 W 361412	7212863
TE-44		December	15W 360504	7212208									
TE-45		December	15W 360159	7212225									
TEFF-15	FF	July	15W 364485	7208978	TEFF-1	B & C	6.9	15 W 361862	7210759	TEFF-1	12.2	15 W 362174	7210121
TEFF-16		July	15W 363595	7210572	TEFF-2	B & C	8.2	15 W 361829	7210712	TEFF-2	12.7	15 W 362809	7209209
TEFF-17		August	15W 362323	7209205	TEFF-3	B & C	6.9	15 W 361733	7210697	TEFF-3	14.4	15 W 363634	7210556
TEFF-18		August	15W 363909	7210300	TEFF-4	B	7.0	15 W 361662	7210658	TEFF-4	14.0	15 W 364119	7208972
TEFF-19		September	15W 362267	7210465	TEFF-5	B	7.0	15 W 361610	7210616	TEFF-5	11.5	15 W 362670	7209765
TEFF-20		September	15W 364662	7209513						TEFF-6	10.2	15 W 363695	7208570
										TEFF-7	10.2	15 W 363665	7209730
										TEFF-8	16.2	15 W 363385	7209647
										TEFF-9	11.5	15 W 362360	7211019
										TEFF-10	12.1	15 W 362520	7210164

Table 2.1-1. CREMP sampling location coordinates (GPS, UTM, NAD83), Meadowbank study lakes and Baker Lake, 2011.

Area-Replicate ID ¹	Area Type ²	Water & Phytoplankton (monthly)			Benthos & Sediment (August)					Zooplankton (August)			
		Date	Easting	Northing	Area-Replicate	Sample Type ³	Depth (m)	Easting	Northing	Area-Replicate	Depth (m)	Easting	Northing
INUG-22	Ref	May	14W 622650	7214481	INUG-1	B & C	6.9	14 W 622816	7216850	INUG-1	11.9	14 W 622040	7215512
INUG-23		May	14W 621873	7216651	INUG-2	B & C	6.8	14 W 622784	7216864	INUG-2	10.4	14 W 622704	7215179
INUG-24		July	14W 622139	7214347	INUG-3	B & C	7.6	14 W 622740	7216834	INUG-3	10.1	14 W 621749	7214158
INUG-25		July	14W 622622	7216230	INUG-4	B & C	8.5	14 W 622711	7216786	INUG-4	10.7	14 W 622832	7216582
INUG-26		August	14W 622002	7216703	INUG-5	B & C	9.2	14 W 622694	7216769	INUG-5	13.3	14 W 622645	7214495
INUG-27		August	14W 622104	7215103						INUG-6	10.6	14 W 622237	7214611
INUG-28		September	14W 622556	7216169						INUG-7	15.8	14 W 622092	7215027
INUG-29		September	14W 621938	7216057						INUG-8	10.3	14 W 622824	7216001
INUG-30		November	14W 622761	7215288						INUG-9	11.0	14 W 622550	7216261
INUG-31		November	14W 622528	7214771						INUG-10	10.7	14 W 622756	7216287
INUG-32		December	14W 622495	7216317									
INUG-33		December	14W 621823	7216125									
WAL-15	NF	July	15W 360235	7221068	WAL-1	B & C	8.6	15 W 360913	7220489	WAL-1	10.4	15 W 362404	7224330
WAL-16		July	15W 360569	7221724	WAL-2	B & C	7.0	15 W 360907	7220436	WAL-2	11.0	15 W 360747	7221951
WAL-17		August	15W 362423	7222486	WAL-3	B & C	8.3	15 W 360923	7220481	WAL-3	14.5	15 W 360954	7222113
WAL-18		August	15W 360442	7221437	WAL-4	B	7.9	15 W 360927	7220428	WAL-4	10.4	15 W 362054	7222595
WAL-19		September	15W 361903	7222021	WAL-5	B	7.2	15 W 360942	7220399	WAL-5	18.5	15 W 362261	7224115
WAL-20		September	15W 360846	7221784						WAL-6	10.0	15 W 362514	7222509
										WAL-7	10.4	15 W 362060	7223574
										WAL-8	10.6	15 W 361756	7222715
										WAL-9	10.9	15 W 360880	7220759
										WAL-10	10.2	15 W 360951	7220494
PDL-15	Ref	July	14W 632956	7225154	PDL-1	B & C	6.5	14 W 630554	7222992	PDL-1	12.0	14 W 632359	7223439
PDL-16		July	14W 631391	7223592	PDL-2	B & C	6.8	14 W 630607	7223035	PDL-2	30.5	14 W 632448	7223916
PDL-17		August	14W 630580	7223943	PDL-3	B & C	6.9	14 W 630711	7222771	PDL-3	21.4	14 W 632198	7224359
PDL-18		August	14W 631665	7224533	PDL-4	B & C	7.6	14 W 630679	7223053	PDL-4	11.1	14 W 629752	7224011
PDL-19		September	14W 631651	7223993	PDL-5	B & C	6.7	14 W 630596	7223017	PDL-5	23.0	14 W 632420	7225027
PDL-20		September	14W 630390	7225018						PDL-6	17.9	14 W 633047	7224412
										PDL-7	23.7	14 W 631752	7225387
										PDL-8	23.9	14 W 631342	7224719
										PDL-9	16.2	14 W 630070	7225075
										PDL-10	12.0	14 W 630187	7223683
BBD-15	NF	July	14W 644368	7135364	BBD-1	B & C	8.0	14 W 644540	7135314	NA			
BBD-16		July	14W 644787	7135117	BBD-2	B & C	9.5	14 W 644601	7135272				
BBD-17		August	14W 644095	7135141	BBD-3	B & C	8.2	14 W 644429	7135350				
BBD-18		August	14W 644550	7135150	BBD-4	B	8.2	14 W 644515	7135317				
BBD-19		September	14W 644344	7135242	BBD-5	B	8.0	14 W 644561	7135308				
BBD-20		September	14W 644705	7135309									
BPJ-15	NF	July	15W 356710	7134174	BPJ-1	B & C	7.5	15 W 357292	7134111	NA			
BPJ-16		July	15W 357051	7134033	BPJ-2	B & C	6.8	15 W 357265	7134141				
BPJ-17		August	15W 357346	7134043	BPJ-3	B & C	7.8	15 W 357233	7134139				
BPJ-18		August	15W 357009	7134144	BPJ-4	B	7.7	15 W 357077	7134214				
BPJ-19		September	15W 356674	7134253	BPJ-5	B	8.2	15 W 357043	7134219				
BPJ-20		September	15W 356946	7134104									
	Ref	NA			BES-1	B & C	8.0	15 W 361228	7132398	NA			
					BES-2	B & C	7.9	15 W 361266	7132382				
					BES-3	B & C	8.8	15 W 361302	7132354				
					BES-4	B	9.2	15 W 361358	7132320				
					BES-5	B	9.1	15 W 361421	7132290				
BAP-15	Ref	July	15W 364133	7131020	BAP-1	B & C	7.2	15 W 363976	7131229	NA			
BAP-16		July	15W 363301	7131150	BAP-2	B & C	7.3	15 W 364035	7131193				
BAP-17		August	15W 363721	7131176	BAP-3	B & C	8.9	15 W 364073	7131154				
BAP-18		August	15W 363237	7131010	BAP-4	B	8.3	15 W 364137	7131139				
					BAP-5	B	8.2	15 W 364144	7131055				

Notes:

¹ Area IDs are as follows: TPE,TPN,TPS=Third Portage Lake - East, North, South basins; SP=Second Portage Lake; TE,TEFF=Tehek Lake - Farfield; INUG=Inuggugayualik Lake; WAL=Wally Lake; PDL=Pipedream Lake; BBD,BPJ,BES,BAP=Baker Lake - Barge Dock, Proposed Jetty, East Shore, Akilahaarjuk Point.

² Area types are as follows: NF = near-field; MF = mid-field; FF = far-field; Ref. = reference.

³ Sample types are as follows: B = Benthos; C = chemistry.

2.1. General Limnology

Vertical temperature (°C), dissolved oxygen (mg/L), conductivity (µS/cm), and pH depth profiles were acquired from each meter (up to 20 m) using the YSI Professional Plus meter. Profiles were acquired from each area at each sampling event (i.e., coinciding with water chemistry sampling) to track changes in oxygen and temperature profiles. Secchi depth (m) was measured prior to collection of water and sediment samples.

2.2. Water Chemistry

Water samples were collected monthly from all sampling areas from July to September and at a subset of areas in May, November and December through-ice. In all cases, water was collected from approximately 3 m depth by pumping lake water through a flexible (food-grade silicone) tube, attached to a diaphragm pump connected to a 12 volt battery.

Water samples were analyzed for conventional parameters (hardness, conductivity, pH, turbidity, and total dissolved and suspended solids), anions (alkalinity, bromide, chloride, fluoride, silicate and sulphate), nutrients (ammonia, nitrate, nitrite, total Kjeldahl nitrogen, ortho-phosphate and total phosphorus), organic parameters (chlorophyll-a, dissolved and total organic carbon) and total and dissolved metals.

Where filtered samples were required for dissolved constituents (metals, DOC), a 45-µm inline filter was connected to the end of the outflow tube and bottles were filled directly using filtered water. The procedures for collecting the water samples are outlined in detail in the Standard Operating Procedure (SOP) for Water and Phytoplankton Sampling (**Appendix B**). Water quality sampling locations are illustrated in **Figure 1.3-1** (Meadowbank lakes) and **Figure 1.3-3** (Baker Lake).

ALS Environmental (Winnipeg, MB) provided all of the sampling containers and appropriate preservatives and performed all analyses. All samples were kept on ice following collection and during transport to the laboratory, and stored in a refrigerator prior to shipping. A completed chain-of-custody form accompanied the samples during transport.

Water chemistry concentrations were tabulated and compared against each other, and, when available, the federal Canadian Council of Ministers of the Environment (CCME, 2007) water quality guidelines for the protection of aquatic life. These guidelines are intended to provide a conservative level of protection to freshwater aquatic life from anthropogenic contaminants or other physical changes (suspended solids, temperature). Since there are no CCME guidelines for dissolved metals, these parameters were screened against the total metals guidelines; this is appropriate given that the dissolved phase (e.g., divalent cations) is typically responsible for toxicity in aquatic systems.

2.3. Sediment Chemistry

Consistent with previous years, sediment was collected only in August 2011, using proven sample collection and handling techniques (Environment Canada, 1984). The procedures for collecting the sediment samples are outlined in detail in the SOP for Benthos and Sediment Sampling (**Appendix C**). Sediment (top 3–5 cm) was collected from all areas using a Petite Ponar grab (sampling area of 0.023 m²). Two grab samples were composited from each area to reduce the influence of within-area spatial heterogeneity⁴. Sediment chemistry grabs were collected after benthic invertebrate sampling to avoid possible disturbance of biota. Sediment chemistry sampling areas are shown in **Figure 1.3-2** (Meadowbank lakes) and **Figure 1.3-3** (Baker Lake); UTM coordinates for each sample are presented in **Table 2.1-1**.

Sediment quality sampling has been conducted for two purposes under the CREMP: (1) characterization of sediment quality (physical and chemical parameters) within the biologically active zone using grab samples to support the assessment of benthic invertebrate community results, and (2) characterization of sediment chemistry (chemical parameters) in the top 1-cm using core samples to support the identification of potential mine-related changes to this medium. The former has been conducted every year synoptically with collection of the benthic invertebrate samples, and for this reason will be continued. The latter was conducted in 2008 at all CREMP areas just prior to the start of the construction phase at Meadowbank (i.e., to characterize baseline conditions). Follow-up coring was conducted in 2009 at four areas to assess potential changes in sediment chemistry associated with construction of the East Dike (reported in the 2009 EAS [Azimuth, 2010c]). The frequency of future coring events will be assessed as part of the ongoing CREMP design review (Azimuth, 2012b).

Only those grab samples that met the following acceptability criteria were retained for analysis: did not contain large foreign objects; adequate penetration depth (i.e., 10–15 cm); not overfilled (sediment surface not touching the top of sampler); did not leak (there was overlying water present and no visible leaks); and was undisturbed (sediment surface was relatively flat). Grabs that did not satisfy these conditions were discarded.

Sampling jars were placed in a cooler with ice packs and transported to ALS Environmental (Vancouver, BC) for analysis. A completed chain-of-custody form accompanied the samples during transport. Sediment samples were analyzed for pH, total organic carbon, moisture content, particle size (% gravel, sand, silt and clay), mineral oil and grease, light & heavy extractable petroleum hydrocarbons (LEPHs and HEPHs), polycyclic aromatic hydrocarbons (PAHs), and total metals concentrations.

⁴ Within-area spatial variability was directly assessed in the targeted sediment coring study which is reported in the 2009 EAS (Azimuth, 2010c).

Sediment metals concentrations were compared to sediment quality guideline (SQG) concentrations developed by the CCME (2002) for the protection of aquatic life. There are two levels of SQGs: Interim Sediment Quality Guidelines (ISQG) and Probable Effects Level (PEL) concentrations. ISQGs are conservative values that represent the concentration below which adverse effects are unexpected. The PEL is less conservative and represents a concentration above which adverse effects may be observed, based on laboratory studies. It is important to realize that background concentrations of some metals in sediments routinely exceed both ISQG and PEL concentrations. This is common in many in mineralized areas and this does not mean that adverse effects should be expected. All of the measured sediment chemistry concentrations from the study lakes were tabulated and compared against each other and, when available, the SQGs.

2.4. Phytoplankton

Phytoplankton are microscopic, unicellular plant species that are suspended in the water column and, as primary producers, comprise the base of the food web. There are six major groups of phytoplankton present in lakes: cyanophytes (blue green algae), chlorophytes (green algae), chrysophytes (golden-brown algae), diatoms, cryptophytes and dinoflagellates. Seasonal production of phytoplankton can vary widely depending upon water temperature, nutrient concentration, time of year, water clarity and amount of sunlight and predation by zooplankton. Estimates of phytoplankton biomass (mg/m^3) are useful as gross indicators of lake productivity to determine if there have been potential changes due to nutrient additions as a result of blasting (i.e., addition of nitrogen and ammonia from ammonium nitrate).

Unfiltered water was collected monthly from all sampling areas from July to September and at a subset of areas in May, November and December through-ice (alongside water chemistry sampling). Water was collected in small (50 mL) vials, from 3 m depth, and preserved with Lugol's solution. The procedures for collecting the phytoplankton samples are outlined in detail in the SOP for Water and Phytoplankton Sampling (**Appendix B**). Phytoplankton samples were collected at water sampling locations; the latter are illustrated in **Figure 1.3-1** (Meadowbank lakes) and **Figure 1.3-3** (Baker Lake).

Preserved samples were transported to Winnipeg, MB for taxonomic identification and analysis by Plankton R Us Inc. For the analysis, 10-mL aliquots of preserved sample were gravity settled for 24 hours. Counts were performed on an inverted microscope at magnifications of 125X, 400X, and 1200X with phase contrast illumination. Cell counts were performed using the $\ddot{\text{U}}$ termohl technique as modified by Nauwerck (1963). Cell counts were converted to wet weight biomass (mg/m^3) by estimating cell volume. Estimates of cell volume for each species were obtained by measurements of up to 50 cells of an individual species and applying the geometric formula best fitted to the shape of the cell (Vollenweider, 1968; Rott, 1981). A specific gravity of 1 was assumed for

cellular mass. All biomass (mg/m³) and density (cells/L) estimates are summed by major taxa, per area.

Simpson's diversity index was calculated for each area to quantify phytoplankton species diversity among areas and sampling events (Washington, 1984). Simpson's diversity (D) is calculated as follows:

$$D = 1 - \sum \frac{n_i(n_i - 1)}{N(N - 1)}$$

where: N is the total number of organisms/replicate; n_i is the total number of organisms of the i th taxa/replicate. The number of species occurring per sample was calculated to measure the species richness among replicates, areas and sampling events.

2.5. Benthic Invertebrates

Benthic invertebrates are small animals that live in or on bottom sediments. The most commonly encountered organisms include the aquatic larval stages (i.e., resembling worms) of insects, especially chironomids (i.e., midge larvae). Other common organisms are oligochaete worms, small bivalve clams and amphipods (i.e., crustaceans). Benthic invertebrates are typically an important food source for juvenile fish of all species (i.e., lake trout, Arctic char and round whitefish); they may also be important for adult fish (e.g., round whitefish).

Benthic invertebrates were collected from each sampling area in August 2011, using a Petite Ponar grab (0.023 m²) and a 500-µm sieve at the same time and locations as sediment chemistry samples. Five replicate samples were collected per area. Two independent grabs⁵ per replicate were composited to form a single sample to reduce sampling variation within areas and to increase the surface area sampled. Depths ranged from 6.5 to 9.5 m. Sampling locations are illustrated in **Figure 1.3-2** (Meadowbank lakes) and **Figure 1.3-3** (Baker Lake); UTM coordinates for each sample are presented in **Table 2.1-1**.

Only those grab samples that met the following acceptability criteria outlined in **Section 2.3** (sediment chemistry methods) were retained for analysis. Grabs that did not satisfy these conditions were discarded. The procedures for collecting the benthic invertebrate samples are outlined in detail in the SOP for Benthos and Sediment Sampling (**Appendix C**).

⁵ Based on analyses conducted for the EEM Cycle 1 Study Design document (for more detail see Azimuth, 2010f), we feel that the benefits of relying on compositing two subsamples for each replicate area to reflect the benthic community outweigh the disadvantages of changing methods and making historical data less comparable.

Benthos samples were preserved in the field with a 10% buffered formalin solution and sent to Zaranko Environmental Assessment Services (ZEAS) (Nobleton, ON) for taxonomic identification and analysis. Upon arrival at ZEAS, samples were immediately logged and inspected to ensure adequate preservation to a minimum level of 10% buffered formalin and checked for correct labeling. Benthos samples were sorted at a magnification of between 7 and 10 times with the use of a stereomicroscope. To expedite sorting prior to processing, all samples were stained with a protein dye that is absorbed by aquatic organisms but not by organic material, such as detritus and algae.

Prior to sorting, samples were washed free of formalin in a 500-µm sieve. Benthos were enumerated and sorted into major taxonomic groups, (i.e., order and family), placed in glass bottles and re-preserved in 80% ethanol for more detailed taxonomic analysis by senior staff. Each bottle was labeled internally with the survey name, date, area and replicate number.

Abundance of organisms/m² was determined from the total number of organisms enumerated (see **Section 3.6**). Nematodes and ostracods were not reported, nor were they included in abundance and richness calculations because they are too small to be reliably retained on a 500-µm sieve.

The following endpoints were used for assessing benthic community structure, based on sensitivity, objectivity, ease of interpretation and cost-effectiveness:

- Taxa richness (i.e., corresponds to the number of taxa per sample and provides a measure of diversity).
- Total abundance (i.e., number of organisms per m²).
- Abundance and richness of all major taxa (e.g., insects, molluscs, worms).
- Simpson's Diversity index (D), calculated as follows:

$$D = 1 - \sum \frac{n_i(n_i - 1)}{N(N - 1)}$$

The benthic invertebrate dataset was tested for differences between specific area-year impacts relative to control area-years and for differences between specific longer-term impacts by area (i.e., for areas where more subtle, but prolonged, effects may have occurred). A BACI (before/after control/impact) model was used for the analysis to test for both types (i.e., single-year and multi-year) of effects.

2.6. Zooplankton

As key primary consumers in the lake food web, these planktonic organisms are important from an energy cycling perspective. Zooplankton are herbivorous, omnivorous and carnivorous water column animals that are an important food source to key life history stages of certain fish species, especially juvenile round whitefish (*Prosopium*

cylindraceum) and juvenile and adult Arctic char (*Salvelinus alpinus*). The seasonal change in biomass (mg/m^3) of zooplankton is also an important indicator of pelagic (i.e., water column) productivity.

Zooplankton were collected once in August 2011, using a 70 μm nitex mesh net with a 30 cm diameter mouth opening and total length of 2.2 m. Ten replicate samples were collected per area in 2011 (Meadowbank lakes only). Replicate sample locations were distributed within the wider sampling areas in order to better characterize zooplankton on a basin-wide level.

For each replicate, four independent tows were collected; two were composited to form a unique sample for biomass analysis and a two were composited for taxonomic analysis. In total, 40 tows were collected for each area. Zooplankton tows were always vertical tows from 8 m depth to the surface. The procedures for collecting the zooplankton samples are outlined in detail in the SOP for Zooplankton Sampling (**Appendix D**). Zooplankton sampling locations are illustrated in **Figure 1.3-2**; UTM coordinates for each sample are presented in **Table 2.1-1**.

After collection, all samples were placed into uniquely labeled 500 mL plastic jars and preserved with a 5% buffered formalin solution. All jars were screwed tight and taped to prevent leakage. Samples were shipped to North/South Consultants, Winnipeg MB for biomass analysis and taxonomic identification. Zooplankton samples were washed through a 63- μm mesh test sieve to remove preservative and debris.

For biomass determination, one set of samples were wet weighed and dried in an oven at 60°C until completely dry (24 – 48 hours). Samples were weighed again dry to determine dry weight. For taxonomic identification, a separate set of samples were rinsed through a 63- μm mesh test sieve, transferred to 70% ethanol and processed as follows. All large, easily identifiable organisms that occur in small abundance in the sample are removed, enumerated and identified to species before the remainder of the sample is processed. Because of the very large number of organisms in each sample, the sample was split into 1/8th or 1/16th the original volume using a Folsom splitter. The split is placed into a petri dish divided into four quadrats and shaken to disperse the organisms uniformly within the petri dish. Then all organisms are enumerated and identified to the lowest practical taxonomic level (to species level where possible) within two of the four quadrats. To arrive at total abundance estimates, the ‘unique’ taxa are added back into the original sample that is multiplied by whatever the split was (i.e., 8x or 16x).

Wet and dry biomass (mg/m^3) was determined by standardizing the wet and dry sample weights with the volume of water filtered by the net during each vertical tow (see **Section 3.7**). Total abundance (count) and presence/absence of major taxonomic groups are also discussed.

2.7. Quality Assurance / Quality Control

The objective of quality assurance and quality control (QA/QC) is to assure that the chemical and biological data collected are representative of the material or populations being sampled, are of known quality, have sufficient laboratory precision to be highly repeatable, are properly documented, and are scientifically defensible. Data quality was assured throughout the collection and analysis of samples using specified standardized procedures, by the employment of laboratories that have been certified for all applicable methods, and by staffing the program with experienced technicians.

Laboratory QA/QC – Data Quality Objectives (DQOs) are numerically definable measures of analytical precision and completeness. Analytical precision is a measurement of the variability associated with duplicate analyses of the same sample in the laboratory. The laboratory duplicate is a new aliquot from the sample bottle/jar and is analyzed from the start in the same manner as the original aliquot taken from the bottle/jar. Also, Certified Reference Materials (CRM) are always included as part of routine laboratory QA/QC.

Field QA/QC: Water Sampling – Field QA/QC standards during water sampling were maintained for every sample. The standard QA/QC procedures included thoroughly flushing the flexible tubing and pump to prevent cross-contamination between areas and thoroughly rinsing the sample containers with site water prior to sample collection. Field QA procedures include collection and/or analysis of the following:

- **Field Duplicate Samples** – An independent collection of water samples at the same time and location as the original, as a measure of consistency in sampling methodology and heterogeneity of chemical parameters at discrete locations. The number of field duplicates taken is approximately 10% of original samples.
- **Travel Blank** – Laboratory supplied bottles of distilled water that are transported to site, carried back and forth into the field and returned to the laboratory, unopened, to test for inadvertent contamination during the transport and field sampling process.
- **Equipment Blank** – At the beginning or end of a field sampling episode, after routine rinsing of the pump and tubing, distilled water is run through the equipment and placed in sampling bottles for analysis of a wide suite of parameters (e.g., metals, nutrients, and conventionals). This blank tests for possible cross-contamination of samples from the water sampling equipment.

Results from both the equipment and travel blanks are examined for detectable concentrations of any of the parameters measured; no parameter in either blank should exceed laboratory DLs.

Quality assurance results of the laboratory and field duplicates were assessed by measuring the relative percent difference (RPD) between original and duplicate measurements as measure of precision by the laboratory and the magnitude of variability

between original and field duplicate samples respectively. The equation used to calculate a RPD is:

$$RPD = \frac{(A - B)}{((A + B)/2)} \times 100$$

where: A = analytical result; B = duplicate result.

The DQOs for this project were:

- Laboratory Duplicate = 25% RPD for concentrations that exceed 10x the method detection limit (MDL).
- Field Duplicate = 50% RPD for concentrations that exceed 10 x MDL.

RPD values may be either positive or negative, and ideally should provide a mix of the two, clustered around zero. Consistently positive or negative values may indicate a bias. Large variations in RPD values are often observed between duplicate samples when the concentrations of analytes are very low and approaching the detection limit. The reason for this is apparent if one considers duplicate samples with concentrations of an analyte of 0.0005 and 0.0007 mg/L. In absolute terms, the concentration difference between the two is only 0.0002 mg/L, a very tiny amount; however, the RPD value is 33.3%. This may sometimes lead to a belief that the level of precision is less than it actually is. RPDs are not calculated for cases where one of the samples (i.e., either A or B above) is below detection and the other is not.

Field QA/QC: Sediment Sampling – Field QA/QC standards during sediment sampling consisted of the following:

- Taking care between sampling areas, by rinsing and cleaning the Petite Ponar grab, stainless steel compositing bowls and spoons using site water and phosphate-free cleaning detergent, avoided the possibility of cross-contamination.
- Metals analysis of an ashless filter (QA/QC Filter) that was swiped over the pre-cleaned bowl at four sampling areas to assess the cleaning procedures. The significance of any metal detected on this filter was evaluated by comparing this amount to the measured concentrations in the sediment samples. Where comparisons were required, the concentration of metals originating from any equipment was estimated by dividing the amount detected on the filter (weight) by: the surface area of 2 Petite Ponar grabs (assuming a thickness of 3 cm was collected from each), that was multiplied by the density of sediment (assumed to be 2 g/cm³).
- Four field duplicate samples were collected in the immediate vicinity of original samples from randomly selected locations as a test of consistency in field methodology and to characterize heterogeneity of sediment chemistry within discrete areas. The DQO for field duplicate samples is based on an RPD of 50% for concentrations that are >10 x MDL.

Field and Laboratory QA/QC: Biota Sampling – Standard procedures were used to collect biota samples. All sampling gear was thoroughly rinsed between sampling areas to ensure that there was no inadvertent introduction (i.e., cross-contamination) of biota from one area to another.

Field duplicates were collected for phytoplankton during each sampling event (i.e., monthly) in coordination with water sample duplicates and were taken in order to assess sampling variability and sample homogeneity. A RPD of 50% for density and biomass concentrations is considered acceptable.

As a measure of laboratory QA/QC on the enumeration method replicate counts were performed on 10% of the samples. Replicate samples were chosen at random and processed at different times from the original analysis to reduce biases. The laboratory replicate is a new aliquot (10 ml) from the sample jar and is counted from the start in the same manner as the original aliquot (10 ml) taken from the jar.

Field replicates (5 per area) were collected for benthos to determine natural variability and heterogeneity. Replicates were collected at least 20 m apart from one another, within the defined sampling areas, as described in **Section 2.5**.

ZEAS incorporates the following set of QA/QC procedures in all benthic projects undertaken by the company to ensure the generation of high quality and reliable data:

- Samples were logged upon arrival, inspected, and enumerated;
- Samples were checked for proper preservation;
- Samples were stained to facilitate sorting;
- Taxonomic identifications were based on the most updated and widely used keys;
- 10% of the samples were re-sorted, and re-counted, targeting >90% recovery;
- Precision and accuracy estimates were calculated;
- A voucher collection was compiled;
- Sorted sediments and debris were re-preserved in 10% formalin and are retained for up to three months. For samples subject to subsampling, sorted and unsorted fractions were re-preserved separately.

Field replicates (10 per area) were collected for zooplankton to test consistency in field methods and to determine natural variability and spatial heterogeneity within each sampling area. Replicate locations were spread to cover and represent the entire basin, as described in **Section 2.6**. When collection of each replicate sample was completed, the net was rinsed by holding it upside down and raising and lowering it into the water to ensure that no zooplankters were stuck inside the net.

Laboratory QA methods by North/South Consultants (NSC) included use of trained technicians familiar with procedures to perform wet and dry weight measurements, calibration of the digital scale between measurements and use of consistent personnel on the same project. The QA/QC procedure for data entry consists of technician #1 – data entry; technician #2 – checks every entry; and the senior biologist examines and finalizes the data file before delivery. QA procedures on the enumeration method involved replicate counts which were performed on 10% of the samples by a separate individual. Replicate samples were chosen at random and processed at different times from the original analysis to reduce biases. The laboratory replicate is a new split from the sample and is counted from the start in the same manner as the original.

Completeness – Completeness for this study is defined as the percentage of valid analytical results. Results that were made uncertain due to missed hold times, improper calibration, contamination of analytical blanks, or poor calibration verification results were deemed invalid. Completeness = 95% valid data obtained.

3. RESULTS AND DISCUSSION

Following the review of QA/QC results (**Section 3.1**), the remainder of this section presents results and discussion for each study component. The latter sections (**Sections 3.2 through 3.7**), are subdivided by study area (i.e., Meadowbank study lakes and Baker Lake), have been structured in a consistent manner with the general rationale used for the trend assessment, and include:

- *General Observations* – which provides a synopsis of expected conditions in the absence of mining-related activities (i.e., based on baseline and reference data [i.e., “control” status data; see textbox in **Section 1.3.1** and text in **Section 1.4.2**]).
- *Temporal and Spatial Trend Interpretation* – which (1) describes the types of changes that could be expected in relation to mining activity, specific to the parameters in question, (2) identifies trends in parameters that are associated with mining-related activities, (3) provides context for the magnitude of observed changes relative to CCME guidelines (where available) or to target studies (e.g., TSS EAS), and (4) identifies parameters requiring management action on two levels: continued trend monitoring in 2012 (i.e., to follow low magnitude or weak trends), or active follow-up with more detailed quantitative assessment in 2012 (i.e., a targeted study to address a potential concern).

3.1. QA/QC

QA/QC procedures consisted of a combination of careful field collection and sample handling, the collection of field duplicate samples and the analysis of laboratory replicates and standard reference materials. Results of the QA/QC analyses are presented in **Tables 3.1-1 to 3.1-5** for water and sediment chemistry, phytoplankton and benthos, respectively.

ALS Environmental is an analytical laboratory accredited by the Canadian Association of Environmental Analytical Laboratories. This accreditation ensures that laboratories achieve and demonstrate the highest levels of technical and management excellence for their services. Laboratory QA/QC procedures performed on the water and sediment samples met all of the laboratory’s internal data quality objectives for accuracy, precision and completeness.

3.1.1. Water Chemistry

For water samples during each event (that consisted of 10–24 samples), one to three field duplicates, one laboratory duplicate, one or two equipment blanks and one travel blank (not for every event) were each analyzed for all water parameters. As a result, a total of 11 field duplicates, 6 laboratory duplicates, 10 equipment blanks, and 4 travel blanks were each analyzed for 24 conventional parameters as well as 39 total and 39 dissolved metals. Although there were some exceedances of the established DQOs, these

exceedances represent much less than 1% of the total for QA samples and parameters measured. When comparing results for a large number of parameters, many of which are near detection limits, simple odds dictate that a few parameters will exceed DQOs due to laboratory error (i.e., a false positive). There was no pattern in the nature of the exceedances that indicates a bias of specific parameters one way or another. The results of the RPD analysis for all these parameters are presented in **Table 3.1-1** and discussed below:

- **Field Duplicates** – Overall, these samples showed a high level of consistency with the original samples. There were only five cases (out of +1000 cases) where the RPD exceeded 50% (i.e., total aluminum in May, TKN in August, total lead and titanium in September, and total phosphate in December); in the case of aluminum, TKN, titanium, and phosphate, measured concentrations were less than 10 x MDL. In the case of total lead, the measured concentration of the original sample was below 10 x MDL and that of the duplicate sample was slightly above 10 x MDL.
- **Laboratory Duplicates** – These samples, conducted randomly as part of the laboratory's internal QA/QC program, showed a high degree of consistency and precision. All laboratory duplicate samples and parameters were below the 25% RPD. Consequently, DQOs were met in all samples.
- **Equipment Blanks** – In 2010, we acquired onsite (Meadowbank lab) distilled water in order to increase the amount of flushing to 2 minutes. Low but detectable concentrations of a variety of parameters were measured in this distilled water, consequently contaminating the blanks from the sampling equipment. In 2011, we ordered a large supply of laboratory-prepared de-ionized water to avoid this problem. The shipment arrived in time for July sampling onwards, but onsite distilled water was used for May equipment blanks. These May equipment blanks are considered compromised and not usable to assess cross contamination during sample collection. The remaining blank samples show some detectable parameters but all are below 10 x MDL.
- **Travel Blanks** – there are several cases of exceedances but all are below 10 x MDL.
- **Overall** – The frequency of DQO exceedances represent a small fraction of the total number of samples and parameters that were measured for QA/QC purposes (i.e., <1%). In addition, there were no apparent patterns in exceedances of parameters or sampling areas suggesting that there was no trend towards higher or lower results in replicate samples. As such, the measured concentrations are considered usable but some are flagged to be interpreted with caution as a result of detectable concentrations in equipment blanks.

3.1.2. Sediment Chemistry

Sediment QA/QC results are presented in **Table 3.1-2** and discussed below:

- Field Duplicates – Overall, these four samples showed a high level of consistency with the original samples. There were only two cases, both for % clay, where the RPD exceeded 50% (i.e., field dup-2 and -4). In both cases, the original sample had more clay content than the duplicate. This difference demonstrates the heterogeneous nature of sediment particles within a spatially small area, particularly that a small lump of clay in one sample can cause this discrepancy.
- Laboratory Duplicates – The RPD value for chromium slightly exceeded the DQO of 25% in one lab duplicate sample (27.3%). This result confirms that sediments were well homogenized in the field prior to placement in jars.
- Filter Swipes – filter swipes were analyzed for total metals in units of µg/filter. While the majority of parameters tested were below the MDL, a few were detected. However, the incremental influence of the measured amounts was estimated to be less than 0.1% of actual measured sediment concentrations in all cases. Consequently, the potential for meaningful cross-contamination is considered negligible and DQOs were considered to be fully met.

3.1.3. Phytoplankton

For phytoplankton, during each event 1–3 field duplicates and 1 laboratory duplicate were analyzed for density and biomass (total and for each major phytoplankton group). Similar to water chemistry, the results for phytoplankton QA/QC had a number of exceedances of the established DQOs. However, where density or biomass of a particular phytoplankton group is very small (i.e., about 1% of total), small differences in that metric between the original and the duplicate can cause very large differences in the RPD. Thus, we evaluate the quality of these data based on *total* density and *total* biomass both for field and laboratory duplicates. Results of the RPD analysis for all these parameters are presented in **Table 3.1-3** and are discussed below:

- Field Duplicates – The phytoplankton field duplicates from Second and Third Portage and Inuggugayualik lakes displayed greater than desired variability in both total density (cells/L) and biomass (mg/m³). Within-taxa variability was quite high, which has been commonly observed in similar datasets over the years. For example, rare groups may be present in one field sample but not another. For example, Dinoflagellates were present in Third Portage Lake in the duplicate sample in May but were not present in the original sample. In such cases, where abundance or biomass is less than 1% of totals, RPD values are not calculated. Nevertheless, RPDs for *total* density and *total* biomass for most field duplicate samples were low and met the DQO (i.e., 19/22 RPDs), although some were still greater than 50% (i.e., 3/22 RPDs). This highlights an inherently high degree of natural variability for this component of the CREMP, as these samples were

collected from the same location at about the same time (likely <10 minutes apart). RPD values were always much less than 50% for number of species and Simpson's diversity. Part of the reason for exceedences of DQOs for phytoplankton, notwithstanding the very small size of phytoplankters, is the very small volume of water used to determine biomass and diversity (~2 mL). Replicate samples using small water volumes will inevitably result in exceedences of DQOs, especially for rare or poorly represented species.

- Laboratory Duplicates – Duplicate re-counts were conducted on 10% of the samples analyzed. RPDs for *total* density and *total* biomass consistently met the DQOs (i.e., <25%). Similar to field duplicates, laboratory duplicates showed high within-taxa variability.
- Overall – These results illustrate the inherently large difference in phytoplankton taxa composition because of the relatively small number of plankters enumerated relative to the very large number of plankters present in the sample. Notwithstanding within-replicate differences in taxonomic composition, total biomass did not differ in one direction or another for laboratory duplicates. The implications of this for monitoring effects is discussed further in **Section 3.5** and will be evaluated in detail as part of the CREMP design (Azimuth, 2012b).

3.1.4. Benthic Invertebrates

Laboratory replicate counts were performed on 10% of all benthic samples. Replicate samples were chosen at random and processed at different times from the original analysis to reduce bias. Of the re-sorted samples, 9/269 (3.35%), 14/314 (4.46%), 1/42 (2.38%), 0/35 (0%), 2/44 (4.55%), 0/118 (0%), and 0/51 (0%) of organisms were missed (**Table 3.1-4**), with an overall omission rate of less about 2%. These results suggest that the vast majority of animals observed in benthic samples by the taxonomist were recovered. A reference collection of benthic taxa has been compiled.

3.1.5. Zooplankton

For zooplankton, field replicates were collected to determine natural variability and heterogeneity, and will be further discussed in **Section 3.7**. Laboratory re-counts were conducted on 10% of the samples analyzed. RPDs for *totals* from each major taxa group did not always meet the DQOs (i.e., <25%) (**Table 3.1-5**). The reasons for this are not entirely clear at the time of publication and are being investigated further.

3.1.6. Completeness

Overall, >99% completeness was achieved in terms of field and sample QA planned for this monitoring study:

- Care taken in the field to ensure consistency of sample collection and methodology

- Thorough cleaning of equipment to avoid cross-contamination between every area
- Equipment flushes and travel blank samples collected for every sampling event
- Field duplicate samples collected for at least every 10 samples collected
- Laboratory duplicates performed on 10% of samples received by the laboratory and reported for each dataset
- All of the prescribed areas were visited and all replicates were collected
- No sampling areas were missed due to weather or mechanical/field equipment difficulties
- All through-ice areas were visited except in months with dangerous ice conditions (June and October)
- No sampling analysis parameters were missed; care was taken when completing COCs and all COCs were correctly interpreted by the laboratories
- A number of chlorophyll-a samples (packaged together in a Ziploc bag) were lost during shipping or at the laboratory during August sampling event.

Table 3.1-1. QA/QC data for water parameters, Meadowbank study lakes and Baker Lake, 2011.

	MDLs	Second Portage Lake			Third Portage Lake			Second Portage Lake			Wally Lake			Pipedream Lake			Innugugayualik Lake		
		SP-35 3-May-11	May Dup-1 3-May-11	RPD (%)	TPE-33 4-May-11	May Dup-2 4-May-11	RPD (%)	SP-36 26-Jul-11	Jul. Dup-1 26-Jul-11	RPD (%)	WAL-16 29-Jul-11	Jul. Dup-2 29-Jul-11	RPD (%)	PDL-15 30-Jul-11	Jul. Dup-3 30-Jul-11	RPD (%)	INUG-27 13-Aug-11	Aug. Dup-1 13-Aug-11	RPD (%)
CONVENTIONAL PARAMETERS																			
Physical Tests																			
Conductivity (µS/cm)	0.40	29.2	29.3	-0.34	25.3	24.1	4.86	21.2	26.0	-20.3	28.5	29.2	-2.43	22.3	21.2	5.06	12.5	12.4	0.80
Hardness (mg/L)	0.30	11.5	11.0	4.44	8.50	8.16	4.08	10.4	10.1	2.93	11.7	11.9	-1.69	8.50	8.08	5.07	5.11	5.21	-1.94
pH	0.10	7.06	7.04	0.28	6.94	6.93	0.14	7.20	7.35	-2.06	7.42	7.44	-0.27	7.25	7.27	-0.28	7.05	7.05	0
Total Suspended Solids (mg/L)	2.0	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<1.0	<1.0	NA
Total Dissolved Solids (mg/L)	5.0	16.0	16.0	0	14.0	14.0	0	14.0	20.0	-35.3	22.0	20.0	9.52	14.0	16.0	-13.3	18.0	16.0	11.8
Turbidity (NTU)	0.10	0.21	0.20	4.9	0.23	0.20	14	0.27	0.32	-17	0.23	0.27	-16	0.21	0.22	-4.7	0.30	0.31	-3.3
Anions & Nutrients (mg/L)																			
Alkalinity - Bicarbonate	2.0	12.8	12.8	0	10.0	9.70	3.05	10.8	11.9	-9.69	13.8	13.9	-0.72	10.4	10.8	-3.77	7.0	7.1	-1.4
Alkalinity - Carbonate	0.60	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA
Alkalinity - Hydroxide	0.40	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA
Alkalinity - Total	1.0	10.5	10.5	0	8.2	8.0	2.5	8.8	9.7	-9.7	11.4	11.4	0	8.5	8.8	-3.5	5.8	5.8	0
Ammonia (as N)	0.050	<0.050	<0.050	NA	<0.050	<0.050	NA	<0.050	<0.050	NA	<0.050	<0.050	NA	<0.050	<0.050	NA	<0.010	<0.010	NA
Bromide	0.10	-	-	-	-	-	-	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA
Chloride	0.20	0.63	0.62	1.6	0.63	0.63	0	0.50	0.51	-2.0	0.45	0.43	4.5	0.55	0.52	5.6	0.60	0.60	0
Fluoride	0.020	0.072	0.071	1.4	0.072	0.058	22	0.056	0.061	-8.5	0.039	0.038	2.6	0.034	0.032	6.1	0.053	0.053	0
Nitrate (as N)	0.0050	0.0245	0.0236	3.74	0.0296	0.0325	-9.34	0.0108	0.00870	21.5	0.0113	<0.0050	NA	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA
Nitrite (as N)	0.0010	<0.0010	<0.0010	NA	<0.0010	0.0076	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA
Total Kjeldahl Nitrogen	0.20	<0.20	<0.20	NA	<0.20	<0.20	NA	<0.20	<0.20	NA	<0.20	<0.20	NA	<0.20	<0.20	NA	0.116	0.129	-10.6
Total Phosphate (as P)	0.010	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	0.0063	NA	0.0043	0.0071	-49	<0.0020	0.0068	NA	0.0087	0.0060	37
Silicate (as SiO ₂)	0.0050	-	-	-	-	-	-	0.485	0.497	-2.44	0.714	0.720	-0.84	0.282	0.290	-2.80	0.289	0.294	-1.72
Sulphate (SO ₄)	0.50	2.45	2.44	0.41	2.17	2.16	0.46	2.20	2.24	-1.80	2.20	2.14	2.76	1.44	1.40	2.82	0.75	0.75	0
ORGANIC / INORGANIC CARBON																			
Dissolved Organic Carbon (mg/L)	1.0	2.0	2.0	0	2.0	1.8	11	1.9	1.9	0	2.3	2.3	0	2.0	1.9	5.1	2.7	2.6	3.8
Total Organic Carbon (mg/L)	1.0	2.2	2.0	9.5	2.0	1.9	5.1	2.0	2.0	0	2.4	2.4	0	2.0	1.9	5.1	2.7	2.6	3.8
PLANT PIGMENTS																			
Chlorophyll a	0.10	<0.10	<0.10	NA	<0.10	<0.10	NA	0.37	0.34	8.5	0.40	0.37	7.8	0.60	0.55	8.7	-	-	-
Phaeophytin a	0.10	<0.10	<0.10	NA	<0.10	<0.10	NA	0.10	<0.10	NA	0.14	0.11	24	0.21	0.18	15	-	-	-
TOTAL METALS (mg/L)																			
Aluminum	0.0050	0.0063	0.0059	6.6	0.00670	0.0176	-89.7	0.0101	0.0112	-10.3	0.0065	0.0065	0	0.0055	0.0063	-14	0.0097	0.0109	-11.7
Antimony	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA
Arsenic	0.00020	0.00031	0.00029	6.7	0.00028	0.00029	-3.5	0.00037	0.00042	-13	0.00024	0.00027	-12	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA
Barium	0.00020	0.00315	0.00295	6.56	0.00334	0.00352	-5.25	0.00249	0.00261	-4.71	0.00189	0.00196	-3.64	0.00198	0.00210	-5.88	0.00197	0.00208	-5.43
Beryllium	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA
Bismuth	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA
Boron	0.010	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA
Cadmium	0.000010	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA
Calcium	0.10	2.93	2.80	4.54	2.03	2.13	-4.81	2.66	2.88	-7.94	3.18	3.38	-6.10	2.11	2.26	-6.86	1.03	1.05	-1.92
Cesium	0.00010	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA
Chromium	0.0010	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA
Cobalt	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA
Copper	0.00020	0.00080	0.00067	18	0.00053	0.00061	-14	0.00076	0.00080	-5.1	0.00095	0.00101	-6.12	0.00057	0.00059	-3.4	0.00046	0.00055	-18
Iron	0.10	<0.010	<0.010	NA	<0.010	<0.010	NA	0.015	0.016	-6.5	0.013	0.014	-7.4	<0.010	<0.010	NA	0.019	0.030	-45
Lead	0.000090	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA
Lithium	0.0020	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA
Magnesium	0.010	1.02	0.977	4.31	0.831	0.849	-2.14	0.911	0.893	2.00	0.904	0.966	-6.63	0.787	0.751	4.68	0.617	0.626	-1.45
Manganese	0.00030	0.00048	0.00044	8.7	0.00051	0.00054	-5.7	0.00193	0.00197	-2.05	0.00150	0.00151	-0.66	0.00156	0.00160	-2.53	0.00258	0.00276	-6.74
Mercury	0.000050	<0.000050	<0.000050	NA	<0.000050	<0.000050	NA	<0.000050	<0.000050	NA	<0.000050	<0.000050	NA	<0.000050	<0.000050	NA	<0.000010	<0.000010	NA
Molybdenum	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA
Nickel	0.0020	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.00.								

Table 3.1-1. QA/QC data for water parameters, Meadowbank study lakes and Baker Lake, 2011.

		Baker Lake			Second Portage Lake			Baker Lake			Third Portage Lake			Tehek Lake			
		BPJ-18	Aug. Dup-2	RPD	SP-41	Sep. Dup-1	RPD	BPJ-20	Sep. Dup-2	RPD	TPN-43	Nov. Dup-1	RPD	TE-44	Dec. Dup-1	RPD	
		MDLs	20-Aug-11	20-Aug-11	(%)	14-Sep-11	14-Sep-11	(%)	20-Sep-11	20-Sep-11	(%)	21-Nov-11	21-Nov-11	(%)	17-Dec-11	17-Dec-11	(%)
CONVENTIONAL PARAMETERS																	
Physical Tests																	
Conductivity (µS/cm)	0.40	69.7	75.3	-7.72	25.4	25.6	-0.78	28.8	29.3	-1.72	25	25	0	26	27	-3.8	
Hardness (mg/L)	0.30	13.4	13.1	2.26	9.58	9.66	-0.83	10.1	10.3	-1.96	7.32	7.06	3.62	11.6	11.3	2.62	
pH	0.10	7.31	7.32	-0.14	7.23	7.35	-1.65	7.29	7.35	-0.82	6.93	7.04	-1.57	7.05	7.00	0.71	
Total Suspended Solids (mg/L)	2.0	<1.0	1.3	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<1.0	<1.0	NA	<2.0	<2.0	NA	
Total Dissolved Solids (mg/L)	5.0	38.0	40.0	-5.13	14.0	16.0	-13.3	18.0	16.0	11.8	16.0	14.0	13.3	14.0	16.0	-13.3	
Turbidity (NTU)	0.10	0.53	0.66	-22	0.47	0.46	2.2	0.32	0.35	-9.0	0.58	0.53	9.0	0.21	0.28	-29	
Anions & Nutrients (mg/L)																	
Alkalinity - Bicarbonate	2.0	12.6	12.4	1.60	12.3	12.3	0	12.8	12.8	0	8.0	8.2	-2.5	11.1	11.7	-5.26	
Alkalinity - Carbonate	0.60	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA	<0.60	<0.60	NA	
Alkalinity - Hydroxide	0.40	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA	<0.40	<0.40	NA	
Alkalinity - Total	1.0	10.3	10.2	0.98	10.1	10.1	0	10.5	10.5	0	6.6	6.7	-1.5	9.1	9.6	-5.3	
Ammonia (as N)	0.050	<0.010	0.016	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	
Bromide	0.10	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	
Chloride	0.20	14.1	14.3	-1.41	0.50	0.51	-2.0	2.30	2.37	-3.00	0.60	0.56	6.9	0.73	0.73	0	
Fluoride	0.020	0.053	0.056	-5.5	0.060	0.060	0	0.051	0.050	2.0	0.056	0.055	1.8	0.080	0.080	0	
Nitrate (as N)	0.0050	0.0051	<0.0050	NA	<0.0050	<0.0050	NA	0.0128	0.0127	0.78	0.0378	0.0366	3.23	0.0149	0.0124	18.3	
Nitrite (as N)	0.0010	0.0012	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	
Total Kjeldahl Nitrogen	0.20	0.182	0.306	-50.8	0.076	0.062	20	0.137	0.122	11.6	0.102	0.087	15.9	<0.050	0.073	NA	
Total Phosphate (as P)	0.010	0.0095	0.0115	-19.0	<0.0020	0.0030	NA	0.0076	0.0062	20	0.0038	0.0047	-21	0.011	0.026	-81	
Silicate (as SiO ₂)	0.0050	0.252	0.252	0	0.454	0.462	-1.75	0.276	0.285	-3.21	0.131	0.131	0	0.502	0.774	-42.6	
Sulphate (SO ₄)	0.50	2.41	2.48	-2.86	2.35	2.36	-0.42	0.75	0.77	-2.6	3.22	3.17	1.56	3.58	3.55	0.84	
ORGANIC / INORGANIC CARBON																	
Dissolved Organic Carbon (mg/L)	1.0	3.7	3.8	-2.7	1.7	1.7	0	3.5	3.5	0	2.1	2.2	-4.7	1.7	1.6	6.1	
Total Organic Carbon (mg/L)	1.0	4.0	3.8	5.1	1.8	1.8	0	3.5	3.5	0	2.3	2.2	4.4	1.8	1.6	12	
PLANT PIGMENTS																	
Chlorophyll a	0.10	2.00	2.01	-0.50	0.72	0.73	-1.4	1.12	1.08	3.64	0.44	0.57	-26	0.48	0.52	-8.0	
Phaeophytin a	0.10	0.54	0.56	-2.7	0.24	0.33	-32	0.40	0.45	-12	0.33	0.37	-11	0.29	0.31	-6.7	
TOTAL METALS (mg/L)																	
Aluminum	0.0050	0.0428	0.0346	21.2	0.0186	0.0225	-19.0	0.0170	0.0186	-8.99	0.0191	0.0224	-15.9	0.0092	0.0112	-19.6	
Antimony	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	
Arsenic	0.00020	<0.00020	<0.00020	NA	0.00031	0.00028	10	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	0.00026	0.00021	21	
Barium	0.00020	0.0187	0.0183	2.16	0.00247	0.00252	-2.00	0.0203	0.0189	7.14	0.00295	0.00280	5.22	0.00258	0.00271	-4.91	
Beryllium	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	
Bismuth	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	
Boron	0.010	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	
Cadmium	0.000010	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	
Calcium	0.10	3.52	3.11	12.4	2.82	3.02	-6.85	2.62	2.83	-7.71	1.91	1.54	21.4	2.80	2.84	-1.42	
Cesium	0.00010	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	
Chromium	0.0010	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	
Cobalt	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	
Copper	0.00020	0.00059	0.00045	27	0.00080	0.00070	13	0.00045	0.00035	25	0.00043	0.00035	21	0.00071	0.00061	15	
Iron	0.10	0.042	0.038	10	0.034	0.033	3.0	0.026	0.020	26	<0.010	<0.010	NA	<0.010	<0.010	NA	
Lead	0.000090	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA	0.000106	0.000995	-161	<0.000090	<0.000090	NA	<0.000090	<0.000090	NA	
Lithium	0.0020	0.0035	0.0030	15	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	
Magnesium	0.010	2.18	2.04	6.64	0.882	1.08	-20.2	1.20	1.42	-16.8	0.722	0.596	19.1	0.948	0.966	-1.88	
Manganese	0.0030	0.00383	0.00360	6.19	0.00265	0.00279	-5.15	0.00256	0.00273	-6.43	0.00328	0.00274	17.9	0.00098	0.00101	-3.0	
Mercury	0.000050	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	<0.000010	<0.000010	NA	
Molybdenum	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	
Nickel	0.0020	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	<0.0020	<0.0020	NA	
Phosphorus	0.20	<0.20	<0.20	NA	<0.20	<0.20	NA	<0.20	<0.20	NA	<0.20	<0.20	NA	<0.20	<0.20	NA	
Potassium	0.020	0.856	0.740	14.5	0.446	0.487	-8.79	0.440	0.472	-7.02	0.461	0.368	22.4	0.471	0.485	-2.93	
Rubidium	0.00020	0.00101	0.00100	1.00	0.00072	0.00077	-6.7	0.00081	0.00082	-1.2	0.00059	0.00053	11	0.00069	0.00072	-4.3	
Selenium	0.0010	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	NA	
Silicon	0.050	0.223	0.182	20.2	0.285	0.319	-11.3	0.176	0.197	-11.3	0.080	0.068	16	0.291	0.299	-2.71	
Silver	0.00010	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	<0.00010	<0.00010	NA	
Sodium	0.030	8.82	8.07	8.88	0.558	0.651	-15.4	1.12	1.44	-25.0	0.833	0.690	19	0.677	0.693	-2.34	
Strontium	0.00010	0.0238	0.0244	-2.49	0.0128	0.0134	-4.58	0.0190	0.0191	-0.52	0.00851	0.00778	8.96	0.0125	0.0128	-2.37	
Tellurium	0.00020	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0.00020	NA	<0.00020	<0		

Table 3.1-1. QA/QC data for water parameters, Meadowbank study lakes and Baker Lake, 2011.

		Travel Blanks				Equipment Blanks ¹											
		Aug.-1	Aug.-2	Nov.-1	Dec.-1	May. EB-1	May. EB-2	Jul. EB-1	Jul. EB-2	Aug. EB-1	Aug. EB-2	Sep. EB-1	Sep. EB-2	Nov. EB-1	Dec. EB-1		
		MDLs	19-Aug-11	30-Aug-11	25-Nov-11	20-Dec-11	2-May-11	2-May-11	26-Jul-11	30-Jul-11	16-Aug-11	23-Aug-11	13-Sep-11	21-Sep-11	24-Nov-11	23-Dec-11	
CONVENTIONAL PARAMETERS																	
Physical Tests																	
Conductivity (µS/cm)	0.40	0.87	0.83	0.78	0.87	1.14	2.06	3.13	3.09	0.88	1.24	1.13	1.12	1.74	1.36		
Hardness (mg/L)	0.30	0.28	0.29	<0.20	<0.20	<0.20	8.28	<0.20	<0.20	0.24	<0.20	<0.20	<0.20	0.28	<0.20		
pH	0.10	5.84	6.03	5.86	5.76	6.04	5.78	6.06	6.06	5.81	6.33	6.26	6.27	6.26	6.13		
Total Suspended Solids (mg/L)	2.0	<5.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<1.0	<2.0	<2.0	<1.0	<2.0		
Total Dissolved Solids (mg/L)	5.0	12.0	34.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	14.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Turbidity (NTU)	0.10	<0.10	<0.10	0.60	<0.10	0.25	0.57	0.13	0.13	0.21	0.16	0.36	0.29	0.95	0.19		
Anions & Nutrients (mg/L)																	
Alkalinity - Bicarbonate	2.0	2.3	2.2	<2.0	2.1	2.8	2.8	4.4	4.0	2.3	2.7	2.7	2.7	2.6	2.6		
Alkalinity - Carbonate	0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60		
Alkalinity - Hydroxide	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40		
Alkalinity - Total	1.0	1.9	1.8	1.6	1.8	2.3	2.3	3.6	3.3	1.9	2.2	2.2	2.2	2.1	2.1		
Ammonia (as N)	0.050	<0.010	<0.010	<0.010	<0.010	<0.050	0.062	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Bromide	0.10	<0.10	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Chloride	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
Fluoride	0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		
Nitrate (as N)	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Nitrite (as N)	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Total Kjeldahl Nitrogen	0.20	0.196	<0.050	<0.050	<0.050	<0.20	<0.20	<0.20	<0.20	0.077	<0.050	<0.050	<0.050	<0.050	<0.050		
Total Phosphate (as P)	0.010	<0.0020	0.0038	<0.0020	0.0073	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	0.0045	<0.0020	<0.0020	0.0110	0.0021		
Silicate (as SiO ₂)	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0159	<0.0050		
Sulphate (SO ₄)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
ORGANIC / INORGANIC CARBON																	
Dissolved Organic Carbon (mg/L)	1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0		
Total Organic Carbon (mg/L)	1.0	<1.0	1.0	1.3	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	1.2	<1.0		
PLANT PIGMENTS																	
Chlorophyll a	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phaeophytin a	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TOTAL METALS (mg/L)																	
Aluminum	0.0050	0.0113	<0.0050	<0.0050	<0.0050	<0.0050	0.0066	<0.0050	<0.0050	<0.0050	0.0128	<0.0050	<0.0050	0.0133	0.0057		
Antimony	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Arsenic	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00027	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Barium	0.00020	0.00023	<0.00020	<0.00020	<0.00020	<0.00020	0.00348	<0.00020	<0.00020	<0.00020	0.00027	<0.00020	<0.00020	0.00025	0.00024		
Beryllium	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Bismuth	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Boron	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Cadmium	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000049	<0.000010		
Calcium	0.10	<0.10	<0.10	0.25	<0.10	<0.10	1.96	<0.10	<0.10	0.12	0.16	<0.10	<0.10	0.16	0.14		
Cesium	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Chromium	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Cobalt	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Copper	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00163	0.00083	<0.00020	<0.00020	0.00020	0.00033	<0.00020	<0.00020	0.00021	0.00063		
Iron	0.10	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.020	<0.010	<0.010	<0.010		
Lead	0.000090	<0.000090	<0.000090	0.000091	<0.000090	0.00127	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	0.000139	0.000435		
Lithium	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		
Magnesium	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.821	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	0.024	0.016		
Manganese	0.00030	0.00146	<0.00030	<0.00030	<0.00030	<0.00030	0.00048	<0.00030	<0.00030	<0.00030	0.00036	<0.00030	<0.00030	<0.00030	<0.00030		
Mercury	0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Molybdenum	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Nickel	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		
Phosphorus	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
Potassium	0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.494	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.024	0.026		
Rubidium	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00076	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Selenium	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0			

Table 3.1-2. QA/QC data for sediment parameters, Meadowbank study lakes and Baker Lake, August 2011.

Analytes		Innugayualik Lake			Tehek Lake			Third Portage Lake			Baker Lake			Various Lakes			Various Lakes			Swipe-1 FILTER 14-Aug-11	Swipe-2 FILTER 16-Aug-11	Swipe-3 FILTER 19-Aug-11	Swipe-4 FILTER 21-Aug-11
		INUG-1 14-Aug-11	Field Dup-1 14-Aug-11	RPD (%)	TE-1 16-Aug-11	Field Dup-2 16-Aug-11	RPD (%)	TPE-1 19-Aug-11	Field Dup-3 19-Aug-11	RPD (%)	BAP-1 21-Aug-11	Field Dup-4 21-Aug-11	RPD (%)	Original August	Laboratory Duplicate	RPD (%)	Original August	Laboratory Duplicate	RPD (%)				
CONVENTIONAL PARAMETERS																							
Physical & Organic Parameters																							
Moisture (%)	0.25	79.0	79.5	-0.63	74.9	74.9	0	87.8	88.3	-0.57	40.2	39.8	1.00	74.9	74.5	0.54	-	-	-				
pH	0.10	5.96	6.02	-1.00	5.73	5.76	-0.52	6.44	6.56	-1.85	6.36	6.53	-2.64	6.60	6.55	0.76	6.53	6.52	0.15				
Total Organic Carbon (% dw)	0.10	2.93	2.62	11.2	1.85	1.89	-2.14	3.75	3.73	0.53	0.23	0.29	-23	7.85	7.79	0.77	3.48	3.50	-0.57				
Particle Size																							
% Gravel (>2mm)	0.10	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	<0.10	<0.10	NA	3.62	3.62	0				
% Sand (2.00mm - 0.063mm)	0.10	11.5	11.2	2.64	17.5	17.4	0.57	1.84	1.48	21.7	75.3	75.3	0	15.8	15.4	2.56	38.7	39.2	-1.28				
% Silt (0.063mm - 4µm)	0.10	75.1	72.8	3.11	60.7	72.7	-18.0	71.4	63.5	11.7	20.1	23.4	-15.2	76.0	74.3	2.26	46.8	45.2	3.48				
% Clay (<4µm)	0.10	13.4	16.0	-17.7	21.7	9.95	74.2	26.8	35.0	-26.5	4.62	1.35	110	8.18	10.3	-22.9	10.9	12.1	-10.4				
AGGREGATE ORGANICS (mg/kg)																							
Mineral Oil and Grease	500-1950	<900	<925	NA	<750	<775	NA	<1550	<1775	NA	<500	<500	NA	<675	<725	NA	-	-	-				
HYDROCARBONS (mg/kg)																							
EPH10-19	200-776	<370	<380	NA	<350	<300	NA	<680	<700	NA	<200	<200	NA	<200	<200	NA	-	-	-				
EPH19-32	200-776	<370	<380	NA	<350	<300	NA	<680	<700	NA	<200	<200	NA	<200	<200	NA	-	-	-				
LEPH	200-776	<370	<380	NA	<350	<300	NA	<680	<700	NA	<200	<200	NA	-	-	-	-	-	-				
HEPH	200-776	<370	<380	NA	<350	<300	NA	<680	<700	NA	<200	<200	NA	-	-	-	-	-	-				
POLYCYCLIC AROMATIC HYDROCARBONS (mg/kg)																							
Acenaphthene	0.0050-0.010	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA	<0.0090	<0.0090	NA	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA	-	-	-				
Acenaphthylene	0.0050-0.010	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA	<0.0090	<0.0090	NA	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA	-	-	-				
Anthracene	0.0040-0.0080	<0.0040	<0.0040	NA	<0.0040	<0.0040	NA	<0.0072	<0.0072	NA	<0.0040	<0.0040	NA	<0.0040	<0.0040	NA	-	-	-				
Benz(a)anthracene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Benzo(a)pyrene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Benzo(b)fluoranthene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Benzo(b+j+k)fluoranthene	0.015-0.028	<0.015	<0.015	NA	<0.015	<0.015	NA	<0.025	<0.025	NA	<0.015	<0.015	NA	-	-	-	-	-	-				
Benzo(g,h,i)perylene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Benzo(k)fluoranthene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Chrysene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Dibenz(a,h)anthracene	0.0050-0.010	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA	<0.0090	<0.0090	NA	<0.0050	<0.0050	NA	<0.0050	<0.0050	NA	-	-	-				
Fluoranthene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Fluorene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Indeno(1,2,3-c,d)pyrene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
2-Methylnaphthalene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Naphthalene	0.010-0.020	<0.020	<0.020	NA	<0.020	<0.020	NA	<0.030	<0.030	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Phenanthrene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
Pyrene	0.010-0.020	<0.010	<0.010	NA	<0.010	<0.010	NA	<0.018	<0.018	NA	<0.010	<0.010	NA	<0.010	<0.010	NA	-	-	-				
B(a)P Total Potency	0.020	<0.020	<0.020	NA	<0.020	<0.020	NA	<0.020	<0.020	NA	<0.020	<0.020	NA	-	-	-	-	-	-				
IACR (CCME)	0.15-0.21	<0.15	<0.15	NA	<0.15	<0.15	NA	<0.19	<0.19	NA	<0.15	<0.15	NA	-	-	-	-	-	-				
d10-Acenaphthene (%)	-	84	86	-2.4	92	93	-1.1	84	97	-14	81	80	1.2	-	-	-	-	-	-				
d12-Chrysene (%)	-	75	69	8.3	79	77	2.6	64	74	-14	76	76	0	-	-	-	-	-	-				
d8-Naphthalene (%)	-	83	84	-1.2	89	91	-2.2	78	93	-18	78	75	3.9	-	-	-	-	-	-				
d10-Phenanthrene (%)	-	79	76	3.9	84	85	-1.2	71	81	-13	80	78	2.5	-	-	-	-	-	-				

Table 3.1-2. QA/QC data for sediment parameters, Meadowbank study lakes and Baker Lake, August 2011.

Analytes	MDLs	Innugayualik Lake			Tehek Lake			Third Portage Lake			Baker Lake			Various Lakes			Various Lakes			Swipe-1	Swipe-2	Swipe-3	Swipe-4		
		INUG-1	Field Dup-1	RPD	TE-1	Field Dup-2	RPD	TPE-1	Field Dup-3	RPD	BAP-1	Field Dup-4	RPD	Original	Laboratory	RPD	Original	Laboratory	RPD	FILTER	FILTER	FILTER	FILTER		
		14-Aug-11	14-Aug-11	(%)	16-Aug-11	16-Aug-11	(%)	19-Aug-11	19-Aug-11	(%)	21-Aug-11	21-Aug-11	(%)	August	Duplicate	(%)	August	Duplicate	(%)	14-Aug-11	16-Aug-11	19-Aug-11	21-Aug-11		
TOTAL METALS (mg/kg dw)																				MDLs (ug)		TOTAL METALS (ug)			
Aluminum	50	21900	20400	7.09	19800	21600	-8.70	24300	19900	19.9	4620	4560	1.31	26400	25600	3.08	3770	3650	3.23	20	20	<20	21	<20	
Antimony	0.10	0.16	0.15	6.5	0.14	0.16	-13	0.28	0.21	29	0.14	0.13	7.4	0.27	0.27	0	<0.10	<0.10	NA	20	<20	<20	<20	<20	
Arsenic	0.050	23.4	23.0	1.72	11.5	12.3	-6.72	17.5	14.7	17.4	4.74	5.27	-10.6	25.8	25.7	0.39	3.45	3.33	3.54	20	<20	<20	<20	<20	
Barium	0.50	103	91.6	11.7	96.9	101	-4.14	135	113	17.7	278	269	3.29	139	133	4.41	38.6	36.8	4.77	1.0	<1.0	<1.0	<1.0	<1.0	
Beryllium	0.20	1.21	1.19	1.67	1.77	1.73	2.29	1.71	1.38	21.4	0.29	0.29	0	2.03	1.92	5.57	<0.20	<0.20	NA	0.50	<0.50	<0.50	<0.50	<0.50	
Bismuth	0.20	1.14	1.08	5.41	1.85	1.97	-6.28	2.23	1.84	19.2	<0.20	<0.20	NA	2.38	2.35	1.27	<0.20	<0.20	NA	20	<20	<20	<20	<20	
Cadmium	0.050	0.111	0.107	3.67	0.109	0.108	0.92	0.464	0.395	16.1	<0.050	<0.050	NA	0.32	0.32	-1.24	<0.050	<0.050	NA	1.0	<1.0	<1.0	<1.0	<1.0	
Calcium	50	1630	1630	0	1890	2070	-9.09	2360	2060	13.6	1960	1870	4.70	2230	2200	1.4	1020	1030	-0.98	5.0	25.1	27.1	35.2	30.1	
Chromium	0.50	110	107	2.76	51.4	54.9	-6.59	118	94.6	22.0	16.6	15.1	9.46	85.4	82.4	3.58	8.88	6.75	27.3	2.0	3.5	3.9	2.8	3.0	
Cobalt	0.10	15.3	14.7	4.00	9.38	9.90	-5.39	16.7	13.5	21.2	3.85	3.88	-0.78	17.0	16.5	2.99	2.98	2.73	8.76	1.0	<1.0	<1.0	<1.0	<1.0	
Copper	0.50	43.8	42.7	2.54	47.9	50.2	-4.69	51.6	42.4	19.6	4.51	4.63	-2.63	80.0	78.1	2.40	2.83	2.59	8.86	1.0	<1.0	<1.0	<1.0	<1.0	
Iron	50	57700	57300	0.70	37500	39900	-6.20	41700	34100	20.1	11600	11700	-0.86	57600	56500	1.93	8760	8070	8.20	3.0	31.3	30.1	35.8	22.5	
Lead	0.50	12.5	11.9	4.92	18.6	19.4	-4.21	20.7	17.4	17.3	4.31	4.31	0	22.2	22.0	0.90	2.85	2.75	3.57	5.0	<5.0	<5.0	<5.0	<5.0	
Lithium	1.0	34.2	27.8	20.6	40.6	44.8	-9.84	52.4	43.7	18.1	6.9	6.6	4.4	48.3	46.9	2.94	5.70	5.70	0	1.0	<1.0	<1.0	<1.0	<1.0	
Magnesium	20	9870	9140	7.68	7930	8120	-2.37	10400	8430	20.9	3170	3150	0.63	9830	9510	3.31	3030	2760	9.33	10	<10	<10	17	12	
Manganese	1.0	1530	1370	11.0	723	743	-2.73	2910	2380	20.0	146	145	0.69	3680	3590	2.48	143	138	3.56	0.50	0.70	<0.50	1.15	<0.50	
Mercury	0.0050	0.0156	0.0171	-9.17	0.0159	0.0166	-4.31	0.0182	0.0166	9.20	<0.0050	<0.0050	NA	0.029	0.028	0.70	<0.0050	<0.0050	NA	0.010	<0.010	<0.010	<0.010	<0.010	
Molybdenum	0.50	4.20	4.09	2.65	3.29	3.46	-5.04	3.94	3.20	20.7	<0.50	<0.50	NA	6.57	6.54	0.46	<0.50	<0.50	NA	3.0	<3.0	<3.0	<3.0	<3.0	
Nickel	0.50	72.0	65.7	9.15	32.2	34.5	-6.90	122	99.6	20.2	9.72	9.28	4.63	72.9	71.1	2.50	5.94	5.09	15.4	5.0	<5.0	<5.0	<5.0	<5.0	
Phosphorus	50	560	489	13.5	604	687	-12.9	443	371	17.7	662	637	3.85	587	575	2.07	325	340	-4.51	30	<30	<30	<30	<30	
Potassium	100	3520	3110	12.4	3670	4020	-9.10	4230	3170	28.6	1040	1000	3.92	4550	4310	5.42	520	520	0	200	<200	<200	<200	<200	
Selenium	0.20	0.46	0.48	-4.3	0.37	0.37	0	0.80	0.65	21	<0.20	<0.20	NA	0.69	0.66	4.4	<0.20	<0.20	NA	20	<20	<20	<20	<20	
Silver	0.10	<0.10	<0.10	NA	0.12	0.12	0	<0.10	<0.10	NA	<0.10	<0.10	NA	0.15	0.15	0	<0.10	<0.10	NA	1.0	<1.0	<1.0	<1.0	<1.0	
Sodium	100	120	130	-8.0	140	160	-13	180	150	18.2	<100	<100	NA	190	180	5.41	<100	<100	NA	200	<200	<200	<200	<200	
Strontium	0.50	23.0	20.7	10.5	14.1	16.1	-13.2	20.9	16.7	22.3	40.2	38.2	5.10	19.7	19.6	0.51	25.6	27.2	-6.06	0.50	<0.50	<0.50	<0.50	<0.50	
Thallium	0.050	0.203	0.192	5.57	0.316	0.340	-7.32	0.488	0.412	16.9	0.058	0.058	0	0.40	0.40	1.50	<0.050	<0.050	NA	20	<20	<20	<20	<20	
Tin	2.0	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	<2.0	NA	3.0	<3.0	4.1	6.5	5.4	
Titanium	1.0	556	569	-2.31	869	957	-9.64	816	669	19.8	262	252	3.89	842	797	5.49	169	157	7.36	1.0	<1.0	<1.0	<1.0	<1.0	
Uranium	0.050	16.1	14.4	11.1	17.3	18.1	-4.52	15.9	13.0	20.1	1.22	1.21	0.82	20	20	0	0.53	0.57	-6.19	-	-	-	-	-	
Vanadium	0.20	35.1	34.3	2.31	32.7	34.5	-5.36	41.2	33.7	20.0	17.7	17.7	0	42.6	41.2	3.34	11.2	10.0	11.3	3.0	<3.0	<3.0	<3.0	<3.0	
Zinc	1.0	80.0	78.8	1.51	87.4	93.8	-7.06	113	92.5	20.0	20.6	21.1	-2.40	124	121	2.45	17.9	15.9	11.8	0.50	0.64	0.85	1.13	0.56	

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 25% (lab duplicates) or 50% (field duplicates).

Bolded filter swipes exceed laboratory method detection limits, but < 10 x MDL.

Each of the 'Field Dup' samples are homogenization duplicates - the original and duplicate samples were split from the same homogenized bowl of sediment.

NA = RPDs have not been calculated for cases where one of the samples is below detection and the other is not and in cases where both are below detection.

Table 3.1-3. QA/QC data for phytoplankton, Meadowbank study lakes and Baker Lake, 2011.

	Second Portage Lake			Third Portage Lake			Second Portage Lake			Wally Lake		
	SP-35-S	May Field	RPD	TPE-33-S	May Field	RPD	SP-36-S	July Field	RPD	WAL-16-S	July Field	RPD
	3-May-11	Duplicate-1	(%)	4-May-11	Duplicate-2	(%)	26-Jul-11	Duplicate-1	(%)	29-Jul-11	Duplicate-2	(%)
Phytoplankton Density (cells/L)												
Cyanophyte	3513	480	152	560	800	-35	4800	3800	23	50888	58472	-14
Chlorophyte	19812	92896	-130	12939	3200	121	202752	145280	33	190584	320296	-51
Chrysophyte	238859	135031	56	155382	500062	-105	804608	905184	-12	1301904	1395296	-7
Diatom	8619	2953	98	5986	14365	-82	88608	94192	-6	45304	31136	37
Cryptophyte	26017	9499	93	12292	37749	-102	29552	72456	-84	102976	60272	52
Dinoflagellate	160	400	-86	5746	0	NA	15368	1000	176	7784	8384	-7
Total	296980	241259	21	192905	556176	-97	1145688	1221912	-6	1699440	1873856	-10
Phytoplankton Biomass (mg/m³)												
Cyanophyte	0.41	0.17	84	0.15	0.28	-60	2.8	2.6	8.7	2.1	2.0	6.8
Chlorophyte	0.80	0.73	8	0.59	0.29	69	4.3	5.8	-29	10	14	-28
Chrysophyte	11	5.9	62	6.7	25	-114	53	51	3.0	82	88	-6.8
Diatom	0.38	0.19	69	0.45	0.40	13	5.6	5.8	-3.5	3.6	3.8	-5.0
Cryptophyte	1.2	1.2	1.1	1.1	2.2	-69	13	16	-19	12	7.9	39
Dinoflagellate	0.64	1.3	-68	2.3	0	NA	8.2	3.9	72	7.9	12	-40
Total	15	9.4	43	11	28	-85	87	85	1.9	118	127	-7.7
# Species	18	17	5.7	17	13	27	36	37	-2.7	37	35	5.6
Simpsons Diversity	0.76	0.77	-1.6	0.79	0.77	2.6	0.86	0.83	2.7	0.85	0.85	-0.33

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 50% (field duplicates) or 25% (lab duplicates).

NA = Not Applicable for rare species.

Table 3.1-3. QA/QC data for phytoplankton, Meadowbank study lakes and Baker Lake, 2011.

	Pipedream Lake			Inuggugayualik Lake			Baker Lake			Second Portage Lake		
	PDL-15-S	July Field	RPD	INUG-27-S	Aug. Field	RPD	BPJ-18-S	Aug. Field	RPD	SP-41-S	Sept. Field	RPD
	30-Jul-11	Duplicate-3	(%)	13-Aug-11	Duplicate-1	(%)	20-Aug-11	Duplicate-2	(%)	14-Sep-11	Duplicate-1	(%)
<u>Phytoplankton Density (cells/L)</u>												
Cyanophyte	0	0	0	526432	136896	117	29136	0	NA	294544	11784	185
Chlorophyte	204152	159648	24	101976	154064	-41	89808	160048	-56	296144	259424	13
Chrysophyte	3349944	2955024	13	1394696	811992	53	1548976	1439616	7	792040	870864	-9
Diatom	216984	279856	-25	95192	38720	84	218384	206584	6	637792	419872	41
Cryptophyte	93008	27152	110	36320	29336	21	267608	101776	90	38720	45304	-16
Dinoflagellate	21368	12584	52	7584	7784	-3	17168	50888	-99	8784	10184	-15
Total	3885456	3434264	12	2162200	1178792	59	2171080	1958912	10	2068024	1617432	24
<u>Phytoplankton Biomass (mg/L)</u>												
Cyanophyte	0	0	0	1.4	0.63	75	0.56	0	NA	44	1.4	187
Chlorophyte	6.5	7.5	-13	3.2	6.0	-61	3.2	4.7	-38	12	10	14
Chrysophyte	274	242	12	110	66	50	185	214	-15	65	70	-6.4
Diatom	15	20	-27	6.5	9.0	-32	16	21	-23	34	27	23
Cryptophyte	13	9.6	33	3.0	2.4	22	23	5.1	127	5.5	5.9	-6.6
Dinoflagellate	70	61	15	6.1	6.5	-6.7	41	23	56	20	35	-52
Total	379	340	11	130	91	36	268	267	0.45	182	149	20
# Species	36	33	8.7	33	37	-11	39	36	8.0	41	41	0
<u>Simpsons Diversity</u>	0.80	0.75	5.5	0.84	0.84	0.52	0.89	0.86	4.0	0.87	0.87	0.09

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate))/2 x 100.

Shaded RPDs exceed 50% (field duplicates) or 25% (lab duplicates).

NA = Not Applicable for rare species.

Table 3.1-3. QA/QC data for phytoplankton, Meadowbank study lakes and Baker Lake, 2011.

	Baker Lake			Third Portage Lake			Tehek Lake			Inuggugayualik Lake		
	BPJ-20-S	Sept. Field	RPD	TPN-43-S	Nov. Field	RPD	TE-44-S	Dec. Field	RPD	INUG-22-S	Lab	RPD
	20-Sep-11	Duplicate-2	(%)	21-Nov-11	Duplicate-1	(%)	17-Dec-11	Duplicate-1	(%)	30-Apr-11	Duplicate	(%)
<u>Phytoplankton Density (cells/L)</u>												
Cyanophyte	400	600	-40	39752	44936	-12	1594116	1675274	-5	80	0	NA
Chlorophyte	542216	320296	51	483528	346832	33	174354	181746	-4	3193	6146	-63
Chrysophyte	525232	734568	-33	366784	266208	32	343962	365238	-6	376443	367824	2
Diatom	226232	244200	-8	1290936	1052464	20	115572	122564	-6	2873	5746	-67
Cryptophyte	75640	96992	-25	7784	200	190	400	500	-22	33763	36796	-9
Dinoflagellate	8984	16368	-58	200	400	-67	0	0	0	8939	6146	37
Total	1378704	1413024	-2	2188984	1711040	25	2228404	2345322	-5	425291	422658	0.6
<u>Phytoplankton Biomass (mg/r)</u>												
Cyanophyte	0.06	0.10	-54	3.8	3.8	1.9	41	43	-4.6	0	0	0
Chlorophyte	10	9.1	13	25	18	34	4.5	4.7	-3.6	0.36	1.1	-104
Chrysophyte	41	64	-43	54	42	26	48	46	3.8	14	13	6.5
Diatom	56	52	7.6	81	80	0.6	10	7.3	31	0.08	0.45	-140
Cryptophyte	13	14	-7.4	0.96	0.22	126	1.0	0.99	4.2	3.1	3.3	-7.0
Dinoflagellate	22	24	-5.3	3.1	7.6	-84	0	0	0	7.3	5.9	22
Total	143	162	-13	167	151	10	105	102	2	25	24	4.1
# Species	43	44	-2.3	25	26	-3.9	22	23	-4.4	14	16	-13
<u>Simpsons Diversity</u>	0.93	0.90	2.5	0.69	0.70	-0.89	0.49	0.49	-0.24	0.68	0.67	1.5

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 50% (field duplicates) or 25% (lab duplicates).

NA = Not Applicable for rare species.

Table 3.1-3. QA/QC data for phytoplankton, Meadowbank study lakes and Baker Lake, 2011.

	Third Portage Lake			Tehek Lake			Third Portage Lake			Tehek Lake		
	TPN-34-S	Lab	RPD	TE-33-S	Lab	RPD	TPE-36-S	Lab	RPD	TE-36-S	Lab	RPD
	1-May-11	Duplicate	(%)	4-May-11	Duplicate	(%)	27-Jul-11	Duplicate	(%)	29-Jul-11	Duplicate	(%)
<u>Phytoplankton Density (cells/L)</u>												
Cyanophyte	3353	3193	5	320	80	120	6600	7200	-9	600	800	-29
Chlorophyte	2320	2720	-16	18845	30177	-46	143880	187584	-26	152664	160048	-5
Chrysophyte	232713	238459	-2	106461	118113	-10	1487288	1494472	-0.5	1250416	1200128	4
Diatom	18918	18038	5	5826	2873	68	10384	10984	-6	172816	136896	23
Cryptophyte	14765	9259	46	3353	3353	0	80224	51888	43	102376	80624	24
Dinoflagellate	400	400	0	0	0	0	39720	24552	47	1600	1400	13
Total	272469	272069	0.1	134805	154596	-14	1768096	1776680	-0.5	1680472	1579896	6
<u>Phytoplankton Biomass (mg/r)</u>												
Cyanophyte	0.43	0.38	11	0.09	0.02	120	3.9	4.3	-10	0.13	0.15	-12
Chlorophyte	0.21	0.24	-16	0.47	0.52	-10	7.8	9.9	-24	6.1	7.6	-22
Chrysophyte	6.5	6.9	-6.1	7.8	7.0	11	99	95	4.2	88	90	-2.4
Diatom	0.76	0.64	18	0.30	0.15	69	2.2	2.2	-0.16	25	17	38
Cryptophyte	2.3	1.2	64	0.58	0.53	8.2	7.4	6.1	19	14	12	13
Dinoflagellate	3.2	3.2	0	0	0	0	21	15	38	18	20	-13
Total	13	13	6.6	9.2	8.2	12	142	132	7.1	151	147	2.6
# Species	14	14	0	11	11	0	34	35	-2.9	32	32	0
<u>Simpsons Diversity</u>	0.61	0.61	0.59	0.51	0.61	-17	0.77	0.77	-0.06	0.83	0.83	0.59

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 50% (field duplicates) or 25% (lab duplicates).

NA = Not Applicable for rare species.

Table 3.1-3. QA/QC data for phytoplankton, Meadowbank study lakes and Baker Lake, 2011.

	Pipedream Lake			Inuggugayualik Lake			Baker Lake			Third Portage Lake		
	PDL-15-S	Lab	RPD	INUG-26-S	Lab	RPD	BAP-17-S	Lab	RPD	TPS-29-S	Lab	RPD
	30-Jul-11	Duplicate	(%)	13-Aug-11	Duplicate	(%)	21-Aug-11	Duplicate	(%)	23-Aug-11	Duplicate	(%)
<u>Phytoplankton Density (cells/L)</u>												
Cyanophyte	0	0	0	43904	800	193	59672	73640	-21	16384	8000	69
Chlorophyte	204152	210136	-3	104176	138496	-28	259224	237872	9	378768	308528	20
Chrysophyte	3349944	3285288	2	1280152	1208112	6	1486704	1421648	4	1421448	1408480	1
Diatom	216984	192032	12	180400	188584	-4	285856	304208	-6	210336	174616	19
Cryptophyte	93008	92608	0.4	136896	144880	-6	346232	310712	11	30336	30536	-1
Dinoflagellate	21368	20768	3	7784	14768	-62	66656	52288	24	30136	15368	65
Total	3885456	3800832	2	1753312	1695640	3	2504344	2400368	4	2087408	1945528	7
<u>Phytoplankton Biomass (mg/r)</u>												
Cyanophyte	0	0	0	2.3	0.14	178	2.2	2.0	11	1.9	1.2	45
Chlorophyte	6.5	6.5	-0.18	5.8	32	-138	11	13	-11	43	13	107
Chrysophyte	274	307	-11	133	119	11	180	178	1.1	105	109	-3.5
Diatom	15	13	13	11	11	-4.3	25	25	-1.2	20	17	14
Cryptophyte	13	13	4.6	6.7	8.1	-19	26	24	7.5	4.2	4.4	-5.7
Dinoflagellate	70	72	-2.9	3.2	5.0	-45	38	36	7.0	19	10	61
Total	379	412	-8.2	162	175	-7.9	283	278	1.8	193	155	22
# Species	36	35	2.8	36	35	2.8	44	42	4.7	40	39	2.5
<u>Simpsons Diversity</u>	0.80	0.81	-1.0	0.86	0.86	-0.46	0.91	0.91	-0.26	0.91	0.89	1.6

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate))/2 x 100.

Shaded RPDs exceed 50% (field duplicates) or 25% (lab duplicates).

NA = Not Applicable for rare species.

Table 3.1-3. QA/QC data for phytoplankton, Meadowbank study lakes and Baker Lake, 2011.

	Tehek Lake			Third Portage Lake			Tehek Lake			Second Portage Lake		
	TEFF-20-S	Lab	RPD	TPE-41-S	Lab	RPD	TE-42-S	Lab	RPD	SP-45-S	Lab	RPD
	13-Sep-11	Duplicate	(%)	16-Sep-11	Duplicate	(%)	24-Nov-11	Duplicate	(%)	23-Dec-11	Duplicate	(%)
<u>Phytoplankton Density (cells/L)</u>												
Cyanophyte	15000	13800	8	64600	65400	-1	11200	9800	13	17600	17600	0
Chlorophyte	173616	174416	-0.5	410288	453392	-10	301928	280176	7	13168272	12643840	4
Chrysophyte	824376	823776	0.1	836344	786456	6	1013744	1100152	-8	387936	380752	2
Diatom	274792	224504	20	1898776	1913944	-1	746552	681696	9	223504	194768	14
Cryptophyte	21552	14368	40	16768	9384	56	124728	124928	-0.2	1400	1400	0
Dinoflagellate	600	600	0	800	600	29	0	200	NA	0	0	0
Total	1309936	1251464	5	3227576	3229176	-0.05	2198152	2196952	0.1	13798712	13238360	4
<u>Phytoplankton Biomass (mg/r)</u>												
Cyanophyte	2.4	2.2	8.3	12	12	-1.2	2.4	2.0	17	2.5	2.6	-3.2
Chlorophyte	3.4	1.9	57	21	22	-4.9	16	14	11	160	153	4.5
Chrysophyte	83	79	4.7	74	76	-2.2	104	106	-1.8	19	20	-6.9
Diatom	21	19	10	100	100	0.19	22	20	9.1	7.4	7.0	5.5
Cryptophyte	2.1	1.4	40	4.0	3.4	17	9.0	11	-19	1.6	1.5	6.1
Dinoflagellate	2.7	2.7	0	9.8	6.7	38	0	0.43	NA	0	0	0
Total	114	106	7	220	219	0.51	153	154	-0.07	190	184	3.2
# Species	31	33	-6.3	32	32	0	31	31	0	17	17	0
<u>Simpsons Diversity</u>	0.88	0.89	-0.67	0.68	0.67	0.83	0.84	0.85	-1.5	0.16	0.15	3.5

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate))/2) x 100.

Shaded RPDs exceed 50% (field duplicates) or 25% (lab duplicates).

NA = Not Applicable for rare species.

Table 3.1- 4. Percent recovery of benthic invertebrate samples, Meadowbank study lakes and Baker Lake, August 2011.

Area-Replicate	Number of Organisms Recovered	Number of Organisms in Re-sort	Percent Recovery
BAP-3	260	269	96.7%
BPJ-1	300	314	95.5%
INUG-3	41	42	97.6%
SP-4	35	35	100%
TE-2	42	44	95.5%
TEFF-3	118	118	100%
TEFF-5	51	51	100%
<i>Average % Recovery</i>			97.9%

Notes:

All sixty-five samples were sorted in their entirety.

For sample BAP-4, nematodes were subsampled at one quarter fraction.

Table 3.1-5. QA/QC data for zooplankton, Meadowbank study lakes, 2011.

	Wally Lake			Wally Lake			Inuggugayualik Lake		
	WAL-5-T	QA (1/16 th)	RPD	WAL-7-T	QA (1/16 th)	RPD	INUG-7-T	QA (1/16 th)	RPD
	15-Aug-11	5-Jan-12	(%)	14-Aug-11	6-Jan-12	(%)	13-Aug-11	9-Jan-12	(%)
CLADOCERA									
<i>Daphnia longiremis</i>	34	1	72	15	-	NA	-	-	-
<i>Daphnia middendorffiana</i>	11	1	-37	16	1	0	8	-	NA
<i>Holopedium gibberum</i>	369	28	-19	654	37	10	7	1	-78
	414	30	-15	685	38	12	15	1	-6
COPEPODA									
Calanoida									
Calanoida copepodite	6464	315	25	13504	738	13	9280	595	-3
<i>Diaptomus minutus</i> Lilljeborg	192	9	29	256	15	6	960	49	20
<i>Diaptomus pribilofensis</i>	128	5	46	128	7	13	-	-	-
<i>Diaptomus sicilis</i>	-	-	-	-	-	-	-	-	-
<i>Diaptomus sp.</i> (unid. Females)	3454	197	9	2432	126	19	1728	116	-7
<i>Epischura lacustris</i>	64	2	67	48	3	0	336	19	10
<i>Heterocope septentrionalis</i>	17	1	6	81	5	1	32	5	-86
Cyclopoida									
Cyclopoid copepodite	960	47	24	2752	156	10	1280	97	-19
<i>Cyclops scutifer</i> Sars	9600	461	26	18304	890	25	2304	98	38
	20879	1037	23	37505	1940	19	15920	979	2

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 25% (lab duplicates).

NA = Not Applicable.

Table 3.1-5. QA/QC data for zooplankton, Meadowbank study lakes, 2011.

	Tehek Lake			Second Portage Lake			Third Portage Lake East		
	TE-4-T	QA (1/8 th)	RPD	SP-3-T	QA (1/8 th)	RPD	TPE-5-T	QA (1/16 th)	RPD
	16-Aug-11	10-Jan-12	(%)	17-Aug-11	10-Jan-12	(%)	23-Aug-11	12-Jan-12	(%)
CLADOCERA									
<i>Daphnia longiremis</i>	14	3	-53	4	1	-67	6	-	NA
<i>Daphnia middendorffiana</i>	13	-	NA	28	1	111	2	-	NA
<i>Holopedium gibberum</i>	10	1	22	5	1	-46	1	-	NA
	37	4	14	37	3	43	9	-	NA
COPEPODA									
Calanoida									
Calanoida copepodite	928	300	-88	16	2	0	2240	195	-33
<i>Diaptomus minutus</i> Lilljeborg	64	12	-40	192	27	-12	-	-	-
<i>Diaptomus pribilofensis</i>	16	2	0	320	32	22	1216	122	-46
<i>Diaptomus sicilis</i>	16	2	0	-	-	-	64	1	120
<i>Diaptomus sp.</i> (unid. Females)	704	210	-82	768	110	-14	2240	205	-38
<i>Epischura lacustris</i>	344	62	-36	8	1	0	64	2	67
<i>Heterocope septentrionalis</i>	11	2	-37	32	2	67	43	4	-39
Cyclopoida									
Cyclopoid copepodite	128	27	-51	1888	220	7	1280	135	-51
<i>Cyclops scutifer</i> Sars	4768	1388	-80	2720	287	17	7552	680	-36
	6979	2005	-79	5944	681	9	14699	1344	-38

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 25% (lab duplicates).

NA = Not Applicable.

Table 3.1-5. QA/QC data for zooplankton, Meadowbank study lakes, 2011.

	Third Portage Lake South			Tehek Lake Farfield			Tehek Lake Farfield		
	TPS-10-T	QA (1/8 th)	RPD	TEFF-5-T	QA (1/16 th)	RPD	TEFF-6-T	QA (1/8 th)	RPD
	22-Aug-11	16-Jan-12	(%)	15-Aug-11	16-Jan-12	(%)	15-Aug-11	17-Jan-12	(%)
CLADOCERA									
<i>Daphnia longiremis</i>	1	1	-156	-	-	-	-	-	-
<i>Daphnia middendorffiana</i>	5	-	NA	2	-	NA	2	-	NA
<i>Holopedium gibberum</i>	5	-	NA	114	22	-102	21	4	-42
	11	1	32	116	22	-101	23	4	-33
COPEPODA									
Calanoida									
Calanoida copepodite	4672	497	16	8832	477	15	2816	398	-12
<i>Diaptomus minutus</i> Lilljeborg	-	-	-	960	47	24	640	118	-38
<i>Diaptomus pribilofensis</i>	8	1	0	-	-	-	-	-	-
<i>Diaptomus sicilis</i>	320	30	29	128	12	-40	64	8	0
<i>Diaptomus sp.</i> (unid. Females)	832	104	0	1856	122	-5	1184	143	3
<i>Epischura lacustris</i>	-	-	-	224	27	-63	248	28	10
<i>Heterocope septentrionalis</i>	52	4	48	19	2	-51	72	10	-11
Cyclopoida									
Cyclopoid copepodite	160	25	-22	640	71	-56	352	55	-22
<i>Cyclops scutifer</i> Sars	704	71	21	1728	137	-24	448	77	-32
	6748	732	14	14387	895	0.47	5824	837	-14

Notes:

RPD = Relative Percent Difference (%) = ((original - duplicate) / (original + duplicate)/2) x 100.

Shaded RPDs exceed 25% (lab duplicates).

NA = Not Applicable.

3.2. Limnology

The Meadowbank project lakes are situated in the barren-ground central sub-Arctic region of Nunavut at approximately 65° north latitude, within an area of continuous permafrost. These lakes are headwater lakes of the Quoich River system that flows south, through Tehek Lake into Chesterfield Inlet and eventually, Hudson Bay. The project lakes are also situated on the watershed boundary that separates Hudson Bay and Arctic drainage lakes. Only a few hundred meters to the west and north of Second and Third Portage lakes, the land drains water towards Pipedream and Inuggugayualik lakes that flow to the Arctic Ocean via the Meadowbank and the Back River systems. Because the project lakes straddle two major drainage basins in the headwaters of both, there are no large streams entering or leaving either watershed. Lakes are connected by wide, short and shallow, boulder strewn channels that do not support spring spawning fish species like Arctic grayling. This also means that there are no significant sources of nutrients or sediment introduced to these lakes, save only local runoff that contribute little to nutrient enrichment or productivity of the system. Consequently, sedimentation rates are typically very low, which partly explains why water clarity is so high (Secchi depth typically 10 m or more) and why nutrient concentrations are so low.

The ice-free season on these lakes is very short. Ice break-up usually occurs during mid- to late-June; ice begins to form again on the lakes beginning in late September or early October, with complete ice cover by late October. Maximum ice thickness is at least 2 m by March/April. Because the lakes are ice covered for most of the year, gas exchange with the atmosphere is limited, although oxygen concentrations usually remain high under the ice because of the low rates of biological activity and decomposition of organic material (processes that consume oxygen from the water). During winter there is typically a slight negative thermal stratification with near 0°C water near the ice-water interface, increasing to 3° – 4°C at depth. During summer, maximum water temperatures may reach 14°C with little evidence of thermal stratification, except for brief periods of time and only a 4 – 5°C temperature difference. Winds blow near constantly and at high speeds, maintaining uniform temperature and high oxygen profiles in the water column in all lakes.

3.2.1. Meadowbank Study Lakes

3.2.1.1. General Observations

Given the ultra-oligotrophic nature of the study lakes, they are characterized as having low nutrient input and cycling, high transparency and a short growing season. Cold temperatures and near constant winds ensure that the water column does not stratify vertically or does so only for brief periods of time in summer during a few calm days. Oxygen concentrations also remain high year-round. Maximum ice thickness is about 2 m and occurs in April, reducing available water volume that can influence certain water

quality parameters, such as chloride. This phenomenon is due to cryo-concentration where ice formation excludes certain ions and increasing their concentration in the water column (Wetzel, 1983).

3.2.1.2. Temporal and Spatial Trend Interpretation

Mine development has altered some limnological features including shoreline development, surface area, mean and maximum depth and water volume of some lakes as a result of dike construction and lake dewatering. In Second Portage Lake for example, about half of the water volume and the deepest part of the lake was eliminated by the East Dike to create the Tailings Impoundment Area (TIA). Reducing the surface and depth reduces fetch distance, increases turnover rate and reduces the possibility of thermal stratification in the lake as the deepest basin was eliminated. In addition, maximum water temperature may also be higher in the remaining basin of Second Portage Lake due to shallower overall depth and lower water volume.

Elimination of a small part of the TPE basin as a result of Bay-Goose Dike construction and dewatering likely has not affected this basin, because of its small size and volume and shallow depth, relative to the East Basin and Third Portage Lake overall.

Large, deep basins such as at TPS are typically colder and do not usually reach the same maximum temperatures that are reached by shallow basin lakes (e.g., WAL, INUG). Near-constant turnover of deep basins ‘dilutes’ the warming capacity of these lakes by circulating cold water from deeper depths throughout the water column.

In addition to the above, the temperature, oxygen and conductivity profiling conducted during each monitoring event can be viewed as analogous to measuring the “vitals” of a human; changes beyond expected conditions signal that something may be out of balance and require follow up.

Temperature and Oxygen

The 2011 vertical temperature profiles are characteristic of the typical thermal regime of these lakes (**Figures 3.2-1 through 3.2-6**). During late winter (May), while there is still a 2 m thick complete ice cover, there is slight negative thermal stratification with water temperatures near 0°C at the ice-water interface, increasing to generally no more than 2°C; although in deeper lake basins (TPS, TPN, TEFF), bottom temperatures are likely closer to 4°C. Oxygen concentrations are generally greater than 8 mg/L at all depths, despite nearly nine months of ice cover, illustrating the low biological oxygen demand of these systems.

By early to mid-July, ice has melted and all of the lakes turn over completely, with uniform temperature and high oxygen concentrations and saturation. With near 24 hours of sunlight, water temperatures warm rapidly to reach maximum temperatures by late July to early August, seldom exceeding 14°C, although a temperature of 16°C was reached in SP in July. Consistent with earlier years, the large, deep basins of TPS, TPN,

PDL and TEFF are 2 – 4°C colder than the shallower basins of WAL, TPE, TE, INUG and SP. This occurs because vertical mixing in the deep basins lowers overall water column temperatures. Temporary stratification is possible depending on the year and timing of monitoring; after several days of warm and calm weather, some vertical stratification can occur, giving surface (0 – 6 m) water that may be several degrees warmer than deeper water (>6 m) (**Figures 3.2-1 through 3.2-6**). In the deepest basin (TPS), stratification may persist for a few weeks. By late August, water temperature, conductivity and oxygen profiles are completely uniform vertically, as autumn winds mix the water column, which is consistent in all other years.

Maximum water temperature of SP (16°C) in July was higher than was observed in previous years (**Figure 3.2-8**), although total depth was shallower (5 m) than is typically measured (>8 m), so this may have had something to do with the higher temperature. However, higher temperatures were also observed in other lakes, including INUG, WAL, TPE and TE, suggesting a regional warming trend in 2011 unrelated to mining activities.

In September, water temperatures have continued to cool further and remain un-stratified until freeze-up in mid- to late-October. With vertical mixing, oxygen concentrations are high, fully saturated and uniform from top to bottom. Between late-October and early December ice conditions are too thin and unstable to monitor during these months. The patterns observed in 2011 are consistent with what has been observed for these lakes since monitoring began nearly 15 years ago.

Water temperatures at 3 m depth for all project lakes since 2006 are depicted in **Figure 3.2-8**. Given that these lakes do not typically stratify vertically, the 3 m depth is a good depiction of mean water temperatures at the time of data collection, avoiding water that might be 2°C warmer very close to the surface or deeper than 10 m. Monthly water temperatures in 2011 showed typical temporal / seasonal changes from temperatures near 0°C in late winter (May) with classic bell-shaped increases through the summer (July) and declining into the fall (August to September) returning to near 0°C by November/December. As discussed above, thermal maxima in 2011 were slightly higher than in previous years, a trend that was observed in both control and impact lakes.

Profiles at “control” lakes (INUG, PDL, WAL) had similar patterns to ‘impact’ lakes (TPN, SP, TPE) with no evidence of temperature differences within lakes that might be mine-related, as discussed above, thermal maxima were observed in July for several impact as well as reference lakes. There were consistent inter-lake differences in 2011 as in previous years as water temperatures in large, deep basin lakes (TPS, TPN, TEFF) were 2 – 3°C colder than shallow basin lakes (WAL, SP, INUG). Overall, vertical temperature and oxygen profiles among near-field, mid-field and reference lakes in 2011 were consistent with what has been observed in the past.

Conductivity

Although technically a ‘water chemistry’ parameter (it is also included in **Section 3.3**), conductivity is discussed here as an indicator of change in the water column to facilitate

review by the reader. Conductivity measures ionic strength of the water column and in freshwater, oligotrophic systems, with low dissolved solids and ions (Ca, Na, Cl, Mg, etc.) conductivity is typically less than 50 $\mu\text{S}/\text{cm}$. There can be seasonal differences in conductivity within lakes due to ice cover, especially in shallow lakes or basins. Ice formation ‘freezes out’ ions (i.e., cryo-concentration) (Wetzel, 1983), thus increasing ion content and therefore conductivity beneath an ice cover. In shallow lakes or basins ($\sim 6 - 8$ m), a 2 m thick ice cover may increase conductivity by a significant amount between summer and winter.

At the Meadowbank study lakes, conductivity is always uniform in concentration from top to bottom at impact and reference lakes. Consistent with the above discussion conductivity in May (near maximum ice cover) was higher in all lakes (15 – 25 $\mu\text{S}/\text{cm}$) than in July (10 – 14 $\mu\text{S}/\text{cm}$). Conductivity was ranged between 14 – 22 $\mu\text{S}/\text{cm}$ at all lakes with the exception of WAL and SP that had higher values (20 $\mu\text{S}/\text{cm}$ in July and 26 $\mu\text{S}/\text{cm}$ in August and September) (**Figure 3.2-8**). In these shallow basin lakes conductivity was higher in December (28 – 32 $\mu\text{S}/\text{cm}$) with an inverse stratification, evidence of the cry-concentration process near the ice-water interface.

The only exception to this pattern in 2011 was under ice in May in the north basin of Third Portage Lake (TPN). Conductivity ranged from 15 – 20 $\mu\text{S}/\text{cm}$ to about 8 m depth before sharply increasing to 30 – 40 $\mu\text{S}/\text{cm}$ below 8 m. The sampling location within TPN was directly offshore of the effluent pipe within the 1% mixing zone. Dewatering records indicate that TSS in effluent ranged from 2 – 9 mg/L in May. Given the concurrent discharge and the calm under-ice conditions, it is possible that the observed conductivity changes were due to incompletely mixed dewatering effluent (although this was not verified by direct sampling⁶). Although dewatering also occurred in July through September, with TSS concentrations of 3 – 12 mg/L, no vertical differences in conductivity were observed in the water column at TPN. During open water, wind-driven vertical and horizontal mixing of the water column is very strong and at these low TSS values, TSS and therefore conductivity was mixed very quickly and was not evident in the water column during any other period. As discussed in **Section 1.4.2**, this effluent and its potential effects to TPN are the focus of a targeted MMER Environmental Effects Monitoring (EEM) study that was implemented in 2011 and will be completed by June 2012 (Azimuth, 2012c *in prep*).

⁶ CREMP monitoring protocols will be revised in 2012 to guide monitoring crews to take discrete water samples when profiling results are anomalous.

3.2.2. Baker Lake

3.2.2.1. General Observations

Throughout this discussion, the following abbreviations will be used for each lake area/basin: Baker Lake –Barge Dock, –Proposed Jetty, –East Shore, –Akilahaarjuk Point (BBD, BPJ, BES, and BAP).

Baker Lake is a very large lake with much greater wind fetch and a unique limnology, mostly because of subtle marine influence from Chesterfield Inlet and a possible relict, deep marine influence in mid-basin. Nevertheless, Baker Lake remains very nutrient poor, cold, deep and well mixed year round with high oxygen. There is added complexity of one or both of the following two factors depending on time of year: (1) the Thelon River, which enters Baker Lake only a few kilometers to the west of the hamlet and may have a particularly strong during spring freshet, and (2) a potential on-going or residual marine influence from Chesterfield/Hudson Bay. The relative importance of these factors on local physical, chemical and biological conditions appears to be influenced primarily by wind (speed and direction) rather than season (low vs. high flow). As described below (and in **Section 3.3**), sampling results to date show marked differences in certain parameters (e.g., total dissolved solids and ancillary parameters such as water hardness, alkalinity and some nutrients) associated with hard (e.g., marine) water. Variability related to these factors potentially confounds the identification of development-related effects on local limnology and water quality.

3.2.2.2. Temporal and Spatial Trend Interpretation

The major mine-related activity that occurs in this area is seasonal barge traffic, which begins around mid-August and may continue through September. Locally, propeller wash may cause vertical mixing in very discrete areas when there is active barge traffic. Otherwise (with the exception of spills etc.), there are no other activities with the potential to alter limnological parameters. There has been no influence on shoreline development, volume or any other feature of Baker Lake itself.

At Baker Lake, limnological conditions are similar to the study lakes except that water temperatures are cooler, reaching no more than 11°C or 12°C in mid-summer, are unstratified because of the large, cold water volume and large fetch of Baker Lake (**Figure 3.2-7**). **Figure 3.2-7** also illustrates how conductivity and other water quality parameters can be affected by wind direction and possibly the influence of the Thelon River outflow or a marine influence from Chesterfield Inlet. In August 2011 conductivity was higher (60 – 85 $\mu\text{S}/\text{cm}$) at the reference area (BAP) than near Baker Lake, possibly reflecting a subtle marine influence. In September, conductivity returned to background (<30 $\mu\text{S}/\text{cm}$) but also varied depending on wind direction and possibly from influence of the Thelon River (see **Table 3.3-1**).

Water temperature and dissolved oxygen profiles measured at ‘impact’ and reference area locations in Baker Lake in 2011 (**Figure 3.2-7**) showed similar patterns as in previous years, which is not surprising given that any mine related activities (barge traffic) would not have any effect on lake temperature. With respect to other chemical parameters, the conductivity profiles can be quite variable within seasons and between years at all Baker Lake areas. Differences in conductivity are indicative of other chemical differences in the water column (i.e., hardness, alkalinity, major ions) that are discussed more fully in **Section 3.3**. There are several reasons for this intra-and inter-annual variability including:

- Wind driven currents that can move Thelon River water near or away from the north shore of Baker Lake.
- Potential tidal/marine influence originating from Chesterfield Inlet. In 2008, conductivity as high as 500 $\mu\text{S}/\text{cm}$ has been observed at the reference location with concomitant increases in other parameters (chloride, sulphate, anions, dissolved solids, etc.) that can only be attributed to a marine influence.
- Marine relict influence within Baker Lake. It is also possible that deep within Baker Lake there is a relict pool of marine water that was trapped during isostatic rebound. Depending on wind direction and speed, this may also influence nearshore conductivity and other chemical parameters (e.g., during a wind-driven seiche).

Notwithstanding intra-annual differences, the general pattern of temperature, oxygen and conductivity in Baker Lake was no different in 2011 than in other monitoring periods.

Figure 3.2- 1. Temperature (°C), conductivity (μS/cm) and dissolved oxygen (mg/L) profiles for May, 2011.

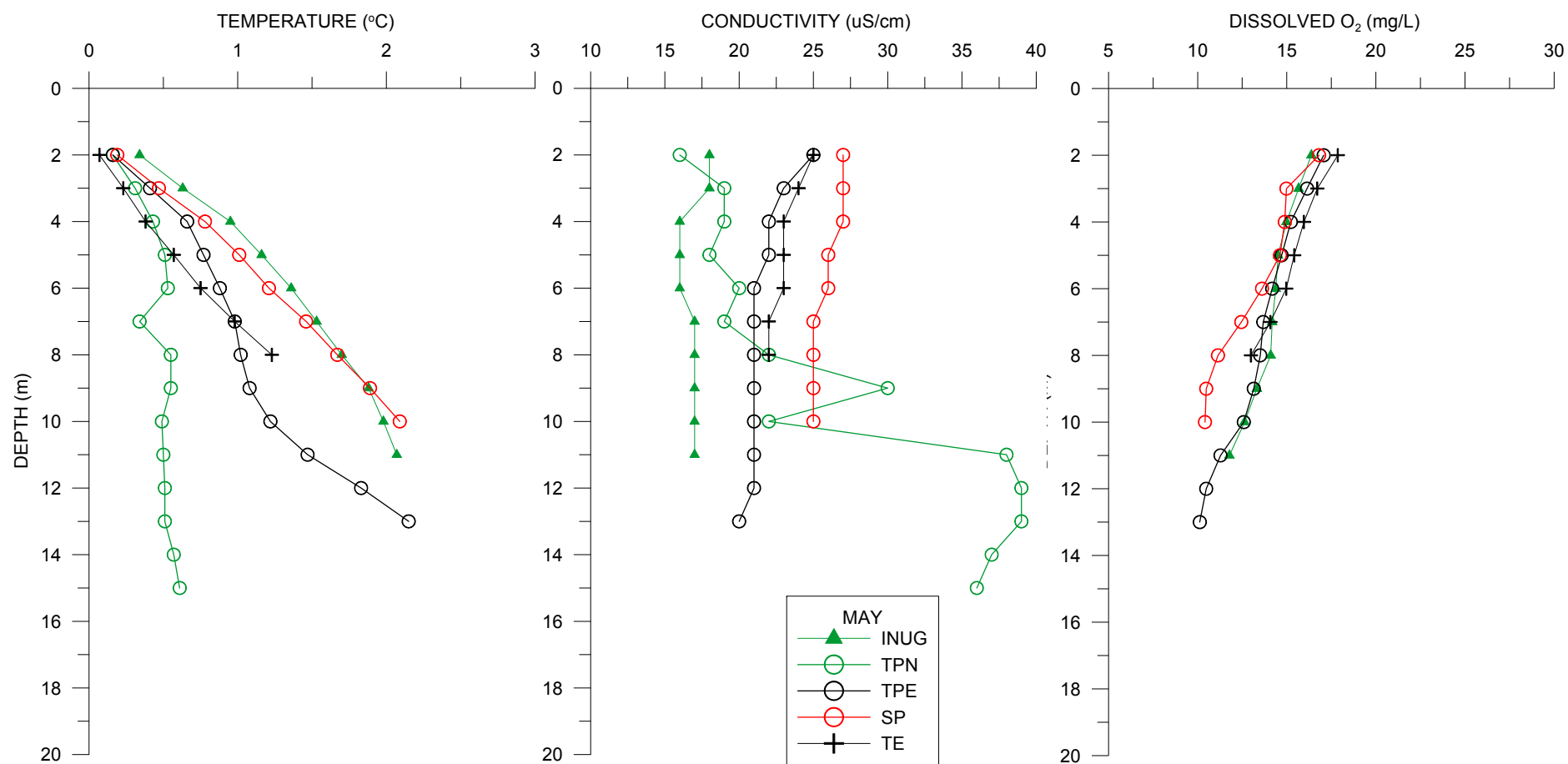


Figure 3.2- 2. Temperature (°C) and conductivity (μS/cm) profiles for July, 2011.

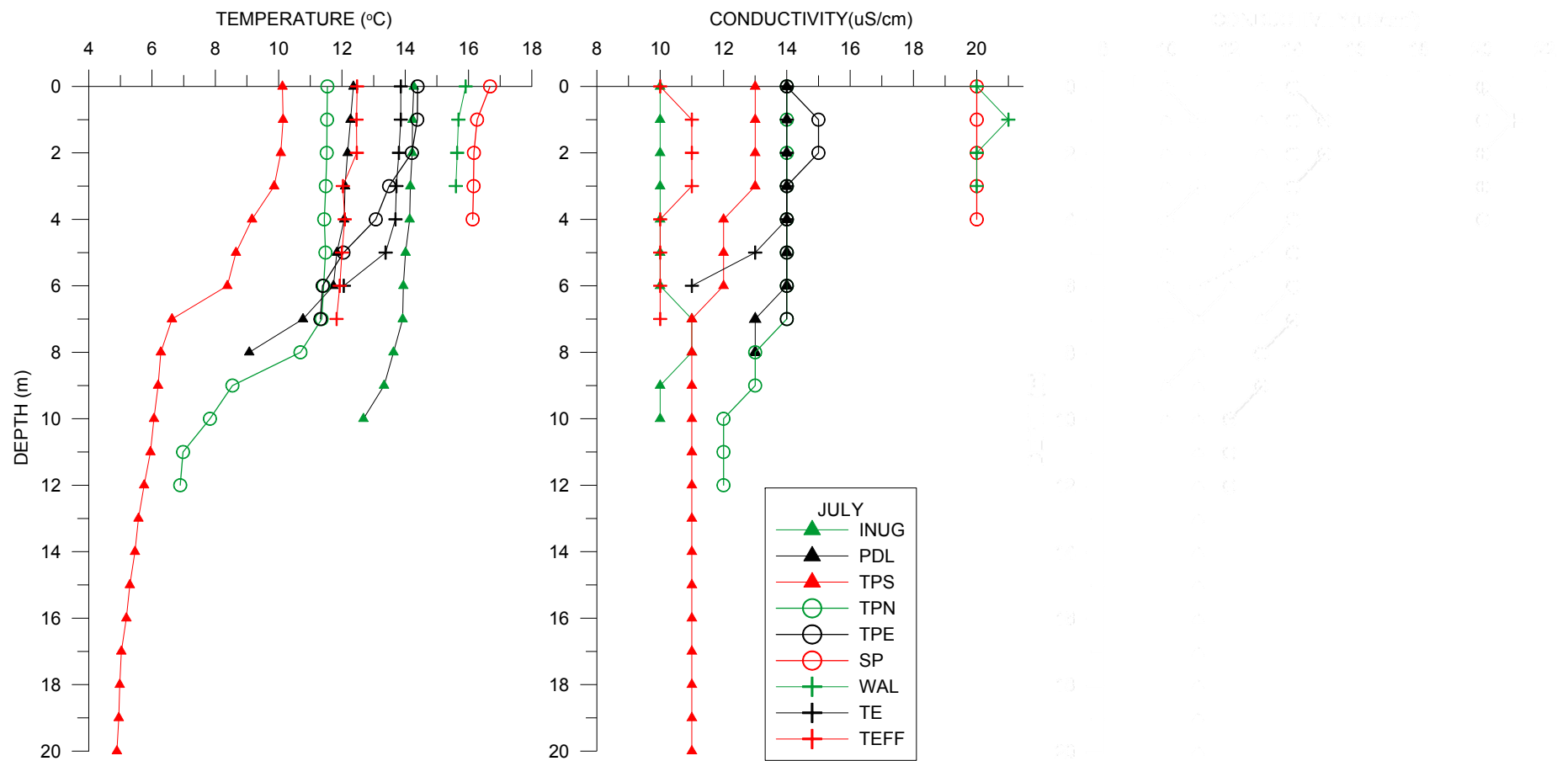


Figure 3.2- 3. Temperature (°C), conductivity (µS/cm) and dissolved oxygen (mg/L) profiles for August, 2011.

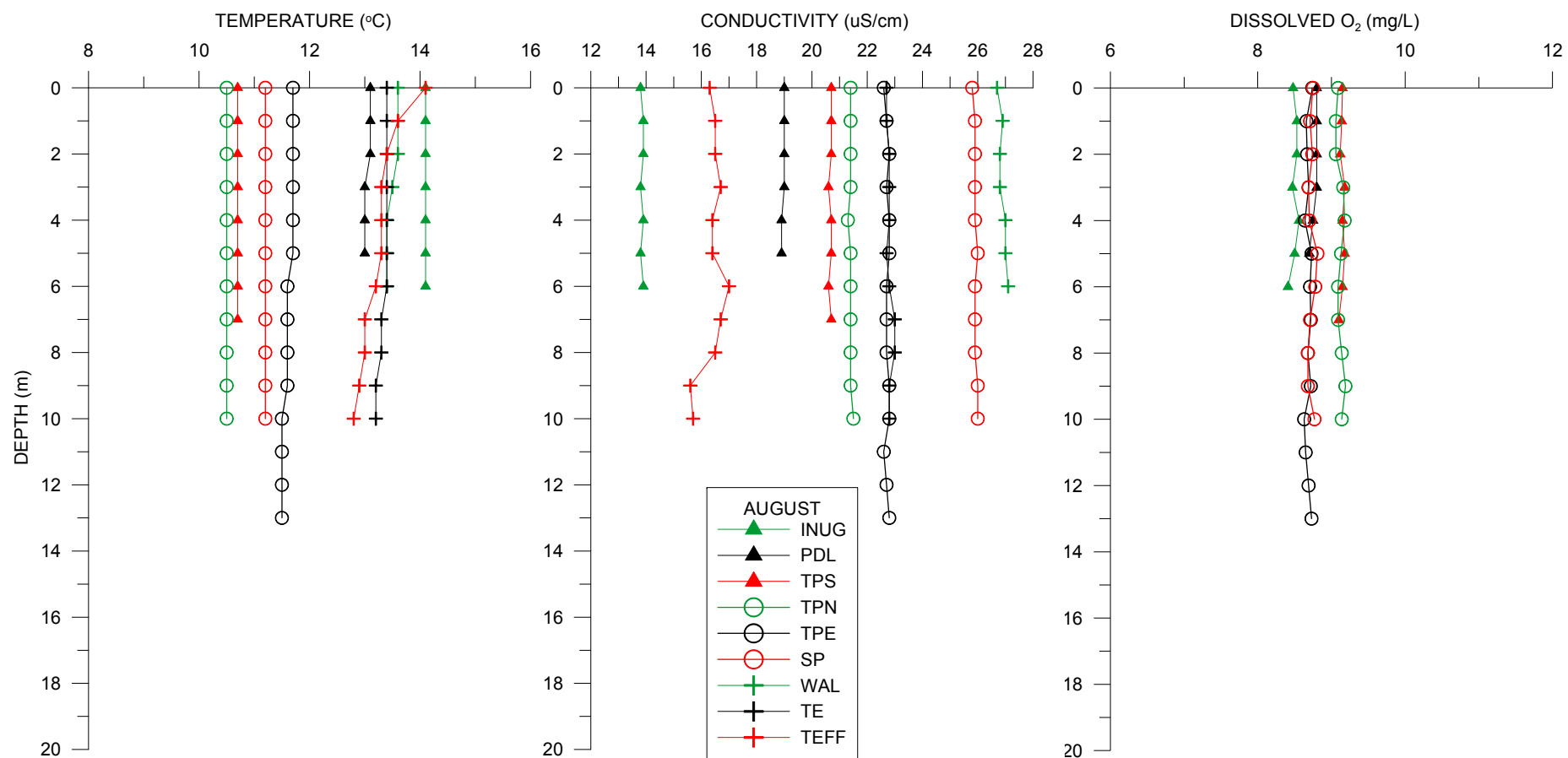


Figure 3.2- 4. Temperature (°C) and conductivity (μS/cm) profiles for September, 2011.

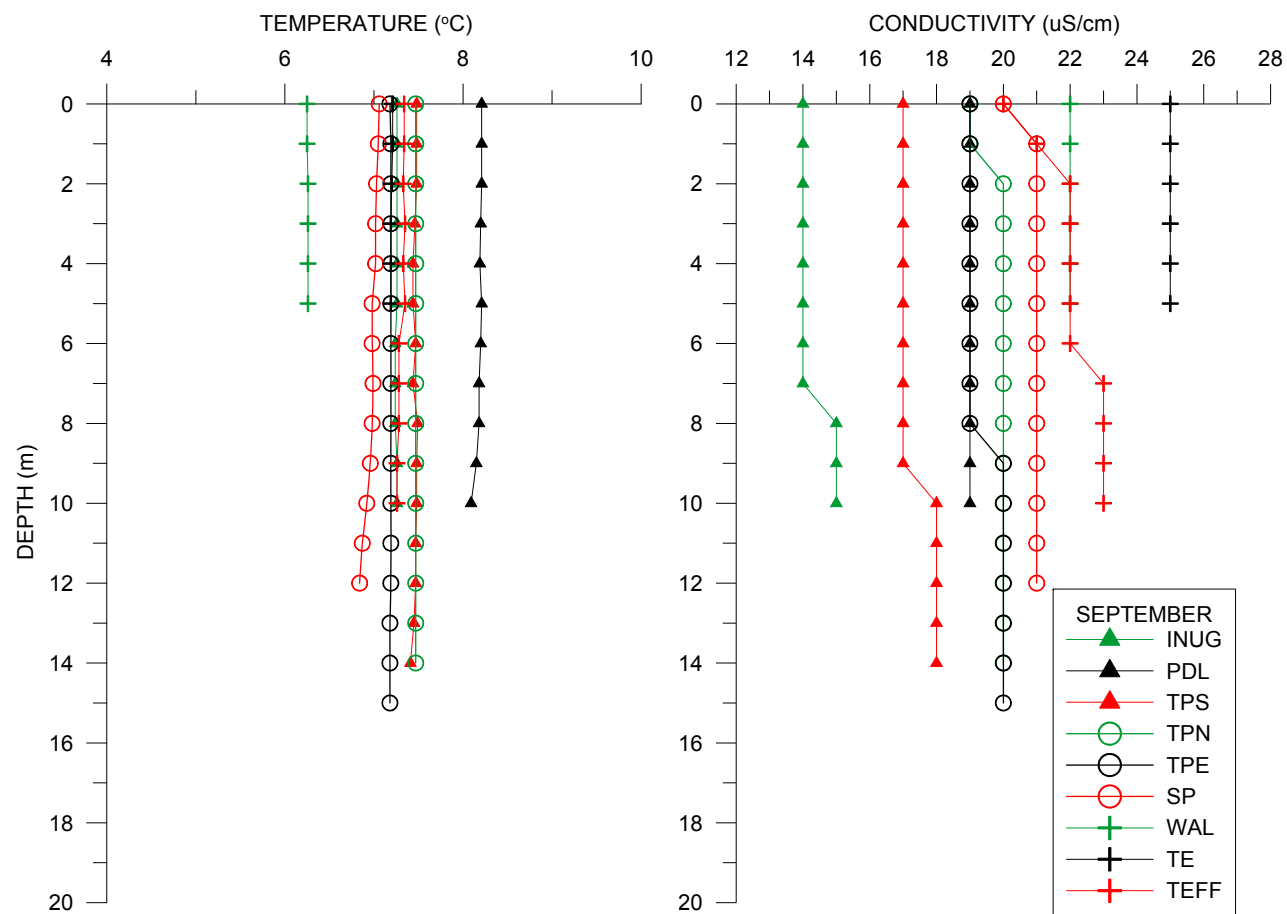


Figure 3.2- 5. Temperature (°C) and conductivity (μS/cm) profiles for November, 2011.

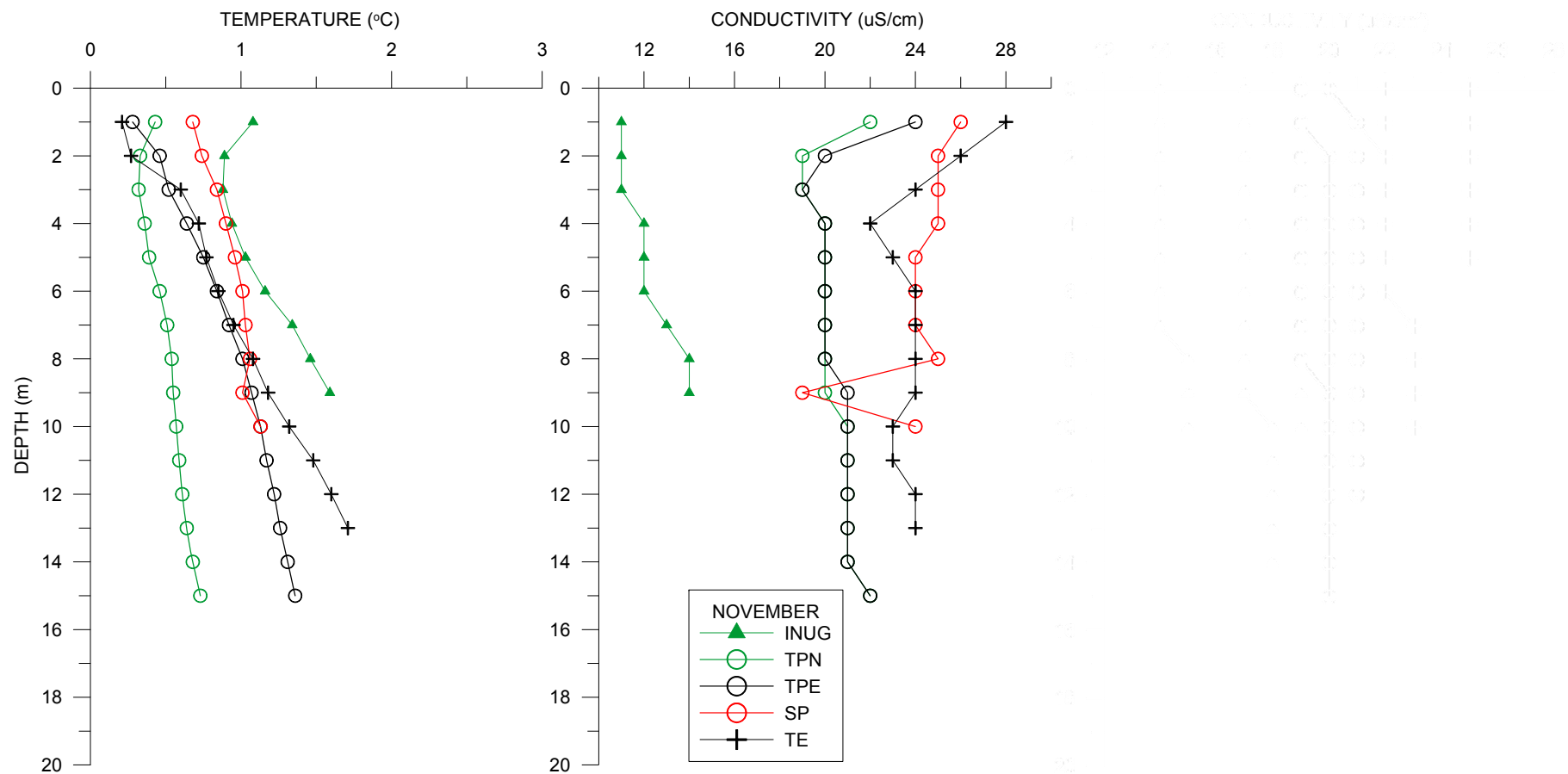


Figure 3.2- 6. Temperature (°C) and conductivity (μS/cm) profiles for December, 2011.

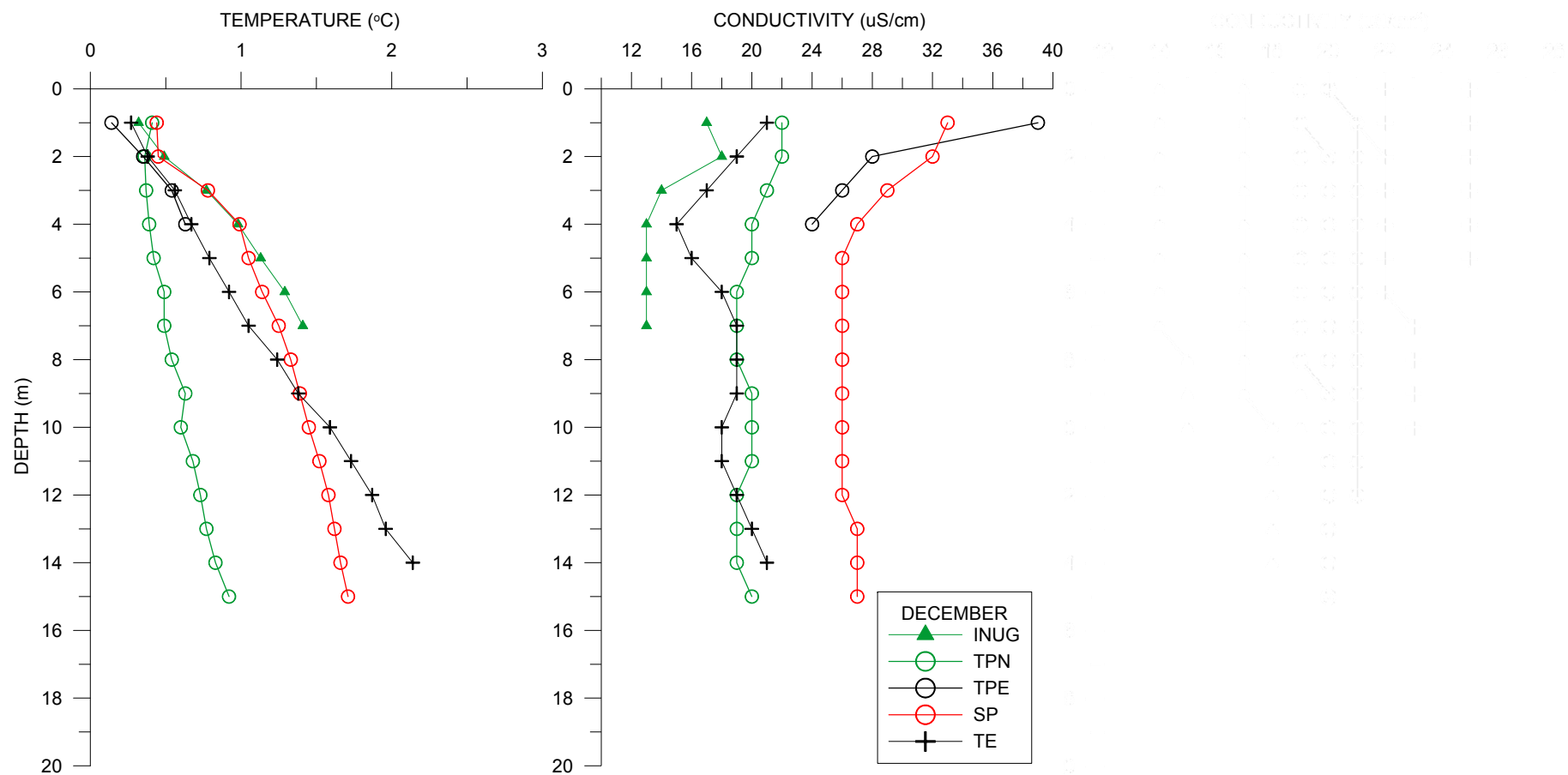


Figure 3.2- 7. Temperature (°C) and conductivity (µS/cm) profiles in Baker Lake for July – September, 2011.

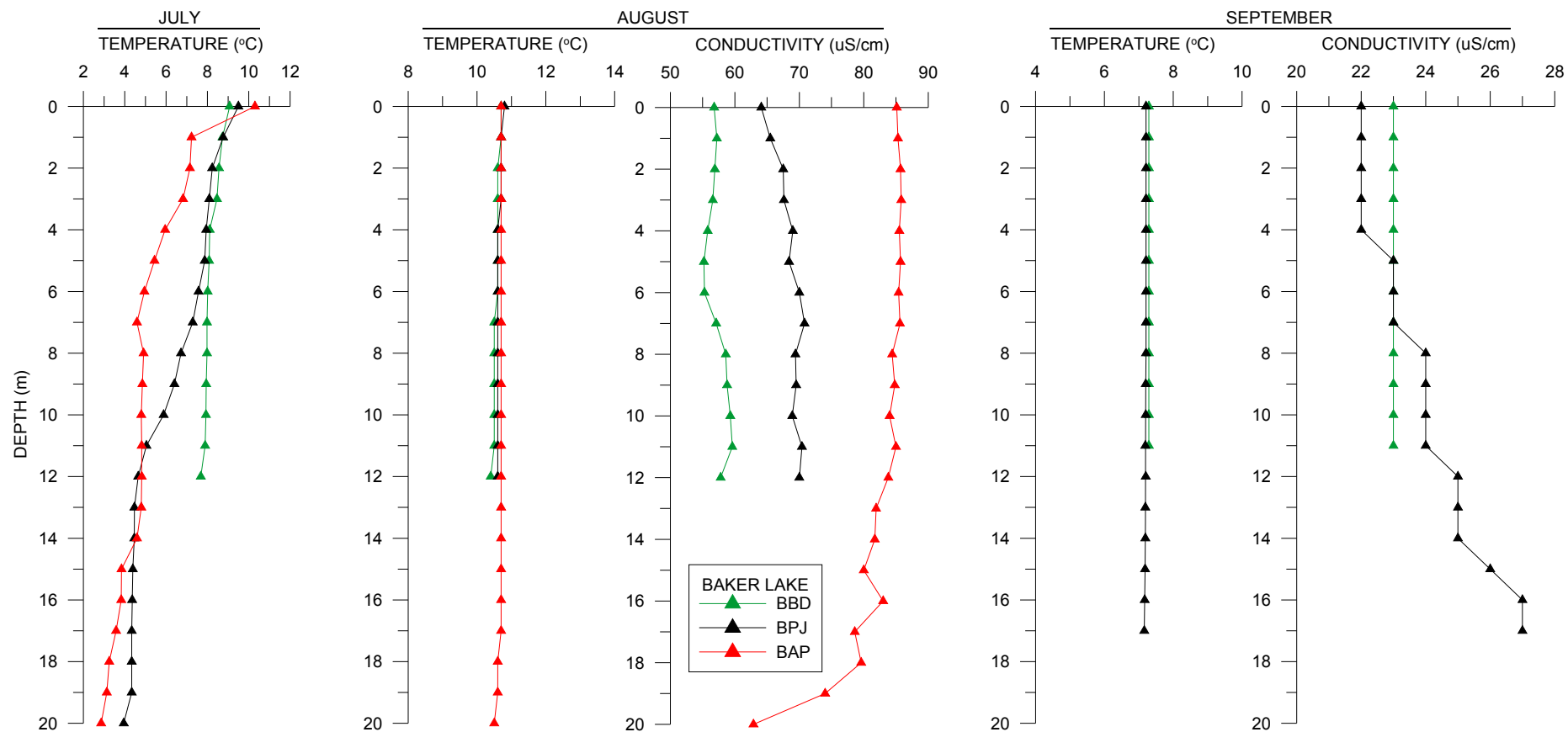
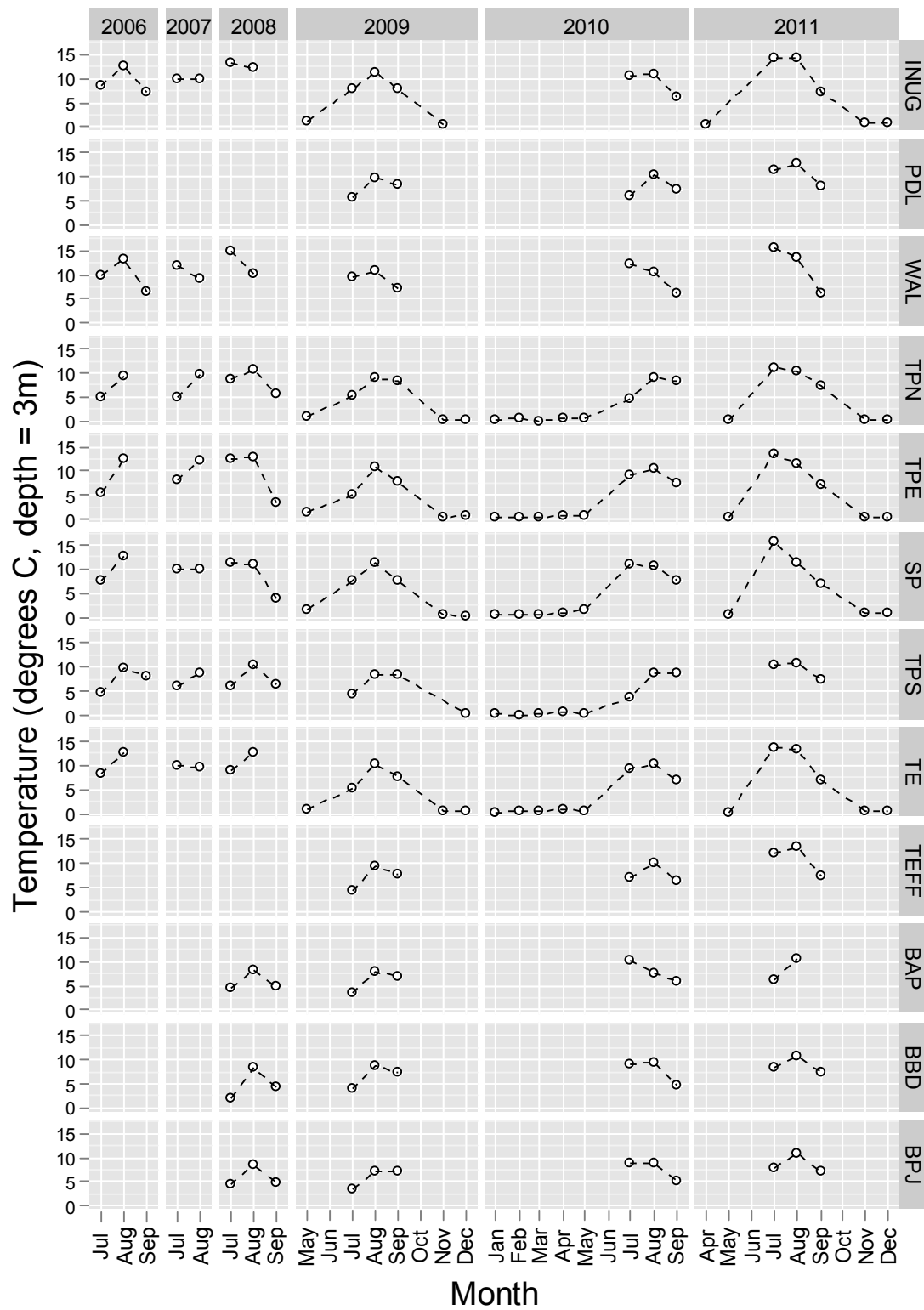


Figure 3.2- 8. Mean monthly temperature (°C) at 3 m depth from 2006 – 2011, Meadowbank study lakes and Baker Lake.



3.3. Water Chemistry

The general conditions affecting water quality in this region were described in **Section 3.2**. Key points to recall are:

- Both the Meadowbank study lakes and Baker Lake are nutrient-poor systems that are typically unstratified and well-mixed with uniform temperature and oxygen profiles.
- The Meadowbank study lakes are headwater lakes, so there are no significant natural sources of nutrients or sediment introduced to these lakes, save only local runoff that contributes little to nutrient enrichment but sustains these aquatic ecosystems. Many chemical parameters have been typically below laboratory detection limits (DLs) since formal baseline monitoring started in 2006⁷.
- Baker Lake has the added complexity of a large river (Thelon River) and possibly a residual or ongoing marine influence, which appears to be related to wind speed and direction. Despite this variability, many parameters in the Baker Lake samples were also typically below laboratory DLs.

3.3.1. Meadowbank Study Lakes

3.3.1.1. General Observations

Results for conventional water quality parameters, nutrients and metals for 2011 are presented in **Table 3.3-1**; they are discussed, where relevant from a spatial and temporal trend perspective, in **Section 3.3.1.2**. General observations (i.e., natural patterns across years and locations that are unrelated to mining activities) for major parameter groups are discussed below (based on **Figures 3.3-1 through 3.3-38**; figures are limited to those parameters measured above laboratory DLs)⁸.

Conventional Parameters

The project lake waters are typically circum-neutral (pH 6.5 to 7.5⁹), with low hardness (range 4 to 13 mg/L), conductivity (12.5 to 30 µS/cm), total suspended solids (TSS; <1

⁷ While formal baseline water quality monitoring started in 2006, reconnaissance baseline monitoring started in the mid-1990s and served as the foundation for designing the formal monitoring program.

⁸ These observations are based on the results of surface water samples, but should be applicable to the water column in general. As discussed in **Section 3.2**, the Meadowbank study lakes typically lack stratification; these conditions result in a well-mixed water column with consistent physical and chemical characteristics across depth zones. This verified statistically as part of a design review for the CREMP (Azimuth, 2012b).

⁹ In August 2007 (i.e., baseline), pH was “elevated” across most areas; this was likely due to laboratory error and is considered an anomaly.

mg/L), total dissolved solids (TDS; <10 mg/L, with occasional increases to 30 mg/L), total alkalinity (2.5 to 15 mg/L), and nutrients (nitrate-N was generally <0.005 mg/L; nitrite-N was <0.001; total phosphorous was usually <0.005 mg/L and rarely exceeded 0.01 mg/L; dissolved organic carbon [DOC] was usually <2 mg/L and rarely >4 mg/L; total organic carbon [TOC] was usually <2.5 mg/L and rarely >3.5 mg/L).

Total and Dissolved Metals

Total and dissolved metals concentrations were consistently low among the project lakes (**Table 3.3-1**). The only total metals measured above laboratory detection limits (DLs) in more than 10% of samples (or consistently measured after a recent reduction in DL) were aluminum (<0.05 mg/L), arsenic (<0.0005 mg/L), barium (<0.005 mg/L), copper (<0.001 mg/L), iron (<0.05 mg/L), manganese (<0.005 mg/L), strontium (<0.012 mg/L), and titanium (<0.001 mg/L in 2011 after reduction in DL). Dissolved metals meeting the above detection frequency criteria were aluminum (<0.01 mg/L), arsenic (<0.0005 mg/L), barium (<0.0035 mg/L), copper (<0.001 mg/L), manganese (<0.005 mg/L), and strontium (<0.012 mg/L).

3.3.1.2. Temporal and Spatial Trend Interpretation

CREMP monitoring results since 2006 were used to assess temporal and spatial trends related to mining activities (see **Section 1.4** for description of key activities). The general rationale for assessing these trends was discussed in **Section 1.5**; the process was tailored slightly for water chemistry, as described below.

As previously discussed, many water quality parameters had concentrations that were routinely below laboratory DLs, thus providing little insight into the assessment of mine-related changes to water quality. To streamline the interpretation process, a conservative three-step screening process was used to identify parameters for inclusion into the formal trend assessment (the results are summarized in **Table 3.3-2**):

1. *Overall Detection Frequency* - Only those water quality parameters that exceeded DLs in at least 10% of the samples were included in this discussion. Because the project lakes are ultra-oligotrophic, it is normal for many parameters to routinely be below DLs. In fact just under half (49%) of parameters measured exceeded DLs at least 10% of the time and are included in this discussion.
2. *Control-Impact Detection Frequency Comparison* – In order to avoid screening out infrequently detected parameters that were detected more often in association with mining activities, the proportion of samples exceeding DLs between “control” and “impact” samples were compared; the intent of this screen was to identify parameters with <10% detection frequency (i.e., those screened out above) for which there were detection frequency changes potentially associated with mining activity (i.e., where the proportion of detected values increased by

0.1 or more). No parameters were added back into the trend assessment based on this screen.

3. *Apparent Detection Pattern Matching Mining Activity* – In order to avoid screening out infrequently detected parameters that may be associated with mining activities, trend plots were used to identify parameters with measured values associated with periods/locations of known mining activities. Where such patterns were observed, these parameters were added back into the trend assessment process. Total chromium, total uranium, and total nickel were added back into the trend assessment process based on this screen.

All parameters not retained for the trend assessment were assumed to have no spatial or temporal trends related to mining activities and were excluded from further consideration (plots for these parameters are included for reference in **Appendix E**).

Trend assessment results related to each of the mining activities discussed in **Section 1.4** are presented below¹⁰.

Dike Construction

Dike construction activities and associated changes to water quality were the focus of two sets of targeted studies: (1) spatially and temporally intensive monitoring was conducted during construction of the East Dike (Azimuth, 2009a) and Bay-Goose Dike (Azimuth, 2010b; AEM, 2011) and (2) a four-year TSS effects assessment study (EAS) was conducted to follow-up on the ecological implications of the sedimentation events associated with construction of each dike (Azimuth, 2009b, 2010c, 2011a, 2012a). The CREMP data set provides a complementary look at changes from a broader temporal and spatial context than the targeted studies.

As described in **Section 1.4** (and in detail in the aforementioned reports), construction of the East Dike across Second Portage Lake started in August 2008. Construction-related sediment inputs resulted in the formation of a concentrated local plume (of TSS and other parameters described below) that then dispersed (at much lower concentrations) across much of Second Portage Lake and into Tehek Lake. In addition to TSS, parameters associated with this event included nitrate, total phosphorus*¹¹, total aluminum*, total

¹⁰ Other seasonal trends, unrelated to mining activity, were evident in the trend plots. For example, a pattern of higher chloride (and other parameters such as conductivity, hardness, calcium, magnesium, sulphate and others) concentrations was evident in through-the-ice sampling at INUG, TPN, TPE, SP, and TE in 2009, 2010, and 2011. This phenomenon was likely due to cryo-concentration, when the water freezes into ice and excludes dissolved ions, such as chloride. Cryo-concentration of chloride has been recorded in other lakes with substantial ice cover, such as Lake Vida in Antarctica (Doran et al, 2004).

¹¹ Phosphorus limitation is prevalent in Canadian Arctic aquatic systems, where input is generally limited to inputs from precipitation (Medeiros, 2011). The CCME (2007) total phosphorus guidelines are based on categorizing lake productivity (i.e., rather than on direct adverse effects to aquatic life); the guideline of <0.004 mg /L is for an ultra-oligotrophic lake system and 0.004 to 0.01 mg /L.

chromium*, total copper*, total iron*, total manganese, total nickel, total titanium, and total uranium (*parameters exceeded CCME guidelines during event; however, dissolved metals were low, so total concentrations were generally associated with particulates and considered unlikely to be bioavailable [see EAS reports for more details]). Plume settlement was underway by September and finished over the following winter, resulting in a return to baseline conditions (as seen by the <1 mg/L TSS results for SP in spring 2009; **Figure 3.3-4**).

Using method refinements intended to better control sediments (see Azimuth, 2010b for details), construction of the Bay-Goose Dike across the northwestern portion of the east basin of Third Portage Lake started in August 2009 and was completed in two phases: the northern portion was constructed in 2009 and the southern portion in 2010 (starting with a causeway portion through the ice followed by the remainder during the open water season). Sediment control measures worked much better in 2009, with the TSS plume largely confined to deeper portions (i.e., low habitat value) of the east basin. However, severe winds destroyed the double turbidity barriers and mixed the water column, resulting in elevated TSS (and other associated parameters) across much of the east basin in late August. Compared to Second Portage Lake in 2008, TSS concentrations were lower and were largely contained within the east basin (**Figure 3.3-4**). Conditions steadily improved in the east basin of Third Portage Lake over the winter, but TSS increased again during the open water season of 2010 (to slightly less than seen in 2009). TSS concentrations had returned to baseline by spring 2011.

The other parameters associated with the Bay-Goose Dike construction sedimentation event were similar to those associated with the East Dike event. Parameters that generally followed the pattern described above for TSS included total aluminum*, total chromium*, total copper*, total iron*, total manganese, total nickel, total titanium, and total uranium. Nitrate is interesting in that it shows a strong association to dike construction (and dewatering), but has lingered at elevated concentrations for much longer; it is important to note, however, that these concentrations are well below (by more than 50 times lower) the current CCME guideline of 2.9 mg/L (for nitrate-N)¹². The parameters marked with “*” above exceeded CCME guidelines during event; however, dissolved metals were low, so total concentrations were generally associated with particulates and considered unlikely to be bioavailable [see EAS reports for more details]).

Dewatering

Dike construction resulted in the creation of two impoundments (the northwest arm of Second Portage Lake [bounded by the East Dike] and the northwest portion of the east

¹² The current CCME guideline for nitrate, 2.9 mg N/L was published in 2003. The federal government recently re-evaluated the nitrate guideline using their 2007 species sensitivity distribution approach for guideline derivation; the draft guideline issued for nitrate in 2011 is 3.6 mg N/L

basin of Third Portage Lake [bounded by the Bay-Goose Dike]) that required dewatering prior to the onset of mining (see **Section 1.4**). Dewatering discharges (i.e., impounded lake water with TSS) were directed primarily into the north basin of Third Portage Lake (TPN; discharging much of the time since March 2009), but also briefly into Second Portage Lake (April 14th to July 9th, 2009). The discharge to TPN has been subject to Metal Mining Effluent Regulations (MMER) as of December 31, 2009. MMER-related studies have included routine effluent characterization (i.e., chemistry and toxicity) and receiving environment characterization (i.e., chemistry and biological [fish and benthic invertebrates] testing); together, these studies are intended to provide a thorough understanding of the potential ecological effects of dewatering effluent discharge to TPN (Azimuth, 2012c *in prep*).

As described in **Section 1.4.2**, TSS concentrations have never been measured at TPN above 3 mg/L and have only rarely been measured above detection limits since dewatering commenced in 2009. Nitrate also showed some changes associated with dewatering, but concentrations were 50 times less than the CCME guideline of 2.9 mg/L (see related foot note under dike construction). Hardness and conductivity may also have increased relative to baseline concentrations; elevated conductivity was also observed at depth in the profile conducted at TPN in May 2011 (see **Figure 3.2-1**)¹³. Total phosphorus spiked on two occasions (November 2009 and February 2010), but the concentrations were not dissimilar to those seen at the reference area INUG; the upward trend at TPN in 2011 was also similar to that seen in INUG, suggesting a regional trend. No other parameters appeared to show substantial changes in relation to dewatering activities.

General Site-Related Activities

As previously discussed, changes in water quality observed in the trend plots are largely attributable to dike construction and/or dewatering. While other activities may have introduced contaminants into the receiving environment (e.g., dust from roads or blasting fallout), any related changes were either confounded by the two major activities (i.e., if they occurred concurrently; if so, contributions from these sources have been discussed as part of the other two activities) or minor relative to natural variability. In 2011, the only major activity occurring was dewatering into TPN, providing a good opportunity to look for trends at SP and TPE related to general site-related activities (i.e., in the absence of dike construction. Based on the prevailing winds, both these areas are downwind of the major on-going site-related activities (e.g., crushing, blasting, general dust, road dust).

¹³ The pronounced increase in conductivity observed at depth at TPN in May 2011 suggests that a deep effluent plume may have been present; no direct sampling of the deep plume for chemical characterization was conducted to verify this possibility. There was no further evidence of a deep water plume by July 2011, nor was there any chemical evidence suggesting that such a plume had mixed with surface waters during post-ice turnover.

All TSS concentrations were below laboratory DLs at SP and TPE in 2011 (although the DLs varied between 1 and 2 mg/L), suggesting no major changes attributable to other site-related activities. While evident in relation to dike construction and dewatering, nitrate concentration patterns in relation to general site-related activities were inconclusive (but again well below CCME guidelines); a minor increase was seen at both TPE and SP in late 2011. Conductivity and sulphate may also be higher than baseline concentrations at TPE and SP, but the trends are weak.

For several parameters (reactive silica, potassium, sodium, total arsenic, total barium, total strontium, dissolved arsenic, dissolved barium, dissolved copper, dissolved molybdenum, and dissolved strontium) recently reduced DLs provided a better understanding of concentrations in the receiving environment in 2011. However, in the absence of baseline data, it is impossible to determine the likely cause of any observed spatial patterns between control and impact areas based on a single year of data; future patterns of change (e.g., growing differences *versus* no change in the difference) will likely help interpret whether mining activities have changed these parameters.

3.3.2. Baker Lake

3.3.2.1. General Observations

Results for conventional water quality parameters, nutrients and metals for 2011 are presented in **Table 3.3-1**; they are discussed, where relevant from a spatial and temporal trend perspective, in **Section 3.3.2.2**. General observations (i.e., natural patterns across years and locations) for major parameter groups are discussed below (based on **Figures 3.3-39 through 3.3-73**; figures are limited to those parameters measured above laboratory DLs).

Conventional Parameters

Baker Lake waters are typically circum-neutral (pH 6.5 to 7.5), with hardness (generally below 15 mg/L in 2011 but up to 60 mg/L on occasion), conductivity (25 to >200 µS/cm), low total suspended solids (TSS; <3 mg/L), total dissolved solids (TDS; 25 to >200 mg/L), total alkalinity (6 to 10.5 mg/L), and nutrients (nitrate-N was generally <0.05 mg/L; nitrite-N was <0.001; total phosphorous was usually <0.01 mg/L; dissolved organic carbon [DOC] and total organic carbon [TOC] were usually 2.5 to 3.5 mg/L and never >4 mg/L). Occasional increases in some parameters (i.e., conductivity, TDS, alkalinity) are possibly due to upwelling of relict brackish water during specific wind conditions.

Total and Dissolved Metals

Total and dissolved metals concentrations were consistently low in Baker Lake (**Table 3.3-1**) with only some metals consistently greater than laboratory detection limits (DLs) and include aluminum (<0.05 mg/L), barium (<0.02 mg/L), copper (<0.001 mg/L), iron

(<0.05 mg/L), manganese (<0.005 mg/L), strontium (<0.025 mg/L), and titanium (<0.001 mg/L). Dissolved metals exceeding DLs were aluminum (<0.007 mg/L), barium (<0.019 mg/L), copper (<0.0004 mg/L), manganese (<0.002 mg/L), and strontium (<0.023 mg/L).

3.3.2.2. Temporal and Spatial Trend Interpretation

CREMP monitoring results since 2008 were used to assess temporal and spatial trends related to mining activities (see **Section 1.4** for description of key activities). The general rationale for assessing these trends was discussed in **Section 1.5**; the process was tailored slightly for water chemistry, as described below.

As discussed in **Section 3.3.1.2** for Meadowbank study lakes, most water quality parameters in Baker Lake were routinely below laboratory DLs. Thus, detection of changes to water quality related to barge activity would be relatively easy to detect. Similar to Meadowbank, starting with the long list of parameters listed in **Table 3.3-1**, a conservative two-step screening process was used to identify parameters for inclusion into the formal trend assessment (the results are summarized in **Table 3.3-3** with **Figure** number references for all parameters that were screened in):

1. *Overall Detection Frequency* - Only those water quality parameters that exceeded DLs in at least 10% of the samples were included in this discussion. Because this lake is ultra-oligotrophic, it is normal for many parameters to routinely be below DLs. In fact just under half (46%) of parameters measured exceeded DLs at least 10% of the time and are included in this discussion.
2. *Control-Impact Detection Frequency Comparison* – In order to avoid screening out infrequently detected parameters that were detected more often in association with barge activities, the proportion of samples exceeding DLs between “control” and “impact” samples were compared; the intent of this screen was to identify parameters with <5% detection frequency (i.e., those screened out above) for which there were detection frequency changes potentially associated with mining activity (i.e., where the proportion of detected values increased by 0.05 or more). Only total lead and total tin were found to have an increased detection frequency in impact samples relative to control samples.

All parameters not retained for the trend assessment were assumed to have no spatial or temporal trends related to barge activities and were excluded from further consideration (plots for these parameters are included for reference in **Appendix E**).

In addition to the trend assessment rationale discussed in **Section 1.5**, comparisons to CCME water quality guidelines for the protection of aquatic life (for 2011 data see **Table 3.3-1**) were used, where available, to provide a context for any observed trends.

Water samples have been collected from Baker Lake monthly during the open-water season (July, August and September) since 2008. Baker Lake was added to the core program to ensure that monitoring was also in place to track activities in that area related

primarily to barge traffic and shipping (see **Figure 1.4-1**). There are two near-field impact areas, one targeting the hamlet's barge landing area (BBD) and the other AEM's fuel storage facility (BPJ). The initial (since 2008) reference area (BAP) is several kilometers to the east of the hamlet along the north shore of the lake. A second reference area (BES) was added in 2011, although water quality parameters were not collected at this area; only sediment and benthos.

As discussed in **Section 3.2**, Baker Lake appears to have a number of natural complexities related to influences of either a marine influence from Chesterfield Inlet and Hudson Bay, or relict marine influence in deep water of Baker Lake that periodically affect water quality parameters. In addition, the influence of the Thelon River, especially during spring freshet adds a further confounding effect to local water quality and is affected by wind speed and direction. These multiple and unpredictable influences and horizontal and vertical mixing of the water column may confound the detection of a potential changes in water quality related to barge activity, with the "signal" getting lost in the "noise" of natural variability.

The following parameters are associated with marine water and show similar fluctuations. These parameters tend to have a high level of natural variability, regardless of location in Baker Lake and include conductivity, hardness, calcium, chloride, magnesium, sodium and TDS. Other parameters also have a high level of natural variability, and appear to be correlated with the above parameters in Baker Lake and include ammonia, nitrate, TKN, total phosphorus, sulphate and TOC/DOC.

Conductivity, hardness and nitrate follow a very similar trend among areas. In general, all 3 areas in Baker Lake show yearly lows in July (possibly the freshwater influence of the Thelon) prior to increases through August and September.

Despite having over ten total metals screened in, most metals concentrations were generally of a similar concentration spatially and temporally and showed no discernible trends between impact and reference areas. In 2011, total aluminum, iron, strontium, and titanium increased in concentration in August, followed by a drop in September at all areas in Baker Lake, again with no spatial pattern.

Thus, despite the increase in barge traffic seen over the past four years (**Figure 1.4-1**), there were no obvious changes to water quality that could be attributed to that activity. This result is not surprising given the lack of spills reported. Consequently, there are no follow-up measures for management in 2012.

However, we do recommend further characterization of general limnology in Baker Lake to address the uncertainty regarding potential marine influences in the lake. Deep vertical temperature and conductivity profiles will be measured and water samples collected strategically, at depths where notable changes in conductivity are observed in order to characterize 'deep' water and better define the limnological and chemical features of this area of Baker Lake.

Table 3.3-1. Conventional water chemistry and total and dissolved metals (mg/L), Meadowbank study lakes and Baker Lake, 2011.

Lake & Basin		TPE												Third Portage Lake								
Area-Replicate ID	CCME (2007) Guideline ¹	TPE-34	TPE-35	TPE-36	TPE-37	TPE-38	TPE-39	TPE-40	TPE-41	TPE-42	TPE-43	TPE-44	TPE-45	TPN-34	TPN-35	TPN-36	TPN-37	TPN-38	TPN-39	TPN-40	TPN-41	
Depth (m)		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Date		4-May-11	4-May-11	27-Jul-11	28-Jul-11	24-Aug-11	24-Aug-11	16-Sep-11	16-Sep-11	22-Nov-11	22-Nov-11	23-Dec-11	23-Dec-11	1-May-11	1-May-11	27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11	18-Sep-11	
CONVENTIONAL PARAMETERS																						
Physical Tests (mg/L)																						
Conductivity (µS/cm)	NG	27.4	28.3	21.5	22.0	21.2	20.7	21.5	21.7	25	26	27	27	20.9	20.4	22.2	23.2	20.3	16.9	21.0	21.3	
Hardness	NG	9.34	10.2	7.59	8.03	6.23	7.46	7.26	7.59	8.04	8.18	9.67	9.84	6.71	7.09	7.00	6.99	7.47	6.57	6.59	6.68	
pH	6.5 - 9.0	7.02	7.00	7.22	7.23	7.27	7.02	7.24	7.22	7.00	7.02	6.99	7.03	6.91	6.91	7.13	7.13	7.00	7.08	7.14	7.12	
Total Suspended Solids	NG	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	
Total Dissolved Solids	NG	14.0	16.0	12.0	14.0	12.0	6.0	14.0	14.0	16.0	16.0	18.0	16.0	10.0	10.0	14.0	16.0	10.0	6.0	12.0	14.0	
Turbidity (NTU)	NG	0.24	0.22	0.24	0.26	0.27	0.29	0.41	0.44	0.74	0.68	0.26	0.26	0.25	0.24	0.19	0.19	0.88	0.28	0.30	0.36	
Anions & Nutrients (mg/L)																						
Alkalinity - Bicarbonate	NG	11.1	11.7	9.9	9.9	9.9	18.9	9.6	9.9	9.3	9.6	10.7	11.0	8.2	8.5	8.2	8.4	7.5	7.6	8.1	8.1	
Alkalinity - Carbonate	NG	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	
Alkalinity - Hydroxide	NG	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
Alkalinity - Total	NG	9.1	9.6	8.2	8.2	8.1	15.5	7.9	8.1	7.7	7.9	8.8	9.0	6.7	6.9	6.7	6.9	6.2	6.2	6.6	6.7	
Ammonia (as N) ²	2.61 - 8.24	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	
Bromide	NG	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Chloride	NG	0.65	0.74	0.50	0.51	0.50	0.51	0.51	0.50	0.54	0.54	0.62	0.71	0.54	0.56	0.54	0.52	0.52	0.53	0.53	0.55	
Fluoride	NG	0.080	0.084	0.065	0.068	0.068	0.069	0.066	0.066	0.064	0.065	0.078	0.088	0.064	0.064	0.058	0.058	0.059	0.059	0.058	0.059	
Nitrate (as N)	2.9	0.0381	0.0409	0.0244	0.0239	0.0165	0.0147	0.0099	0.0098	0.0169	0.0173	0.0217	0.0221	0.0054	<0.0050	0.0380	0.0338	0.0326	0.0300	0.0287	0.0301	
Nitrite (as N)	0.060	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Kjeldahl Nitrogen	NG	<0.20	<0.20	<0.20	<0.20	<0.20	0.148	0.107	0.064	0.062	0.109	0.082	0.068	0.117	<0.20	<0.20	<0.20	0.163	0.100	0.070	0.071	
Total Phosphate (as P)	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0043	0.0040	0.0031	0.0031	0.0044	0.0040	0.0042	0.0050	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	0.0027	0.0040	<0.0020
Silicate (as SiO ₂)	NG	-	-	0.220	0.218	0.183	0.180	0.146	0.142	0.140	0.145	0.182	0.0745	-	-	0.233	0.232	0.203	0.198	0.140	0.145	
Sulphate (SO ₄)	NG	2.18	2.48	2.18	2.01	2.16	2.22	2.36	2.30	2.66	2.58	3.08	3.44	1.96	2.02	3.13	3.05	2.87	2.83	3.00	3.08	
ORGANIC / INORGANIC CARBON (mg/L)																						
Dissolved Organic Carbon	NG	1.8	2.1	1.5	1.4	1.9	1.9	1.7	1.3	2.2	2.3	1.4	1.4	1.7	1.6	1.6	1.5	1.9	1.9	1.7	1.7	
Total Organic Carbon	NG	1.8	1.9	1.5	1.5	1.9	2.0	1.7	1.7	2.2	2.2	1.5	1.4	1.9	1.8	1.9	1.5	1.9	2.0	1.7	1.7	
PLANT PIGMENTS (µg/L)																						
Chlorophyll-a ^{##}	NG	<0.10	0.13	0.42	0.33	0.66	0.60	0.42	0.55	0.48	0.35	0.18	0.26	<0.10	<0.10	0.27	0.39	0.76	0.81	0.56	0.50	
Phaeophytin-a	NG	<0.10	<0.10	0.12	<0.10	0.16	0.15	0.19	0.19	0.32	0.29	0.18	0.19	0.30	0.31	<0.10	0.11	0.20	0.20	0.24	0.24	
TOTAL METALS (mg/L)																						
Aluminum ³	0.100 - 0.100	0.0071	0.0074	0.0110	0.0128	0.0121	0.0104	0.0160	0.0186	0.0278	0.0209	0.0087	0.0103	<0.0050	<0.0050	0.0084	0.0082	0.0089	0.0093	0.0106	0.0117	
Antimony	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Arsenic	0.0050	0.00047	0.00044	0.00046	0.00057	0.00087	0.00067	0.00050	0.00061	0.00041	0.00053	0.00045	0.00063	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Barium	NG	0.00341	0.00394	0.00267	0.00276	0.00253	0.00250	0.00258	0.00252	0.00274	0.00271	0.00315	0.00311	0.00272	0.00280	0.00294	0.00299	0.00383	0.00265	0.00260	0.00280	
Beryllium	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Bismuth	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Boron	NG	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium*	2.4E-06 - 6.7E-06	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Calcium	NG	2.25	2.44	1.83	1.96	2.06	1.98	1.89	1.87	2.12	2.03	2.31	2.43	1.57	1.68	1.66	1.69	1.89	1.70	1.60	1.70	
Cesium	NG	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Chromium ⁴	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Copper*	0.002 - 0.002	0.00057	0.00061	0.00053	0.00056	0.00046	0.00048	0.00051	0.00049	0.00045	0.00048	0.00050	0.00048	0.00047	0.00052	0.00038	0.00049	0.00050	0.00042	0.00053	0.00065	
Iron	0.3	<0.010	<0.010	0.011	0.013	0.013	0.011	0.019	0.021	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.047	<0.010	0.013	0.014	
Lead*	0.001 - 0.001	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.0														

Table 3.3-1. Conventional water chemistry and total and dissolved metals (mg/L), Meadowbank study lakes and Baker Lake, 2011.

Lake & Basin		TPN				TPS						Second Portage Lake									
Area-Replicate ID		TPN-42	TPN-43	TPN-44	TPN-45	TPS-27	TPS-28	TPS-29	TPS-30	TPS-31	TPS-32	SP-34	SP-35	SP-36	SP-37	SP-38	SP-39	SP-40	SP-41	SP-42	SP-43
Depth (m)	CCME (2007)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Date	Guideline ¹	21-Nov-11	21-Nov-11	20-Dec-11	20-Dec-11	27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11	18-Sep-11	3-May-11	3-May-11	26-Jul-11	26-Jul-11	18-Aug-11	18-Aug-11	14-Sep-11	14-Sep-11	23-Nov-11	23-Nov-11
CONVENTIONAL PARAMETERS																					
Physical Tests (mg/L)																					
Conductivity (µS/cm)	NG	25	25	27	23	20.5	20.8	17.5	17.8	17.9	20.1	30.4	29.2	21.2	26.0	24.2	24.5	24.7	25.4	30	30
Hardness	NG	7.24	7.32	9.41	7.70	6.72	6.61	6.37	6.55	6.18	6.38	11.6	11.5	10.4	10.0	9.71	9.53	9.30	9.58	10.5	10.6
pH	6.5 - 9.0	6.88	6.93	6.87	6.92	7.11	7.10	7.13	7.12	7.13	7.12	7.04	7.06	7.20	7.31	7.31	7.30	7.25	7.23	7.14	7.20
Total Suspended Solids	NG	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0
Total Dissolved Solids	NG	14.0	16.0	14.0	14.0	14.0	14.0	<5.0	6.0	12.0	12.0	18.0	16.0	14.0	16.0	14.0	12.0	14.0	14.0	18.0	18.0
Turbidity (NTU)	NG	0.72	0.58	0.67	0.19	0.21	0.20	0.28	0.26	0.34	0.32	0.24	0.21	0.27	0.29	0.36	1.06	0.39	0.47	0.74	0.93
Anions & Nutrients (mg/L)																					
Alkalinity - Bicarbonate	NG	8.0	8.0	9.2	8.2	8.3	8.4	7.7	7.7	7.7	7.8	13.1	12.8	10.8	12.8	11.9	12.0	11.9	12.3	12.4	12.4
Alkalinity - Carbonate	NG	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
Alkalinity - Hydroxide	NG	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Alkalinity - Total	NG	6.5	6.6	7.6	6.7	6.8	6.9	6.3	6.3	6.3	6.4	10.7	10.5	8.8	10.5	9.7	9.8	9.8	10.1	10.1	10.1
Ammonia (as N) ²	2.61 - 8.24	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.018
Bromide	NG	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	NG	0.58	0.60	0.60	0.69	0.52	0.54	0.51	0.51	0.51	0.52	0.68	0.63	0.50	0.50	0.50	0.49	0.50	0.50	0.55	0.54
Fluoride	NG	0.056	0.056	0.064	0.073	0.060	0.060	0.059	0.059	0.058	0.059	0.077	0.072	0.056	0.058	0.061	0.059	0.062	0.060	0.059	0.063
Nitrate (as N)	2.9	0.0366	0.0378	0.0408	0.0441	0.0195	0.0237	0.0255	0.0251	0.0235	0.0244	0.0337	0.0245	0.0108	0.0076	<0.0050	<0.0050	<0.0050	<0.0050	0.0062	0.0052
Nitrite (as N)	0.060	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	NG	0.094	0.102	0.099	0.069	<0.20	<0.20	0.134	0.112	0.072	0.066	<0.20	<0.20	<0.20	<0.20	0.136	0.095	0.073	0.076	0.092	0.107
Total Phosphate (as P)	0.004	0.0039	0.0038	0.0071	0.0050	<0.0020	0.0116	0.0034	0.0051	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0053	0.0055	0.0055	<0.0020	0.0046	0.0045
Silicate (as SiO ₂)	NG	0.135	0.131	0.136	0.174	0.228	0.230	0.199	0.200	0.162	0.160	-	-	0.485	0.524	0.499	0.485	0.380	0.454	0.529	0.503
Sulphate (SO ₄)	NG	3.19	3.22	3.43	3.97	2.59	2.84	2.72	2.72	2.75	2.78	2.56	2.45	2.20	2.25	2.20	2.19	2.34	2.35	2.74	2.72
ORGANIC / INORGANIC CARBON (mg/L)																					
Dissolved Organic Carbon	NG	2.1	2.1	1.5	1.0	1.5	1.4	1.7	1.9	1.7	1.7	2.0	2.0	1.9	2.1	1.3	2.3	2.5	1.7	2.2	2.1
Total Organic Carbon	NG	2.3	2.3	1.6	1.3	1.6	1.4	2.0	2.0	1.7	2.3	2.1	2.2	2.0	2.7	2.0	2.3	2.5	1.8	2.2	2.3
PLANT PIGMENTS (µg/L)																					
Chlorophyll-a ^{##}	NG	0.67	0.44	0.38	0.30	0.49	0.39	0.68	0.80	0.51	0.57	<0.10	<0.10	0.37	0.28	0.87	0.94	0.61	0.72	0.52	0.34
Phaeophytin-a	NG	0.32	0.33	0.28	0.25	0.14	0.10	0.23	0.19	0.26	0.27	<0.10	<0.10	0.10	0.10	0.23	0.26	0.21	0.24	0.29	0.26
TOTAL METALS (mg/L)																					
Aluminum ³	0.100 - 0.100	0.0358	0.0191	<0.0050	0.0083	0.0069	0.0078	0.0093	0.0089	0.0113	0.0101	0.0066	0.0063	0.0101	0.0117	0.0104	0.0108	0.0161	0.0186	0.0374	0.0134
Antimony	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic	0.0050	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.00041	0.00031	0.00037	0.00034	0.00035	0.00032	0.00035	0.00031	0.00025	0.00025
Barium	NG	0.00289	0.00295	0.00359	0.00292	0.00262	0.00278	0.00266	0.00253	0.00270	0.00268	0.00353	0.00315	0.00249	0.00251	0.00210	0.00207	0.00242	0.00247	0.00243	0.00238
Beryllium	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bismuth	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Boron	NG	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium*	2.4E-06 - 6.7E-06	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000015
Calcium	NG	1.82	1.91	2.35	2.19	1.62	1.58	1.66	1.66	1.56	1.58	2.93	2.93	2.66	2.57	2.93	2.75	2.50	2.82	2.98	2.94
Cesium	NG	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Chromium ⁴	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Copper*	0.002 - 0.002	0.00042	0.00043	0.00034	0.00038	0.00060	0.00043	0.00039	0.00048	0.00046	0.00041	0.00067	0.00080	0.00076	0.00075	0.00072	0.0128	0.00075	0.00080	0.00066	0.00066
Iron	0.3	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.011	0.016	0.014	<0.010	0.015	0.016	0.022	0.027	0.031	0.034	0.010	0.017
Lead*	0.001 - 0.001	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090															

Table 3.3-1. Conventional water chemistry and total and dissolved metals (mg/L), Meadowbank study lakes and Baker Lake, 2011

[illegible]

Notes:

¹CCME (Canadian Council of Ministers of the Environment) Canadian Water Quality Guidelines for the Protection of Aquatic Life, 1999, updated December 2007

²Ammonia guideline is for 10°C and is pH dependent.

³Aluminum guideline is pH dependent.

NG = no guideline.

⁴Chromium guideline is for Cr VI. *Italicized numbers are below detection limits.*

⁵Guidelines have not yet been made for "Dissolved Metals," thus were screened against CCME guidelines for "Total Metals."

*Cadmium, copper, lead and nickel guidelines are hardness dependent.

^{##}Chlorophyll-a samples reported for *INUG* in *May* are an average of 6 samples from *INUG*.

Table 3.3-1. Conventional water chemistry and total and dissolved metals (mg/L), Meadowbank study lakes and Baker Lake, 2011

[illegible]

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*Cadmium, copper, lead and nickel guidelines are hardness dependent.

^{##}Chlorophyll-a samples reported for *INUG* in *May* are an average of 6 samples from *INUG*.

Table 3.3-1. Conventional water chemistry and total and dissolved metals (mg/L), Meadowbank study lakes and Baker Lake, 2011.

Lake & Basin		Pipedream Lake				Barge Dock						Baker Lake						Akilahaarjuk Point			
Area-Replicate ID		PDL-17	PDL-18	PDL-19	PDL-20	BBD-15	BBD-16	BBD-17	BBD-18	BBD-19	BBD-20	BPJ-15	BPJ-16	BPJ-17	BPJ-18	BPJ-19	BPJ-20	BAP-15	BAP-16	BAP-17	BAP-18
Depth (m)	CCME (2007)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Date	Guideline ¹	11-Aug-11	11-Aug-11	15-Sep-11	15-Sep-11	25-Jul-11	25-Jul-11	21-Aug-11	21-Aug-11	19-Sep-11	19-Sep-11	25-Jul-11	25-Jul-11	20-Aug-11	20-Aug-11	20-Sep-11	20-Sep-11	25-Jul-11	25-Jul-11	21-Aug-11	21-Aug-11
CONVENTIONAL PARAMETERS																					
Physical Tests (mg/L)																					
Conductivity (µS/cm)	NG	20.2	20.2	20.6	20.8	30.1	30.4	57.4	57.8	26.7	31.2	27.2	37.1	55.7	69.7	29.0	28.8	70.9	66.2	93.6	91.5
Hardness	NG	8.10	8.15	7.71	7.61	10.6	10.5	12.1	12.9	10.2	10.5	10.5	10.7	12.3	13.4	10.4	10.1	14.1	14.0	15.7	15.3
pH	6.5 - 9.0	7.23	7.23	7.27	7.27	7.23	7.20	7.32	7.31	7.31	7.28	7.24	7.26	7.31	7.31	7.30	7.29	7.22	7.26	7.16	7.32
Total Suspended Solids	NG	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<1.0	1.1	<2.0	<2.0	<2.0	<2.0	1.4	<1.0	<2.0	<2.0	<2.0	<2.0	<1.0	1.1
Total Dissolved Solids	NG	12.0	16.0	12.0	14.0	22.0	22.0	26.0	30.0	16.0	18.0	20.0	26.0	30.0	38.0	16.0	18.0	46.0	44.0	48.0	48.0
Turbidity (NTU)	NG	0.24	0.24	0.21	0.26	0.26	0.36	0.52	0.48	0.35	0.33	0.38	0.28	0.53	0.53	0.36	0.32	0.29	0.30	0.30	0.31
Anions & Nutrients (mg/L)																					
Alkalinity - Bicarbonate	NG	10.0	10.1	10.4	10.5	12.6	12.6	12.9	13.0	12.7	12.8	12.6	12.6	12.6	12.6	12.7	12.8	12.2	12.4	12.3	12.3
Alkalinity - Carbonate	NG	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
Alkalinity - Hydroxide	NG	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Alkalinity - Total	NG	8.2	8.3	8.5	8.6	10.3	10.4	10.6	10.6	10.4	10.5	10.3	10.4	10.3	10.3	10.4	10.5	10.0	10.1	10.1	10.1
Ammonia (as N) ²	2.61 - 8.24	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010
Bromide	NG	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	NG	0.54	0.54	0.55	0.55	2.38	2.35	10.3	10.3	1.69	2.84	1.72	4.48	9.90	14.1	2.35	2.30	13.1	11.8	20.2	18.7
Fluoride	NG	0.034	0.034	0.035	0.036	0.052	0.052	0.052	0.056	0.049	0.050	0.053	0.055	0.055	0.053	0.050	0.051	0.049	0.050	0.055	0.056
Nitrate (as N)	2.9	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	0.0097	<0.0050	<0.0050	0.0156	0.0147	0.0104	0.0102	<0.0050	0.0051	0.0130	0.0128	0.0101	0.0079	<0.0050	<0.0050
Nitrite (as N)	0.060	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	NG	0.118	0.123	0.066	0.092	<0.20	<0.20	0.235	0.240	0.136	0.140	<0.20	<0.20	<0.050	0.182	0.128	0.137	<0.20	<0.20	0.184	0.164
Total Phosphate (as P)	0.004	0.0041	0.0068	<0.0020	0.0058	0.0056	0.0439	0.0093	0.0083	0.0096	0.0069	0.0059	0.0056	0.0108	0.0095	0.0083	0.0076	0.0073	0.0059	0.0068	0.0092
Silicate (as SiO ₂)	NG	0.293	0.284	0.312	0.285	0.272	0.297	0.263	0.262	0.269	0.277	0.290	0.290	0.262	0.252	0.278	0.276	0.309	0.311	0.244	0.248
Sulphate (SO ₄)	NG	1.43	1.43	1.48	1.49	0.75	0.76	1.89	2.68	0.68	0.86	0.67	1.06	1.82	2.41	0.76	0.75	2.22	2.04	3.31	3.08
ORGANIC / INORGANIC CARBON (mg/L)																					
Dissolved Organic Carbon	NG	1.7	2.3	2.3	2.2	3.2	3.2	3.8	3.8	3.6	3.1	3.4	3.3	3.8	3.7	3.6	3.5	3.2	3.1	3.8	3.7
Total Organic Carbon	NG	2.1	2.3	2.4	2.4	3.3	3.2	3.9	3.7	3.7	3.3	3.3	3.3	3.8	4.0	3.5	3.5	3.2	3.2	3.8	3.9
PLANT PIGMENTS (µg/L)																					
Chlorophyll-a ^{##}	NG	-	-	0.61	0.57	0.95	1.40	2.03	2.18	1.15	1.19	1.02	0.88	2.08	2.00	1.10	1.12	2.03	1.11	1.87	1.92
Phaeophytin-a	NG	-	-	0.28	0.26	0.39	0.38	0.59	0.68	0.50	0.45	0.42	0.39	0.59	0.54	0.42	0.40	0.45	0.34	0.62	0.61
TOTAL METALS (mg/L)																					
Aluminum ³	0.100 - 0.100	0.0057	0.0064	0.0058	0.0064	0.0130	0.0129	0.0266	0.0295	0.0138	0.0159	0.0135	0.0100	0.0352	0.0428	0.0165	0.0170	0.0194	0.0144	0.0176	0.0200
Antimony	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic	0.0050	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.00020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Barium	NG	0.00201	0.00220	0.00184	0.00194	0.0183	0.0185	0.0190	0.0190	0.0195	0.0193	0.0159	0.0171	0.0184	0.0187	0.0195	0.0203	0.0182	0.0159	0.0171	0.0173
Beryllium	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bismuth	NG	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Boron	NG	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium*	2.4E-06 - 6.7E-06	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Calcium	NG	2.07	2.13	1.94	2.04	2.48	2.57	2.83	2.82	2.55	2.56	2.16	2.26	3.53	3.52	2.53	2.62	2.84	2.45	3.34	3.17
Cesium	NG	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010				

Table 3.3- 2. Screening process for water quality parameters, Meadowbank study lakes.

CONVENTIONALS				TOTAL METALS				DISSOLVED METALS			
Screening Level	1	2	3	Screening Level	1	2	3	Screening Level	1	2	3
Screening Rule ¹	>DL ≥ 10% frequency	C-I > 0.1 frequency	Pattern = Activity	Screening Rule ¹	>DL ≥ 10% frequency	C-I > 0.1 frequency	Pattern = Activity	Screening Rule ¹	>DL ≥ 10% frequency	C-I > 0.1 frequency	Pattern = Activity
Conductivity	Figure 3.3-1			Aluminum	Figure 3.3-17			Aluminum	Figure 3.3-32		
Hardness	Figure 3.3-2			Antimony			*	Antimony			*
pH	Figure 3.3-3			Arsenic	Figure 3.3-18			Arsenic	Figure 3.3-33		
TSS	Figure 3.3-4			Barium	Figure 3.3-19			Barium	Figure 3.3-34		
TDS	Figure 3.3-5			Beryllium			*	Beryllium			*
B-Alkalinity	Figure 3.3-6			Boron			*	Boron			*
C-Alkalinity			*	Cadmium			*	Cadmium			*
T-Alkalinity	Figure 3.3-7			Calcium	Figure 3.3-20			Chromium			*
Ammonia-N	Figure 3.3-8			Chromium			Figure 3.3-21	Copper	Figure 3.3-35		
Chloride	Figure 3.3-9			Copper	Figure 3.3-22			Iron			*
Nitrate-N	Figure 3.3-10			Iron	Figure 3.3-23			Lead			*
Nitrite-N			*	Lead			*	Lithium			*
TKN	Figure 3.3-11			Lithium			*	Manganese	Figure 3.3-36		
T-phosphorous	Figure 3.3-12			Magnesium	Figure 3.3-24			Mercury			*
Ortho-phosphate			*	Manganese	Figure 3.3-25			Molybdenum	Figure 3.3-37		
Reactive silica	Figure 3.3-13			Mercury			*	Nickel			*
Sulphate	Figure 3.3-14			Molybdenum			*	Selenium			*
DOC	Figure 3.3-15			Nickel			Figure 3.3-26	Strontium	Figure 3.3-38		
TOC	Figure 3.3-16			Potassium	Figure 3.3-27			Thallium			*
				Selenium			*	Tin			*
				Sodium	Figure 3.3-28			Titanium			*
				Strontium	Figure 3.3-29			Uranium			*
				Thallium			*	Vanadium			*
				Tin			*	Zinc			*
				Titanium	Figure 3.3-30						
				Uranium			Figure 3.3-31				
				Vanadium			*				
				Zinc			*				

Notes: ¹ See text for further detail; * Plots for these parameters are presented in **Appendix E**.

Table 3.3- 3. Screening process for water quality parameters, Baker Lake.

CONVENTIONALS			TOTAL METALS			DISSOLVED METALS		
Screening Level	1	2	Screening Level	1	2	Screening Level	1	2
Screening Rule ¹	>DL ≥ 10% frequency	C-I > 0.05 frequency	Screening Rule ¹	>DL ≥ 10% frequency	C-I > 0.05 frequency	Screening Rule ¹	>DL ≥ 10% frequency	C-I > 0.05 frequency
Conductivity	Figure 3.3-39		Aluminum	Figure 3.3-56		Aluminum	Figure 3.3-69	
Hardness	Figure 3.3-40		Antimony		*	Antimony		*
pH	Figure 3.3-41		Arsenic		*	Arsenic		*
TSS	Figure 3.3-42		Barium	Figure 3.3-57		Barium	Figure 3.3-70	
TDS	Figure 3.3-43		Beryllium		*	Beryllium		*
B-Alkalinity	Figure 3.3-44		Boron		*	Boron		*
C-Alkalinity		*	Cadmium		*	Cadmium		*
T-Alkalinity	Figure 3.3-45		Calcium	Figure 3.3-58		Chromium		*
Ammonia-N	Figure 3.3-46		Chromium		*	Copper	Figure 3.3-71	
Chloride	Figure 3.3-47		Copper	Figure 3.3-59		Iron		*
Nitrate-N	Figure 3.3-48		Iron	Figure 3.3-60		Lead		*
Nitrite-N		*	Lead		Figure 3.3-61	Lithium		*
TKN	Figure 3.3-49		Lithium		*	Manganese	Figure 3.3-72	
T-phosphorous	Figure 3.3-50		Magnesium	Figure 3.3-62		Mercury		*
Ortho-phosphate	Figure 3.3-51		Manganese	Figure 3.3-63		Molybdenum		*
Reactive silica	Figure 3.3-52		Mercury		*	Nickel		*
Sulphate	Figure 3.3-53		Molybdenum		*	Selenium		*
DOC	Figure 3.3-54		Nickel		*	Strontium	Figure 3.3-73	
TOC	Figure 3.3-55		Potassium	Figure 3.3-64		Thallium		*
			Selenium		*	Tin		*
			Sodium	Figure 3.3-65		Titanium		*
			Strontium	Figure 3.3-66		Uranium		*
			Thallium		*	Vanadium		*
			Tin		Figure 3.3-67	Zinc		*
			Titanium	Figure 3.3-68				
			Uranium		*			
			Vanadium		*			
			Zinc		*			

Notes: ¹ See text for further detail; * Plots for these parameters are presented in **Appendix E**.

Figure 3.3- 1. Conductivity ($\mu\text{S}/\text{cm}$) in water samples from Meadowbank study lakes since 2006.

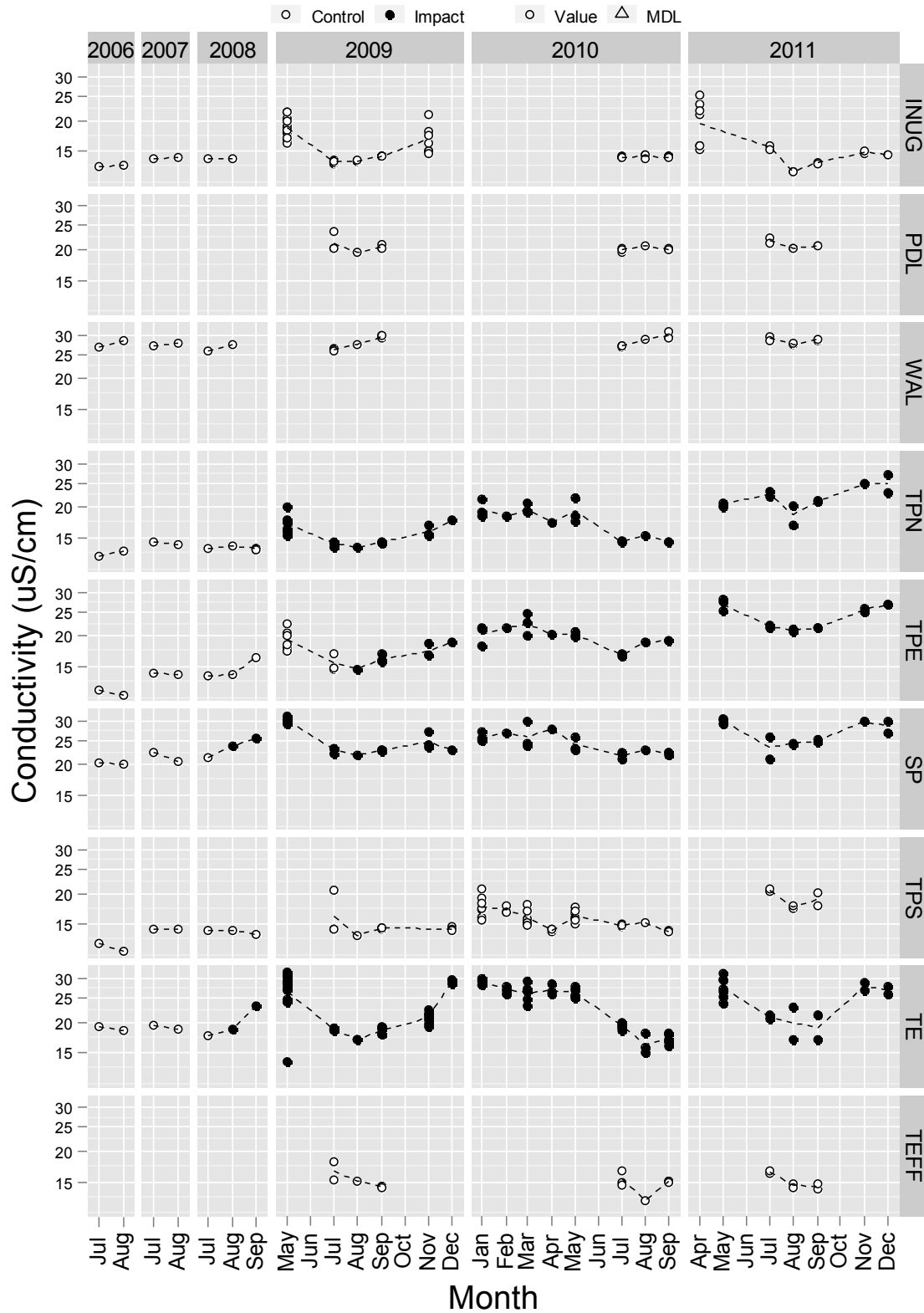


Figure 3.3- 2. Hardness (mg/L) in water samples from Meadowbank study lakes since 2006.

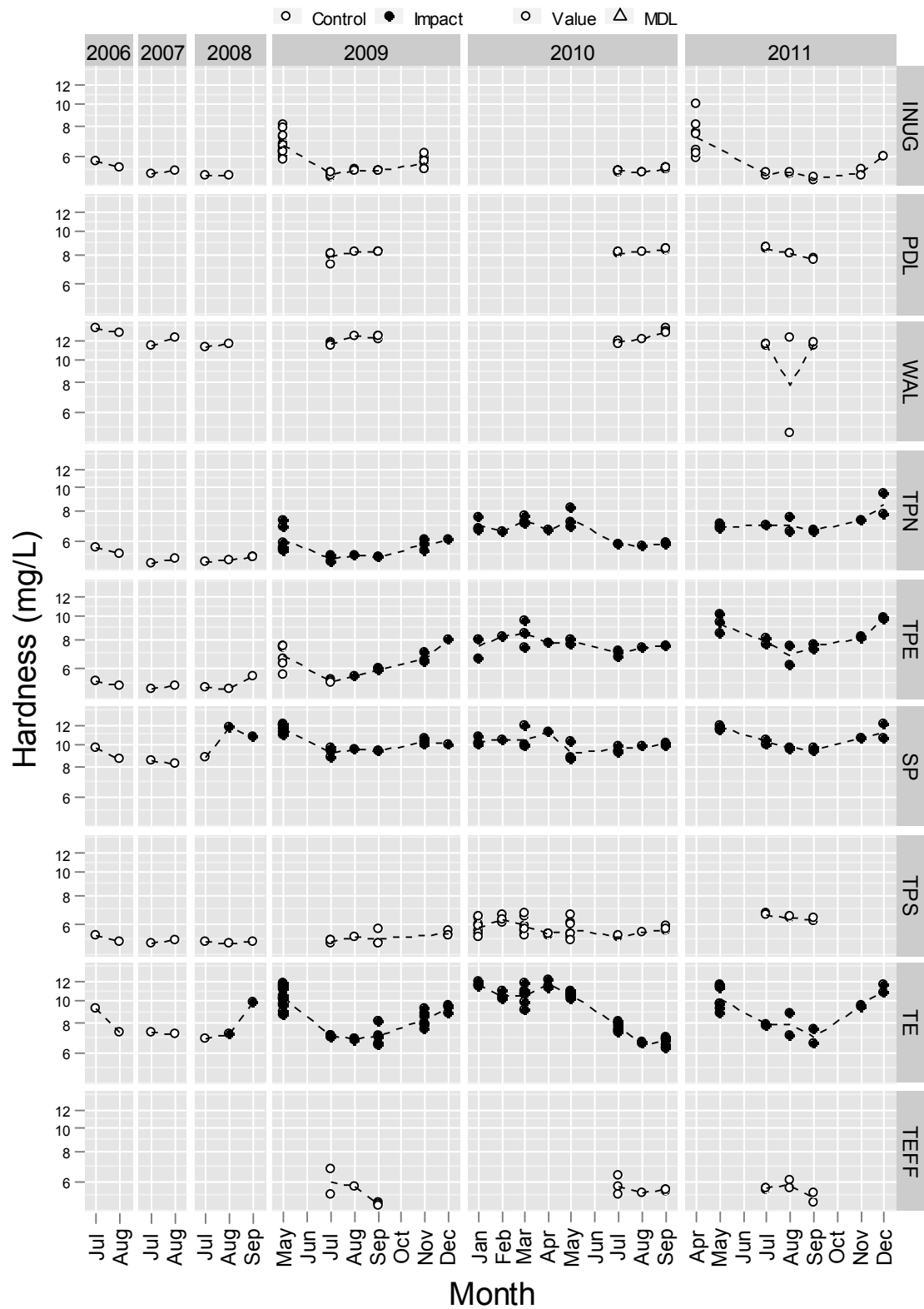


Figure 3.3- 3. pH in water samples from Meadowbank study lakes since 2006.

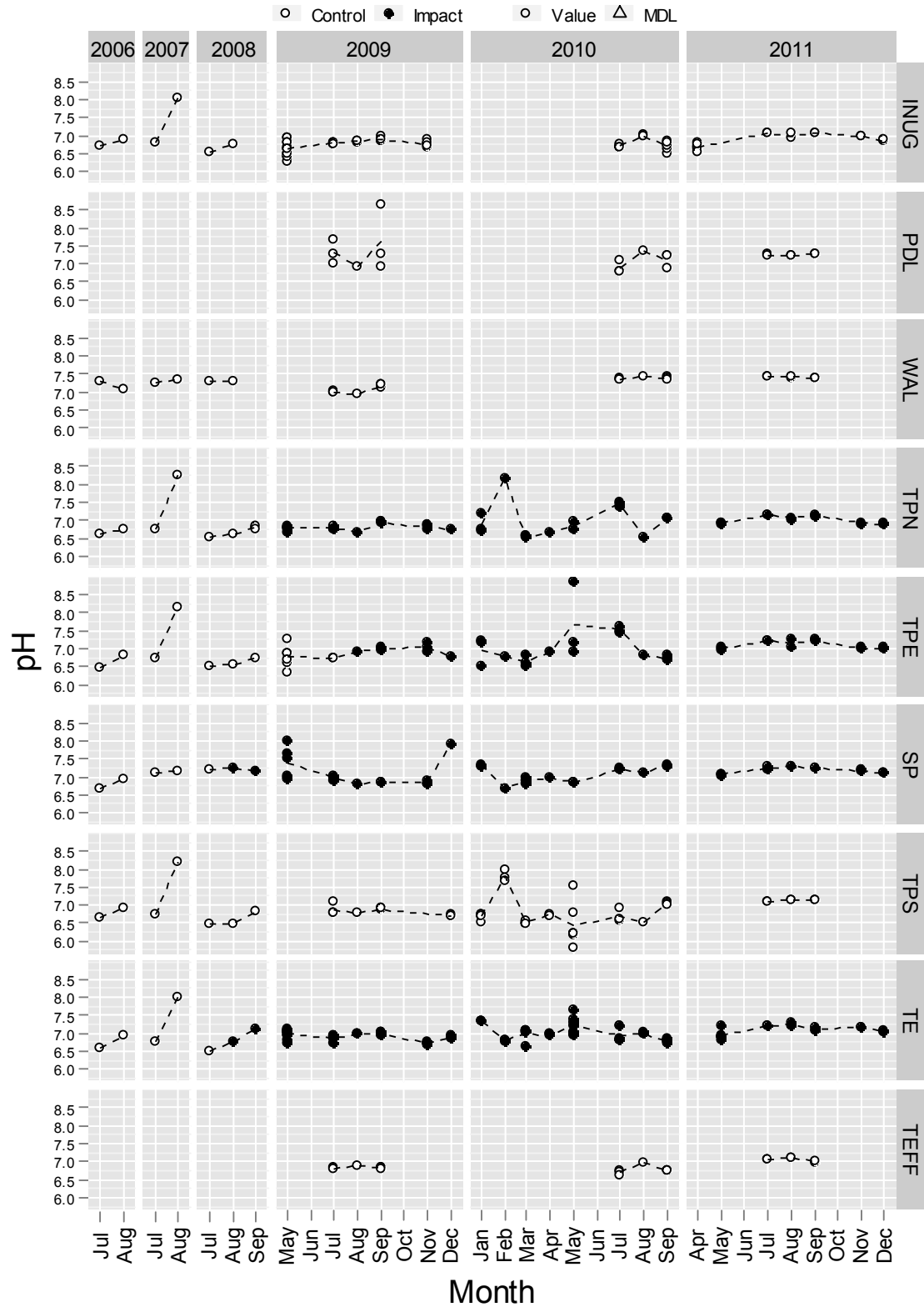


Figure 3.3- 4. Total Suspended Solids (TSS; mg/L) in water samples from Meadowbank study lakes since 2006.

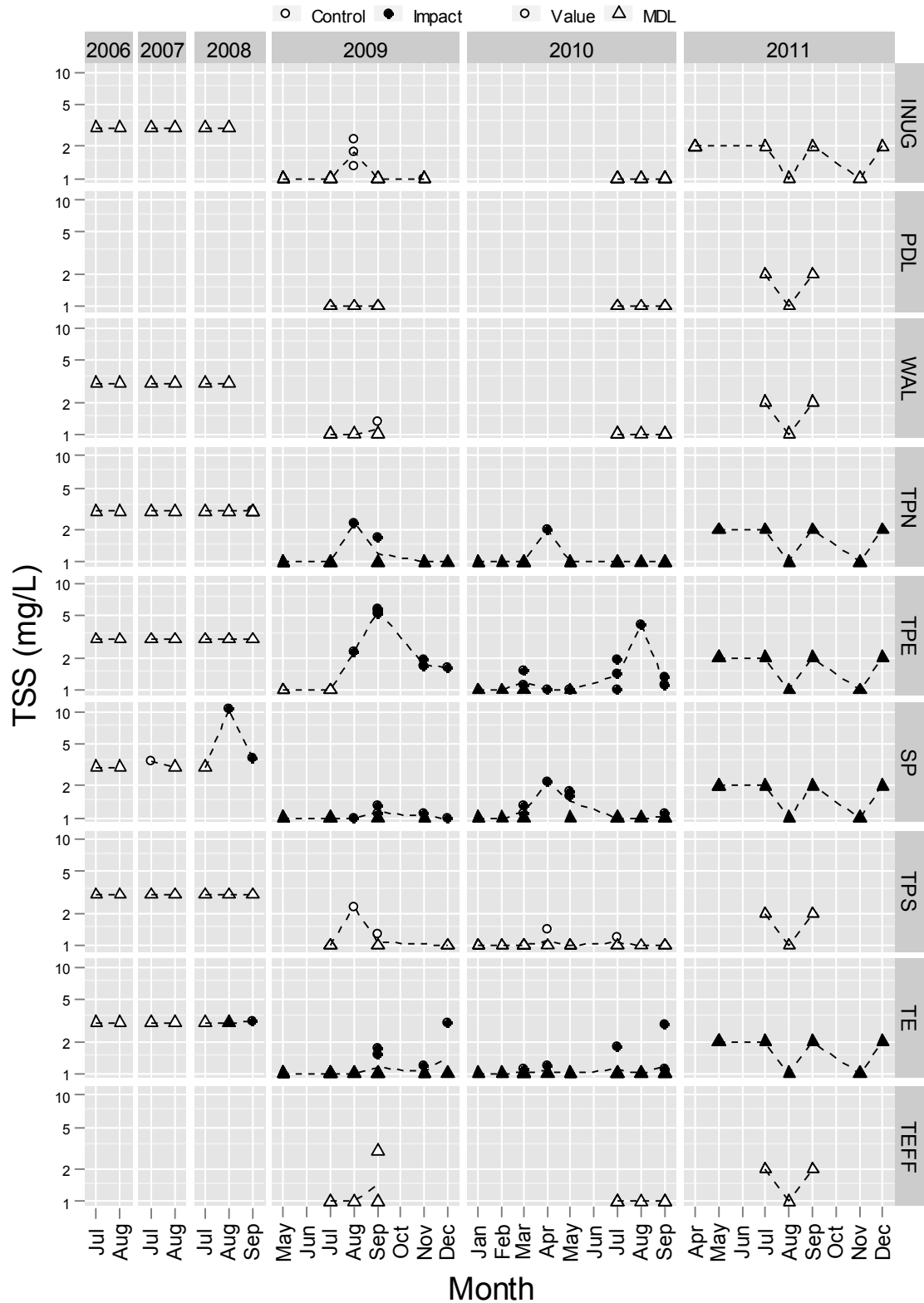


Figure 3.3- 5. Total Dissolved Solids (TDS; mg/L) in water samples from Meadowbank study lakes since 2006.

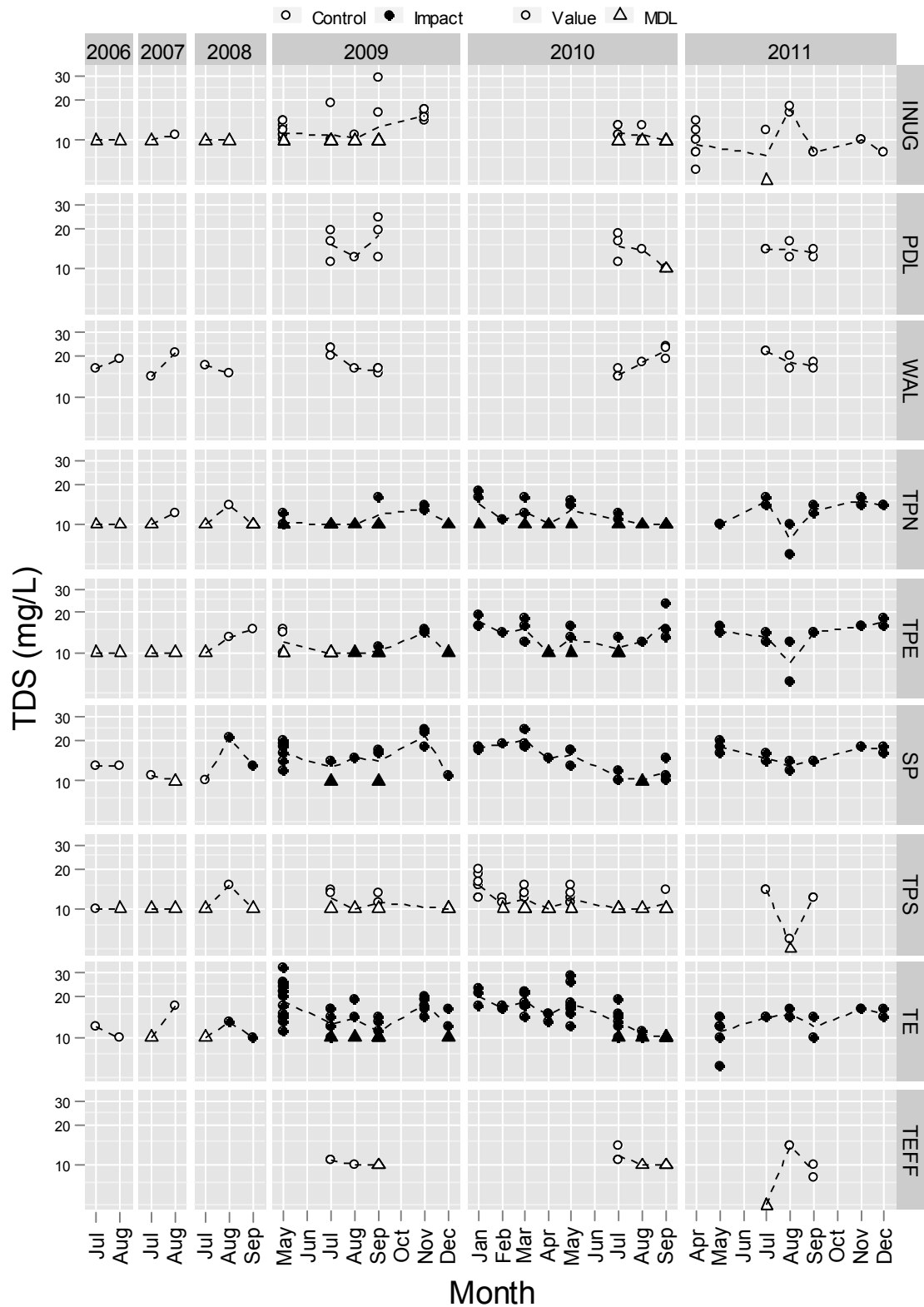


Figure 3.3- 6. Bicarbonate Alkalinity (mg/L) in water samples from Meadowbank study lakes since 2006.

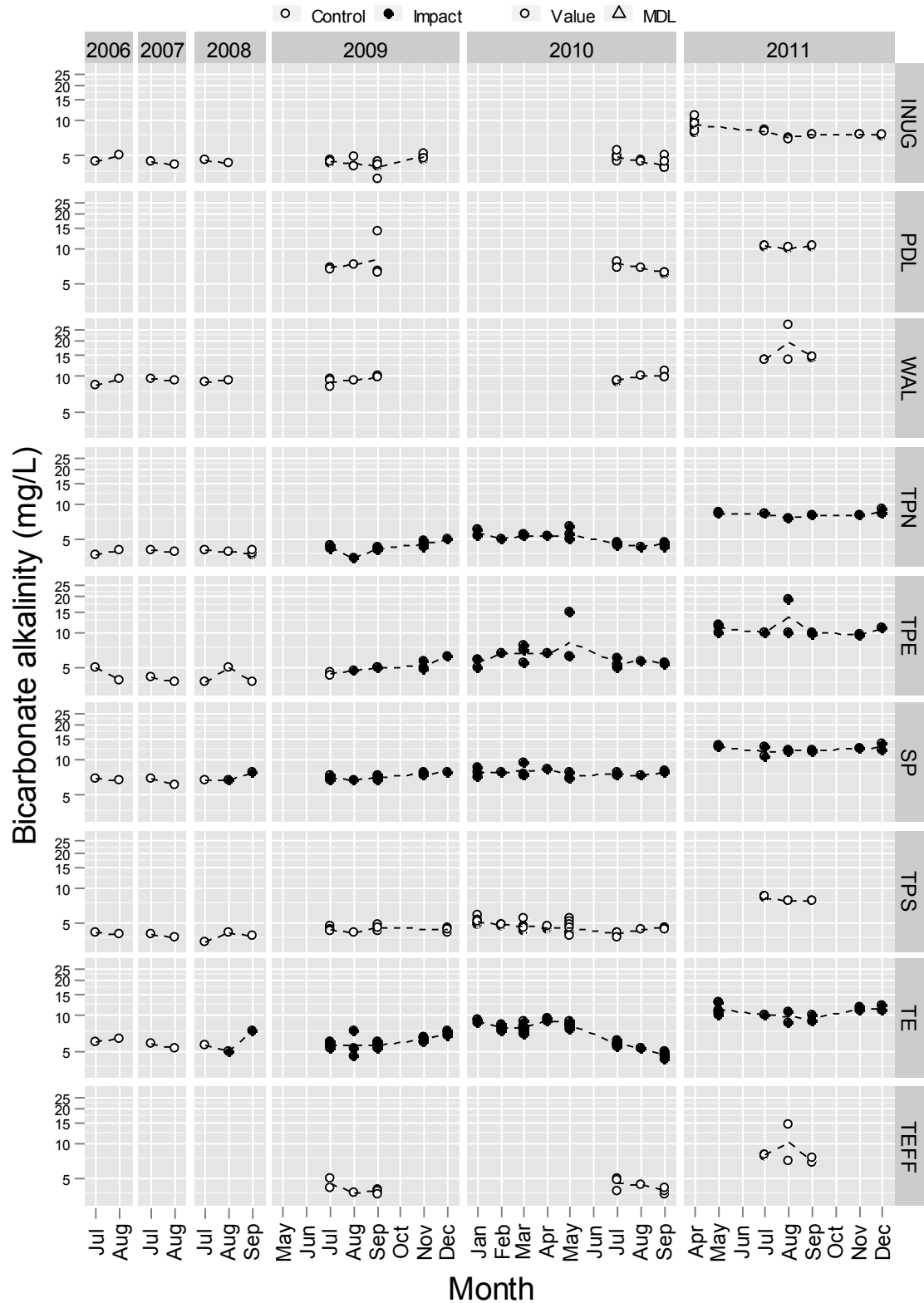


Figure 3.3- 7. Total Alkalinity (mg/L) in water samples from Meadowbank study lakes since 2006.

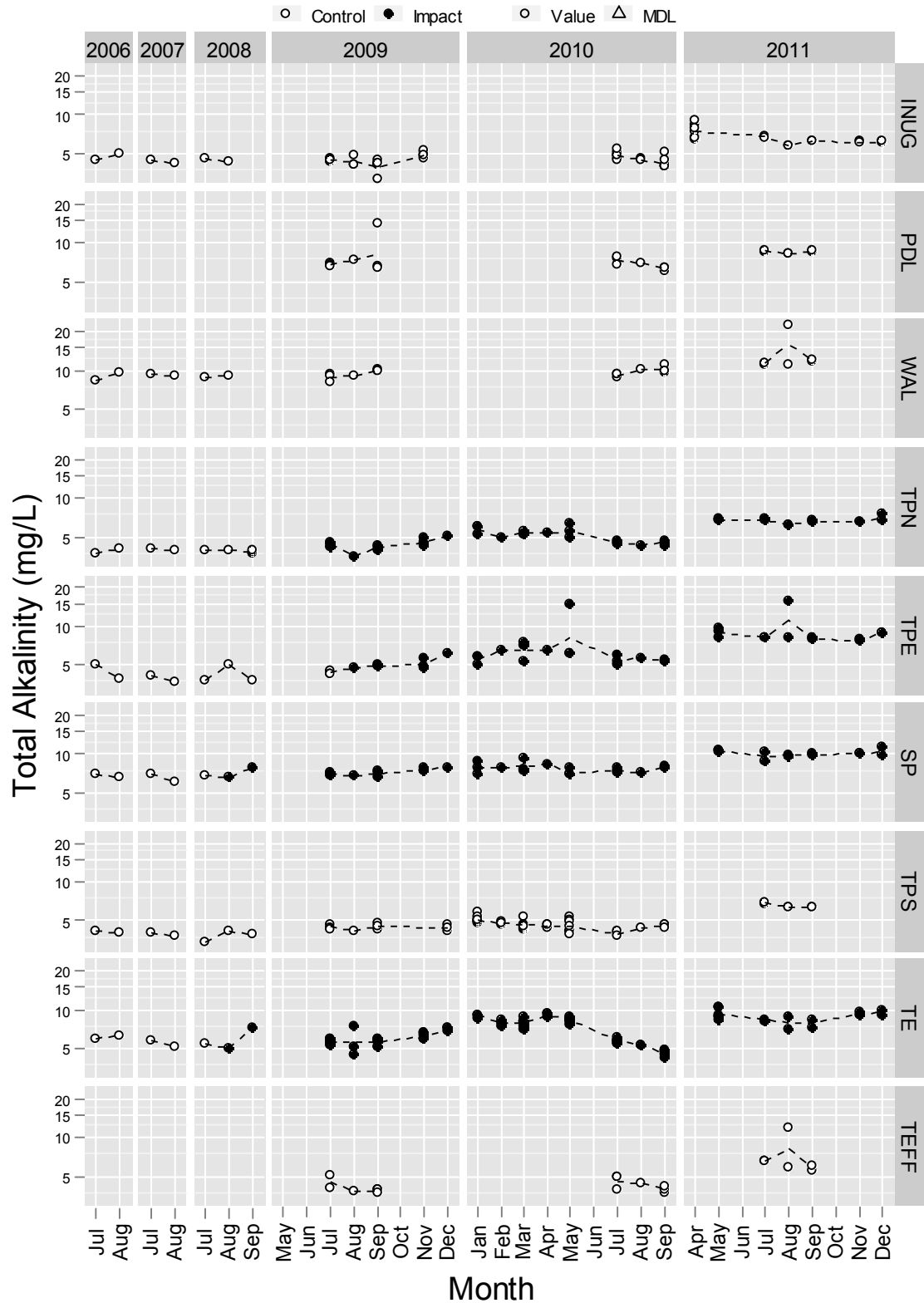


Figure 3.3- 8. Ammonia-N (mg/L) in water samples from Meadowbank study lakes since 2006.

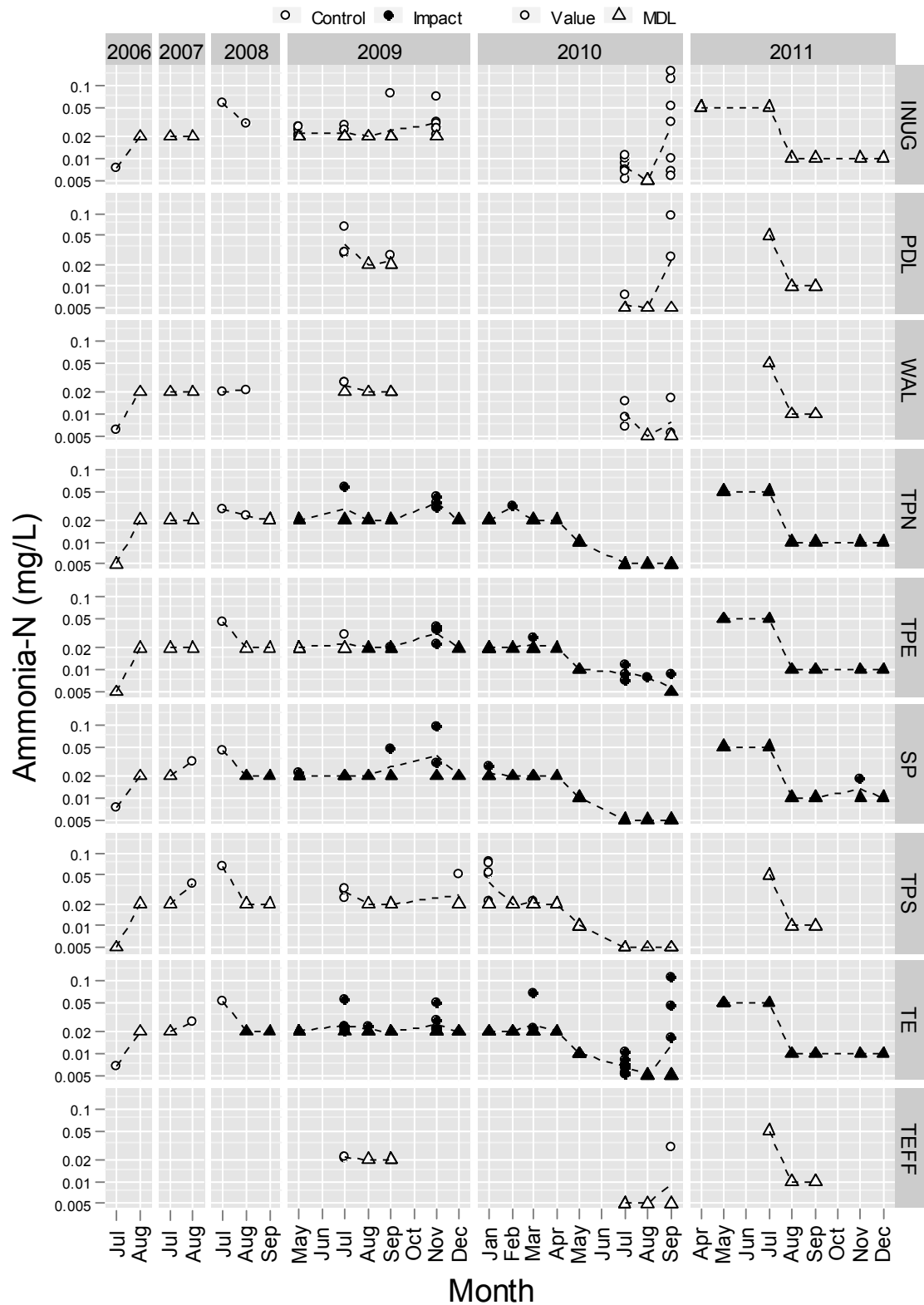


Figure 3.3- 9. Chloride (mg/L) in water samples from Meadowbank study lakes since 2006.

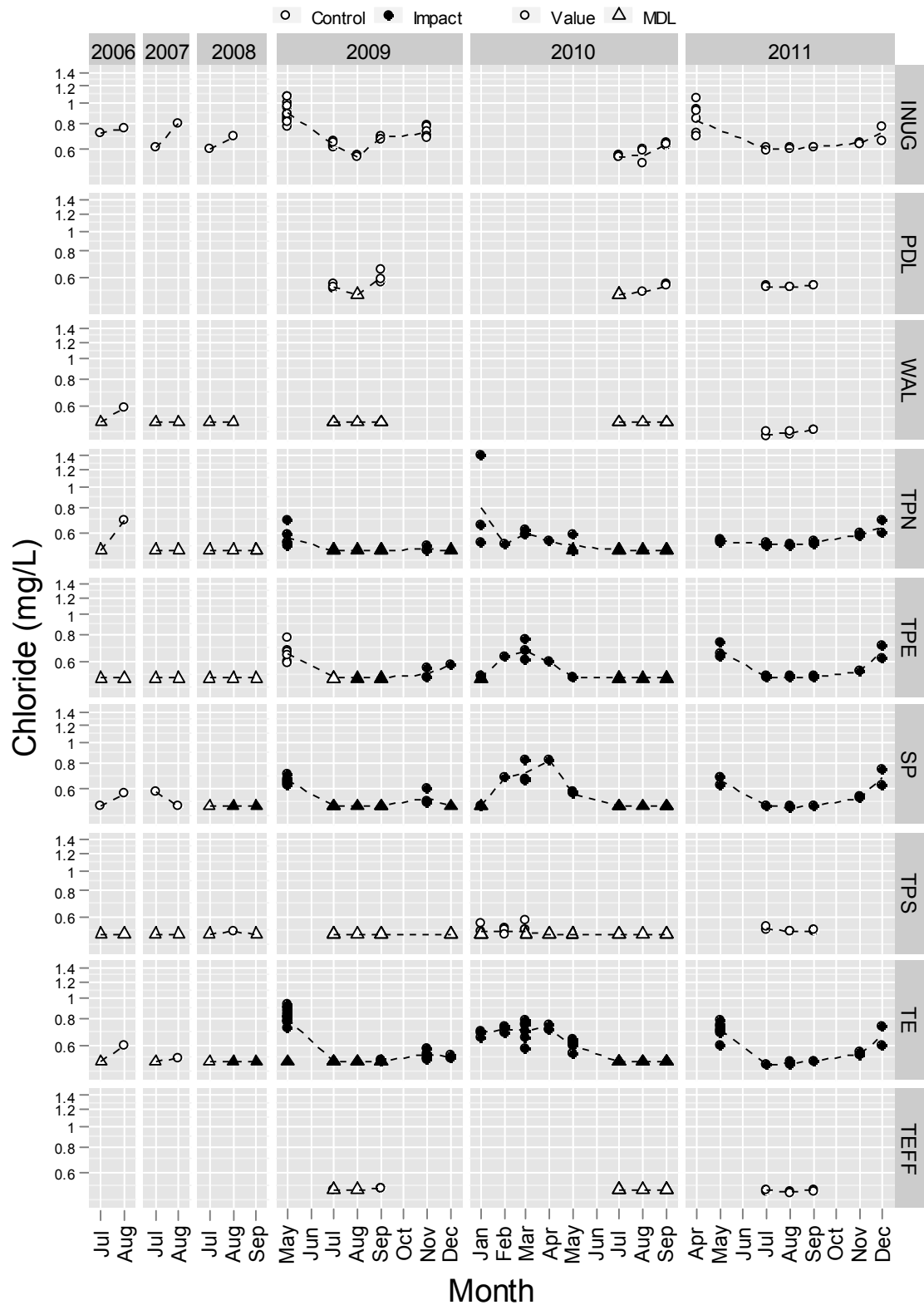


Figure 3.3- 10. Nitrate-N (mg/L) in water samples from Meadowbank study lakes since 2006.

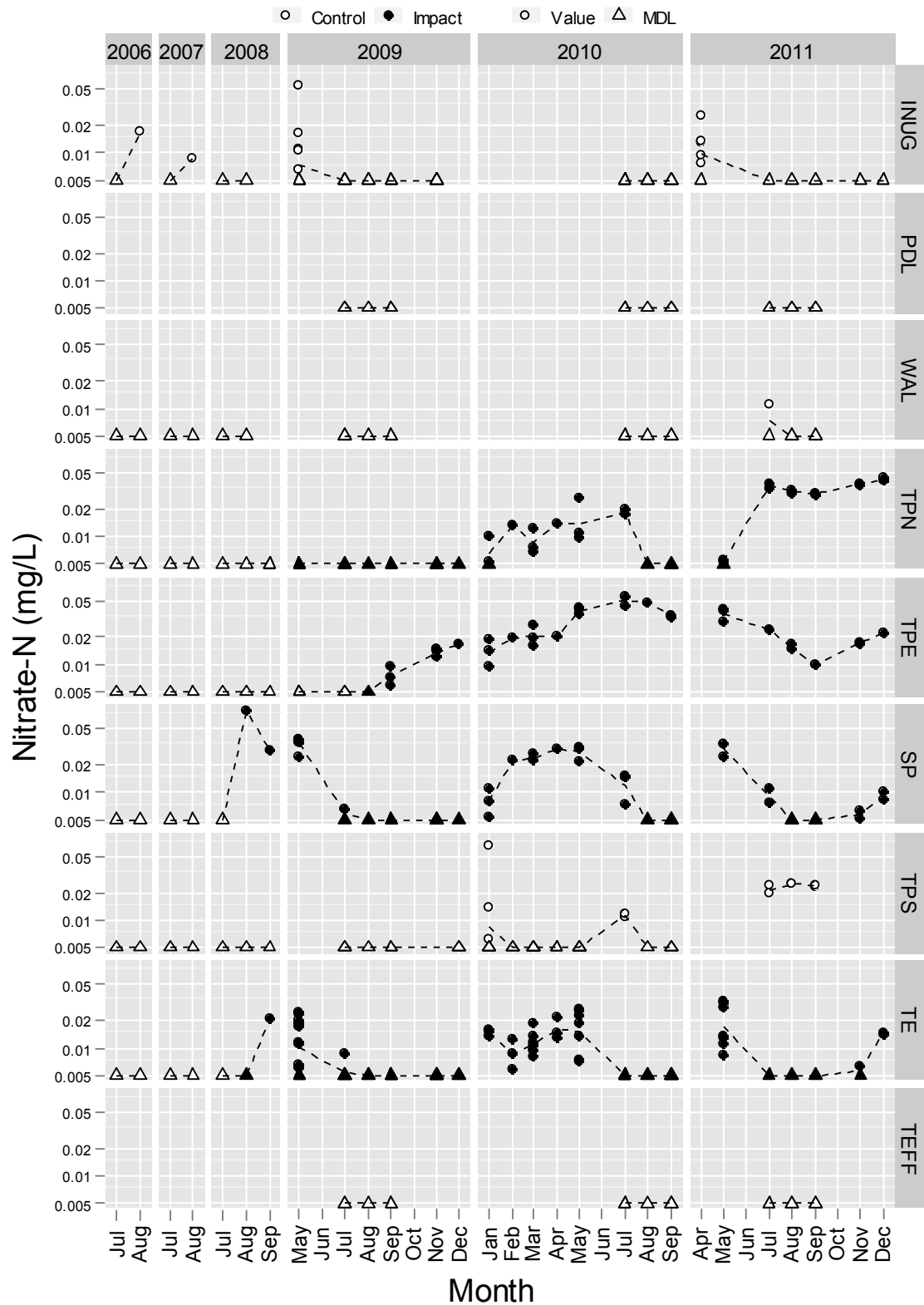


Figure 3.3- 11. Total Kjeldahl Nitrogen (TKN; mg/L) in water samples from Meadowbank study lakes since 2006.

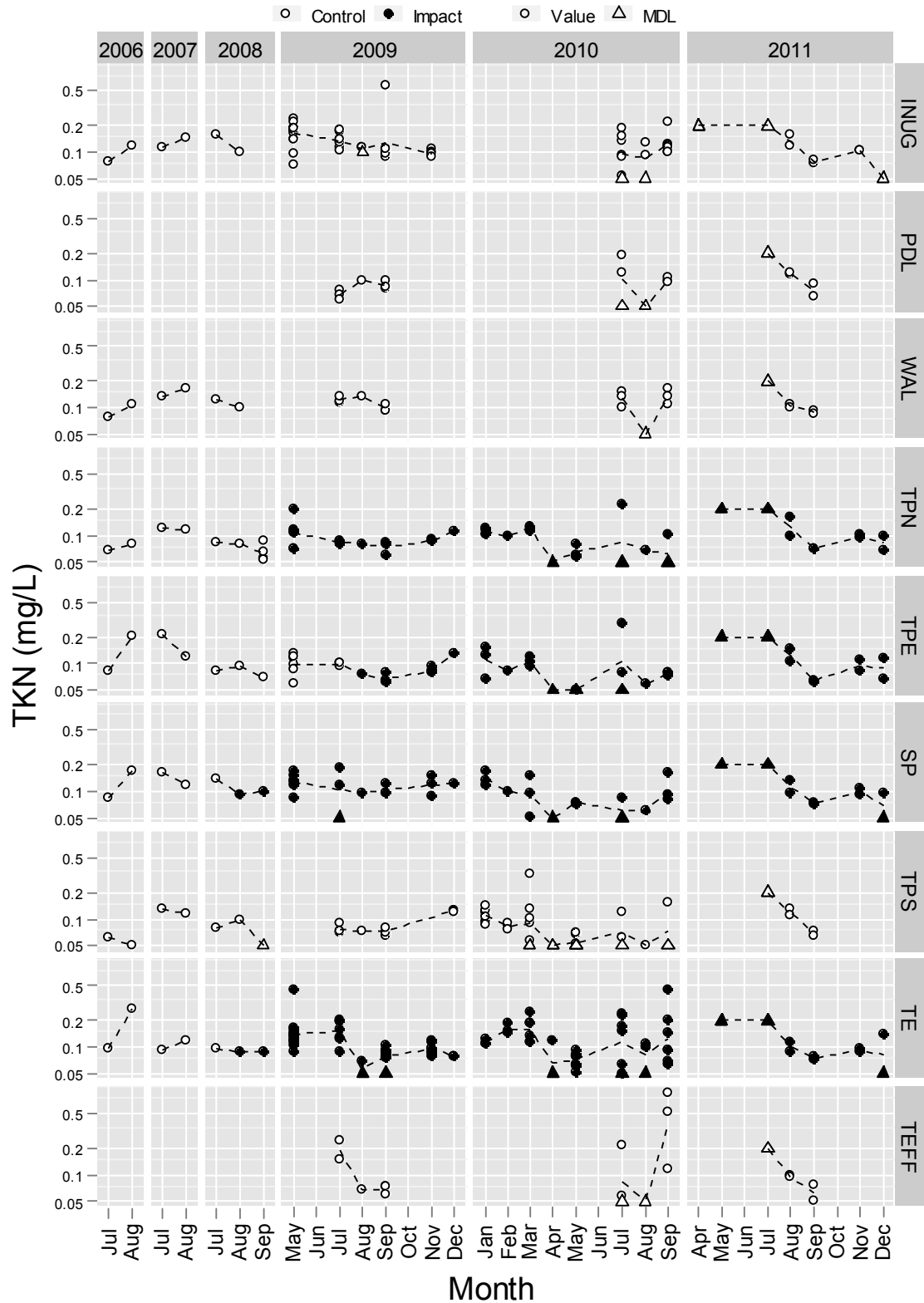


Figure 3.3- 12. Total Phosphorus (mg/L) in water samples from Meadowbank study lakes since 2006.

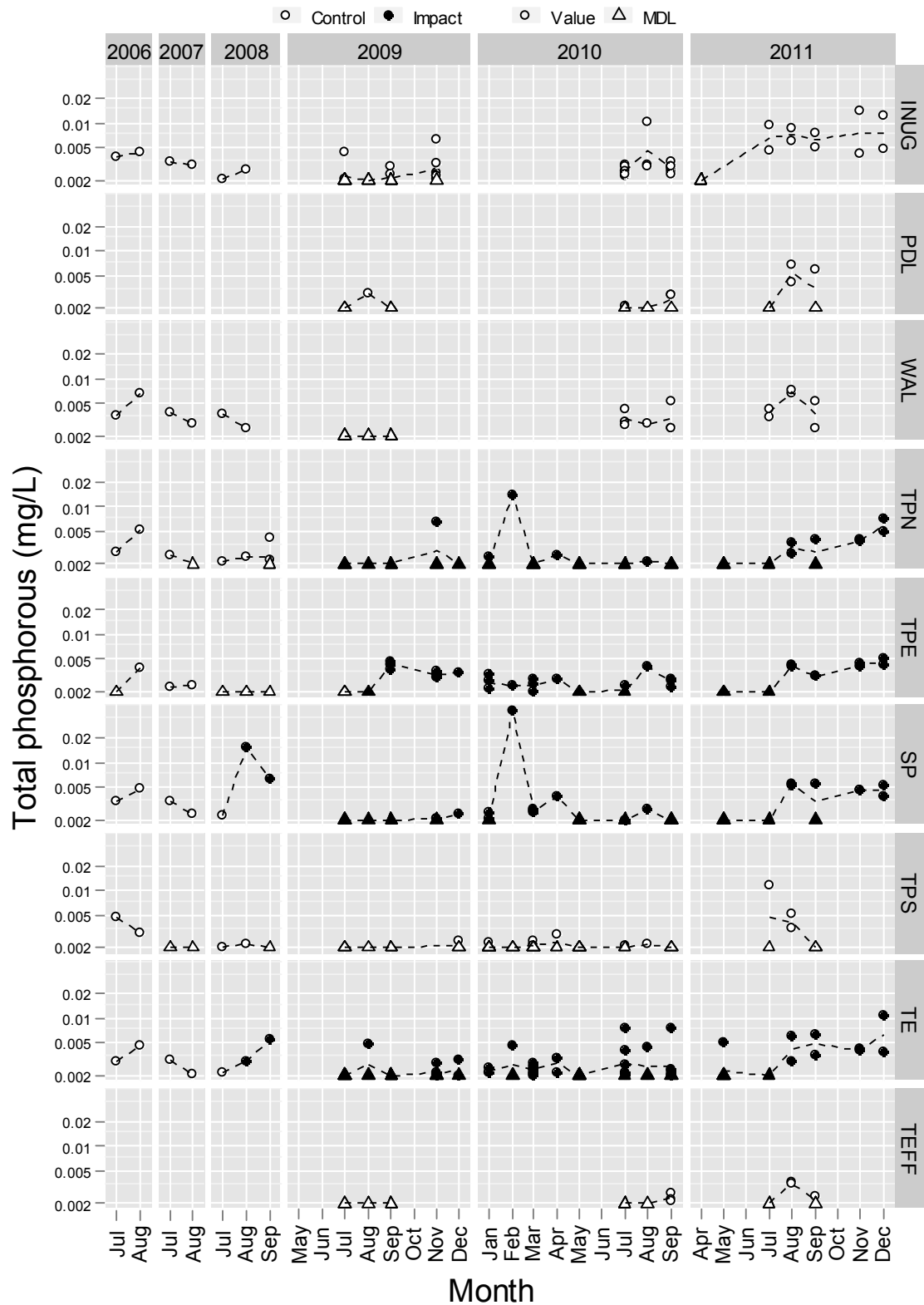


Figure 3.3- 13. Reactive Silica (mg/L) in water samples from Meadowbank study lakes since 2006.

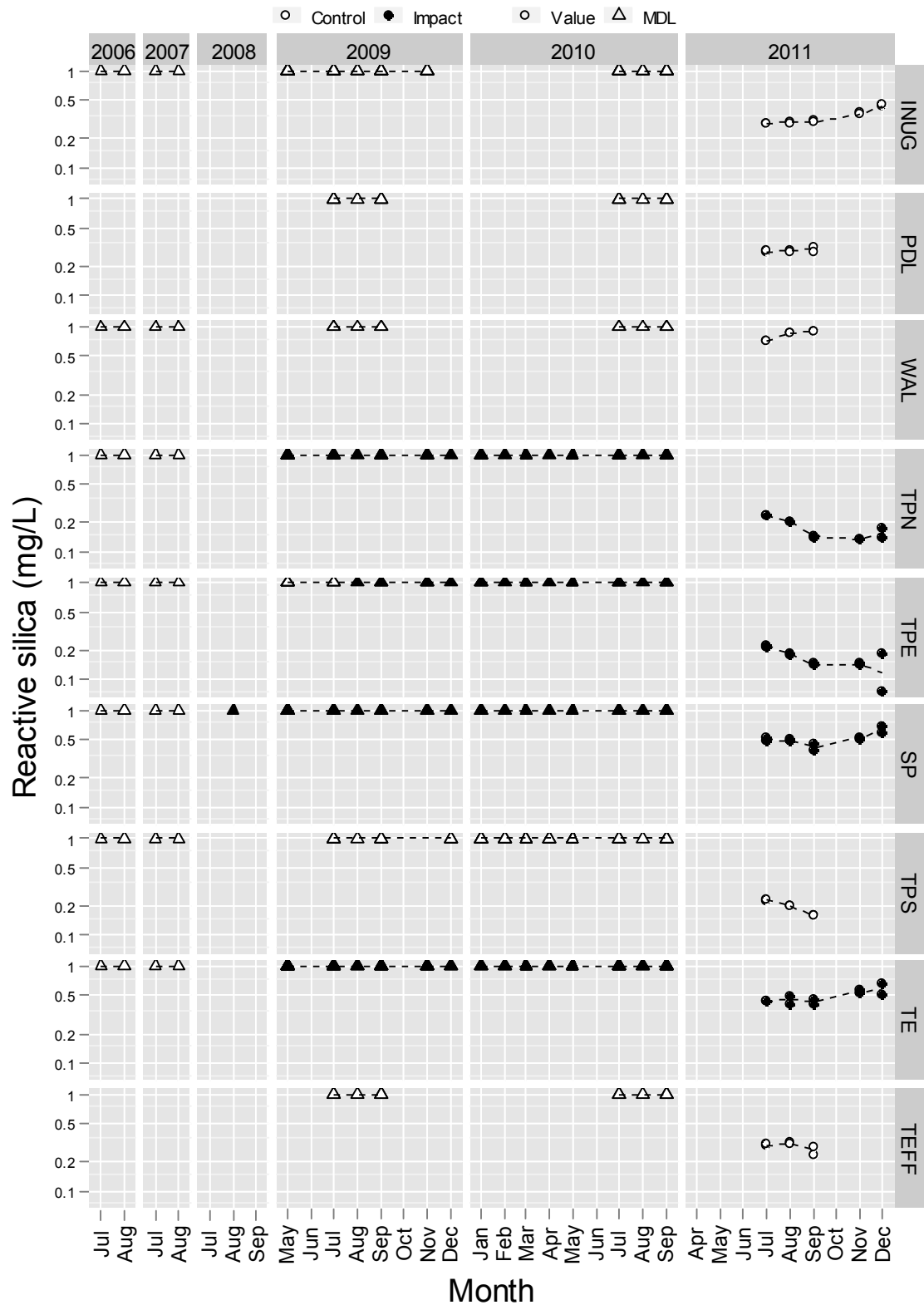


Figure 3.3- 14. Sulphate (mg/L) in water samples from Meadowbank study lakes since 2006.

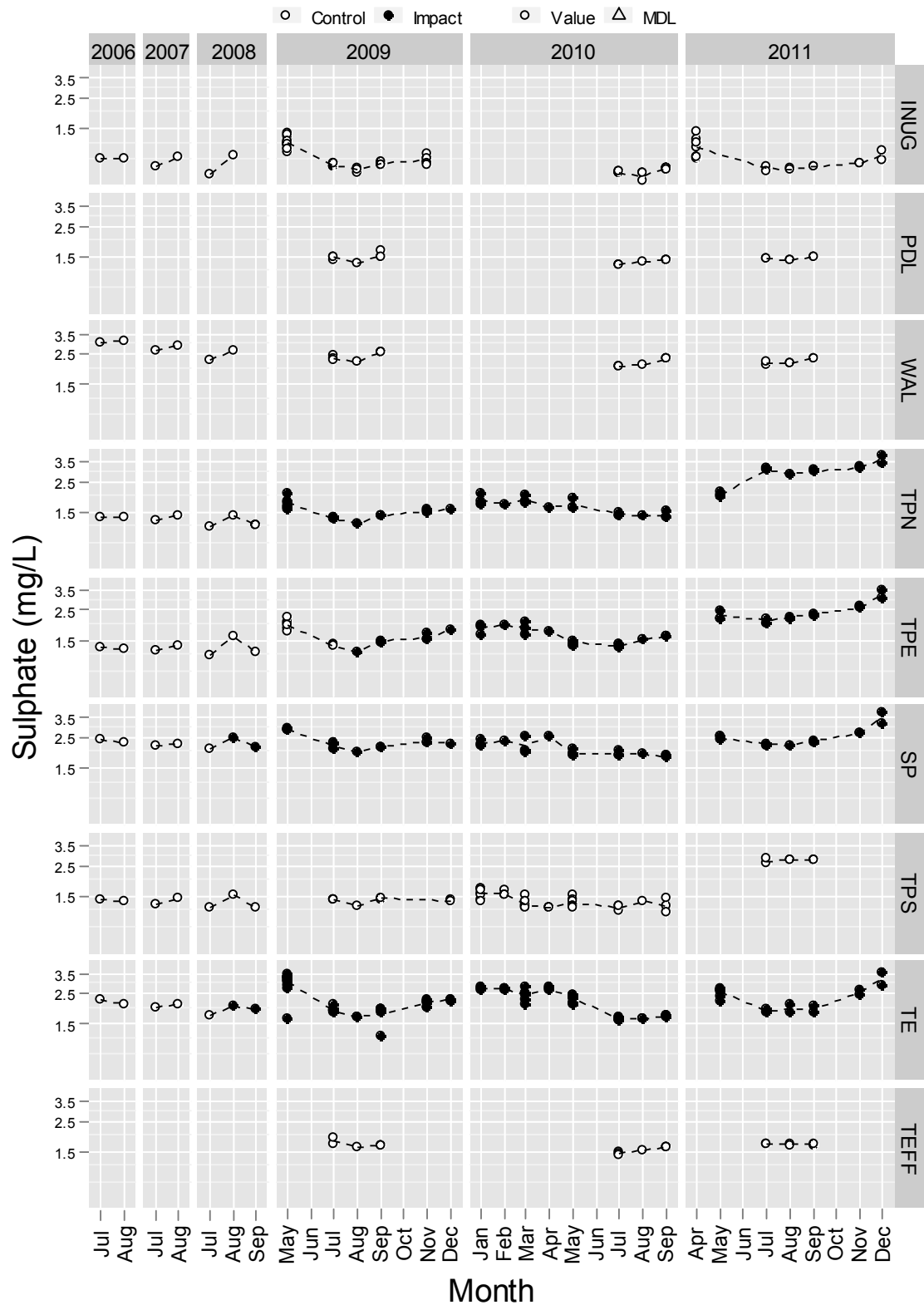


Figure 3.3- 15. Dissolved Organic Carbon (DOC; mg/L) in water samples from Meadowbank study lakes since 2006.

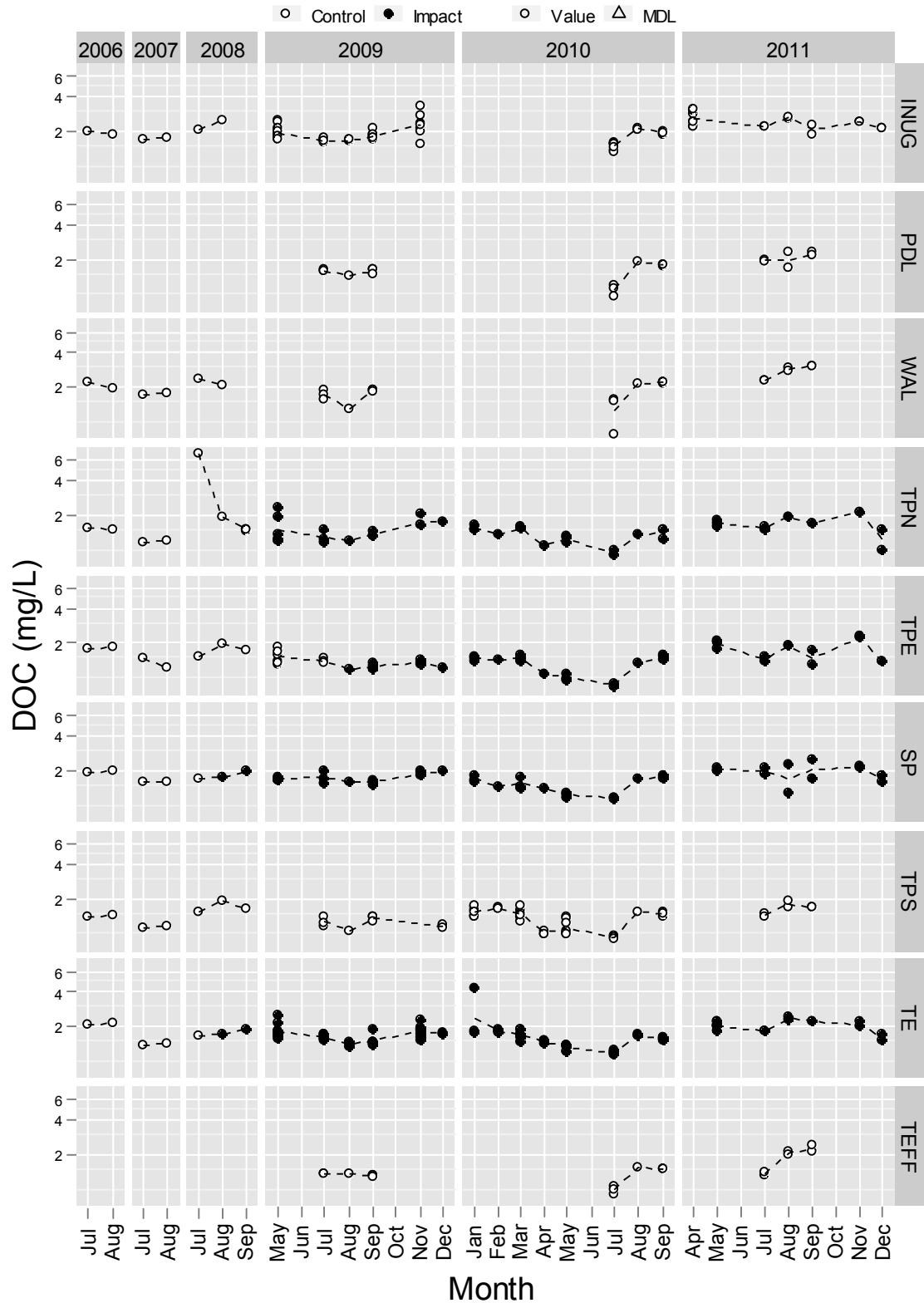


Figure 3.3- 16. Total Organic Carbon (TOC; mg/L) in water samples from Meadowbank study lakes since 2006.

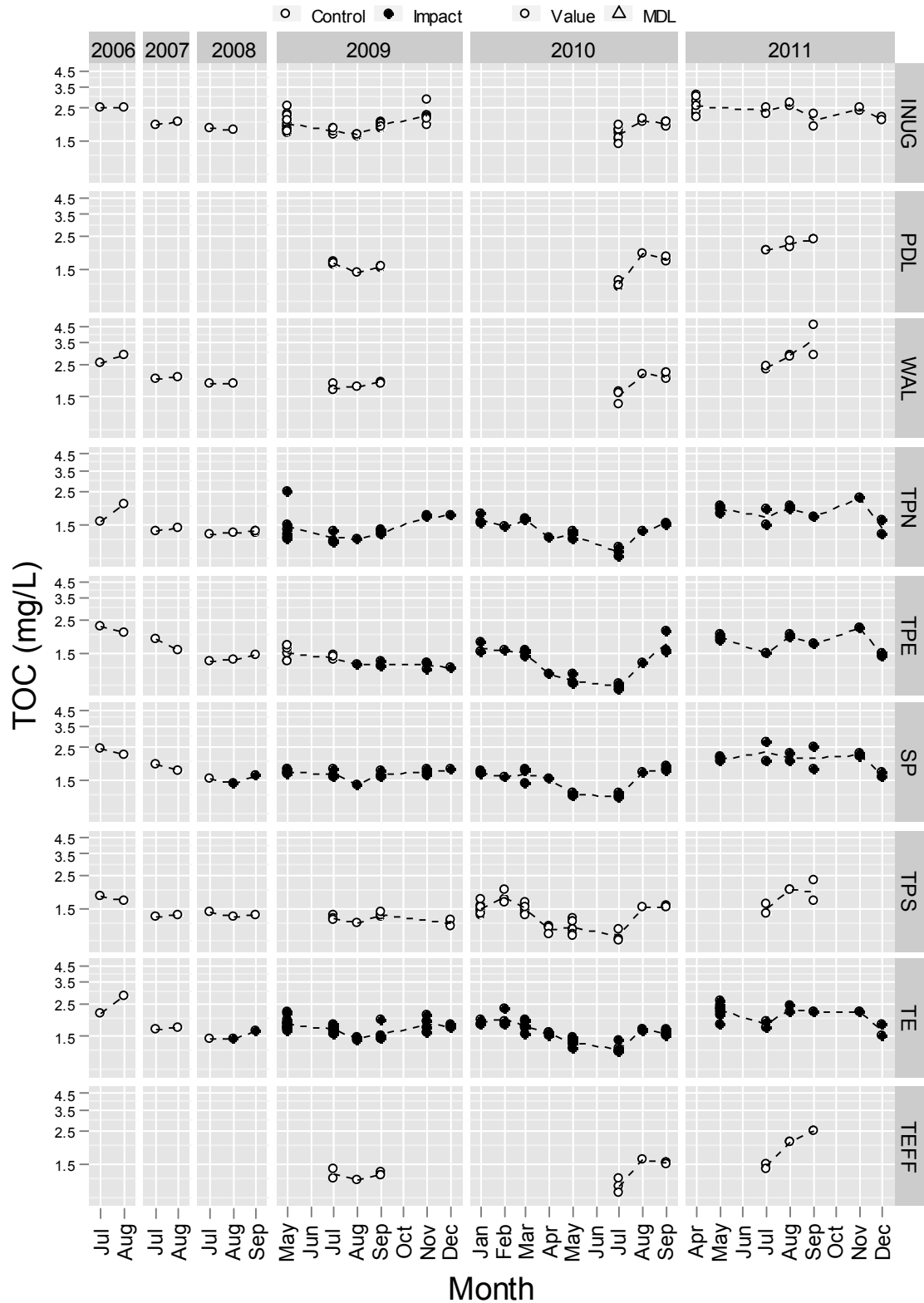


Figure 3.3- 17. Total Aluminum (mg/L) in water samples from Meadowbank study lakes since 2006.

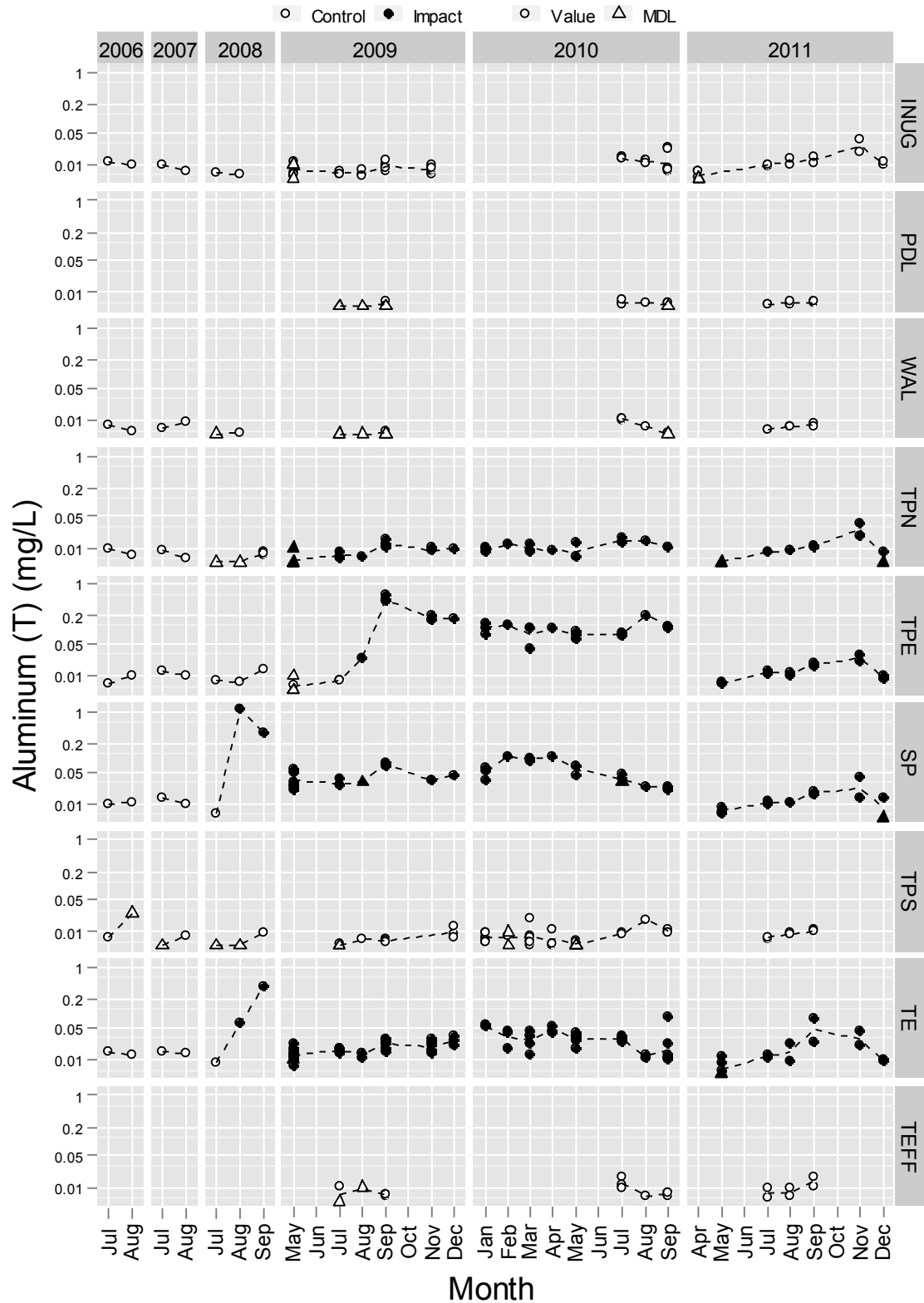


Figure 3.3- 18. Total Arsenic (mg/L) in water samples from Meadowbank study lakes since 2006.

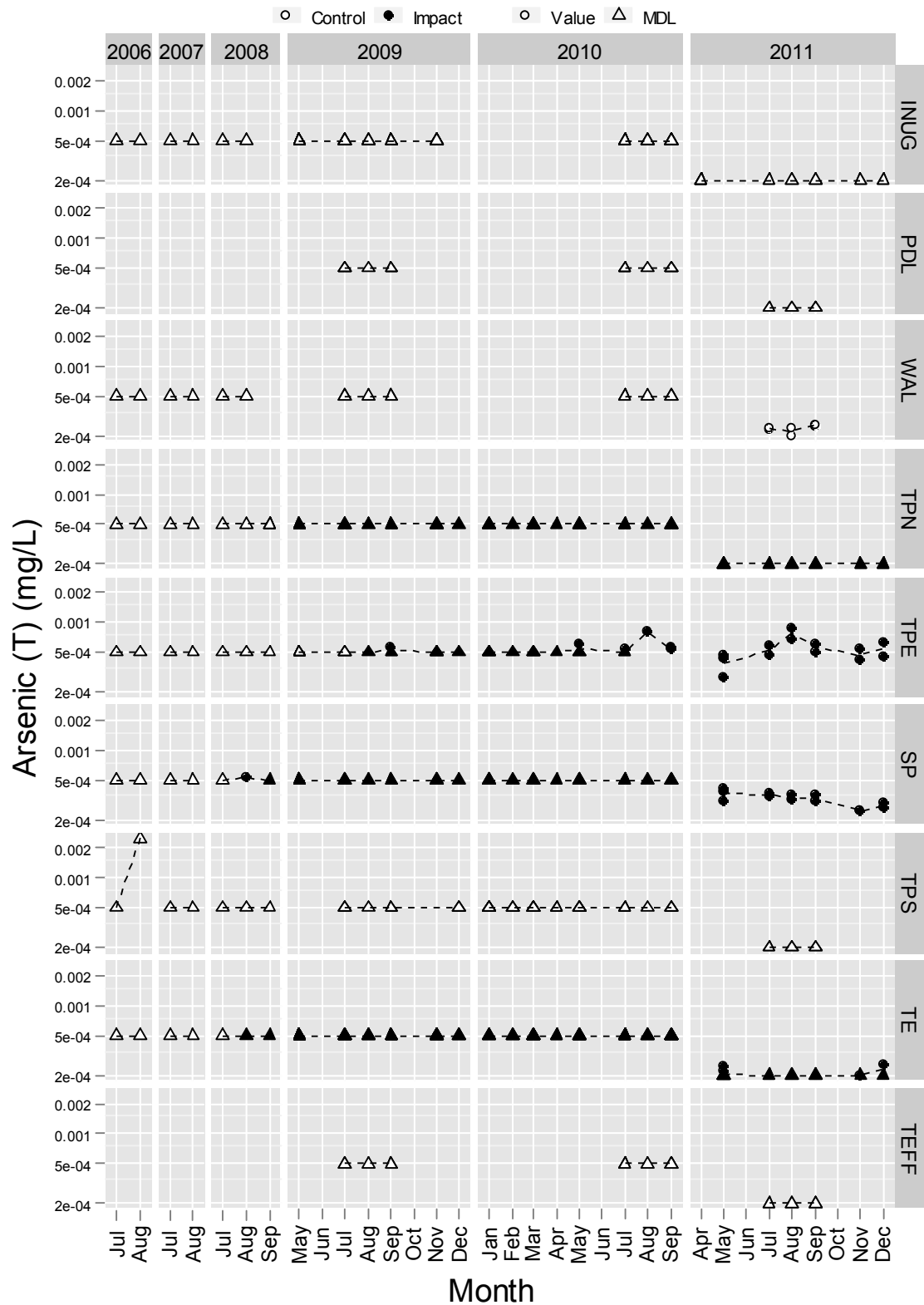


Figure 3.3- 19. Total Barium (mg/L) in water samples from Meadowbank study lakes since 2006.

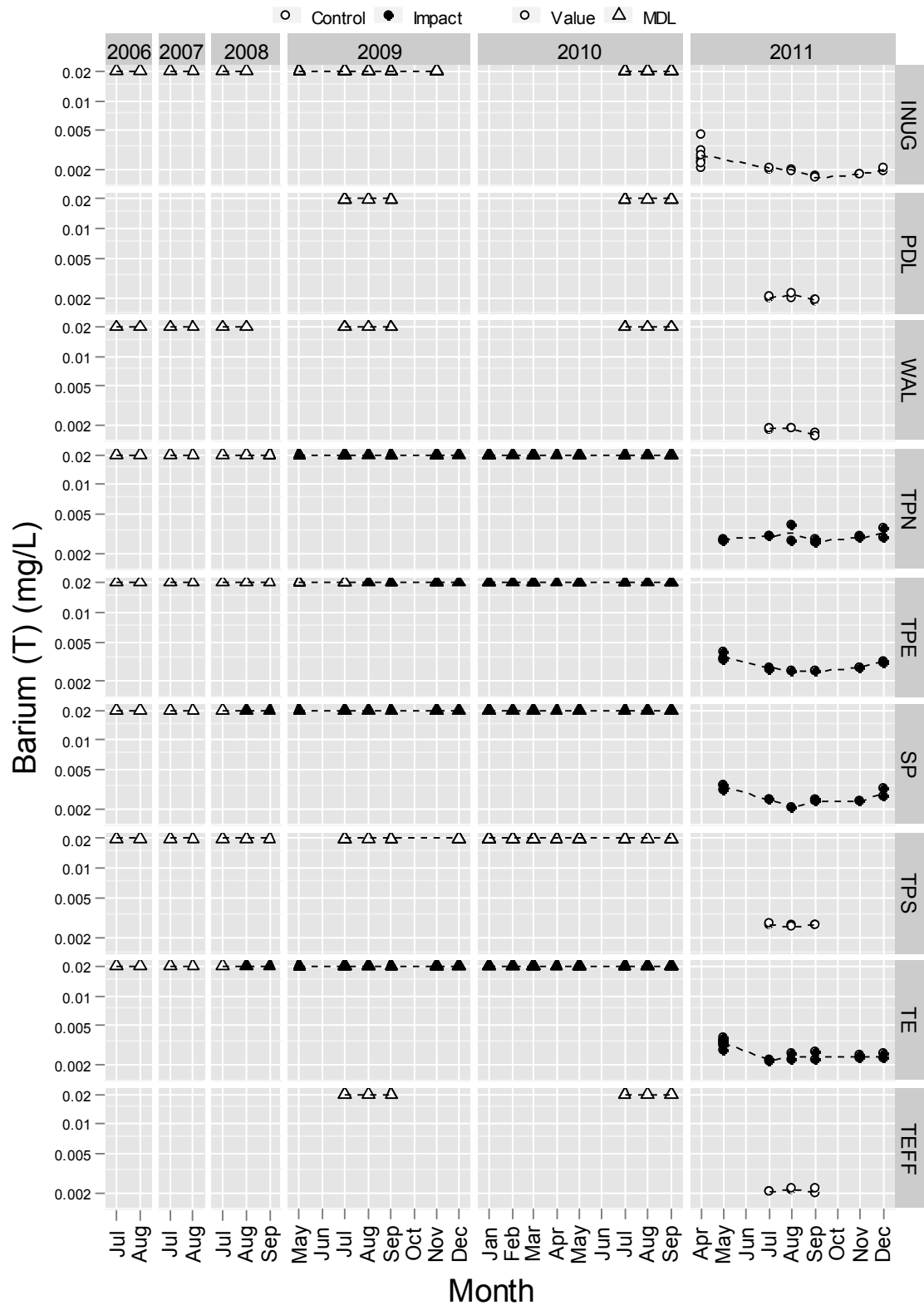


Figure 3.3- 20. Total Calcium (mg/L) in water samples from Meadowbank study lakes since 2006.

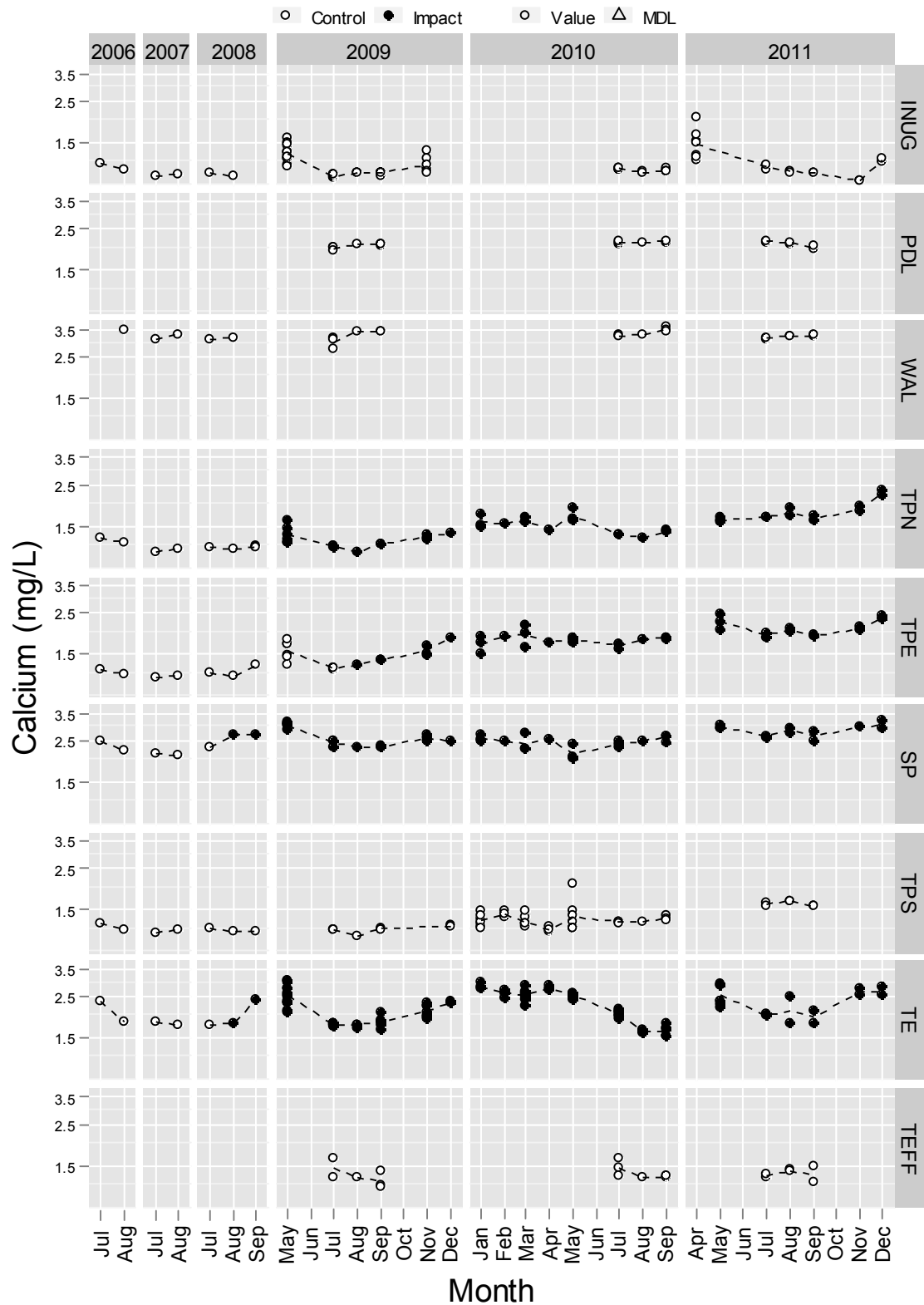


Figure 3.3- 21. Total Chromium (mg/L) in water samples from Meadowbank study lakes since 2006.

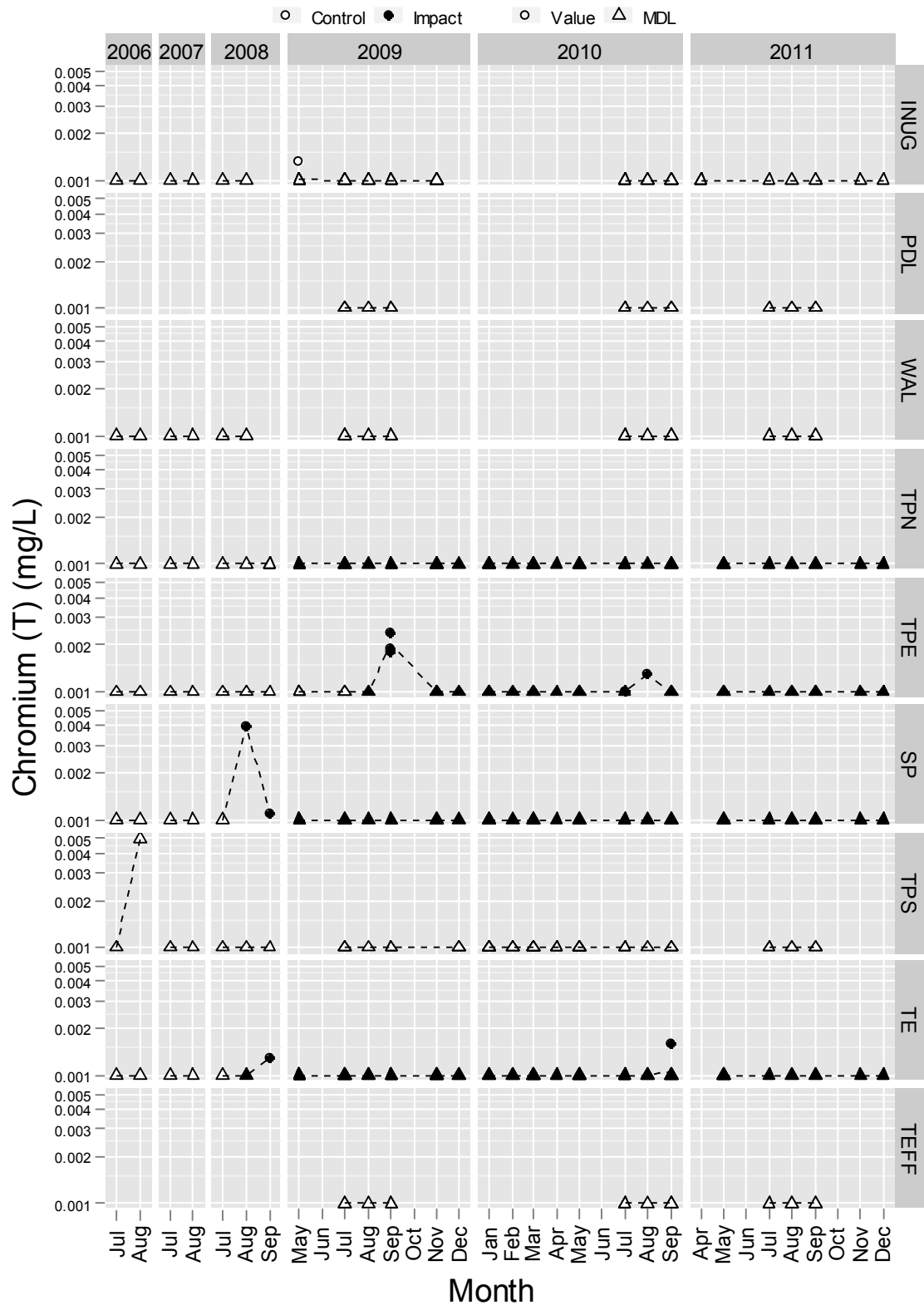


Figure 3.3- 22. Total Copper (mg/L) in water samples from Meadowbank study lakes since 2006.

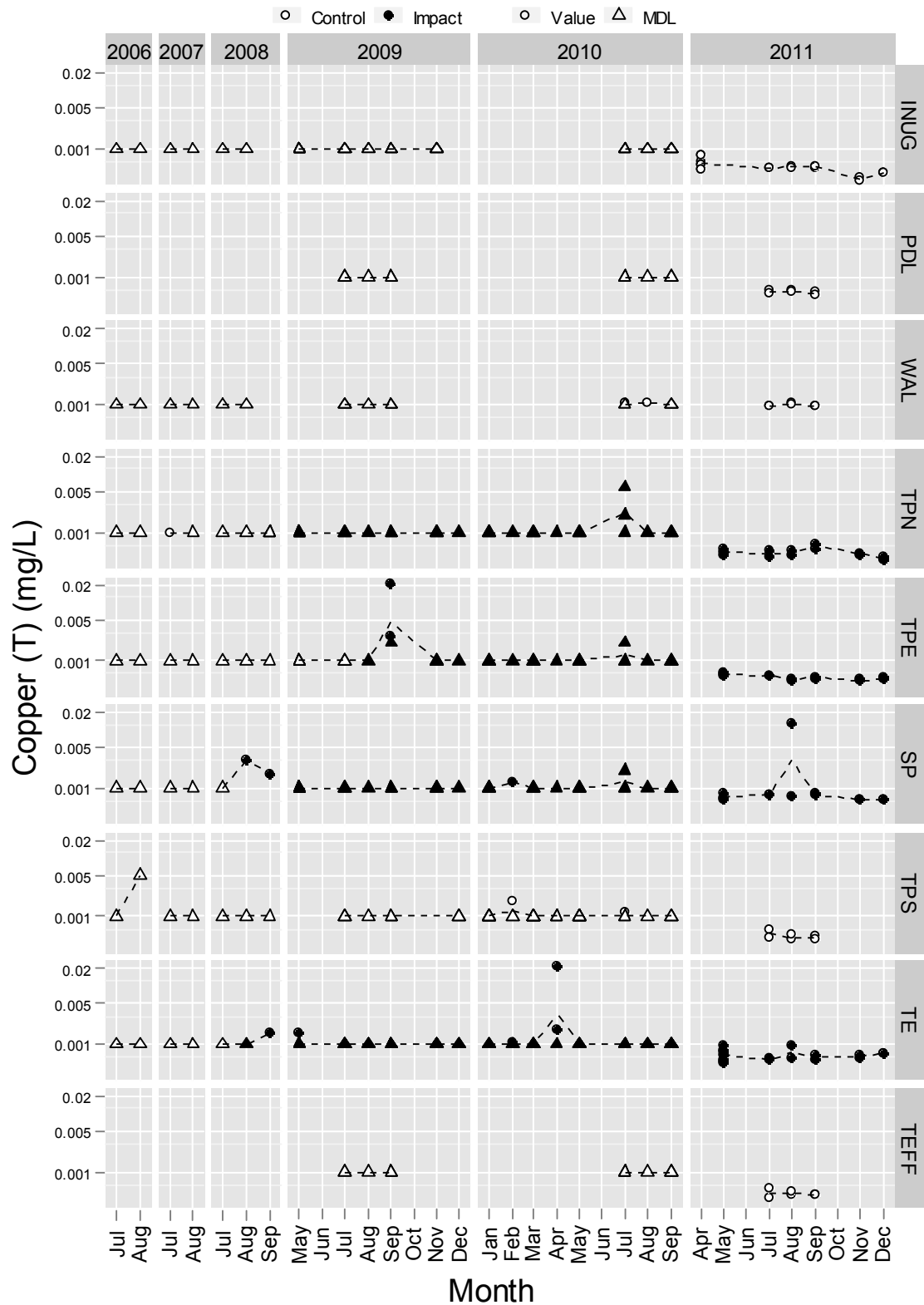


Figure 3.3- 23. Total Iron (mg/L) in water samples from Meadowbank study lakes since 2006.

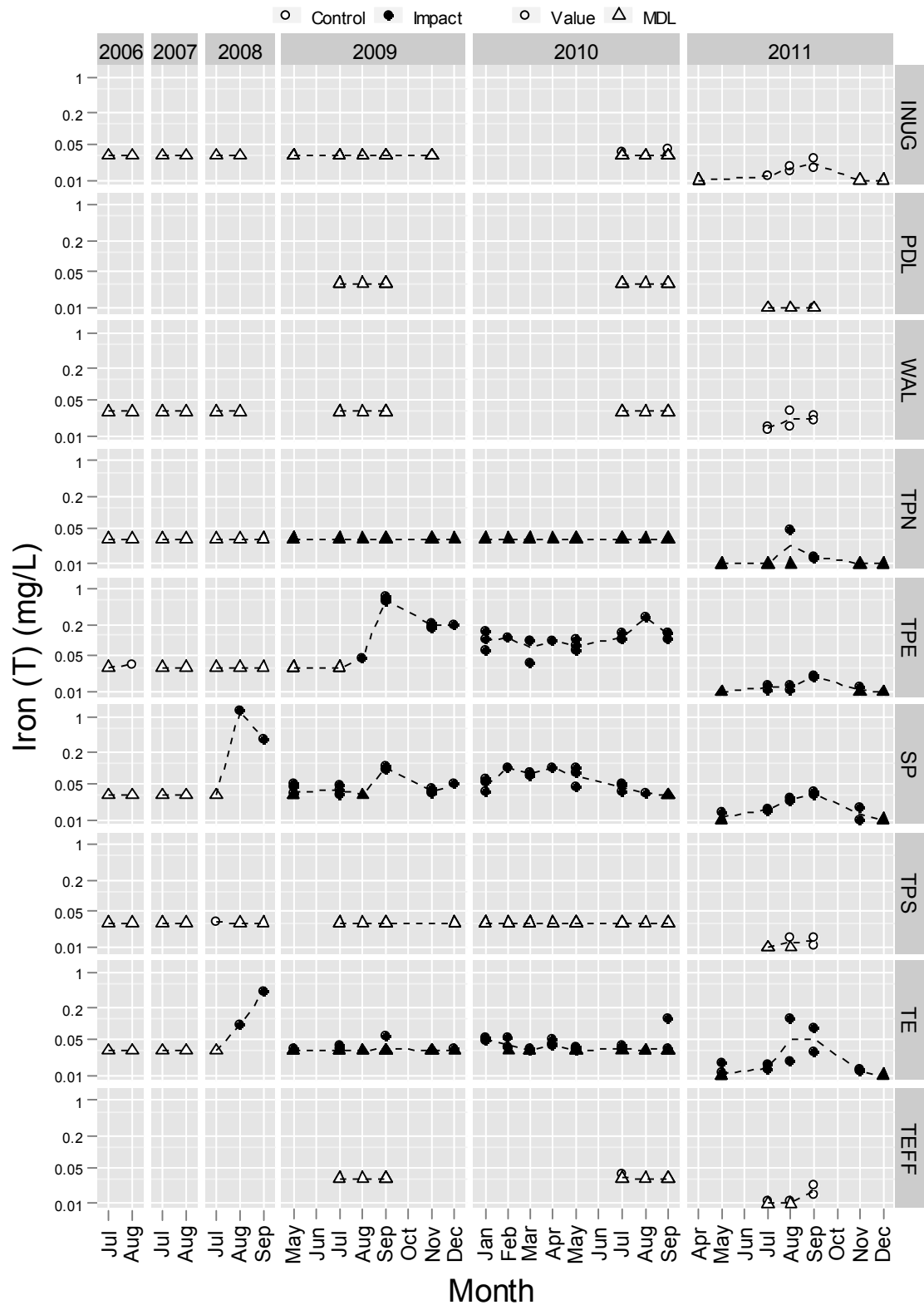


Figure 3.3- 24. Total Magnesium (mg/L) in water samples from Meadowbank study lakes since 2006.

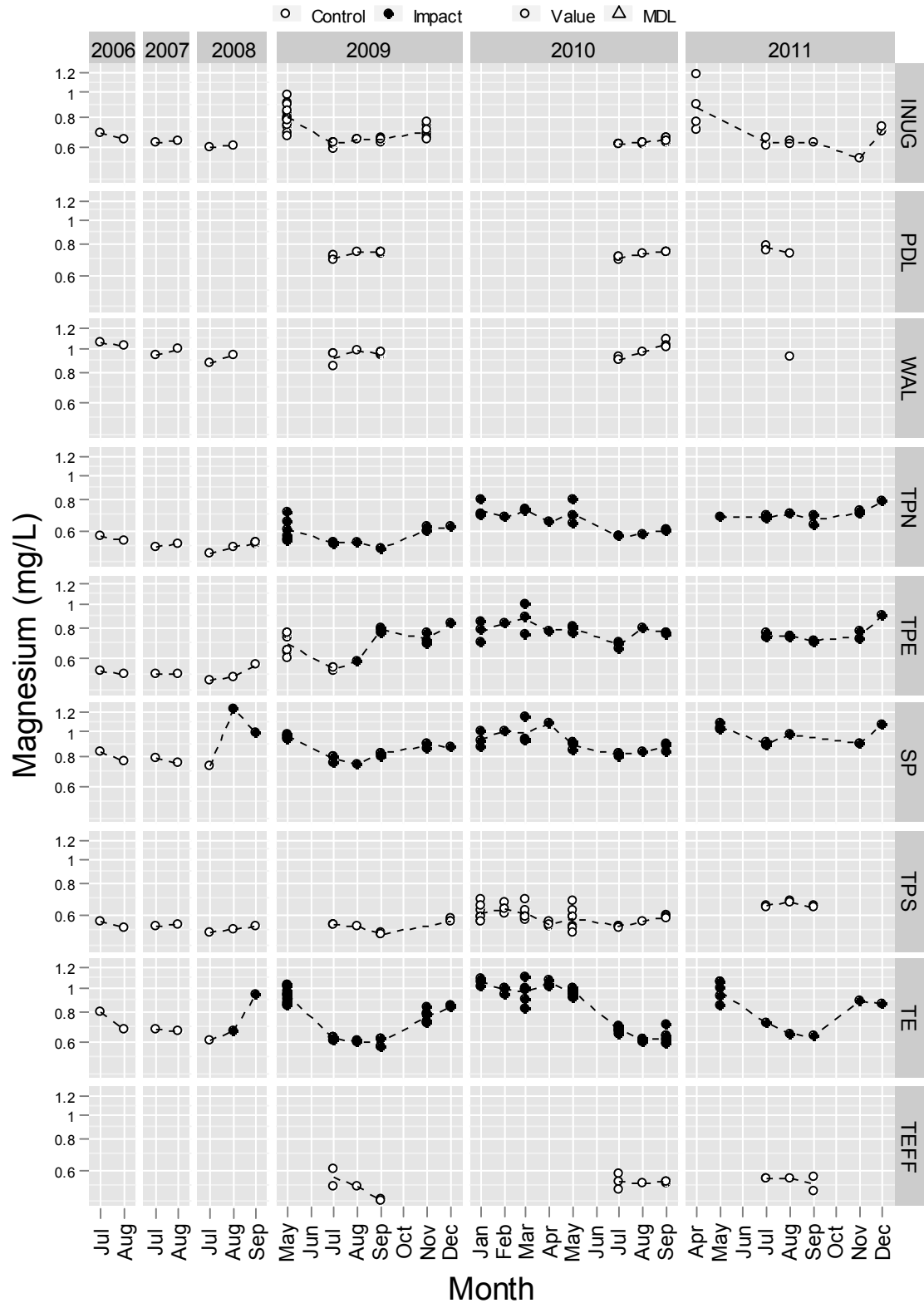


Figure 3.3- 25. Total Manganese (mg/L) in water samples from Meadowbank study lakes since 2006.

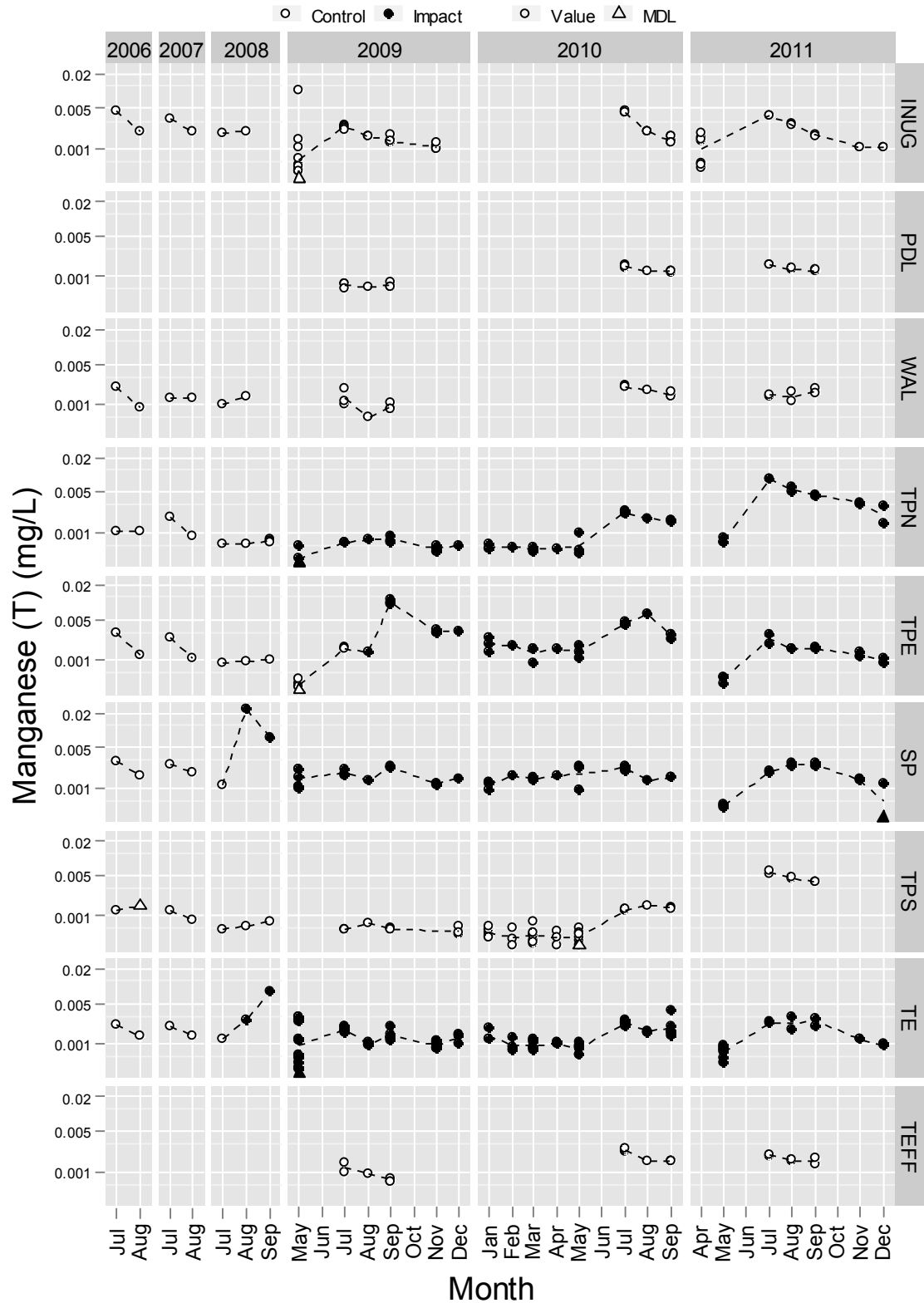


Figure 3.3- 26. Total Nickel (mg/L) in water samples from Meadowbank study lakes since 2006.

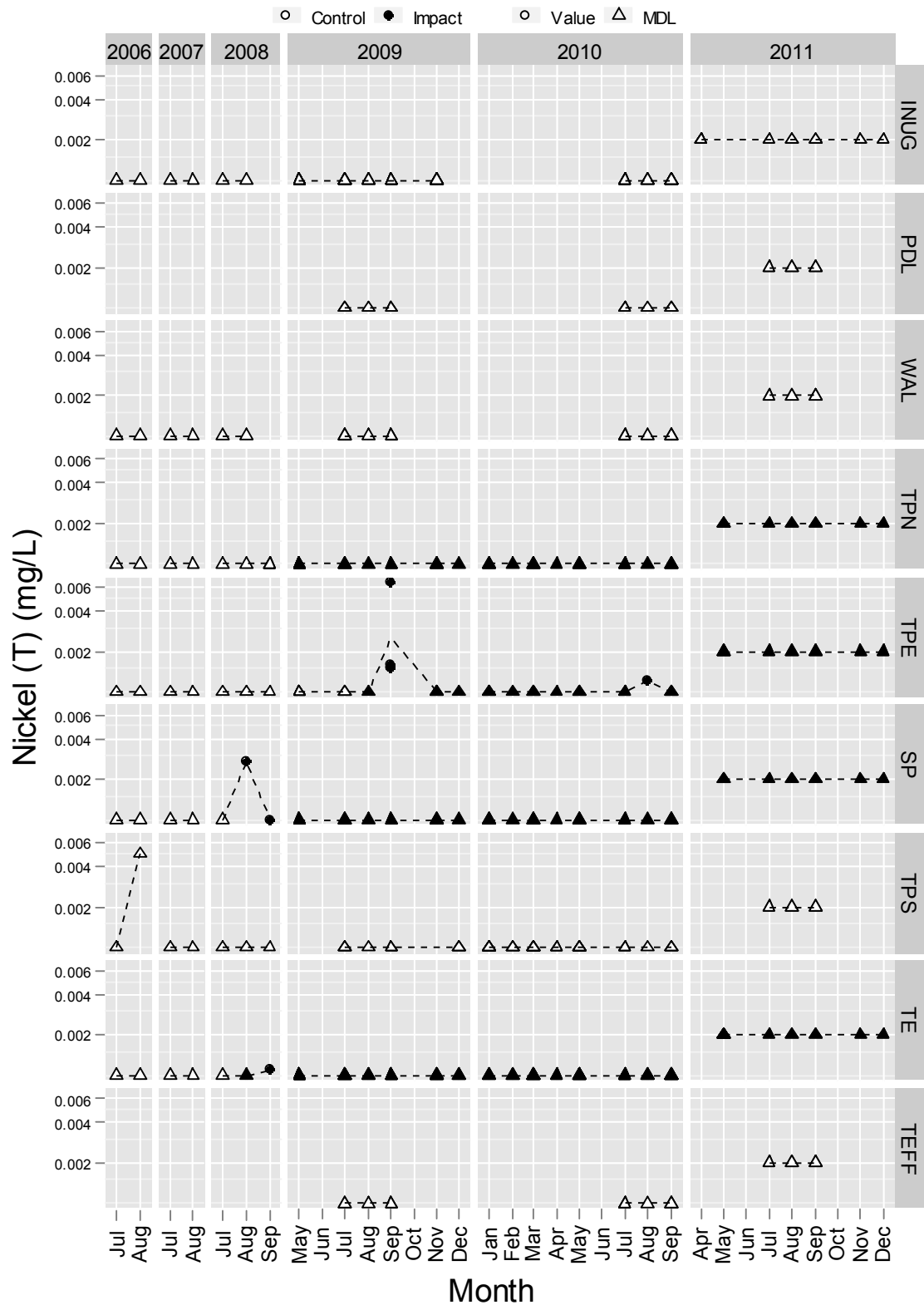


Figure 3.3- 27. Total Potassium (mg/L) in water samples from Meadowbank study lakes since 2006.

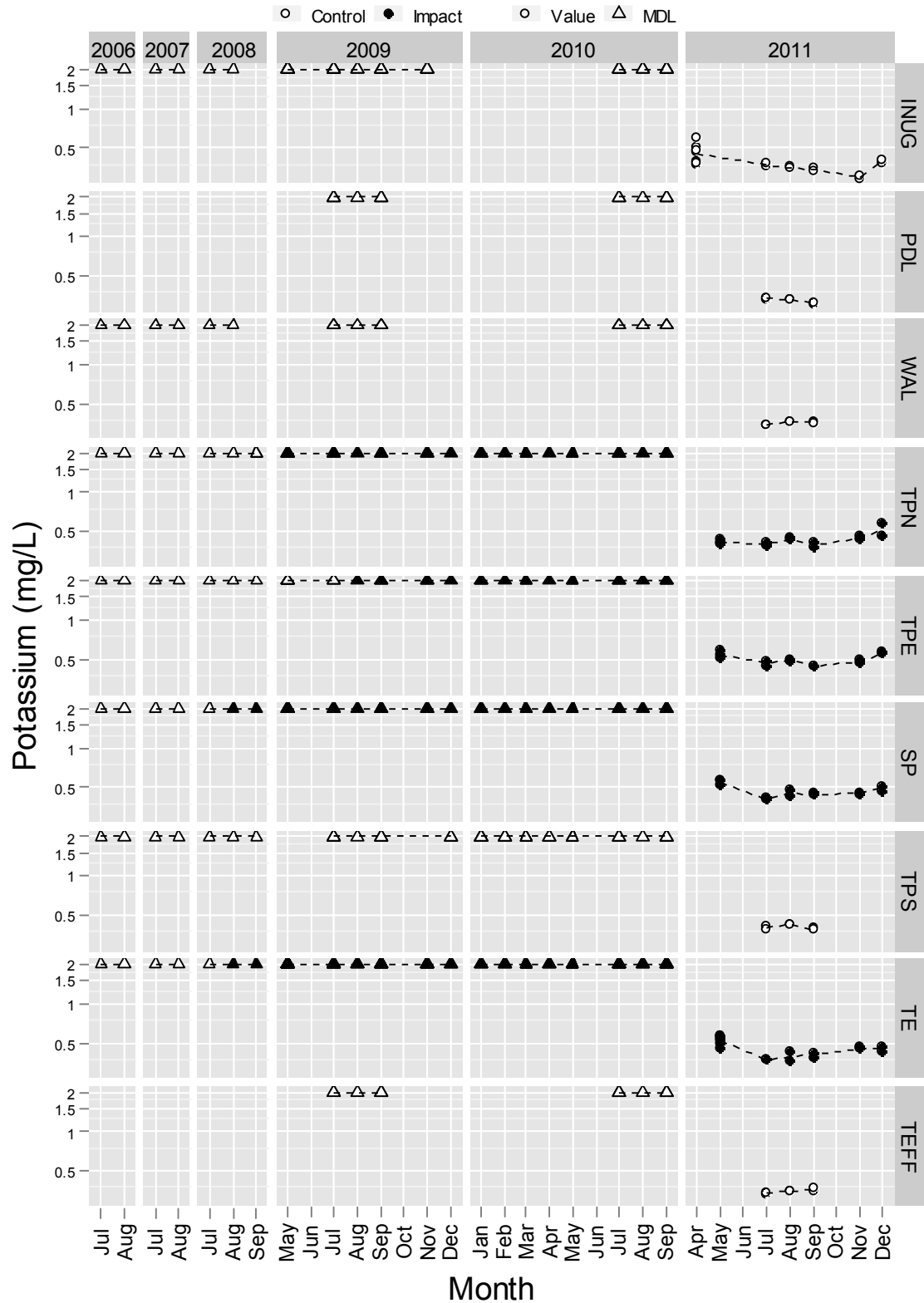


Figure 3.3- 28. Total Sodium (mg/L) in water samples from Meadowbank study lakes since 2006.

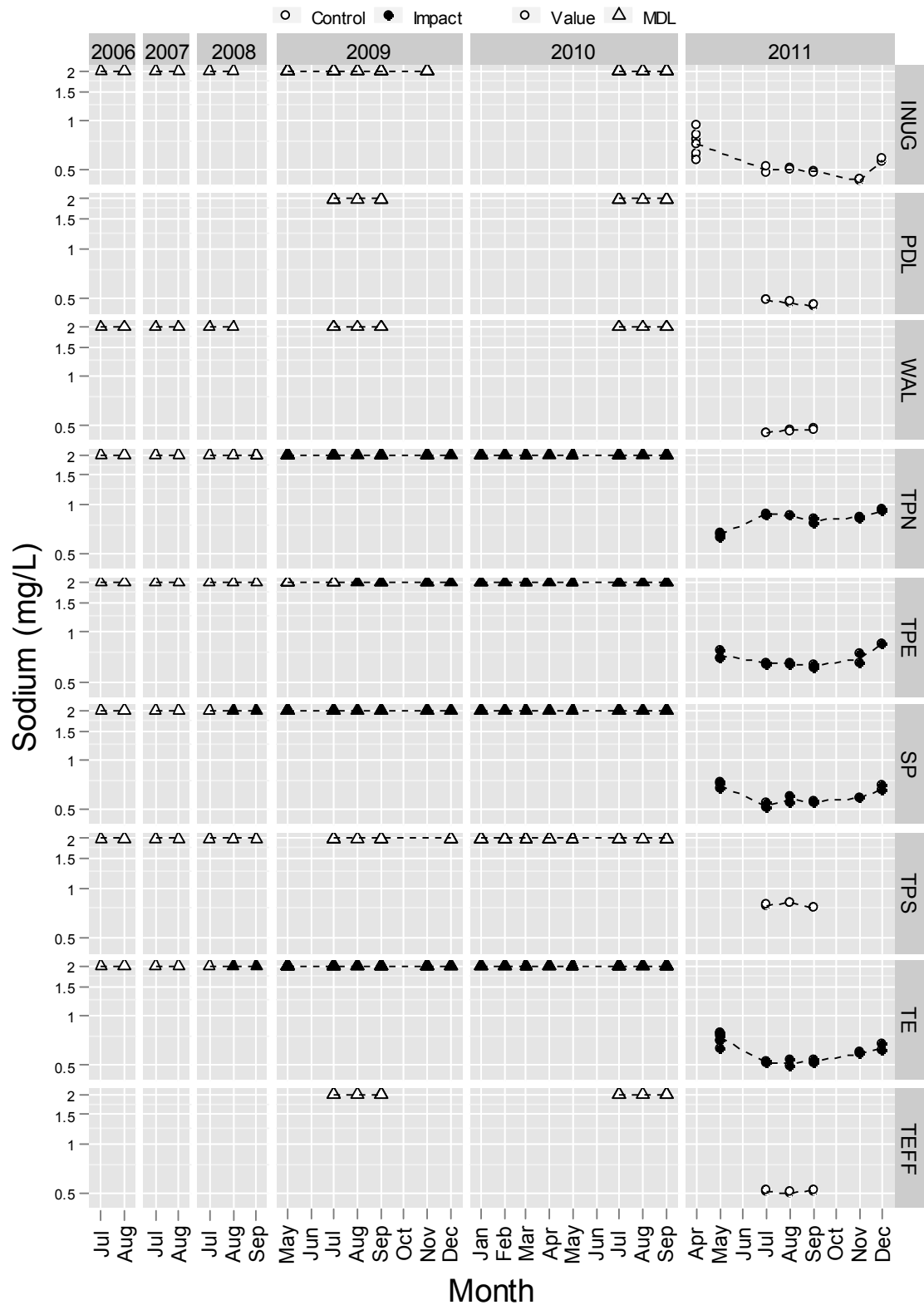


Figure 3.3- 29. Total Strontium (mg/L) in water samples from Meadowbank study lakes since 2006.

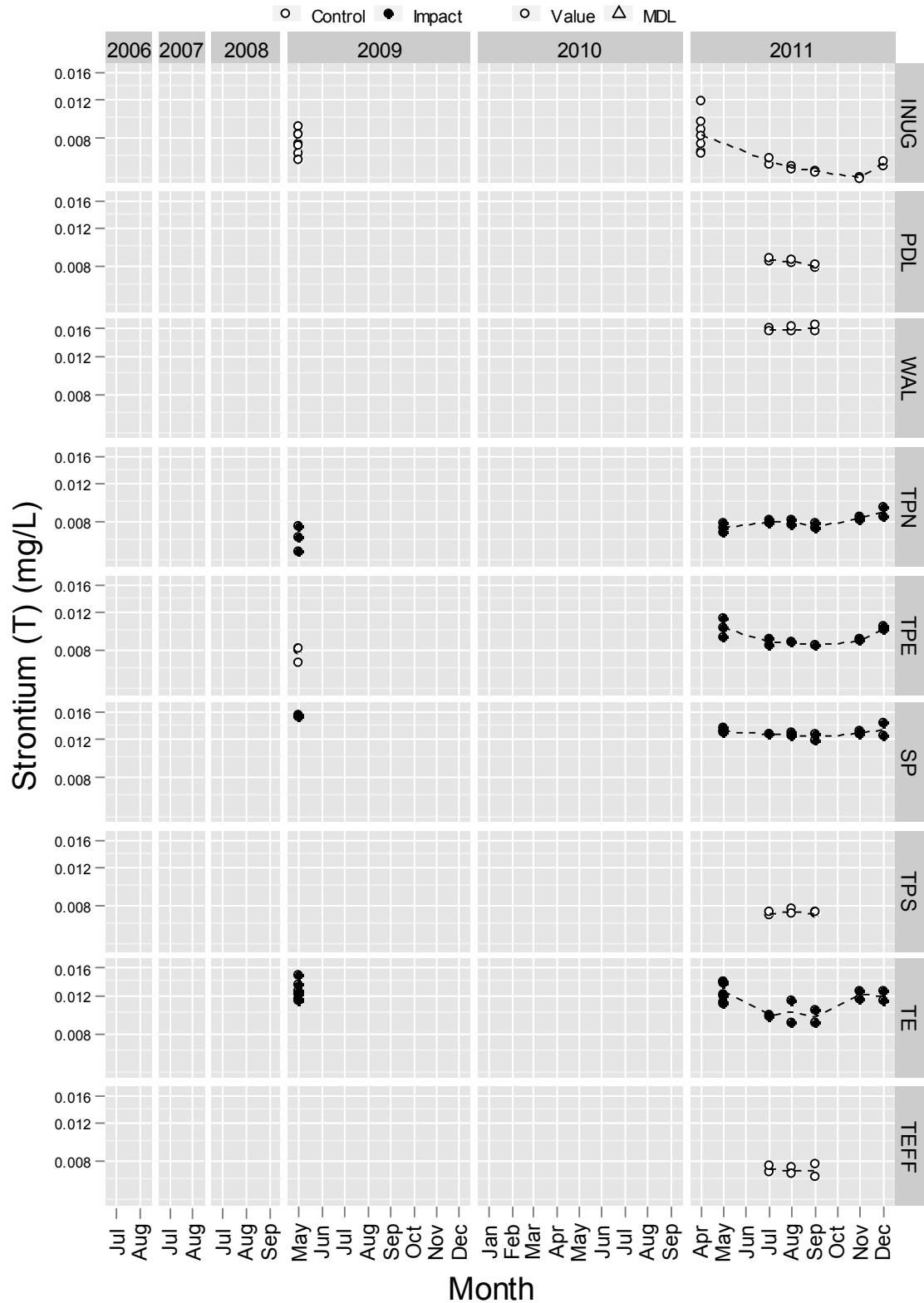


Figure 3.3- 30. Total Titanium (mg/L) in water samples from Meadowbank study lakes since 2006.

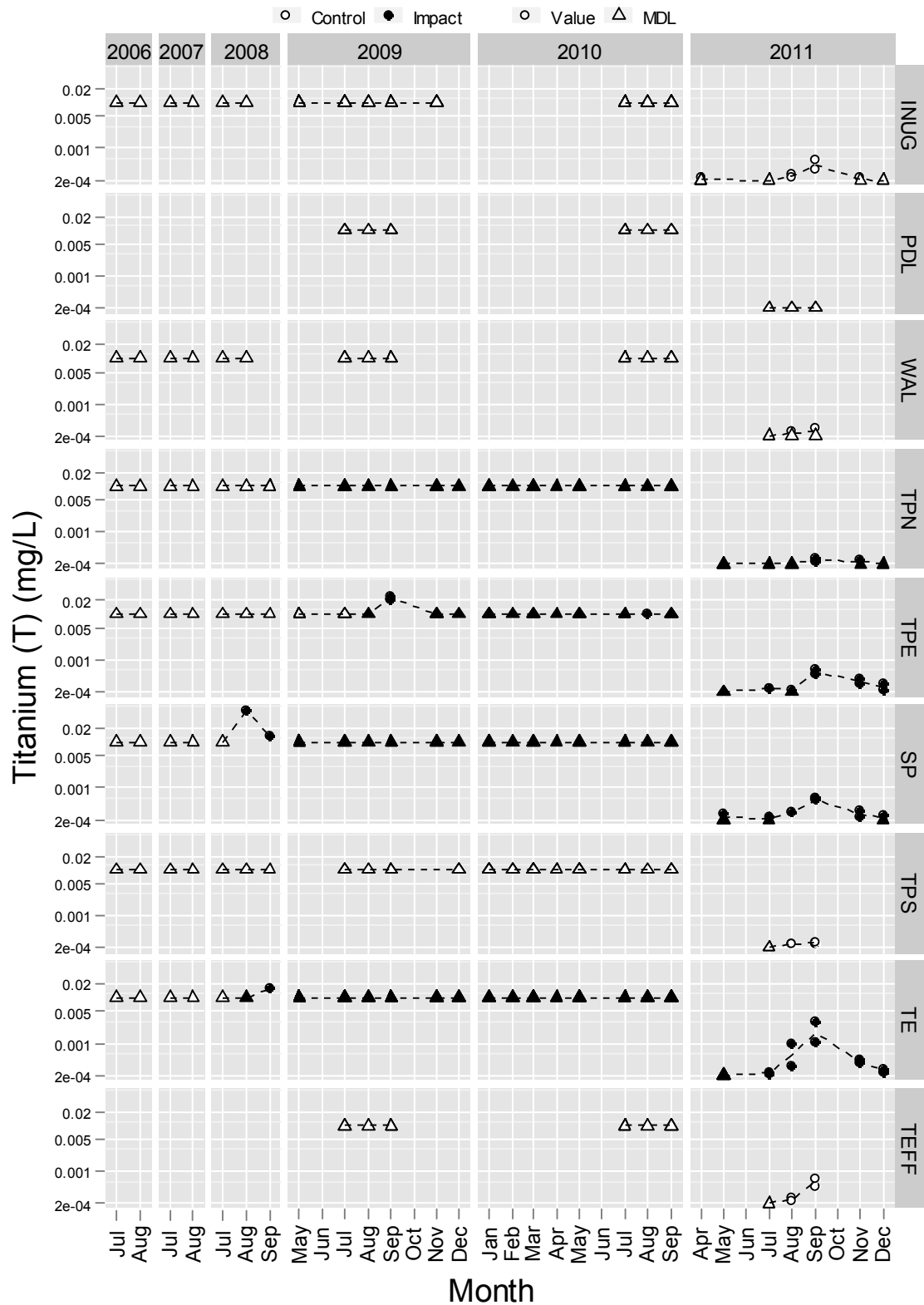


Figure 3.3- 31. Total Uranium (mg/L) in water samples from Meadowbank study lakes since 2006.

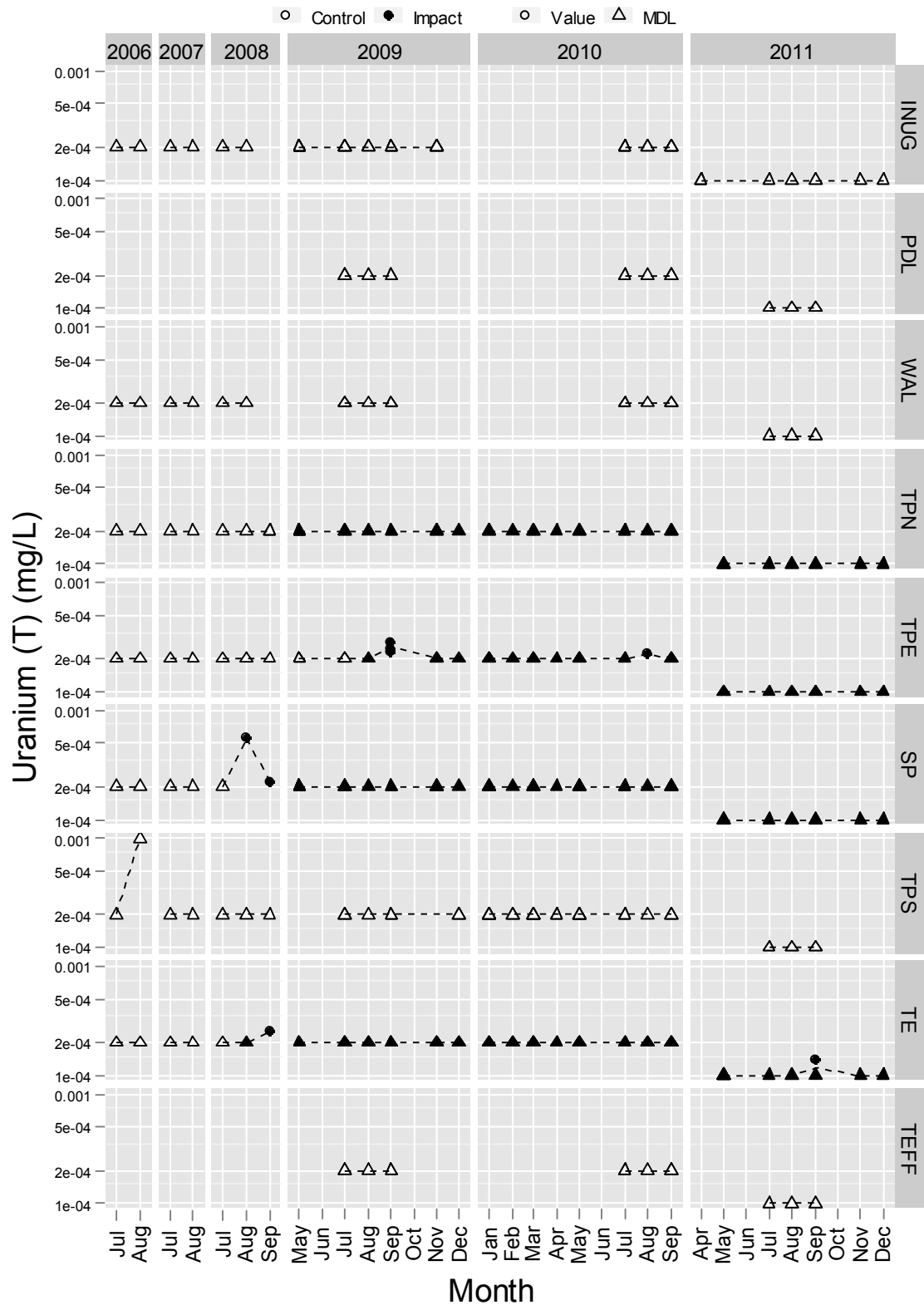


Figure 3.3- 32. Dissolved Aluminum (mg/L) in water samples from Meadowbank study lakes since 2006.

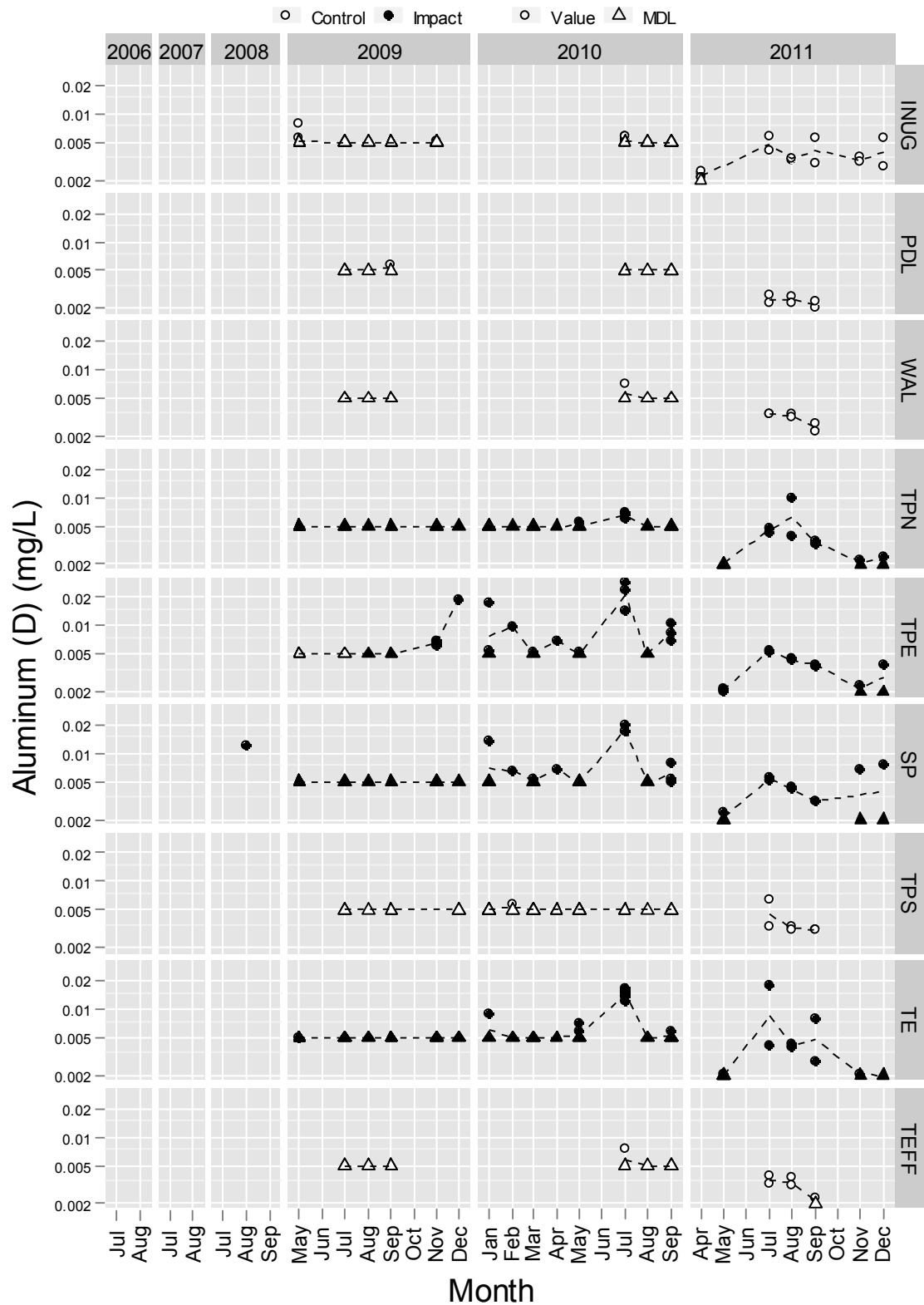


Figure 3.3- 33. Dissolved Arsenic (mg/L) in water samples from Meadowbank study lakes since 2006.

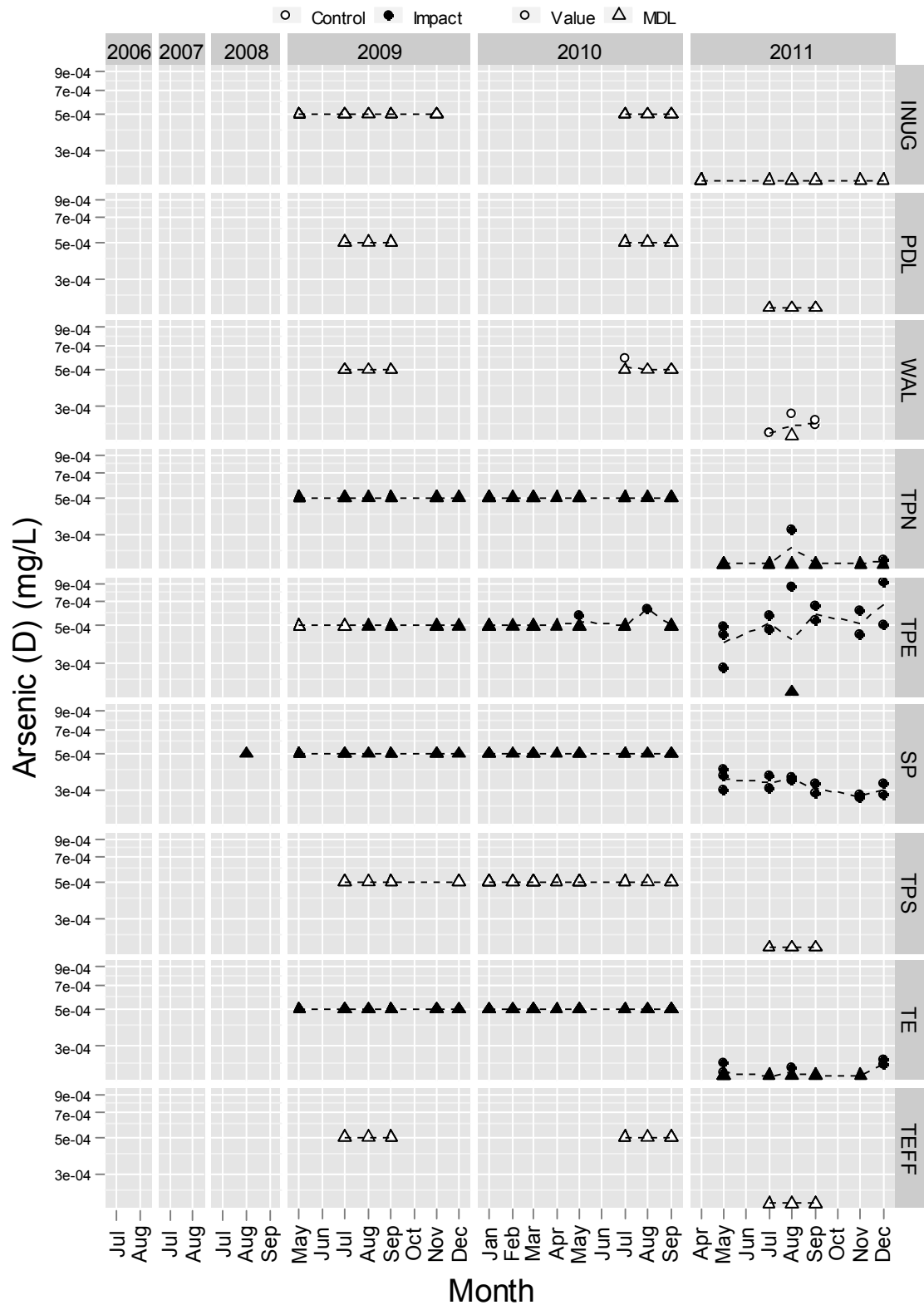


Figure 3.3- 34. Dissolved Barium (mg/L) in water samples from Meadowbank study lakes since 2006.

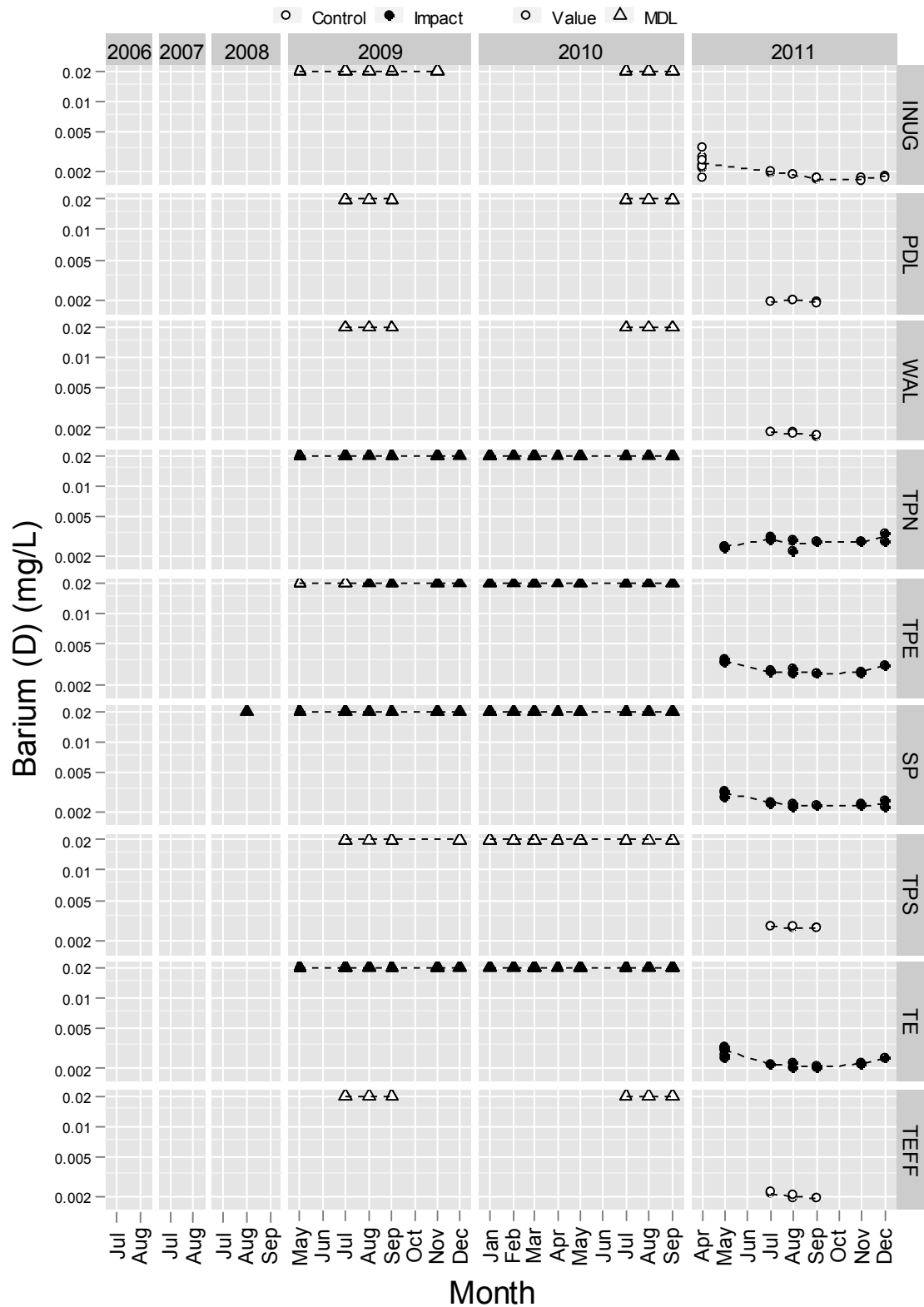


Figure 3.3- 35. Dissolved Copper (mg/L) in water samples from Meadowbank study lakes since 2006.

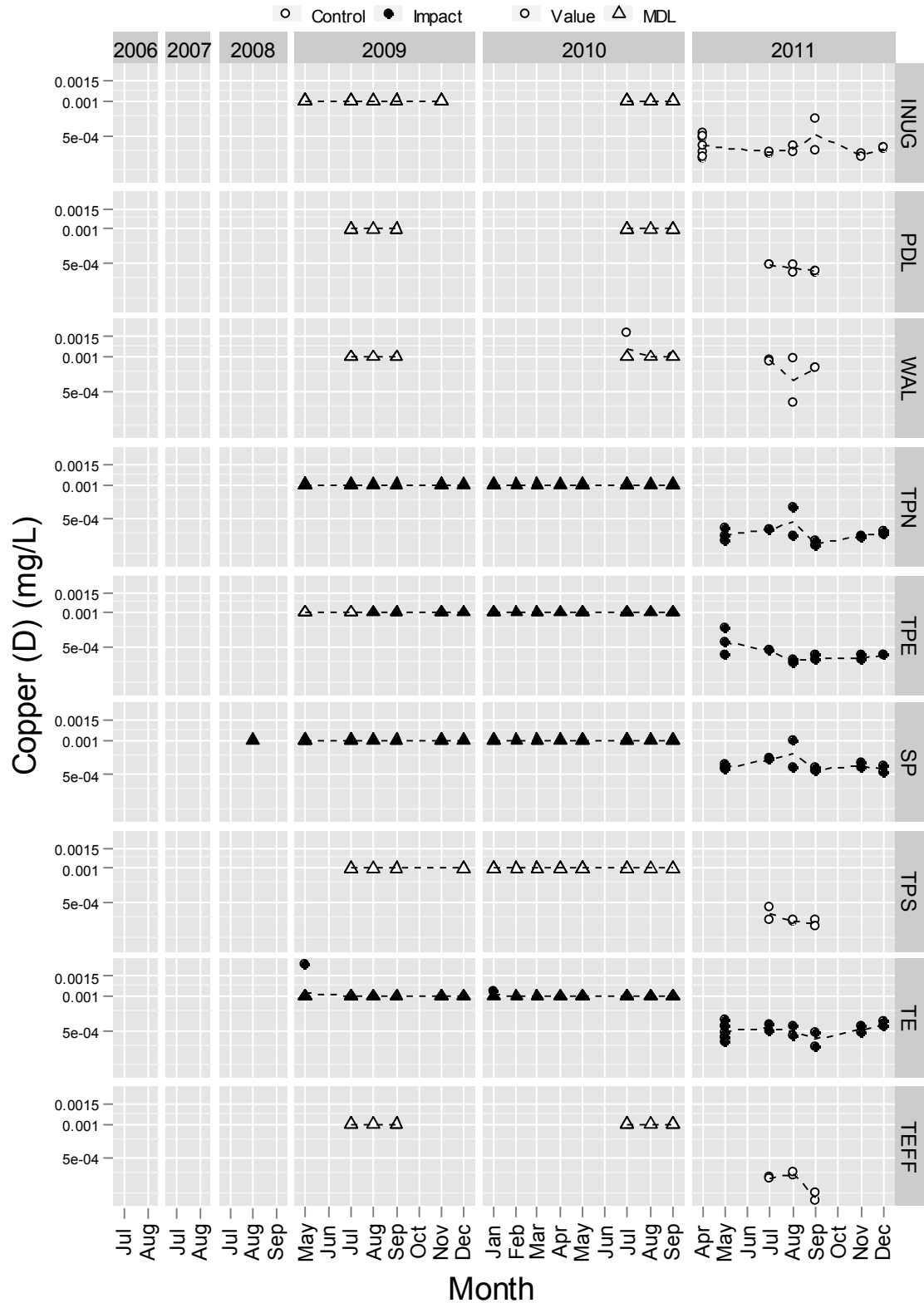


Figure 3.3- 36. Dissolved Manganese (mg/L) in water samples from Meadowbank study lakes since 2006.

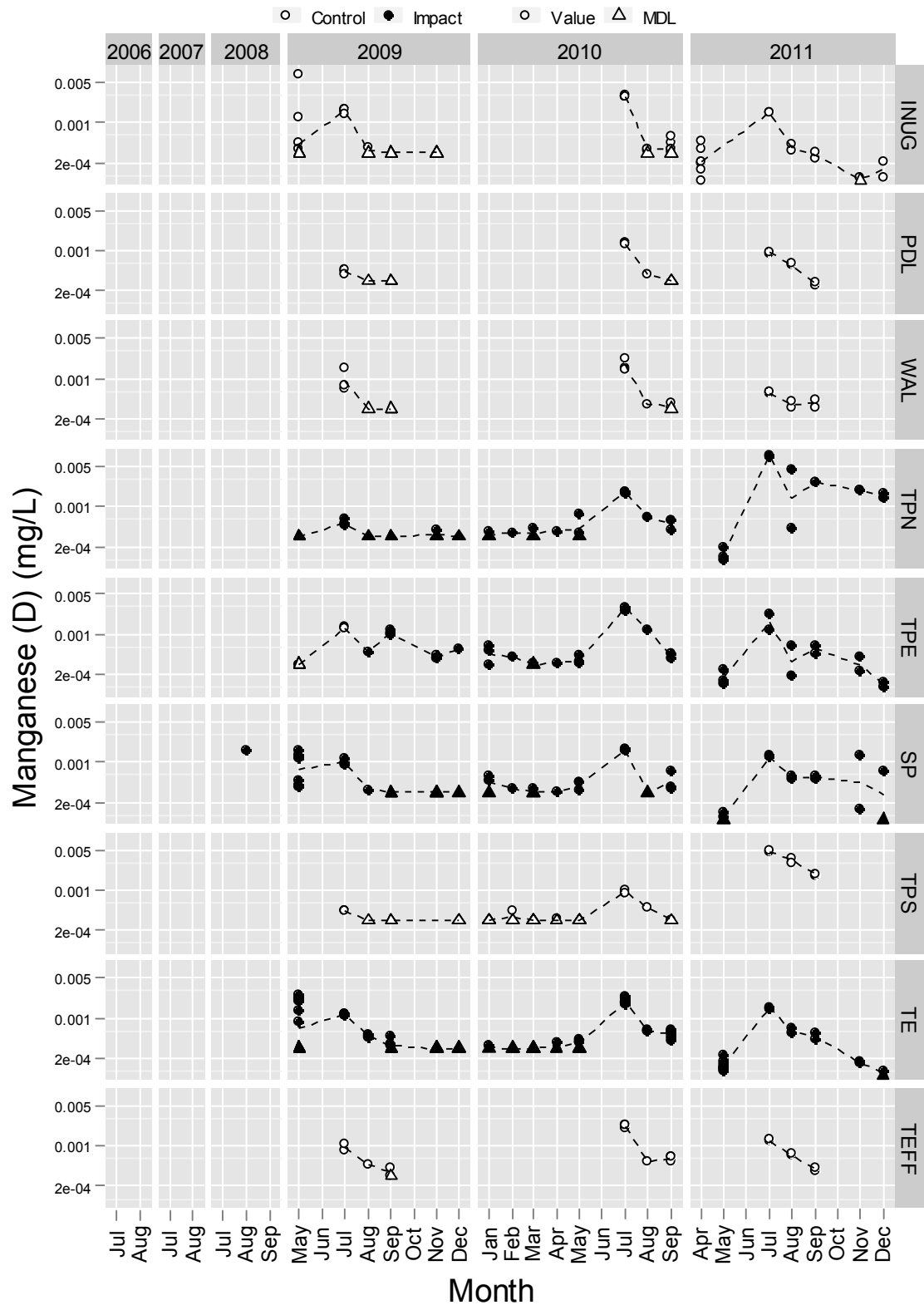


Figure 3.3- 37. Dissolved Molybdenum (mg/L) in water samples from Meadowbank study lakes since 2006.

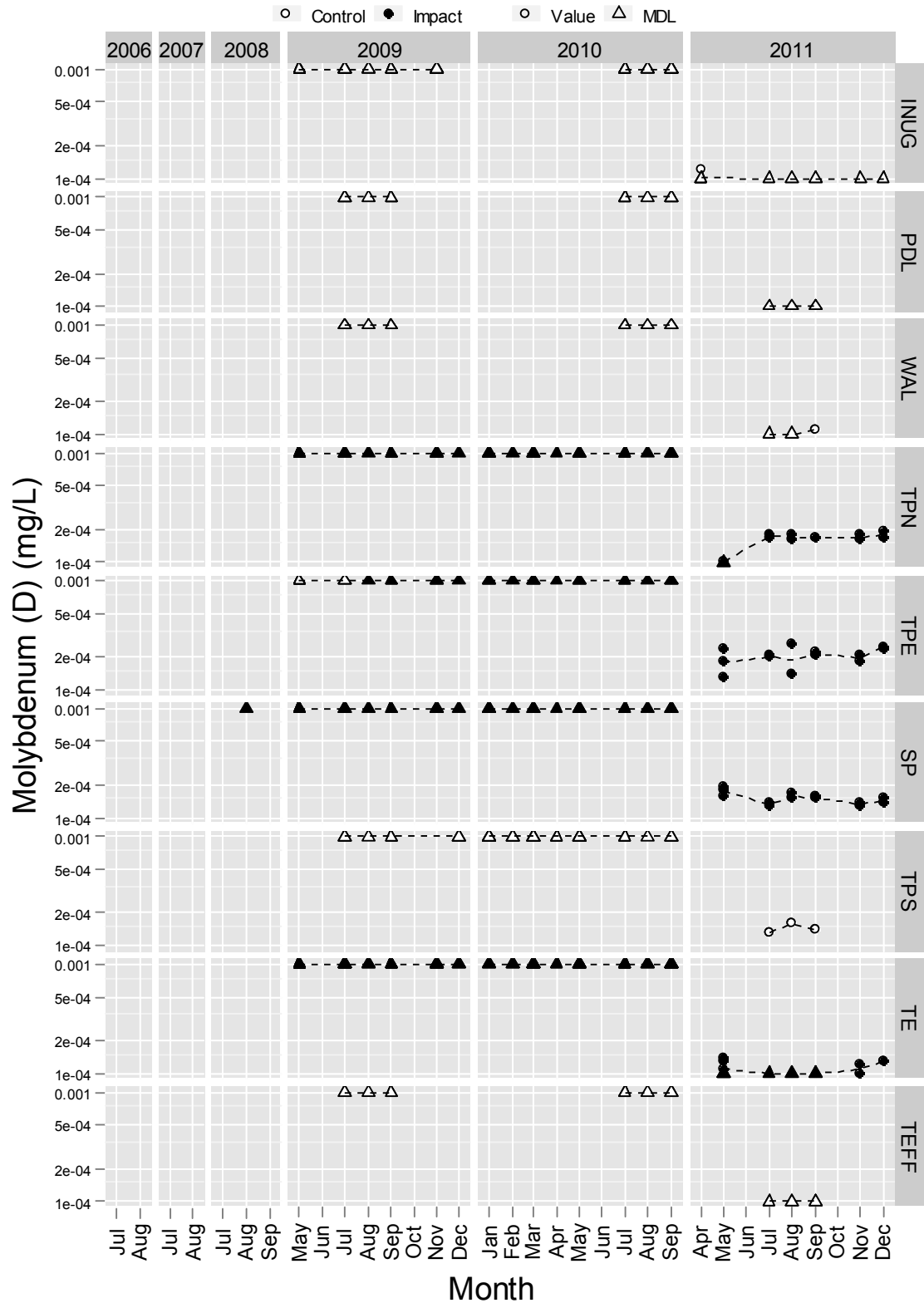


Figure 3.3- 38. Dissolved Strontium (mg/L) in water samples from Meadowbank study lakes since 2006.

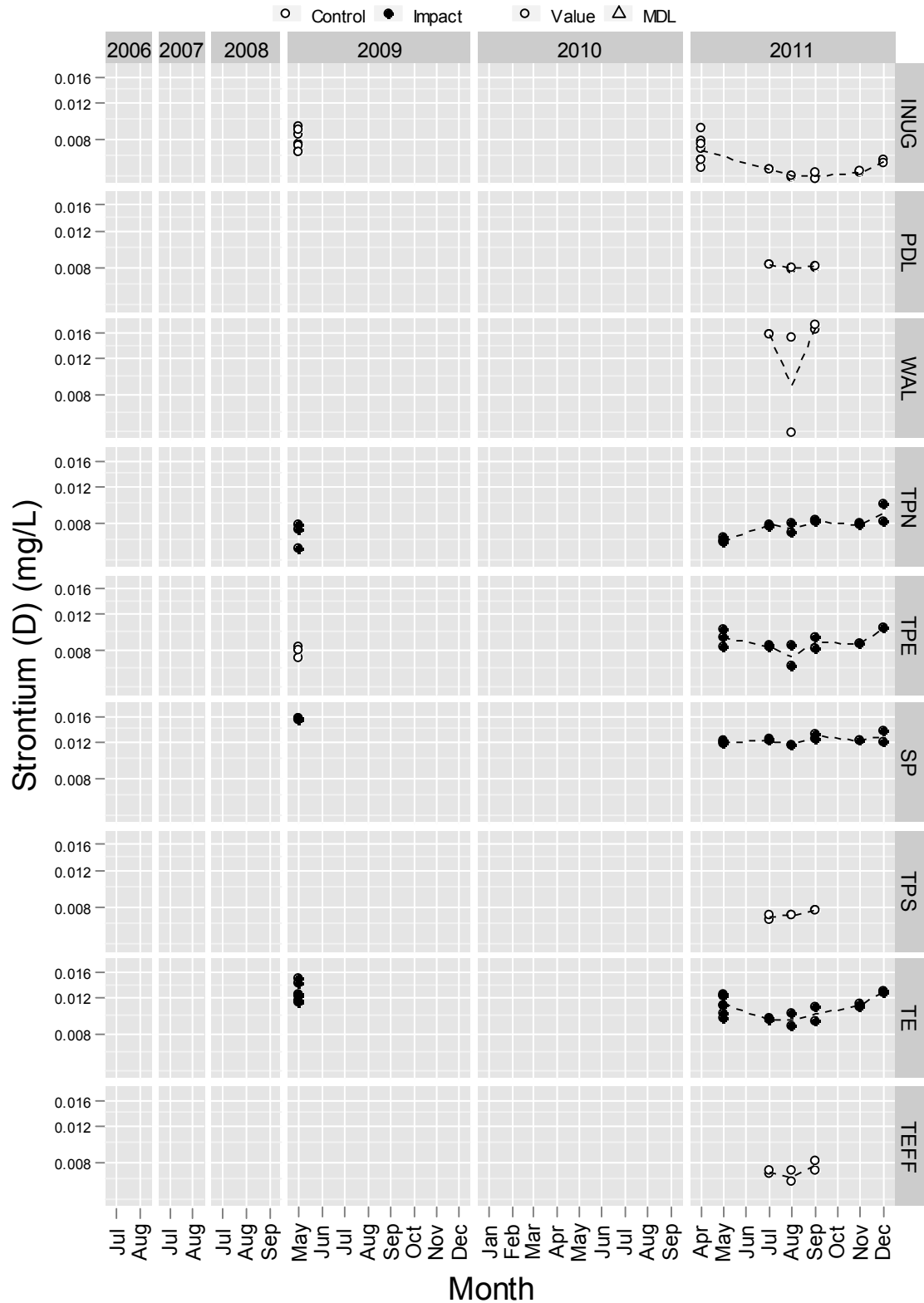


Figure 3.3- 39. Conductivity ($\mu\text{S}/\text{cm}$) in water samples from Baker Lake since 2008.

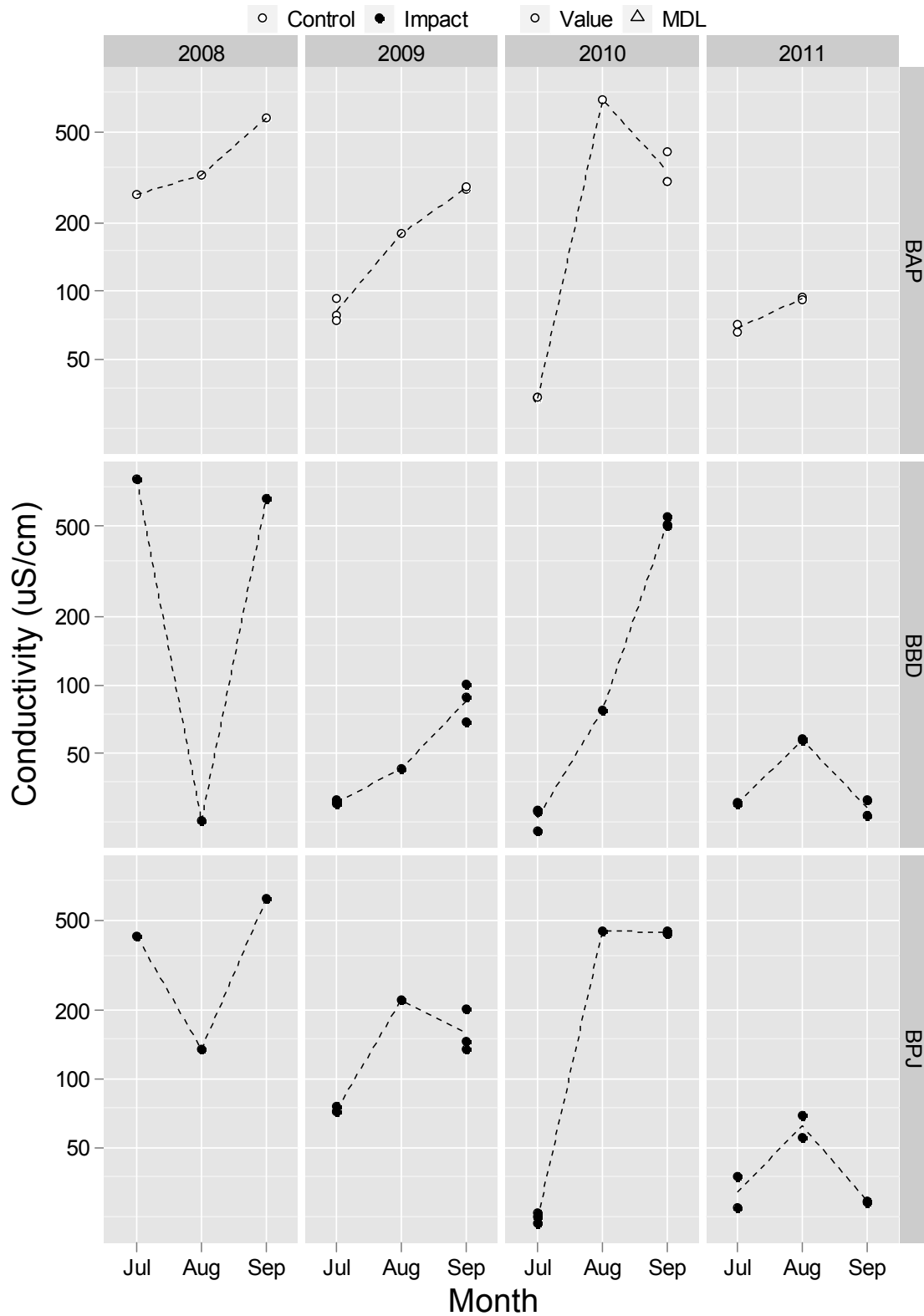


Figure 3.3- 40. Hardness (mg/L) in water samples from Baker Lake since 2008.

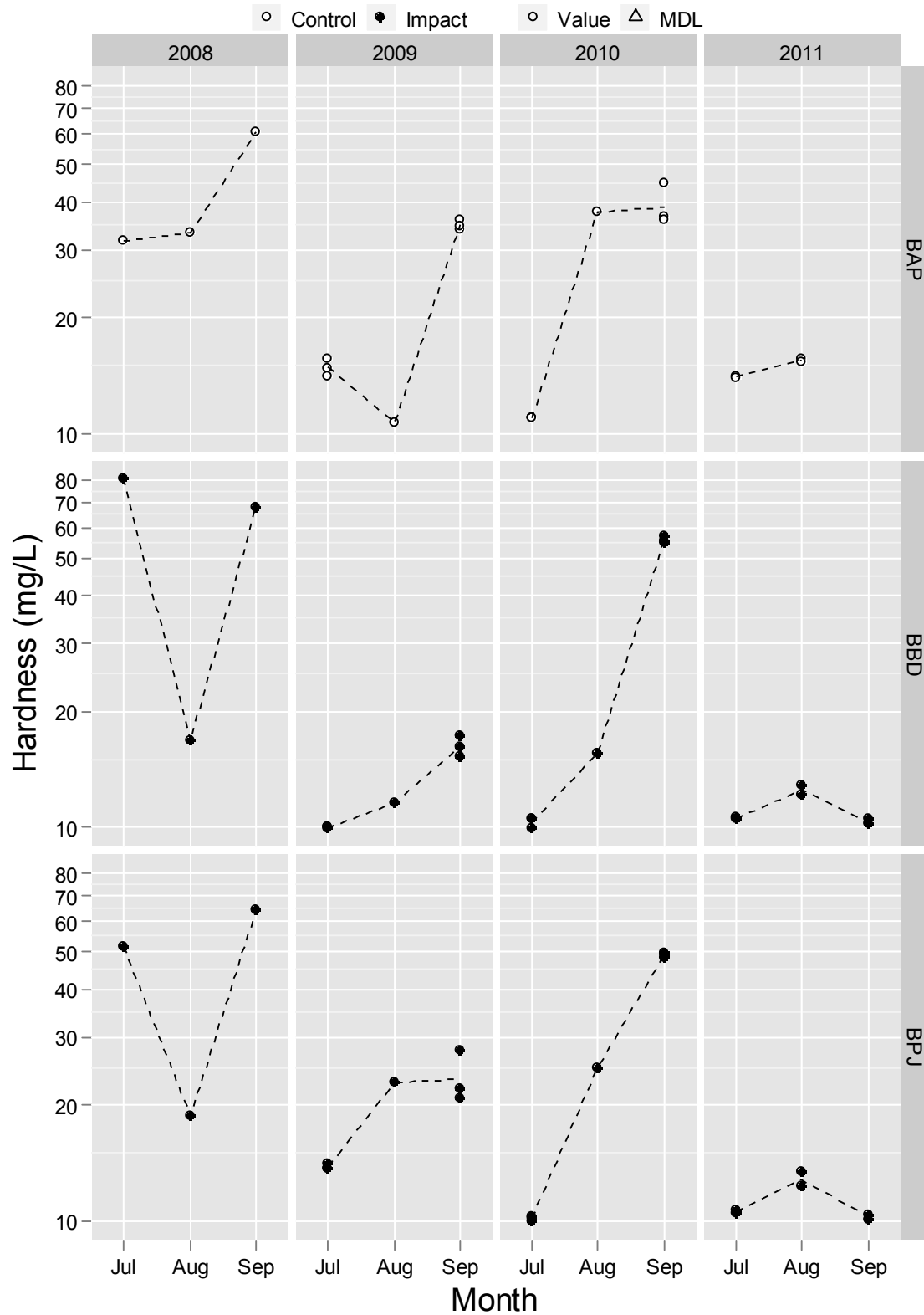


Figure 3.3- 41. pH in water samples from Baker Lake since 2008.

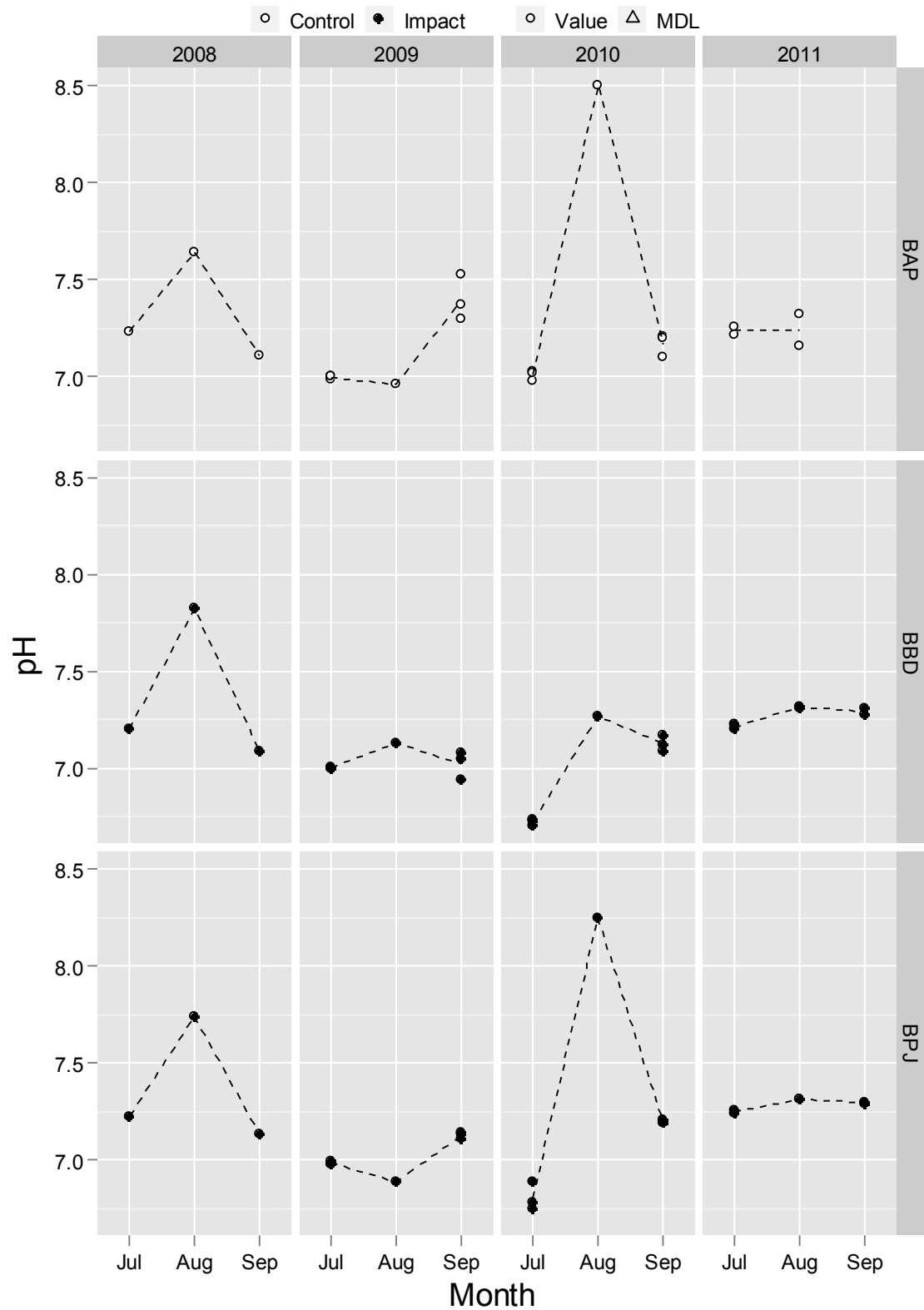


Figure 3.3- 42. Total Suspended Solids (TSS; mg/L) in water samples from Baker Lake since 2008.

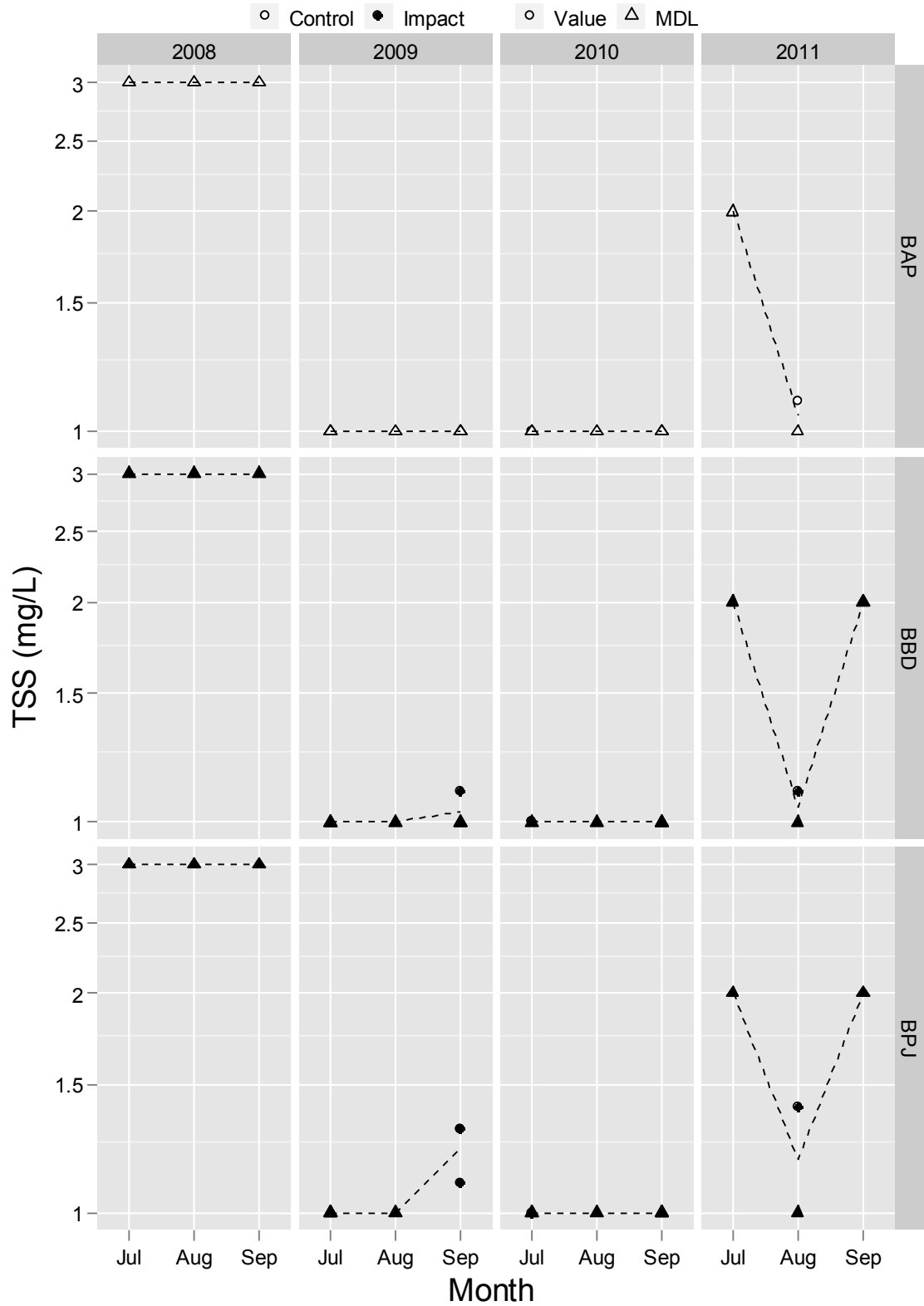


Figure 3.3- 43. Total Dissolved Solids (TDS; mg/L) in water samples from Baker Lake since 2008.

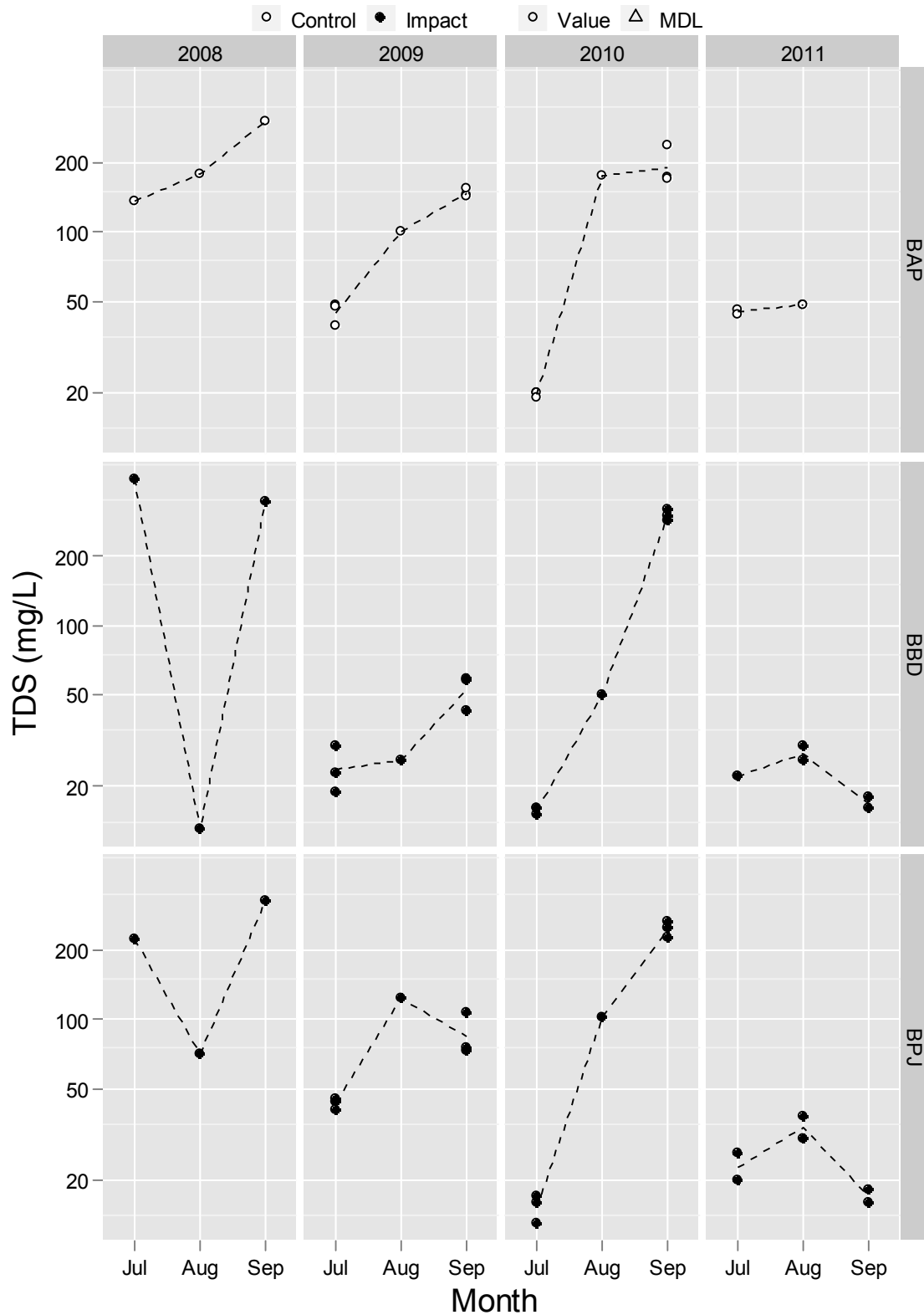


Figure 3.3- 44. Bicarbonate Alkalinity (mg/L) in water samples from Baker Lake since 2008.

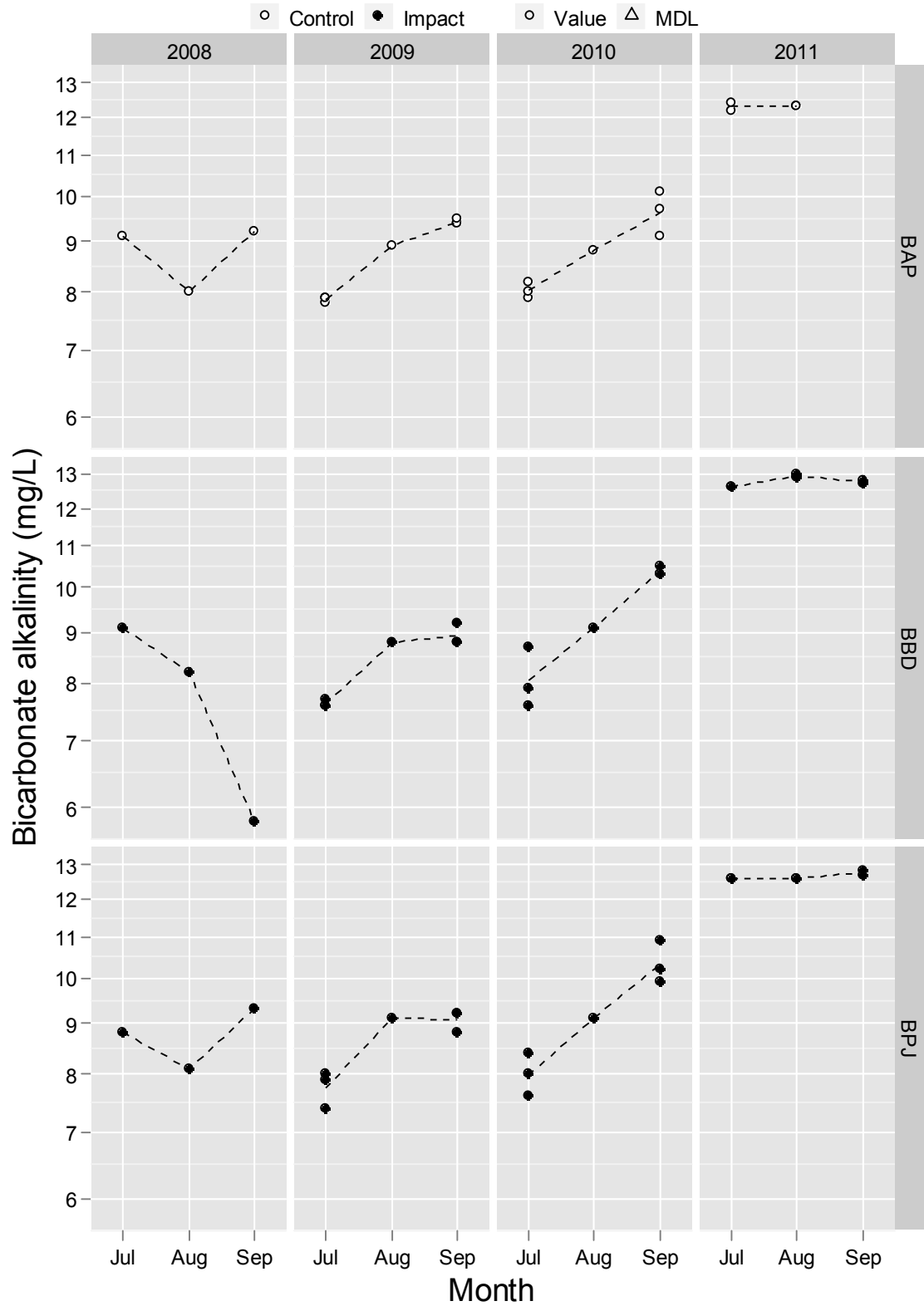


Figure 3.3- 45. Total Alkalinity (mg/L) in water samples from Baker Lake since 2008.

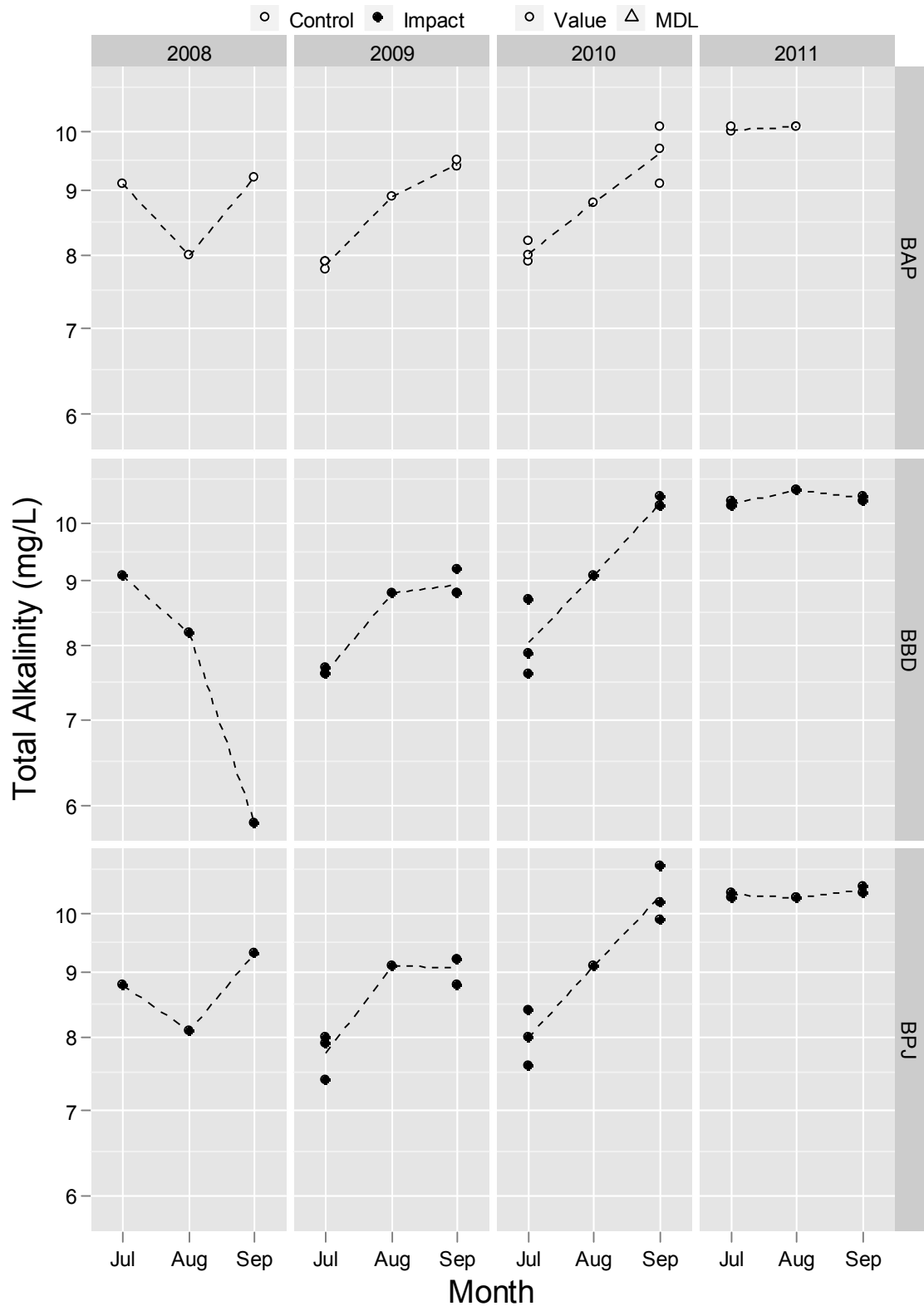


Figure 3.3- 46. Ammonia-N (mg/L) in water samples from Baker Lake since 2008.

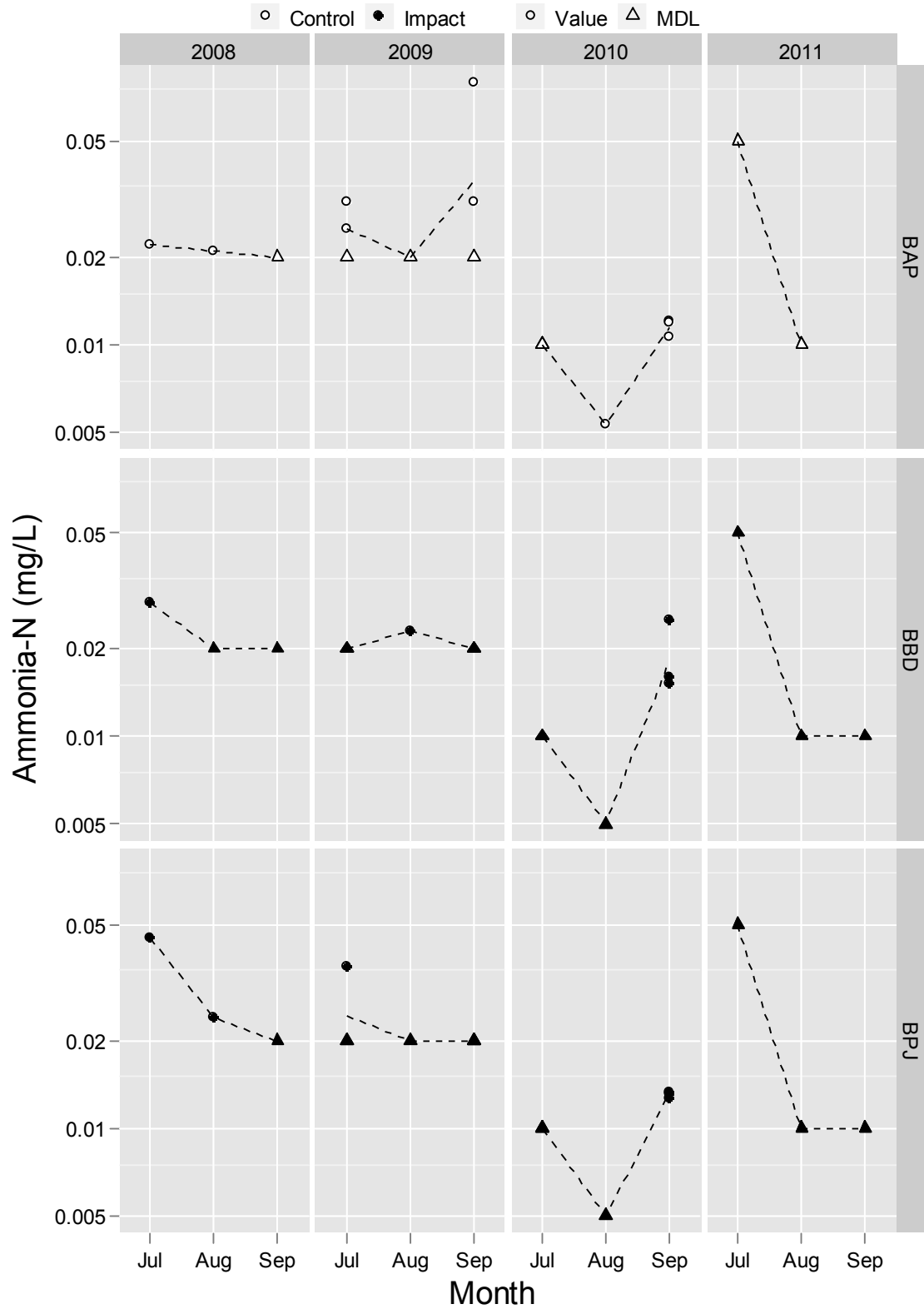


Figure 3.3- 47. Chloride (mg/L) in water samples from Baker Lake since 2008.

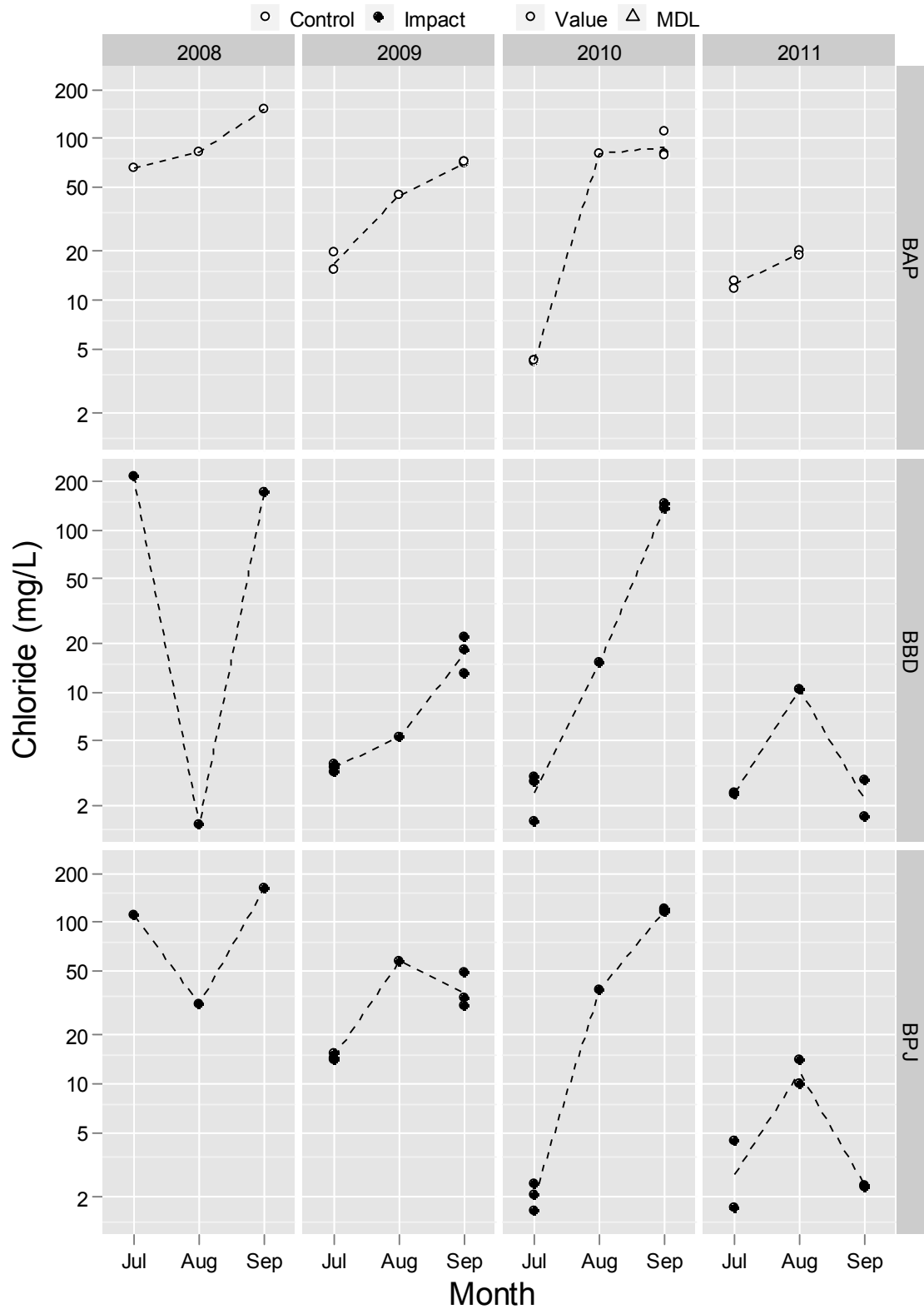


Figure 3.3- 48. Nitrate-N (mg/L) in water samples from Baker Lake since 2008.

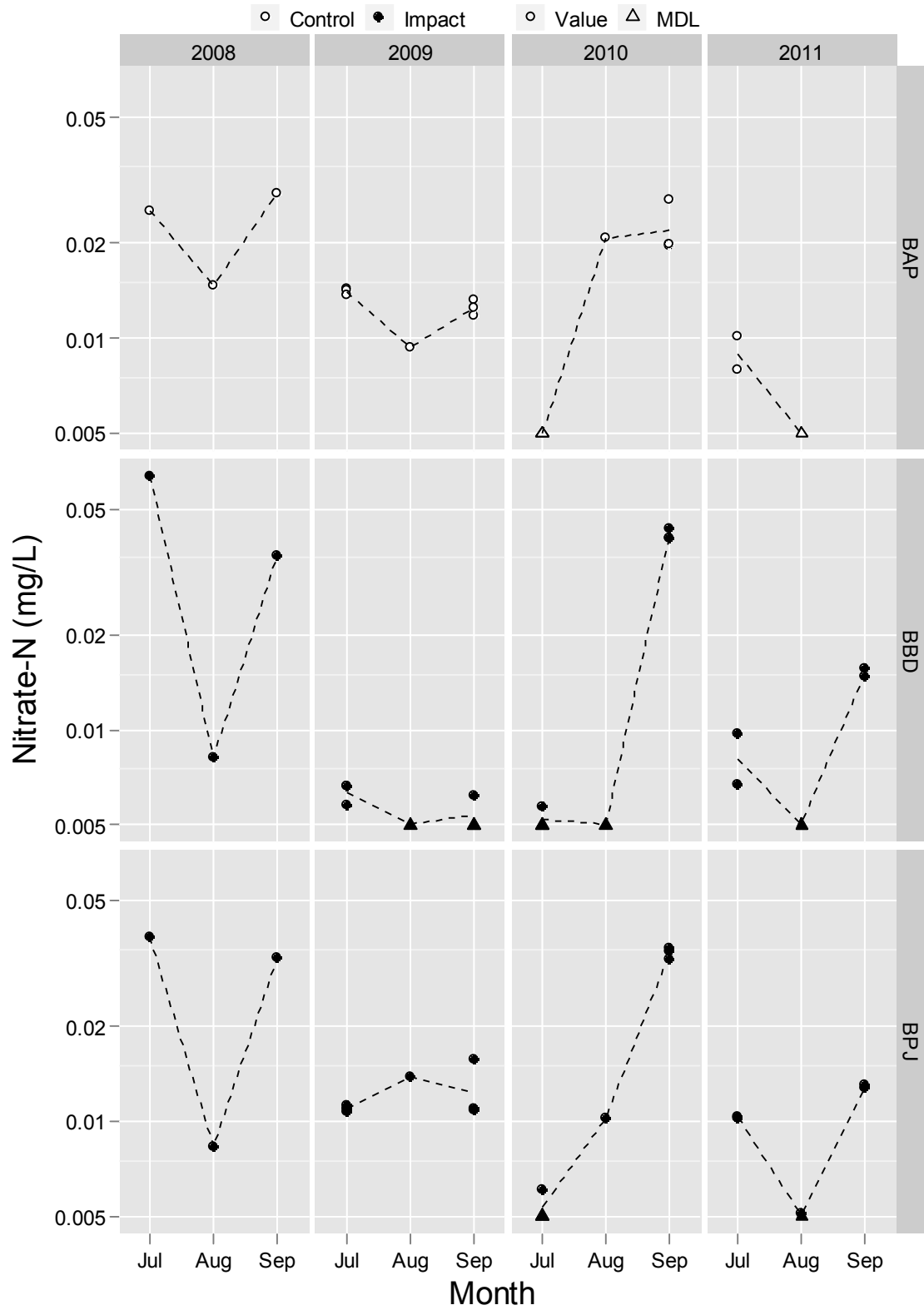


Figure 3.3- 49. Total Kjeldahl Nitrogen (TKN; mg/L) in water samples from Baker Lake since 2008.

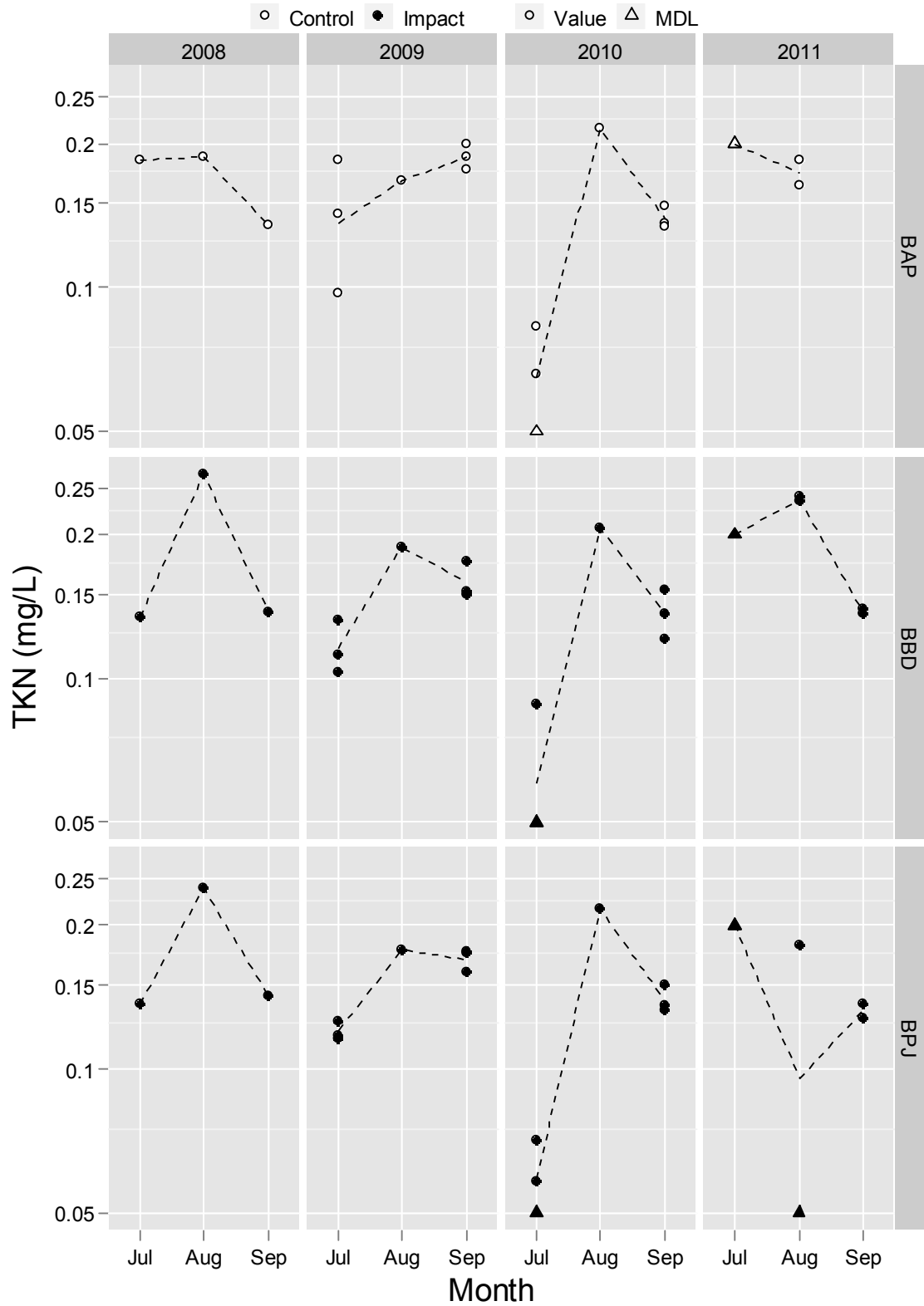


Figure 3.3- 50. Total Phosphorus (mg/L) in water samples from Baker Lake since 2008.

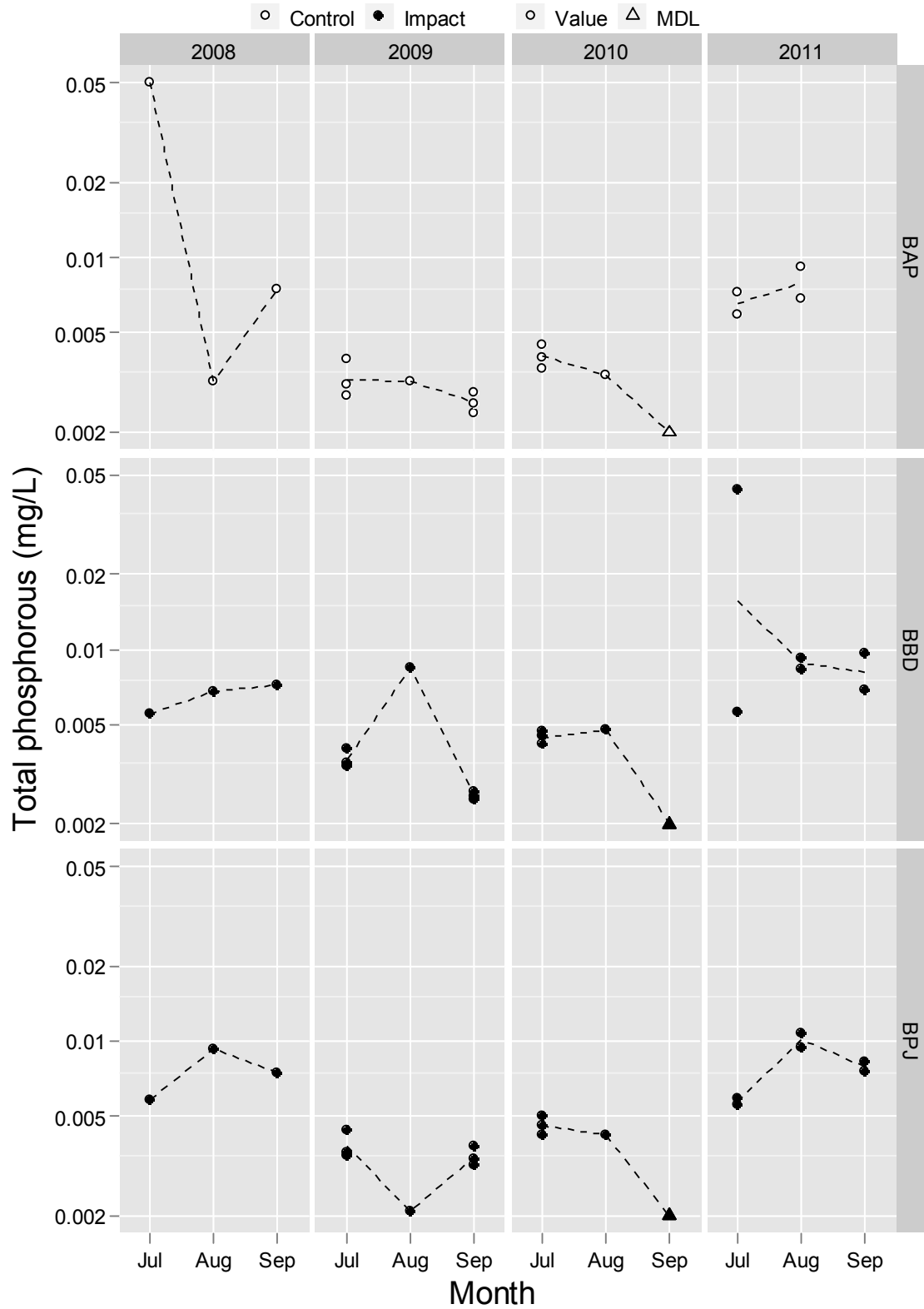


Figure 3.3- 51. Ortho-Phosphate (mg/L) in water samples from Baker Lake since 2008.

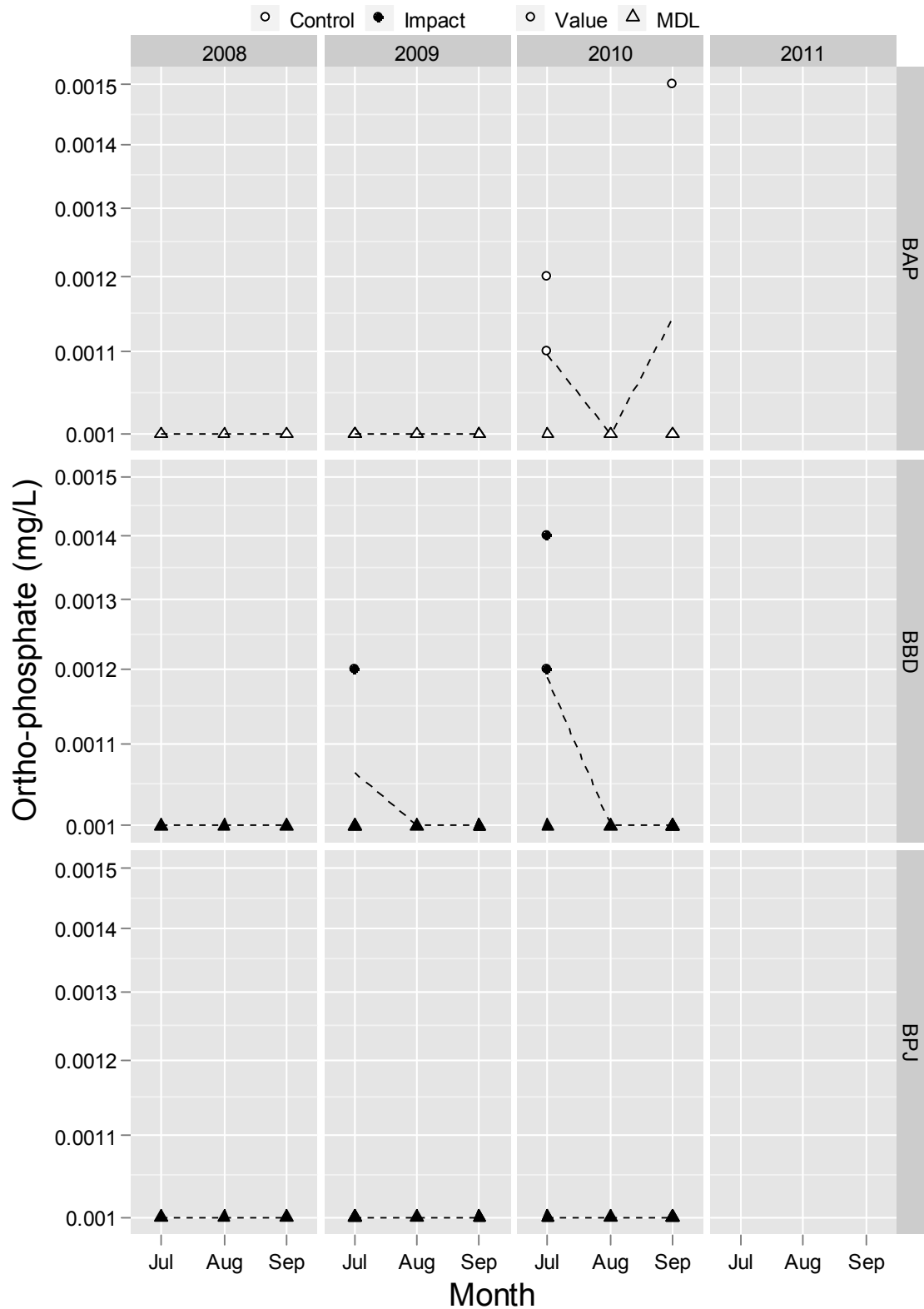


Figure 3.3- 52. Reactive Silica (mg/L) in water samples from Baker Lake since 2008.

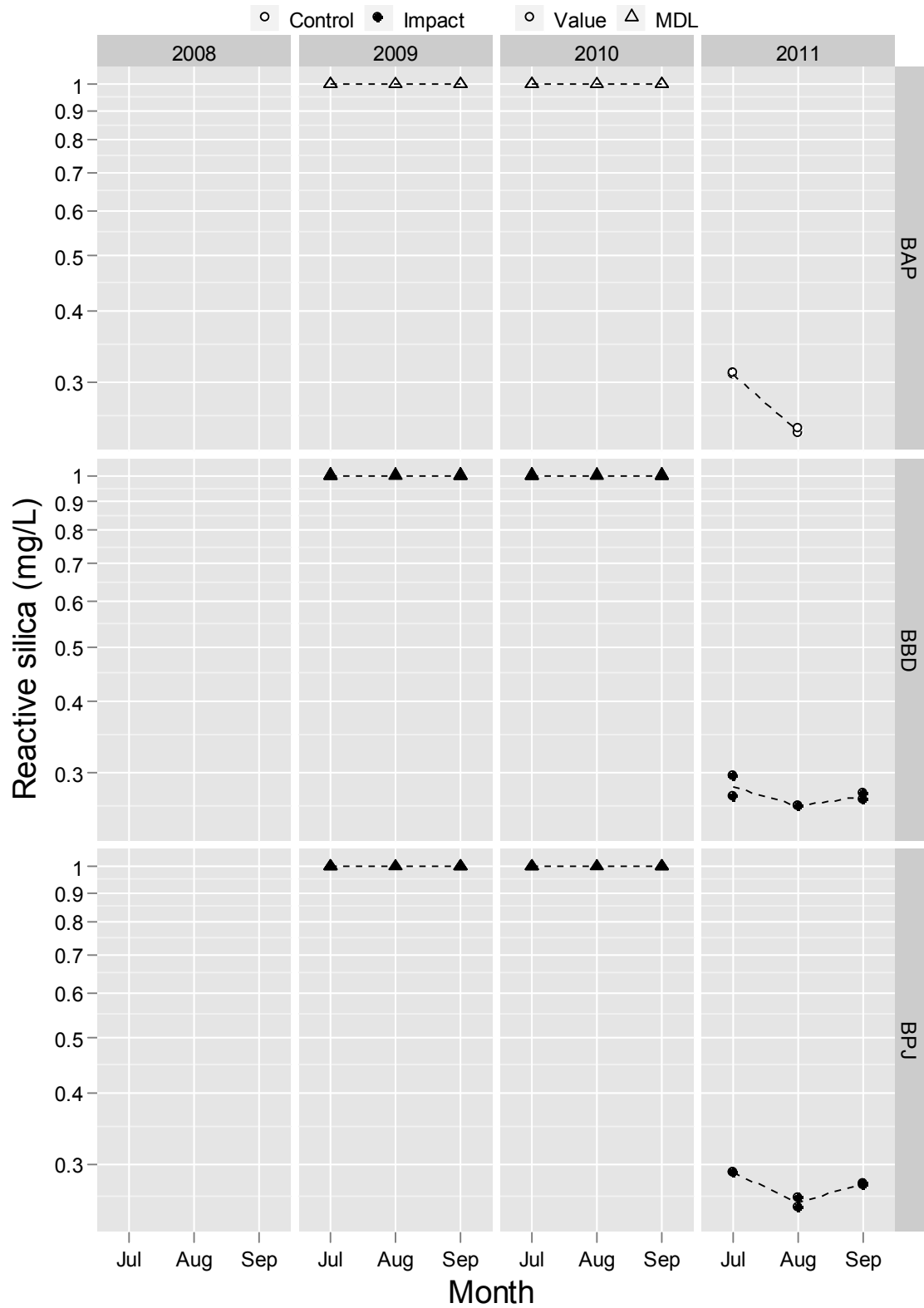


Figure 3.3- 53. Sulphate (mg/L) in water samples from Baker Lake since 2008.

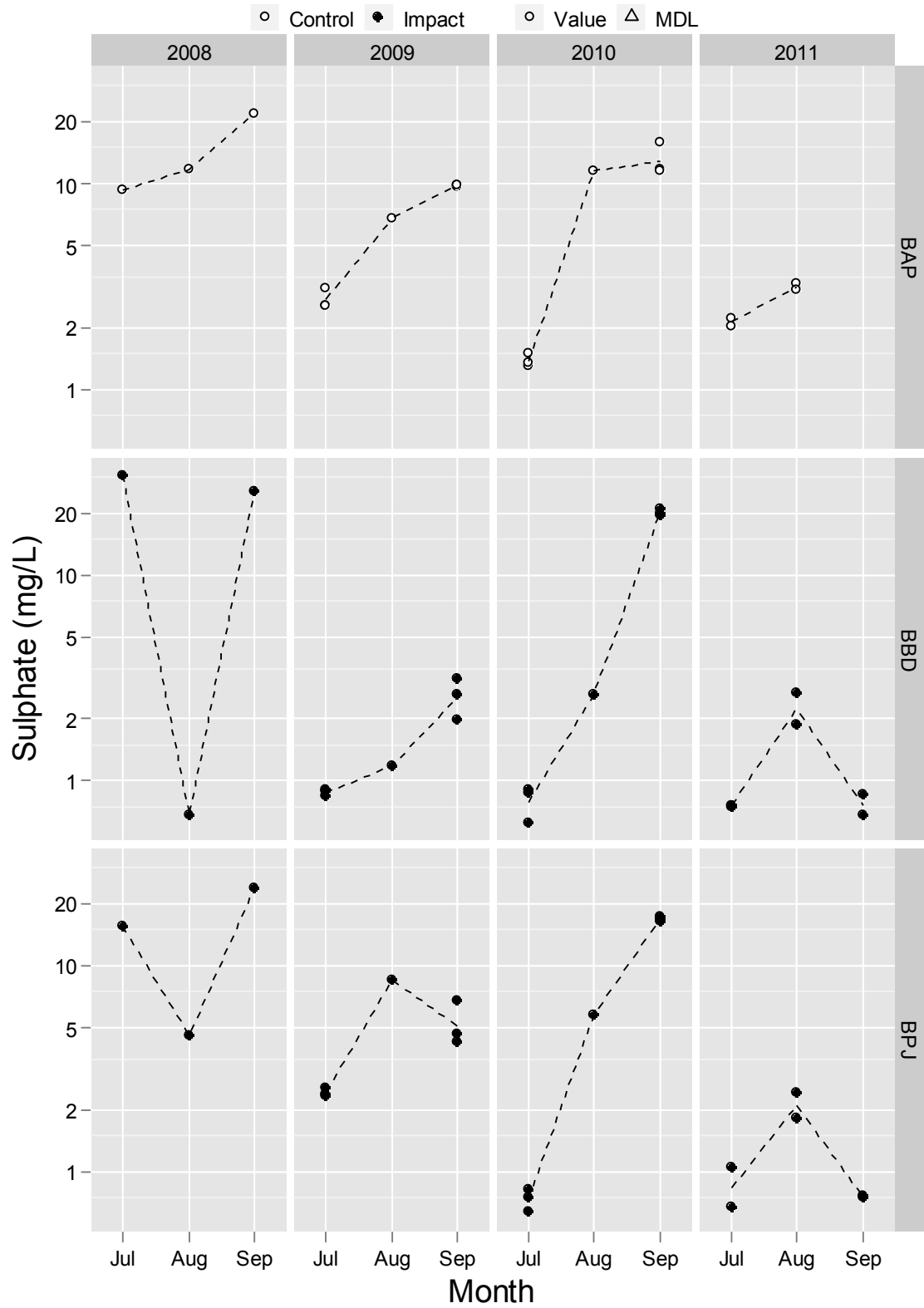


Figure 3.3- 54. Dissolved Organic Carbon (DOC; mg/L) in water samples from Baker Lake since 2008.

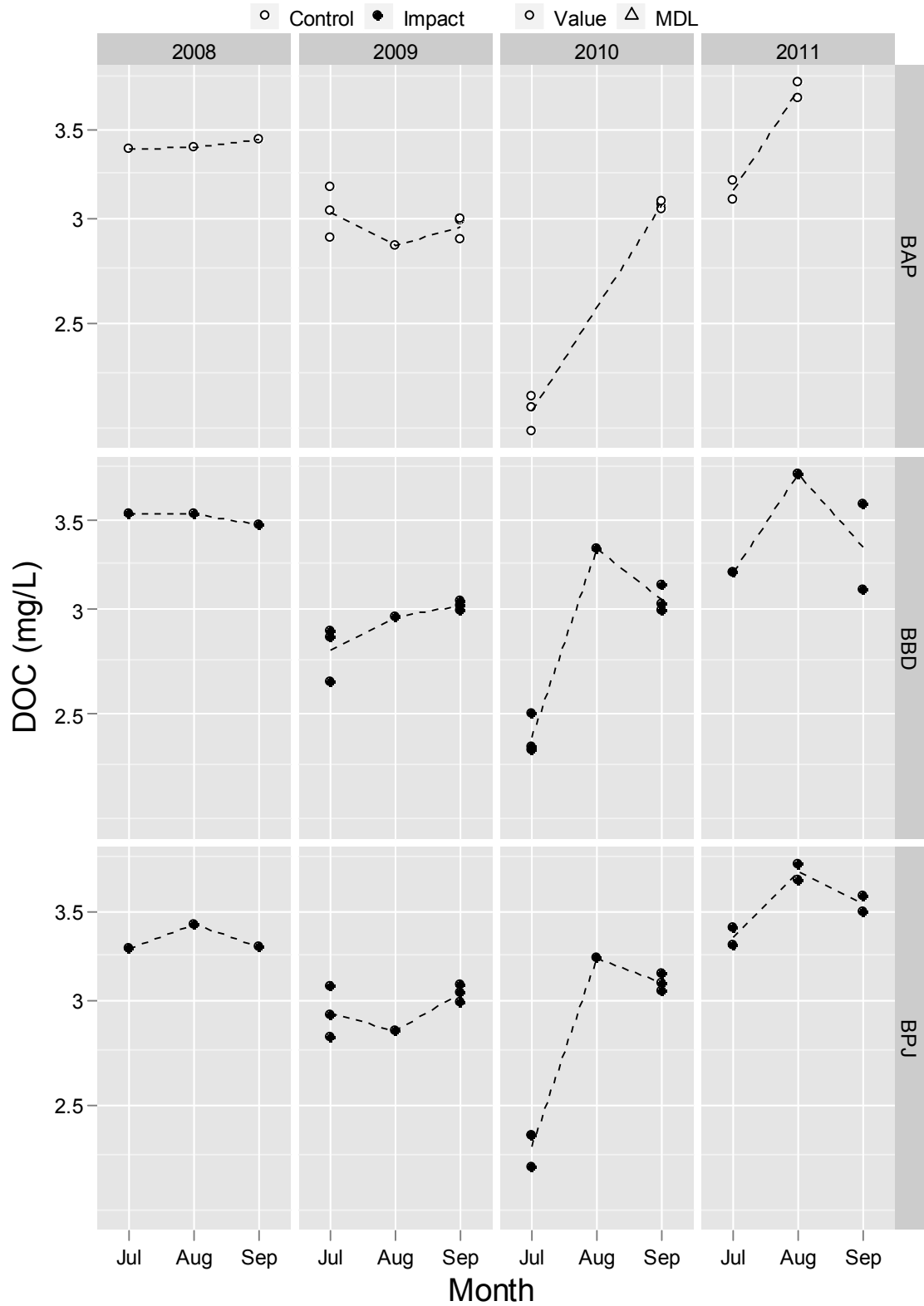


Figure 3.3- 55. Total Organic Carbon (TOC; mg/L) in water samples from Baker Lake since 2008.

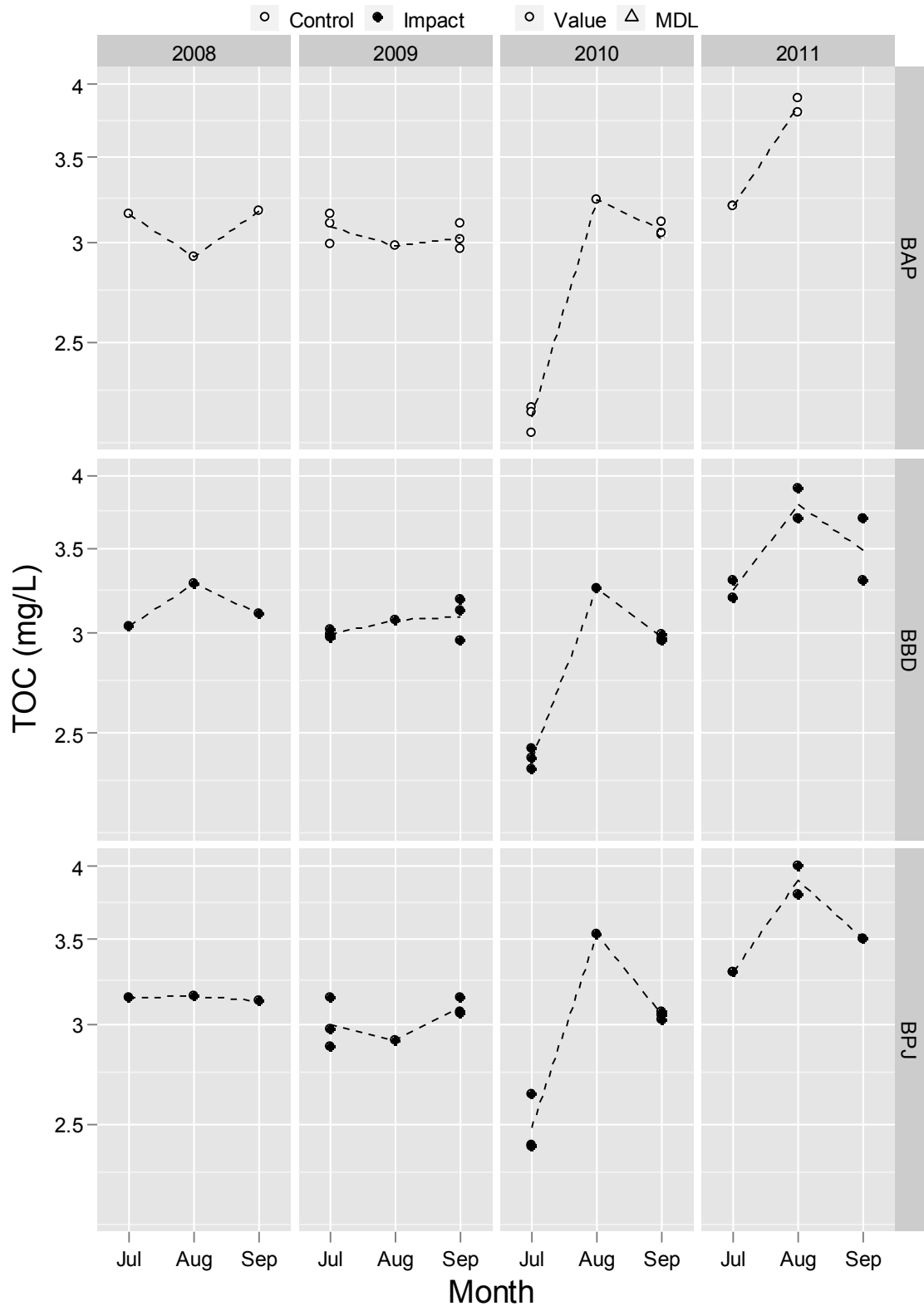


Figure 3.3- 56. Total Aluminum (mg/L) in water samples from Baker Lake since 2008.

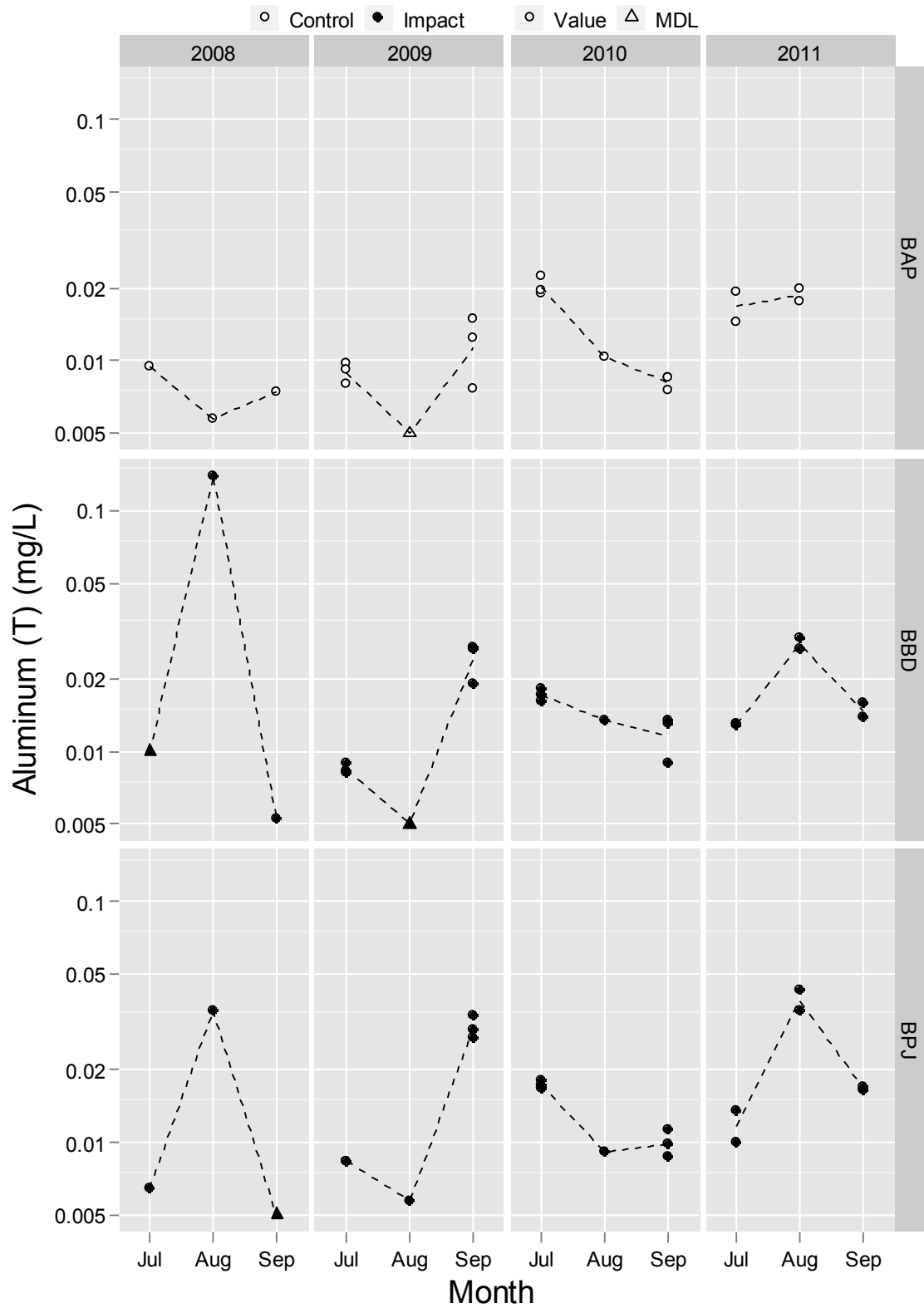


Figure 3.3- 57. Total Barium (mg/L) in water samples from Baker Lake since 2008.

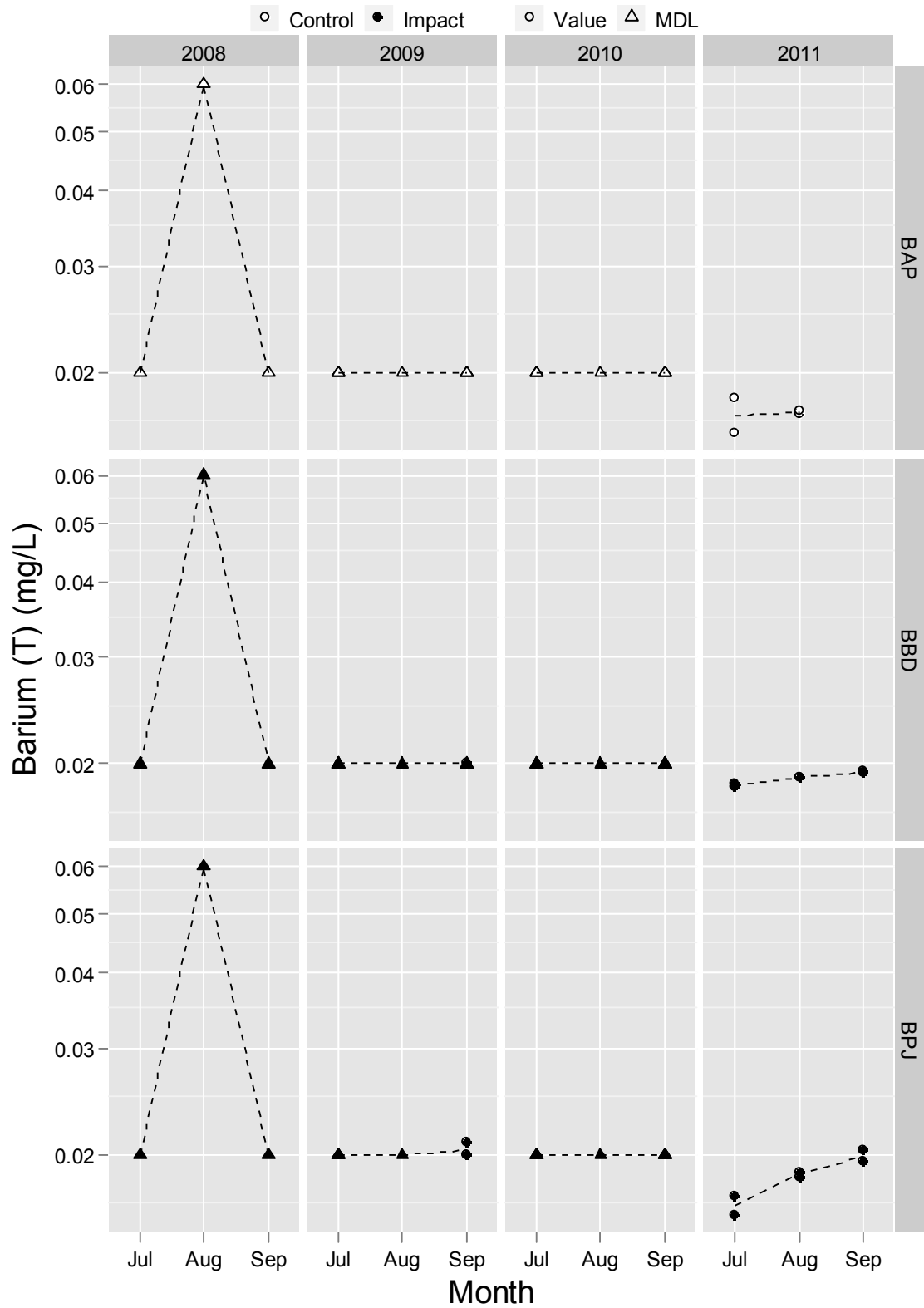


Figure 3.3- 58. Total Calcium (mg/L) in water samples from Baker Lake since 2008.

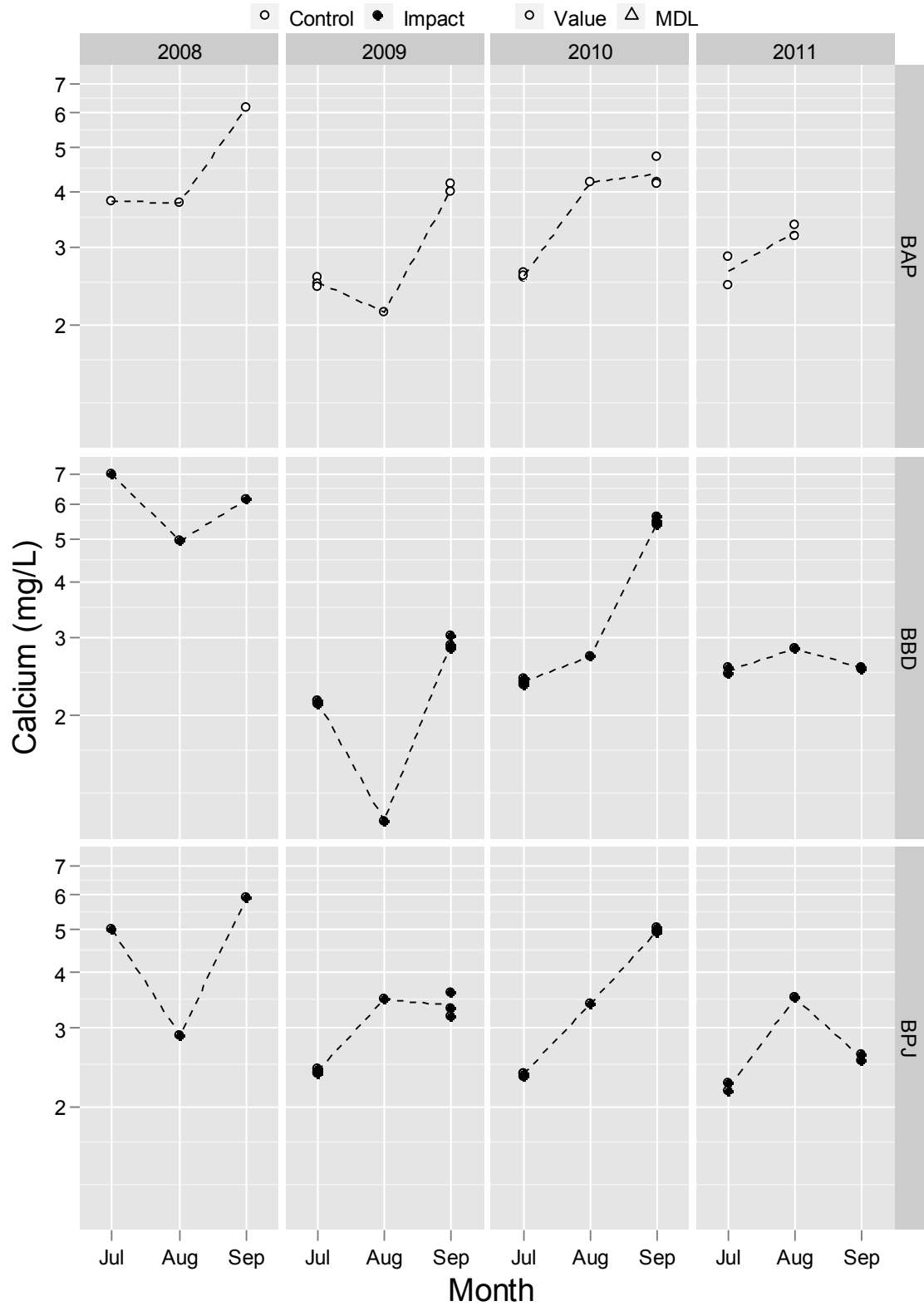


Figure 3.3- 59. Total Copper (mg/L) in water samples from Baker Lake since 2008.

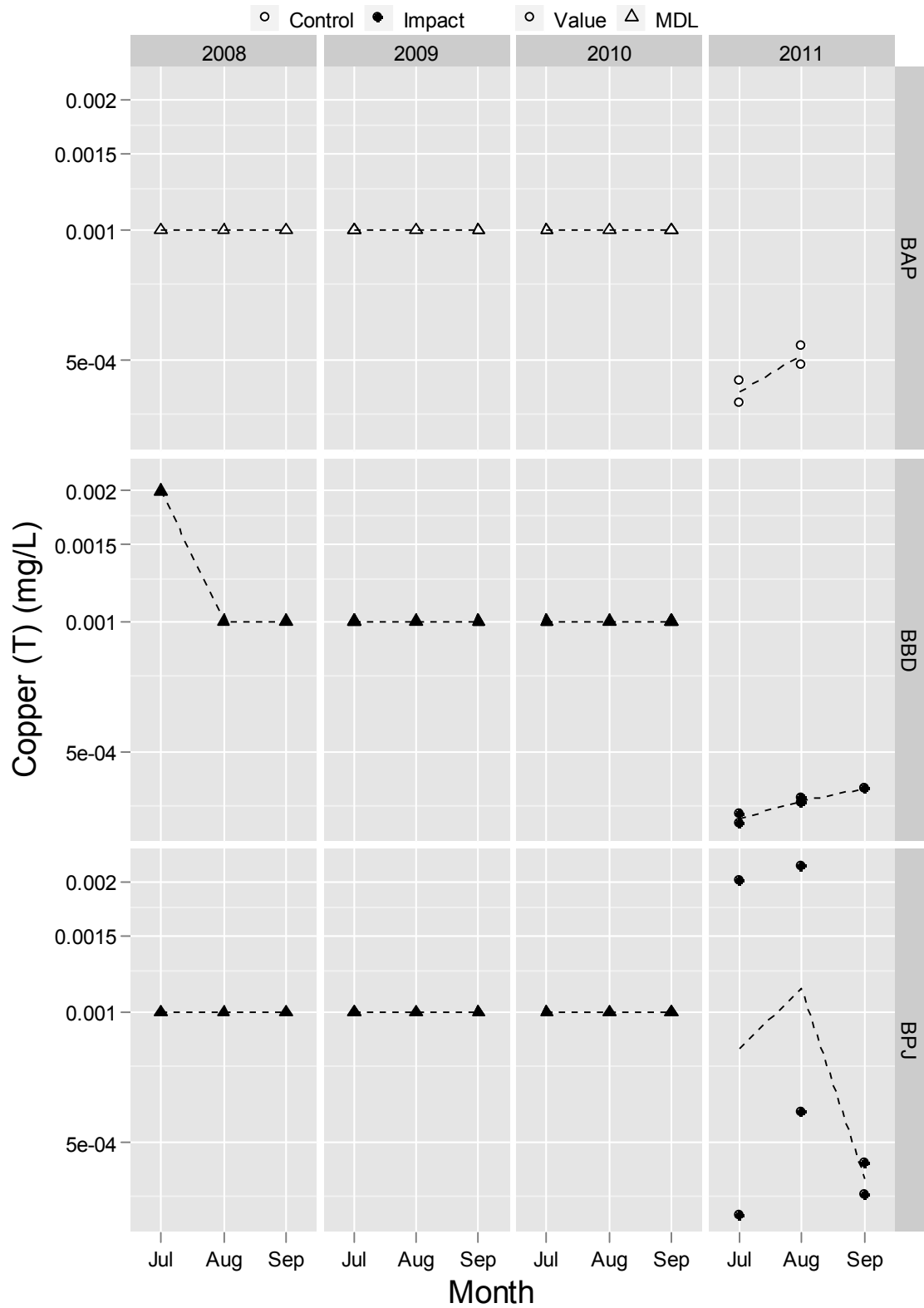


Figure 3.3- 60. Total Iron (mg/L) in water samples from Baker Lake since 2008.

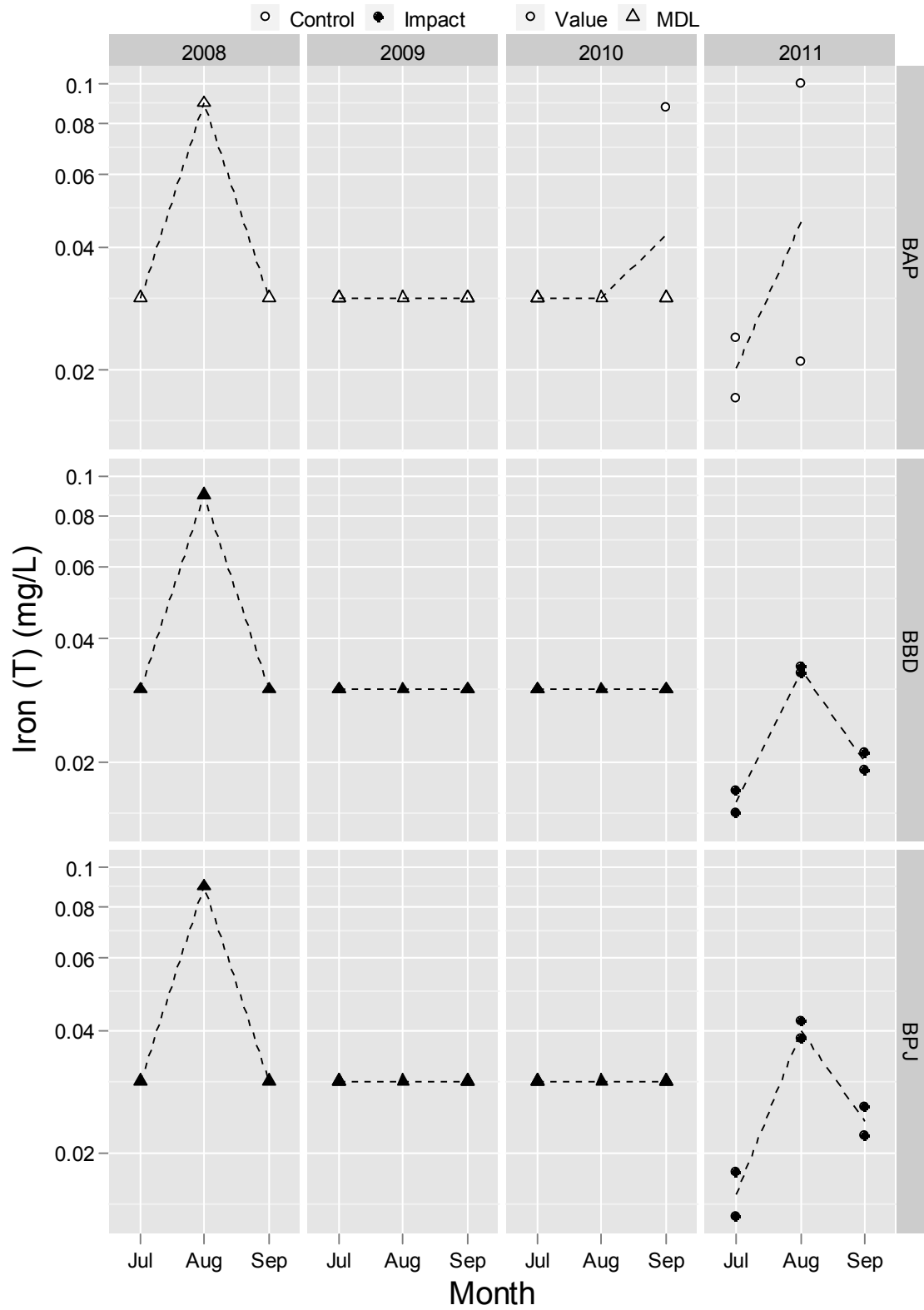


Figure 3.3- 61. Total Lead (mg/L) in water samples from Baker Lake since 2008.

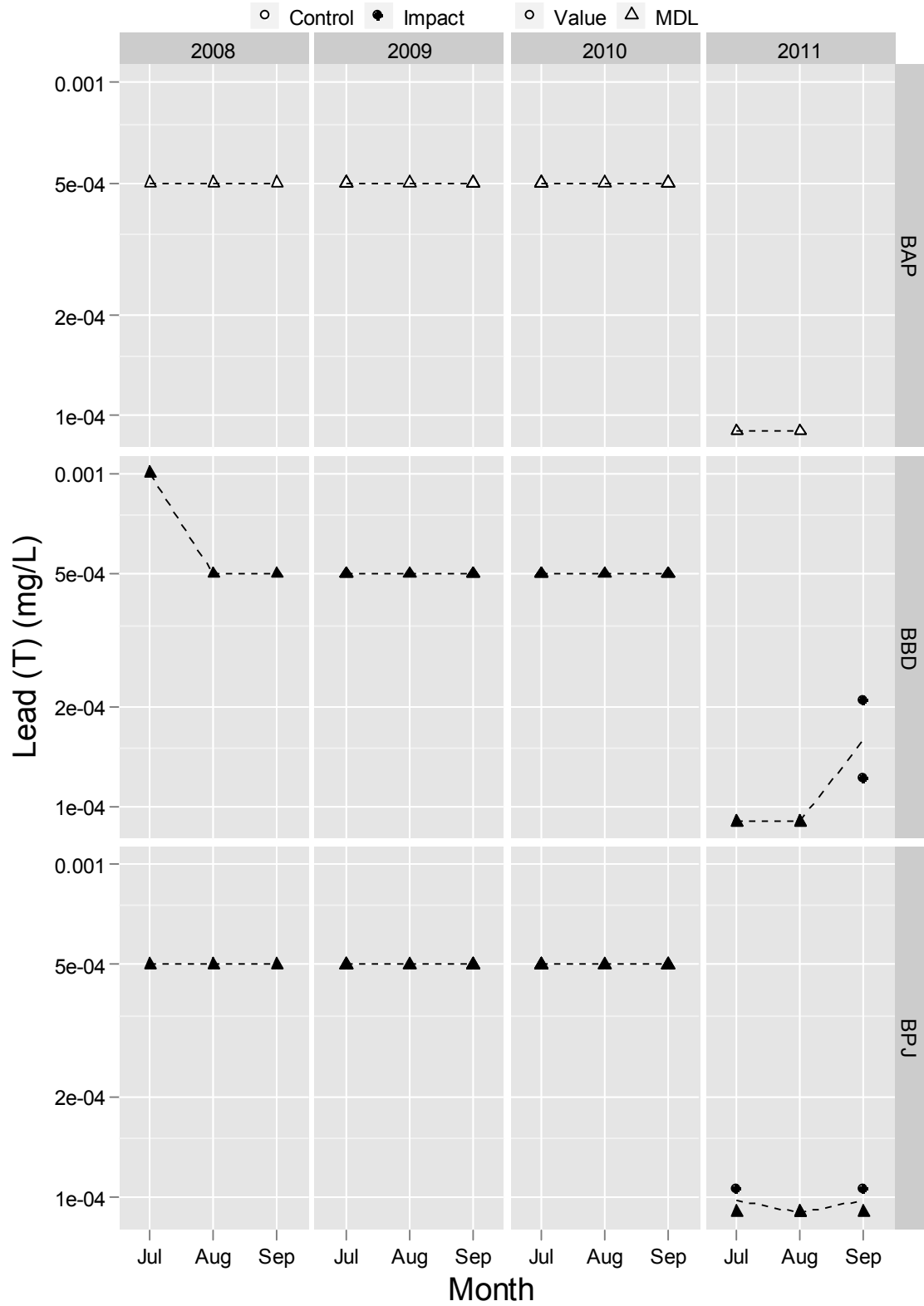


Figure 3.3- 62. Total Magnesium (mg/L) in water samples from Baker Lake since 2008.

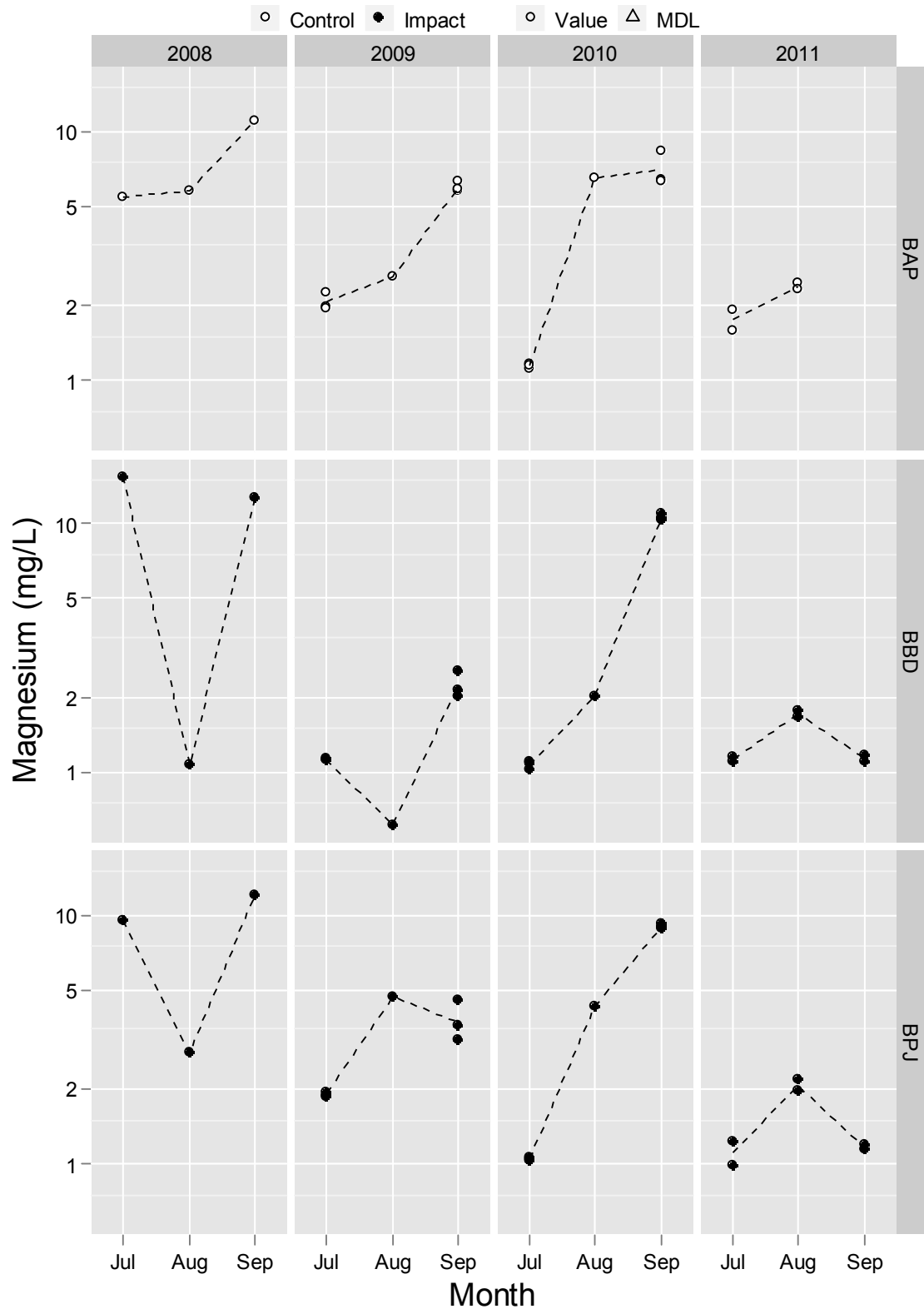


Figure 3.3- 63. Total Manganese (mg/L) in water samples from Baker Lake since 2008.

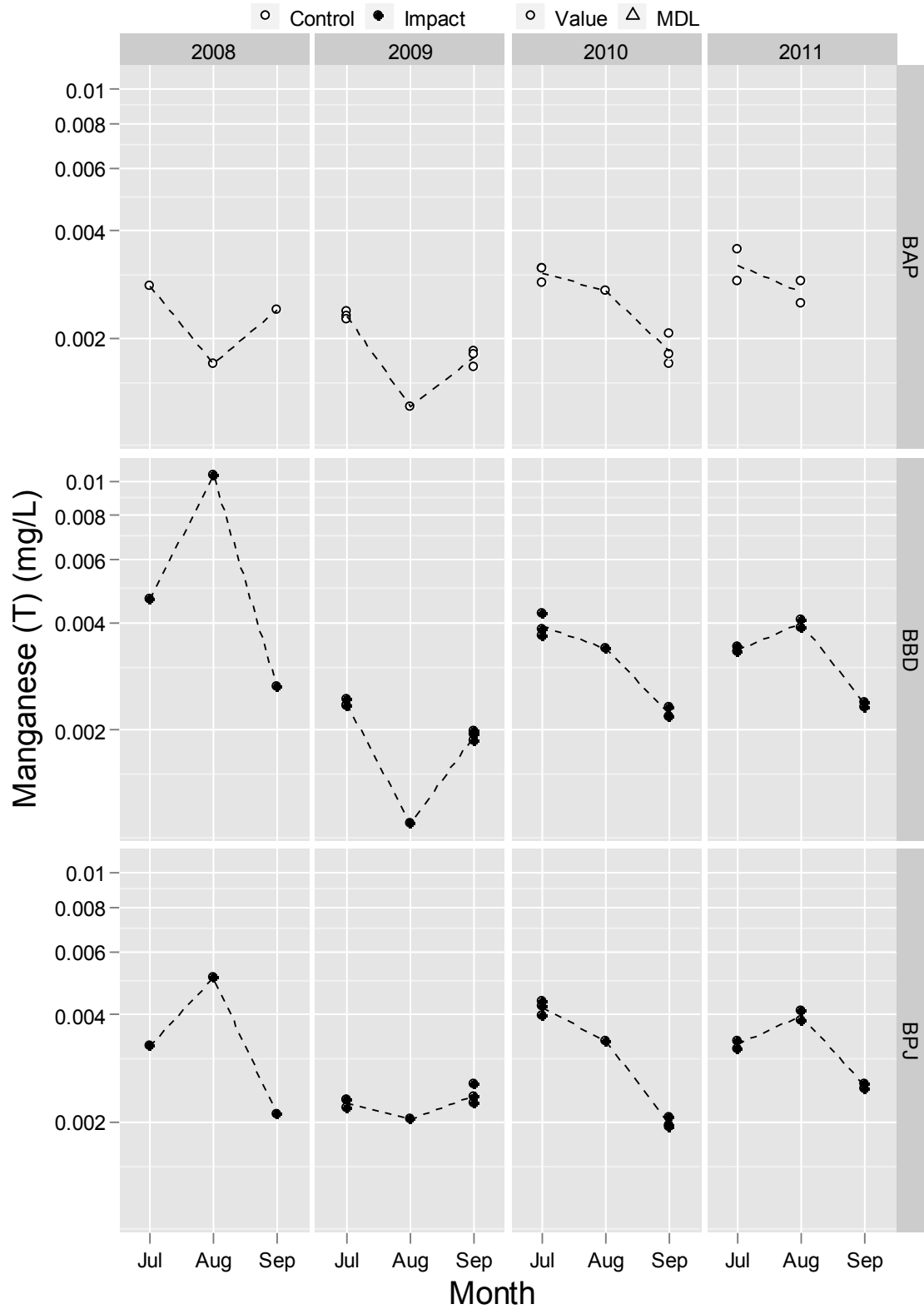


Figure 3.3- 64. Total Potassium (mg/L) in water samples from Baker Lake since 2008.

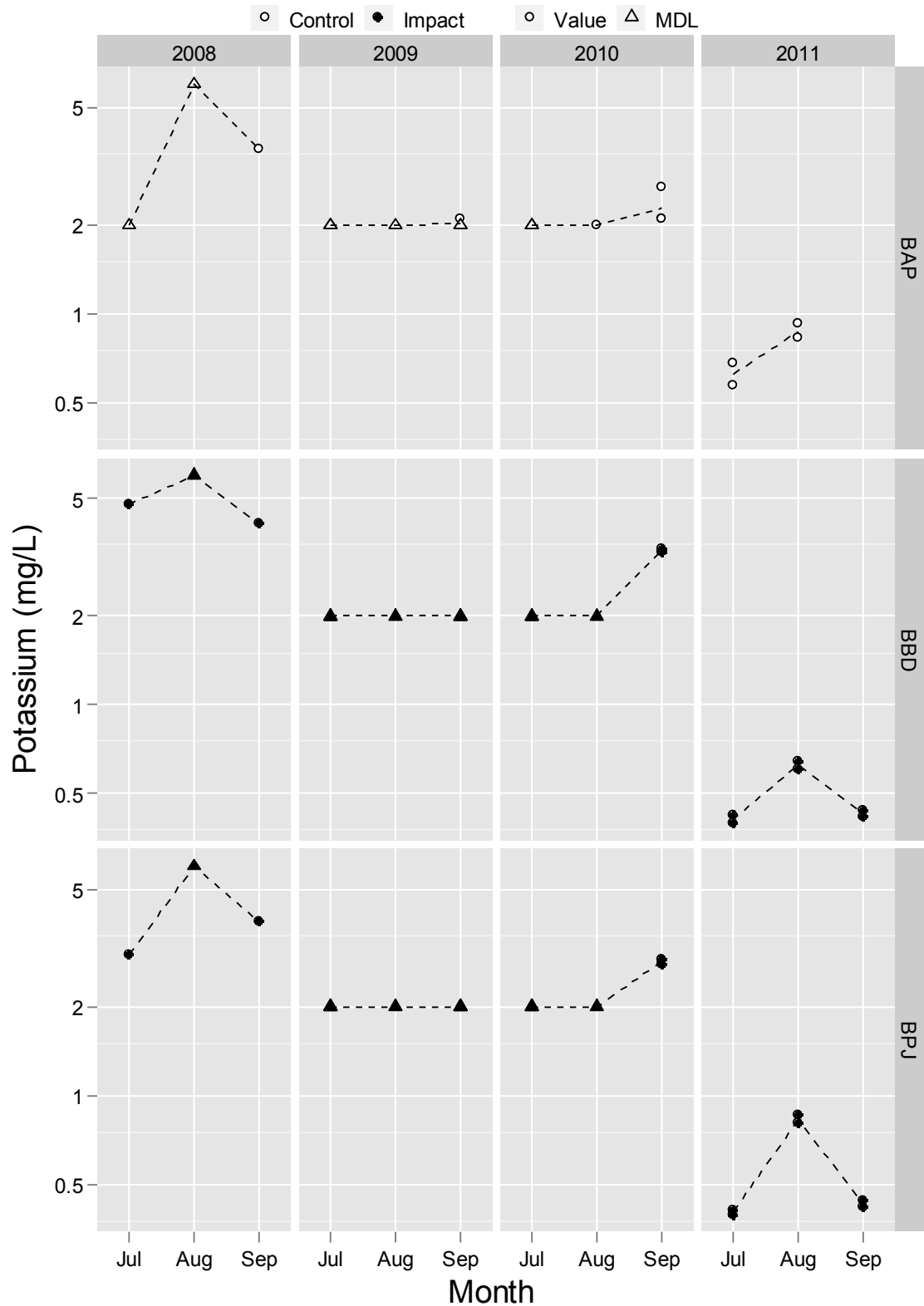


Figure 3.3- 65. Total Sodium (mg/L) in water samples from Baker Lake since 2008.

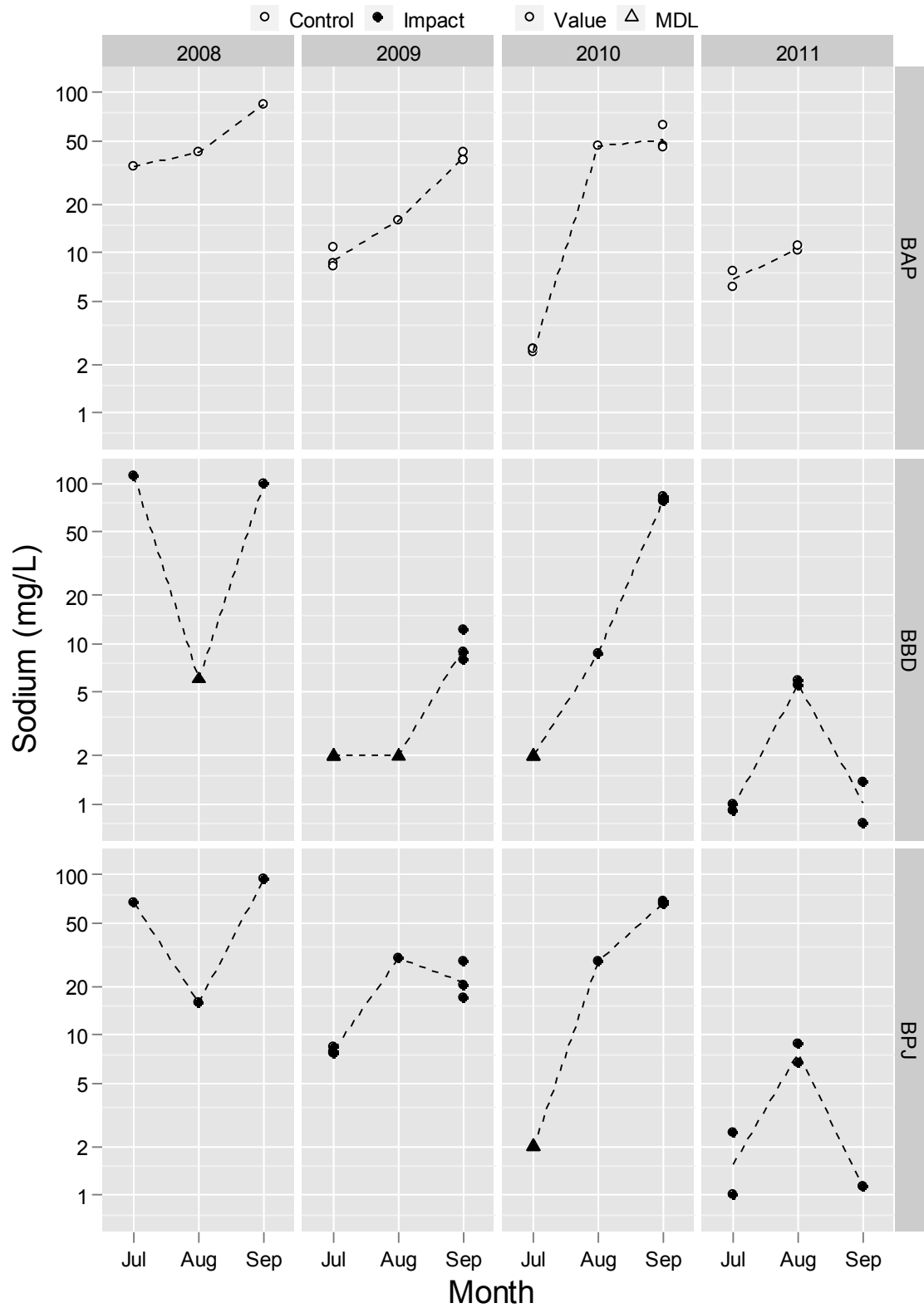


Figure 3.3- 66. Total Strontium (mg/L) in water samples from Baker Lake since 2008.

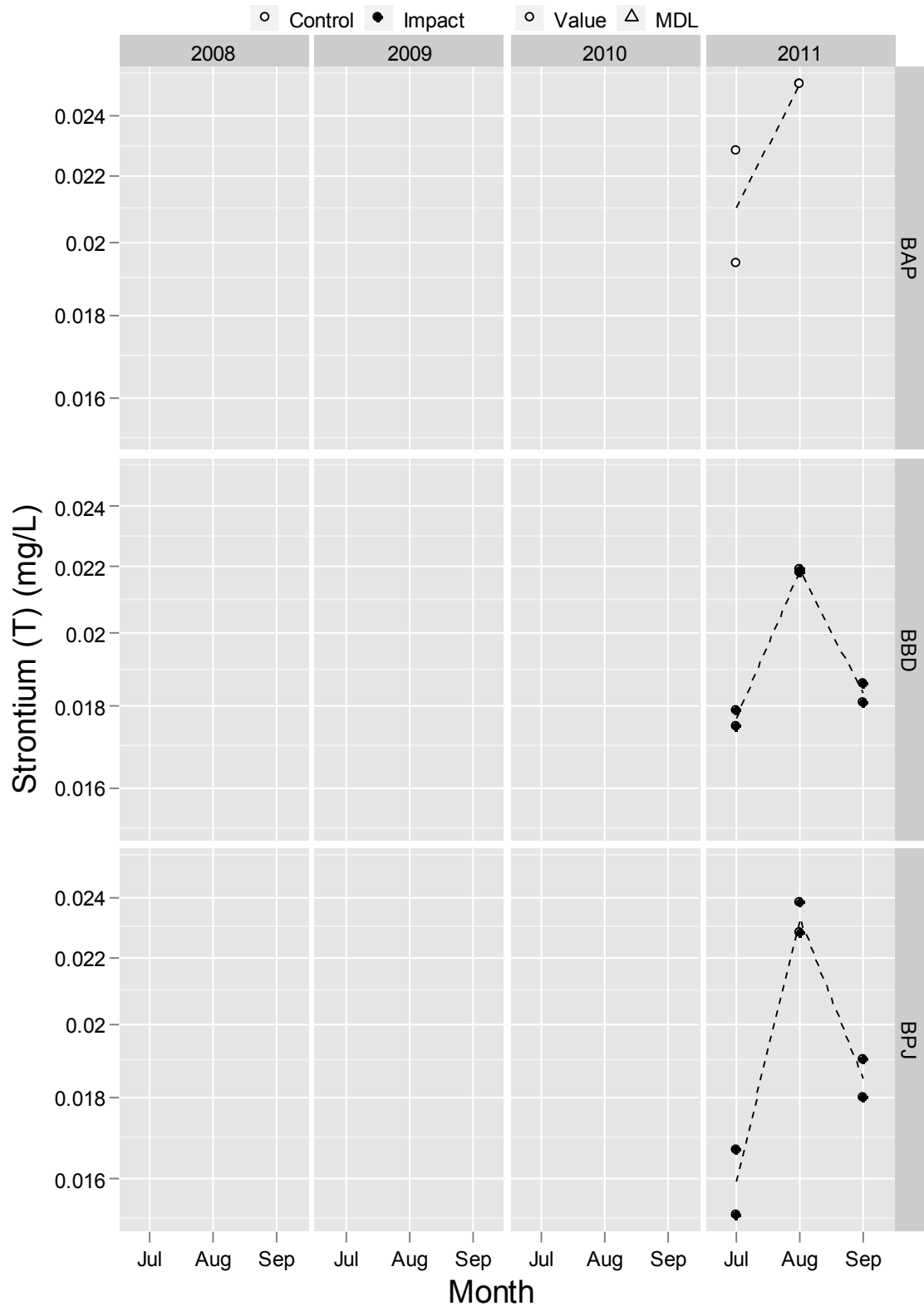


Figure 3.3- 67. Total Tin (mg/L) in water samples from Baker Lake since 2008.

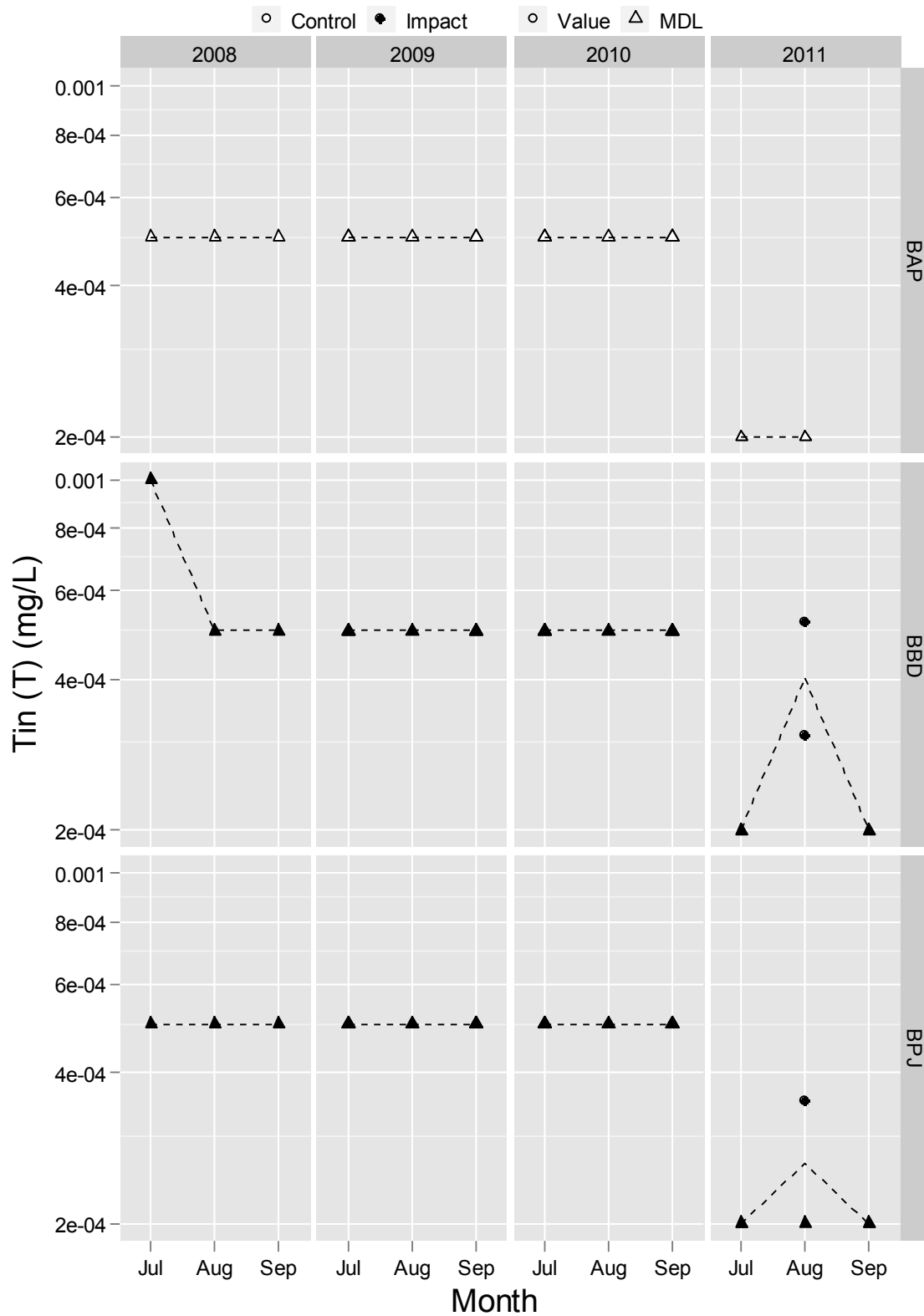


Figure 3.3- 68. Total Titanium (mg/L) in water samples from Baker Lake since 2008.

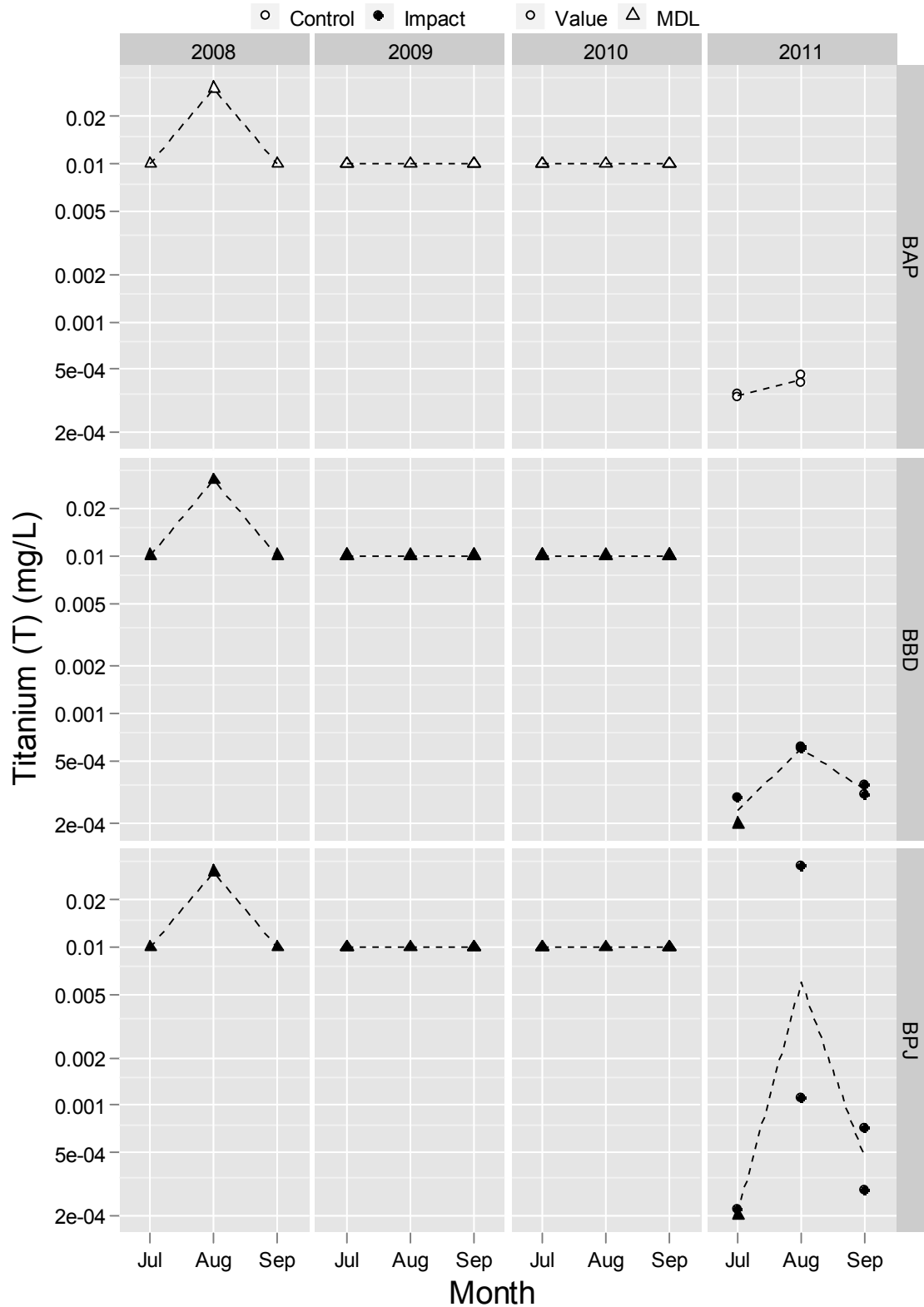


Figure 3.3- 69. Dissolved Aluminum (mg/L) in water samples from Baker Lake since 2008.

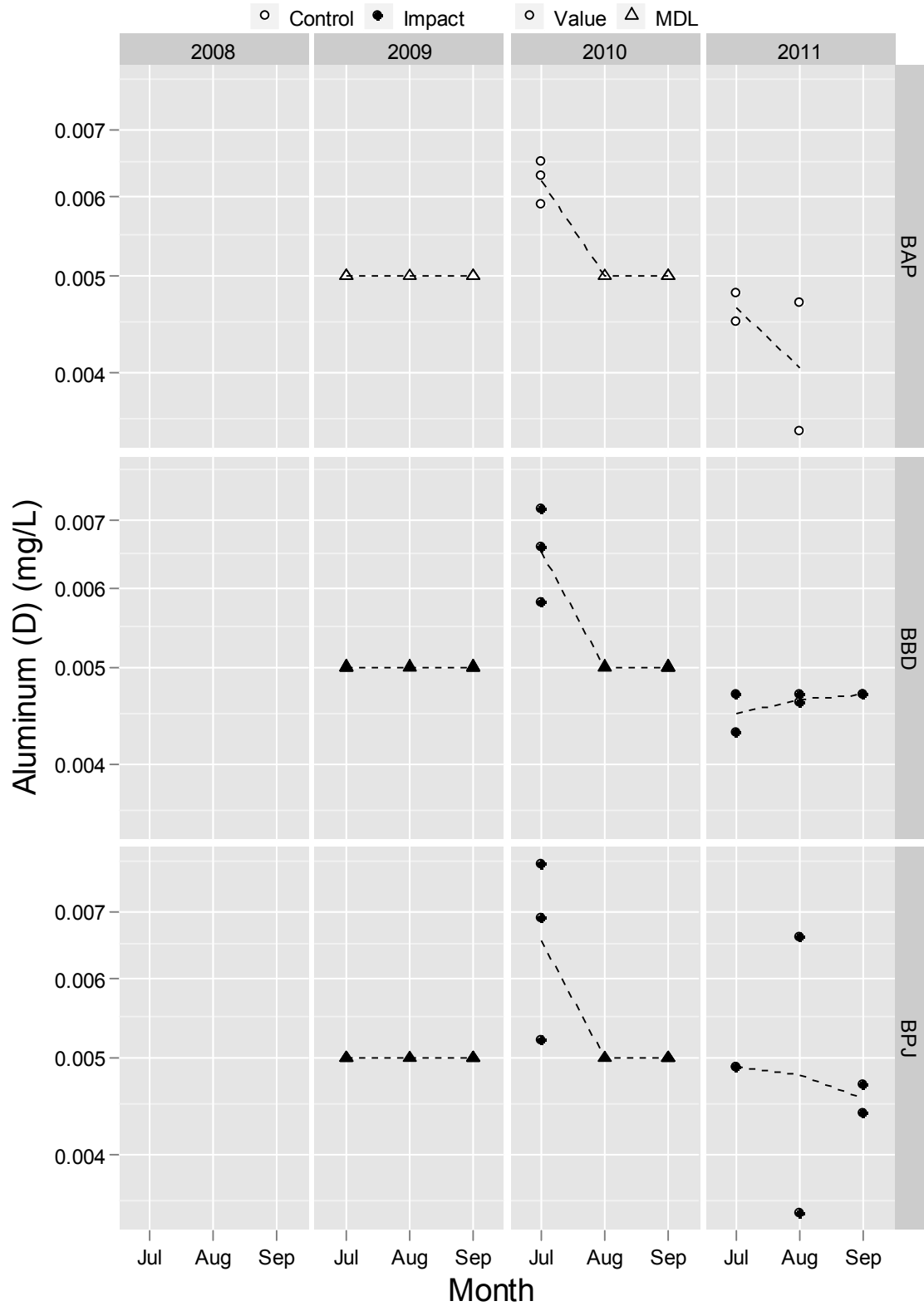


Figure 3.3- 70. Dissolved Barium (mg/L) in water samples from Baker Lake since 2008.

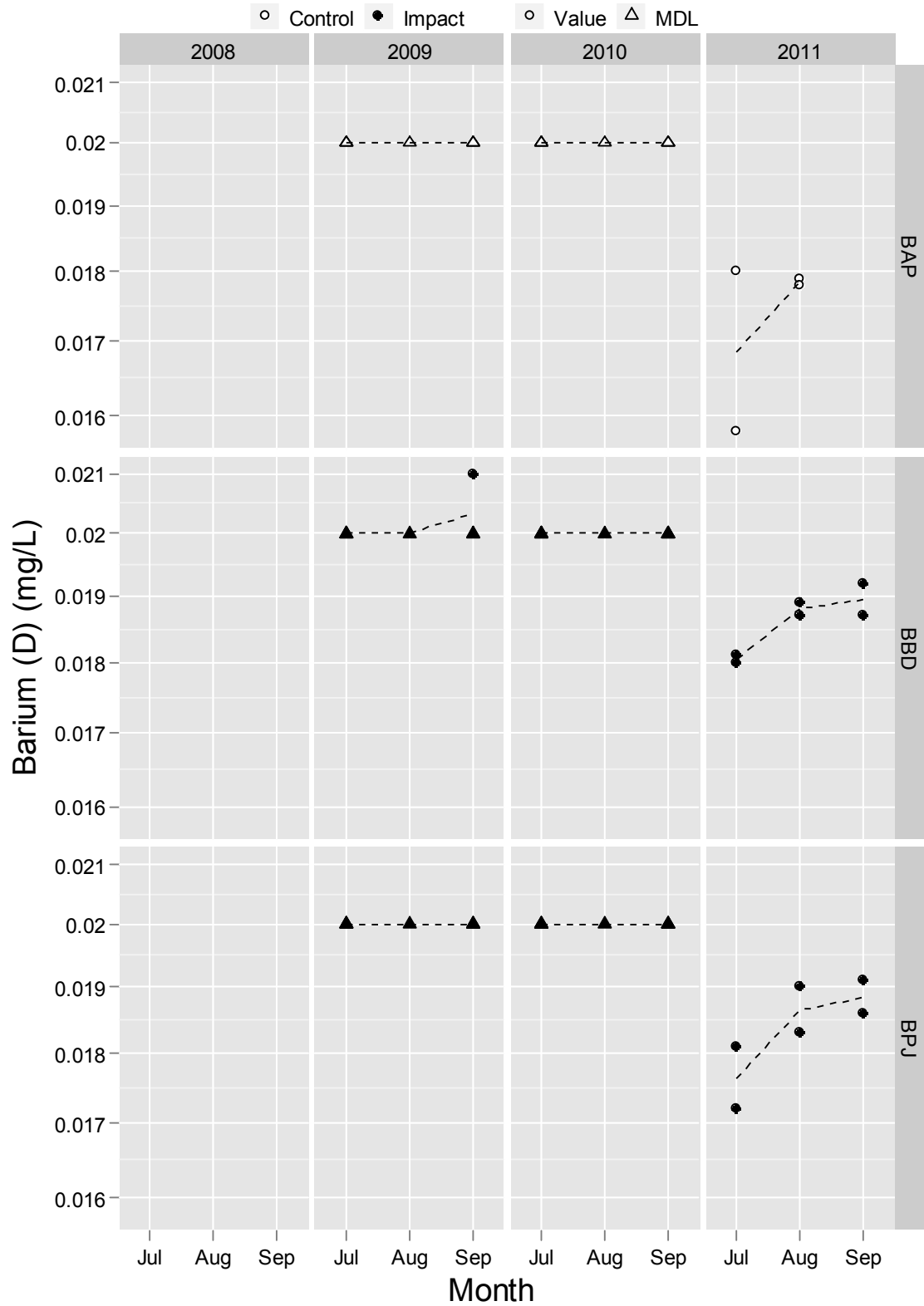


Figure 3.3- 71. Dissolved Copper (mg/L) in water samples from Baker Lake since 2008.

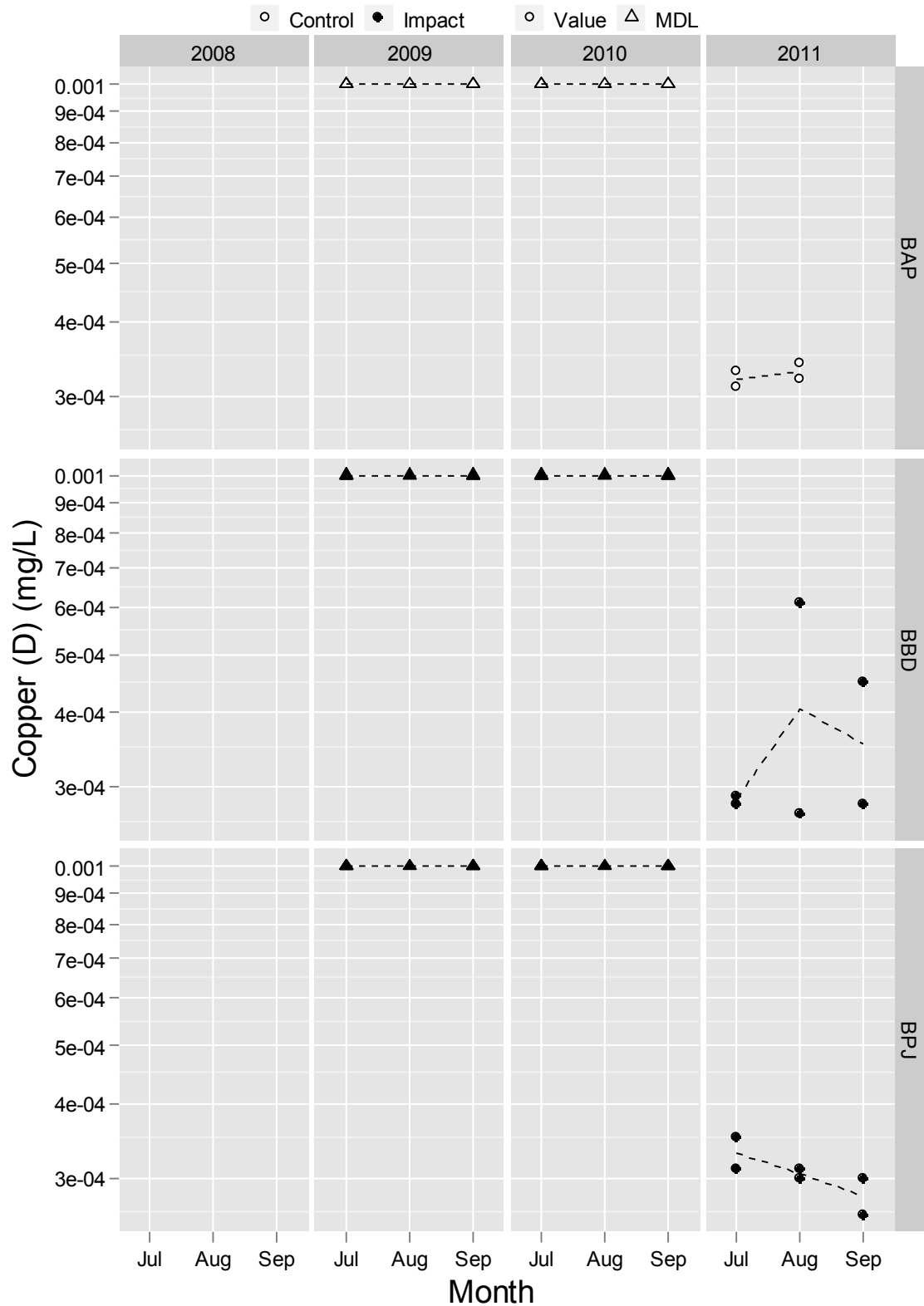


Figure 3.3- 72. Dissolved Manganese (mg/L) in water samples from Baker Lake since 2008.

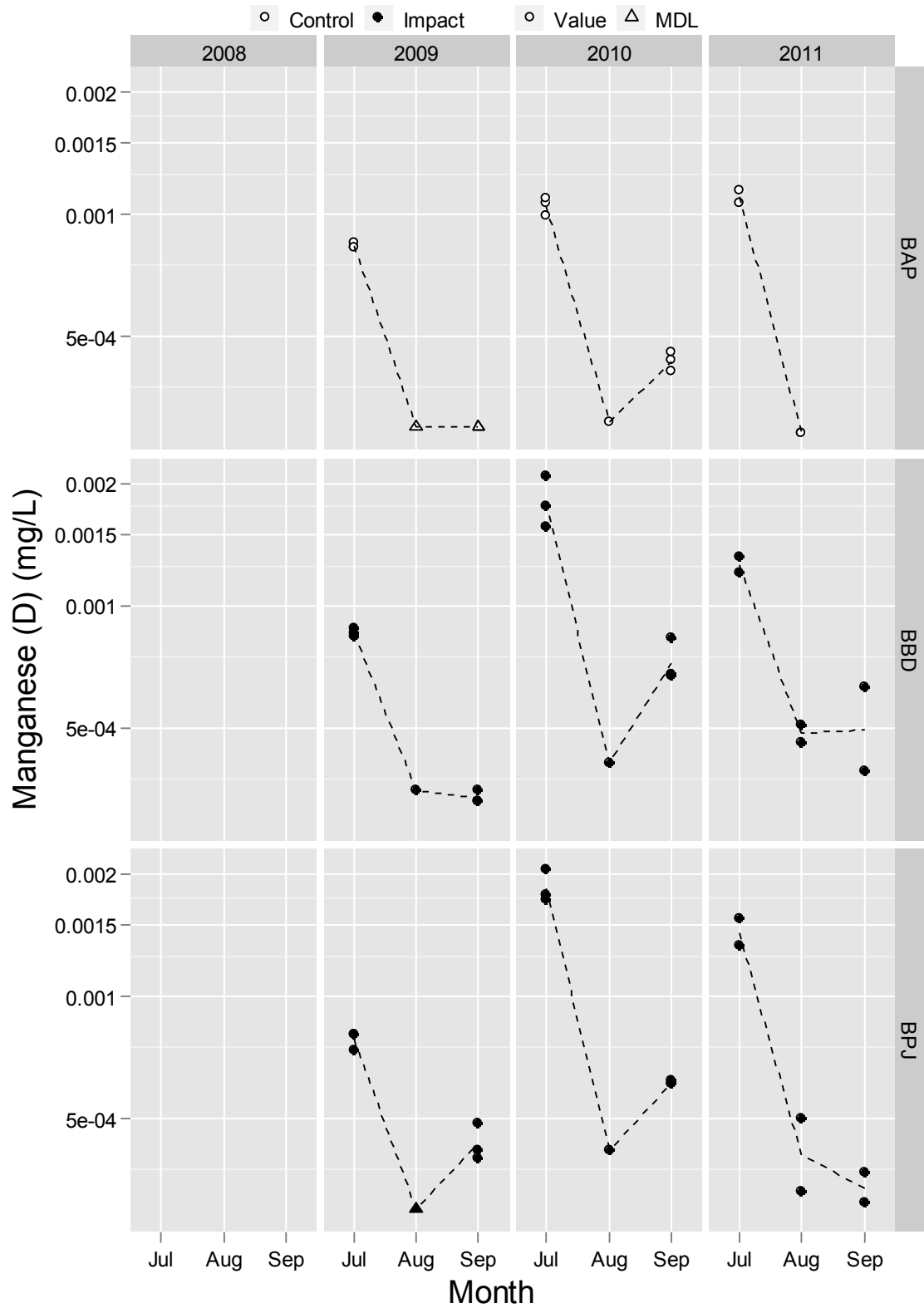
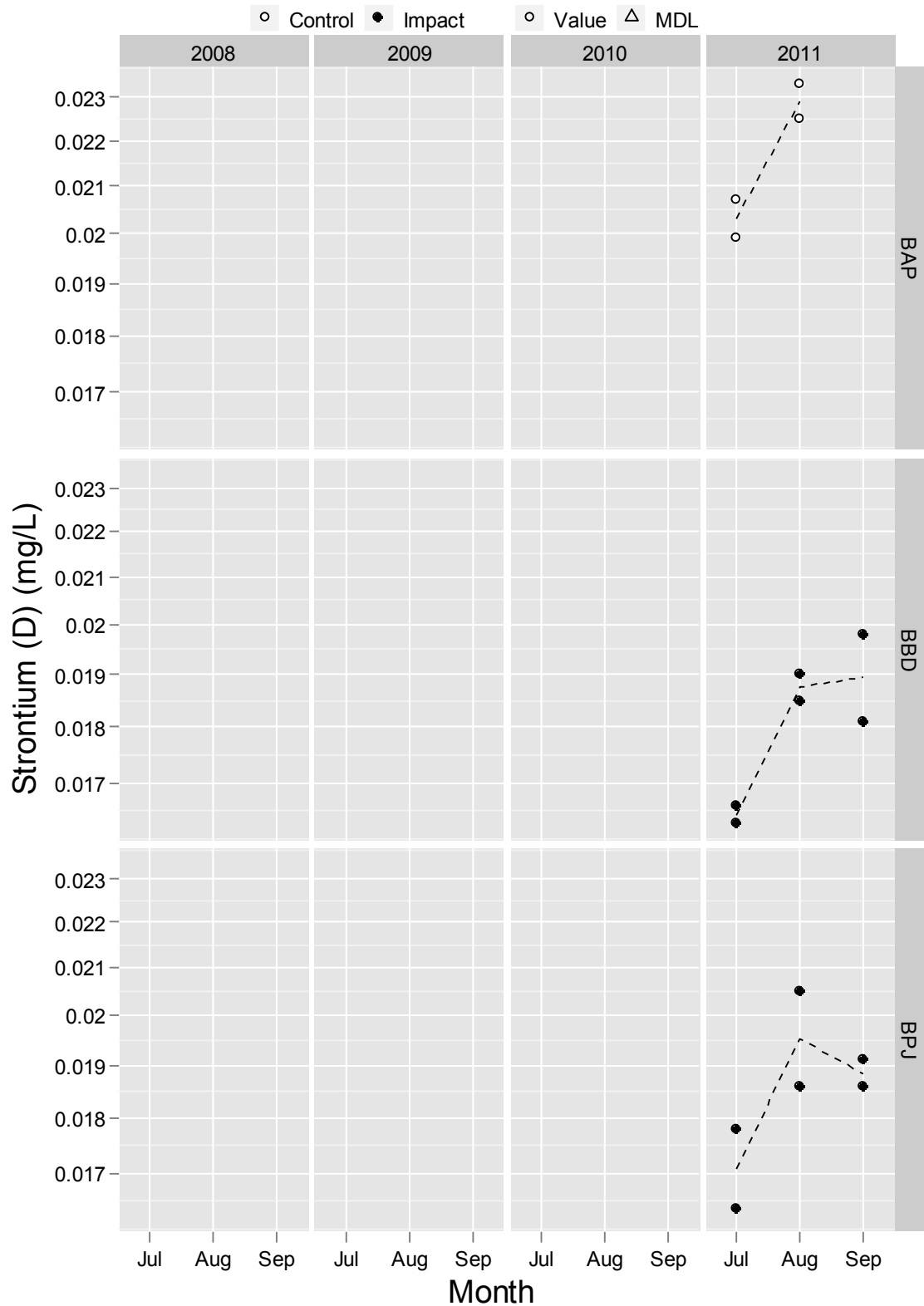


Figure 3.3- 73. Dissolved Strontium (mg/L) in water samples from Baker Lake since 2008.



3.4. Sediment Chemistry

Sediment is an important sink for many contaminants including metals. Contaminants entering aquatic systems via tributary streams or directly from local sources are often associated with suspended particulate matter in the water column. Particulates eventually settle in depositional areas as sediment, especially in deeper areas of lakes and provide a good temporal record of deposition, integrating concentrations over time and provide more than just snapshots of water quality. Sediments, therefore, typically act as accumulators of contaminants over time in aquatic systems and are typically a sink, but can also potentially become a source of contaminants within a system. In the case of the Meadowbank lakes, disturbance of lake sediments can re-introduce historically laid down particulates back into the water column and redistributed, as was the case during East Dike construction in 2008, for example. It is important to distinguish at this point what defines a ‘contaminant’. A contaminant is a substance that occurs at higher concentrations than what is typical for a local environment and can potentially cause harm to receiving environment biota. Some contaminants (e.g., metals) may be naturally elevated in some environments (e.g., in mineralized areas) and pose no harm, while the same concentration when introduced to another environment may be potentially toxic. Toxicity is a function of speciation, concentration, organism acclimatization, organism sensitivity and other factors. Re-introduction of metal contaminants from sediments may not be expected to be a source of toxicity if concentrations are within the range of what is typical.

3.4.1. Meadowbank Study Lakes

3.4.1.1. General Observations

Sedimentation rates in the Meadowbank lakes are low. Because none of the project lakes receives any riverine / tributary inflow, very little sediment is carried into the lakes besides what may drain off of the nearby tundra, or is deposited as dust in rain and snowfall. There are a number of mine-site activities that can generate dust, possibly exacerbating net deposition into project lakes in excess of natural rates (see **Section 1.4.2**).

Based on historical bulk sampling of sediment using grab samples, we have observed reasonably large differences in surface sediment (i.e., top 3 – 5 cm) concentrations for a variety of metals. Although one might intuitively believe that because of the slow net depositional rate of sediments in these lakes, metal concentrations might be more uniform or homogeneous. However, there are a number of processes that affect the distribution of metals in sediments including differential deposition of different grain size materials according to wind direction and speed, water depth, water currents, basin morphometry, bioturbation (i.e., vertical mixing of sediment by burrowing insect larvae) and patchy, heterogeneous distribution of metals in mineralized areas. Sediment coring studies within

each major basin in 2008 (to characterize baseline conditions) and 2009 (to monitor changes in sediment chemistry in a subset of basins as part of the EAS following East Dike construction; Azimuth, 2010c) further illustrate heterogeneity in metals concentrations in the top 1 cm of sediment (discussed in more detail below).

Finally, the degree to which sediments metals concentrations may vary, independent of mine-related activities, include the historical (pre-mine) sedimentation patterns, mineralization areas, bioturbation and different grain size distribution. Grain size has a very large influence on metals – the more coarse the grain size (i.e., sandier), the lower the metals. Thus, our sediment programs have attempted to target areas that are dominated by silt/clay sediment in areas of similar depth (6 – 10 m) where grain size tends to be finer and more consistent.

3.4.1.2. Temporal and Spatial Trend Interpretation

To help with interpretation of long-term temporal and spatial trends, concentrations of individual metals have been plotted over time within areas and depict bulk-sediment (i.e., open or closed circles [control versus impact data, respectively] collected using a grab sampler) and surface sediment (i.e., box and whisker plots using a sediment core device). The latter plots illustrate the statistical distribution of 15 cores (top 1 cm only) within each area. Data interpretation for the box and whisker plots is as follows:

- The horizontal line inside the box represents the median concentration
- The upper and lower margins of the box represent the upper (75thile) and lower (25thile) percentile concentrations, respectively
- The vertical lines represent maximum and/or minimum concentrations (provided at least one value falls outside the box but within 1.5 times the interquartile range)
- ‘x’s that occur beyond the maximum or minimum lines represent concentrations that are greater than 1.5 times the interquartile distance and indicate ‘outlier’ concentrations that are real, but don’t fit within the distribution of the rest of the data.

Coring was conducted in July 2008 (i.e., prior to onset of East Dike construction) to characterize baseline surface metals concentrations at all monitoring areas. As noted above, the 2009 study was conducted to monitor potential changes to surface sediment chemistry that may have occurred as a result of the East Dike sedimentation event in August 2008. The 2009 study was conducted only at SP, TE, TPE, and INUG, with the first last two areas serving as reference areas for SP and TE.

As discussed above (see **Section 1.5**), our approach to identify potential mine-related impacts involved visually searching for temporal/spatial patterns associated with mining activities; no formal statistical analyses were conducted (although detailed statistical analyses were conducted on the 2008 and 2009 sediment coring data in the 2009 EAS

report; Azimuth, 2010c). Like most parameters, sediment metals concentrations can also be highly variable naturally, making detecting mine-related events difficult based on bulk sediment chemistry alone, given the small amount of sediment introduced relative to the volume of sediment sampled from the bottom. Consequently, while grab data provide insights into sediment chemistry as a result of long-term historical deposition, only the coring data is appropriate for assessing changes related to mining activity. Furthermore, the 2009 coring data were intended to provide insights into potential changes related to East Dike construction. The planned 2012 sediment coring program (repeating the 2008 baseline sampling event) will provide data to assess potential changes related to Bay-Goose Dike construction, dewatering or other general mining-related activities since 2009.

Given the low sedimentation rates for this region, there is no expectation for inter-annual changes in sediment chemistry due to natural factors; variability seen in the grab data over time in control data is likely due to intra-area spatial heterogeneity (or to laboratory variability or error).

In addition to the trend assessment discussed above, sediment chemistry results were compared to CCME (2001) sediment quality guidelines (SQGs; Interim Sediment Quality Guidelines [ISQG] and Probable Effects Level [PEL] concentrations. ISQGs are conservative and represent the value below which effects are rare. The PEL is less conservative and represents a concentration above which adverse effects may occur. Again, exceedences of the ISQG or PEL concentrations do not necessarily mean that adverse effects should be expected. At Meadowbank, some sediment metals concentrations (e.g., arsenic, chromium and copper) have always consistently exceeded the CCME guidelines (i.e., even prior to mine development).

It should also be noted that the ecological significance of changes in sediment chemistry identified in the 2009 EAS (i.e., after the 2008 East Dike sedimentation event) were studied in 2010. The 2010 EAS included sequential extraction analyses and sediment toxicity testing to assess the bioavailability of metals; the results were consistent and indicated that the elevated metals were not toxic (Azimuth, 2011a).

Trend plots for sediment chemistry parameters are provided in **Figures 3.4-1 through 3.4-8** (plots for other parameters are provided in **Appendix F**). The 2011 sediment chemistry data are screened against CCME guidelines in **Table 3.2-1**.

Aluminum

Aluminum concentrations at reference sites INUG and PDL were consistent over time ranging between 15,000 and 27,000 mg/kg (**Figure 3.4-1**). The coring data show an increase in concentrations at SP in 2009 (~30,000 mg/kg) after East Dike construction in 2008 (~24,000 mg/kg). This change also appeared to extend into TE. There are no CCME guidelines for aluminum. As noted above, the results of the 2010 EAS suggest that the increase in aluminum concentrations at SP was not ecologically relevant.

Arsenic

Arsenic concentrations at reference lakes varied over at least an order of magnitude from 7 to nearly 200 mg/kg (**Figure 3.4-2**). At near-field areas, arsenic concentrations were less variable, typically ranging from 12 – 50 mg/kg in TPE and 7 – 30 mg/kg at SP. The range in arsenic concentrations at impact areas do not appear to have changed over time, although there are some consistent spatial differences in arsenic concentration (e.g., TEFF lower than TPS). The coring data suggest no temporal changes occurred between 2008 and 2009. Arsenic in sediment routinely exceeds the ISQG of 5.9 mg/kg (CCME, 2002) in all samples and the PEL (17 mg/kg) in most samples from all lakes and is evidence of regional natural elevations in this metal.

Cadmium

Cadmium concentrations varied over an order of magnitude across at all areas, with no apparent patterns in concentration over time or between areas (**Figure 3.4-3**). The change in DL in 2011 resulted in better characterization at many areas. No mine-related impacts were evident as impact and control concentrations were similar. Lowering of the MDL confounds the data somewhat as mean concentrations appear to have decreased in 2011, even in areas where the DL was always exceeded (e.g., TPN, SP, and TE). Cadmium concentrations frequently exceeded the ISQG (0.6 mg/kg) but never exceeded the PEL (3.5 mg/kg).

Chromium

Chromium concentrations at reference area INUG and PDL ranged between 80mg/kg – 140mg/kg, while concentrations in WAL were consistently lower (40 – 70 mg/kg) (**Figure 3.4-4**). While the coring data show that chromium was slightly higher in SP and TE in 2009, the same result was also seen at TPE (which served as a reference in the study as the samples were collected prior to the onset of Bay-Goose Dike construction); this raises the possibility that the result may be due to natural spatial heterogeneity (notwithstanding, the 2010 EAS results suggest that chromium [or any metal] was not toxic). The ISQG for chromium (37 mg/kg) was exceeded for all grabs and cores in all areas; the PEL (90 mg/kg) was exceeded in one or more samples from all areas except WAL, TE and TEFF.

Copper

Copper concentrations at reference areas INUG and PDL ranged from 25 – 50 mg/kg and 10 – 200 mg/kg at WAL, illustrating the naturally heterogeneous nature of copper in sediment in Meadowbank lakes (**Figure 3.4-5**). Concentrations generally exceeded the ISQG (35.7) but rarely exceeded the PEL (197 mg/kg). There was a marginal increase in copper concentrations at SP and TE in 2009 relative to 2008; however, the 2010 EAS results suggest that the increase is not relevant ecologically due to a lack of metals bioavailability (Azimuth, 2010c).

Lead

Sediment lead concentrations were consistently below the laboratory DL of 30 mg/kg, except for the coring data at reference area INUG and both grab and core samples at WAL (30 – 45 mg/kg) (**Figure 3.4-6**). The reduction in the DL in 2011 should help provide better characterization of this metal moving forward; in 2011 concentrations ranged from 10 – 20 mg/kg in most areas with no meaningful differences within or between areas. Most samples were below the ISQG (35 mg/kg) and all were below the PEL (91.3).

Mercury

Mercury concentrations in control data varied spatially at INUG (0.01 – 0.05 mg/kg), PDL (<0.015 mg/kg) and WAL (0.05 – 0.08 mg/kg) (**Figure 3.4-7**). While SP and TE showed slight increases in mercury concentrations between 2008 and 2009, concentrations in all samples was below the ISQG (0.17 mg/kg).

Zinc

Zinc concentrations ranged from 60 – 100 mg/kg at INUG and PDL and up to 160 mg/kg at WAL, again illustrating the natural metals enrichment in sediments at WAL (**Figure 3.4-8**). Following East Dike construction, zinc concentrations from SP and TE increased in 2009 from 2008 by about 30 mg/kg (95 – 125 mg/kg in SP; 90 – 115 in TE); as discussed for the other metals that increased after East Dike construction, the 2010 EAS results suggest that the increases were not ecologically relevant as the metals were not bioavailable and not toxic.

Summary

Statistical analyses conducted for the 2009 EAS (Azimuth, 2010c) showed that concentrations of aluminum and zinc (and beryllium and vanadium at SP only) were significantly higher only at SP and TE in 2009 relative to 2008; the trend assessment documented above also identified increases in chromium, copper and mercury related to East Dike construction.

The concerns regarding potential metals toxicity were directly tested in 2010 using sediment toxicity tests and sequential extraction analysis (Azimuth, 2011a). Results of amphipod (*Hyalella azteca*) and midge (*Chironomus tentans*) survival and growth endpoints in bioassays showed that surface sediments collected from within or adjacent to the East Dike construction zone (i.e., the zone delineated by the turbidity barriers) were not toxic relative to local reference sediment. The sequential extraction results showed that most of the metals in the sediment are associated with the residual matrix fraction, which is not considered bioavailable. Consequently, the 2010 EAS concluded that metals toxicity is not likely an issue in Second Portage Lake following East Dike construction (Azimuth, 2011a).

3.4.2. Baker Lake

3.4.2.1. General Observations

As discussed earlier, Baker Lake is a large lake that has multiple confounding influences (e.g., the Thelon and Prince Rivers, wind-driven currents and possibly deep marine/brackish water) that affect water (see **Sections 3.2 and 3.3**) and likely also sediment chemistry. The combined influence of these factors may affect sampling areas differently (e.g., grain size and sedimentation rates).

Shipping-related influence on sediment metals concentrations would be limited to disturbance of bottom sediments from ship propeller wash and possibly from contaminant introductions (e.g., discharges, leaks or spills, none of which have been documented for Baker Lake).

Sediment grain size, which is known to affect sediment chemistry, is a confounding factor in this case as the BAP reference area is generally more sandy, with less silt/clay (**Table 3.4-1**). Typically, the more coarse the grain size (i.e., sandier), the lower the metal concentration. Despite our attempt to target areas that are dominated by silt/clay sediment in areas of similar depth (6 – 10 m), this was not always possible. The existing temporal patterns in benthic community abundance (and to a lesser extent richness) have raised concerns regarding the suitability of the existing reference area.

Azimuth (Technical Memo to AEM, August 8, 2011; see **Appendix A**) evaluated the suitability of the reference area BAP because it has inherently coarser sediments than exposure areas and thus lower metals concentrations. Rather than dropping the BAP area and losing potentially valuable temporal information, a second Baker Lake reference area (Baker East Shore [BES]) was added to the CREMP in 2011 to address these concerns

3.4.2.2. Temporal and Spatial Trend Interpretation

Patterns in metals concentrations within and between areas were quite consistent since monitoring began in 2008. In general, metals concentrations have not appeared to have changed or trended higher or lower over time regardless of area. Concentrations at exposure or impact areas are uniformly higher than at control / reference areas because of larger grain size. In 2011, the percent silt/clay at impact areas was 67% (BBD) and 72% (BPJ) with about 30% sand while at BAP and BES, sand dominated (75% and 78%) with a smaller fraction of silt/clay in the sediment (24%) (**Table 3.4-1 and Figure 3.4-9**).

Aluminum, arsenic, chromium, copper, and zinc concentrations at impact areas were reasonably variable, sometimes ranging over an order of magnitude between minimum and maximum concentrations with a similar range in values for all metals between BBD and BPJ (**Figures 3.4-10, -11, -13, -14, and -17**). Concentrations of the same metals were about 50% lower at the reference areas and were less variable over time with a narrower

range in concentration between minimum and maximum values again, likely due to larger grain size.

Cadmium, lead and mercury were consistently at or just above (for mercury) laboratory DLs (**Figures 3.4-12, -15, and -16**). When DLs were lowered for these metals in 2011, concentrations were about an order of magnitude lower and similar across all areas.

There were no detectable concentrations of aggregate organics (mineral oil and grease), hydrocarbons or poly-aromatic hydrocarbons (PAHs) at any of the areas (**Table 3.4-1**) with all values below laboratory DLs. These data suggest that there have been no spills or increase in hydrocarbons in sediment in the vicinity of the barge unloading area or the upland fuel storage area east of the hamlet of Baker Lake.

Summary

There is no evidence of barge-related impacts to sediment metals or hydrocarbon concentrations at impact areas in Baker Lake. Although sediment grain size is inherently different between exposure and reference areas (including the newly added BES area), there was no pattern of change for any metal over time that would suggest metals contamination. However, the inherently larger natural variation in the concentration of most metals (about 10 times between minimum and maximum) at impact areas make detection of such a change difficult. It is not known if some of this variability is due to physical disturbance (e.g., propeller wash) at BBD.

Table 3.4-1. Conventional sediment chemistry, hydrocarbons, PAHs and total metals (mg/kg), Meadowbank study lakes and Baker Lake, August 2011.

Lake & Basin			Third Portage Lake			Second Portage Lake	Tehek Lake	Tehek Farfield	Inuggugayualik Lake	Wally Lake	Pipedream Lake	Baker Lake			
			East	North	South							Barge Dock	Proposed Jetty	Akilahaarjuk Point	East Shore
Area-Replicate ID Date	Sediment Quality ISQG	Quality PEL	TPE-1 19-Aug-11	TPN-1 19-Aug-11	TPS-1 22-Aug-11	SP-1 17-Aug-11	TE-1 16-Aug-10	TEFF-1 15-Aug-11	INUG-1 14-Aug-11	WAL-1 14-Aug-11	PDL-1 13-Aug-11	BBD-1 20-Aug-11	BPJ-1 20-Aug-11	BAP-1 21-Aug-11	BES-1 21-Aug-11
CONVENTIONAL PARAMETERS															
Physical & Organic Parameters															
Moisture (%)	NG	NG	87.8	76.1	82.9	85.1	74.9	84.3	79.0	80.1	78.8	45.7	57.0	40.2	38.0
pH	NG	NG	6.44	6.06	6.01	6.60	5.73	6.01	5.96	6.21	7.87	6.48	7.50	6.36	7.41
Total Organic Carbon (% dw)	NG	NG	3.75	1.80	2.84	3.46	1.85	3.33	2.93	3.96	2.44	0.26	0.45	0.23	0.20
Particle Size															
% Gravel (>2mm)	NG	NG	<0.10	0.64	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.17	0.19	<0.10	0.17
% Sand (2.00mm - 0.063mm)	NG	NG	1.84	46.0	21.9	2.34	17.5	4.80	11.5	4.21	13.7	27.4	32.5	75.3	78.3
% Silt (0.063mm - 4µm)	NG	NG	71.4	42.8	61.4	81.9	60.7	81.2	75.1	82.9	74.0	58.0	52.3	20.1	18.0
% Clay (<4µm)	NG	NG	26.8	10.6	16.7	15.8	21.7	14.0	13.4	12.9	12.3	14.5	15.0	4.62	3.52
AGGREGATE ORGANICS (mg/kg)															
Mineral Oil and Grease	NG	NG	<1550	<800	<1200	<1400	<750	<1275	<900	<1000	<950	<500	<500	<500	<500
HYDROCARBONS (mg/kg)															
EPH10-19	NG	NG	<680	<340	<470	<530	<350	<520	<370	<440	<350	<200	<220	<200	<200
EPH19-32	NG	NG	<680	<340	<470	<530	<350	<520	<370	<440	<350	<200	<220	<200	<200
LEPH	NG	NG	<680	<340	<470	<530	<350	<520	<370	<440	<350	<200	<220	<200	<200
HEPH	NG	NG	<680	<340	<470	<530	<350	<520	<370	<440	<350	<200	<220	<200	<200
POLYCYCLIC AROMATIC HYDROCARBONS (mg/kg)															
Acenaphthene	0.00671	0.0889	<0.0090	<0.0050	<0.0060	<0.0075	<0.0050	<0.0075	<0.0050	<0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene	0.00587	0.128	<0.0090	<0.0050	<0.0060	<0.0075	<0.0050	<0.0075	<0.0050	<0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	0.0469	0.245	<0.0072	<0.0040	<0.0048	<0.0060	<0.0040	<0.0060	<0.0040	<0.0048	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Benzo(a)anthracene	0.0317	0.385	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.0319	0.782	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	NG	NG	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b+j+k)fluoranthene	NG	NG	<0.025	<0.015	<0.017	<0.021	<0.015	<0.021	<0.015	<0.017	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(g,h,i)perylene	NG	NG	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	NG	NG	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.0571	0.862	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene	0.00622	0.135	<0.0090	<0.0050	<0.0060	<0.0075	<0.0050	<0.0075	<0.0050	<0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.111	2.355	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	0.0212	0.144	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene	NG	NG	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	0.0202	0.201	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	0.0346	0.391	<0.030	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.010	<0.010	<0.010	<0.010
Phenanthrene	0.0419	0.515	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Pyrene	0.053	0.875	<0.018	<0.010	<0.012	<0.015	<0.010	<0.015	<0.010	<0.012	<0.010	<0.010	<0.010	<0.010	<0.010
B(a)P Total Potency Equivalent	NG	NG	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
IACR (CCME)	NG	NG	<0.19	<0.15	<0.15	<0.16	<0.15	<0.16	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15

Table 3.4-1. Conventional sediment chemistry, hydrocarbons, PAHs and total metals (mg/kg), Meadowbank study lakes and Baker Lake, August 2011.

Lake & Basin			Third Portage Lake			Second Portage Lake	Tehek Lake	Tehek Farfield	Inuggugayualik Lake	Wally Lake	Pipedream Lake	Baker Lake			
			East	North	South							Barge Dock	Proposed Jetty	Akilahaarjuk Point	East Shore
Area-Replicate ID	Sediment Quality		TPE-1	TPN-1	TPS-1	SP-1	TE-1	TEFF-1	INUG-1	WAL-1	PDL-1	BBD-1	BPJ-1	BAP-1	BES-1
Date	ISQG	PEL	19-Aug-11	19-Aug-11	22-Aug-11	17-Aug-11	16-Aug-10	15-Aug-11	14-Aug-11	14-Aug-11	13-Aug-11	20-Aug-11	20-Aug-11	21-Aug-11	21-Aug-11
TOTAL METALS (mg/kg dw)															
Aluminum	NG	NG	24300	13300	20100	26400	19800	22800	21900	34600	19000	9540	9230	4620	4890
Antimony	NG	NG	0.28	0.15	0.19	0.27	0.14	0.18	0.16	0.68	0.24	0.17	0.13	0.14	0.11
Arsenic	5.9	17	17.5	8.89	11.7	25.8	11.5	11.1	23.4	18.1	20.2	44.0	15.5	4.74	2.72
Barium	NG	NG	135	48.6	94.1	139	96.9	116	103	202	81.9	165	146	278	111
Beryllium	NG	NG	1.71	0.70	1.29	2.03	1.77	1.83	1.21	2.38	0.94	0.46	0.42	0.29	0.26
Bismuth	NG	NG	2.23	0.77	1.21	2.38	1.85	1.79	1.14	3.25	0.86	0.22	0.22	<0.20	<0.20
Cadmium	0.6	3.5	0.46	0.07	0.22	0.32	0.11	0.13	0.11	1.2	0.12	0.06	0.10	<0.050	<0.050
Calcium	NG	NG	2360	1220	1910	2230	1890	1910	1630	4090	1790	2720	2600	1960	2060
Chromium	37.3	90	118	89.5	101	85.4	51.4	54.0	110	84.3	124	23.7	21.7	16.6	15.7
Cobalt	NG	NG	16.7	7.56	11.7	17.0	9.38	12.8	15.3	12.8	11.6	6.46	8.28	3.85	3.97
Copper	35.7	197	51.6	33.4	49.5	80.0	47.9	49.9	43.8	169	46.3	10.0	9.32	4.51	4.50
Iron	NG	NG	41700	20800	25600	57600	37500	40000	57700	34700	33400	25400	21700	11600	11900
Lead	35	91.3	20.7	11.3	17.0	22.2	18.6	19.9	12.5	44.2	13.7	8.79	9.39	4.31	4.25
Lithium	NG	NG	52.4	19.9	41.1	48.3	40.6	57.0	34.2	80.7	32.0	11.7	10.6	6.9	6.9
Magnesium	NG	NG	10400	6830	9460	9830	7930	8330	9870	12900	10400	5410	5260	3170	3470
Manganese	NG	NG	2910	279	391	3680	723	1910	1530	509	359	825	2600	146	395
Mercury	0.170	0.486	0.018	0.011	0.015	0.029	0.016	0.016	0.016	0.021	0.010	0.005	0.011	<0.0050	<0.0050
Molybdenum	NG	NG	3.94	1.56	2.78	6.57	3.29	4.75	4.20	7.58	2.80	2.02	2.06	<0.50	<0.50
Nickel	NG	NG	122	44.6	65.9	72.9	32.2	37.1	72.0	74.4	74.7	13.8	14.8	9.72	9.59
Phosphorus	NG	NG	443	374	382	587	604	429	560	572	531	1800	1090	662	661
Potassium	NG	NG	4230	1650	3010	4550	3670	4230	3520	6430	2360	1770	1560	1040	950
Selenium	NG	NG	0.80	0.29	0.49	0.69	0.37	0.46	0.46	1.14	0.41	0.20	<0.20	<0.20	<0.20
Silver	NG	NG	<0.10	<0.10	0.14	0.15	0.12	<0.10	<0.10	0.52	0.15	<0.10	<0.10	<0.10	<0.10
Sodium	NG	NG	180	<100	140	190	140	180	120	170	110	140	140	<100	<100
Strontium	NG	NG	20.9	10.8	16.0	19.7	14.1	19.3	23.0	35.7	20.2	55.0	50.6	40.2	35.1
Thallium	NG	NG	0.488	0.144	0.262	0.402	0.316	0.398	0.203	0.515	0.169	0.091	0.082	0.058	<0.050
Tin	NG	NG	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	NG	NG	816	384	708	842	869	807	556	1080	486	382	386	262	271
Uranium	NG	NG	15.9	9.16	14.5	20.0	17.3	22.4	16.1	28.9	8.13	3.31	2.14	1.22	1.00
Vanadium	NG	NG	41.2	24.8	36.1	42.6	32.7	36.1	35.1	47.0	33.7	31.3	26.1	17.7	18.1
Zinc	123	315	113	56.0	90.2	124	87.4	106	80.0	164	76.4	36.7	41.1	20.6	20.3

Notes:

NG = no guideline.

¹CCME (Canadian Council of Ministers of the Environment) Canadian Sediment Quality Guidelines for the Protection of Aquatic Life, 1999, updated in 2002.

ISQG = Interim freshwater Sediment Quality Guideline, PEL = Probable Effect Level.

Shaded concentrations = or > ISQG.

Italicized numbers are below detection limits.

Boxed concentrations also > PEL.

Figure 3.4- 1. Total Aluminum (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

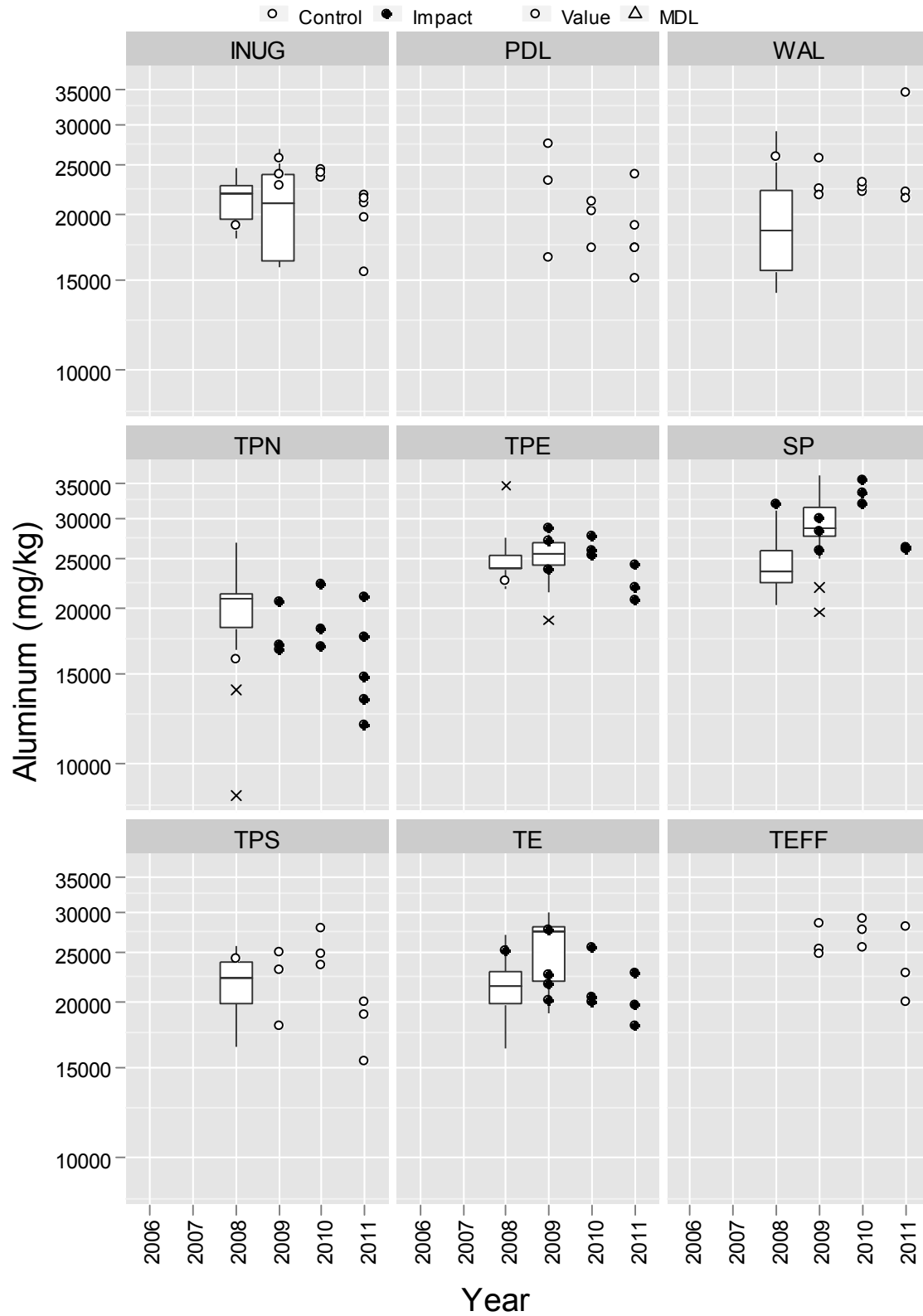


Figure 3.4- 2. Total Arsenic (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

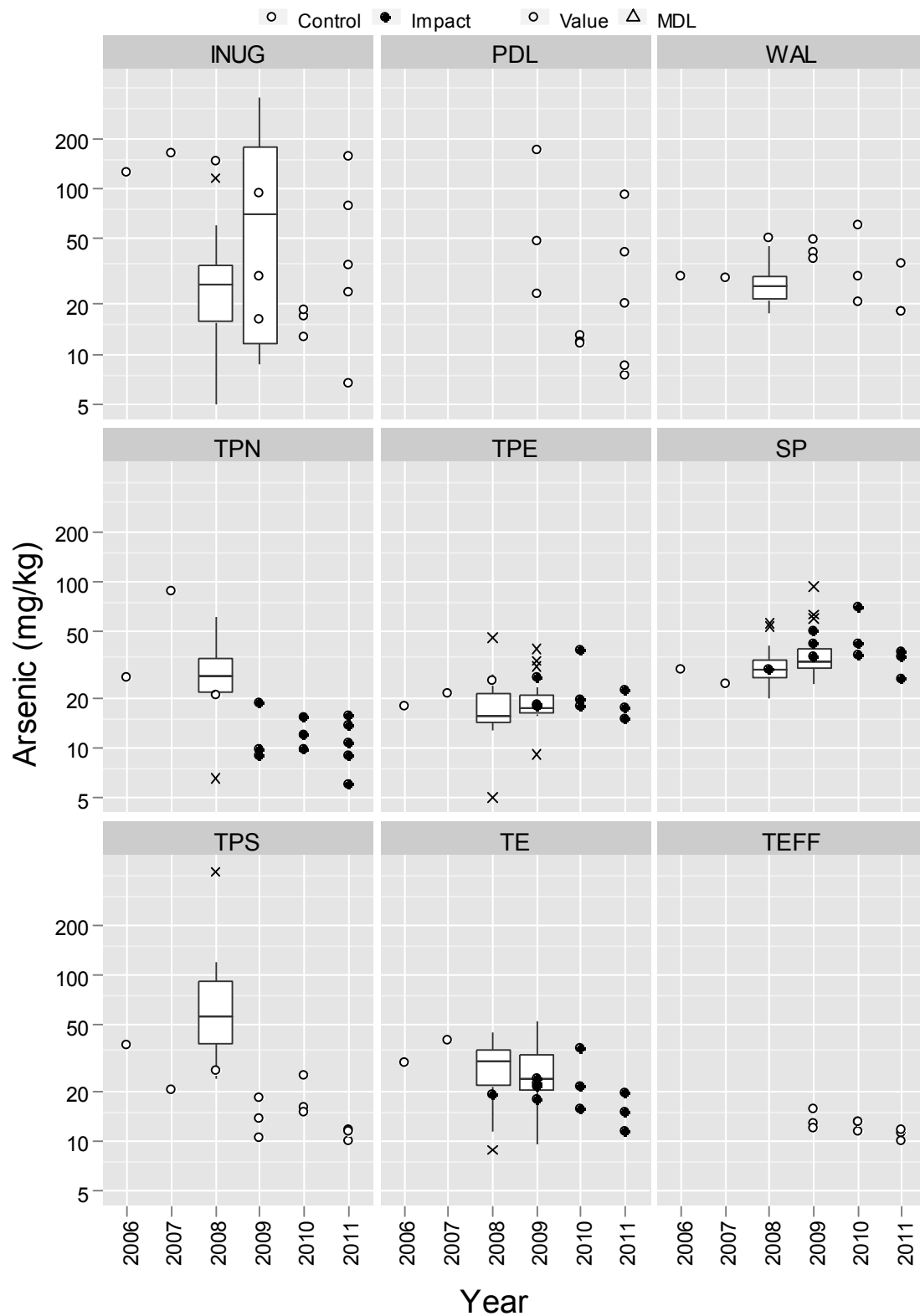


Figure 3.4- 3. Total Cadmium (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

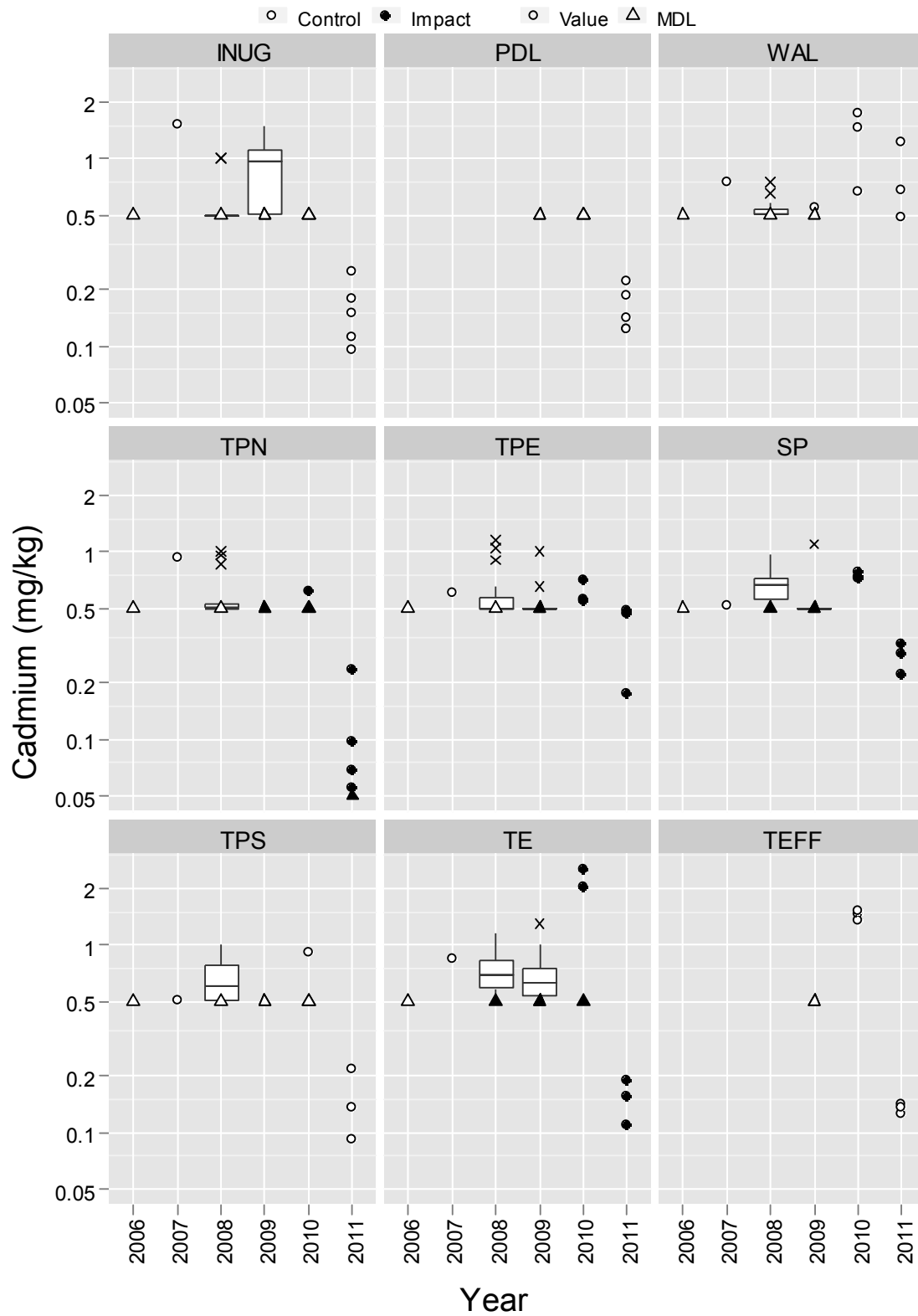


Figure 3.4- 4. Total Chromium (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

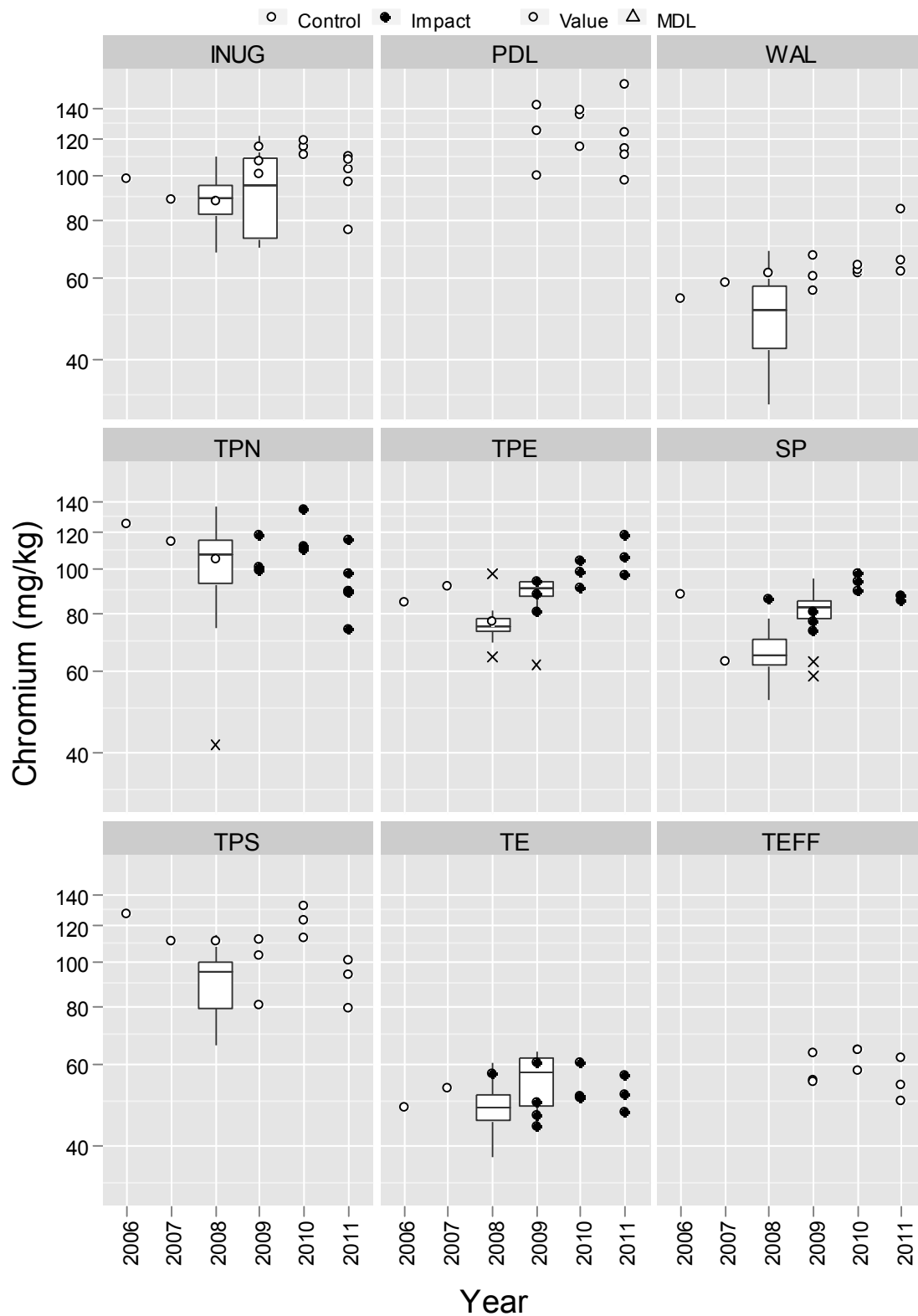


Figure 3.4- 5. Total Copper (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

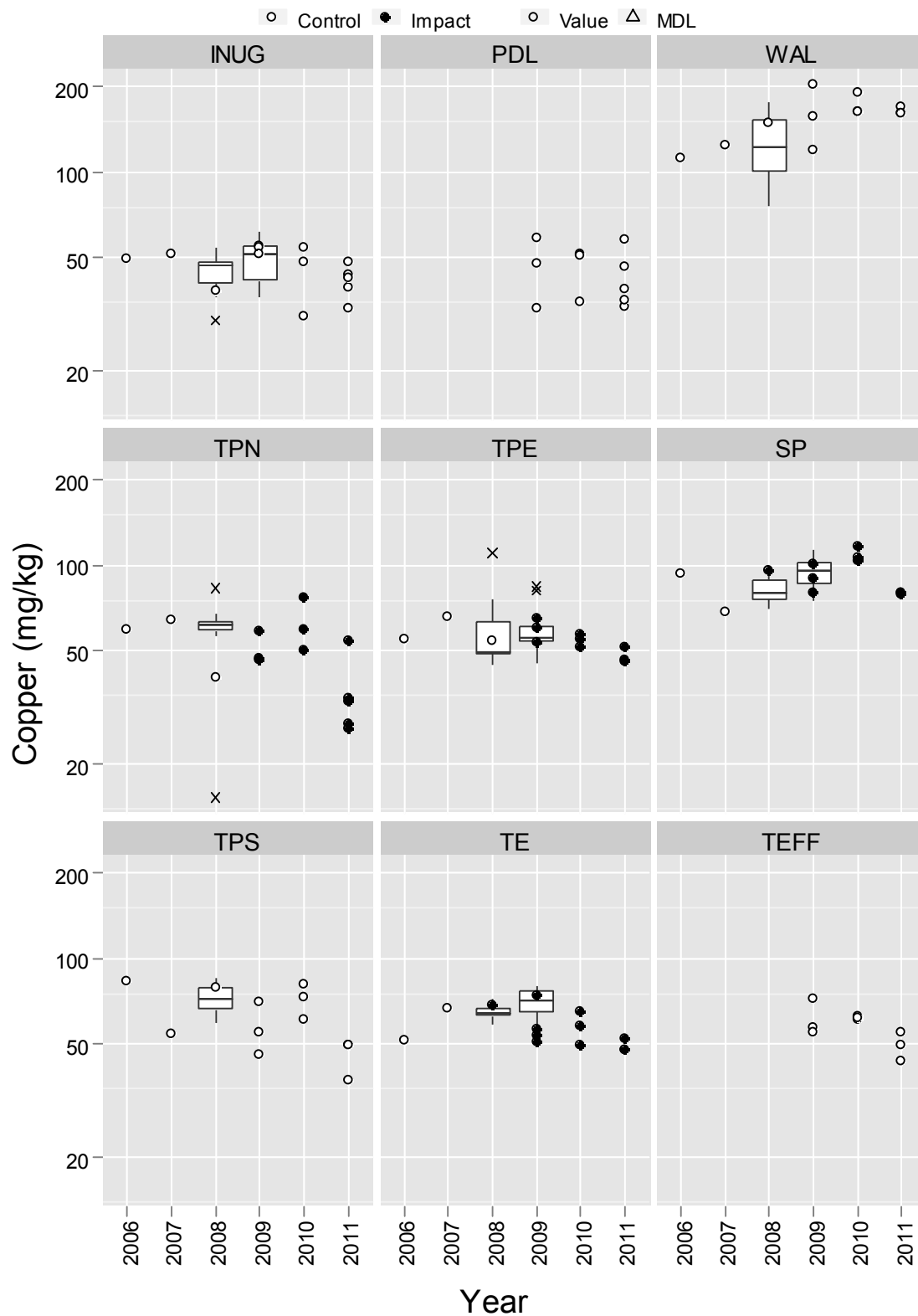


Figure 3.4- 6. Total Lead (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

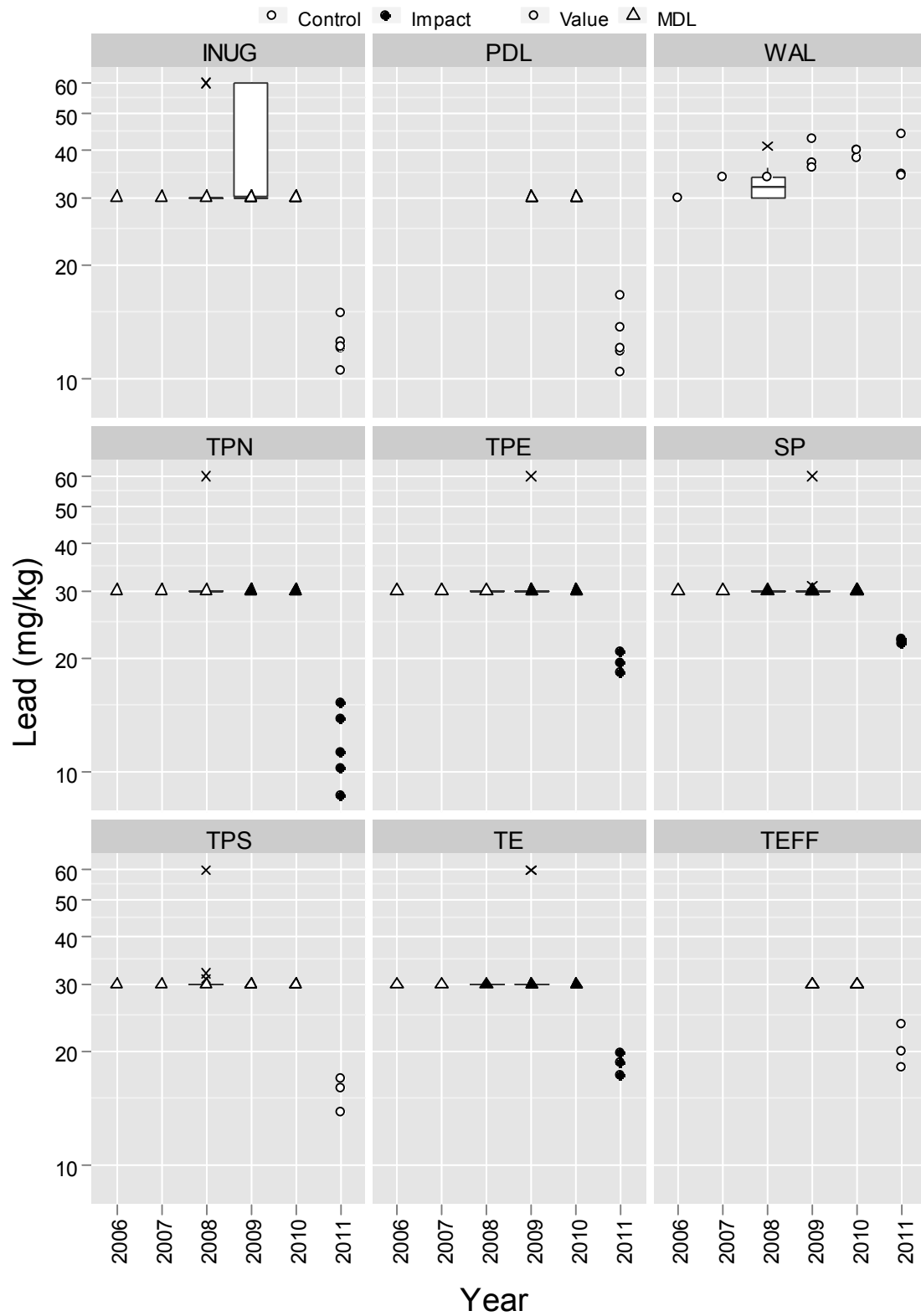


Figure 3.4- 7. Total Mercury (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

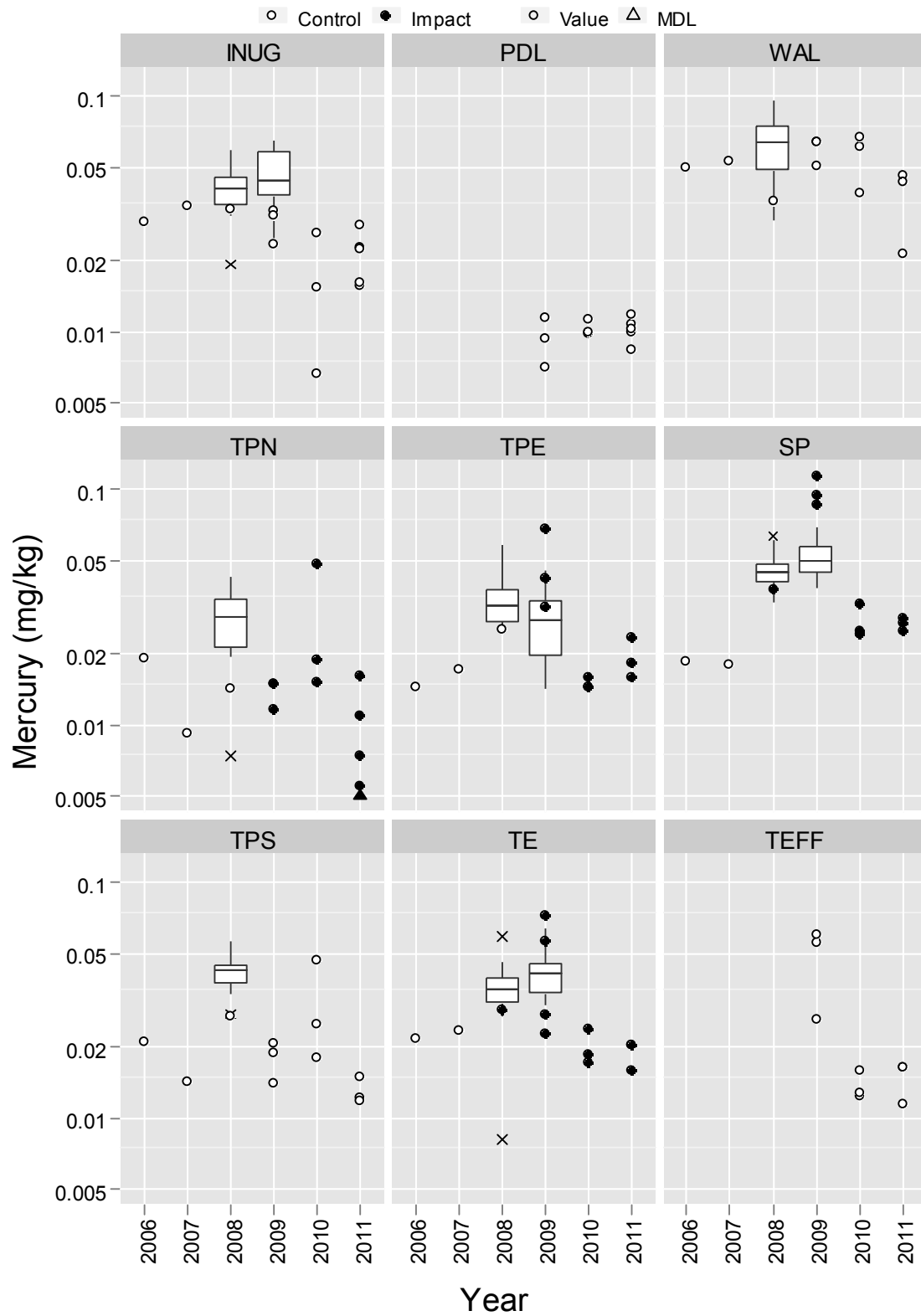


Figure 3.4- 8. Total Zinc (mg/kg) in sediment samples from Meadowbank study lakes since 2006.

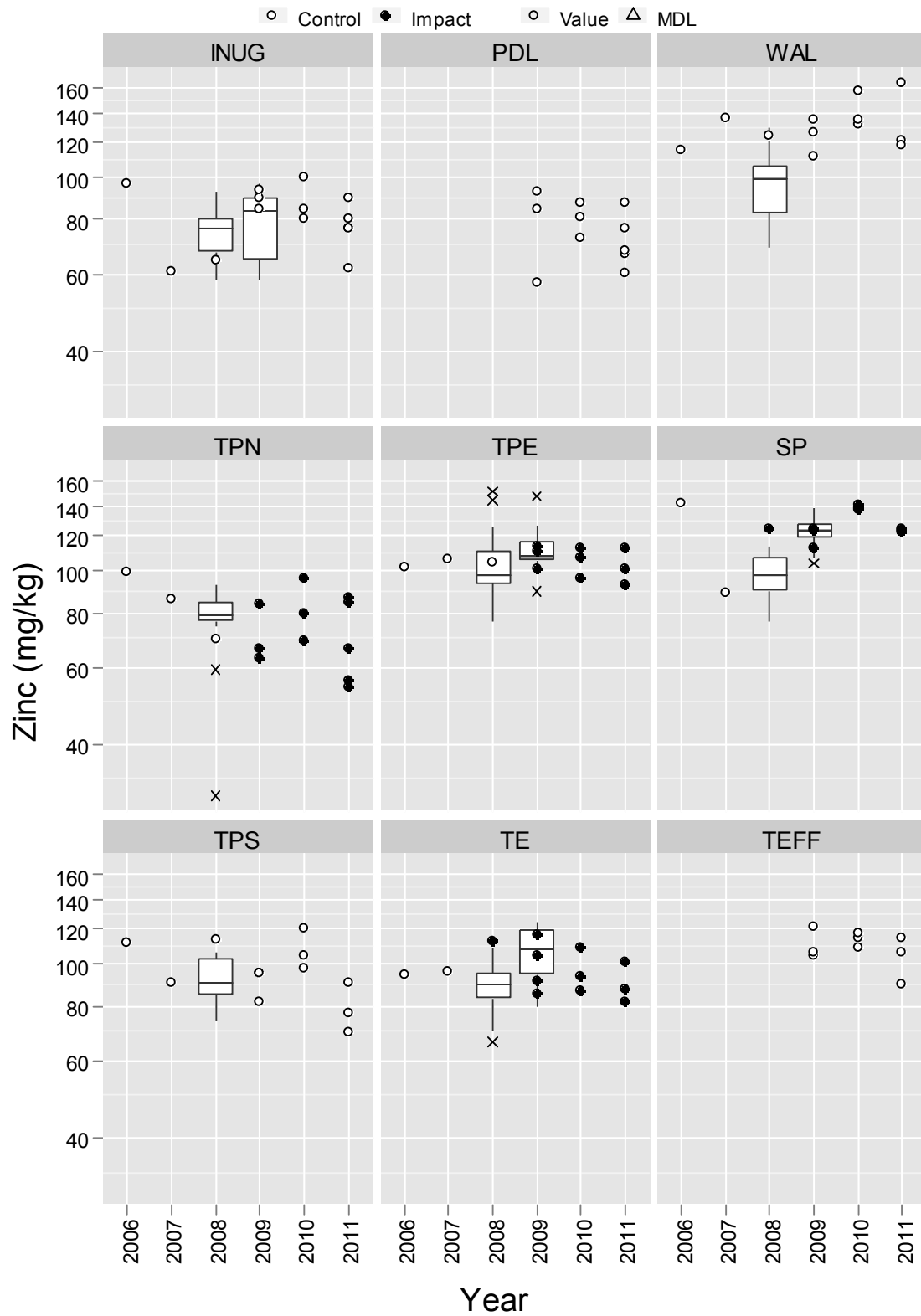


Figure 3.4- 9. Sediment grain size composition in sediment samples from Baker Lake since 2008.

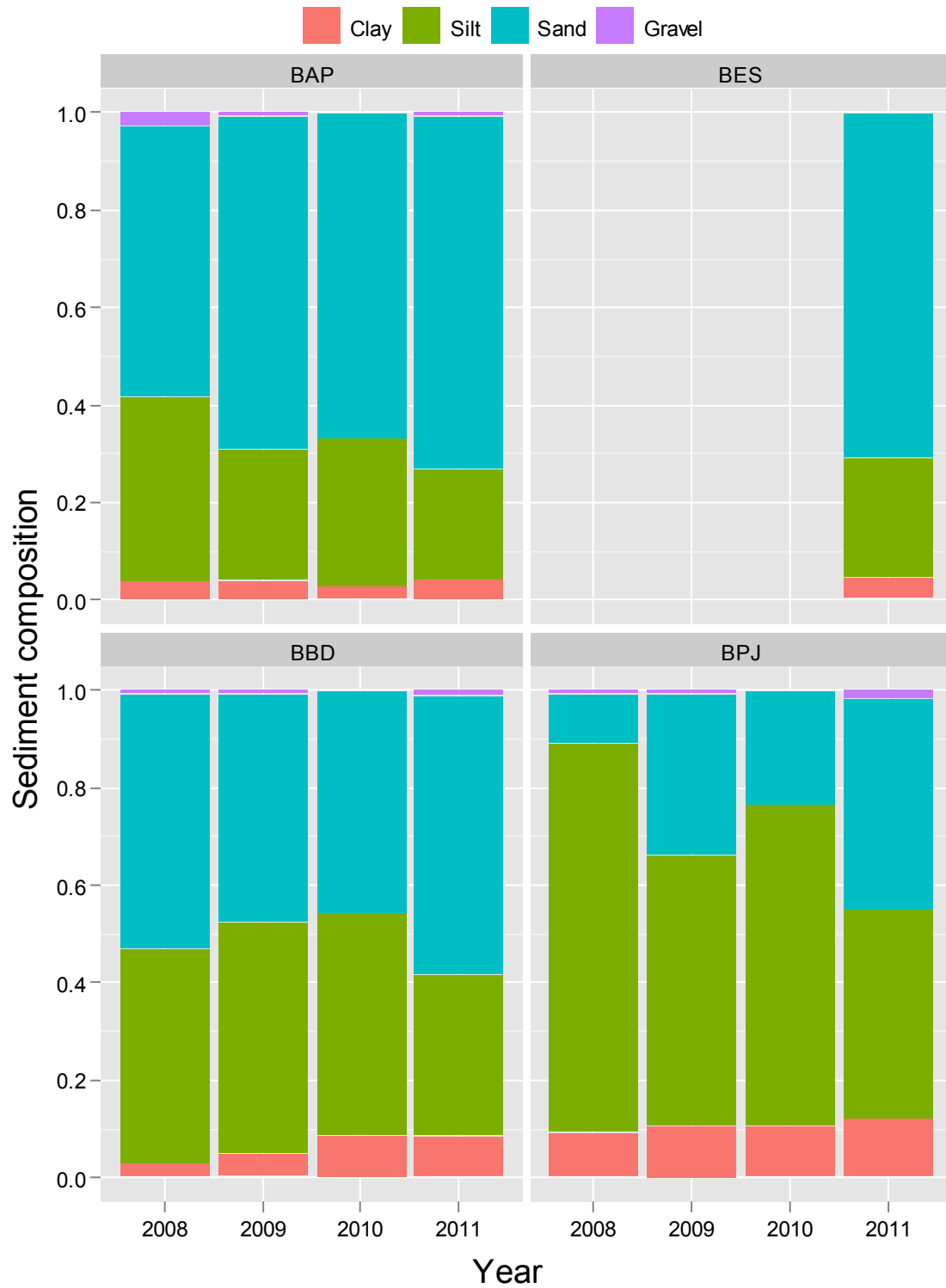


Figure 3.4- 10. Total Aluminum (mg/kg) in sediment samples from Baker Lake since 2008.

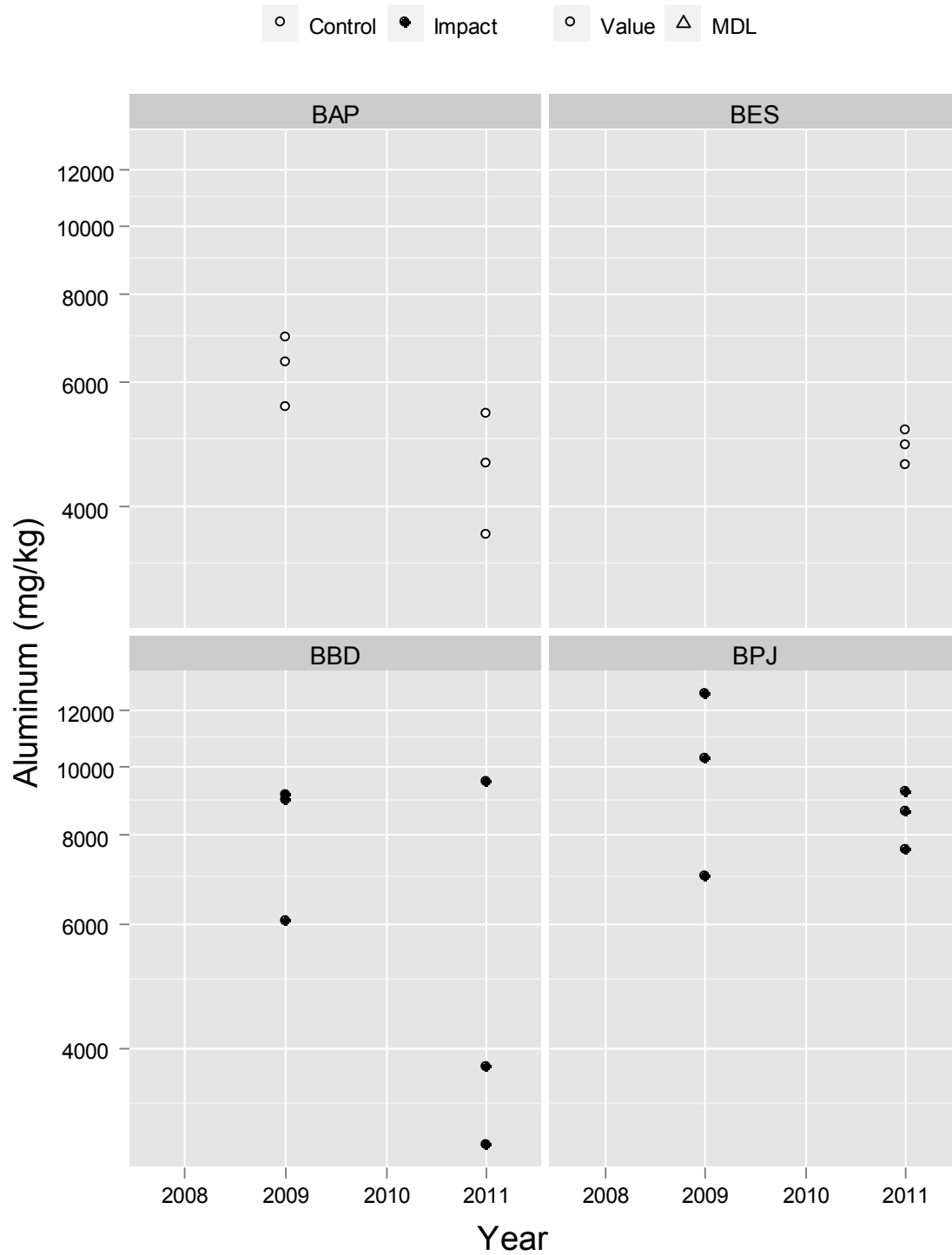


Figure 3.4- 11. Total Arsenic (mg/kg) in sediment samples from Baker Lake since 2008.

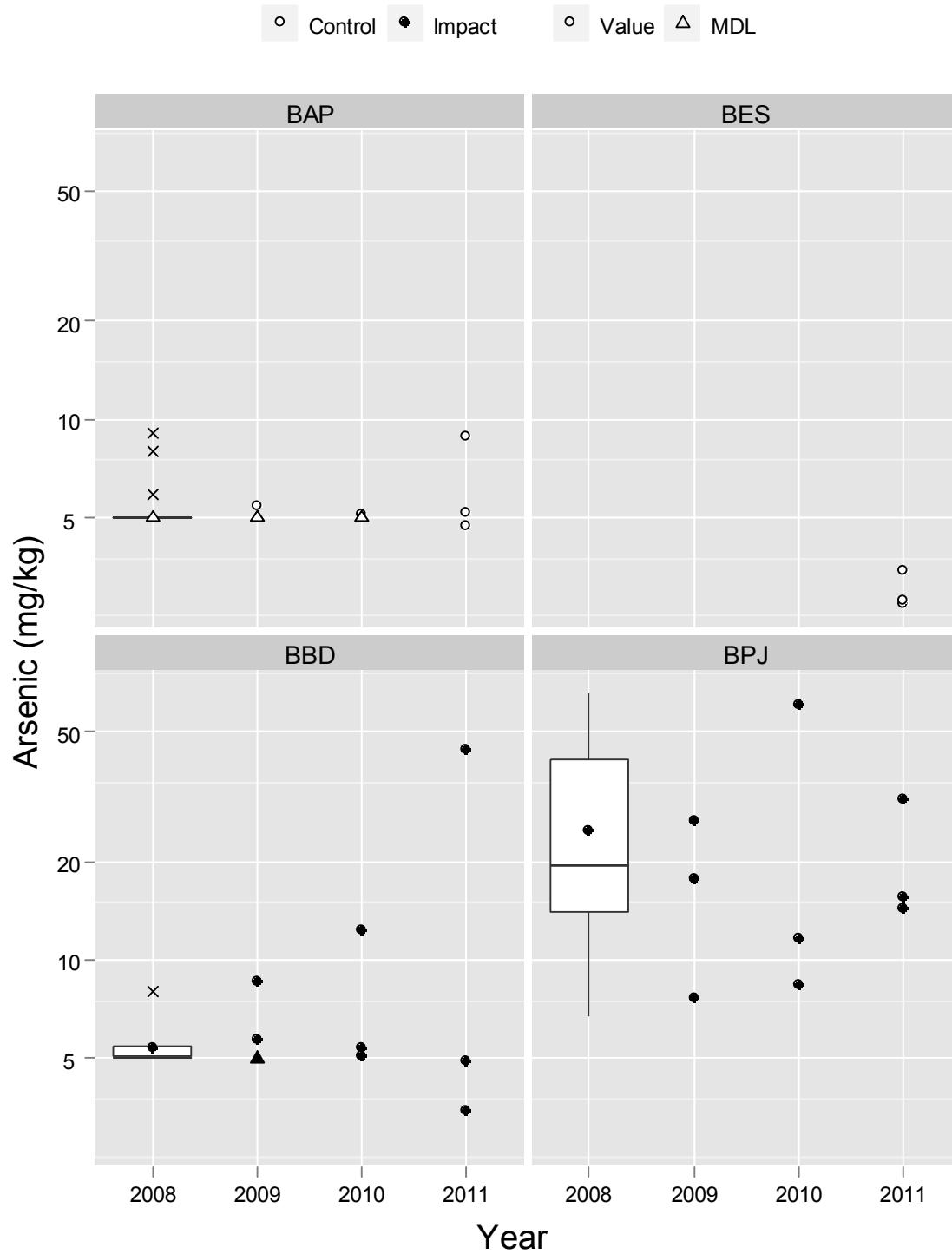


Figure 3.4- 12. Total Cadmium (mg/kg) in sediment samples from Baker Lake since 2008.

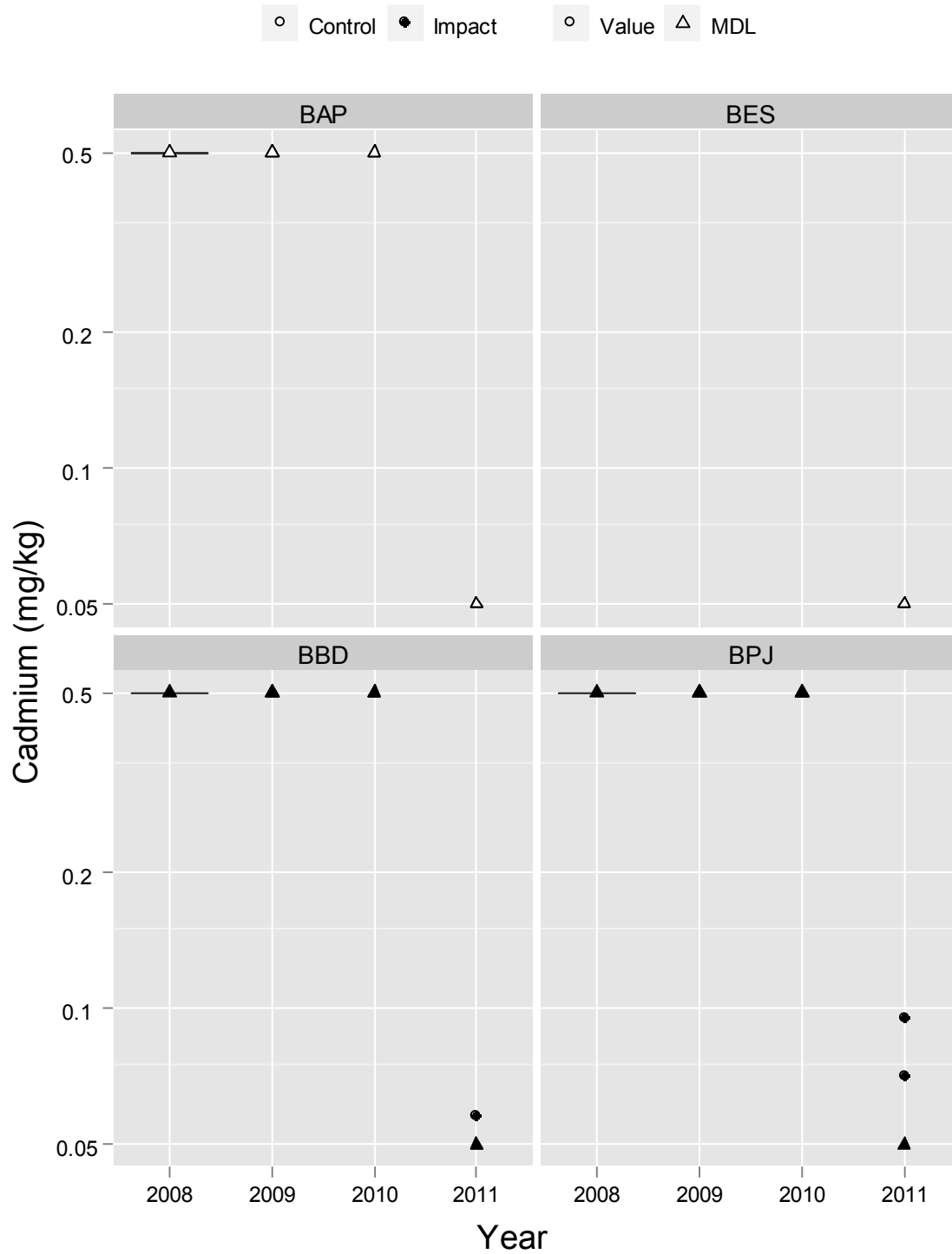


Figure 3.4- 13. Total Chromium (mg/kg) in sediment samples from Baker Lake since 2008.

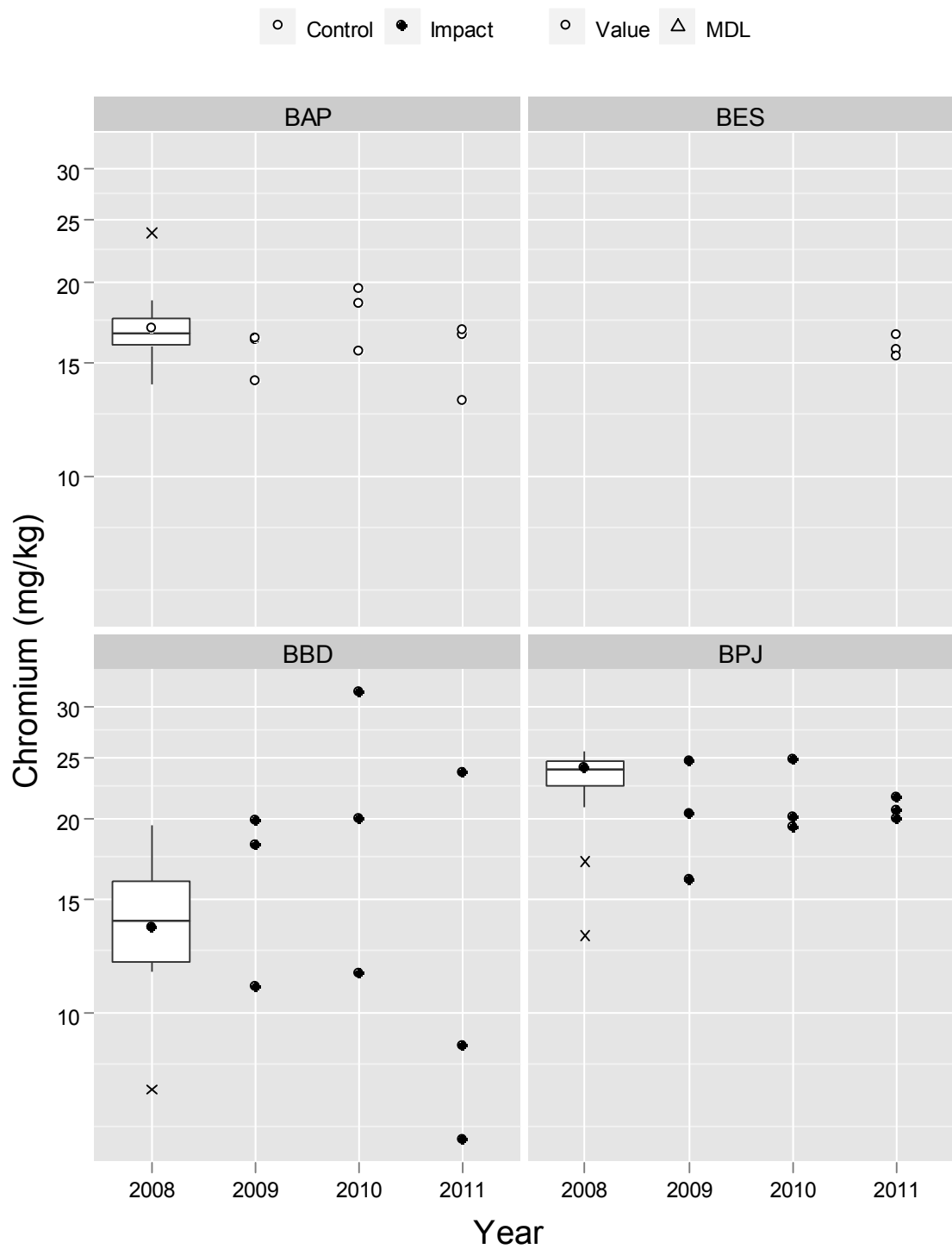


Figure 3.4- 14. Total Copper (mg/kg) in sediment samples from Baker Lake since 2008.

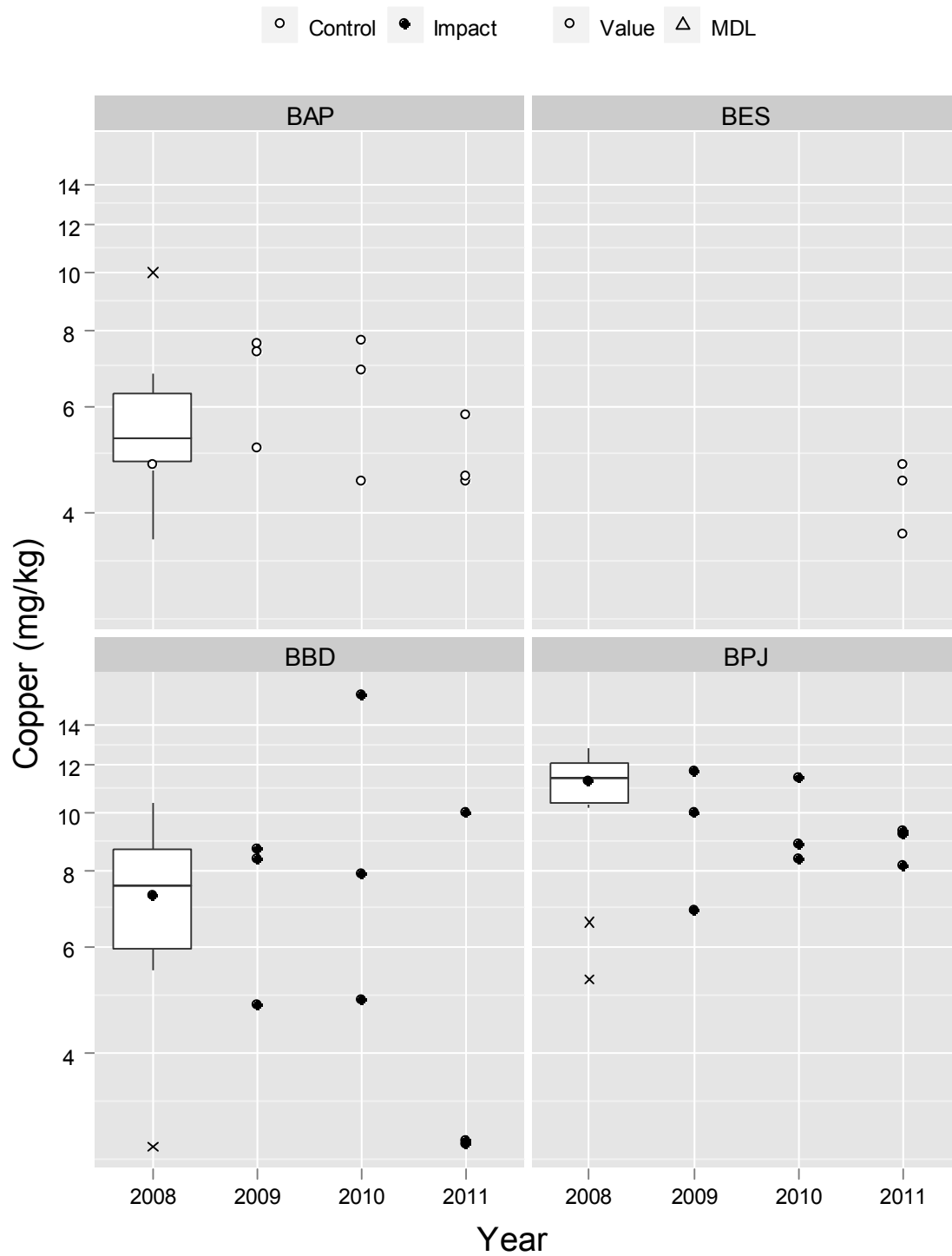


Figure 3.4- 15. Total Lead (mg/kg) in sediment samples from Baker Lake since 2008.

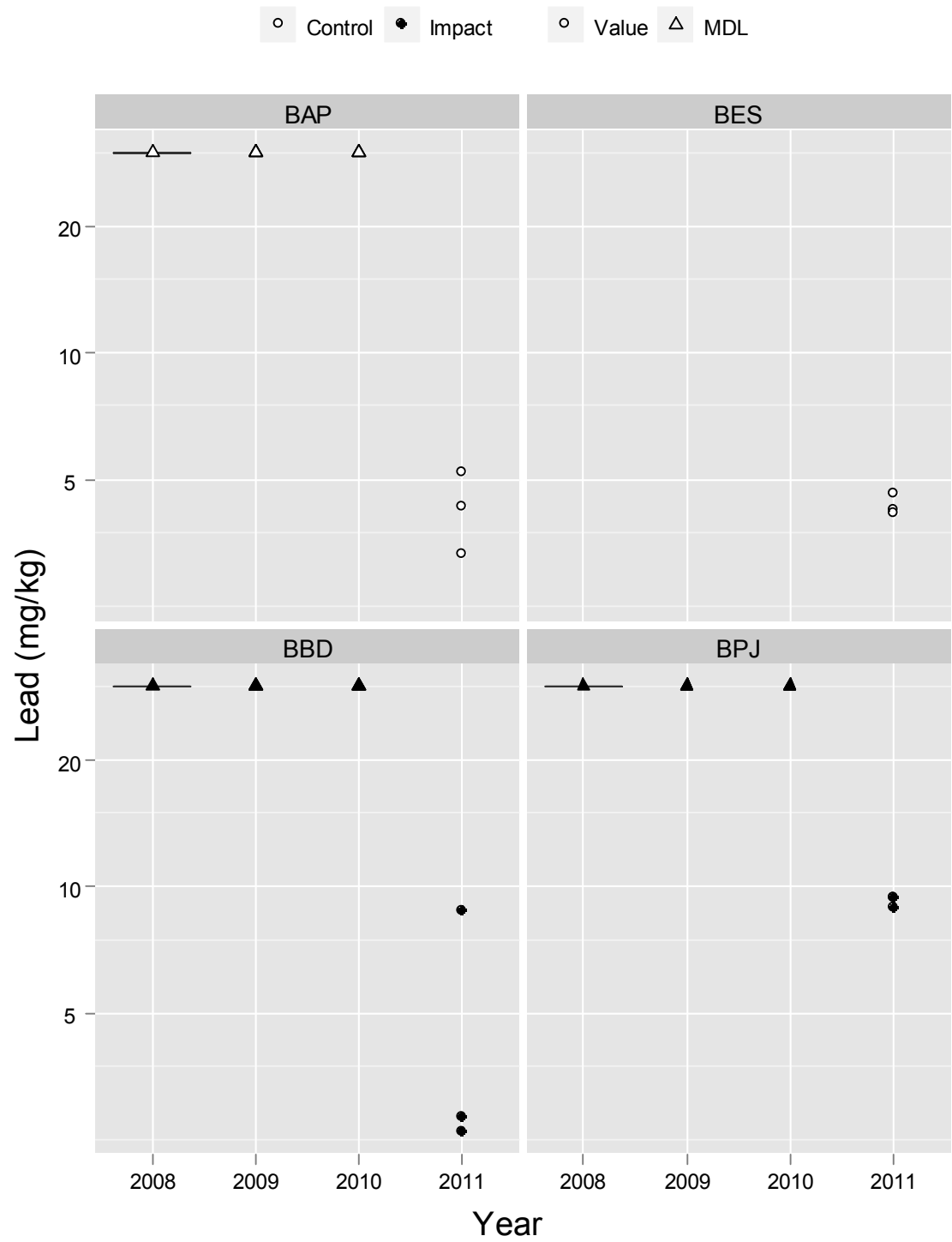


Figure 3.4- 16. Total Mercury (mg/kg) in sediment samples from Baker Lake since 2008.

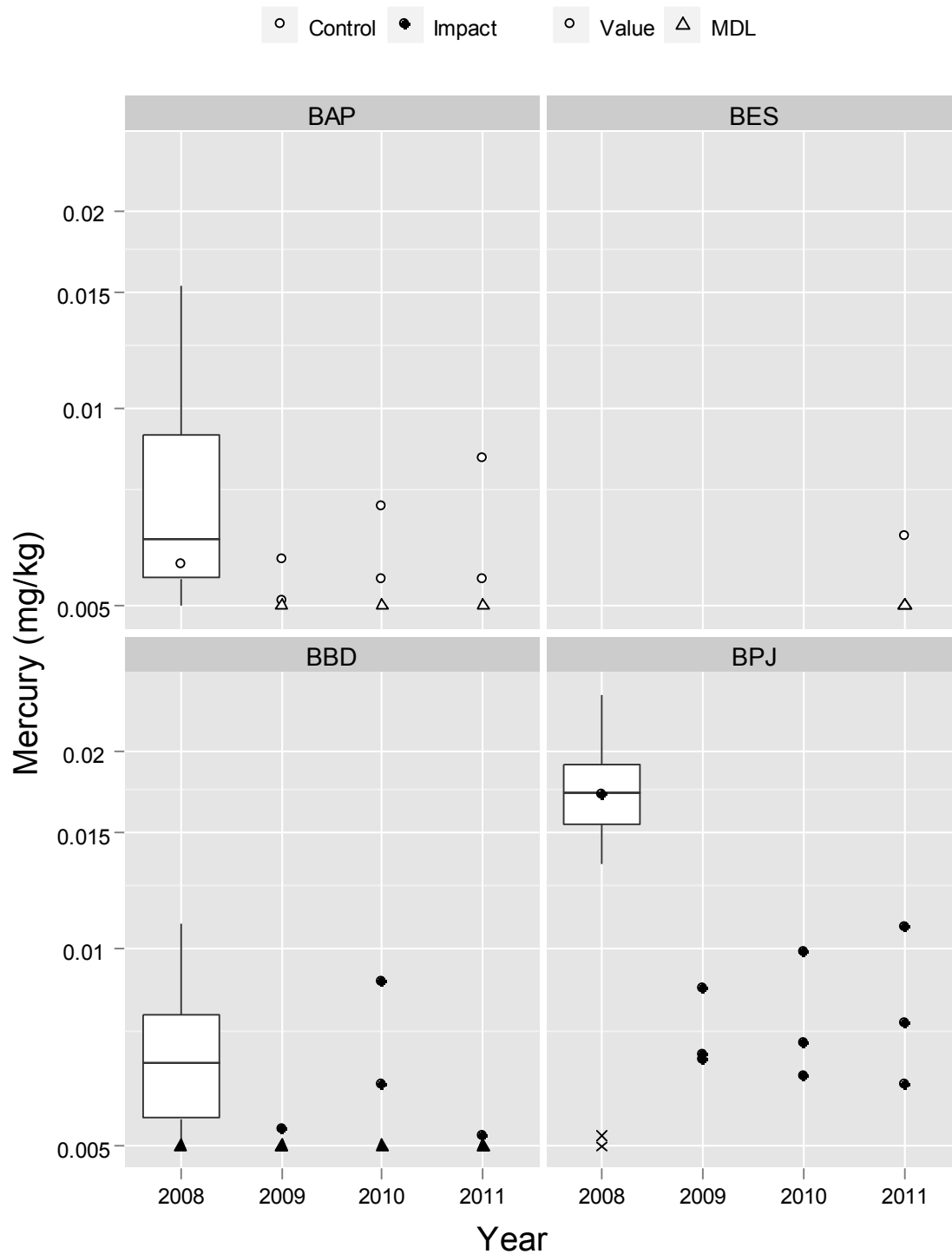
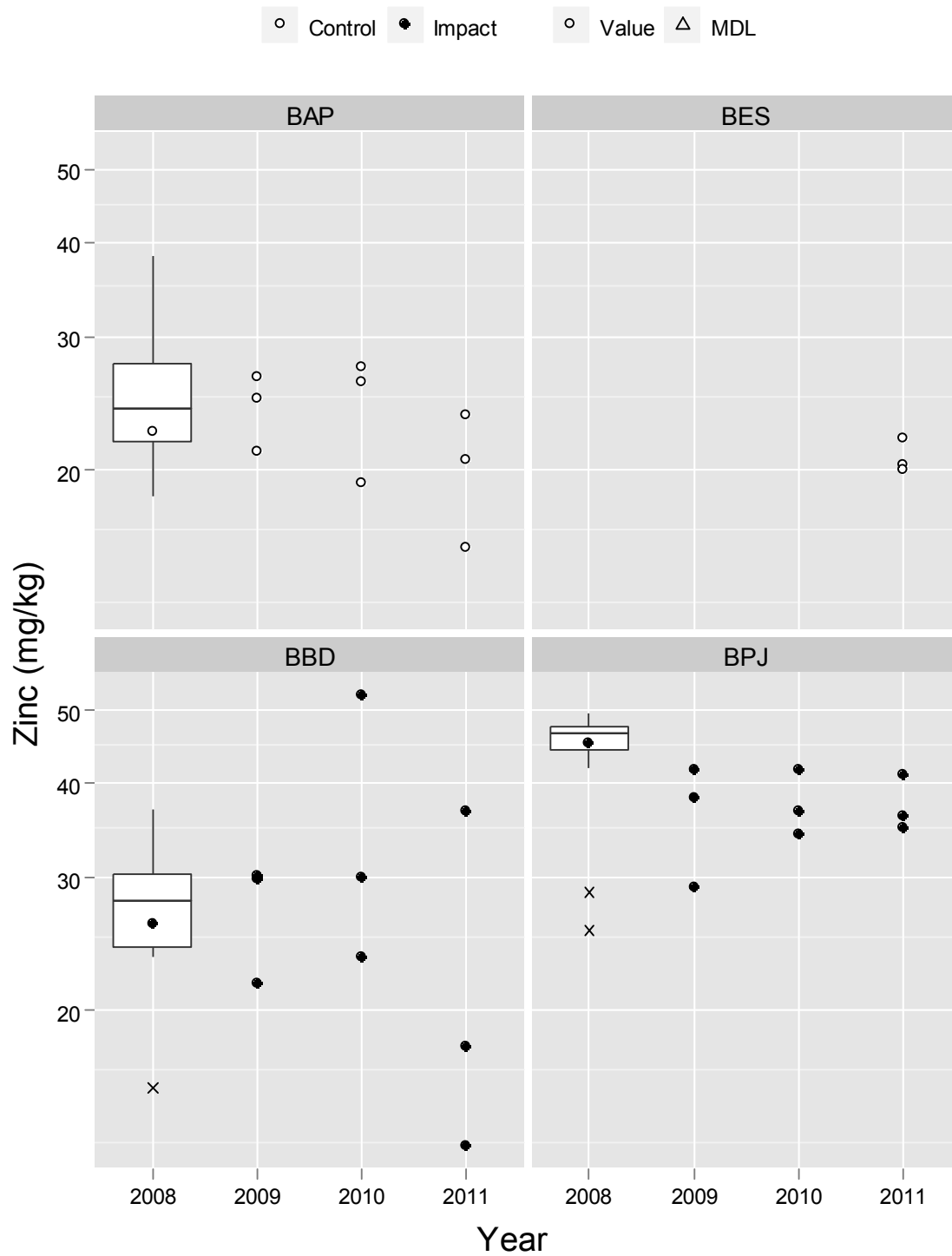


Figure 3.4- 17. Total Zinc (mg/kg) in sediment samples from Baker Lake since 2008.



3.5. Phytoplankton

Phytoplankton are microscopic, unicellular, or colonial plant species that are suspended in the water column and contribute to the base of the food web as ‘primary producers’.

These organisms use chlorophyll to convert the sun’s energy to plant tissue.

Phytoplankton are primary producers and are grazed on by herbivorous zooplankton (i.e., free-swimming invertebrates) species throughout the year, but especially during the open water season when primary production within the lake is greatest. There is a large natural seasonal fluctuation in biomass (mg/m^3) and abundance (cells/L) of phytoplankton, especially in Arctic lakes where winters are dark and virtually no production occurs relative to summer, where near 24 hour sunlight prevails and primary production is at its greatest. In general, production starts in lake winter and early spring, utilizing sunlight that penetrates the snow and ice. Maximum production usually occurs in early to mid-summer within the upper 10 m of water, where there is the greatest amount of light.

Annual production can vary widely depending on water temperature, mixing, nutrient concentration, amount of sunlight, water clarity, and predation by zooplankton. Estimates of phytoplankton biomass are used as gross indicators of productivity from a “snap-shot” perspective, depending on frequency of sampling. They are only useful to detect long-term trends or gross changes in lake production, such as eutrophication as a result of nutrient additions (e.g., from sewage disposal) or addition of nitrites as a result of the use of explosives.

There are six major taxonomic groups of phytoplankton present in the study lakes, namely blue green algae (Cyanophyte), green algae (Chlorophyte), golden-brown algae (Chrysophyte), Diatom, Cryptophyte and Dinoflagellate (a presence/absence matrix of phytoplankton species for 2011 is presented in **Appendix G**). The diversity in types and sizes of phytoplankton is very large and their abundance is very great, typically exceeding 1 million individuals per litre with a total biomass of approximately $100 \text{ mg}/\text{m}^3$.

3.5.1. Meadowbank Study Lakes

3.5.1.1. General Observations

Chrysophytes (golden-brown algae) are small, usually unicellular phytoplankton that are consistently the most numerous taxonomic group in the Meadowbank area lakes. By virtue of this abundance, Chrysophytes also dominate biomass in all project lakes, typically representing 65% or more of total phytoplankton biomass in summer samples, with smaller proportions (usually <10% each) of the other five major groups. The dominant Chrysophyte genera for the Meadowbank lakes are *Chrysococcus*, *Kephyrion*, *Chrysochromulina*, *Dinobryon* and *Chrysolkos*. Dominant genera for the other groups were *Ankistrodesmus* sp. for chlorophytes, *Planktolyngbya* sp. for cyanophytes,

Cyclotella sp. for diatoms, *Rhodomonas* sp. and *Cryptomonas* sp. for cryptophytes and *Gymnodinium* sp. for dinoflagellates (Azimuth, 2011b, 2010a, 2009c, 2008a, and 2008b).

Diatoms and dinoflagellates (10 – 15% of biomass) are the next most abundant groups with the remaining taxa comprising only small proportions of abundance and biomass in project area lakes. Dinoflagellates are unicellular, flagellated motile algae that are commonly used for biomonitoring because particular species are sensitive to changes in certain water chemistry variables such pH, dissolved organic matter, and temperature. Although diatoms are a diverse and important group, the majority of species are sessile and associated with littoral substrates such as rocks and attached vegetation (Wetzel, 1983). Because of this limitation this group is less useful for biomonitoring.

Mean phytoplankton biomass in the Meadowbank area lakes typically ranges from 100 to 200 mg/m³ during summer with diminishing biomass in fall through winter. This range in biomass is fairly typical for oligotrophic, central Arctic Canadian lakes. For example, some nearby lakes such as Snap Lake (266 mg/m³; De Beers, 2002), Kiggavik lakes (125 mg/m³; McKee et al., 1989), Char, Spring and Saqvaquac lakes, not far from Baker Lake ranged up to 166 mg/m³, 120 mg/m³ and 130 mg/m³ respectively (Kalff et al., 1975; Welch et al., 1989). Major species and biomass of phytoplankton in the Meadowbank project lakes is consistent with dominant and commonly occurring phytoplankton species usually found in oligotrophic lakes with circum-neutral pH and low nutrient concentrations (Wetzel, 1983).

3.5.1.2. Temporal and Spatial Trend Interpretation

As previously discussed, our approach to identify potential mine-related impacts involved visually searching for temporal-spatial patterns that might be related to mine-related activities (see **Section 1.5** for details). One of inherent challenges when dealing with phytoplankton is the large natural variability that can exist within and between sampling events that can limit quantitative statistical analyses from distinguishing patterns. When water is sampled from a single depth and time, and plankton are enumerated from only 10 millilitres of water in order to represent a ‘month’, there are obviously some assumptions made. Nevertheless, given that millions of cells may be present in a single sample representing many taxa and many samples have been collected over the last 10 years, it is possible to distinguish a ‘signal’ out of the ‘noise’.

The primary metrics upon which we based our decisions are chlorophyll-a concentration (a surrogate for overall primary productivity), total biomass (mg/m³), relative biomass of major taxonomic groups, and species richness or diversity (total # species). We have chosen to examine biomass and not abundance because the two tend to be reasonably well correlated and ultimately, biomass is a much better approximation of actual production or food available to zooplankton.

The expected response patterns in phytoplankton biomass and species richness is dictated by the nature of the physical and/or chemical changes caused by mine-related activities.

For example, dike construction or dewatering may introduce a large amount of sediment into the water column, impair light penetration and may cause a reduction in phytoplankton or impair certain sensitive groups, such as Dinoflagellates. The magnitude and extent of the effect is related to the spatial and temporal extent of light extinction in the water column that can partly be overcome by windy conditions that mix the water vertically and expose phytoplankton to sunlight that is more abundant near the surface in turbid conditions.

With completion of dike construction in 2010, dewatering into TPN was the only major activity being conducted that had the potential to seriously impact water clarity (and hence phytoplankton productivity). There was also the possibility that other general mine-related activities (e.g., those creating dust emissions) could affect phytoplankton. On the other hand, increased nutrient additions from dike construction, dewatering or other mine-related activities could increase phytoplankton biomass and overall primary production. In this case, an increase in biomass and chlorophyll-a might be expected, so we are looking for any changes to phytoplankton coinciding with mining activities (i.e., focusing primarily on impact data for SP, TPE and TPN).

One factor to be taken into account when dealing with phytoplankton data is the recognition of high natural variability of control data (i.e., for reference areas and baseline conditions). This potentially confounding effect can make it difficult to identify mining-related influences at impact areas, unless the latter are quite large. Below are observations on the pattern of results for the specific area/years of interest (i.e., based on impact data) relative to the patterns observed for control data. Note that plots for all other phytoplankton metrics are presented in **Appendix H**.

Chlorophyll-a

- Chlorophyll-a concentrations at most reference areas ranged between 0.4 and 0.8 µg/L in spring and summer months and have remained fairly consistent since 2006 (**Figure 3.5-1**). Few monitoring events have occurred outside of open water periods at reference areas.
- Aside from August 2011 data, chlorophyll a concentrations have been fairly consistent during open water periods hovering around 0.5 µg/L. During 2008 and 2009 dike construction events, chlorophyll concentrations appear to have dipped during summer in SP and TPE (2009), but rebounded by September. In August 2011 chlorophyll-a concentrations spiked 2x – 3x baseline concentrations up to 1.4 to 1.8 µg/L at impact areas TPN, TPE and SP. These spikes are unrelated to dewatering because they occurred simultaneously in SP, TPE and TPN, as well as TPN, coincident with typically low nutrient concentrations in each water body.

Total Biomass

- At reference areas, phytoplankton biomass was approximately 200 mg/m³ at INUG, TEFF, and WAL and >300 mg/m³ at PDL, which is consistent with the

range in concentrations observed in previous years (**Figure 3.5-2**). Winter under-ice biomass is very low at all locations in all years it has been measured.

- A drop in phytoplankton biomass was seen in 2008 in SP and to a lesser extent in TE. In 2009, a slight drop in biomass was also seen in TPE due to Bay-Goose dike construction that was not observed in SP or TE. Similar changes were also observed in the follow-up TSS EAS studies (Azimuth, 2009b, 2010c).
- Seasonal patterns in phytoplankton biomass (low winter, peaking through summer and diminishing in fall) did not appear to be influenced by dewatering of the attenuation pond in SP and the Bay-Goose impoundment as 2010 and 2011, with biomass in TPN reaching typical concentrations of 200 mg/m³.

Major Taxa Composition

As a complement to the total biomass plots discussed above, **Figures 3.5-3 and 3.5-4** show stacked bar graphs depicting total biomass and relative biomass broken down by major taxa group. (of major taxa group) and relative biomass (of major taxa group) with different colors representing each of the major taxa groups. Relative density is presented in **Figure 3.5-4** on a scale of 0 to 100%.

- All areas are dominated by Chrysophytes in all open-water months where biomass is in excess of 25 mg/m³, a pattern that has been consistent since monitoring began in 2006. Relative abundance of Chrysophytes is diminished and other groups are relatively more abundant outside of the spring and summer growing season. Diatoms became relatively more abundant at INUG for example.
- Reductions in Chrysophyte abundance and relative abundance are the most noticeable change associated with dike construction (i.e., SP and TE in 2008 and TPE in 2009 and 2010). These changes reversed soon after the sedimentation events cleared up.
- No changes in community composition are apparent in relation to dewatering discharge into TPN or to other general site-related activities.

Species Richness

- At reference areas, seasonal profiles in species richness were similar in shape as biomass, with an increase from low diversity (~15 species) in under-ice months to maximum diversity (40 – 45 species) in summer, with a decline to <20 species in winter (under-ice) months where this was measured (**Figure 3.5-5**). Seasonal peaks at reference areas do not appear to have changed over time except at INUG in 2006 (higher) and PDL (lower).
- Seasonal trends in species richness at impact areas are very similar over time and the only influence of dike construction occurred in SP during August when a large drop in richness was observed, yet rebounded in September. Richness typically increases from <15 species in May to maximum diversity at 40 – 45 species July

- September, diminishing in November and December back to May levels. In 2008, richness was 16 species in August at SP.
- Dewatering and general site-related activities do not appear to have influenced species richness at impact areas.

In summary, 2008 East Dike and to a lesser extent, 2009 Bay-Goose dike construction increased TSS concentrations and diminished light penetration during the open water period in SP / TE and TPE / SP respectively. This caused small and ephemeral diminishment of phytoplankton biomass, abundance and richness in SP in 2008, and reduced biomass and cell density in TPE in 2009 that has been previously documented. Unusual peaks in chlorophyll a concentrations in 2011 were not correlated with phytoplankton biomass. Notwithstanding the large natural variability in phytoplankton biomass and abundance, 2011 dewatering and general mine-related activities do not appear to have affected phytoplankton metrics.

Given the absence of mine-related effects on phytoplankton, there are no further management actions for 2012.

3.5.2. Baker Lake

3.5.2.1. General Observations

The phytoplankton community of Baker Lake is relatively similar to the Meadowbank Lakes by virtue of the fact that they are situated within roughly the same geographic. Similar to the study lakes, taxonomic composition and biomass are comparable as Chrysophytes (golden-brown algae) have consistently been the numerous taxonomic group in Baker Lake since monitoring began in 2008 with similar dominant taxa (e.g., *Chrysococcus*, *Kephyrion*, *Dinobryon*). However, Cryptophytes and Diatoms were the next most abundant groups in Baker Lake, comprising about 15% of abundance, followed by Dinoflagellates. This group was slightly less represented in Baker Lake relative to the study lakes because of the large size of Baker Lake. Given that Dinoflagellates tend to be more sessile and associated with hard substrates and shorelines, the lack of this habitat limited their relative abundance and biomass.

Mean summer phytoplankton biomass in Baker Lake was higher than in the Meadowbank lakes ranging from 200 – 400 mg/m³ possibly because of greater nutrient abundance due to large tributary inflow.

3.5.2.2. Temporal and Spatial Trend Interpretation

Baker Lake is a large lake that has multiple confounding influences that affect water chemistry in a way that is impossible to predict or control for including influence of a large nearby tributary stream (Thelon River) that may affect near-field or impact areas (BBD and BPJ) depending on wind direction, speed and duration. Furthermore, the

influence of wind-driven currents and the influence of deep marine/brackish water (especially at reference BAP) may considerably affect water chemistry parameters and consequently, the phytoplankton community in ways that are far too complex to decipher given the limited monthly sampling schedule.

In addition, no winter/spring sampling has been conducted at Baker Lake areas so interpretations are limited to summer open water period (which does coincide with barge activity). Because of the large size of Baker Lake it is likely very well mixed and given the relative paucity of mine-related activities, it is unlikely that barge traffic (in the absence of a fuel or chemical spill) could influence whole-lake phytoplankton community. Nevertheless, major findings at Baker Lake areas for chlorophyll-a, biomass, species richness and major taxa group composition are as follows:

- Chlorophyll-a concentration at reference area BAP and impact areas BBD and BPJ rose from 1 ug/L in July to peak at near 4 ug/L in August before returning to 1 ug/L in September (**Figure 3.5-6**).
- Biomass did not correlate well with chlorophyll-a concentrations. Biomass was highest in July at all areas (350 – 410 mg/m³) and declined through the summer/fall to reach 150 – 175 mg/m³ in September (**Figure 3.5-7**).
- Species richness was variable at all areas with no apparent pattern within or between years as number of species ranged from 35 – 40 at most areas (**Figure 3.5-8**). Species richness tended to be higher in August but this was not always the case.
- The relative proportion of Chrysophytes, the dominant taxa group at all areas and years, was highest in July and August, but diminished in importance in September, with Diatoms becoming more important, followed by Dinoflagellates (**Figure 3.5-7**). There were no apparent differences between BAP and impact areas BBD and BPJ.

Summary

The phytoplankton community of Baker Lake showed minor variation spatially with no meaningful patterns across areas in any year. Regardless of location, patterns of biomass, species richness and taxonomic composition were similar within and between years. Considering the potentially large natural variability of the phytoplankton community in this large lake, especially in this chemically dynamic environment, there is no evidence of any pattern that could be related to barge activity.

Table 3.5.-1. Phytoplankton density (cells/L) by major taxa group, Meadowbank study lakes and Baker Lake, 2011.

Area-Replicate	Date	Phytoplankton Density (cells/L)						Total
		Cyanophyte	Chlorophyte	Chrysophyte	Diatom	Cryptophyte	Dinoflagellate	
Third Portage Lake								
TPE-34	4-May-11	320	13499	209809	3593	800	320	228341
TPE-35	4-May-11	720	17485	166954	83317	40942	3273	312691
TPE-36	27-Jul-11	6600	143880	1487288	10384	80224	39720	1768096
TPE-37	28-Jul-11	3200	194568	1746512	90208	30936	19368	2084792
TPE-38	24-Aug-11	53152	517648	1093568	360400	24152	15568	2064488
TPE-39	24-Aug-11	27968	474744	562152	309112	11184	8384	1393544
TPE-40	16-Sep-11	67600	417472	809808	749336	16968	7784	2068968
TPE-41	16-Sep-11	64600	410288	836344	1898776	16768	800	3227576
TPE-42	22-Nov-11	67320	309312	381552	1366560	29336	0	2154080
TPE-43	22-Nov-11	112824	251640	309112	1202528	14768	0	1890872
TPE-44	23-Dec-11	103196	592682	305056	142540	400	0	1143874
TPE-45	23-Dec-11	3200	34258112	165232	138296	800	0	34565640
TPN-34	1-May-11	3353	2320	232713	18918	14765	400	272469
TPN-35	1-May-11	3200	11259	178286	14845	43655	400	251645
TPN-36	27-Jul-11	2000	150480	2323432	101376	7984	16184	2601456
TPN-37	27-Jul-11	4200	236888	1520824	123328	1200	10584	1897024
TPN-38	23-Aug-11	16784	220120	1289936	217720	44704	15768	1805032
TPN-39	23-Aug-11	13784	247256	1048080	267608	74640	74040	1725408
TPN-40	18-Sep-11	12400	1145656	843928	932736	30736	7784	2973240
TPN-41	18-Sep-11	17000	871464	1124104	567552	11784	1800	2593704
TPN-42	21-Nov-11	42536	174016	208736	917768	14768	200	1358024
TPN-43	21-Nov-11	39752	483528	366784	1290936	7784	200	2188984
TPN-44	20-Dec-11	125360	137096	402304	319696	600	200	985256
TPN-45	20-Dec-11	90040	180000	179800	376168	0	200	826208
TPS-27	27-Jul-11	3600	260040	1792816	81424	31536	10984	2180400
TPS-28	27-Jul-11	3800	454392	1008160	65056	22152	24952	1578512
TPS-29	23-Aug-11	16384	378768	1421448	210336	30336	30136	2087408
TPS-30	23-Aug-11	34336	340264	1403680	166032	73440	46504	2064256
TPS-31	18-Sep-11	41552	617040	835544	753136	38120	1000	2286392
TPS-32	18-Sep-11	36352	482944	850112	684480	15568	400	2069856
Second Portage Lake								
SP-34	3-May-11	80	28264	204463	2873	3193	240	239113
SP-35	3-May-11	3513	19812	238859	8619	26017	160	296980
SP-36	26-Jul-11	4800	202752	804608	88608	29552	15368	1145688
SP-37	26-Jul-11	1000	237672	869664	87408	57088	1000	1253832
SP-38	18-Aug-11	60672	539600	1409264	31136	57288	11184	2109144
SP-39	18-Aug-11	125528	877248	1165008	72240	114760	9984	2364768
SP-40	14-Sep-11	10600	302728	988008	808808	24952	15168	2150264
SP-41	14-Sep-11	294544	296144	792040	637792	38720	8784	2068024
SP-42	23-Nov-11	15800	238272	811992	710232	211936	200	1988432
SP-43	23-Nov-11	22800	352616	934320	823776	131512	400	2265424
SP-44	23-Dec-11	67352	352616	797824	217120	31336	600	1466848
SP-45	23-Dec-11	17600	13168272	387936	223504	1400	0	13798712
Tehok Lake								
TE-34	4-May-11	480	45095	336941	2953	1040	12212	398721
TE-35	4-May-11	0	240	146843	17238	7346	11572	183239
TE-36	29-Jul-11	600	152664	1250416	172816	102376	1600	1680472
TE-37	29-Jul-11	15968	281376	1610216	130312	42720	2800	2083392
TE-38	16-Aug-11	3000	496096	1214496	45904	88408	7584	1855488
TE-39	16-Aug-11	114944	647360	1566312	111160	79824	51888	2571488
TE-40	13-Sep-11	17984	201152	1353192	197168	145280	600	1915376
TE-41	13-Sep-11	9800	239872	1209112	200968	67256	1800	1728808
TE-42	24-Nov-11	11200	301928	1013744	746552	124728	0	2198152
TE-43	24-Nov-11	17400	244256	1114320	551984	160848	400	2089208
TE-44	17-Dec-11	1594116	174354	343962	115572	400	0	2228404
TE-45	17-Dec-11	778336	426020	163116	359046	700	0	1727218

Table 3.5.-1. Phytoplankton density (cells/L) by major taxa group, Meadowbank study lakes and Baker Lake, 2011.

Area-Replicate	Date	Phytoplankton Density (cells/L)						Total
		Cyanophyte	Chlorophyte	Chrysophyte	Diatom	Cryptophyte	Dinoflagellate	
TEFF-15	29-Jul-11	800	68456	1492088	175216	74840	24552	1835952
TEFF-16	29-Jul-11	143880	88408	1920128	129712	72840	15968	2370936
TEFF-17	15-Aug-11	1400	123328	611440	94192	51888	15568	897816
TEFF-18	15-Aug-11	1200	138696	898600	79824	138696	30536	1287552
TEFF-19	13-Sep-11	16600	275092	983024	225504	44104	7584	1551908
TEFF-20	13-Sep-11	15000	173616	824376	274792	21552	600	1309936
<i>Inuggugayualik Lake</i>								
INUG-22	30-Apr-11	80	3193	376443	2873	33763	8939	425291
INUG-23	30-Apr-11	0	0	333268	320	7186	14685	355459
INUG-24	30-Jul-11	400	277192	1567112	145880	36720	15968	2043272
INUG-25	30-Jul-11	0	80024	1488488	198168	101576	22952	1891208
INUG-26	13-Aug-11	43904	104176	1280152	180400	136896	7784	1753312
INUG-27	13-Aug-11	526432	101976	1394696	95192	36320	7584	2162200
INUG-28	15-Sep-11	14984	426056	1381160	52088	44104	7584	1925976
INUG-29	15-Sep-11	83224	178416	1084816	119144	66056	14968	1546624
INUG-30	25-Nov-11	9384	260224	1049664	678312	15168	600	2013352
INUG-31	25-Nov-11	9184	130112	992192	745352	95592	0	1972432
INUG-32	24-Dec-11	1019144	1652320	466960	216720	7784	200	3363128
INUG-33	24-Dec-11	59236	4046	535446	159624	78712	0	837064
<i>Wally Lake</i>								
WAL-15	29-Jul-11	11184	396920	1430616	87808	83024	15368	2024920
WAL-16	29-Jul-11	50888	190584	1301904	45304	102976	7784	1699440
WAL-17	15-Aug-11	35920	476744	1022328	29136	87208	1200	1652536
WAL-18	15-Aug-11	503080	412688	863080	51888	65056	1200	1896992
WAL-19	14-Sep-11	15968	189184	1390712	185000	88608	7584	1877056
WAL-20	14-Sep-11	16168	152464	1043880	120344	95392	15168	1443416
<i>Pipedream Lake</i>								
PDL-15	30-Jul-11	0	204152	3349944	216984	93008	21368	3885456
PDL-16	30-Jul-11	0	72840	2386688	322312	29736	15568	2827144
PDL-17	11-Aug-11	0	158648	1114320	113760	72440	2600	1461768
PDL-18	11-Aug-11	71840	122728	1395296	168848	28936	10384	1798032
PDL-19	15-Sep-11	200	196768	1337424	302776	51288	2400	1890856
PDL-20	15-Sep-11	400	231288	1344608	416920	102176	10384	2105776
Relative Abundance (%)								
		3.6	37	43	13	2.2	0.42	
<i>Baker Lake</i>								
BBD-15	25-Jul-11	0	89808	2296712	104792	295360	12184	2798856
BBD-16	25-Jul-11	600	55488	2518416	117176	298760	21768	3012208
BBD-17	21-Aug-11	200	187184	762120	138744	109560	15568	1213376
BBD-18	21-Aug-11	7184	158448	777688	108424	275592	16968	1344304
BBD-19	19-Sep-11	8984	668328	827360	235416	218920	16968	1975976
BBD-20	19-Sep-11	22752	533216	913168	353344	178616	9184	2010280
BPJ-15	25-Jul-11	400	76040	2878416	138944	375984	11184	3480968
BPJ-16	25-Jul-11	400	15968	3097720	145912	332464	31936	3624400
BPJ-17	20-Aug-11	7984	452592	1604648	184848	281976	16568	2548616
BPJ-18	20-Aug-11	29136	89808	1548976	218384	267608	17168	2171080
BPJ-19	20-Sep-11	1400	491928	870464	292272	214536	8184	1878784
BPJ-20	20-Sep-11	400	542216	525232	226232	75640	8984	1378704
BAP-15	25-Jul-11	0	87208	2274360	102424	266424	50904	2781320
BAP-16	25-Jul-11	200	41520	2916920	80456	422472	47904	3509472
BAP-17	21-Aug-11	59672	259224	1486704	285856	346232	66656	2504344
BAP-18	21-Aug-11	600	195768	1541776	254688	360400	30136	2383368
BAKER LAKE								
Relative Abundance (%)								
		0.36	10	70	7.7	11	1.0	

Table 3.5-2. Phytoplankton biomass (mg/m³) and diversity by major taxa group, Meadowbank study lakes and Baker Lake, 2011.

Area-Replicate	Date	Phytoplankton Biomass (mg/m ³)							# Species	Simpsons Diversity
		Cyanophyte	Chlorophyte	Chrysophyte	Diatom	Cryptophyte	Dinoflagellate	Total		
Third Portage Lake										
TPE-34	4-May-11	0.08	0.26	8.7	0.78	0.55	2.0	12.3	18	0.73
TPE-35	4-May-11	0.19	0.51	5.9	2.2	2.5	2.2	13.5	19	0.82
TPE-36	27-Jul-11	3.9	7.8	99	2.2	7.4	21	142	34	0.77
TPE-37	28-Jul-11	1.0	9.6	83	6.7	4.8	15	119	33	0.75
TPE-38	24-Aug-11	6.3	25	80	28	4.7	12	156	38	0.87
TPE-39	24-Aug-11	3.4	13	57	15	5.9	11	106	32	0.90
TPE-40	16-Sep-11	10	23	77	47	5.0	8.8	171	35	0.84
TPE-41	16-Sep-11	12	21	74	100	4.0	9.8	220	32	0.68
TPE-42	22-Nov-11	7.5	12	35	38	3.3	0	95.6	26	0.60
TPE-43	22-Nov-11	6.4	6.0	18	227	1.6	0	260	26	0.62
TPE-44	23-Dec-11	6.1	25	24	7.4	0.65	0	63.6	15	0.74
TPE-45	23-Dec-11	1.5	1257	10	11	1.3	0	1281	12	0.02
TPN-34	1-May-11	0.43	0.21	6.5	0.76	2.3	3.2	13.4	14	0.61
TPN-35	1-May-11	0.75	0.40	4.7	1.2	2.3	3.6	12.9	16	0.70
TPN-36	27-Jul-11	0.70	4.9	141	5.1	1.4	31	184	29	0.57
TPN-37	27-Jul-11	1.7	5.1	99	5.8	1.1	15	128	28	0.68
TPN-38	23-Aug-11	2.6	7.1	137	20	5.4	11	183	39	0.90
TPN-39	23-Aug-11	2.0	7.0	69	26	7.8	42	154	39	0.90
TPN-40	18-Sep-11	2.3	18	84	78	4.5	8.7	195	37	0.89
TPN-41	18-Sep-11	3.4	22	97	59	6.2	18	206	44	0.92
TPN-42	21-Nov-11	3.4	7.5	28	58	1.4	3.1	101	27	0.62
TPN-43	21-Nov-11	3.8	25	54	81	0.96	3.1	167	25	0.69
TPN-44	20-Dec-11	8.3	11	25	43	0.99	0.35	89	18	0.86
TPN-45	20-Dec-11	7.1	8.7	16	44	0	0.32	77	19	0.85
TPS-27	27-Jul-11	1.4	4.8	122	8.8	5.6	18	161	37	0.79
TPS-28	27-Jul-11	1.4	6.1	75	5.1	1.5	27	116	30	0.84
TPS-29	23-Aug-11	1.9	43	105	20	4.2	19	193	40	0.91
TPS-30	23-Aug-11	1.3	15	117	18	5.6	30	187	38	0.89
TPS-31	18-Sep-11	4.9	21	89	78	5.8	6.6	205	46	0.91
TPS-32	18-Sep-11	3.0	18	72	57	2.5	1.9	154	39	0.89
Second Portage Lake										
SP-34	3-May-11	0.02	0.54	8.3	0.08	0.37	1.0	10.3	14	0.66
SP-35	3-May-11	0.41	0.80	11	0.38	1.2	0.64	14.6	18	0.76
SP-36	26-Jul-11	2.8	4.3	53	5.6	13	8.2	86.8	36	0.86
SP-37	26-Jul-11	0.18	5.3	71	5.1	11	6.2	99.1	36	0.85
SP-38	18-Aug-11	4.8	12	86	4.0	13	39	159	36	0.85
SP-39	18-Aug-11	6.3	18	77	2.4	17	26	147	39	0.89
SP-40	14-Sep-11	1.7	15	84	46	5.3	12	164	41	0.84
SP-41	14-Sep-11	44	12	65	34	5.5	20	182	41	0.87
SP-42	23-Nov-11	3.7	10	90	42	21	1.8	169	34	0.85
SP-43	23-Nov-11	5.4	18	72	27	12	5.1	140	35	0.82
SP-44	23-Dec-11	5.8	7.5	34	10	4.8	9.4	72	25	0.86
SP-45	23-Dec-11	2.5	160	19	7.4	1.6	0	190	17	0.16
Tehek Lake										
TE-34	4-May-11	0.14	0.41	17	0.18	0.76	14	33.2	16	0.73
TE-35	4-May-11	0	0.02	8.5	0.48	1.4	6.7	17.0	14	0.75
TE-36	29-Jul-11	0.13	6.1	88	25	14	18	151	32	0.83
TE-37	29-Jul-11	0.91	9.5	109	12	12	23	166	40	0.83
TE-38	16-Aug-11	1.3	9.8	83	4.5	7.1	6.1	112	34	0.87
TE-39	16-Aug-11	0.47	20	126	11	7.4	22	186	38	0.90
TE-40	13-Sep-11	2.4	5.8	96	22	13	4.1	144	35	0.89
TE-41	13-Sep-11	1.6	9.1	98	11	8.1	13	141	39	0.88
TE-42	24-Nov-11	2.4	16	104	22	9.0	0	153	31	0.84
TE-43	24-Nov-11	3.1	7.5	106	17	16	2.7	152	29	0.87
TE-44	17-Dec-11	41	4.5	48	10	1.0	0	105	22	0.49
TE-45	17-Dec-11	193	7.9	16	11	1.3	0	230	22	0.74

Table 3.5-2. Phytoplankton biomass (mg/m³) and diversity by major taxa group, Meadowbank study lakes and Baker Lake, 2011.

Area-Replicate	Date	Phytoplankton Biomass (mg/m ³)							# Species	Simpsons Diversity
		Cyanophyte	Chlorophyte	Chrysophyte	Diatom	Cryptophyte	Dinoflagellate	Total		
TEFF-15	29-Jul-11	0.20	2.8	126	15	6.2	18	168	37	0.83
TEFF-16	29-Jul-11	3.1	4.3	174	10	7.3	18	217	34	0.83
TEFF-17	15-Aug-11	0.81	4.7	46	3.7	4.7	16	75.8	34	0.79
TEFF-18	15-Aug-11	0.20	4.4	67	6.0	12	27	117	35	0.83
TEFF-19	13-Sep-11	3.9	13	104	20	4.5	5.9	151	39	0.92
TEFF-20	13-Sep-11	2.4	3.4	83	21	2.1	2.7	114	31	0.88
Inuggugayualik Lake										
INUG-22	30-Apr-11	0.004	0.4	14	0.08	3.1	7.3	25.2	14	0.68
INUG-23	30-Apr-11	0	0	14	1.0	1.3	11	27.5	15	0.72
INUG-24	30-Jul-11	0.27	6.3	134	11	3.8	13	168	44	0.84
INUG-25	30-Jul-11	0	2.4	134	15	10	14	175	33	0.85
INUG-26	13-Aug-11	2.3	5.8	133	11	6.7	3.2	162	36	0.86
INUG-27	13-Aug-11	1.4	3.2	110	6.5	3.0	6.1	130	33	0.84
INUG-28	15-Sep-11	1.9	8.3	181	8.5	3.4	8.9	212	37	0.88
INUG-29	15-Sep-11	4.0	4.8	117	10	7.5	10	153	42	0.86
INUG-30	25-Nov-11	0.69	10	145	19	1.8	5.1	182	39	0.87
INUG-31	25-Nov-11	0.65	5.0	151	22	7.5	0	186	37	0.86
INUG-32	24-Dec-11	26	22	34	12	1.5	0.29	96	23	0.70
INUG-33	24-Dec-11	0.91	0.77	37	8.3	5.9	0	53	19	0.80
Wally Lake										
WAL-15	29-Jul-11	1.6	8.5	101	7.0	12	10	140	34	0.84
WAL-16	29-Jul-11	2.1	10	82	3.6	12	7.9	118	37	0.85
WAL-17	15-Aug-11	2.7	12	64	1.2	7.4	19	106	37	0.86
WAL-18	15-Aug-11	2.0	16	44	3.5	6.6	6.5	78.3	38	0.86
WAL-19	14-Sep-11	2.3	8.4	112	10	9.3	5.9	148	41	0.87
WAL-20	14-Sep-11	1.9	6.5	77	10	10	14	120	42	0.83
Pipedream Lake										
PDL-15	30-Jul-11	0	6.5	274	15	13	70	379	36	0.80
PDL-16	30-Jul-11	0	2.2	172	23	2.9	10	210	29	0.82
PDL-17	11-Aug-11	0	3.4	68	8.7	4.3	24	109	33	0.87
PDL-18	11-Aug-11	2.3	3.8	105	11	1.7	18	142	30	0.86
PDL-19	15-Sep-11	0.03	6.0	89	28	5.6	19	148	43	0.85
PDL-20	15-Sep-11	0.07	4.8	101	33	8.4	43	191	42	0.91
MEADOWBANK LAKES										
Relative Biomass (%)		4.0	17	53	14	3.9	7.8			
Baker Lake										
BBD-15	25-Jul-11	0	3.3	232	13	45	33	327	39	0.83
BBD-16	25-Jul-11	0.22	2.1	289	13	49	48	401	42	0.81
BBD-17	21-Aug-11	0.01	3.9	105	18	10	11	148	34	0.91
BBD-18	21-Aug-11	0.93	3.4	125	20	21	22	192	40	0.91
BBD-19	19-Sep-11	0.80	8.2	87	47	25	26	194	46	0.93
BBD-20	19-Sep-11	2.4	12	53	48	26	24	165	44	0.91
BPJ-15	25-Jul-11	0.12	1.9	282	16	53	23	376	39	0.83
BPJ-16	25-Jul-11	0.10	0.84	238	21	30	26	317	40	0.81
BPJ-17	20-Aug-11	1.3	6.4	173	23	19	31	254	40	0.89
BPJ-18	20-Aug-11	0.56	3.2	185	16	23	41	268	39	0.89
BPJ-19	20-Sep-11	0.58	10	76	45	29	8.5	169	42	0.93
BPJ-20	20-Sep-11	0.06	10	41	56	13	22	143	43	0.93
BAP-15	25-Jul-11	0	1.5	287	21	37	95	442	35	0.79
BAP-16	25-Jul-11	0.11	1.7	260	14	65	51	391	40	0.76
BAP-17	21-Aug-11	2.2	11	180	25	26	38	283	44	0.91
BAP-18	21-Aug-11	0.18	8.6	161	22	28	17	237	41	0.90
BAKER LAKE										
Relative Biomass (%)		0.22	2.0	64	9.7	12	12			

Figure 3.5- 1. Chlorophyll-a ($\mu\text{g/L}$) in water samples from Meadowbank study lakes since 2006.

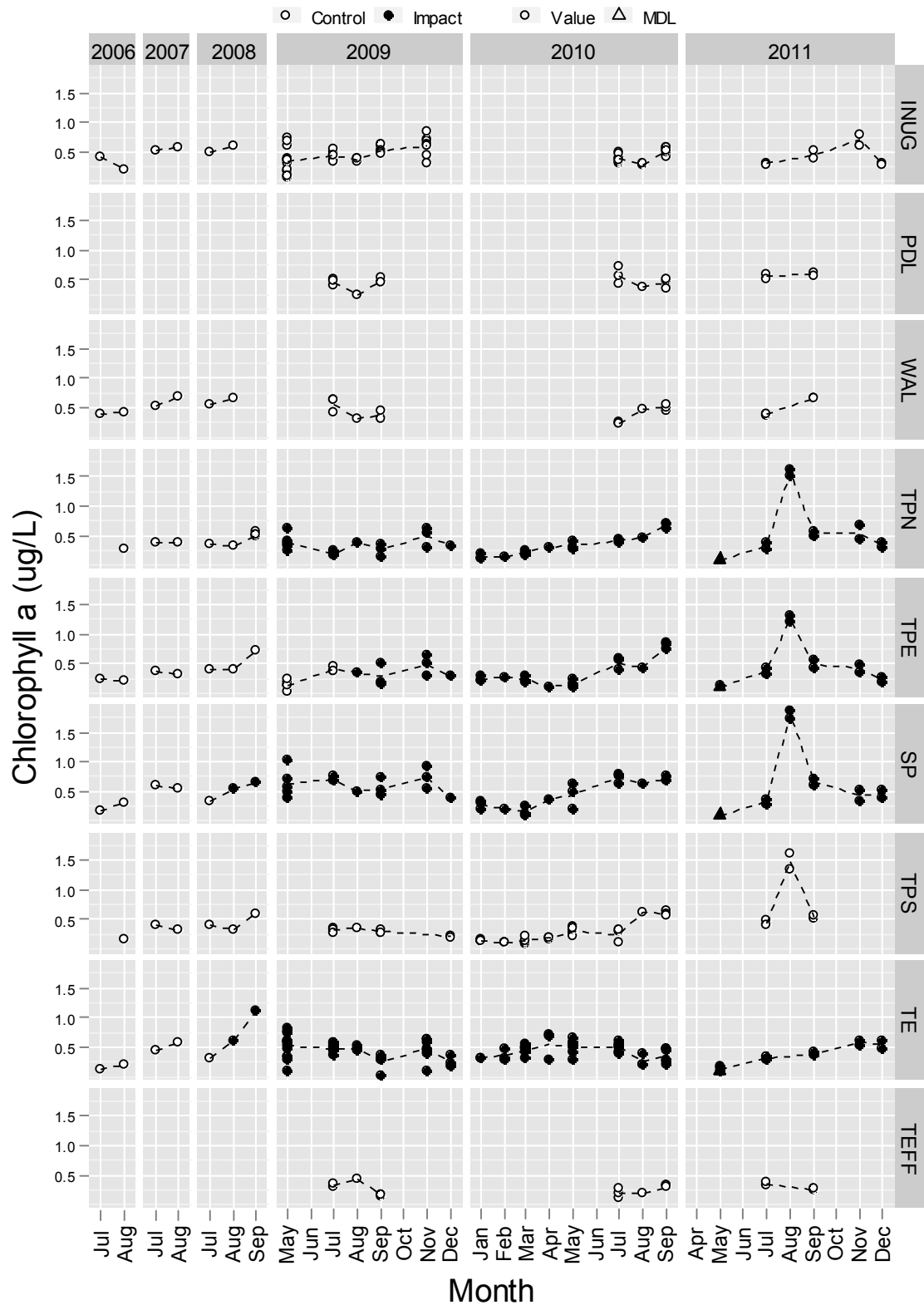


Figure 3.5- 2. Total phytoplankton biomass (mg/m³) from Meadowbank study lakes since 2006.

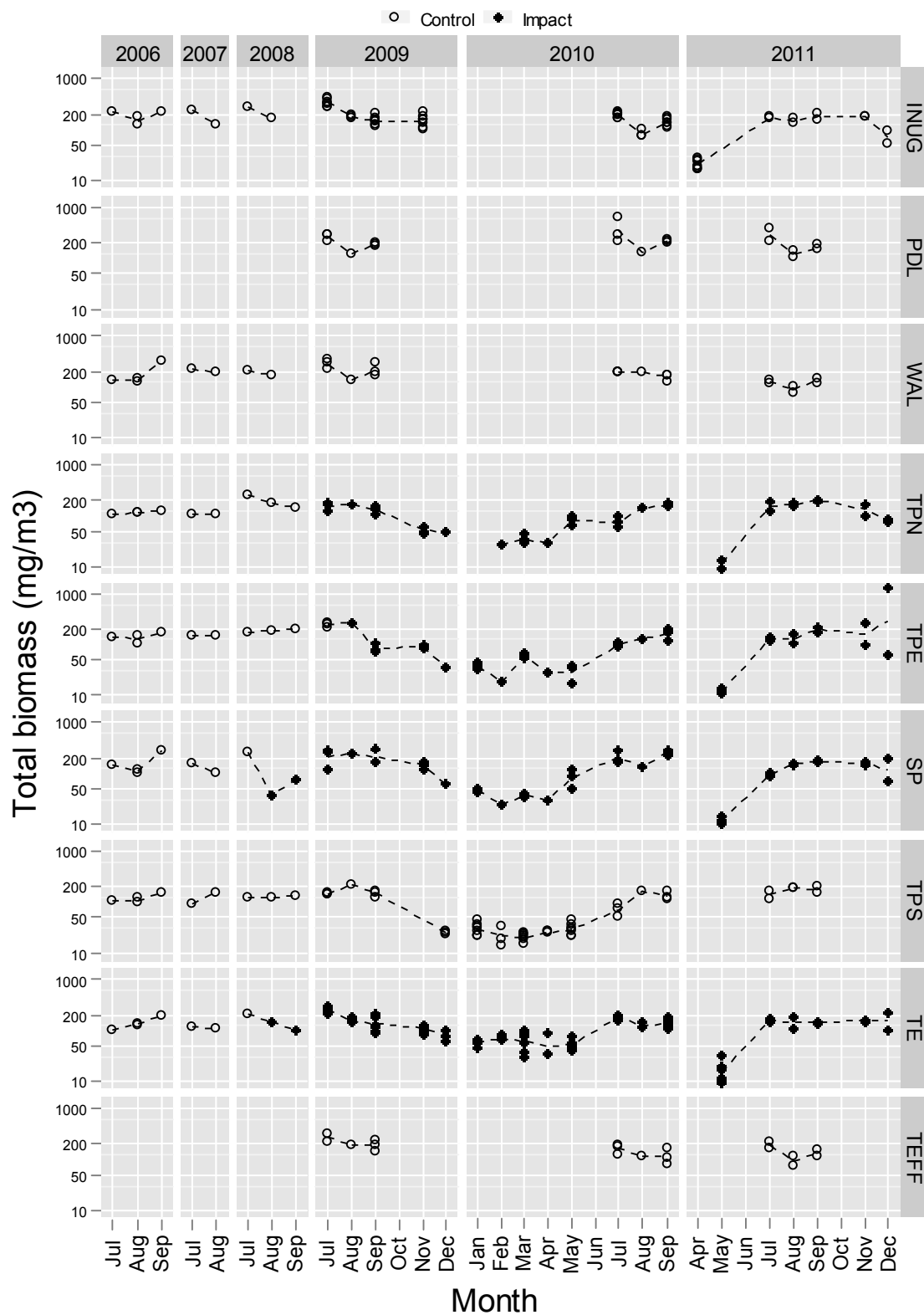


Figure 3.5- 3. Phytoplankton biomass (mg/m³) by major taxa group from Meadowbank study lakes since 2006.

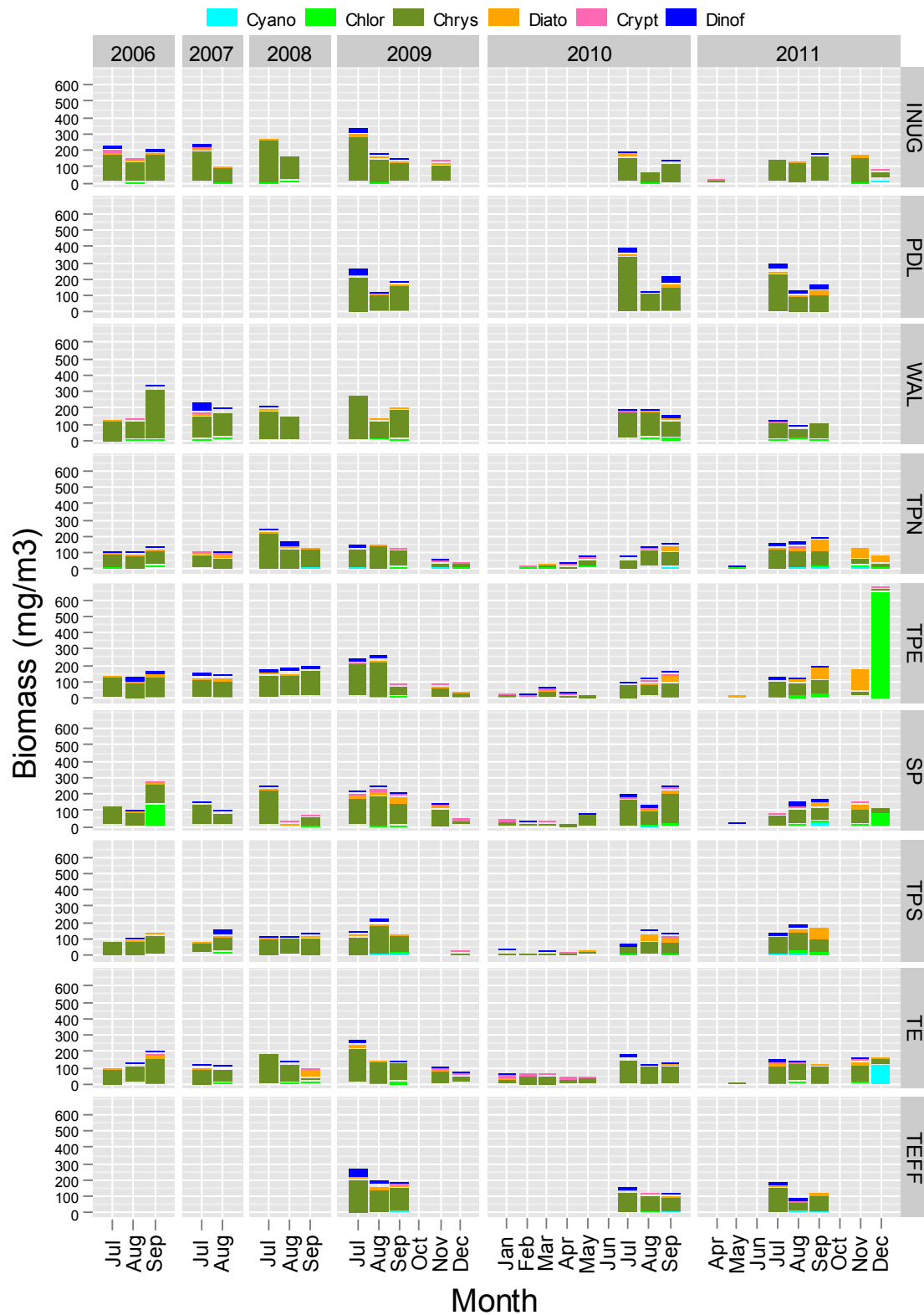


Figure 3.5- 4. Phytoplankton relative biomass by major taxa group from Meadowbank study lakes since 2006.

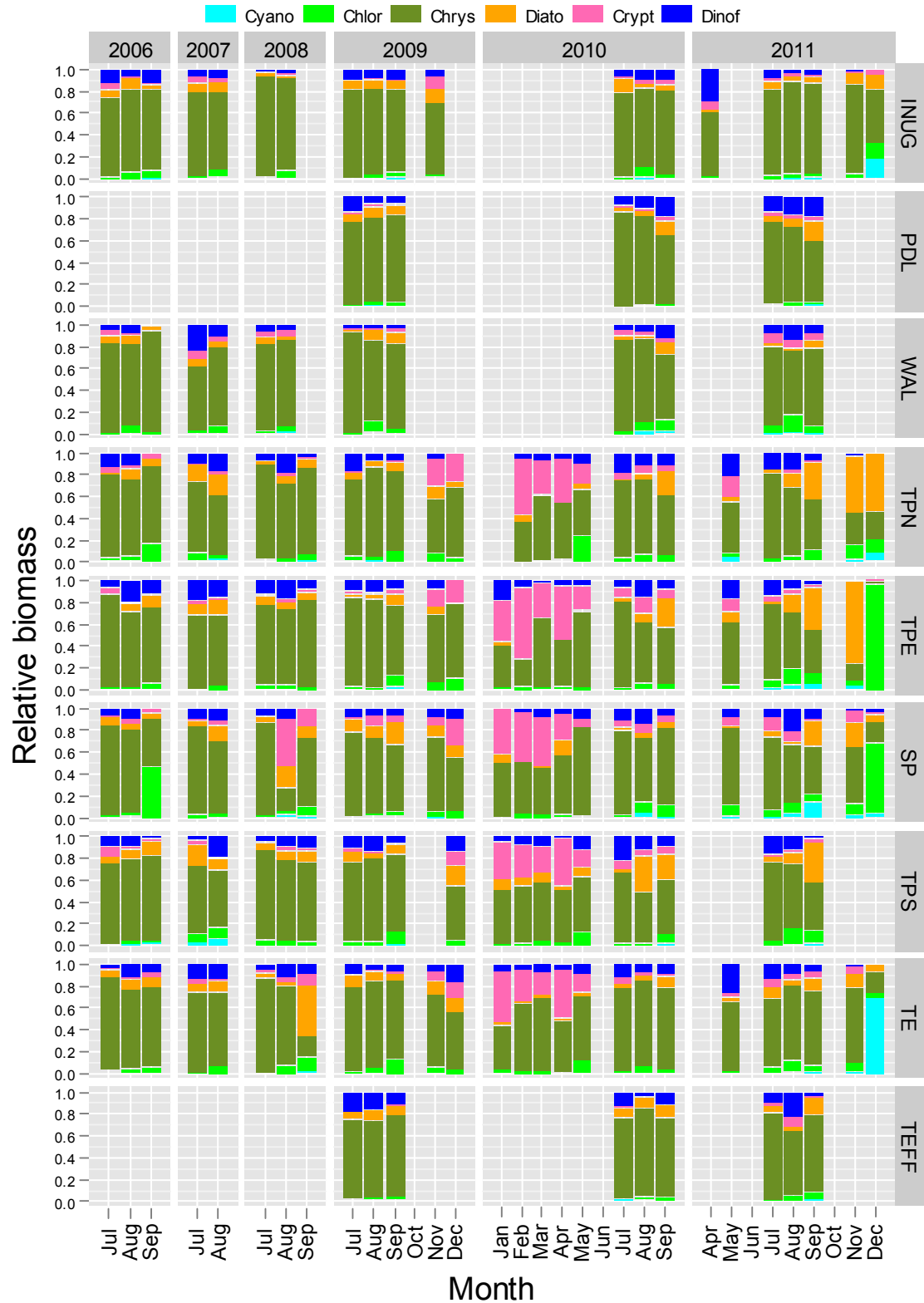


Figure 3.5- 5. Phytoplankton species richness from Meadowbank study lakes since 2006.

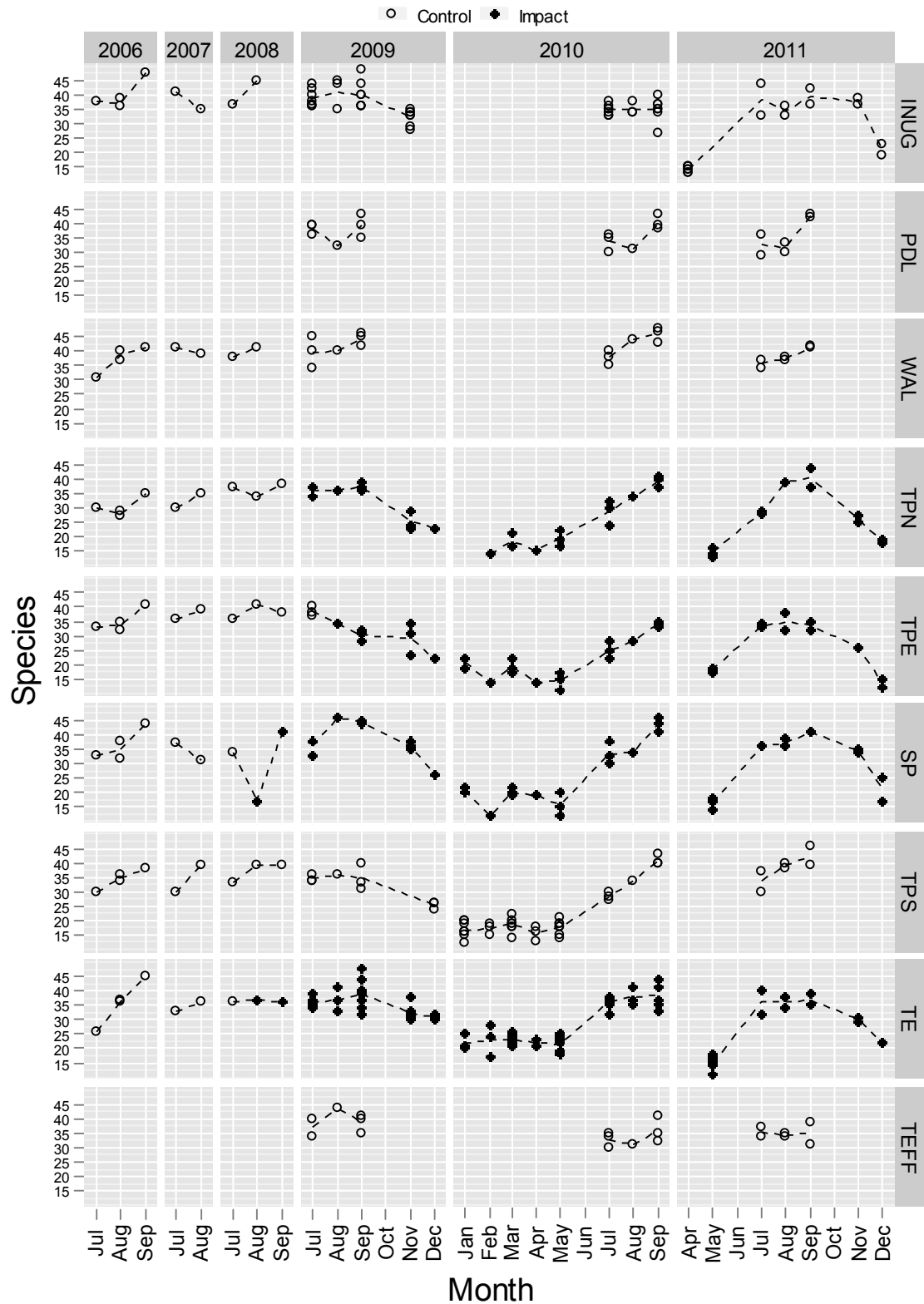


Figure 3.5- 6. Chlorophyll-a ($\mu\text{g/L}$) in water samples from Baker Lake since 2008.

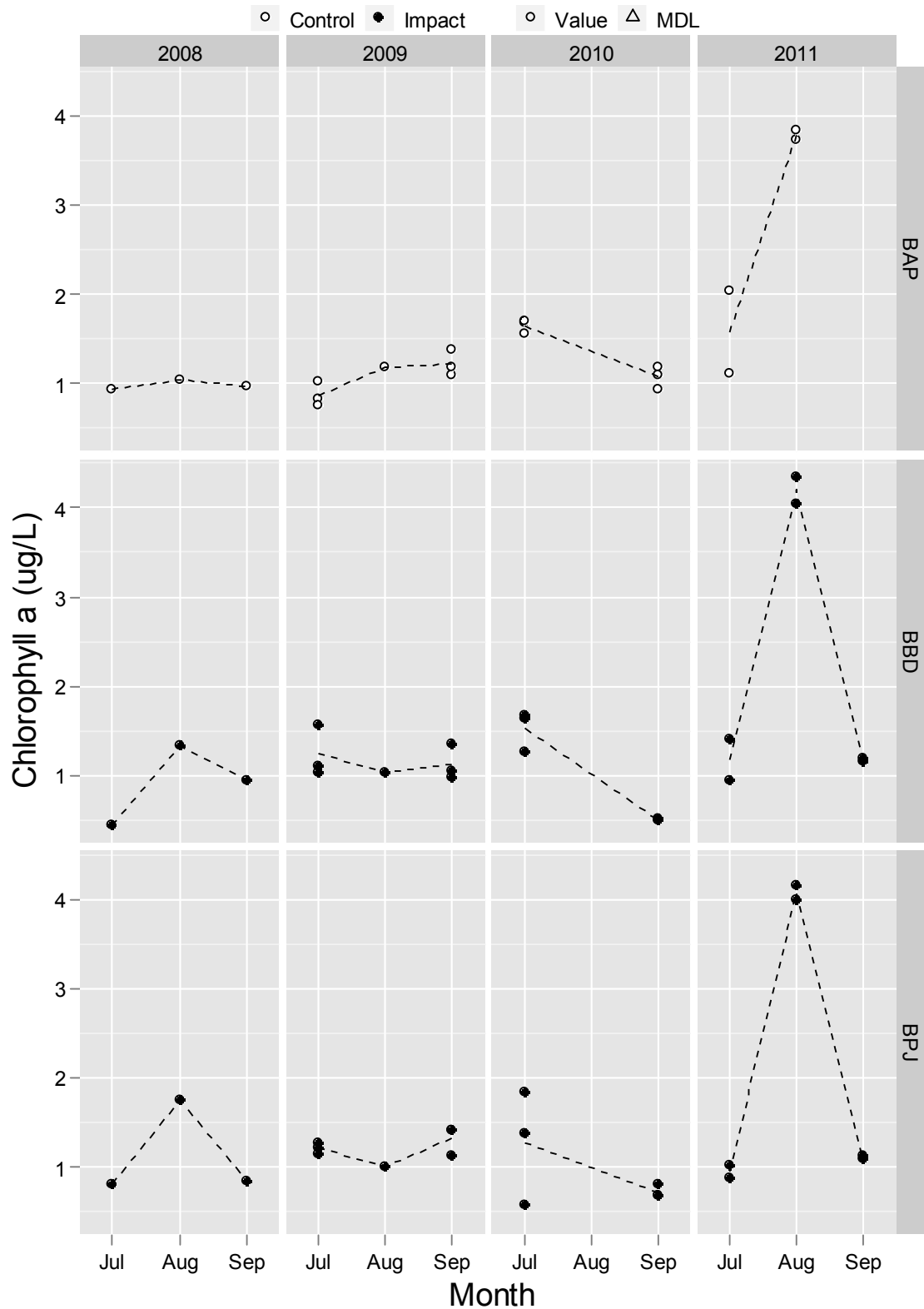


Figure 3.5- 7. Phytoplankton biomass (mg/m³) by major taxa group from Baker Lake since 2008.

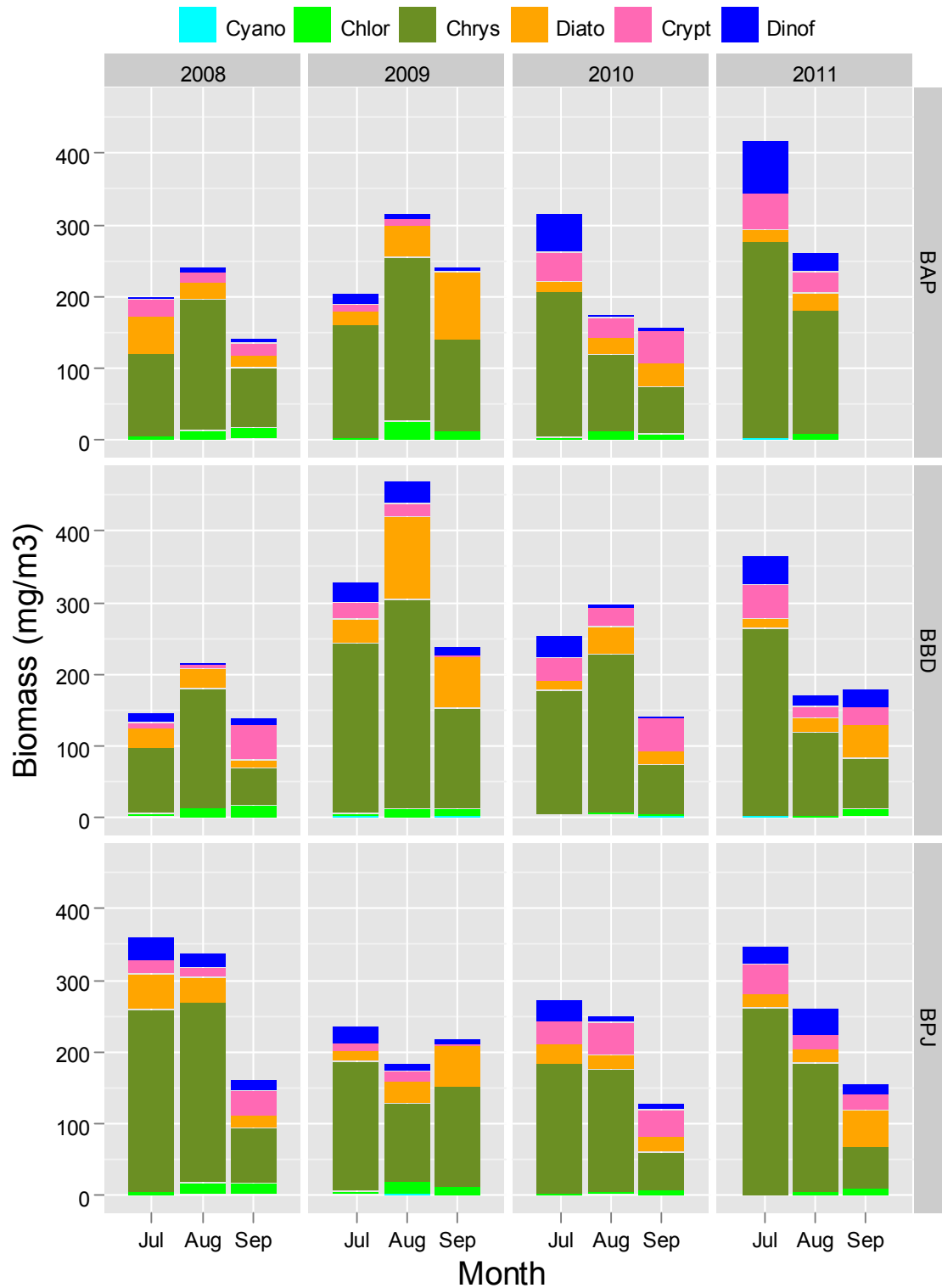
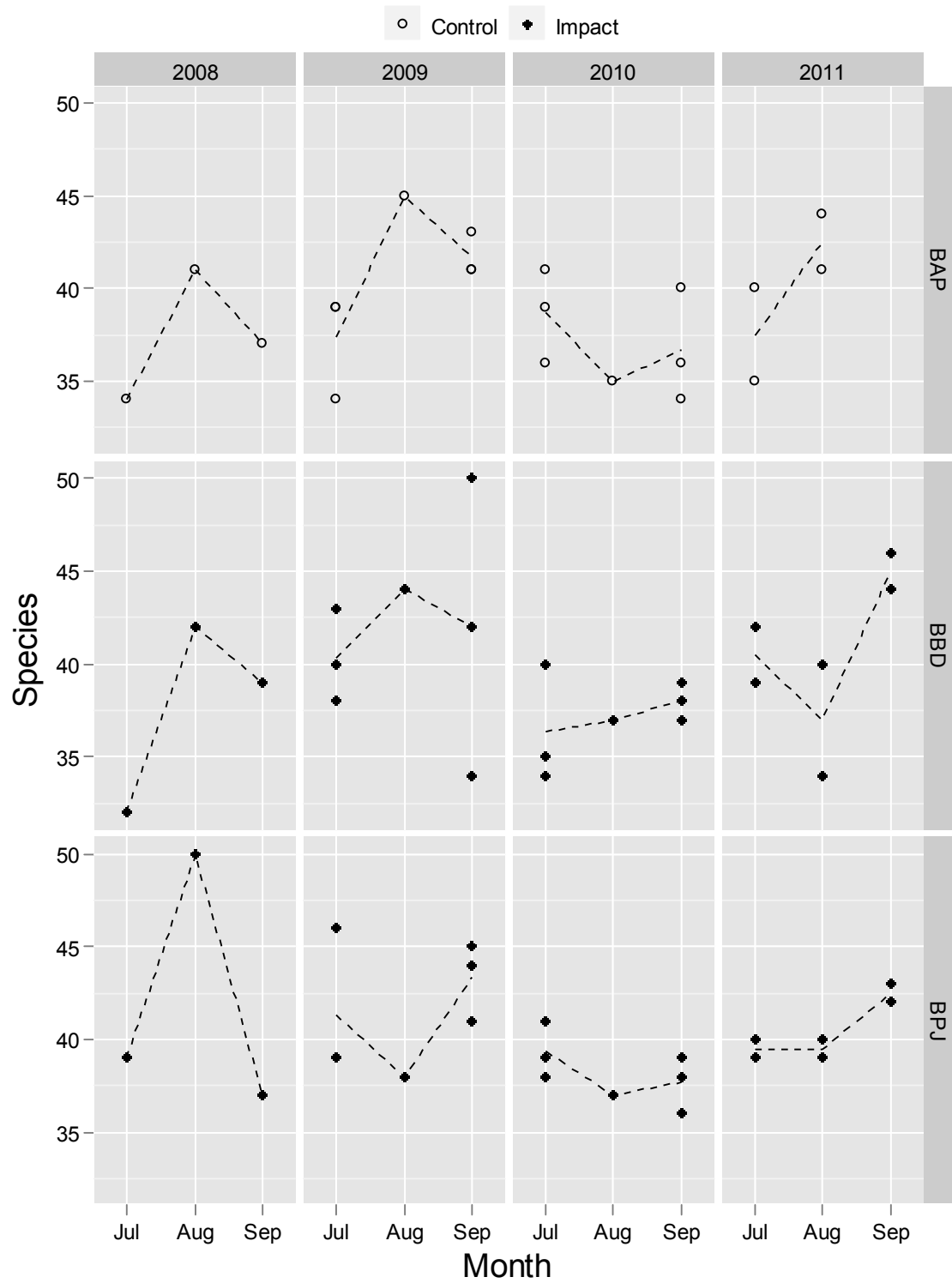


Figure 3.5- 8. Phytoplankton species richness from Baker Lake since 2008.



3.6. Benthic Invertebrates

Benthic invertebrates (collectively referred to as “benthos”) are small animals that live on or in the bottom sediments and are an important food source for most fish species, especially young-of-the-year and juvenile lake trout, round whitefish, and Arctic char (Machniak, 1975; Scott and Crossman, 1979).

The abundance and species composition of benthic invertebrates is strongly affected by the following:

- *Water depth* - benthic invertebrates are typically most abundant at depths between approximately 3 m and 12 m. Benthos are less abundant at shallower depths because of ice scouring and coarse grain size. Below a depth of about 12 m, light penetration is much reduced and algal productivity is lower, so abundance and diversity of benthos is similarly reduced. The vast majority of benthic invertebrates in deeper sediments consist of oligochaete worms (true worms) and chironomid (midge) larvae, which live primarily in the sediment (i.e., infauna), as opposed to organisms that live on top of the sediment (epifauna). In shallower sediments (<12 m), the major invertebrate groups consist of aquatic larvae of insects (Class Insecta), especially chironomids (Order Diptera), caddisflies (O. Trichoptera), mayflies (O. Ephemeroptera), and stoneflies (O. Plecoptera). Other major taxa include amphipods (Crustacea; O. Amphipoda), mites (O. Acarina), fingernail clams (Class Bivalvia; *Pisidium* or *Sphaeridae*), harpacticoid copepods (Crustacea; O. Harpacticoida), and tadpole shrimp (O. Notostraca). The CREMP targets depths ranging from 6.5 m to 9.5 m (i.e., $8 \text{ m} \pm 1.5 \text{ m}$) to reduce the influence of depth-related variability on the results.
- *Sediment grain size* – both abundance and richness can vary with substrate coarseness. Substrates in the depth range targeted by the CREMP are typically dominated by silts and clays in the Meadowbank Study Lakes; the Baker Lake sampling areas typically have more sand.
- *Organic carbon content* – The amount of organic carbon, a food source, in the sediment will also influence abundance of benthic infauna that feed on the organic particles. Generally, sediment with a higher proportion of organic material will have greater abundance and diversity of benthos than sediments with small amounts of organic carbon.

Other physical factors, such as water temperature, can influence larval development rates and ultimately timing of hatching for insect larvae. Consequently, even if sampling can be conducted simultaneously in all lakes (which is not practical), differential hatching can lead to a particular species being very abundant in one lake, and much less abundant in another, because of hatching of larvae into the terrestrial adult. This is partly overcome in the CREMP by sampling during late fall, after the emergence of most groups, but is still a source of some variability.

This section gives a general description of observations made on abundance and richness of all major taxa¹⁴ (e.g., insects, molluscs, worms) for the Meadowbank Study Lakes and for Baker Lake. The 2011 results are summarized in **Tables 3.6-1 and 3.6-2** (raw data are provided in **Appendix I**) and included in the time series graphs (**Figures 3.6-1 to 3.6-6**) that target the following endpoints (descriptions based on Environment Canada guidance [EEM, 2011]):

- *Total abundance* – the number of individual organisms per m², this metric is a measure of community density.
- *Total richness* – the number of different taxa (identified to the lowest practical taxonomic level, usually species) per grab.
- *Simpson's Diversity* – takes into account both the abundance patterns and taxa richness of the community based on the proportion of individuals that each taxa contributes to total abundance.
- *Bray-Curtis Index* – a distance coefficient (based on comparison of a site to one or more [pooled] reference sites) that ranges between 0 (both identical) to 1 (completely different). The index measures the percentage of difference between sites.
- *Major taxa group abundance* – similar to total abundance, but broken down by major taxa group.
- *Major taxa group relative abundance* – proportional abundance of each major taxa group.
- *Major taxa group richness* – similar to total richness, but broken down by major taxa group.
- *Major taxa group relative richness* – proportional richness of each major taxa group.

3.6.1. Meadowbank Study Lakes

3.6.1.1. General Observations

Nutrient status and general limnology of these lakes are discussed in **Sections 3.2 and 3.3**. Low productivity and low nutrient cycling result in a benthic community characterized by low abundance and relatively low taxa richness. Benthos abundance was

¹⁴ The abundance of roundworms (Nematoda) and seed shrimp (Ostracoda) is reported (**Appendix I**), but is not included in statistical comparisons of total number of genera, abundance or richness. Because of their small size, they are not consistently retained on a 500- μ m sieve, thus their presence would be confounding if they were used to quantitatively compare abundance estimates among areas.

typically less than 2,000 organisms/m² and was often less than 1,000 organisms/m² (**Figures 3.6-1 and 3.6-2**). Annual variability was sometimes high, as seen at Wally Lake (WAL; e.g., all years) and the east basin of Third Portage Lake (TPE; e.g., 2006 to 2008). There have also been fairly consistent spatial differences in abundance among lakes (e.g., Second Portage Lake [SP] and Tehek [TE] have generally had lower abundance than the other lakes and WAL higher since baseline monitoring [2006 to 2007]). Taxa richness typically ranged from 8 to 12 for most area-year combinations (**Figures 3.6-4 and 3.6-5**).

Typical of most Arctic lakes, the benthic invertebrate community has been generally dominated by the aquatic larval stages of insects, especially chironomids (Family Chironomidae), both in terms of abundance and taxa richness (**Figures 3.6-2, -3, -5, and -6**). The next most abundant group was typically Mollusca (clams) especially, *Cyclocalyx* / *Neopisidium*, genera of the family Sphaeriidae (fingernail clams). Oligochaete worms were also relatively abundant in the lake sediments; generally, at least one oligochaete taxon was present at most area/year combinations.

3.6.1.2. Temporal and Spatial Trend Interpretation

As discussed in **Sections 1.4 and 1.5**, the identification of potential mine-related impacts generally involved visually examining the data for spatial/temporal patterns that matched mine-related events (see **Section 1.4** for details). For benthic invertebrates, this process was augmented by statistical analyses conducted for the 2011 *Dike Construction TSS Effects Assessment Study* (Azimuth, 2012a), which is part of a multi-year investigation focused on assessing potential effects related to sediment releases that occurred during construction of the East Dike (2008) and Bay-Goose Dike (2009 – 2010) (see **Section 1.4** for more details).

The expected response patterns are dictated by the nature of the physical and/or chemical changes caused by mine-related activities. Dike construction, for example, is most likely to cause a physical change from increased sedimentation. The 2010 EAS (Azimuth, 2011a) included toxicity testing to assess the potential for direct toxicity and sequential extraction testing to assess the bioavailability of metals of sediments. All evidence suggested a low likelihood of chemical effects to the benthic community.

Physical changes such as a sedimentation event typically result in a temporally-limited effect to benthic invertebrates (Matthaei et al., 1996, 1997; Lake et al., 1989). Furthermore, dike construction monitoring results suggest variable degrees of sediment releases during each of the dike construction events (i.e., East Dike 2008 > Bay-Goose Dike 2009 > Bay-Goose Dike 2010; Azimuth, 2009a, 2010b and AEM 2011). Thus, these aspects should be reflected in potential spatial-temporal benthic community response patterns seen in the graphs (or detected during statistical analyses). Specific areas and years of interest (i.e., near-field areas with “impact” status) where mine-related effects should be seen (if they are occurring) are Second Portage Lake (SP in 2008 to 2011), Tehek Lake (mainly 2008 and to a lesser extent 2009 to 2011), east basin of Third

Portage Lake (TPE 2009 to 2011), and north basin of Third Portage Lake (TPN 2009 to 2011).

One of the most obvious observations on the data is the high natural variability based on control data (i.e., for reference areas and baseline conditions). This “noise” makes it more difficult to identify mining-related “signals” (i.e., changes), unless the latter are quite large. Below are a summary of visual observations and some statistical analysis results (see Azimuth, 2012a for details) on the pattern of results for the specific area/years of interest relative to the patterns observed for the control data. Note that plots for all benthic invertebrate metrics are presented in **Appendix J**.

SP and TE (2008 to 2011)

- These area/year combinations were grouped as SP is up-gradient of TE (i.e., they are not independent). Baseline conditions at SP and TE were characterized by lower abundance and diversity than most of the other lakes.
- The 2008 EAS (Azimuth, 2009b) reported a negative trend (although not statistically significant, but a fairly large effect size was observed) in total abundance at SP that did not extend to TE, which receives water from SP (and also had elevated TSS, but not as high as SP, in 2008) (see **Figures 3.6-1 and 3.6-4**). As seen in **Figures 3.6-2 and 3.6-3**, the only shift in community composition associated with that trend was the loss of one oligochaete taxa.
- Abundance increased at SP in 2009, while taxa richness was within the range of baseline observations (although slightly lower based on the mean per year). Given the temporal and spatial pattern of the benthic community data, the potential for this to represent a recovery trend from a sedimentation event was not ruled out.
- The 2010 results further clouded the issue, with both abundance and diversity dropping at SP (although the change was not statistically significant relative to control data [Azimuth, 2012a]) despite no substantial changes to water quality relative to 2009. There was also a general regional drop in abundance and richness that year (i.e., based on control data). However, results for the 2010 TSS EAS (Azimuth, 2011a), which included better coverage with Second Portage Lake, actually showed no obvious change (unlike the CREMP SP results) between 2009 and 2010 across five sampling areas (despite the general regional drop). Consequently, it was concluded that the 2010 drop at the CREMP SP area was a localized event that was not likely due to the sedimentation event.
- The 2011 results for abundance and richness at SP were both higher than in 2010. While taxa richness was at its highest yet, abundance was still slightly lower (but not statistically significant; Azimuth, 2012a) than baseline results for SP (only one replicate sample in **Figure 3.6-1** falls outside the range of baseline values).
- Overall, while the initial 2008 reduction in benthic community abundance may have been related to the physical effects of the sedimentation event that occurred

during East Dike construction, the pattern of results since then (i.e., variability that does not correspond to any known factors) does not appear to be consistent with a recovery or a prolonged impairment of the community. It is possible that the “signal” of the impact is obscured by the “noise” of natural variability; it is also possible that the entire pattern is due to natural variability (i.e., that the initial drop in abundance at SP was natural). These results are discussed more thoroughly in the 2011 EAS report (Azimuth, 2012a).

TPE (2009 to 2011)

- Baseline conditions at TPE were quite variable, with a pronounced spike in abundance and taxa richness in 2008 (**Figures 3.6-1 and 3.6-4**). As seen in **Figures 3.6-2, -3, -5, and -6**, both of the increases were primarily due to insects.
- A large drop in abundance and taxa richness was observed at TPE in 2009 (**Figures 3.6-1 and 3.6-4**), despite sampling taking place very early in the 2009 Bay-Goose Dike sedimentation event (i.e., when TSS concentrations in the water column were above background, but far below peak concentrations). Given the magnitude of change and the relatively low exposure, this would appear to be a reduction after the large peak in 2008.
- TPE abundance dropped further in 2010 (i.e., the period after the highest TSS exposure), but so did many of the lakes and basins away from mining activity that year (Azimuth, 2012a). Again, the change was not statistically significant (as confidence intervals, and thus uncertainty, were high; Azimuth, 2011a).
- Looking back from 2011 (see **Figures 3.6-2 and 3.6-5**), apart from the peak that occurred in 2008, the patterns in benthic community abundance and richness do not appear to have changed much at all relative to baseline, and do not support the presence of a TSS-related impact at TPE.

TPN (2009 to 2011)

- Baseline conditions at TPN showed a steady decline in both richness and abundance from 2006 through 2008 (**Figures 3.6-1 and 3.6-4**). These changes appear related to broad reductions in numbers and taxa across all major taxa groups (**Figures 3.6-2, -3, -5, and -6**).
- Abundance and taxa richness increased in 2009, despite dewatering activities from the attenuation pond to TPN commencing in that basin in spring 2009.
- There was a slight drop in mean abundance in 2010 relative to 2009 (largely due to a single sample with low abundance [**Figure 3.6-1**]; the other replicates were all at the higher range of baseline conditions; the change was not statistically significant [Azimuth, 2012a]). Taxa richness increased in 2010 (**Figure 3.6-4**). AEM started monitoring the dewatering effluent and receiving environment in

early 2010 as part of the requirements of the Metal Mines Effluent Regulation (MMER).

- There was a more pronounced drop in abundance and taxa richness in 2011 (although neither was statistically significant relative to controls [Azimuth, 2012a]). Mean abundance dropped two-fold (**Figure 3.6-2**) and taxa richness dropping just over 2 taxa (from about 10.5 in 2010; **Figure 3.6-5**), largely due to a drop in insects. The reasons for this are not clear, given that TSS concentrations in the effluent were relatively low and never exceeded CCME guidelines and during open water periods, were not detectable from background. To address effluent discharge and in addition to the EAS (Azimuth, 2012a), Azimuth conducted an MMER Environmental Effects Monitoring (EEM) study in TPN in 2011 as required by Environment Canada, targeting benthos and fish within the dilution zone of the receiving environment. These results have not been analyzed and will be reported in June 2012 (Azimuth, 2012c *in prep*), along with more details on effluent characterization and discharge volumes.

3.6.2. Baker Lake

3.6.2.1. General Observations

The abundance and species composition of benthic invertebrates is strongly affected by a variety of parameters, the most important of which are grain size, water depth and organic content of the sediment. Investigations in the Meadowbank lakes and Baker Lake have attempted to target areas of similar depth and grain size (i.e., dominated by silt/clay with a small [$<5\%$] sand fraction). However, in Baker Lake, sediment grain size has tended to be more variable and less predictable according to depth and grain size at all locations is consistently larger, with a higher sand fraction than observed in Meadowbank lakes. Higher sand content is also typically associated with a lower TOC concentration and a different benthic community. However, this area of Baker Lake appears to be naturally quite sandy, so this represents the ‘typical’ condition and this is what was sampled. For perspective, the reference areas BAP and BES sediment contain about 60 – 70% sand, while the impact areas at BBD (50% sand) and BPJ (10 – 40% sand) have a smaller sand component and relatively more silt-clay.

Similar to Meadowbank study lakes, the Baker Lake benthic community is characterized by relatively low abundance and taxa richness. Benthos abundance was typically around 5,000 organisms/m², which is higher than typical numbers ($\sim 2,000/\text{m}^2$) in Meadowbank (**Figures 3.6-7 and 3.6-8**). Annual variability was sometimes high, as seen for examples at BBD (e.g., from 2008 to 2009). There have also been fairly consistent spatial differences in abundance among areas (e.g., BBD and BPJ have generally had lower abundance than BAP). Taxa richness typically ranged from 6 to 12 in exposure areas and from about 12 to 22 in reference areas (**Figures 3.6-9 and 3.6-10**).

Typical of most Arctic lakes, the benthic invertebrate community has been generally dominated by the aquatic larval stages of insects, especially chironomids (Family Chironomidae), both in terms of abundance and taxa richness (**Figures 3.6-8 and 3.6-10**). The next most abundant group was typically Mollusca (clams) especially, *Cyclocalyx* / *Neopisidium*, genera of the family Sphaeriidae (fingernail clams). Oligochaete worms were also relatively abundant in the lake sediments, possibly because of the sandier grain size sediment; generally, at least one oligochaete taxon was present at most area/year combinations.

3.6.2.2. Temporal and Spatial Trend Interpretation

Benthic invertebrates have been collected from Baker Lake annually in August since 2008. Baker Lake was added to the core program to ensure that monitoring was also in place to track activities in that area related primarily to barge traffic and shipping. There are two near-field impact areas, one targeting the hamlet's barge landing area (BBD) and the other AEM's fuel storage facility (BPJ). The initial (since 2008) reference area (BAP) is several kilometers to the east of the hamlet along the north shore of the lake. A second reference area (BES) was added in 2011 to provide a broader perspective for temporal patterns in benthic community structure.

In 2008, abundance and richness at all 3 sampling areas showed similar ranges (**Figure 3.6-7**), despite some differences in sediment grain size between near-field and reference areas. In 2009, abundances for most of the replicates were lower at BBD and BPJ, but remained at 2008 levels at BAP. Total abundance continued to decrease at BPJ, increased somewhat at BBD, and remained the same at BAP (note that oligochaete abundance was much greater than observed at any other time or location; see **Figure 3.6-8**). By 2011, total abundance at both BBD and BPJ had generally returned to 2008 levels. The same pattern is apparent for total richness in Baker Lake sampling areas (**Figure 3.6-9**).

Given the similarity in benthic community structure among areas in 2008, the decrease observed in 2009 and 2010 at near-field areas would either suggest a development-related change in these areas, or that localized natural factors (e.g., Thelon River, marine influence) affecting benthic community structure have a stronger influence than regional natural factors. Similar to Meadowbank study lakes, the benthic invertebrate data in Baker Lake show high natural variability based on control data (i.e., for reference areas). This "noise" makes it more difficult to identify activity-related "signals" (i.e., changes), unless the latter are quite large. Differences in sediment grain size and TOC as a food source for benthos may also add to this uncertainty. Given and the pattern of barge intensity (see **Section 1.4.2**), the pattern of results do not appear to support attributing the observed changes to barge traffic. The data do, however, confirm, that the reference area (BAP) is quite different from the exposure areas and that the new reference area (BES) appears to be much more similar to exposure areas (**Figure 3.6-8**), based on limited data (one sampling event).

Table 3.6-1. Benthic invertebrate abundance (#/m²) by major taxa group, Meadowbank study lakes and Baker Lake, August 2011.

August 2011.

Area-Replicate	Date	Depth (m)	Total Abundance (#/m ²)				Total
			Oligochaetes	Insects	Molluscs	Other Taxa	
Third Portage Lake							
TPE-1	19-Aug-11	7.7	457	826	696	0	1978
TPE-2	19-Aug-11	8.4	174	696	717	109	1696
TPE-3	19-Aug-11	8.2	109	804	457	87	1457
TPE-4	19-Aug-11	9.5	43	565	1022	43	1674
TPE-5	19-Aug-11	7.9	174	457	565	22	1217
Area Mean			191	670	691	52	1604
TPN-1	19-Aug-11	7.0	22	370	370	0	761
TPN-2	19-Aug-11	9.0	43	500	283	0	826
TPN-3	19-Aug-11	9.2	0	217	22	22	261
TPN-4	19-Aug-11	8.6	0	391	283	43	717
TPN-5	19-Aug-11	8.4	0	152	109	0	261
Area Mean			13	326	213	13	565
TPS-1	22-Aug-11	6.9	65	1109	435	0	1609
TPS-2	22-Aug-11	6.7	65	870	435	0	1370
TPS-3	22-Aug-11	7.3	22	1130	522	0	1674
TPS-4	22-Aug-11	8.1	43	457	174	0	674
TPS-5	22-Aug-11	8.4	0	109	174	0	283
Area Mean			39	735	348	0	1122
Second Portage Lake							
SP-1	17-Aug-11	8.8	0	348	239	109	696
SP-2	17-Aug-11	7.5	0	239	391	43	674
SP-3	17-Aug-11	7.8	22	196	326	43	587
SP-4	17-Aug-11	8.0	43	348	239	43	674
SP-5	17-Aug-11	6.5	0	152	130	22	304
Area Mean			13	257	265	52	587
Tehek Lake							
TE-1	16-Aug-11	7.2	43	413	304	0	761
TE-2	16-Aug-11	8.3	22	587	152	65	826
TE-3	16-Aug-11	7.7	0	130	109	22	261
TE-4	16-Aug-11	7.3	0	935	326	109	1370
TE-5	16-Aug-11	6.5	0	435	413	43	891
Area Mean			13	500	261	48	822
TEFF-1	15-Aug-11	6.9	22	174	130	43	370
TEFF-2	15-Aug-11	8.2	0	196	348	0	543
TEFF-3	15-Aug-11	6.9	0	870	522	109	1500
TEFF-4	15-Aug-11	7.0	0	130	326	22	478
TEFF-5	15-Aug-11	7.0	0	348	261	0	609
Area Mean			4	343	317	35	700
Inuggugayualik Lake							
INUG-1	14-Aug-11	6.9	43	239	174	0	457
INUG-2	14-Aug-11	6.8	43	391	413	22	870
INUG-3	14-Aug-11	7.6	65	239	478	43	826
INUG-4	14-Aug-11	8.5	87	1000	978	130	2196
INUG-5	14-Aug-11	9.2	65	370	283	22	739
Area Mean			61	448	465	43	1017
Wally Lake							
WAL-1	14-Aug-11	8.6	22	152	304	0	478
WAL-2	14-Aug-11	7.0	0	391	391	43	826
WAL-3	14-Aug-11	8.3	43	2826	478	22	3370
WAL-4	14-Aug-11	7.9	22	130	391	22	565
WAL-5	14-Aug-11	7.2	22	130	283	0	435
Area Mean			22	726	370	17	1135

Table 3.6-1. Benthic invertebrate abundance (#/m²) by major taxa group, Meadowbank study lakes and Baker Lake, August 2011.

August 2011							
Area-Replicate	Date	Depth (m)	Total Abundance (#/m ²)				Total
			Oligochaetes	Insects	Molluscs	Other Taxa	
<i>Pipedream Lake</i>							
PDL-1	13-Aug-11	6.5	65	630	304	65	1065
PDL-2	13-Aug-11	6.8	22	500	348	0	870
PDL-3	13-Aug-11	6.9	152	543	413	65	1174
PDL-4	13-Aug-11	7.6	0	348	304	22	674
PDL-5	13-Aug-11	6.7	43	717	152	22	935
<i>Area Mean</i>			<i>57</i>	<i>548</i>	<i>304</i>	<i>35</i>	<i>943</i>
<i>Baker Lake</i>							
BBD-1	20-Aug-11	8.0	109	2087	22	43	2261
BBD-2	20-Aug-11	9.5	261	4174	109	87	4630
BBD-3	20-Aug-11	8.2	391	4587	109	0	5087
BBD-4	20-Aug-11	8.2	22	478	0	22	522
BBD-5	20-Aug-11	8.0	43	3043	22	65	3174
<i>Area Mean</i>			<i>165</i>	<i>2874</i>	<i>52</i>	<i>43</i>	<i>3135</i>
BPJ-1	20-Aug-11	7.5	152	4783	783	130	5848
BPJ-2	20-Aug-11	6.8	283	4087	870	43	5283
BPJ-3	20-Aug-11	7.8	22	391	0	0	413
BPJ-4	20-Aug-11	7.7	22	957	22	22	1022
BPJ-5	20-Aug-11	8.2	326	1913	109	22	2370
<i>Area Mean</i>			<i>161</i>	<i>2426</i>	<i>357</i>	<i>43</i>	<i>2987</i>
BAP-1	21-Aug-11	7.2	1217	2130	500	261	4109
BAP-2	21-Aug-11	7.3	2304	4848	826	196	8174
BAP-3	21-Aug-11	8.9	2065	2370	522	239	5196
BAP-4	21-Aug-11	8.3	3478	5978	0	239	9696
BAP-5	21-Aug-11	8.2	174	2435	587	217	3413
<i>Area Mean</i>			<i>1848</i>	<i>3552</i>	<i>487</i>	<i>230</i>	<i>6117</i>
BES-1	21-Aug-11	8.0	152	1130	87	65	1435
BES-2	21-Aug-11	7.9	478	1978	457	196	3109
BES-3	21-Aug-11	8.8	109	1804	109	109	2130
BES-4	21-Aug-11	9.2	87	2739	109	43	2978
BES-5	21-Aug-11	9.1	43	2109	478	65	2696
<i>Area Mean</i>			<i>174</i>	<i>1952</i>	<i>248</i>	<i>96</i>	<i>2470</i>

Table 3.6-2. Benthic invertebrate richness (# taxa) by major taxa group, Meadowbank study lakes and Baker Lake, August 2011.

August 2011.

Area-Replicate	Date	Total Richness (# taxa)				Total
		Oligochaetes	Insects	Molluscs	Other Taxa	
Third Portage Lake						
TPE-1	19-Aug-11	1	4	1	0	6
TPE-2	19-Aug-11	1	6	1	1	9
TPE-3	19-Aug-11	3	8	1	1	13
TPE-4	19-Aug-11	1	7	1	1	10
TPE-5	19-Aug-11	2	5	1	1	9
	Area Mean	2	6	1	1	9
TPN-1	19-Aug-11	1	6	1	0	8
TPN-2	19-Aug-11	1	7	1	0	9
TPN-3	19-Aug-11	0	4	1	1	6
TPN-4	19-Aug-11	0	9	1	1	11
TPN-5	19-Aug-11	0	5	1	0	6
	Area Mean	0	6	1	0	8
TPS-1	22-Aug-11	2	8	1	0	11
TPS-2	22-Aug-11	1	8	1	0	10
TPS-3	22-Aug-11	1	8	1	0	10
TPS-4	22-Aug-11	1	7	1	0	9
TPS-5	22-Aug-11	0	2	1	0	3
	Area Mean	1	7	1	0	9
Second Portage Lake						
SP-1	17-Aug-11	0	8	1	1	10
SP-2	17-Aug-11	0	7	2	1	10
SP-3	17-Aug-11	0	5	1	1	7
SP-4	17-Aug-11	2	11	1	1	15
SP-5	17-Aug-11	0	6	2	1	9
	Area Mean	0	7	1	1	10
Tehek Lake						
TE-1	16-Aug-11	1	4	1	0	6
TE-2	16-Aug-11	1	3	1	1	6
TE-3	16-Aug-11	0	2	1	1	4
TE-4	16-Aug-11	0	7	1	2	10
TE-5	16-Aug-11	0	3	1	1	5
	Area Mean	0	4	1	1	6
TEFF-1	15-Aug-11	1	5	1	1	8
TEFF-2	15-Aug-11	0	6	1	0	7
TEFF-3	15-Aug-11	0	9	1	1	11
TEFF-4	15-Aug-11	0	5	1	1	7
TEFF-5	15-Aug-11	0	9	1	0	10
	Area Mean	0	7	1	1	9
Inuggugayualik Lake						
INUG-1	14-Aug-11	1	6	1	0	8
INUG-2	14-Aug-11	1	4	3	1	9
INUG-3	14-Aug-11	1	4	3	1	9
INUG-4	14-Aug-11	1	10	3	2	16
INUG-5	14-Aug-11	1	6	3	1	11
	Area Mean	1	6	3	1	11
Wally Lake						
WAL-1	14-Aug-11	1	3	2	0	6
WAL-2	14-Aug-11	0	6	2	1	9
WAL-3	14-Aug-11	1	6	2	1	10
WAL-4	14-Aug-11	1	2	2	1	6
WAL-5	14-Aug-11	1	2	2	0	5
	Area Mean	1	4	2	1	7

Table 3.6-2. Benthic invertebrate richness (# taxa) by major taxa group, Meadowbank study lakes and Baker Lake, August 2011.

August 2011.

Area-Replicate	Date	Total Richness (# taxa)				Total
		Oligochaetes	Insects	Molluscs	Other Taxa	
<i>Pipedream Lake</i>						
PDL-1	13-Aug-11	0	9	2	1	12
PDL-2	13-Aug-11	1	7	2	0	10
PDL-3	13-Aug-11	2	4	1	1	8
PDL-4	13-Aug-11	0	4	1	1	6
PDL-5	13-Aug-11	1	7	2	1	11
	<i>Area Mean</i>	<i>1</i>	<i>6</i>	<i>2</i>	<i>1</i>	<i>9</i>
<i>Baker Lake</i>						
BBD-1	20-Aug-11	2	7	1	1	11
BBD-2	20-Aug-11	2	11	2	1	16
BBD-3	20-Aug-11	1	10	1	0	12
BBD-4	20-Aug-11	1	7	0	1	9
BBD-5	20-Aug-11	2	13	1	1	17
	<i>Area Mean</i>	<i>2</i>	<i>10</i>	<i>1</i>	<i>1</i>	<i>13</i>
BPJ-1	20-Aug-11	2	12	2	1	17
BPJ-2	20-Aug-11	1	12	2	1	16
BPJ-3	20-Aug-11	1	5	0	0	6
BPJ-4	20-Aug-11	1	8	1	1	11
BPJ-5	20-Aug-11	3	10	2	1	16
	<i>Area Mean</i>	<i>2</i>	<i>9</i>	<i>1</i>	<i>1</i>	<i>13</i>
BAP-1	21-Aug-11	3	14	2	1	20
BAP-2	21-Aug-11	5	16	2	2	25
BAP-3	21-Aug-11	5	13	2	2	22
BAP-4	21-Aug-11	3	15	0	1	19
BAP-5	21-Aug-11	1	12	1	1	15
	<i>Area Mean</i>	<i>3</i>	<i>14</i>	<i>1</i>	<i>1</i>	<i>20</i>
BES-1	21-Aug-11	2	10	1	1	14
BES-2	21-Aug-11	2	13	1	1	17
BES-3	21-Aug-11	2	9	1	1	13
BES-4	21-Aug-11	2	10	1	1	14
BES-5	21-Aug-11	1	9	1	1	12
	<i>Area Mean</i>	<i>2</i>	<i>10</i>	<i>1</i>	<i>1</i>	<i>14</i>

Figure 3.6- 1. Benthic invertebrate total abundance ($\#/m^2$) from Meadowbank study lakes since 2006.

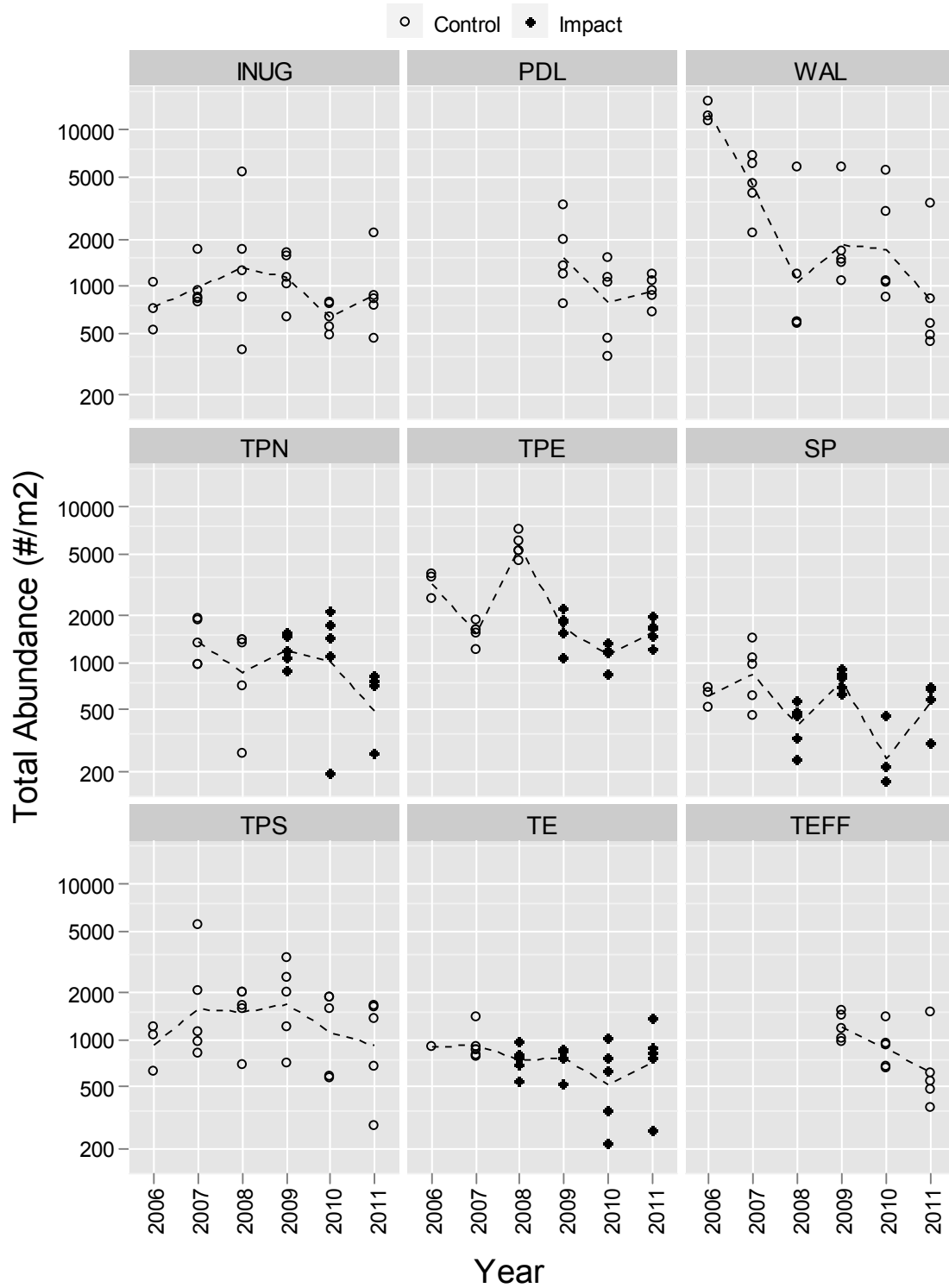


Figure 3.6- 2. Benthic invertebrate abundance ($\#/m^2$) by major taxa group from Meadowbank study lakes since 2006.

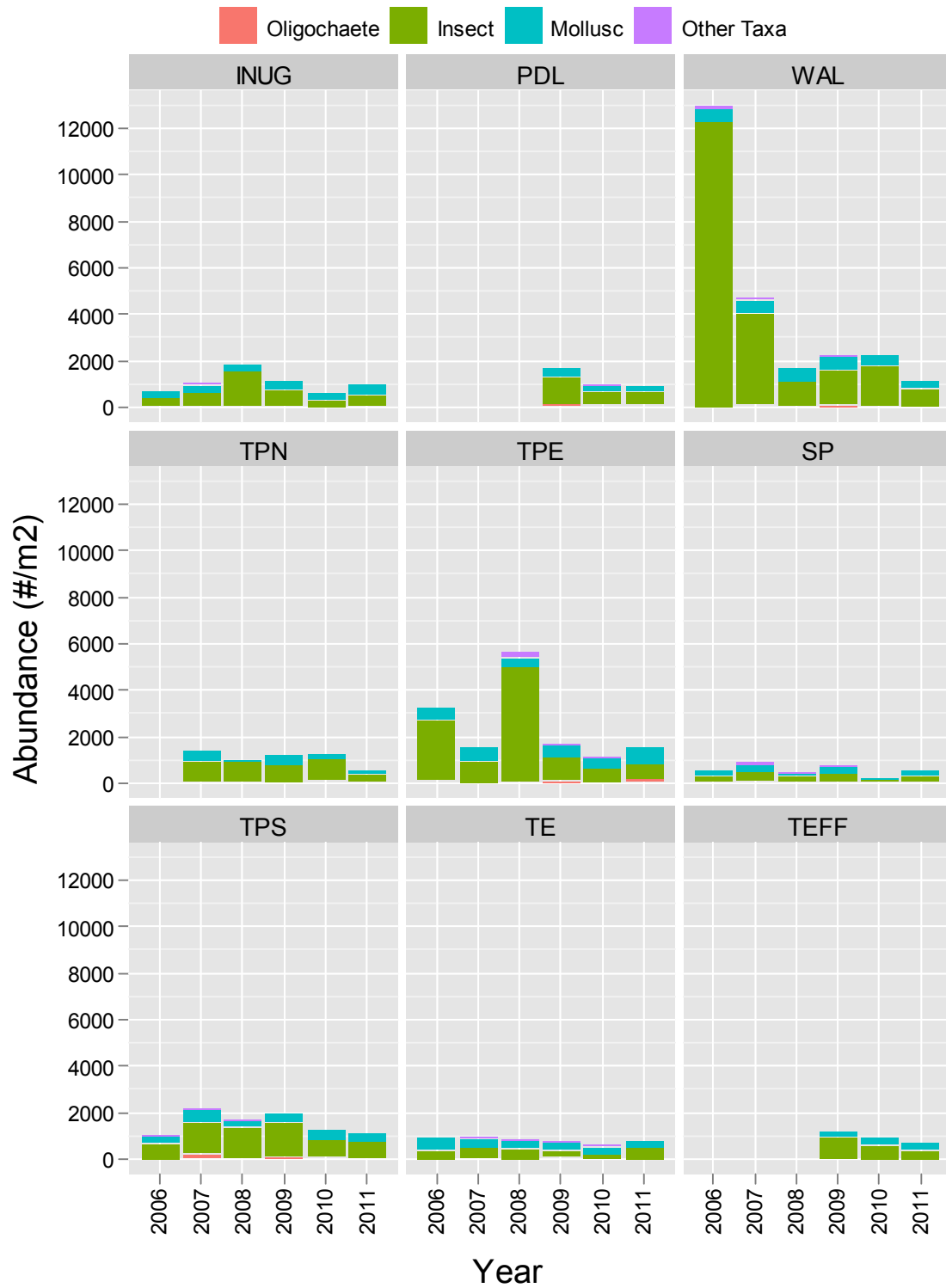


Figure 3.6- 3. Benthic invertebrate relative abundance by major taxa group from Meadowbank study lakes since 2006.

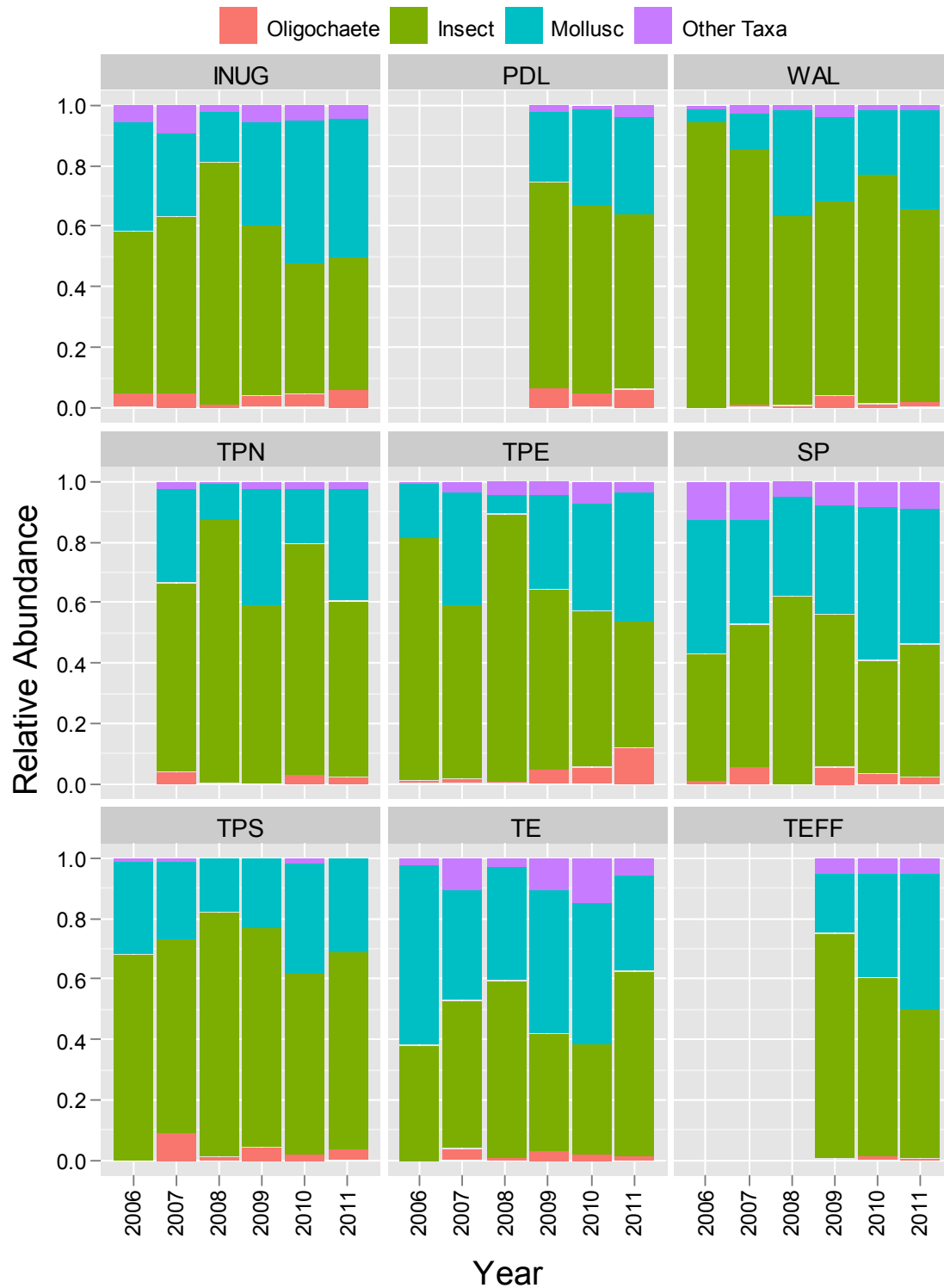


Figure 3.6- 4. Benthic invertebrate total richness (# taxa) from Meadowbank study lakes since 2006.

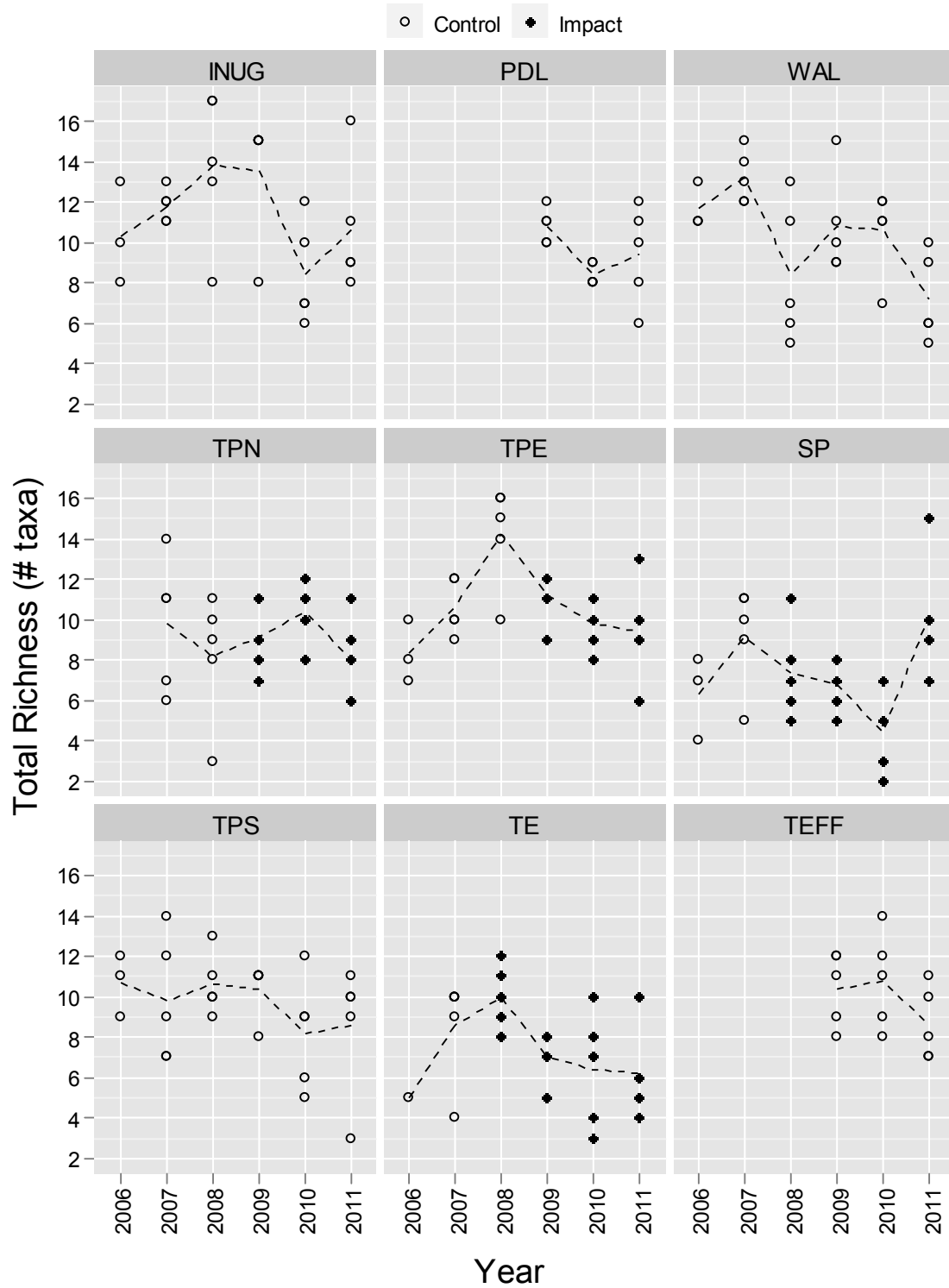


Figure 3.6- 5. Benthic invertebrate richness (# taxa) by major taxa group from Meadowbank study lakes since 2006.



Figure 3.6- 6. Benthic invertebrate relative richness by major taxa group from Meadowbank study lakes since 2006.

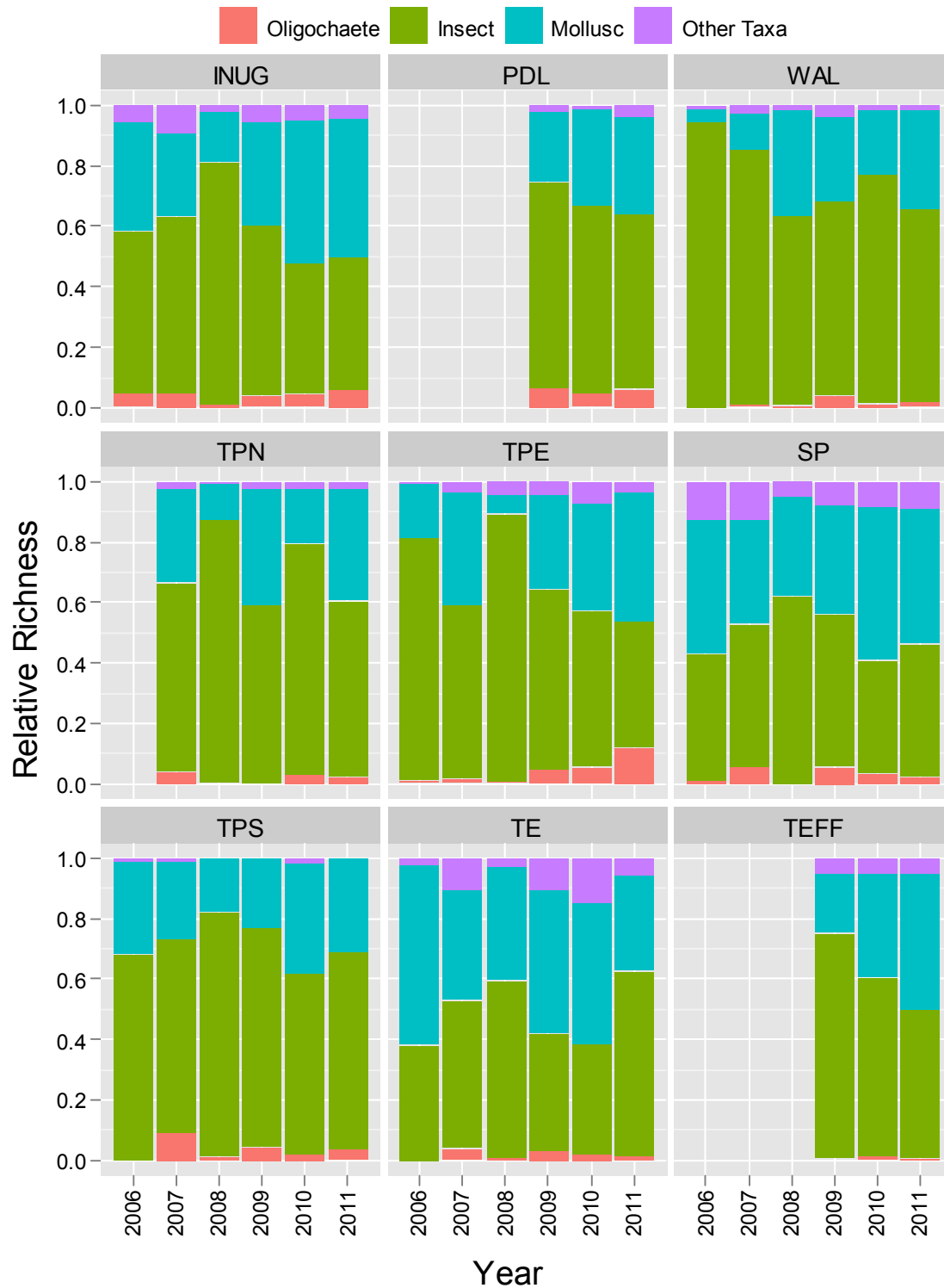


Figure 3.6- 7. Benthic invertebrate total abundance ($\#/m^2$) from Baker Lake since 2008.

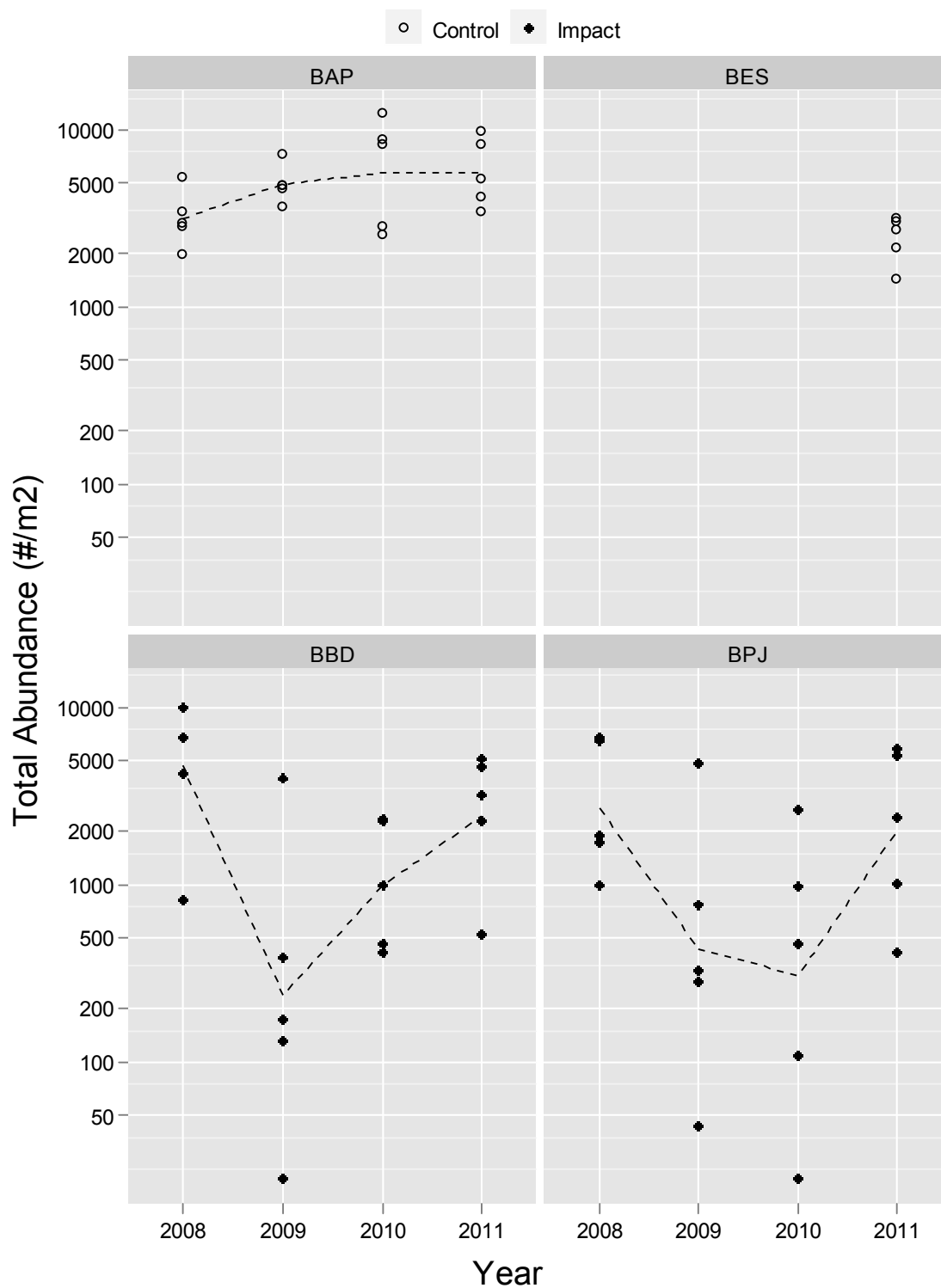


Figure 3.6- 8. Benthic invertebrate abundance ($\#/m^2$) by major taxa group from Baker Lake since 2008.

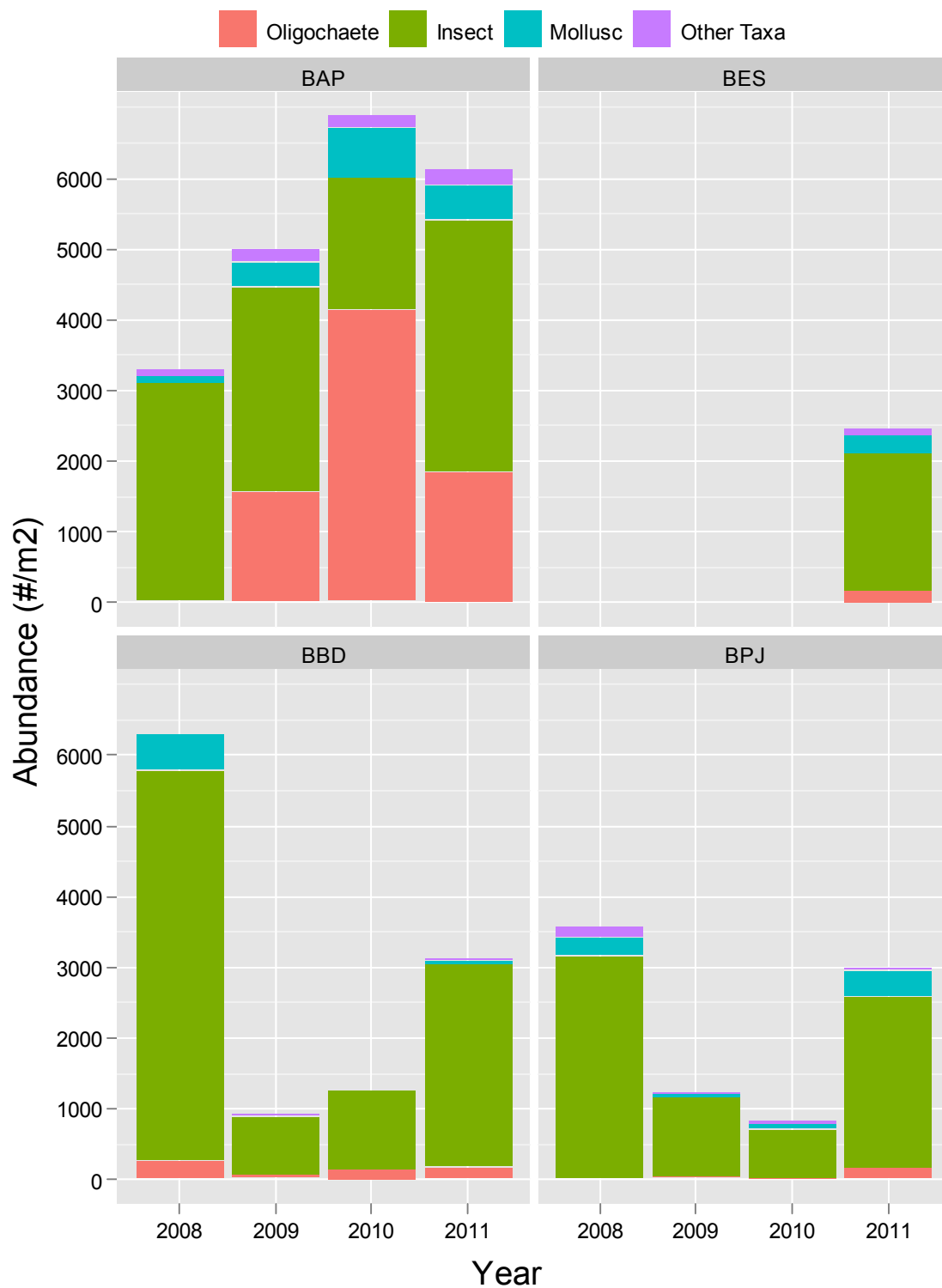


Figure 3.6- 9. Benthic invertebrate total richness (# taxa) from Baker Lake since 2008.

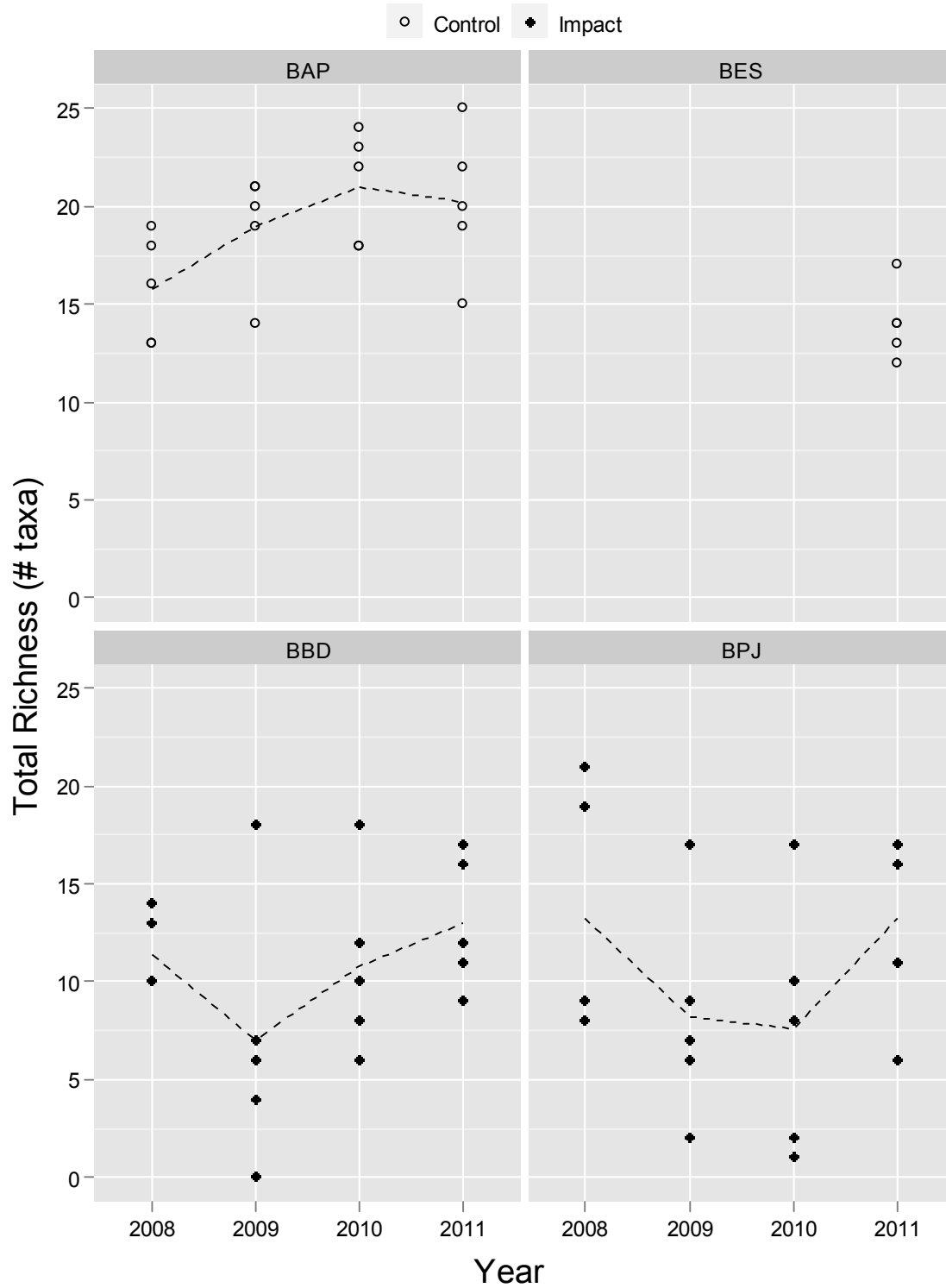
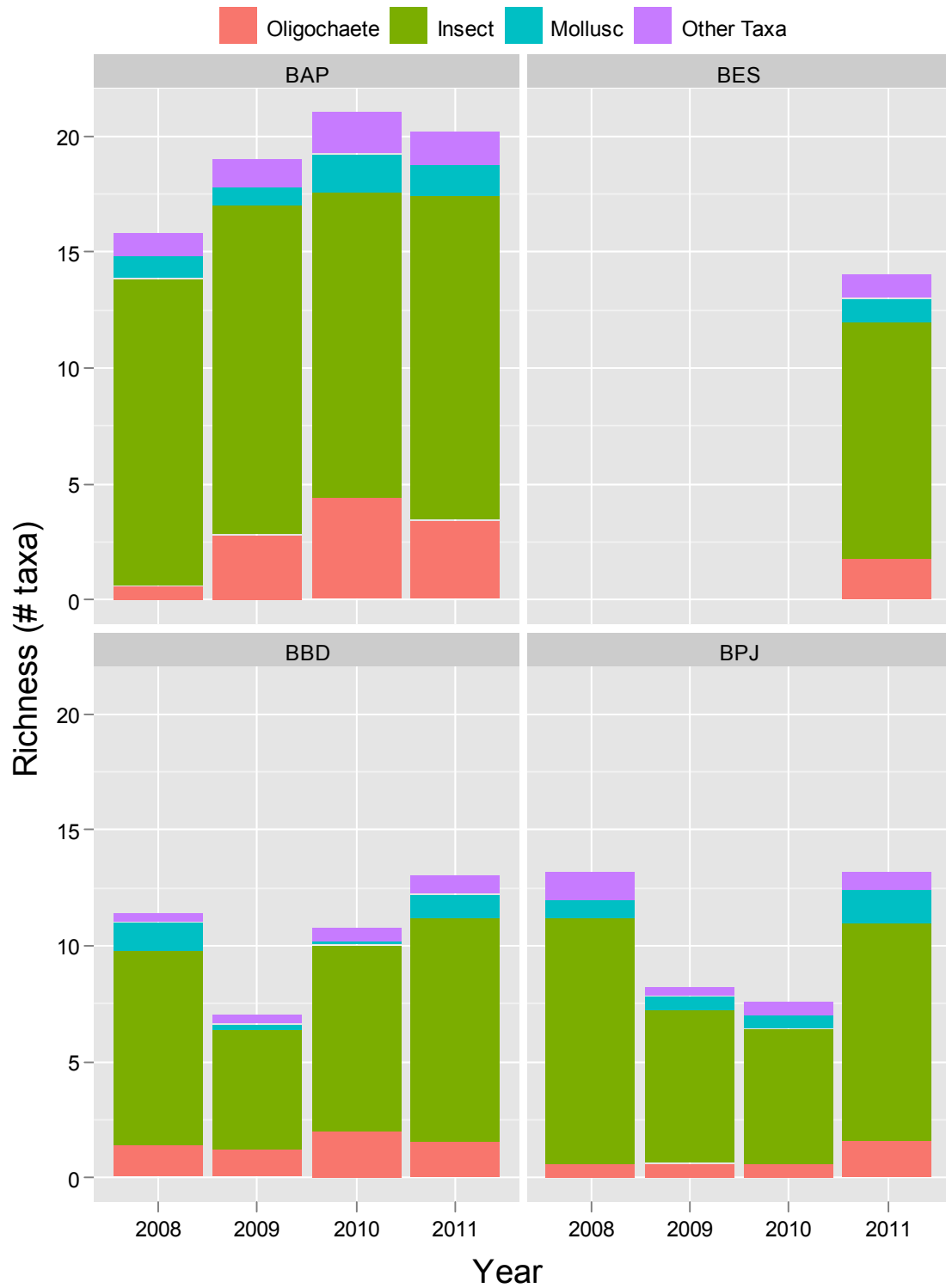


Figure 3.6- 10. Benthic invertebrate richness (# taxa) by major taxa group from Baker Lake since 2008.



3.7. Zooplankton

Zooplankton are small, free-swimming animal species that feed on phytoplankton, bacteria, detritus, and smaller zooplankton. Zooplankton are a key food chain species for fish, especially young-of-the-year lake trout and round whitefish and are the main food source for adults of some species, particularly Arctic char. Three major groups of zooplankton typically dominate the plankton community in freshwater lakes. These are rotifers, and two subclasses of the Crustacea, Cladocera and Copepoda (within which there are two major orders, Calanoid and Cyclopoid copepods) (Wetzel, 1983). Rotifers are a large and diverse group that are predominantly sessile and associated with littoral substrates, although planktonic species can form a significant component of the zooplankton community. The majority of rotifer species are quite small and can only reliably be captured in fine mesh nets, less than 50 μm in size. Given that a 70 μm net was used, rotifer density and biomass are excluded to avoid the confounding factor of catch efficiency when larger mesh sizes are used.

Other notable zooplankton groups include tadpole shrimp (Branchiopoda) and larvae of some aquatic insects such as *Chaoborus*, although these species are typically found in lower abundance in nets than in fish stomachs because they are more common near the bottom where the vertically towed net is less effective at capturing of near-bottom organisms. Nevertheless, the vast majority of zooplankton identified from Meadowbank project lakes, however, consisted of Cladocera and Copepoda species. All of the zooplankton taxa identified from project area lakes are common, widespread species that are well known from this region of the Arctic (Patalas *et al.*, 1994). There were no unusual or uncommon species identified from any of the lakes.

3.7.1. Meadowbank Study Lakes

3.7.1.1. General Observations

The zooplankton community was quantitatively sampled in 2010 and 2011 using the same net and methods (lowering net mouth to 8 m below surface, compositing 2 tows per replicate (for each analysis), 10 replicates per area in 2011; 5 replicates in 2010) to minimize natural variability in abundance and biomass that is inherent in zooplankton sampling. These parameters can vary considerably according to wind speed and direction, vertical mixing, time of year, predation by fish and other factors. Although sampling was done at a similar time of year (mid-August), differences in growth rate and inter-annual differences in abundance and growth can affect community structure (e.g., zooplankton size that may be more or less vulnerable to capture) and biomass. We attempted to locate a digital flow meter to fit within the net mouth to accurately measure filtered volume. Unfortunately, a uni-directional meter was not available so we assumed that the filtered volume was the same between tows, replicates, areas and years by controlling upward movement speed of the net. Despite these measures, minor net clogging can cause a bow

wave to form and reduce filtered volume and possible avoidance by larger zooplankters. All of these factors can influence results and make distinguishing mine-related influences on zooplankton from natural variability difficult.

3.7.1.2. Temporal and Spatial Trend Interpretation

In 2010 and 2011, duplicate tows were composited at five and ten independent locations, respectively, within each area to minimize natural variability. To help with data interpretation, abundance (# organisms; **Figure 3.7-1**) and biomass (mg dry weight/m³; **Figure 3.7-2**) of zooplankton were plotted for each lake using box and whisker plots. Note that plots for all zooplankton metrics are presented in **Appendix K**. To interpret these plots, the interpretation is similar as for metals and is as follows:

- The horizontal line inside the box represents the median concentration
- The upper and lower margins of the box represent the upper (75thile) and lower (25thile) percentile concentrations, respectively
- The vertical lines represent maximum and/or minimum concentrations (provided at least one value falls outside the box but within 1.5 times the interquartile range)
- ‘dots’ that occur beyond the maximum or minimum lines represent concentrations that are greater than 1.5 times the interquartile distance and indicate ‘outlier’ concentrations that are real, but don’t fit within the distribution of the rest of the data.

Total abundance (# organisms) and dry biomass (mg/m³) of zooplankton in 2010 and 2011 sampling events are depicted in **Figures 3.7-1 and 3.7-2**, respectively. The 2011 data only are summarized in **Tables 3.7-1 (biomass) and 3.7-2 (mean taxonomy/m³)** and raw taxonomic data is presented in **Appendix L**. Taxonomically, there were few differences in community composition between years. Within Cladocera the genera *Daphnia* sp. and *Holopedium gibberum* were the most common, although relative abundance was greater in 2010 than in 2011. In 2010 Cladocera comprised 1 – 18% of total abundance (mean 7%) with Pipedream Lake containing the highest relative abundance (18% were Cladocera). In 2011 relative abundance of Cladocera species was much lower, only 1% or less at all areas except Pipedream Lake (15%) with a mean abundance across all lakes of only 2%. Thus, 2010 abundance of Cladocera was much greater in all lakes (except Pipedream) than in 2011.

Within the Copepoda, *Diaptomus* sp. was the most common Calanoid species while *Cyclops scutifer* was the most abundance Cyclopoid species in both years. However, relative total abundance of zooplankton differed considerably between 2010 and 2011 as abundance in 2011 was 2 – 5 x greater, although total biomass was only about 50% higher in 2011 (**Figures 3.7-1 and 3.7-2**). This trend was consistent across reference and impact locations as there were no differences in the relative magnitude of abundance and biomass values between years. That is, the relative magnitude of increase in abundance

and to a lesser degree, biomass, was similar at reference areas as at impact areas. For example, total abundance of zooplankton at reference and impact areas in 2010 was 3,993 and 2,631 organisms/m³ and 6,805 and 11,165/m³ in 2011 respectively. Relative abundance in reference lakes was 65% and 61% of total abundance at impact lakes, so despite the large increase between 2010 and 2011, the magnitude of increase was similar across all lakes.

Looking closely at the taxonomy data (2011 data in **Table 3.7-2**) the reason for the large difference in abundance between the two years is the relative proportion of Calanoid and Cyclopoid copepodite stages within the total abundance values of all lakes. Copepodites are a series of juvenile or immature stages that are typically quite small and often difficult to identify to genera, let alone species. In 2010 the relative abundance of Calanoid and Cyclopoid copepodites as a proportion of total abundance was small and ranged from 4% to 12% (mean 8%) of the total. In 2011 the range was much higher (14% to 80%) with a mean abundance of 49%, 6 times greater than the 2010 mean, which is a very large difference. It is difficult to explain this difference and is likely related to a combination of factors including natural factors, such as a regional increase in reproductive success of zooplankton in 2011, or possibly differences in sampling efficiency of the net in 2011. However, because the same people conducted both surveys it is difficult to reconcile this difference.

Despite uniformly higher zooplankton abundance in all lakes in 2011 than in 2010, the magnitude of difference in increase was not reflected to the same degree in terms of biomass (mg dry weight/m³). This is because of the influence of the large number of relatively small copepodites, that although very numerous, they contribute relatively very little in terms of biomass because of their small size. Thus the range and median biomass estimates in 2011 are greater than in 2010 but by a much smaller degree of difference than in for abundance estimates. **Figure 3.7-2** presents median biomass values that indicate that 2011 biomass is generally about 25% - 35% higher than in 2010 at most lakes. Only Pipedream Lake (2.5x increase) and Tehek far-field (2x increase) were significantly higher in 2011 than in 2010.

Given that the relative magnitude increase in biomass was similar among control and impact areas over the years, there is no indication that this increase was mine-related and there does not appear to a pattern to the change that is associated with water chemistry (i.e., nutrients, TSS, metals) or phytoplankton biomass. Phytoplankton biomass concentrations averaged around 200 mg/m³ in 2010 and 2011 and did change in a manner that would affect zooplankton biomass.

Summary

Relative abundance and biomass of zooplankton increased 2 – 5 x and ~ 0.4x respectively between 2010 and 2011. The relative magnitude of increase was similar between reference and impact areas, suggesting that the effect is not mine-related. Zooplankton species composition did not differ between the two year and presence of an additional

species does not explain this difference. The increase in abundance is related to the much greater abundance of copepodite stages of Calanoid and Cyclopoid copepods in 2011 (49% of all individual enumerated) than in 2010 (8% of all individuals enumerated). Because of the small size of copepodites, the large increase in abundance was not equally reflected in biomass.

Zooplankton abundance and biomass can vary considerably within and between years depending on a range of environmental factors (nutrients, phytoplankton, turbidity, wind speed, direction, water depth, etc.). In particular, time of year that can influence vulnerability of different life history stages to net capture. Also differences in sampling methodology can influence sampling consistency from year to year. Once-annual sampling of zooplankton is too coarse a metric to track changes in population level or lake-wide changes to community structure. Nevertheless, despite the large differences between 2010 and 2011 that are difficult to explain, the change did not appear to be mine-related.

Area-Replicate	Date	Water Depth	Tow Depth	Total <u>Wet</u> biomass	<u>Wet</u> biomass (volume-normalized)	Total <u>Dry</u> biomass	<u>Dry</u> biomass (volume-normalized)
		(m)	(m)	(mg ww)	(mg/m ³ ww)	(mg dw)	(mg/m ³ dw)
Third Portage Lake							
TPE-1	23-Aug-11	10.7	8	624	552	36	31.8
TPE-2	23-Aug-11	11.0	8	421	372	24	21.2
TPE-3	23-Aug-11	13.2	8	630	557	33	29.2
TPE-4	23-Aug-11	16.1	8	917	811	37	32.7
TPE-5	23-Aug-11	13.2	8	609	539	32	28.3
TPE-6	23-Aug-11	18.6	8	706	625	37	32.7
TPE-7	23-Aug-11	12.4	8	629	556	34	30.1
TPE-8	23-Aug-11	12.2	8	594	525	33	29.2
TPE-9	23-Aug-11	10.2	8	816	722	36	31.8
TPE-10	23-Aug-11	11.8	8	556	492	26	23.0
Mean							29.0
TPN-1	24-Aug-11	13.4	8	714	632	37	32.7
TPN-2	24-Aug-11	11.1	8	539	477	27	23.9
TPN-3	24-Aug-11	12.0	8	544	481	27	23.9
TPN-4	24-Aug-11	13.0	8	492	435	19	16.8
TPN-5	24-Aug-11	11.0	8	552	488	25	22.1
TPN-6	24-Aug-11	16.0	8	368	326	18	15.9
TPN-7	24-Aug-11	23.0	8	455	403	29	25.7
TPN-8	24-Aug-11	10.2	8	487	431	25	22.1
TPN-9	24-Aug-11	24.0	8	416	368	21	18.6
TPN-10	24-Aug-11	30.9	8	476	421	27	23.9
Mean							22.6
TPS-1	23-Aug-11	11.2	8	1117	988	47	41.6
TPS-2	23-Aug-11	37.7	8	678	600	32	28.3
TPS-3	24-Aug-11	50.1	8	515	456	26	23.0
TPS-4	22-Aug-11	16.5	8	377	334	19	16.8
TPS-5	22-Aug-11	16.9	8	710	628	33	29.2
TPS-6	22-Aug-11	12.0	8	464	410	25	22.1
TPS-7	23-Aug-11	30.0	8	442	391	26	23.0
TPS-8	22-Aug-11	10.9	8	995	880	67	59.3
TPS-9	22-Aug-11	64.3	8	609	539	33	29.2
TPS-10	22-Aug-11	27.0	8	411	364	30	26.5
Mean							29.9
Second Portage Lake							
SP-1	18-Aug-11	25.0	8	715	633	33	29.2
SP-2	17-Aug-11	10.8	8	506	448	30	26.5
SP-3	17-Aug-11	10.7	8	653	578	33	29.2
SP-4	18-Aug-11	11.6	8	732	648	37	32.7
SP-5	17-Aug-11	12.2	8	839	742	49	43.3
SP-6	17-Aug-11	10.4	8	579	512	26	23.0
SP-7	18-Aug-11	15.0	8	488	432	27	23.9
SP-8	17-Aug-11	10.6	8	443	392	23	20.3
SP-9	18-Aug-11	18.0	8	581	514	30	26.5
SP-10	18-Aug-11	11.4	8	613	542	41	36.3
Mean							29.1
Tehek Lake							
TE-1	16-Aug-11	11.0	8	298	264	15	13.3
TE-2	16-Aug-11	11.3	8	221	196	13	11.5
TE-3	16-Aug-11	10.7	8	160	142	9	8.0
TE-4	16-Aug-11	14.7	8	543	480	23	20.3
TE-5	16-Aug-11	10.8	8	625	553	26	23.0
TE-6	16-Aug-11	12.1	8	262	232	13	11.5
TE-7	16-Aug-11	14.1	8	587	519	29	25.7
TE-8	16-Aug-11	16.1	8	407	360	17	15.0
TE-9	16-Aug-11	13.6	8	764	676	22	19.5
TE-10	16-Aug-11	14.1	8	572	506	23	20.3
Mean							16.8

Table 3.7-1. Zooplankton biomass (mg/m³) (wet and dry weights), Meadowbank study lakes, 2011.

Area-Replicate	Date	Water Depth	Tow Depth	Total <u>Wet</u> biomass	<u>Wet</u> biomass (volume-normalized)	Total <u>Dry</u> biomass	<u>Dry</u> biomass (volume-normalized)
		(m)	(m)	(mg ww)	(mg/m ³ ww)	(mg dw)	(mg/m ³ dw)
TEFF-1	15-Aug-11	12.2	8	667	590	23	20.3
TEFF-2	15-Aug-11	12.7	8	780	690	36	31.8
TEFF-3	15-Aug-11	14.4	8	1113	985	29	25.7
TEFF-4	15-Aug-11	14.0	8	380	336	16	14.2
TEFF-5	15-Aug-11	11.5	8	2199	1945	62	54.8
TEFF-6	15-Aug-11	10.2	8	356	315	19	16.8
TEFF-7	15-Aug-11	10.2	8	520	460	17	15.0
TEFF-8	15-Aug-11	16.2	8	799	707	25	22.1
TEFF-9	15-Aug-11	11.5	8	847	749	19	16.8
TEFF-10	15-Aug-11	12.1	8	2162	1913	39	34.5
Mean							25.2
Inuggugayualik Lake							
INUG-1	13-Aug-11	11.9	8	1193	1055	48	42.5
INUG-2	13-Aug-11	10.4	8	728	644	29	25.7
INUG-3	13-Aug-11	10.1	8	1479	1308	77	68.1
INUG-4	13-Aug-11	10.7	8	1028	909	46	40.7
INUG-5	13-Aug-11	13.3	8	935	827	45	39.8
INUG-6	13-Aug-11	10.6	8	1078	954	52	46.0
INUG-7	13-Aug-11	15.8	8	1030	911	40	35.4
INUG-8	13-Aug-11	10.3	8	1190	1053	50	44.2
INUG-9	13-Aug-11	11.0	8	1526	1350	62	54.8
INUG-10	13-Aug-11	10.7	8	1027	909	36	31.8
Mean							42.9
Wally Lake							
WAL-1	15-Aug-11	10.4	8	1516	1341	43	38.0
WAL-2	14-Aug-11	11.0	8	2097	1855	74	65.5
WAL-3	14-Aug-11	14.5	8	1186	1049	41	36.3
WAL-4	15-Aug-11	10.4	8	1313	1162	44	38.9
WAL-5	15-Aug-11	18.5	8	1214	1074	38	33.6
WAL-6	15-Aug-11	10.0	8	1827	1616	49	43.3
WAL-7	14-Aug-11	10.4	8	1940	1716	63	55.7
WAL-8	14-Aug-11	10.6	8	1644	1454	56	49.5
WAL-9	15-Aug-11	10.9	8	1041	921	44	38.9
WAL-10	15-Aug-11	10.2	8	855	756	44	38.9
Mean							43.9
Pipedream Lake							
PDL-1	11-Aug-11	12.0	8	1562	1382	26	23.0
PDL-2	11-Aug-11	30.5	8	575	509	16	14.2
PDL-3	11-Aug-11	21.4	8	533	472	15	13.3
PDL-4	11-Aug-11	11.1	8	1795	1588	39	34.5
PDL-5	11-Aug-11	23.0	8	1215	1075	15	13.3
PDL-6	11-Aug-11	17.9	8	1249	1105	14	12.4
PDL-7	11-Aug-11	23.7	8	3995	3534	41	36.3
PDL-8	11-Aug-11	23.9	8	2372	2098	32	28.3
PDL-9	11-Aug-11	16.2	8	3484	3082	43	38.0
PDL-10	11-Aug-11	12.0	8	2839	2512	40	35.4
Mean							24.9

Table 3.7-2. Zooplankton mean abundance (#/m³) and taxonomy, Meadowbank study lakes, 2011.

	Area Date	TPE 23-Aug-11	TPN 24-Aug-11	TPS 22-Aug-11	SP 18-Aug-11	TE 16-Aug-11	TEFF 15-Aug-11	INUG 13-Aug-11	WAL 15-Aug-11	PDL 11-Aug-11
CLADOCERA										
Daphniidae										
<i>Daphnia longiremis</i> Sars		2.5	1.7	0.53	1.9	4.6	0.09	0.18	8.4	0
<i>Daphnia middendorffiana</i> Fischer		2.2	8.8	3.4	9.0	4.0	1.9	6.5	8.5	1.2
Bosminidae										
<i>Bosmina longirostris</i> (O.F. Muller)		3.4	2.5	1.2	24.1	15	6.2	2.3	6.1	16
Chydoridae										
<i>Acroperus harpae</i> Baird		0.09	0	0	0	0	0	0	0	0
<i>Alona guttata</i> Sars		0.09	0	0	0	0	0	0	0	0
<i>Chydorus</i> sp.		0.09	0	0	0	0	0	0	0	0
Holopedidae										
<i>Holopedium gibberum</i> Zaddach		0.71	14	8.6	0.88	8.1	59	7.3	248	226
% CLADOCERA:		0.1%	0.5%	0.3%	0.4%	0.6%	1.0%	0.1%	1.5%	15.3%
COPEPODA										
Calanoida										
Calanoida copepodite		3117	2751	3673	1241	720	3342	6774	6794	988
Diaptomidae										
<i>Diaptomus ashlandi</i> Marsh		0	0	0	0	0	0	0	0	3.5
<i>Diaptomus minutus</i> Lilljeborg		0	0	0.71	445	94	648	586	144	0
<i>Diaptomus probilifensis</i> Juday and Muttkowski		1186	12	9.2	294	15	0	0	207	1.8
<i>Diaptomus sicilis</i> S.A. Forbes		64	203	209	0	1.4	31	5.7	0	2.1
<i>Diaptomus</i> sp. (unid. Females)		1749	361	283	1558	575	1348	2541	2575	44
Temoridae										
<i>Epischura lacustris</i> Forbes		5.7	0	0	5	212	204	296	74	89
<i>Heterocope septentrionalis</i> Juday and Muttkowski		35	31	50	31	11	41	57	41	44
Cyclopoida										
Cyclopoid copepodite		540	291	137	1375	82	366	835	1154	30
Cyclopidae										
<i>Cyclops scutifer</i> Sars		3306	1211	368	3540	3873	1005	2884	6653	143
% COPEPODA:		99.9%	99.5%	99.7%	99.6%	99.4%	99.0%	99.9%	98.5%	84.7%
TOTAL ABUNDANCE / m³:		10013	4887	4742	8523	5615	7053	13994	17913	1588

Figure 3.7- 1. Zooplankton total abundance (count) from Meadowbank study lakes since 2010.

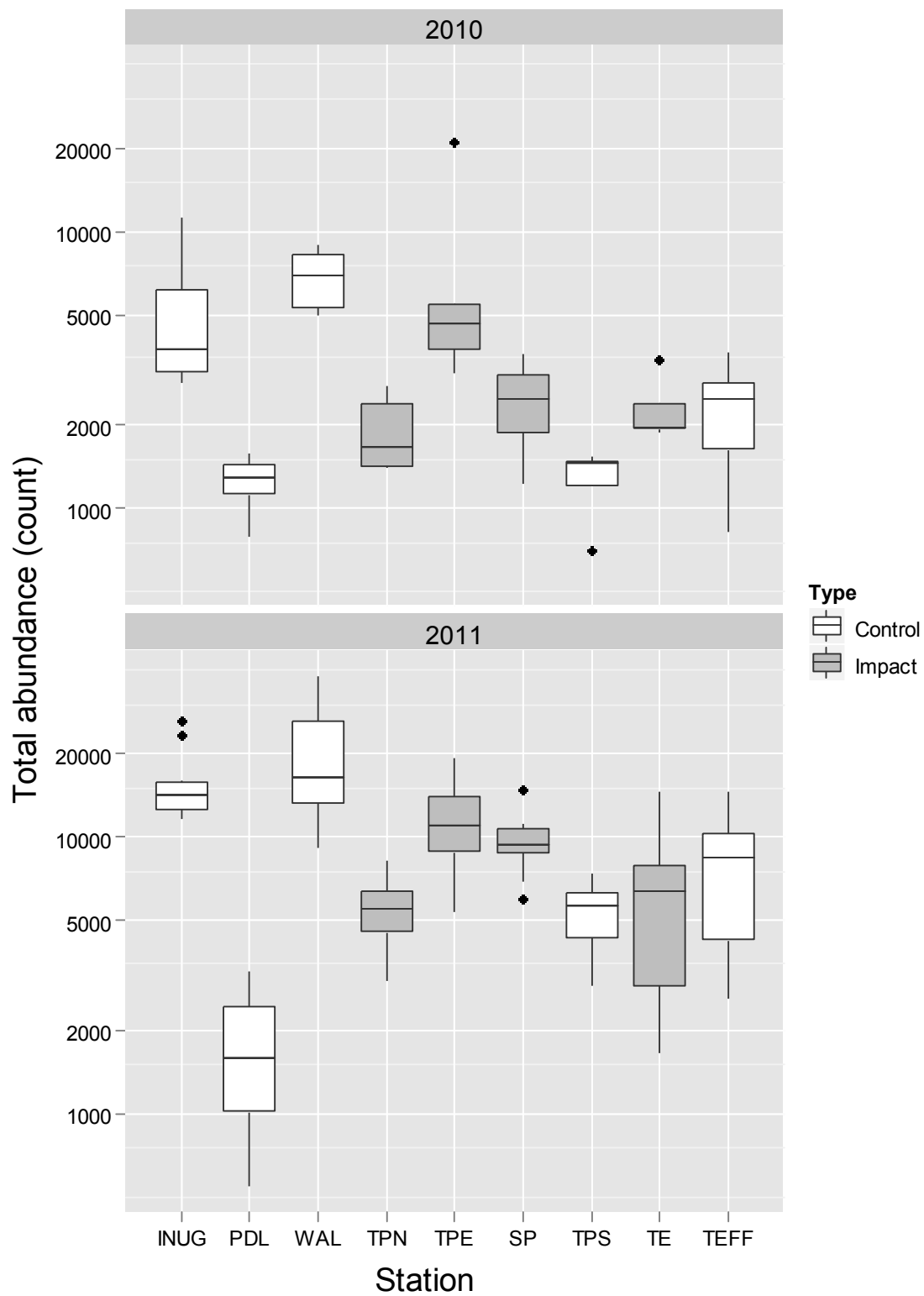
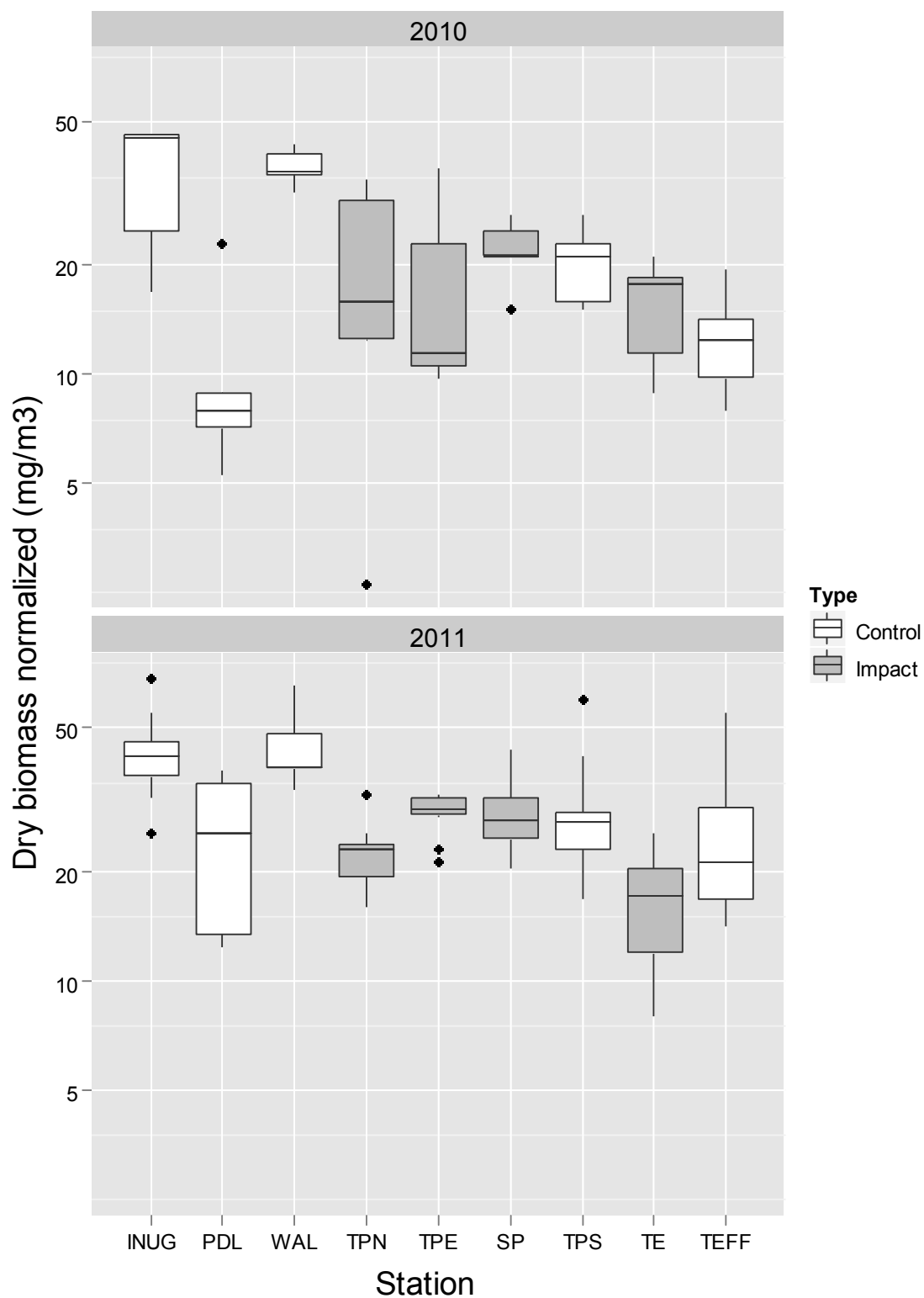


Figure 3.7- 2. Zooplankton total dry biomass (mg/m^3) from Meadowbank study lakes since 2010.



4. SUMMARY AND IMPLICATIONS FOR MANAGEMENT

4.1. Meadowbank Study Lakes

The approach for CREMP data interpretation was changed substantially in 2011 to focus on identifying temporal and spatial trends in the data related to mining activity. Major activities included dike construction (East Dike and Bay-Goose Dike) and dewatering (impoundments created by both dikes), which both provided clear temporal/spatial signatures (e.g., changes in Second Portage Lake in August 2008 associated with the onset of East Dike construction). Other general mining-related activities (e.g., most on-site activities like rock crushing, blasting, ore and waste hauling, etc. that can result in dust emissions) had less obvious temporal/spatial patterns.

While this trend assessment approach highlights all changes that have occurred since mine construction started in 2008, it is important to note that more detailed investigations have already been implemented to address potential adverse effects related to the two most significant mining-related activities: dike construction (i.e., the four-year TSS EAS [Azimuth, 2012a]) and dewatering (i.e., MMER Environmental Effects Monitoring [implemented in 2011; scheduled for completion in June 2012]). Consequently, the ultimate focus of this section is to identify any outstanding issues in 2011 that warrant either: (a) continued trend monitoring in 2012 (i.e., to follow low magnitude or weak trends), or (b) being followed-up with more detailed quantitative assessment in 2012 (i.e., a targeted study to address a potential concern).

4.1.1. Limnology

Monthly/annual profiles at control areas (INUG, PDL, WAL) had similar patterns to those seen at impact areas (TPN, SP, TPE), with no evidence of temperature or oxygen differences among lakes that were related to mining activities. There were consistent inter-lake differences in 2011, as in previous years as water temperatures in large, deep basin lakes (TPS, TPN, TEFF) were 2 – 3°C colder than shallow basin lakes (WAL, SP, INUG). Overall, vertical temperature and oxygen profiles among near-field, mid-field and reference lakes in 2011 were consistent with what has been observed in the past. SP and to a lesser extent TPE have become smaller in size and volume and on average, may experience slightly greater maximum summer temperatures in future years. Otherwise, no changes have been observed and none are expected.

Conductivity profiling at TPN in May 2011 showed a sharp increase at depth, suggesting a potential deep plume adjacent to the dewatering effluent discharge point (see **Section 4.1.2** for more discussion).

From a management perspective, apart from continued monitoring of surface water temperatures (as already done in the CREMP) at SP and TPE, no further follow-up actions are required.

4.1.2. Water Chemistry

Construction of the East Dike in SP (2008) and Bay-Goose Dike in TPE (2009 – 2010) introduced large amounts of sediment into the water column of these lake basins and downstream into TE and were the subject of targeted investigations (see Azimuth EAS reports; Azimuth, 2009b, 2010c, 2011a, and 2012a) to assess the potential ecological consequences of these sedimentation events. Although TSS, some nutrients (nitrate, phosphorus) and metals (Al, Cr, Cu, Fe, Mn, Ni, Ti) were significantly elevated above background (with some exceeding CCME guidelines) during the event, baseline conditions were observed in the spring immediately following the activity. No lingering effects of dike construction related changes to water quality at impact areas have been observed since the winter following the activity (i.e., 2009 in SP and 2011 in TPE).

Dewatering (to TPN) was the only mine-related activity resulting in point-source discharges to the receiving environment in 2011. Although TSS concentrations were somewhat elevated in effluent (<10 mg/L), receiving environment TSS concentrations were never measured above 3 mg/L (and rarely measured above laboratory DLs). In addition, TPN was the subject of a comprehensive MMER EEM investigation in 2011 targeting potential effects of effluent to benthic invertebrates and fish (scheduled for completion in June 2012). CREMP monitoring results showed nitrate was slightly elevated in the immediate vicinity of the dewatering area, but still well below the CCME guideline. Hardness may also have increased and higher conductivity was observed at depth (>8m) in May 2011 under ice (discussed in previous section and below), but not during open water. Total phosphorus was elevated in November 2009 and February 2010, but was similar to concentrations seen at INUG, suggesting a regional trend. No other parameters showed a consistent change as a result of discharge of dewatering effluent into TPN.

While other activities may have introduced contaminants into the receiving environment (e.g., dust from roads or crushing), no other changes in water quality were observed in the trend plots that were attributable to these non-point source discharges.

As discussed in **Section 4.1.1**, a potential plume was detected at depth in May 2011 near the TPN effluent discharge location, although no water sample was taken for verification. As stated above, there was no evidence of this plume in July 2011, suggesting it was relatively minor. However, sampling protocols should be amended to ensure that appropriate follow-up sampling is conducted if monitoring crews find unusual limnological profiling results in the future.

Overall, while there are several parameters for continued trend monitoring in 2012 (e.g., low magnitude or weak trends for nitrate, hardness, sulphate and conductivity), there were no changes apparent in 2011 that warrant follow-up management actions.

4.1.3. Sediment Chemistry

CREMP sediment chemistry monitoring includes both grab and core samples. Grab samples, while providing sediment chemistry context for historical deposition patterns, are not ideal for assessing possible subtle changes over time. Consequently, the trend assessment relied primarily on the core data, which were limited to a complete set of baseline samples (i.e., all areas in 2008 sampled prior to the onset of East Dike construction) and a subset of areas in 2009 targeting the assessment of potential changes related to East Dike construction.

Statistical analyses conducted for the 2009 EAS (Azimuth, 2010c) showed that concentrations of aluminum and zinc (and beryllium and vanadium at SP only) were significantly higher at SP and TE in 2009 relative to 2008; the trend assessment documented above also identified increases in chromium, copper and mercury in relation to East Dike construction.

The concerns regarding potential metals toxicity were directly tested in 2010 using sediment toxicity tests and sequential extraction analysis (Azimuth, 2011a). Results of amphipod (*Hyalella azteca*) and midge (*Chironomus tentans*) survival and growth endpoints in bioassays showed that surface sediments collected from within or adjacent to the East Dike construction zone (i.e., the zone delineated by the turbidity barriers) were not toxic relative to local reference sediment. The sequential extraction results showed that most of the metals in the sediment are associated with the residual matrix fraction, which is not considered bioavailable. Consequently, the 2010 EAS concluded that metals toxicity is not likely an issue in Second Portage Lake following East Dike construction (Azimuth, 2011a).

The lack of coring data since 2009 precludes making any conclusions regarding potential changes in sediment chemistry related to Bay-Goose dike construction or dewatering. Consequently, a complete sediment coring program (i.e., repeating the full 2008 program) is recommended as a follow-up action for 2012.

4.1.4. Phytoplankton

There are considerable challenges when interpreting long-term phytoplankton data. Natural variability of the phytoplankton community is inherently high because of intra and inter-annual differences in temperature, productivity, vertical mixing, time of year of sampling, ‘snap-shot’ perspective on community structure and other factors. Variability is sufficiently high that only gross basin-level effects might be detected, following large changes in water chemistry that would be detected more quickly and easily. Documented reductions in phytoplankton biomass and a lesser extent cell density occurred in SP and TE that were attributable to 2008 East Dike construction and in TPE, attributable to 2009/10 Bay-Goose dike construction. Notwithstanding the large natural variability in phytoplankton biomass and abundance, 2011 dewatering and general mine-related activities do not appear to have affected phytoplankton metrics.

Given the absence of on-going mine-related effects on phytoplankton in 2011, no further management actions are warranted at this time.

4.1.5. Zooplankton

Population metrics of zooplankton differed greatly between 2010 and 2011, the only years that quantitative sampling has occurred at CREMP sampling areas. For example, abundance and biomass increased 2 – 5 x and ~ 0.4x respectively between 2010 and 2011 and was consistent among impact and control areas, suggesting that the effect was not mine-related, however. The increase in abundance was related to the much greater abundance of copepodite stages of Calanoid and Cyclopoid copepods in 2011 than in 2010 for unexplained reasons. Nevertheless, there was no relationship between these metrics and mine-related activities, especially dewatering to TPN in 2011.

Zooplankton abundance and biomass can vary considerably within and between years depending on a range of environmental factors (nutrients, phytoplankton, turbidity, wind speed, direction, water depth, etc.). In addition, different life history stages may be more or less vulnerable to capture by the net, depending on timing of sampling within and between years. These factors make this tool challenging to use when attempting to track changes in population biomass or community structure over time, which is why zooplankton monitoring was not included initially in the CREMP.

During discussions with regulators regarding the CREMP in early 2010, however, AEM decided to reintroduce the tool in order to objectively and quantitatively assess its suitability for inclusion in the CREMP in the future. In 2010, five replicate samples (consisting of two vertical tows each) were collected in August from each of the Meadowbank study lakes CREMP areas. This was increased to 10 replicates per area in 2011 to better support a rigorous analysis of statistical power being conducted as part of the CREMP design review (Azimuth, 2012b). The results of the power analyses confirm that this is a coarse tool that requires targeting large effect sizes (e.g., 50% change), large effect durations (e.g., more than a year), multiple years of “before” data, and large sample sizes before typically targeted power (e.g., 0.9) goals are met.

Based on the above, consideration should be given to dropping zooplankton monitoring from the CREMP.

4.1.6. Benthic Invertebrates

As described above, detailed targeted studies have already been implemented to assess potential effects to the benthic invertebrate community from dike construction (EAS studies; summarized in Azimuth, 2012a) and dewatering (MMER EEM study; Azimuth, 2012c *in prep*) activities.

The following text is taken largely from the 2011 EAS report (Azimuth, 2012a):

- *East Dike Construction* – For benthic invertebrates, the 2008 CREMP data indicated reduced benthic invertebrate abundance (a marginal trend) in Second Portage Lake (that did not extend to Tehek Lake); this was no longer observed in 2009 (i.e., abundance was similar to baseline), suggesting a short-term physical effect and subsequent recovery. The higher resolution EAS results in 2009 highlighted natural differences between Second Portage Lake (and Tehek) and the control areas (i.e., inherent inter-lake differences). Unfortunately, the 2010 results were contradictory, with the CREMP showing an even bigger drop in 2010 than that observed in 2008 (despite very low TSS exposure in 2010) and the EAS data suggesting further recovery relative to control areas. When considered together, the 2010 CREMP results are likely highly localized and unrelated to TSS. Results from 2011 CREMP data showed improvements for all endpoints relative to 2010. While mean total abundance was slightly below the baseline means, mean total richness was the highest seen to date. The overall response patterns observed in Second Portage Lake appear consistent with natural variability rather than with exposure to TSS.
- *Bay-Goose Dike Construction* – Available data for potential effects to benthic invertebrate communities in the east basin of Third Portage Lake are also inconclusive. While most results point to the lack of any TSS-related impacts to the community, there have been two successive drops in abundance that coincide with dike construction. However, these “drops” are likely due to natural variability (2009) or a regional trend of decreased abundance and richness (2010). The 2011 results are again in line with baseline levels for both metrics (abundance and richness). The overall response patterns observed in the east Basin of Third Portage Lake appear consistent with natural variability rather than with exposure to TSS.
- *Dewatering to TPN* – While analysis of the detailed EEM study data has not been completed, the 2011 EAS included TPN in the detailed analysis of the 2006 to 2011 CREMP dataset. While there was a drop in total abundance in 2011, the change was not statistically significant and appears most likely attributable to natural variability (i.e., given the low magnitude of exposure to TSS in TPN relative to what was seen in SP and TPE during dike construction). These results should be viewed as preliminary at this time, pending the findings of the EEM study.

From a management perspective, no follow-up action is required as the 2012 CREMP will provide data to continue tracking the benthic invertebrate communities at SP, TPE and TPN.

4.2. Baker Lake

Apart from local infrastructure (e.g., fuel storage and lay-down area), mine-related activities in Baker Lake are primarily limited to barge traffic, which has increased substantially over the years and is limited to the open water season (i.e., as timing relies on clear passage through Hudson Bay and Chesterfield Inlet to allow barges onto Baker Lake). To our knowledge, no spills of fuels, hydrocarbons or any other materials have occurred in the vicinity of the barge dock area (BBD) and jetty (BPJ) as a result of shipping of materials to the mine or bulk fuel storage facility. Thus, potential impacts to receiving environment would likely be restricted to localized physical disturbance of the bottom as a result of prop wash. In addition, no changes to limnological profiles (temperature, oxygen, pH, conductivity), or other water chemistry parameter would be possible or expected.

In 2011 an additional reference area was added at BES (about 4 km east of BPJ)

There are no apparent mining-related changes to the aquatic receiving environment of Baker Lake, so no management actions are required for 2012.

5. MONITORING COMPONENTS FOR 2012

As discussed in **Section 1**, the rationale, framework, strategy, methods, and scope of receiving environment (now referred to as *Core Receiving Environment Monitoring Program* or “CREMP”) monitoring for the Meadowbank Mine were documented in the 2005 AEMP (AEMP, 2005). The CREMP has been implemented every year since 2006, with some modifications (e.g., lake sampling area additions, parameter deletions/additions, sampling frequency and intensity) to improve the program or to comply with regulatory requirements (e.g., the NWB A License). In 2010, an update report was prepared to document changes to the program made since the 2005 AEMP and present details on sampling and analysis (Azimuth, 2010g). The CREMP design is currently being reviewed as part of AEM’s efforts to develop an integrated adaptive management framework. Based on forthcoming discussions with AEM, the NWB and regulators, as well as results from the CREMP design, there may be potential changes to the CREMP (in addition to the recommended changes discussed in this report). The current program for 2012 is summarized in **Table 5-1**.

Table 5-1. Monitoring components planned for 2012 CREMP*.

Project Lake	Area ID	Through-Ice						Open-Water			Through-Ice		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Third Portage	TPE	Limno ¹	Limno ¹	Limno ¹	Limno ¹	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto
	TPN	Limno ¹	Limno ¹	Limno ¹	Limno ¹	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto
	TPS	Limno ¹	Limno ¹	Limno ¹	Limno ¹		Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe		
Second Portage	SP	Limno ¹	Limno ¹	Limno ¹	Limno ¹	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto
Tehek	TE					Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto
Tehek	TEFF						Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe		
Inuggugayualik	INUG					Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe	Limno Water Phyto	Limno Water Phyto
Wally	WAL						Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe		
Pipedream	PDL						Ice not safe	Limno Water Phyto	Limno Water Phyto Sed/Core Benthos	Limno Water Phyto	Ice not safe		

Project Lake	Area ID	Through-Ice						Open-Water			Through-Ice		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baker Lake	BBD						Ice not safe	Limno ² Water Phyto	Limno ² Water Phyto Sed/Core Benthos	Limno ² Water Phyto	Ice not safe		
	BPJ						Ice not safe	Limno ² Water Phyto	Limno ² Water Phyto Sed/Core Benthos	Limno ² Water Phyto	Ice not safe		
	BAP						Ice not safe	Limno ² Water Phyto	Limno ² Water Phyto Sed/Core Benthos	Limno ² Water Phyto	Ice not safe		
	BES						Ice not safe	Limno ²	Limno ² Sed Benthos	Limno ²	Ice not safe		

Notes:

Limno: 2 depth profiles for 6 events per year.

Limno¹: 1 depth profile for 4 events per year; water chemistry will also be collected if profiling shows unusual results.

Limno²: 2 depth profiles for 3 events per year; also including deeper profiles to investigate potential marine influence.

Water: 2 replicate samples from 3m depth; same locations as limno.

Phyto: 2 replicate samples from 3m depth; same locations as limno.

Sed: 5 replicate samples (2 grab composite/sample).

Core: 10-15 replicate samples (number to be determined).

Benthos: 5 replicate samples (2 grab composite/sample); same locations as sediment.

* Zooplankton sampling has been dropped for 2012; see report text.

6. REFERENCES

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APPENDICES



APPENDIX A

TECHNICAL MEMORANDUM: BAKER LAKE CREMP REFERENCE AREA DATA REVIEW; AUGUST 8, 2011





Technical Memorandum

Date: August 8, 2011
To: Ryan VanEngen – AEM Meadowbank Gold Mine
Cc:
From: Maggie McConnell, Gary Mann and Ryan Hill – Azimuth Consulting Group
RE: Baker Lake CREMP reference area data review

OBJECTIVE:

To review three years of physical, chemical and biological data from the CREMP monitoring areas at Baker Lake in order to address uncertainty regarding the suitability of the existing reference area and to determine whether changing the area for the 2011 open-water season is warranted. Specifically to answer the question: *“Could the current Baker Lake reference area constrain our ability to detect AEM-related changes at near-field exposure areas?”* And if a change is suspected, *“Is the change relevant to impacts that we might expect from this area?”*

BACKGROUND:

Initially the CREMP focused solely on the Meadowbank project lakes, but in 2008 was expanded to Baker Lake to ensure that monitoring was also in place to track project-related activities in that area. Two particular areas of interest were established as monitoring areas: one targeting the hamlet’s barge landing area (Baker Barge Dock [BBD]) and the other at AEM’s fuel storage facility (Baker Proposed Jetty [BPJ]). A reference area was also selected and located several kilometers to the east of the hamlet along the north shore of the lake (Baker Akilahaarjuk Point [BAP]). These areas have been monitored monthly (limnology and water quality) or yearly (sediment quality) during the open-water season since 2008.

Early results for Baker Lake indicated more complex limnological conditions relative to the Meadowbank project lakes; specifically, conditions varied largely, likely due to influences of the Thelon River and Chesterfield Inlet. Consideration for changing the location of the reference area (BAP) was initially discussed in the 2009 CREMP report (Azimuth, 2010). However, during sample planning for the 2010 open-water season, both sediment chemistry and benthic biota data from 2008 and 2009 were reviewed. It was concluded at that time that the exposure areas were not consistently different from the reference area and the exposure areas also showed high inter-annual variation,

somewhat confounding the interpretation. Thus, BAP remained as the reference area for 2010 sampling. It is important to note that these differences do not indicate that the reference area is necessarily unsuitable; the CREMP monitoring framework targets the relative performance of each of the two exposure areas over time. Provided that the areas all respond similarly to broad-scale natural fluctuations (e.g., inter-annual variability), initial differences between reference and exposure areas should not impede the detection of adverse effects related to AEM's activities. That said, if conditions do vary sufficiently that responses to regional factors (e.g., climatic) differ among areas (i.e., "noise" is higher than the "signal"), then a more suitable reference area may be desirable to avoid erroneous conclusions regarding the presence/absence of adverse effects.

APPROACH:

The focus of this memorandum is to compare and contrast conditions (based on selection of key parameters) at the Baker Lake exposure and reference areas. The following is a list of parameters and metrics from all the sample media that were reviewed for the existing 3 years of data (2008 – 2010); a subset of these parameters was selected (**bolded**), based on the criteria and rationale presented below, for further discussion in the findings section.

Limnology and Water Chemistry

- Temperature, pH, Total alkalinity
- 'Seawater parameters' (**Conductivity**, **Hardness**, Calcium, Chloride, Magnesium, Sodium, TDS¹)
- Nutrients (**TKN**, Ammonia, **Nitrate**, Phosphate)
- TOC, DOC
- Total metals (Aluminum)

Criteria for selecting parameters: sufficient number of detectable concentrations (e.g., ammonia was not selected because it has >50% ND values; metals not listed above also have >50% ND values), parameter relation to seawater (CREMP Re-Design selected triggers specific to Baker Lake based on the influence of seawater that make Baker Lake fundamentally different from Meadowbank lakes), differences in trends over time (e.g., Cl, Ca, Mg, Na and TDS show very similar trends to conductivity, only the latter is shown), correlation of parameters to each other (e.g., conductivity, hardness, nitrate appear to be correlated), and presence of an observable trend over time (e.g., total phosphate and total aluminum are generally consistent across areas and time that no trend can be discerned).

Phytoplankton

- **Total biomass**, Chrysophyte biomass
- Total density
- Simpson's diversity

Criteria for selecting metrics: differences in trends over time (e.g., total and chrysophyte biomass and total density show similar trends over time, only total biomass is shown),

¹ TDS = total dissolved solids; TKN = total Kjeldahl nitrogen; TOC = total organic carbon; DOC = dissolved organic carbon; ND = non-detected.

correlation of parameters to each other (e.g., TKN and phytoplankton biomass appear to be correlated), and presence of an observable trend over time (e.g., Simpson's diversity is consistent across areas and time that no trend can be discerned).

Sediment Chemistry

- TOC
- Grain size (% gravel, % sand, % **silt**, % clay)
- Total metals (Arsenic, **Chromium**, Cobalt, **Copper**, **Nickel**, **Zinc**)

Criteria for selecting parameters: sufficient number of detectable concentrations (e.g., metals not listed above have many ND values), differences in trends over time (e.g., arsenic and cobalt show similar trends to the other metals, for simplicity only 4 metals were shown; % silt and TOC show similar trends, only % silt is shown), and correlation of parameters to each other (e.g., % silt and TOC appear to be correlated to sediment metals).

Benthic Invertebrates

- **Taxa group abundance**
- **Taxa group richness**
- Simpson's diversity

Criteria for selecting metrics: presence of an observable trend over time (e.g., Simpson's diversity is consistent across areas and time that no trend can be discerned), and noted differences in past reports (e.g., higher total abundance and richness at BAP in 2009 (Azimuth, 2010); higher abundance of oligochaetes at BAP in 2010 (Azimuth, 2011b)).

For each parameter discussed below, data are presented graphically by area and time, then discussed in terms of similarities and differences between exposure and reference areas, and finally, in relation to triggers for decision making.

FINDINGS: Water Conductivity, Hardness and Nitrate

Compare and Contrast

Conductivity, hardness and nitrate follow a very similar trend among areas, as shown in **Figure 1**. In general, all 3 areas show yearly lows in July (likely the freshwater influence of the Thelon) prior to increases through August and September.

Potential Impact on Decision Making

Early warning trigger values were established in the CREMP Re-Design process for all parameters measured during CREMP sampling (Azimuth, 2011a). For conductivity, hardness and nitrate in Baker Lake, triggers are 464.9, 49.5 and 1.46 mg/L, respectively. The trigger values for conductivity and hardness are exceeded periodically in Baker Lake (**Figure 1**) during seasonal peaks; however, following the application process in the CREMP Re-Design, the 1-month mean of an area will be flagged if it exceeds the trigger but will not require action until the 6-month mean also exceeds the trigger. The 6-month means (in the case of Baker Lake there are only 3 months/year of data to average) for conductivity and hardness are below these triggers for all 3 areas and all 3 years, with the exception of BBD in 2008. Nitrate values have never exceeded 0.1 mg/L

in Baker Lake in the 3 years of monitoring. Ultimately, if a flag does get raised here, the relatively consistent similarities between the exposure areas and the reference areas would show whether the elevated value was likely due to natural causes.

FINDINGS: Phytoplankton & Nutrients (TKN)

Compare and Contrast

Phytoplankton biomass and TKN are plotted on the same graph as they show some similarities (**Figure 2**); this is not surprising given that phytoplankton growth is dependent on nutrients (such as nitrogen and phosphorus) in the lake. The general temporal pattern of TKN concentrations is fairly similar across areas, as is that for phytoplankton biomass. While there are some area-month differences for both parameters, there is no obvious indication that the reference area is different from the exposure areas.

Potential Impact on Decision Making

The trigger value for TKN in Baker Lake from the CREMP Re-Design is 0.194 mg/L (Azimuth, 2011a), which is exceeded generally once per year, during seasonal peaks (**Figure 2**). Similar to the discussion for other water parameters above, the process in the CREMP Re-Design is such that no action is required unless the 6-month mean exceeds the trigger. For TKN, the 6-month mean (3-month mean, in actuality) is below the trigger for all 3 areas and all 3 years.

The trigger for phytoplankton (and other biota) is somewhat loosely defined as a 20 – 50% effect size (or change of means) in the CREMP Re-Design, although an effect size of 20% can be difficult to detect. The process for action using the effect size is to evaluate the data after 3 months (open-water season) in order to adequately determine effect size. Effect size for each exposure area can be determined by comparing means to a baseline, the latter of which is calculated by averaging the 3 years of data at BAP. The 3-month mean for phytoplankton total biomass in Baker Lake exceeds an effect size of 20% at BBD in 2008 and 2009 and at BPJ in 2008 but does not exceed 50% at either area. Phytoplankton show high within-area variability, making it difficult to further detect trends.

Overall, the similarities between reference and exposure areas should provide a strong rationale for any flags raised should they be due to natural conditions.

FINDINGS: Sediment Chemistry and Grain size

Compare and Contrast

Sediment metals concentrations and sediment grain size (%silt) are plotted on the same graph as they show similar trends (**Figure 3**) and sediment grain size is also plotted separately in **Figure 4**. All four of the metals shown (Cu, Ni, Cr, Zn) follow the same trends and can also be discussed together. Sediment metals concentrations have small ranges between areas: ranging from approximately 5-15 mg/kg (Cu and Ni), 10-30 mg/kg (Cr) and 20-50 mg/kg (Zn). Apart from one replicate in 2010 at BBD, metals concentrations are quite similar between BBD and BAP, but BPJ are a bit higher. While

variable, there do seem to be some differences in grain size among areas, with generally coarser sediments at the reference area. The exposure areas were more variable, possibly due to physical disturbances related to barge activity.

Potential Impact on Decision Making

The trigger values for chromium, copper and zinc in Baker Lake sediments from the CREMP Re-Design are 27.0, 20.5 and 73.6 mg/kg, respectively (Azimuth, 2011a). Chromium exceeds its trigger in one replicate sample (32 mg/kg) at BBD in 2010; no other metals exceed their trigger values (**Figure 3**). The process in the CREMP Re-Design is such that no action is required unless the annual mean (data are collected only once per year in August) exceeds the trigger. In this case, chromium would be flagged for further review and statistical analysis. That sample also contained quite a high proportion of fine sediments, which would at least partially explain the results. Once we move to using the more robust coring method for monitoring (more replicates, targeting the surface interval), we'll have higher confidence in any observed changes. Due to the fairly consistent nature of sediments as a sink for contaminants, we wouldn't expect inter-annual variability to play a large factor in decision-making, so we wouldn't expect to rely on comparisons to reference.

FINDINGS: Benthic Invertebrate Community

Compare and Contrast

Benthic invertebrate (benthos) taxa abundance and richness are plotted by major taxa group in **Figures 5 and 6**, respectively. In 2008, abundance and richness for the 3 sampling areas show similar ranges, despite some within-area variability. In 2009, abundances for most of the replicates were lower at BBD and BPJ, but remain at 2008 levels at BAP. In 2010, abundance increased somewhat at BBD, remained low at BPJ, and at BAP has an oligochaete presence much greater than previously seen at any area in any year.

Similar to sediment metals concentrations, BAP appears to have more consistency among sample replicates in a given year, which may be again due to the absence of physical disturbance related to barge activity.

Potential Impact on Decision Making

The trigger for benthos is a 20 – 50% effect size in the CREMP Re-Design. The process for action using these is to evaluate the August data once a year in order to adequately determine effect size. Effect size would be determined by examining the interaction between “area” and “year” factors in the BACI model testing for differences between each exposure area and the reference area over time. The interaction term essentially quantifies the relative changes between reference and exposure stations over time. Temporal patterns at the two exposure areas show a drop in abundance (and to a lesser extent richness) between 2008 and 2009/2010 are different than that observed at the reference area. Given the greater similarity among areas in 2008, this either means that the aforementioned trend suggests a development-related change at the exposure areas (i.e., between 2008 and 2009 that persisted to 2010) or that localized natural factors affecting benthic community structure have a stronger influence than regional natural factors (i.e., making the reference area inappropriate).

CONCLUSIONS & RECOMMENDATION:

The parameters and metrics for each medium discussed above were chosen for their representativeness in the context of Baker Lake, in order to answer the question: *“Could the current Baker Lake reference area constrain our ability to detect AEM-related changes at near-field exposure areas?”*

For the water column, trends over time for most parameters showed strong similarities between exposure and reference areas over the past 3 years. Consequently, we would not expect the detection of adverse effects in the water column at exposure areas to be impeded based on the existing reference area.

For sediments, the results are less clear. There are a couple of points to keep in mind regarding decision-making:

- Our expectation would be for fairly consistent results for chemical and physical sediment parameters at a given area over time under natural conditions. Thus, we are less reliant on comparisons to the reference area to identify AEM-related changes at exposure areas.
- Detecting meaningful changes in benthic community parameters is reliant on determining differences over time at exposure areas relative to the reference area. Thus, absolute differences may exist between exposure and reference areas without constraining our ability to make robust decisions.
- Ultimately, causality needs to be addressed to determine the need for and nature of any management actions regarding sediment quality.

The existing temporal patterns in benthic community abundance (and to a lesser extent richness) have raised concerns regarding the suitability of the existing reference area. While the reference area does inherently have coarser sediments (and thus lower metals concentrations), the lack of any temporal changes in chemical or physical parameters does not suggest a causal mechanism for the observed temporal patterns in benthos. Two possibilities were postulated for the inconsistent inter-annual patterns among exposure and reference areas: (1) the observed reductions in benthic invertebrate abundance at the exposure areas may be related to physical disturbance from barge activities (e.g., prop wash), or (2) the observed patterns are due to unmeasured localized natural factors that mask any regional trends.

Given the confounding nature of the possibilities of the observed trends in benthic community parameters, we cannot confidently determine the appropriateness of the existing reference area. Options to consider are:

- *Continue with the same reference area* – additional data may provide insights into the nature and cause of apparent differences between the exposure and reference areas. On the other hand, it may not and the base assumption of this study design is that observed relative differences would be AEM-related. That said, given the apparent absence of chemical or physical changes, physical disturbance related to barge activities (a highly reversible cause) would be the most likely cause. Additional studies may need to be conducted to verify/refute that assumption unless there are obvious management actions that can be implemented at little cost to AEM.

- *Change to a new reference area* – there is no guarantee that results for a new area would improve the situation, particularly if the exposure area trends are disturbance-related. A major limitation of this option would be the loss of temporal continuity for comparisons between exposure and reference areas for the full monitoring period.
- *Add a new reference area* – this option avoids the limitation discussed above and has the added benefit of providing a second reference area. This would be the best option to provide further insights into the situation by providing a broader perspective for temporal patterns in benthic community structure beyond AEM's influence.

Our recommendation would be to pursue the third option. In consideration of the additional costs, AEM may choose to limit the parameters collected to sediment quality (once a year) and basic limnology (e.g., profiling) (concurrent with water sampling at the other areas).

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FIGURES:

Figure 1. Field conductivity, hardness and nitrate measurements during open-water sampling from 2008 – 2010 in Baker Lake.

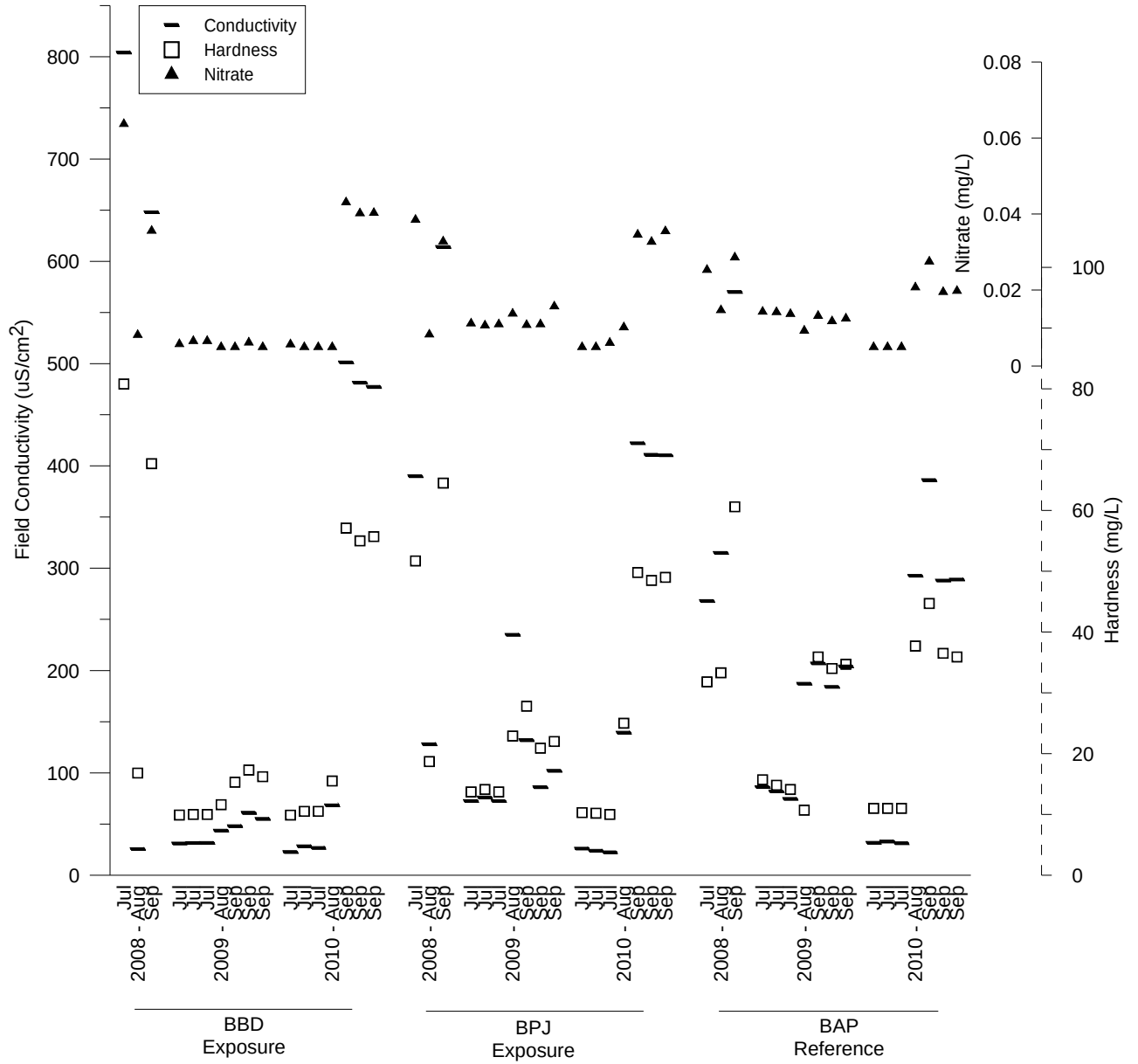


Figure 2. Total phytoplankton biomass and TKN concentration during open-water sampling from 2008 – 2010 in Baker Lake.

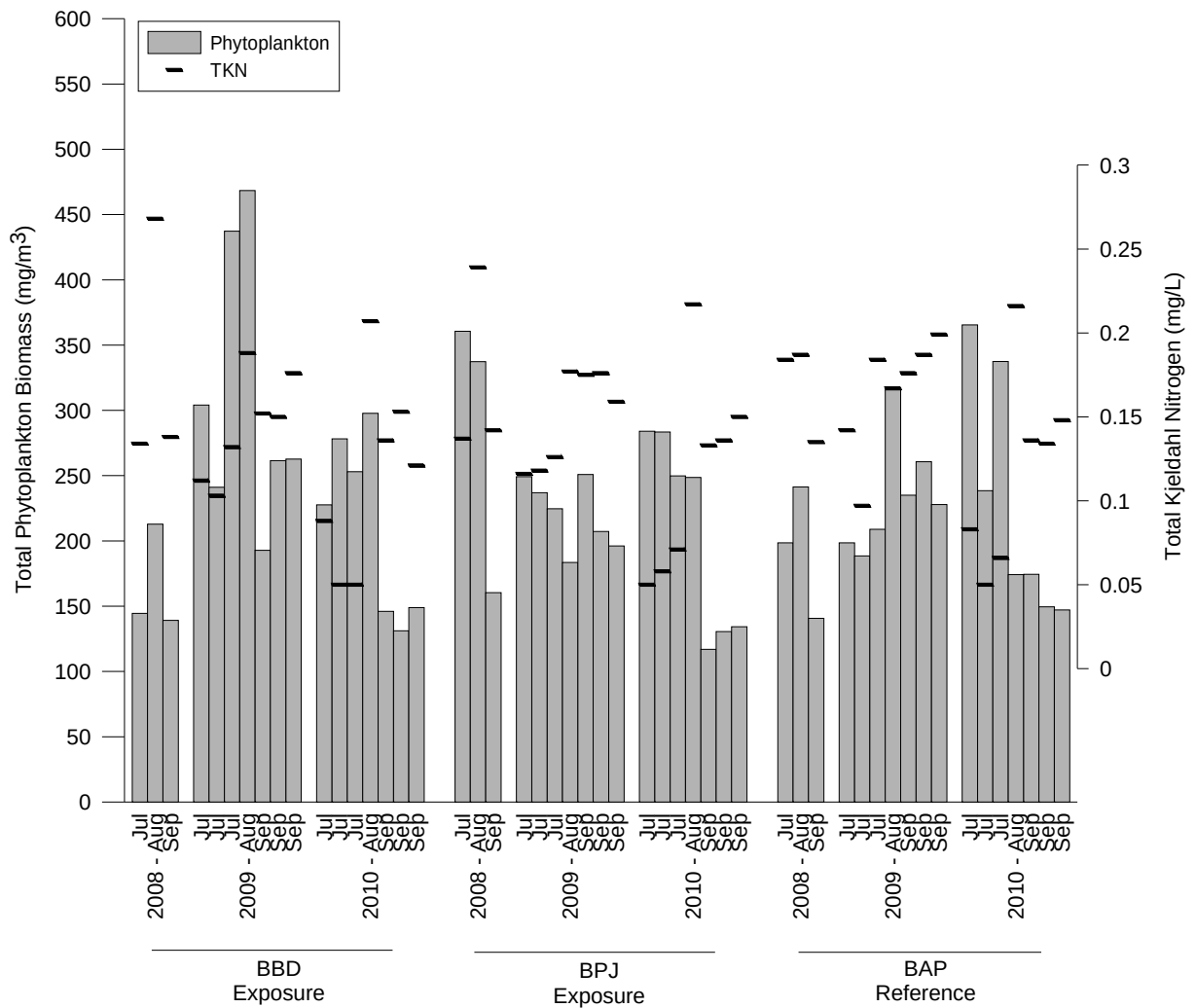


Figure 3. Total metals in sediment and sediment grain size (% silt) during August sampling from 2008 – 2010 in Baker Lake. (Note: sediment metals concentrations are each shown beginning at zero, bars are not stacked)

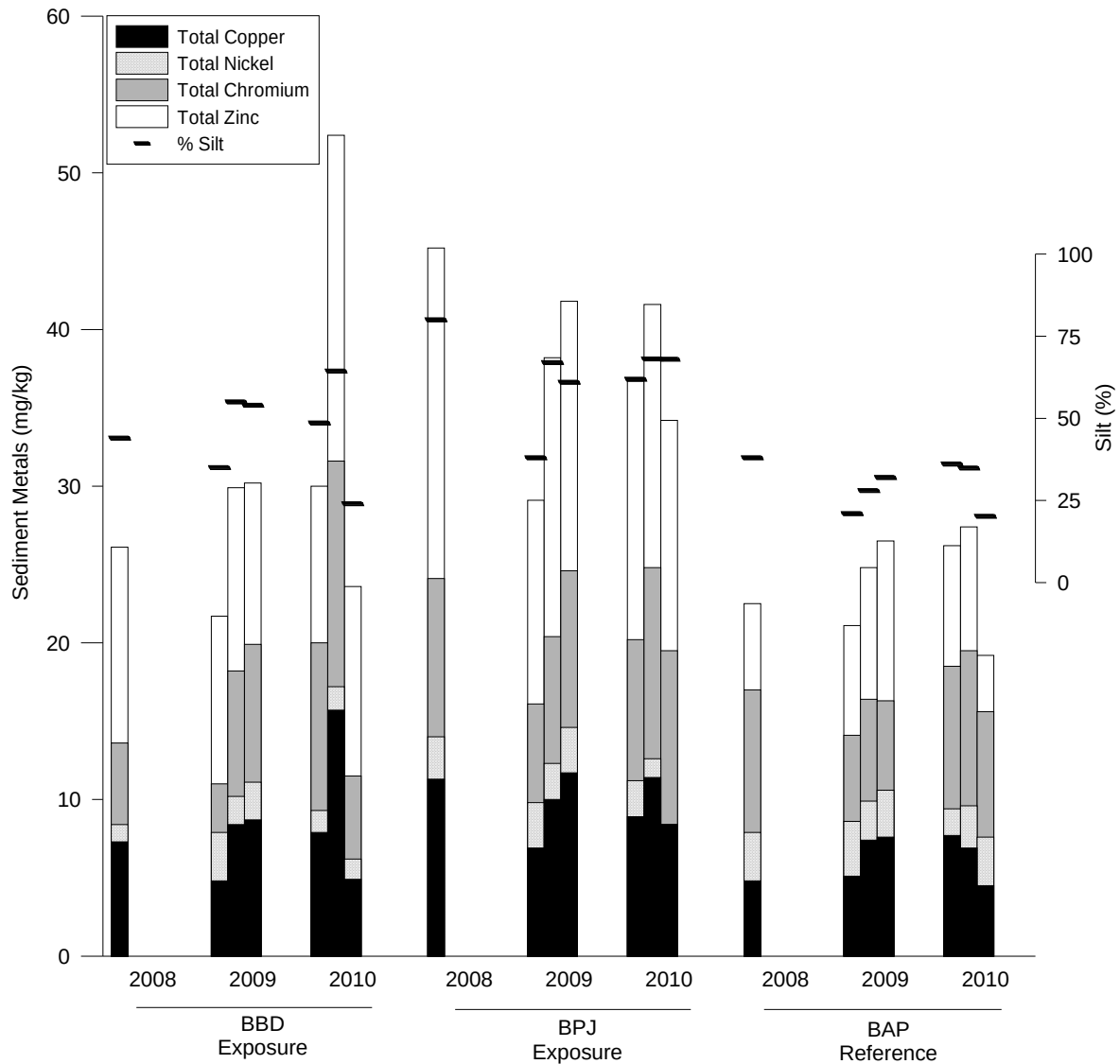


Figure 4. Sediment grain size (%) from samples collected during August sampling from 2008 – 2010 in Baker Lake.

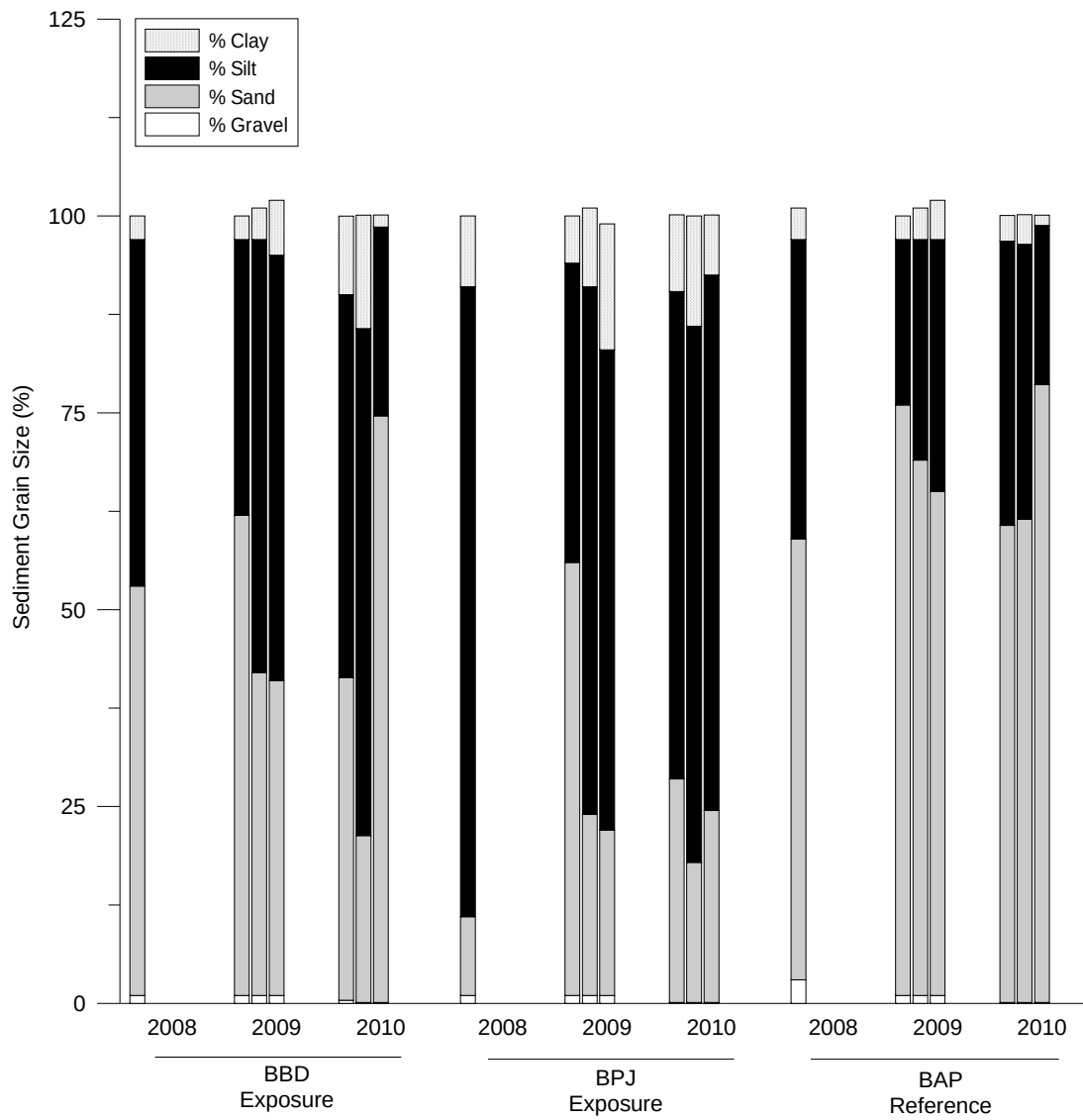


Figure 5. Benthic invertebrate taxa abundance during August sampling from 2008 – 2010 in Baker Lake. (*Note: benthos taxa abundance groups are stacked one on top of the other; the top of the highest bar represents total abundance of all groups*)

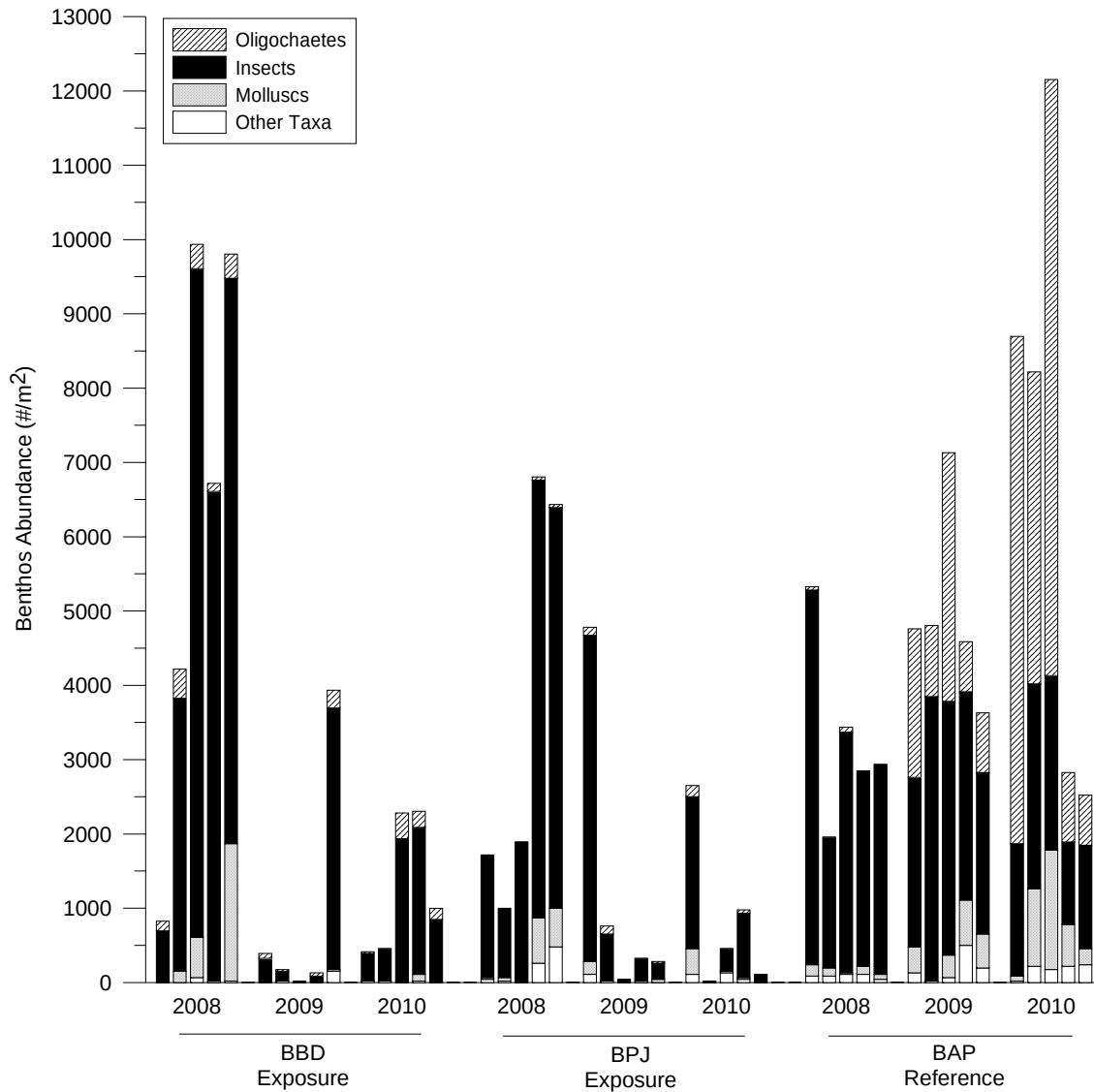
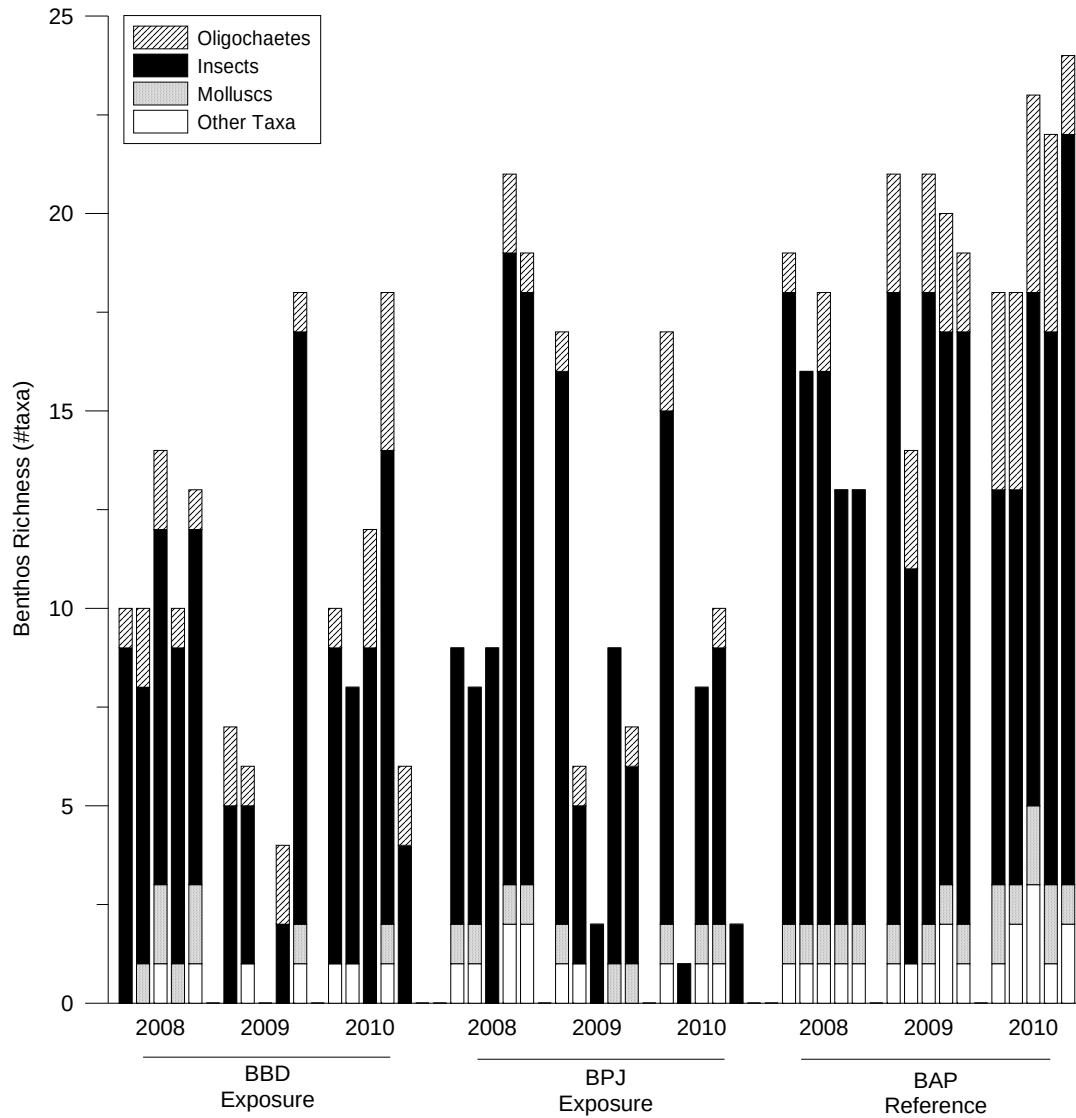


Figure 6. Benthic invertebrate taxa richness during August sampling from 2008 – 2010 in Baker Lake. (*Note: benthos taxa abundance groups are stacked one on top of the other; the top of the highest bar represents total richness of all groups*)



APPENDIX B

STANDARD OPERATING PROCEDURE (SOP) FOR CREMP WATER & PHYTOPLANKTON SAMPLING



Standard Operating Procedure

Meadowbank Project Lakes & Baker Lake

CREMP Water & Phytoplankton Sampling

GENERAL:

Project Coordinator:

Maggie McConnell
Azimuth Consulting Group
218-2902 West Broadway
Vancouver, BC, V6K 2G8
Telephone: 604-730-1220
Email: mmcconnell@azimuthgroup.ca

In case of **emergency**, contact Gary Mann (Azimuth telephone number 604-730-1220 or cell phone 604-908-0601).

LOCATION AND TIMING FOR FIELD ACTIVITIES:

Twelve (12) sampling stations have been chosen for water quality monitoring in the Meadowbank project lakes and Baker Lake. Water samples are collected monthly during open water and during ice-cover, except for October and June, when ice conditions are unsafe for sampling. The 12 stations (with their corresponding abbreviation) are:

- Third Portage Lake – North Basin (TPN)
- Third Portage Lake – East Basin (TPE)
- Second Portage Lake (SP)
- Tehek Lake (TE)
- Inuggugayualik Lake (INUG)

- Tehek Lake – Far-field (TEFF)
- Third Portage Lake – South Basin (TPS)
- Wally Lake (WAL)
- Pipedream Lake (PDL)

- Baker Lake – Barge Dock (BBD)
- Baker Lake – Proposed Jetty (BPJ)
- Baker Lake – Akilahaarjuk Point (BAP)

There are two levels of sampling intensity over the course of the year, depending on whether under ice or in open water; during open water all stations are sampled, whereas only the first 5 stations listed above are sampled through-ice. Check the monthly water sampling schedule to confirm which sampled are to be collected where, BEFORE going into the field.

All samples are now collected from **3 m below the water surface**, which is indicated by “-S” at the end of the sample ID (S=Surface). Two target sample locations for each station listed above have been

randomly pre-determined and recorded in MapSource and in the hand-held GPS units (NAD 83). Confirm before going into the field.

Field activities are scheduled roughly once a month for 6 months, including winter ice sampling. Sampling through the ice will take place in May, November, and December. Open water sampling will take place in July, August, and September. Sampling will not be conducted in June and October because of thin ice conditions.

MONTHLY CREMP WATER CHEMISTRY & PHYTOPLANKTON SAMPLING:

1. Prior to leaving camp gather the appropriate type and number of sampling vessels and acid vials for preservation. Prepare appropriate labels for containers, affix them to the appropriate bottle (see below), and wrap label with packing tape. Use the following information:
 - Azimuth company name
 - Station abbreviation (e.g. TPE-36-S, INUG-24-S)
 - Date of sample collection
 - Parameters to be measured from individual bottle (TOC, total metals, etc.)

2. Gather **field collection materials:**

In the boat:

- Field collection data forms, pencils, waterproof markers & clipboard
- GPS unit, batteries
- Water pump & 12V battery
- Tubing (4 meter length and 1 meter length) & weight (& extra C-clamps and cable ties)
- In-line filter and a spare
- YSI meter, batteries
- Secchi disk
- Hand held pH meter, batteries
- Depth meter, batteries
- Rope
- Sampling gloves
- Field sample bottles & preservatives (per sample) (***this may be different for ALS Winnipeg***):
 - ▶ 2 – 1 L plastic (TSS-low and Conventional)
 - ▶ 1 – 250 mL amber glass (TKN, Ammonia)
 - ▶ 2 – 125 mL amber glass (TOC & DOC)
 - ▶ 2 – 250 mL plastic (total and dissolved metals)
 - ▶ 1 – 50 mL vial for phytoplankton
 - ▶ 1 vial sulfuric acid
 - ▶ 2 vial hydrochloric acid
 - ▶ 2 vial nitric acid
 - ▶ 1 syringe & magnesium carbonate slurry
 - ▶ 1 syringe & Lugol's solution
- Extra sample bottles in case of breakage or loss
- QA/QC field duplicate sampling containers & preservatives (same as above).
- Take one set of Travel Blank bottles into the field and transport and treat as other samples. Note that the Travel Blank bottles are not to be opened and no preservatives added.

In camp:

- Hand pump, filters, tweezers, tinfoil and magnesium carbonate for chlorophyll-a
- De-ionized water for rinsing equipment and collected field equipment blank
- Coolers (for storing and shipping samples)
- Ice packs (for shipping samples to laboratories)
- Address labels for coolers
- Chain-of-custody forms
- Large Ziploc bags (for sending chain-of-custody form in cooler)
- Packing tape (for affixing labels to sampling containers & sealing cooler)

The following table lists the specific bottles to be filled, parameters to be measured and preservatives required for each. Affix the labels to the sampling containers and then prior to shipping, wrap packing tape around the labels to ensure a waterproof seal.

(Note: this may be different for ALS Winnipeg)

Sampling Container	Parameters to be Measured	Preservatives to be Added
2 - 1 L plastic	Conventionals*	None
250 mL amber glass	TKN, Ammonia	1 vial of sulfuric acid
250 mL plastic	Total Metals	1 vial of nitric acid
250 mL plastic	Dissolved Metals	1 vial of nitric acid
125 mL amber glass	TOC	1 vial of hydrochloric acid
125 mL amber glass	DOC	1 vial of hydrochloric acid
50 mL vial	Phytoplankton	1/2 mL of Lugol's solution per 50 mL sample

* includes: hardness, conductivity, pH, TDS, TSS-low, turbidity, alkalinity (speciated), orthophosphate and total phosphate, chloride, fluoride, bromide, sulfate, nitrate-nitrogen, nitrite-nitrogen, silicate.

** **do not use filtrate water** for any sample. Use the in-line filters for collecting dissolved metals and dissolved organic carbon samples.

3. For **QAQC** purposes three kinds of samples are required; one set per 10 field samples as follows:

A: One field duplicate is collected for every 10 sample per event (i.e., 10%). All parameters measured in the original sample are measured in the field duplicate. The sampling station is selected randomly from one of the stations, and labeled as station CREMP [month] DUP-1, -2, -3, -4, etc. Prepare the QAQC labels and affix to the sampling containers, as described in step 2.

B: One set of travel blanks are to be carried into the field and treated like the other sampling vessels except that the bottles are not to be opened or anything added to them.

C: One equipment blank will be acquired per every 10 field samples. To collect an equipment blank set up the water sampling equipment as if a routine sample was to be collected except that the incurrent and excurrent hoses are placed into a 4L container of de-ionized water (**use DI water sent from ALS laboratories**). Pump for 2 minutes (just like in the field) to flush site water from the equipment (also attach the filter to flush for 30 seconds). Using a second 4L jug, flush another approx. 1L (this time excurrent hose is placed in sink or bucket) and then use the remaining 2L fill all bottles, except for TSS-low and chlorophyll parameters. Preserve and treat as other samples, including filtering where

necessary. Label as station CREMP [month] EB-1, -2, -3, -4, etc. Finally, fill a new suite of bottles (if available) directly from a third 4L jug to test for any problems with the DI water itself. Label these as CREMP [month] DI-1, -2, -3, -4.

4. Before and during sampling fill in the requested information on the field data form; complete one field data form in its entirety for each sampling station and sampling event. Forms are made of waterproof paper; print all information on the form using a lead pencil or a write-in-the-rain pen.
5. With the aid of a GPS unit, navigate the boat to the sampling station using the UTM coordinates (in NAD 83) provided. Approach the station from downstream of the wind direction. In windy conditions, anchor the boat upstream of the station and drift back; it is not necessary to anchor the boat in calm conditions providing the boat remains in the same position. Do not allow the anchor to drag through the sampling station. Record the **UTM coordinates** on the field data form.
6. Measure **water depth** at the sampling station using the 'Hawkeye' hand-held depth meter (or transom-mounted lowrance). Hold the meter in the water, facing the lake bottom, until the meter measures the depth. Record this information on the field data form. If you are in water that is too shallow (i.e., **must have at least 5 meters depth**), move to deeper water near the assigned station.
7. Measure the light attenuation at the sampling station using the **Secchi disk**. Lower the disk into the water, on the shady side of the boat, so that you can no longer see it. Slowly raise the disk to the point that you can see it and measure this depth using the markings on the disk rope.
8. Measure the pH of the water at the sampling station using the **pH meter** (unless the YSI includes this parameter). Hold the probe portion of the meter in the lake until the meter measures the pH. Record this information on the field data form.
9. Calibrate the YSI probe prior to going into the field; confirm elevation (m) of sampling environment. Check the DO calibration (adjust barometric pressure based on airport data) but also check the DO membrane (it may need to be replaced). At Meadowbank DO readings should be about 8 – 12mg/L; if meter is reading much lower/higher than this, membrane likely needs to be replaced. Keep a calibration log which includes date and time, type of calibration, results, and troubleshooting.
10. Lower the **YSI probe** into the lake to just below the water surface level. Measure the temperature (°C), specific conductance (i.e., temperature corrected) (uS/cm) and dissolved oxygen concentration (mg/L) in the water and record on the field data form. Lower the meter to a depth of 1 m and record the field measurements. Allow the concentrations on the meter to stabilize for 10 to 15 seconds before recording the concentrations. Continue recording the field measurements at **1 m depth intervals** until you reach the whole metre mark above the lake bottom (i.e. if the lake depth is 9.3 meters, record field measurements up to a depth of 9 meters). Use the **turbidity probe** in a similar manner to record a turbidity profile.
11. Set up the **water pump** in the boat; attach the tubing to the pump using the C-clamps and attach the 12-V battery. Attach the 4 meter length of tubing to the intake valve, and the 1 meter length to the output valve. Attach the plastic coated ball weight to the end of the 4 meter length of tubing. Lower the 4 meter length of tubing into the water to **3 meters depth** and place the 1 meter length of tubing over the edge of the boat. Run the pump for **2 minutes** to flush the sampling device.

12. For each sampling station, **fill** the required **pre-labeled sampling containers** with water from the 1 meter length of tubing.
13. Dissolved metals and dissolved organic carbon samples are to be collected with an in-line high capacity filter with 0.45 um pore size. After all unfiltered samples have been collected, disconnect the battery from the pump and fix the filter onto the end of the discharge hose. Re-connect the pump and allow the water to discharge and flush through the filter for 15 – 20 seconds. Direct filtered water into the DOC and dissolved metals bottles. Flow from the hose can be controlled by pinching the incurrent end of the tube (**not the excurrent**). Once filtered samples have been collected remove the filter and place into a plastic or zip-loc bag for re-use. In the Meadowbank environment where the amount of suspended solids is typically low, filters can be re-used for up to 10 samples. Remember to use the same filter when collecting equipment blank samples, not a new filter.
14. **Add the specified preservatives** to the appropriate sampling containers (according to the information on the labels and table in step 2), seal and mix thoroughly by turning upside down and then upright a number of times.
15. To collect a phytoplankton sample, add site water from appropriate depth (i.e., 3 m) into the 50 mL vial provided. Make sure that site information is appropriately labeled on the jar. In the field or the lab, add a few drops of Lugol's solution to the sample so that it has the color of weak tea.
16. Rinse all sections of the water filter apparatus with site water.
17. Back in the office, to process the chlorophyll-a sample, use the hand-held pump apparatus and filters. Using the tweezers, place an ashless filter paper on the screen in the water filter apparatus, and, prior to filtering, add 1–2 drops of magnesium carbonate slurry directly onto the filter, then screw the two sections together and attach the hand-held vacuum pump. **Filter 1 L of water** through the water filter apparatus. Wrap the filter paper in a piece of tinfoil, then place the filter in the pre-labeled ziploc bag. Mark on the field collection data sheet the volume of water filtered. In some cases it is not possible to filter up to 1L. In such cases it is critical to note the actual volume filtered. After filtering remove the filter with clean tweezers, place on a piece of tin foil and double wrap. With a sharpie pen, write the appropriate sampling information on a label and stick to the tin foil. Place the folded tinfoil in a zip loc bag and put into the **freezer**.
18. Until ready for shipping, the water samples are stored **chilled** in a refrigerator in camp, if space is available. The filter for chlorophyll-a analysis must be **frozen**; store this bag in a deep freezer in the camp. Bottles should be put in plastic bubble bags prior to storage on ice to protect the labels from water damage. The phytoplankton samples are stored at **room temperature**.
19. If this sampling station is selected as the QAQC **field duplicate**, collect a second set of water samples (repeat step 10), fill the pre-labeled sampling containers, including the phytoplankton vial (repeat step 11-14) and collect a second filtered chlorophyll-a sample (step 16). Record which sampling station the QAQC samples are collected from on the appropriate field data form.
20. Fill out a **chain-of-custody** form for the water samples and filters being sent to **ALS Environmental**. The COC form must be completed carefully and in its entirety to ensure proper analysis. This includes listing all of the specific conventional parameters (see table in step 2), Azimuth and ALS

contact names, and checking off all of the specific boxes for requested analyses. The ALS laboratory quote number must be printed on the COC form to ensure proper billing.

A **digital COC** form is most commonly used; this form can be filled out in advance to ensure accuracy and efficiency and amended in the field as required. Note that using a digital copy of the COC requires printing 2 copies of the document in the field (one for the laboratory, one for Azimuth). Any questions regarding the COC form should be directed to the Azimuth project coordinator – Maggie McConnell. Put the completed COC form in a sealed ziploc plastic bag in a cooler with the water samples.

21. Fill out a **chain-of-custody** form for the phytoplankton samples being sent to **Plankton R Us Inc.**, Winnipeg, MB. Complete all of the required fields and then put the form in a sealed ziploc plastic bag in the cooler with the phytoplankton samples.

PACKAGING & SHIPPING SAMPLES:

1. Ensure all **water samples** are **sealed** securely. Prior to shipping, it is advisable to wrap the label of each sample bottle with clear tape to make sure that the label does not come off during shipping and handling. Dry the water bottle and wrap with tape. **Pack** water sampling containers upright in coolers with ice packs, and packing material, to ensure samples do not spill or break during transport. (Ideal storage and transport temperature is 4°C).
2. Ensure the COC form is enclosed and then seal the cooler(s). **Label the cooler(s)** with the following address:

ALS Environmental 101-8081 Lougheed Hwy. Burnaby, BC, Canada V5A 1W9 Tel: 604-253-4188 Attn: Brent Mack	OR	ALS Environmental 39 – Unit 12, 1329 Niakwa Road East Winnipeg, MB R2J 3T4 Tel: 204-255-9721
3. Ensure **phytoplankton samples** are **sealed** securely and **pack** in a cooler with packing material to ensure samples do not break during transport. It is not necessary to keep samples cool.
4. Ensure the COC form is enclosed and then seal the cooler. **Label the cooler** with the following address:

Plankton R Us Inc. Dave Findlay 39 Alburg Drive Winnipeg, MB R2N 1M1 Tel: 204-254-7952
5. **Ship** the water **samples** to ALS Environmental as quickly as possible. Ship the phytoplankton samples to Dave Findlay at the end of each month or event.
6. Send completed **COC forms** and **field data forms** to **Azimuth Consulting Group Inc.**, attention the project coordinator – Maggie McConnell.

APPENDIX C

STANDARD OPERATING PROCEDURE (SOP) FOR CREMP BENTHOS & SEDIMENT SAMPLING



Standard Operating Procedure

Meadowbank Project Lakes & Baker Lake

CREMP Benthos & Sediment Sampling

GENERAL:

Project Coordinator:

Maggie McConnell
Azimuth Consulting Group
218-2902 West Broadway
Vancouver, BC, V6K 2G8
Telephone: 604-730-1220
Email: mmcconnell@azimuthgroup.ca

In case of **emergency**, contact Gary Mann (Azimuth telephone number 604-730-1220 or cell phone 604-908-0601).

LOCATION AND TIMING FOR FIELD ACTIVITIES:

Twelve (12) sampling stations have been chosen for benthos and sediment quality monitoring in the Meadowbank project lakes. These stations (with their corresponding abbreviation) are:

- Third Portage Lake – North Basin (TPN)
- Third Portage Lake – East Basin (TPE)
- Second Portage Lake (SP)
- Tehek Lake (TE)
- Inuggugayualik Lake (INUG)

- Tehek Lake – Far-field (TEFF)
- Third Portage Lake – South Basin (TPS)
- Wally Lake (WAL)
- Pipedream Lake (PDL)

- Baker Lake – Barge Dock (BBD)
- Baker Lake – Proposed Jetty (BPJ)
- Baker Lake – Akilahaarjuk Point (BAP)

Field activities are scheduled for once per year, in **mid/late August**. The **target water depth** at each sampling station is approximately **8 meters +/- 1.5 m**; Wally Lake is the exception, with a total water depth of approximately 6 meters (target water depth is 5 to 6 meters).

BENTHOS & SEDIMENT CHEMISTRY SAMPLING:

1. Gather field collection materials:

In the boat:

- Field collection data forms, waterproof paper, pencils, waterproof markers & clipboard

- GPS unit, batteries
- Depth meter, batteries
- pH meter, batteries
- Rope
- Petite Ponar grab and rope
- 500 micron sieve bag
- 2 stainless steel bowls
- 2 stainless steel spoons
- Liquinox detergent and dish cleaning brush
- Plastic squirt bottle
- Sampling gloves
- Safety glasses
- Field sample jars & preservatives (per sampling station):
 - ▶ 8 – 125 mL glass jars (sediment samples : 2 jars for first 3 reps; 1 jar for last 2 reps)
 - ▶ 5 – 500 mL plastic jars (benthos: 1 jar for each rep)
- QA/QC field duplicate sediment jars
- Ashless filter paper & tweezers; 1-125 mL glass jar

In camp:

- Formalin (10% of pure Formaldehyde)
- Labels for sampling containers
- Coolers, action packers (for storing and shipping samples)
- Ice packs (for shipping sediment samples to lab)
- Address labels for coolers
- Chain-of-custody forms
- Large Ziploc bags (for sending chain-of-custody form in coolers)
- Electrical tape (for sealing benthos jars)
- Packing tape (for affixing labels to sediment sample containers & sealing coolers)

2. Before going into the field, **label the lids** of all sampling containers using a permanent waterproof marker. After sampling, prepare appropriate labels for containers and affix them when bottles are dry enough to stick to. Use the following information:

- Azimuth company name
- Station abbreviation (e.g. TPE-1, INUG-3)
- Date of sample collection
- Parameters to be measured from individual jar (1 x 125 mL – total metals, pH, moisture, PAHs, LEPHs & HEPHs, Mineral Oil & Grease; 1 x 125 mL – grain size (PSA), TOC)

Affix the labels to the sediment jars and then wrap packing tape around the labels to ensure a waterproof seal.

For the **benthos containers**, print the following information directly onto both the jar and jar lid using a permanent waterproof marker:

- Azimuth company name
- Station abbreviation (e.g. TPE, INUG) and replicate number (e.g. TPE-1, TPE-2); there are a total of 5 replicates per sampling station
- Date of sample collection

Prepare **internal labels** for each of the benthos containers. On a small piece of waterproof paper, write, using a lead pencil, the station abbreviation and replicate number (e.g. TPE-1). If no

waterproof paper is available, use regular paper. Store the labels in their corresponding sampling container.

3. For **QAQC** purposes, sediment samples are collected in duplicate from one station every sampling event. All parameters measured in the original sample are measured in the field duplicate. The sampling station is selected randomly from one of the ten stations, and labeled as station DUP. Prepare the QAQC labels and affix to the sediment jars, as described in step 2. Label one new 125 mL glass jar with the Azimuth company name, date, QAQC filter and total metals.
4. A 100% formalin solution is equivalent to a solution of 37% formaldehyde. The **target formalin concentration** in each of the sampling containers is 10%. A neutral buffered formalin solution is achieved by adding a sufficient amount of calcium carbonate powder or pellets to render the solution pH neutral (pH = 7.0). Borax powder may be substituted for calcium carbonate powder if necessary.

Transport Canada allows the free transport of formalin at concentrations less than 25% formaldehyde. Consequently, the formalin transported up to Meadowbank will be diluted in half (18.5% formaldehyde / 50% formalin solution).

To **prepare** the **neutral buffered formalin**, add a small amount of calcium carbonate powder or pellets to the 50% formalin solution, seal the container and shake until mixed. Check the pH of the solution using the pH pen. Continue adding the powder/pellets until the pH of the solution reaches approximately 7.0. Store at room temperature until ready to use. Only prepare the required volume of neutral buffered formalin for that sampling event. Buffered formalin will not store for long periods of time.

Follow all **safety precautions** when preparing the formalin solution. Formalin is a carcinogen and irritant. Wear sampling gloves and safety glasses when mixing the solution and prepare the solution in a well ventilated area.

5. Before and during the benthos and sediment sampling fill in the requested information on the **field data form**; complete one field data form in its entirety for each sampling station and sampling event. Forms are made of waterproof paper; **print** all information on the form using a **lead pencil** or write-in-the-rain pen.
6. With the aid of a GPS unit, **navigate the boat** to the sampling station using the UTM coordinates (in NAD 83) provided. Approach the station from downstream of the wind direction. In windy conditions, anchor the boat upstream of the station and drift back; it is not necessary to anchor the boat in calm conditions providing the boat remains within a 50 meter radius of the position. Do not allow the anchor to drag through the sampling station. Record the UTM coordinates on the field data form.
7. Measure the **water depth** at the sampling station using the 'Hawkeye' hand-held depth meter (or transom-mounted lowrance). Hold the meter in the water, facing the lake bottom, until the meter measures the depth. Record this information on the field data form Ensure sample depth is within the target (8 meters +/- 1.5 m, or 5-6 meters for Wally).

8. Begin collecting the benthos samples. Collecting the sediment first would disturb the benthic community.
9. Ensure the rope is securely attached to the **Ponar**. Rinse the Ponar grab, stainless steel bowl and spoon with lake water. **Wash** each of these items with liquinox soap by scrubbing with the dish cleaning brush and then thoroughly rinse with lake water. Put aside the stainless steel bowl and spoon until later (step 18).
10. Lower the **Ponar** to within 1 meter of the bottom of the lake. Lower the Ponar very slowly over the last meter and allow the rope to go slack. Raise the Ponar to the edge of the boat and check the grab for **acceptability**. The grab is acceptable if the sample:
 - does not contain large foreign objects;
 - has adequate penetration depth (i.e., 10-15 centimeters);
 - is not overfilled (sediment surface must not be touching the top of the Ponar);
 - did not leak (there is overlying water present in Ponar); and
 - is undisturbed (sediment surface relatively flat).Once the grab is deemed acceptable, open the Ponar jaws and drop the sample into a stainless steel bowl. Rinse the ponar with squirt bottles to make sure all of the material is in the bowl. Gently pour the contents of the bowl into the 500 micron sieve bag.
11. **Sieve the sample** in the lake water until only the benthic organisms and coarse materials remain. Care must be taken to ensure the benthic organisms are not damaged or crushed. Do not disturb the sample to the point that it is splashing out of the sieve. Do not forcibly push materials through the sieve; gently break apart any small clay balls. Rinse off any pieces of larger plant material or rocks in the sample and discard.
12. **Flush the remaining sample** in the bottom of the sieve into the pre-labeled plastic sampling container (i.e. station-1 jar). A plastic squirt bottle filled with lake water is useful for this purpose.
13. **Repeat steps 10-12**, flushing the sample into the same pre-labeled plastic sampling container (i.e., station-1 jar). Ensure the sample is collected in an area not previously disturbed by the Ponar. The two independent grabs (per replicate) are composited to increase the surface area sampled.
14. **Rinse the sieve** bag to clear out any debris in the screen. To rinse, hold the sieve upside down and raise and lower the sieve into the water.
15. **Repeat steps 10-14** four more times; there must be a separation of **20 meters** or more from other replicate stations. Record the depth and GPS coordinates of each replicate station on the field data form. Put the samples from each replicate in pre-labeled station replicate jars 2 through 5. In total, 10 Ponar grabs will be collected for benthos collection, two grabs per replicate.
16. Ensure internal labels are in each sample container. Shake the formalin to ensure all of the calcium carbonate powder is in solution. **Add** a sufficient volume of **formalin** to each sampling container to make a corresponding formalin solution of approximately 10%. Volumes of formalin are added by 'eye' (for a 10% solution, a ratio of 4 parts water and 1 part 50% formalin solution). Overall, there must be enough liquid in the jar to cover the entire sample. Seal the sample container securely and gently roll the container to mix the sample and formalin solution. Do not shake the sample container; this will crush the benthic organisms inside.

17. Prior to collecting the next REP, clean ponar and both bowls with liquinox and scrub brush, rinse with lake water. Begin collecting the sediment samples. Lower the **Ponar** to within 1 meter of the bottom of the lake, in an area not previously disturbed by the Ponar. Lower the Ponar very slowly over the last meter and allow the rope to go slack. Raise the Ponar to the edge of the boat and check the grab for **acceptability** (see step 10 for criteria).
18. Once the grab is deemed acceptable, open the top of the Ponar and remove any overlying water. Using the pre-cleaned stainless steel spoon, scoop out the **top 3-5 centimeters** of **sediment** and place in the pre-cleaned stainless steel bowl. Empty the remainder of the grab sample into a bucket in the boat, not directly into the lake, to ensure the area is not disturbed.
19. **Repeat steps 17 and 18** one or two more times, placing the sediment into the bowl with the other sediment sample(s).
20. **Homogenize** the sediment samples in the stainless steel bowl (by stirring with the spoon) until the sediment is thoroughly mixed. Scoop the sediment into pre-labeled sediment sampling containers. **Fill the jars** to the top and seal securely.
21. If this station is selected as the QAQC **field duplicate**, using the tweezers and a set of clean sampling gloves, **swipe** the stainless steel bowl and spoon with one piece of ashless **filter paper** and store in the pre-labeled 125 mL glass jar. Collect the duplicate sediment sample from the same sediment collected in steps 17-20. Fill the sampling containers labeled as station DUP. Record that the QAQC samples were collected from this sampling station on the field data form.
22. **Complete the field data form**, including a description of the sediment (grain size, consistency, colour, presence of biota, sheen, unusual appearance) and the sampling effort (equipment failure, control of vertical descent of sampler) required to collect the benthos and sediment samples.
23. **Rinse** out the Ponar, stainless steel bowl and spoon with lake water. Dump the sediment and water from the plastic bin into the lake.
24. Until ready for shipping, store the sediment samples and QAQC filter paper **chilled** (on ice) in a cooler or in a refrigerator in camp, if space is available. The sediment sampling containers may be put in plastic bags prior to storage on ice to further protect the labels from water damage. Benthos samples are stored in a cooler or action packer at **room temperature**.
25. Fill out a **chain-of-custody** form for the sediment samples being sent to **ALS Environmental**. The COC form must be completed carefully and in its entirety to ensure proper analysis. This includes listing all of the specific parameters to be analyzed (see step 2), Azimuth and ALS contact names, and checking off all of the specific boxes for requested analyses. The ALS laboratory quote number must be printed on the COC form to ensure proper billing.

A **digital COC** form is most commonly used; this form can be filled out in advance to ensure accuracy and efficiency and amended in the field as required. However, using a digital copy of the COC requires printing 2 copies of the document in the field (one for the laboratory, one for Azimuth). Any questions regarding the COC form should be directed to the Azimuth project coordinator – Maggie McConnell. Put the completed COC form in a sealed ziploc plastic bag in the cooler with the samples.

26. Fill out a **chain-of-custody** form for the benthos samples being sent to **Zaranko Environmental Assessment Services (ZEAS)**. Complete all of the required fields and then put the form in a sealed ziploc plastic bag in the cooler with the benthos samples.

PACKAGING & SHIPPING SAMPLES:

1. Ensure all **sediment samples** are **sealed** securely. **Pack** sediment sampling containers upright in a cooler with ice packs, and packing material, to ensure containers do not break during transport. (Ideal storage and transport temperature is 4°C).
2. Ensure the COC form is enclosed and then seal the cooler(s). **Label the cooler(s)** with the following address:

ALS Environmental
101-8081 Lougheed Hwy.
Burnaby, BC, Canada
V5A 1W9
Tel: 604-253-4188
Attention: Brent Mack

3. Ensure **benthos samples** are **sealed** securely. Wrap electrical tape around the edge of the lids to ensure a tight seal. **Pack** benthos sampling containers upright in a cooler or action packer; ensure the cooler/action packer is well packed so the jars are not able to move around.
4. Ensure the COC form is enclosed and then seal the cooler(s). **Label the cooler(s)** with the following address:

Zaranko Environmental Assessment Services (ZEAS)
36 McCutcheon Avenue
P.O. Box 1045
Nobleton, ON
L0G 1N0
Tel: 905-859-7976

5. **Ship** the sediment **samples** to ALS Environmental as quickly as possible. Ship the benthos samples to ZEAS when convenient. Coordinate shipping with the camp manager.
6. Send completed **COC forms** and **field data forms** to **Azimuth Consulting Group Inc.**, attention the project coordinator – Maggie McConnell.

APPENDIX D

STANDARD OPERATING PROCEDURE (SOP) FOR CREMP ZOOPLANKTON SAMPLING



Standard Operating Procedure

Meadowbank Project Lakes

CREMP Zooplankton Sampling

GENERAL:

Project Coordinator:

Maggie McConnell
Azimuth Consulting Group
218-2902 West Broadway
Vancouver, BC, V6K 2G8
Telephone: 604-730-1220
Email: mmcconnell@azimuthgroup.ca

In case of **emergency**, contact Gary Mann (Azimuth telephone number 604-730-1220 or cell phone 604-908-0601).

LOCATION AND TIMING FOR FIELD ACTIVITIES:

Nine (9) sampling stations have been chosen for zooplankton monitoring in the Meadowbank project lakes. These stations (with their corresponding abbreviation) are:

- Third Portage Lake – North Basin (TPN)
- Third Portage Lake – East Basin (TPE)
- Second Portage Lake (SP)
- Tehek Lake (TE)
- Inuggugayualik Lake (INUG)

- Tehek Lake – Far-field (TEFF)
- Third Portage Lake – South Basin (TPS)
- Wally Lake (WAL)
- Pipedream Lake (PDL)

Field activities are scheduled for once per year, in **mid/late August**. The target **water depth** at each sampling station is 10 meters (at least > 8 m).

ZOOPLANKTON SAMPLING:

1. Gather field collection materials:

In the boat:

- Field collection data forms, waterproof paper, pencils, waterproof markers & clipboard
- GPS unit, batteries
- Depth meter, batteries
- pH meter, batteries
- Rope
- 70 micron nitex plankton net (30 cm diameter; 2.2 m long)
- Flow meter for net

- Plastic squirt bottle
- Sampling gloves
- Safety glasses
- Field sample jars (per sampling station):
 - ▶ 20 – 500 mL plastic jars

In camp:

- Buffered formalin (10% Formaldehyde)
- Coolers, action packers (for storing and shipping samples)
- Address labels for coolers
- Chain-of-custody forms
- Large Ziploc bags (for sending chain-of-custody form in coolers)
- Electrical tape (for sealing zooplankton jars)
- Packing tape (for sealing coolers)

Before going into the field, **label all the lids and sampling containers** using a permanent waterproof marker. Print the following information directly onto both the jar and jar lid using a permanent waterproof marker:

- Azimuth company name
- Station abbreviation (e.g. TPE-1-B, INUG-3-B)
- Date of sample collection
- Parameters to be measured from individual jar (10 x 500 mL – Taxonomy; 10 x 500 mL – Biomass)

The following table lists the number of jars to be filled per sampling area (i.e., lake basin), naming convention to use, number of tows per replicate, analyses and preservatives required for each.

Sampling Containers / Area	Sample ID / Rep e.g.,	Tows / Rep	Analyses	Preservatives
10 x 500 mL plastic wide-mouth jar	TPE-1-B through TPE-10-B	2 tows	Biomass Analysis	5-10% Formalin
10 x 500 mL plastic wide-mouth jar	TPE-1-T through TPE-10-T	2 tows	Taxonomic Identification	5-10% Formalin

Prepare **internal labels** for each of the zooplankton containers. On a small piece of waterproof paper, write, using a lead pencil, the station abbreviation and replicate number (e.g. TPE-1). If no waterproof paper is available, use regular paper. Store the labels in their corresponding sampling container.

2. A 100% formalin solution is equivalent to a solution of 37% formaldehyde. The **target formalin concentration** in each of the sampling containers is 10% (i.e., 1/10th of the 37% solution). A neutral buffered formalin solution is achieved by adding a sufficient amount of calcium carbonate powder or pellets to render the solution pH neutral (pH = 7.0). Borax powder may be substituted for calcium carbonate powder if necessary.

Transport Canada allows the free transport of formalin at concentrations less than 25% formaldehyde. Consequently, the formalin transported up to Meadowbank will be diluted in half (18.5% formaldehyde / 50% formalin solution).

Store at room temperature until ready to use. Only prepare the required volume of neutral buffered formalin for that sampling event. Buffered formalin will not store for long periods of time. Do not freeze the formalin solution as this renders it useless.

Follow all **safety precautions** when preparing the formalin solution. Formalin is a carcinogen and irritant. Wear sampling gloves and safety glasses when mixing the solution and prepare the solution in a well ventilated area.

3. Before and during the zooplankton sampling fill in the requested information on the **field data form**; complete one field data form in its entirety for each sampling station and sampling event. Forms are made of waterproof paper; **print** all information on the form using a **lead pencil** or write-in-the-rain pen.
4. With the aid of a GPS unit, **navigate the boat** to the sampling station using the UTM coordinates (in NAD 83) provided. Approach the station from downstream of the wind direction. In windy conditions, anchor the boat upstream of the station and drift back; it is not necessary to anchor the boat in calm conditions providing the boat remains within a 50 meter radius of the position. Do not allow the anchor to drag through the sampling station. Record the exact UTM coordinates on the field data form.
5. Measure the **water depth** at the sampling station using the 'Hawkeye' hand-held depth meter (or transom-mounted lowrance). Hold the meter in the water, facing the lake bottom, until the meter measures the depth. Record this information on the field data form. Prior to sampling, make sure that the depth below the boat is at least **10 m**, to allow for a standard 8 m sampling depth, plus the length of the net (~2 m).
6. Ensure the rope is securely attached to the **Plankton Net**. Rinse the net with lake water. Lower the **Plankton Net** to 8 meters and wait for 30 seconds. Slowly tow the net towards the surface at a rate of about 0.3 m /second. It should take nearly 30 seconds to raise the net so that the mouth is above the water surface. Ensure consistency in tow by checking rate on the flow meter. Rinse the sidewalls of the net well by splashing water onto the outsides of the net to wash any zooplankters down towards the cod end of the net (i.e., the collecting vessel).
7. **Empty the sample** from the collecting vessel into the pre-labeled plastic sampling container (i.e. station-1 jar). A plastic squirt bottle filled with lake water is useful for this purpose.
8. **Repeat steps 6-7**, to acquire a second complete sample. Combine the second sample with the first sample into the same pre-labeled plastic sampling container (i.e., station-1 jar). The two tows (per replicate) are composited to increase the water volume sampled (these are for Biomass Analyses). Collect an additional 2 tows at the same station and composite for Taxonomic ID. Note the tow depth of the water sampled at each station.
9. **Rinse the net** by holding the net upside down and raise and lower the net and collecting vessel into the water to ensure that there are no zooplankters stuck inside the net.

10. **Repeat steps 6-9** nine more times. Navigate to the nine pre-determined random sample locations within the entire basin (spatial replicates). Ensure that there is sufficient depth beneath the boat. If not, move to slightly deeper water. Record the depth and GPS coordinates of each replicate station on the field data form. Put the samples from each replicate in pre-labeled station replicate jars 2 through 10. In total, 40 tows will be collected for zooplankton collection, four tows per replicate, 10 replicates.
11. Ensure internal labels are placed in each sample container. Shake the formalin to ensure all of the calcium carbonate powder is in solution. **Add** a sufficient volume of **formalin** to each sampling container to make a corresponding formalin solution of approximately 5 - 10%. Volumes of formalin are added by 'eye' (for a 10% solution, a ratio of 4 parts water and 1 part 50% formalin solution). Overall, there must be enough liquid in the jar to cover the entire sample. Seal the sample container securely and gently roll the container to mix the sample and formalin solution. Do not shake the sample container; this will crush the organisms inside.
12. **Complete the field data form**, including sampling effort (successful tows, equipment failure, control of vertical ascent of net, tow depth) required to collect the zooplankton samples.
13. Until ready for shipping, store the zooplankton samples in a cooler or action packer at **room temperature**. Dry the zooplankton net before storing away.
14. Fill out a **chain-of-custody** form for the benthos samples being sent to **North South Consultants, Winnipeg**. Complete all of the required fields and then put the form in a sealed ziploc plastic bag in the cooler with the samples.

PACKAGING & SHIPPING SAMPLES:

1. Ensure the COC form is enclosed and then seal the cooler(s). **Label the cooler(s)** with the following address:

North South Consultants Inc.
83 Scurfield Blvd.
Winnipeg, MB, Canada
R3Y 1G4
Tel: 204-284-3366
2. Ensure **samples** are **sealed** securely. Wrap electrical tape around the edge of the lids to ensure a tight seal. **Pack** sampling containers upright in a cooler or action packer; ensure the cooler/action packer is well packed so the jars are not able to move around.
3. **Ship** the samples to North South when convenient. Coordinate shipping with the camp manager.
4. Send completed **COC forms** and **field data forms** to **Azimuth Consulting Group Inc.**, attention the project coordinator – Maggie McConnell.

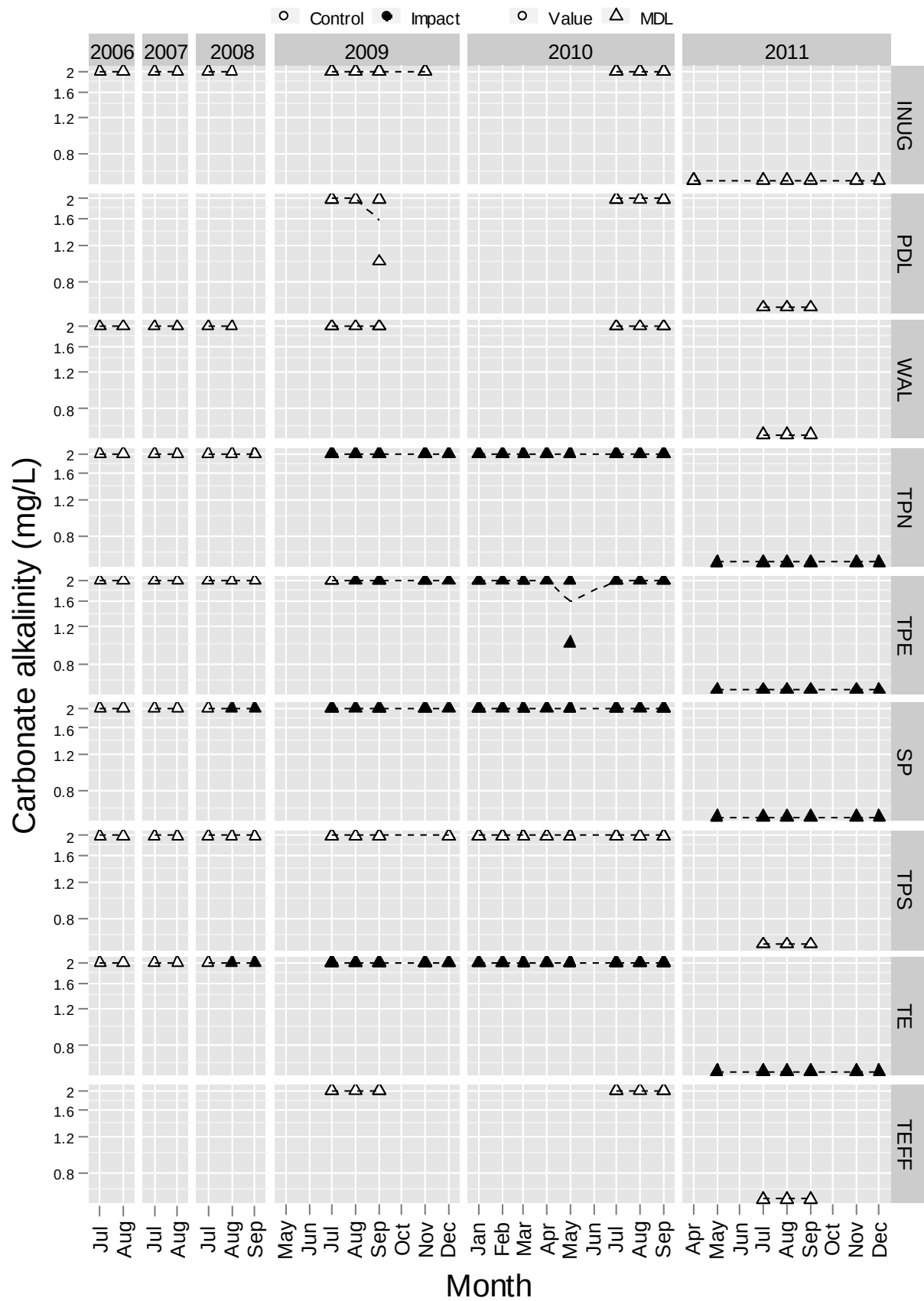
APPENDIX E

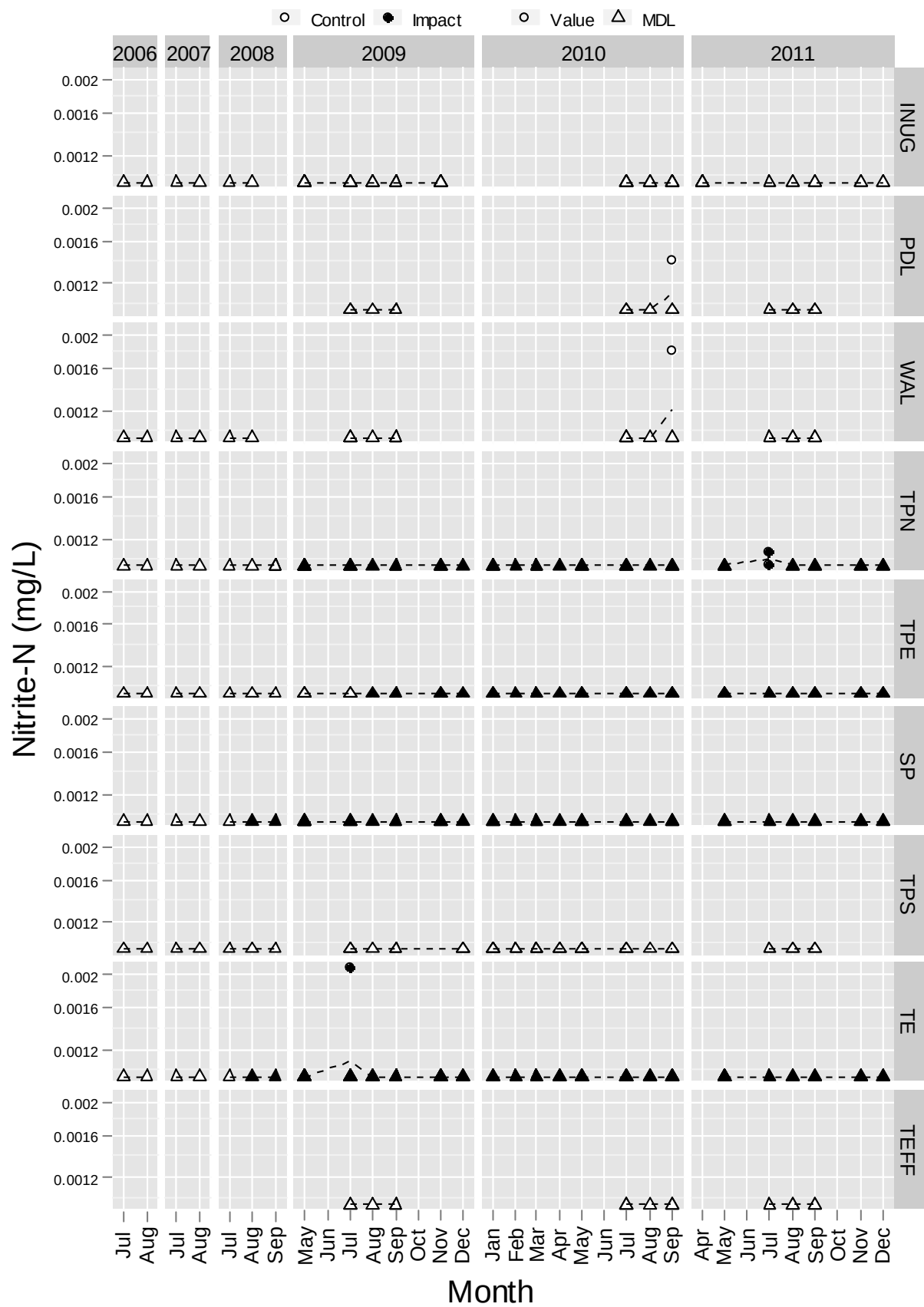
WATER QUALITY PARAMETER PLOTS 2006 – 2011

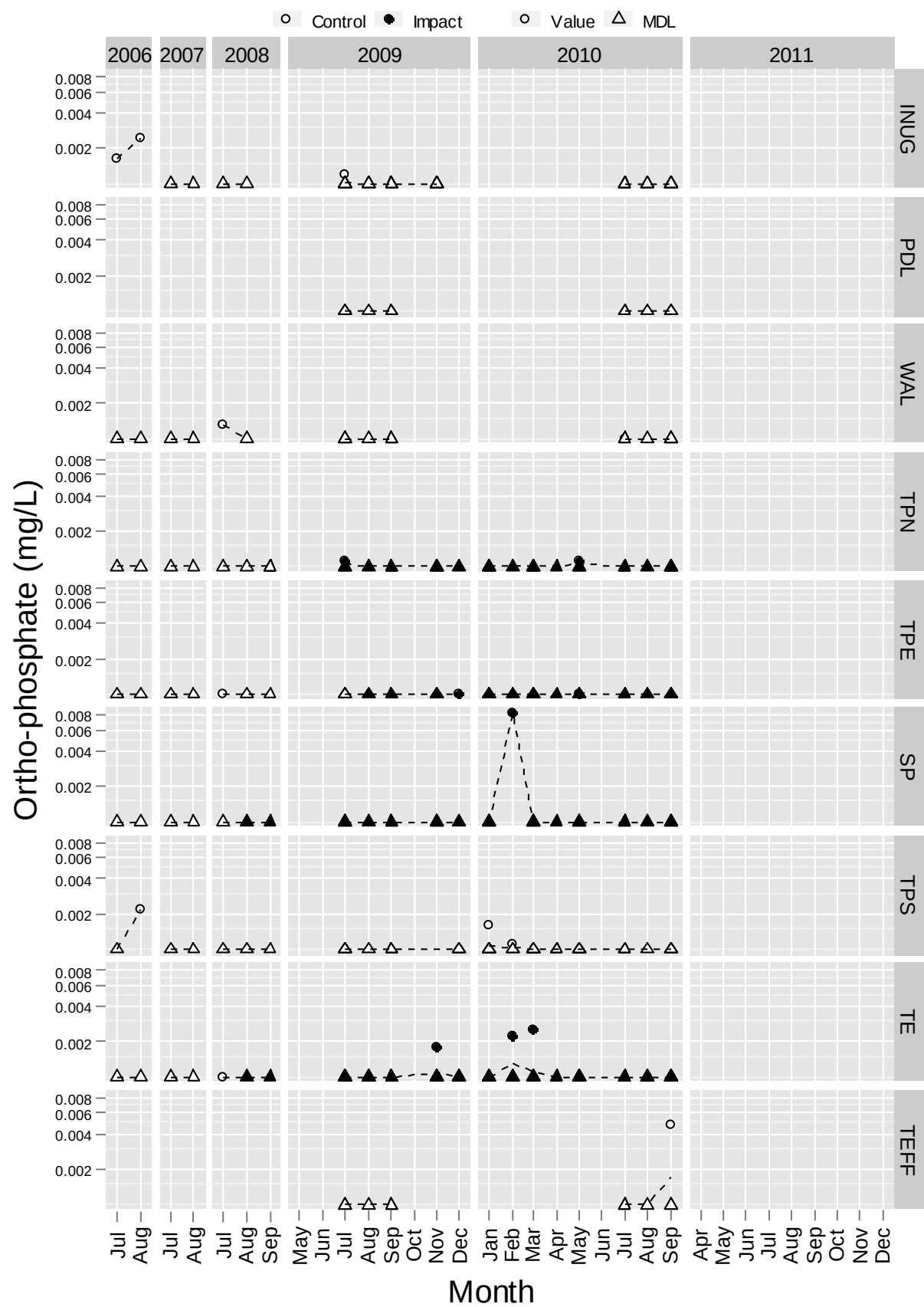


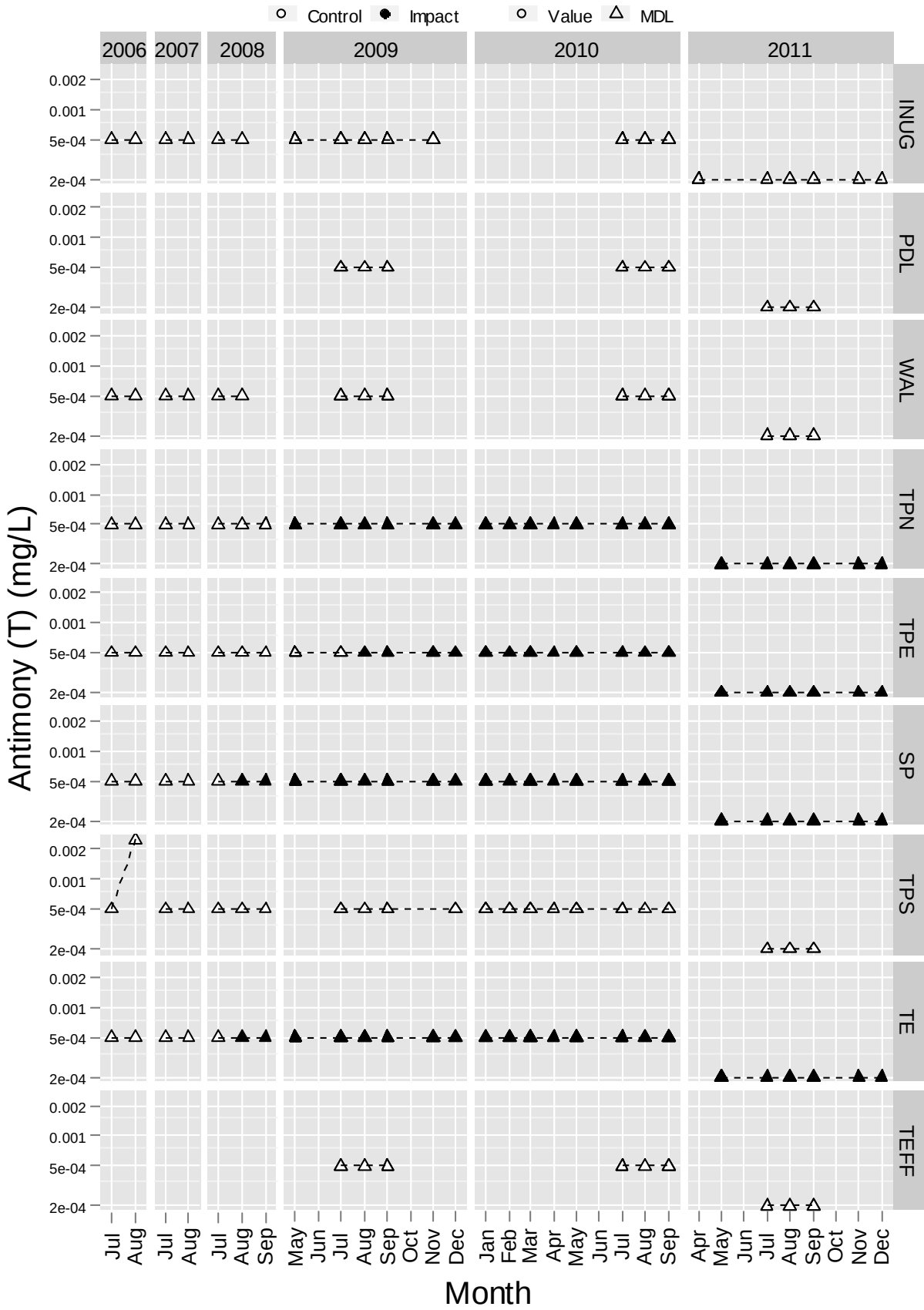
Water chemistry plots

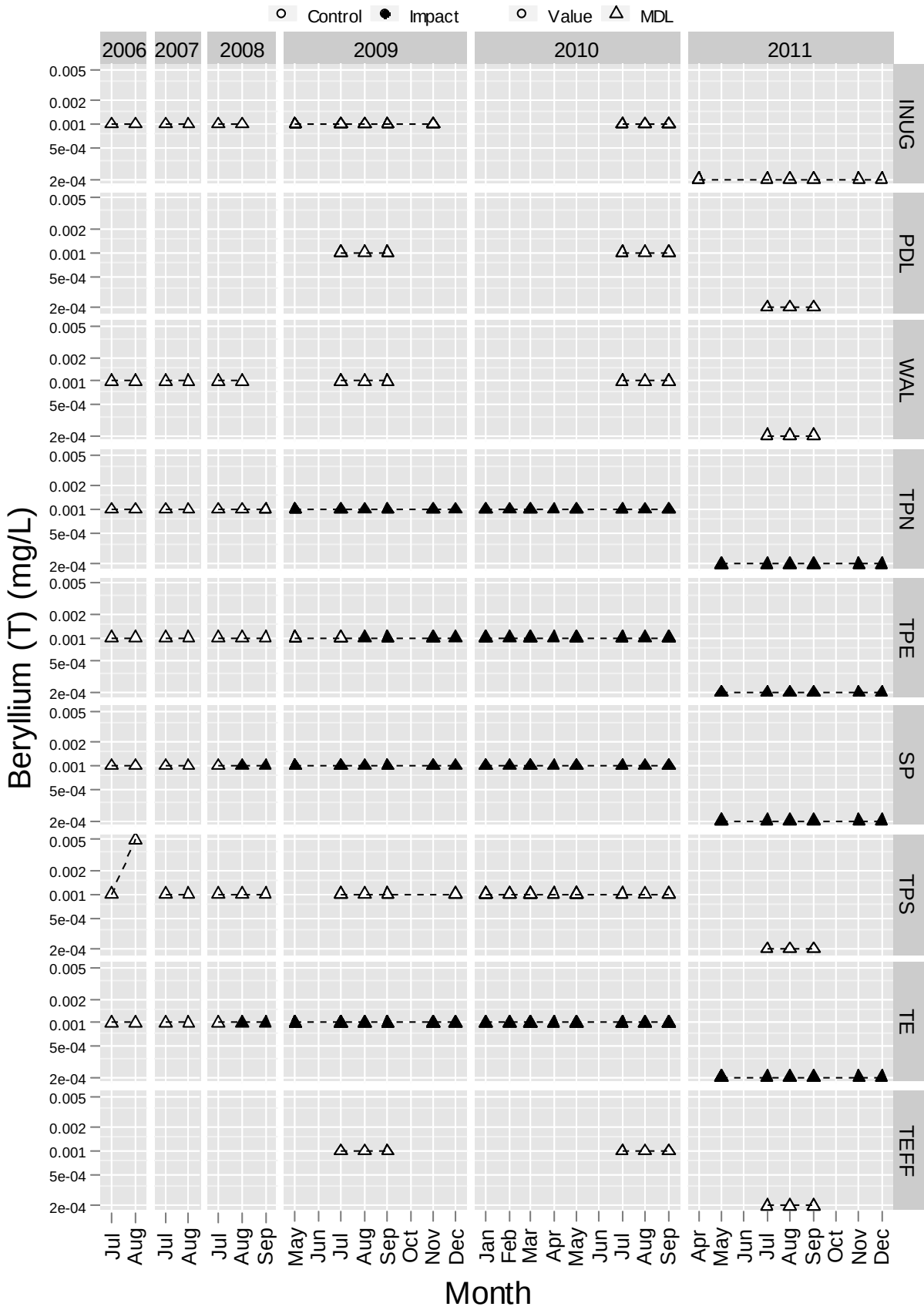
Meadowbank

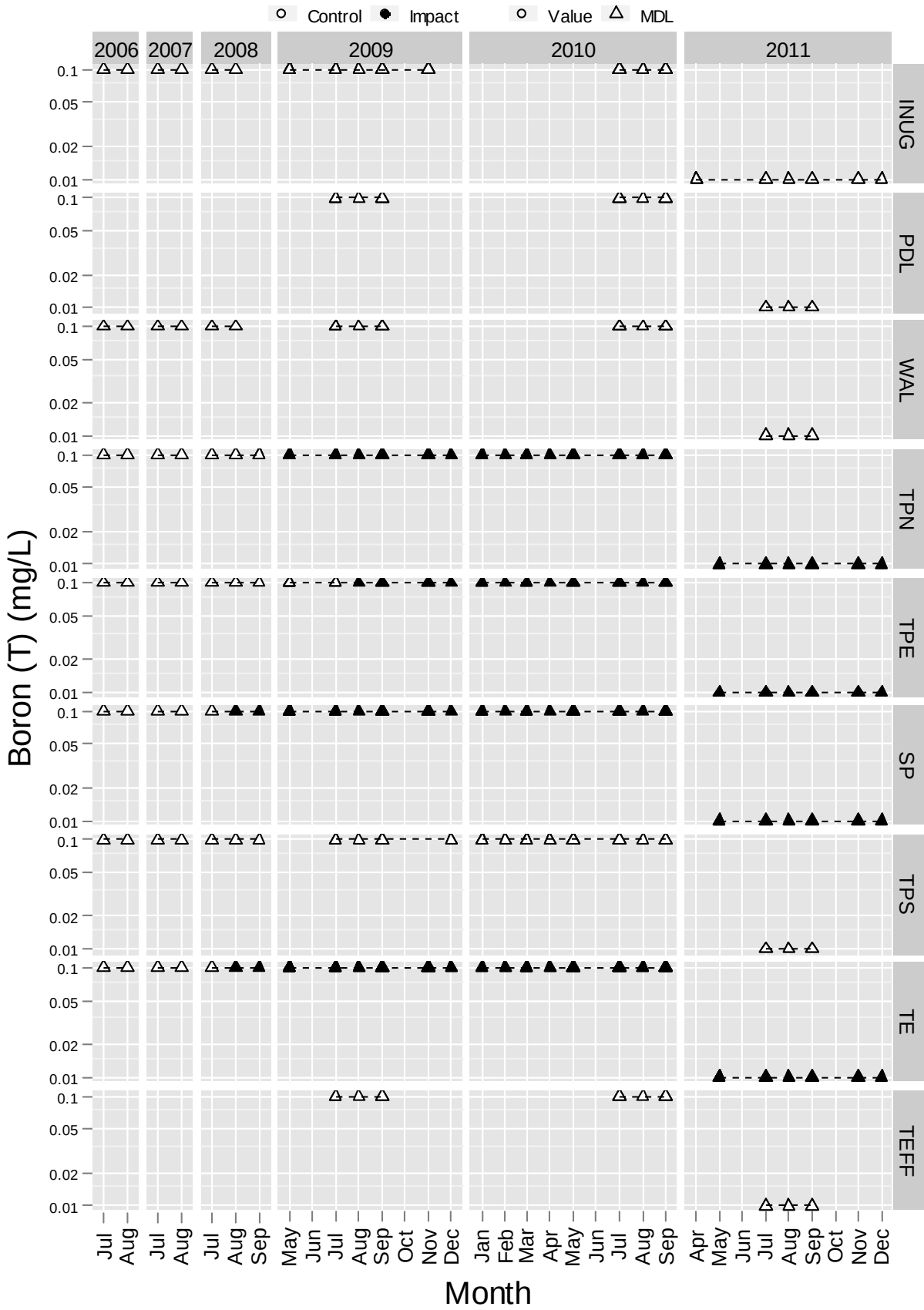


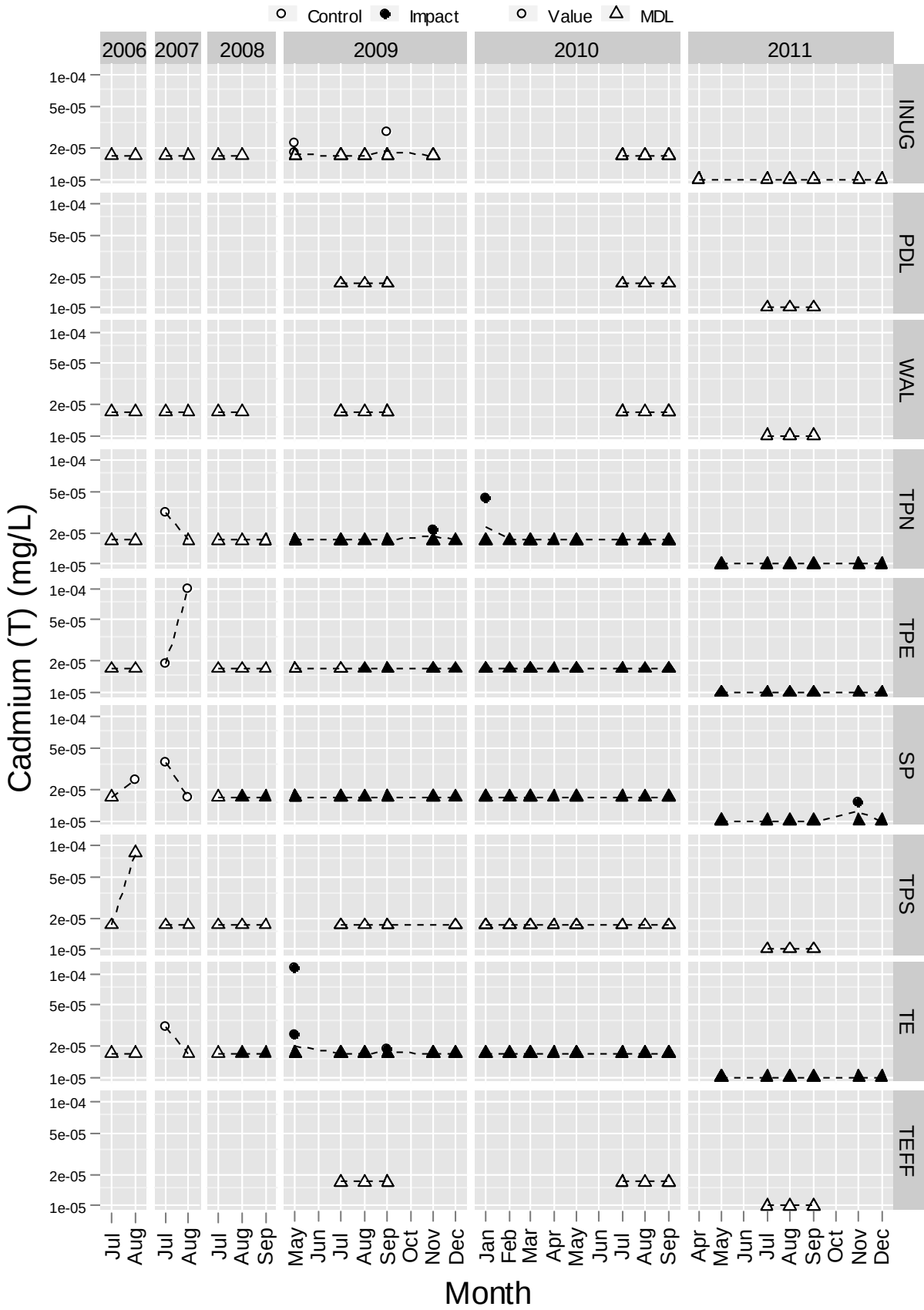


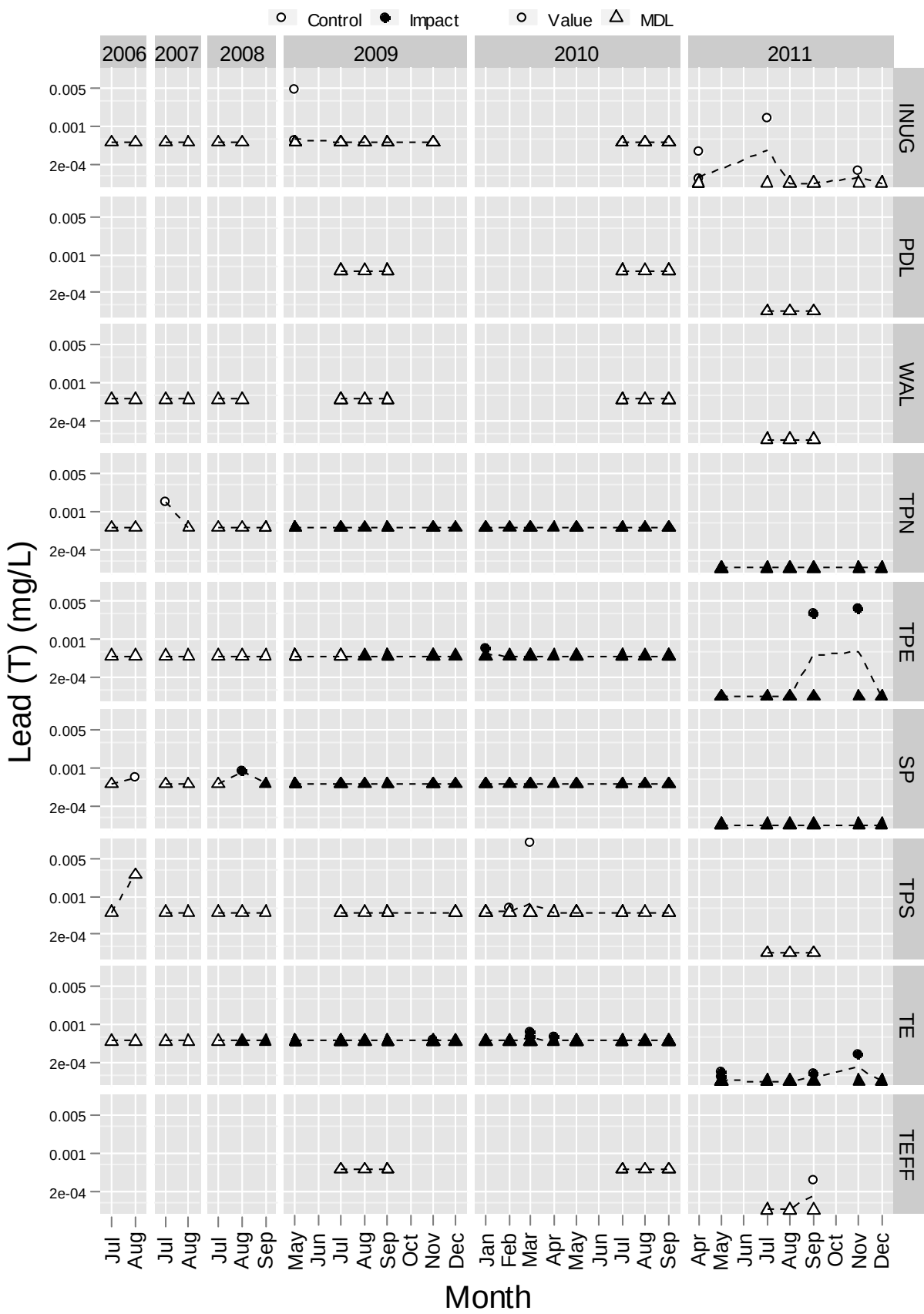


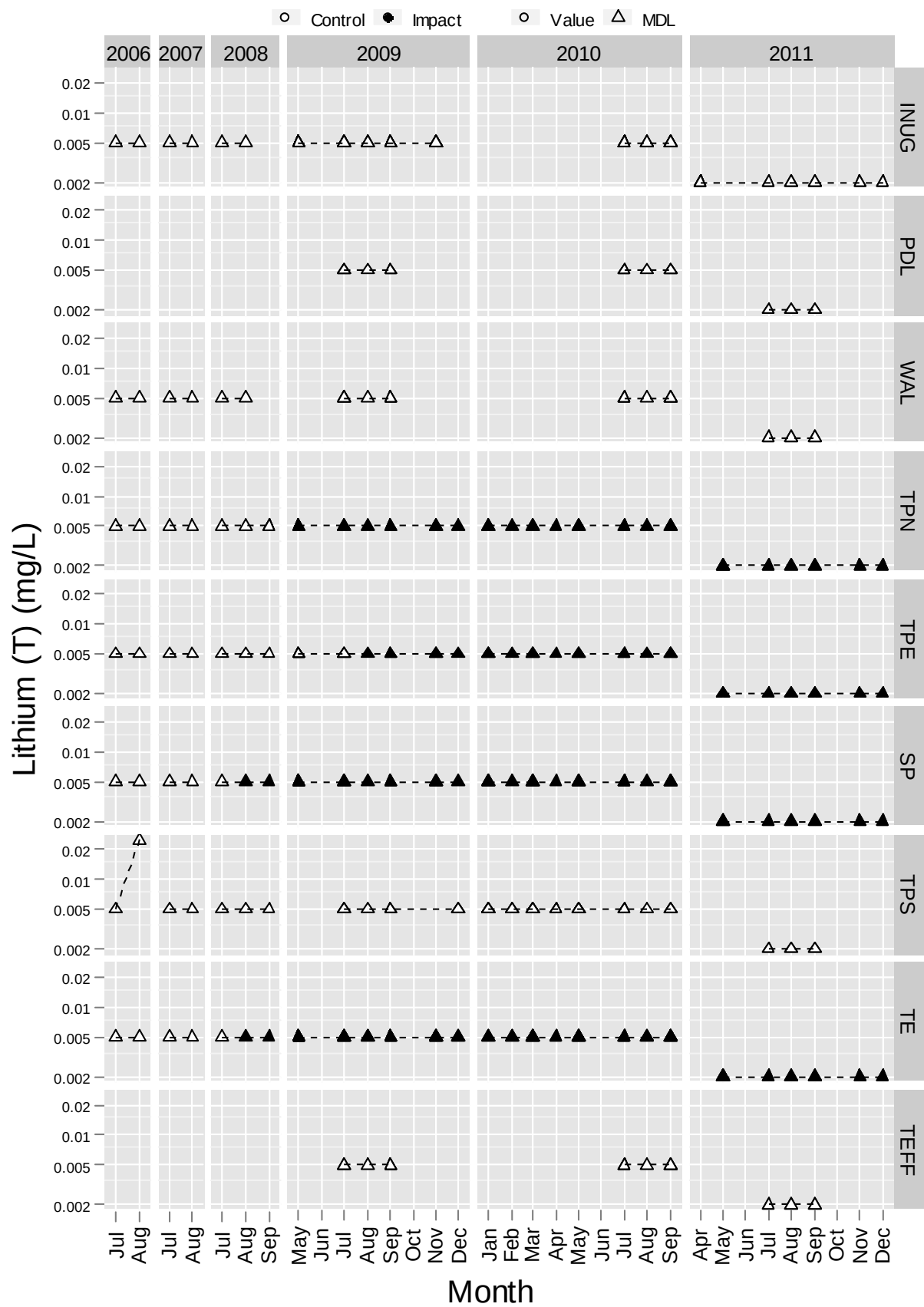


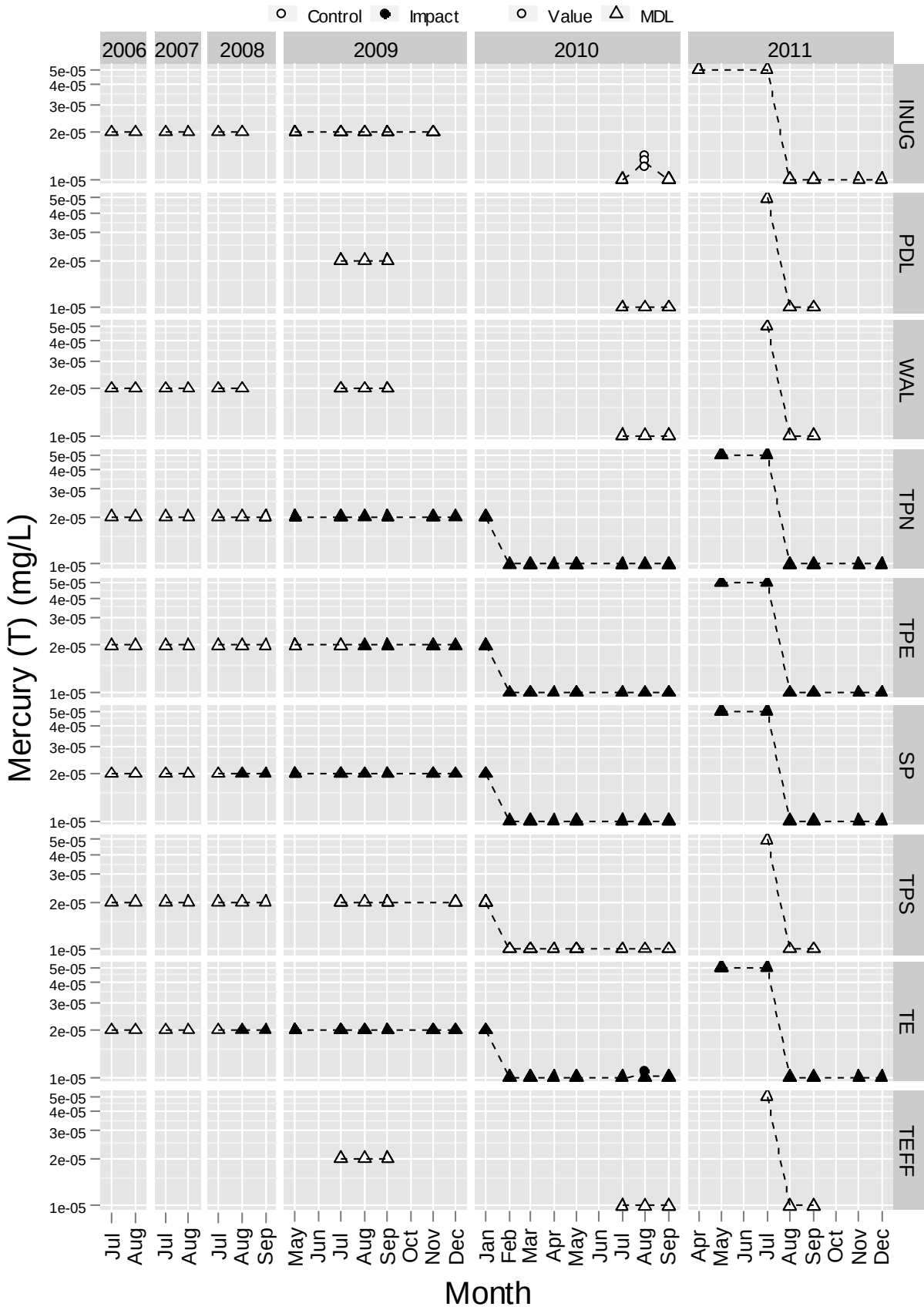


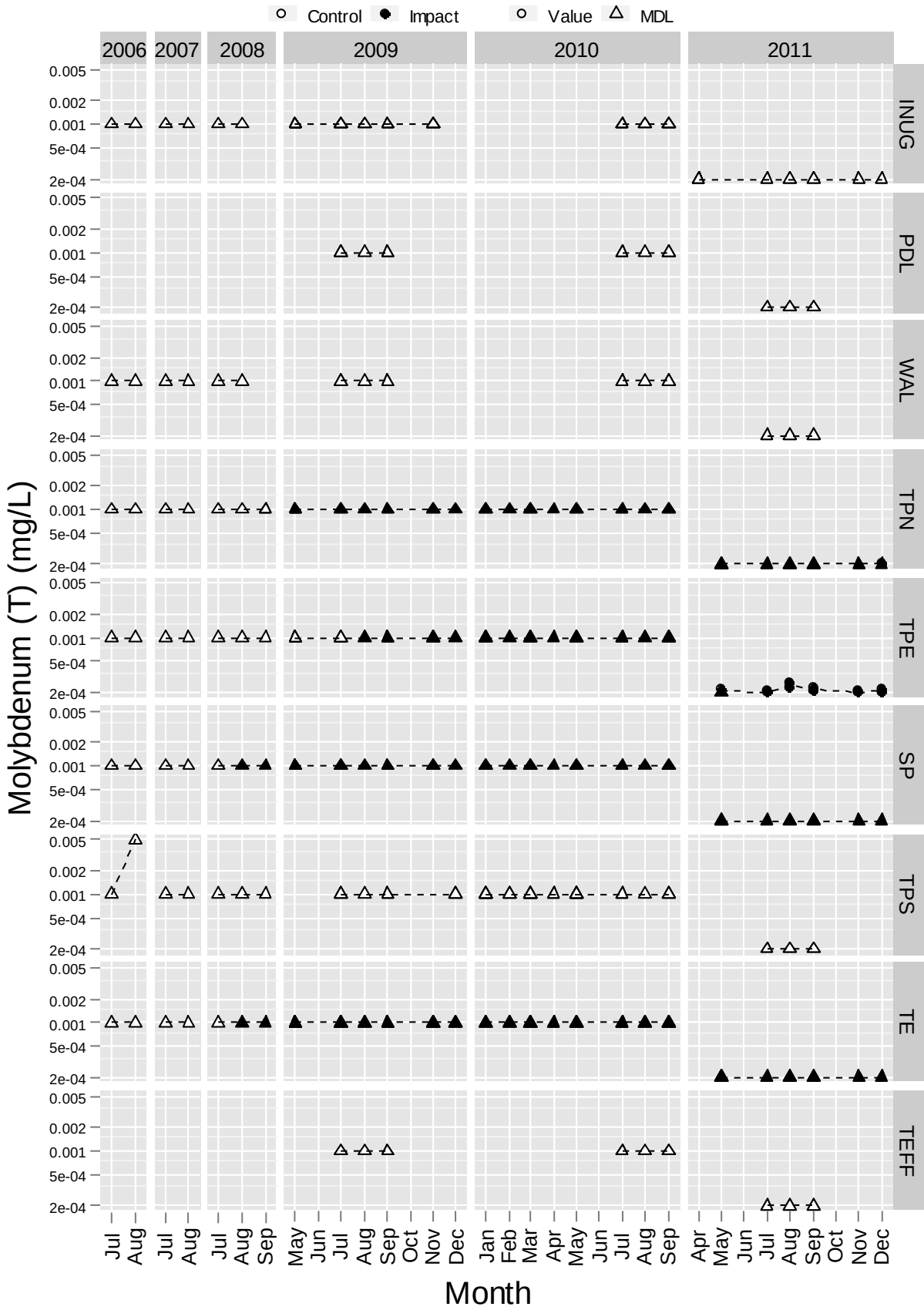


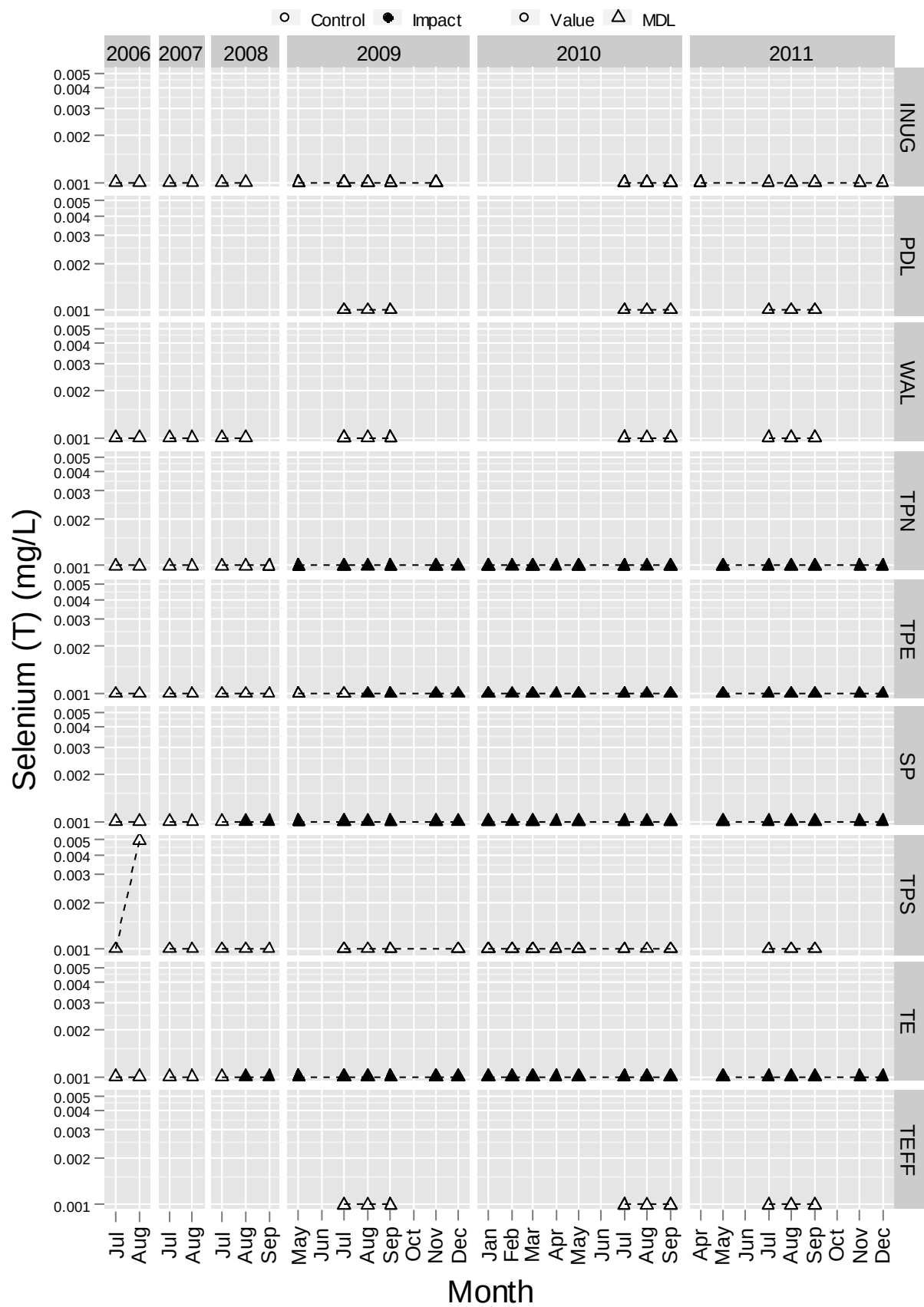


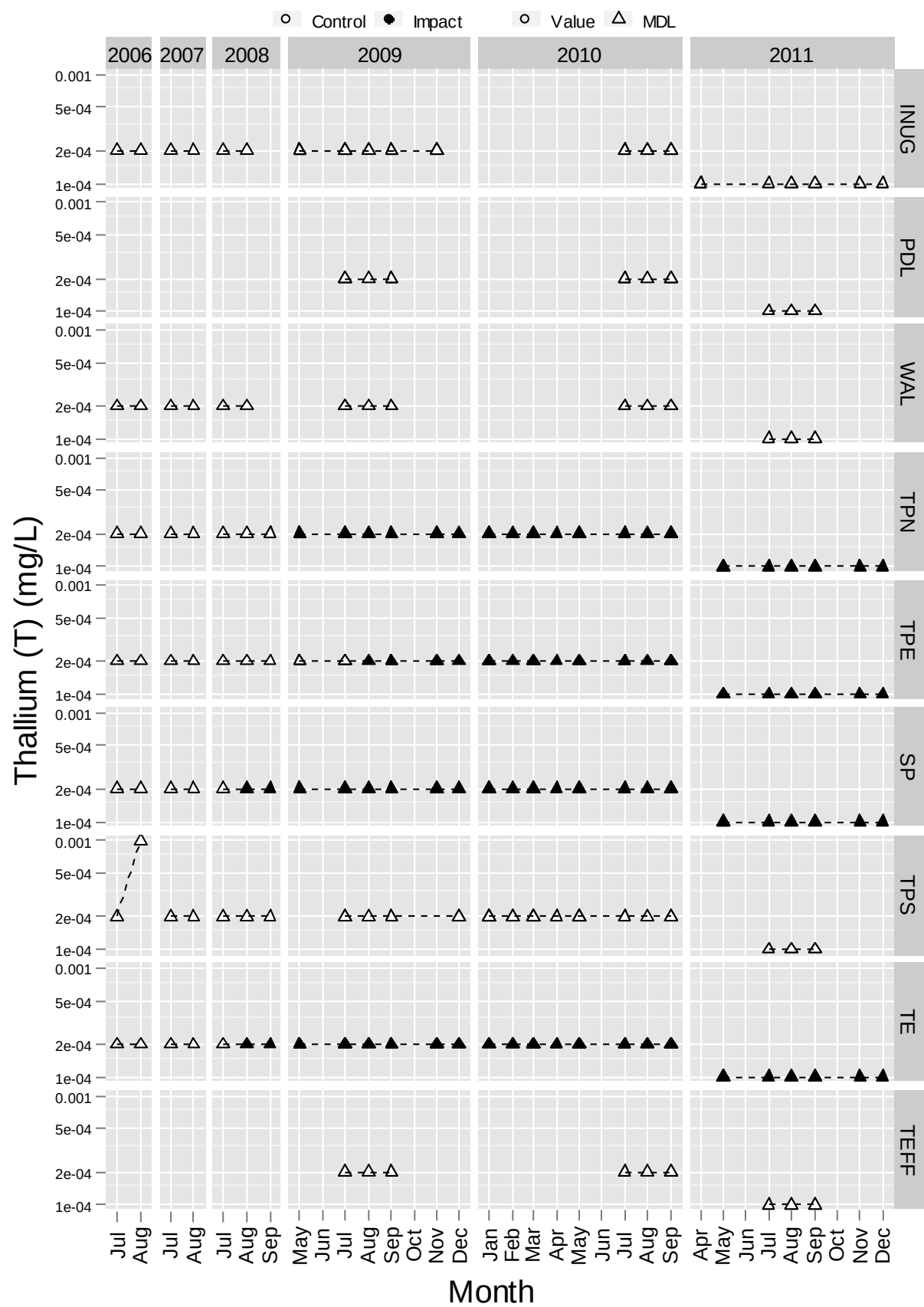


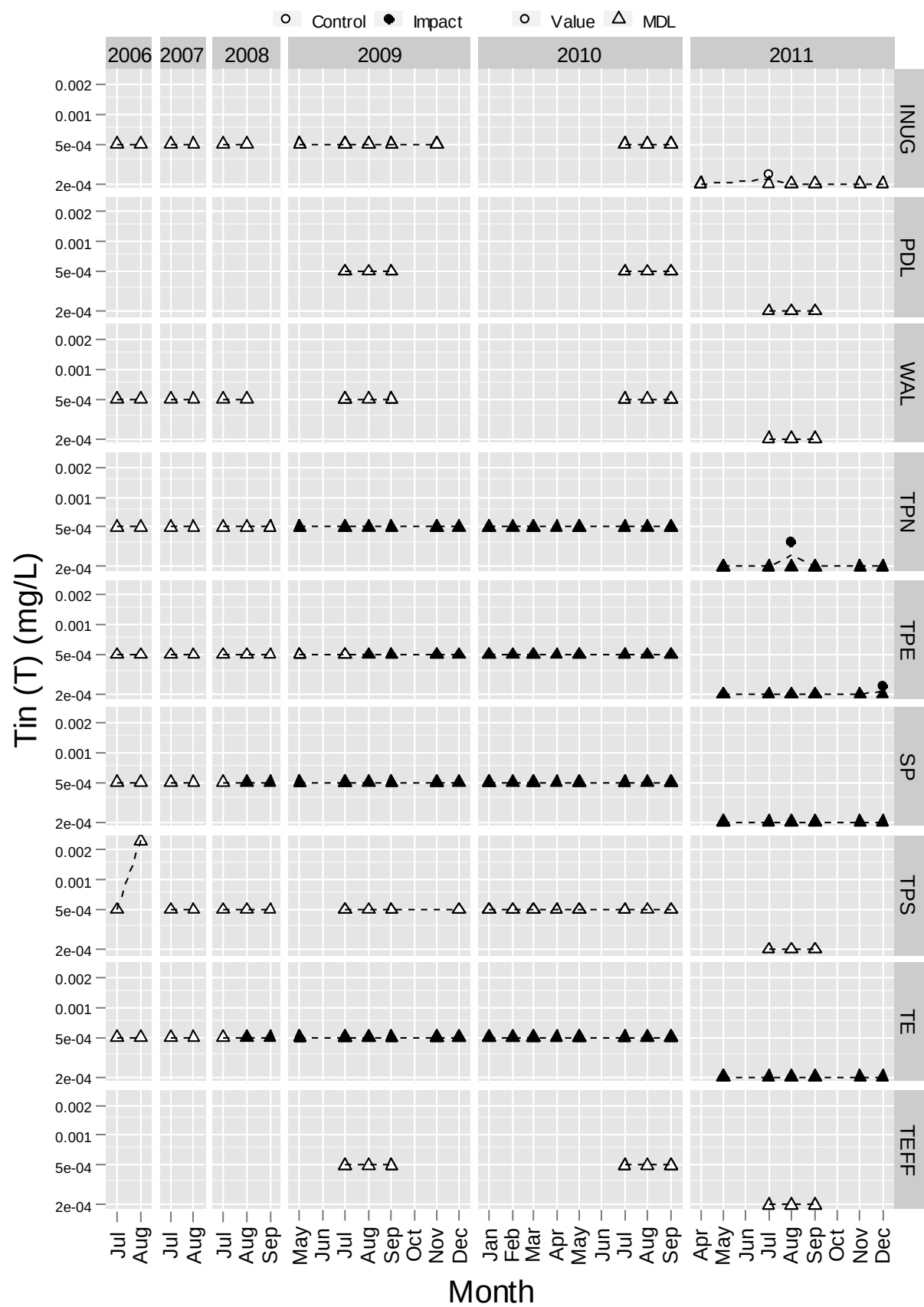


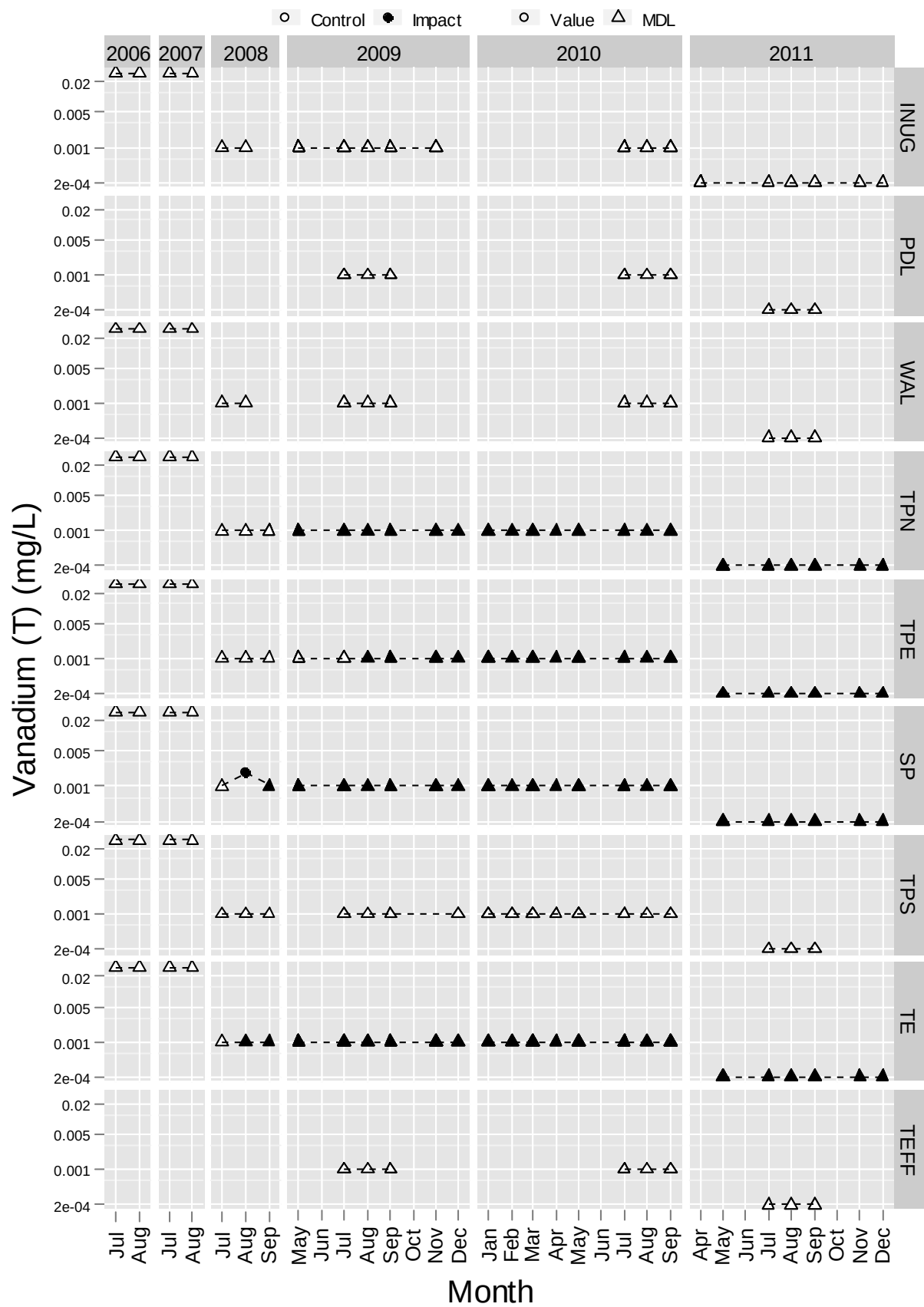


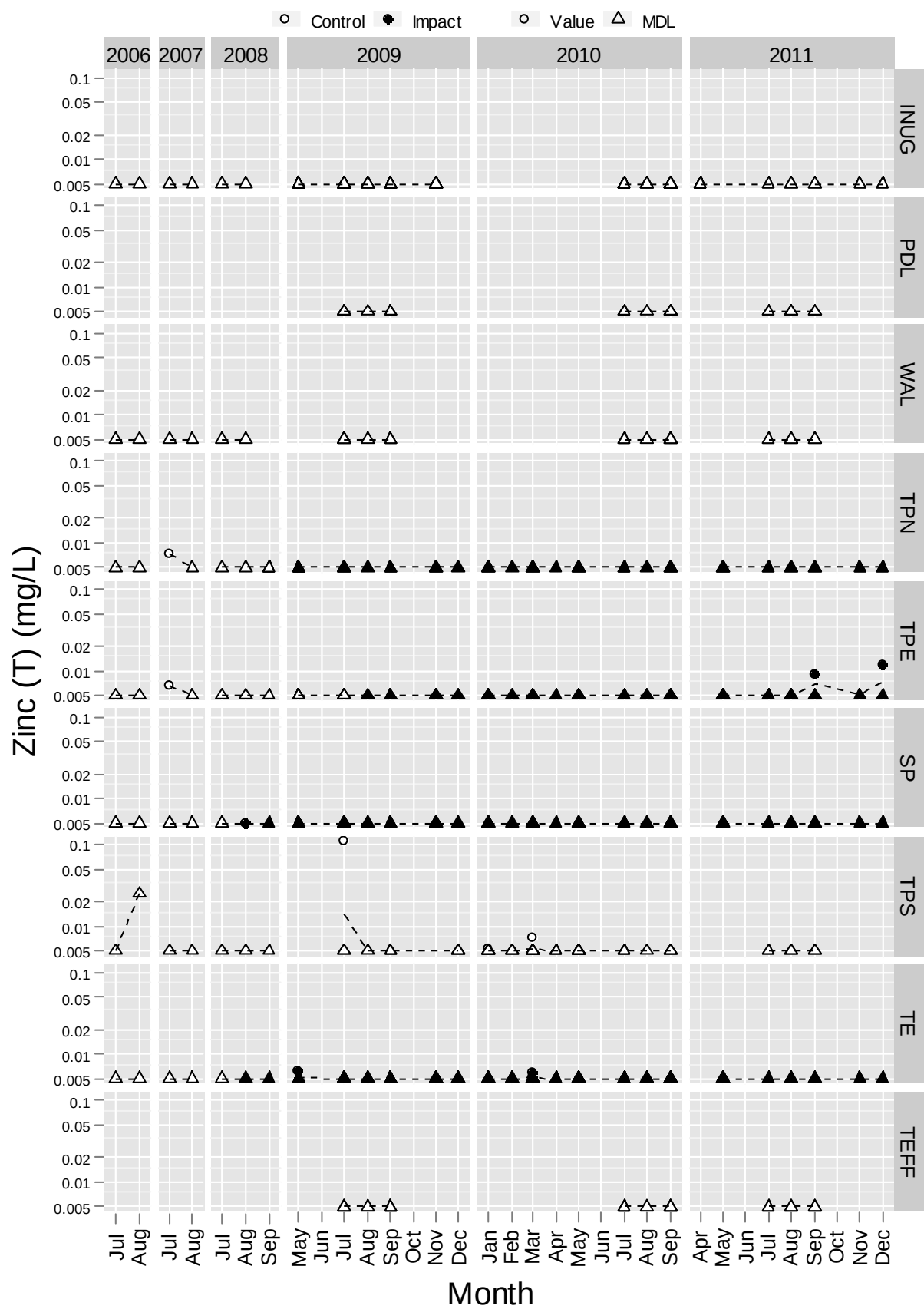


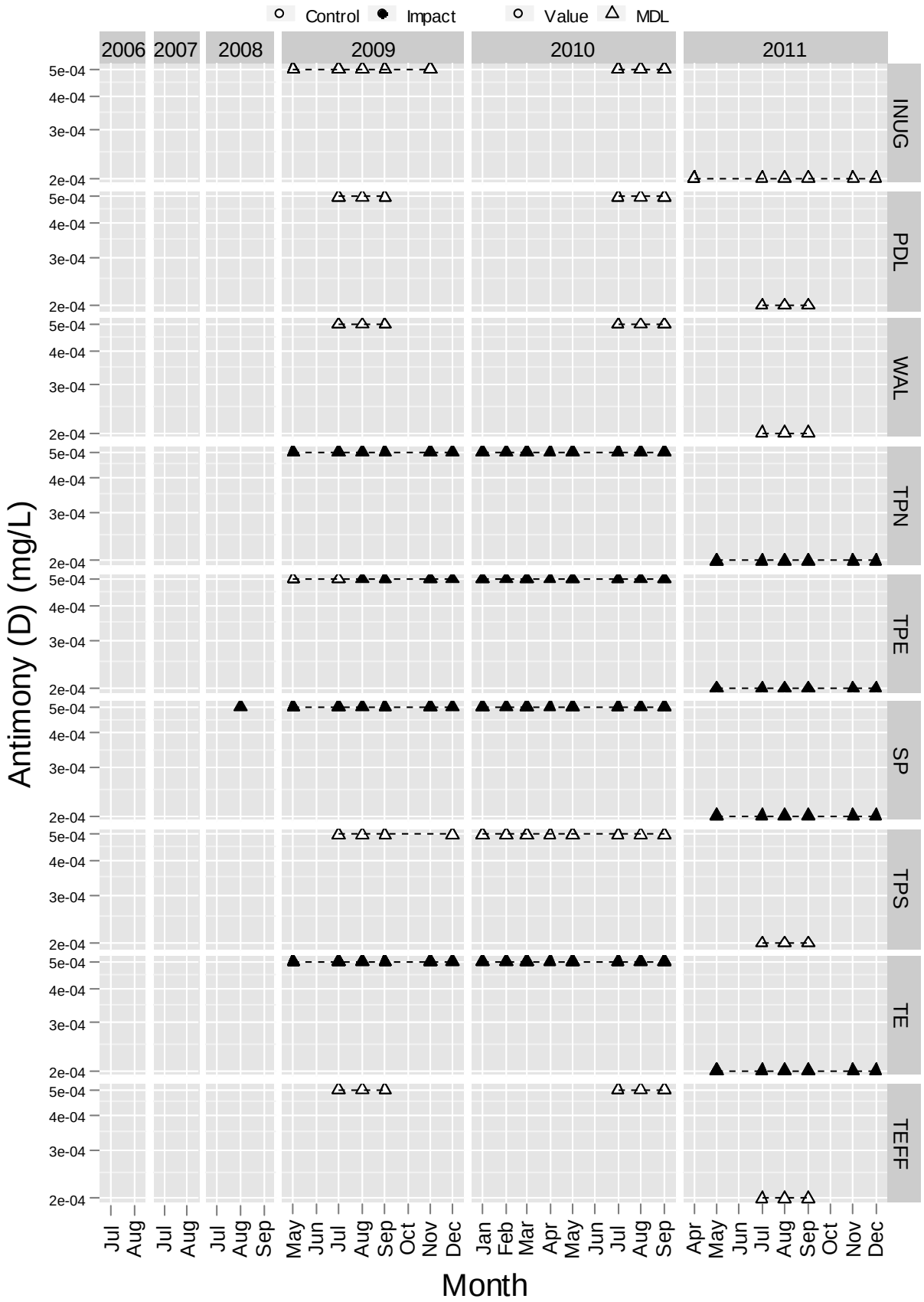


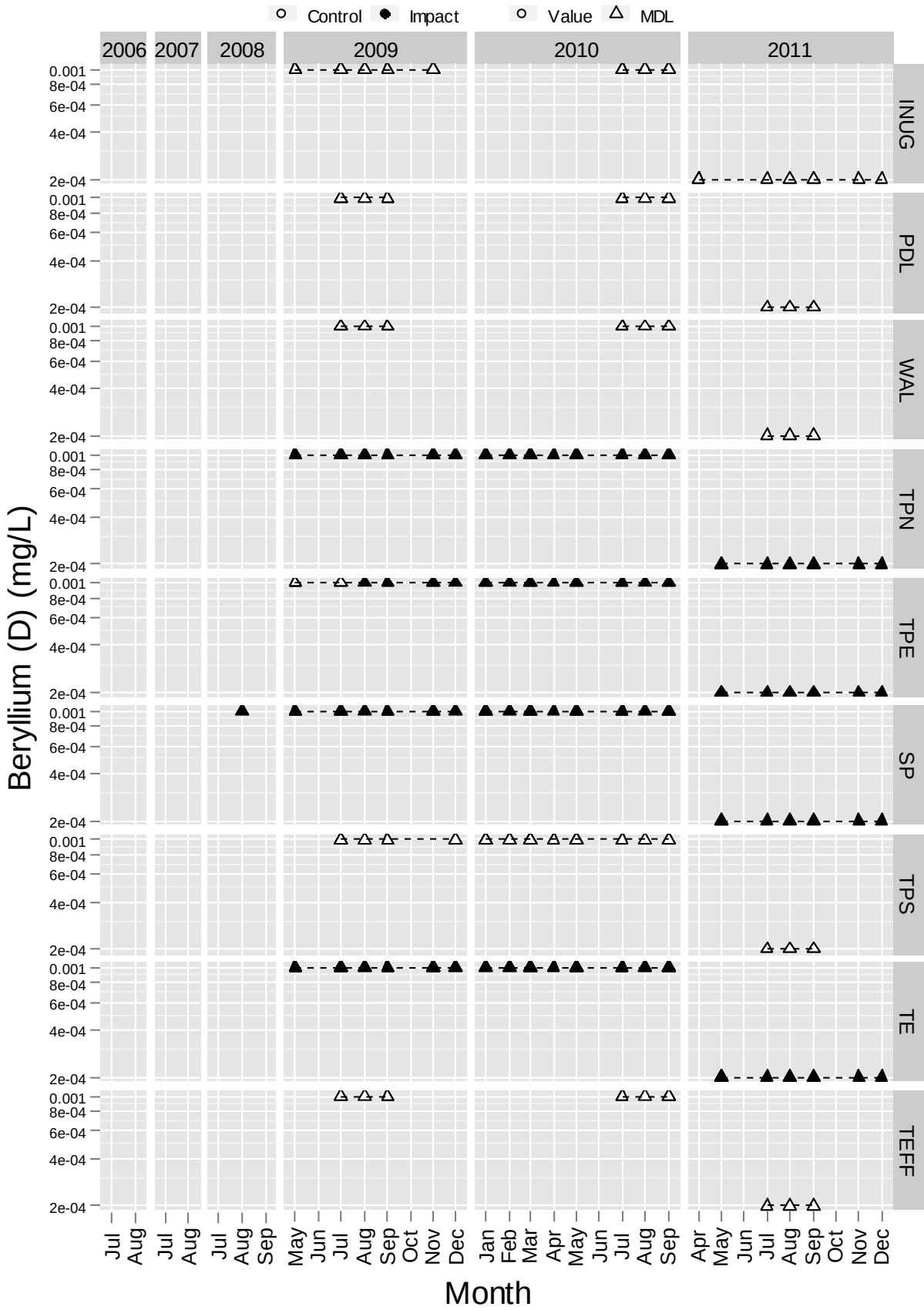


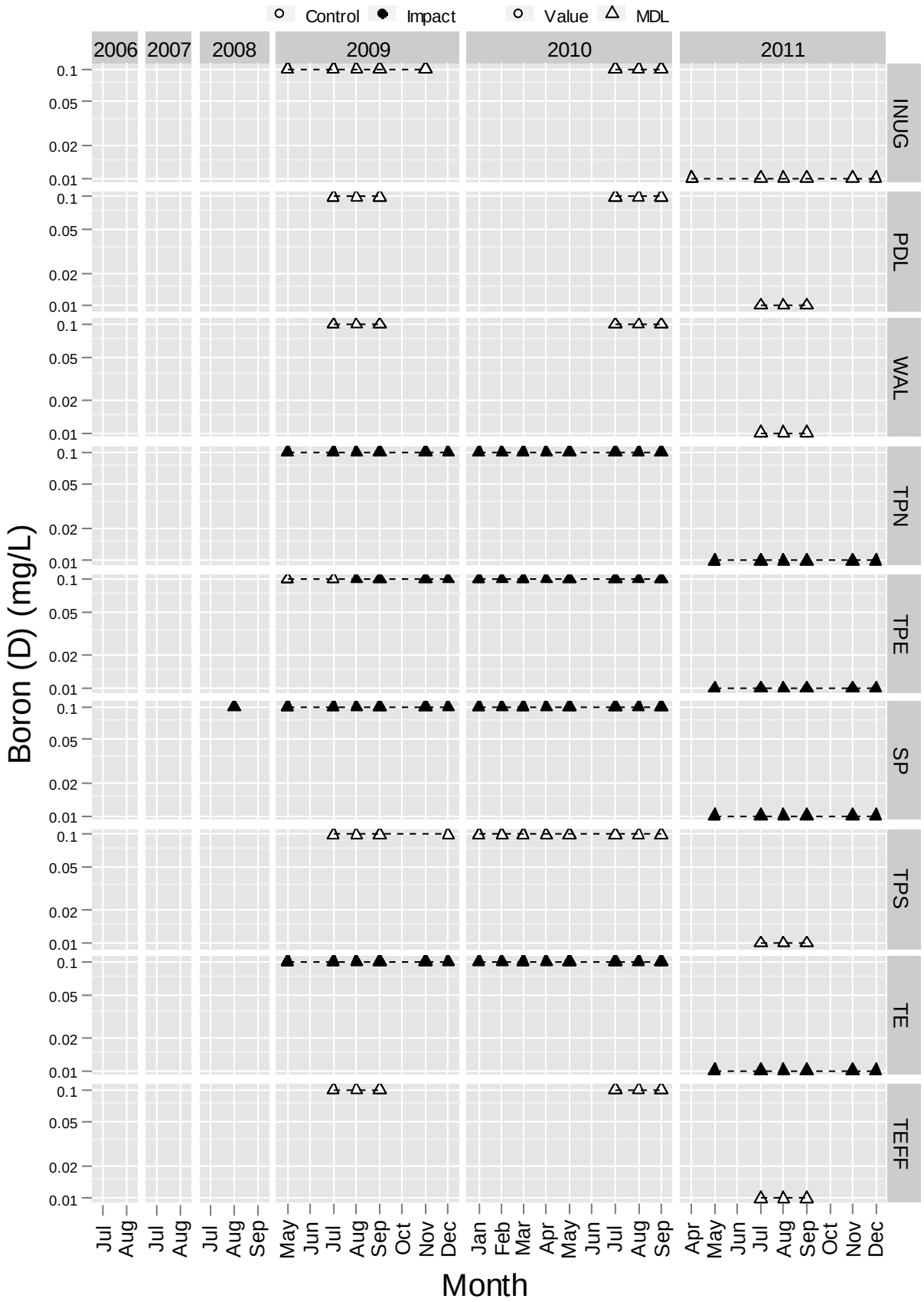


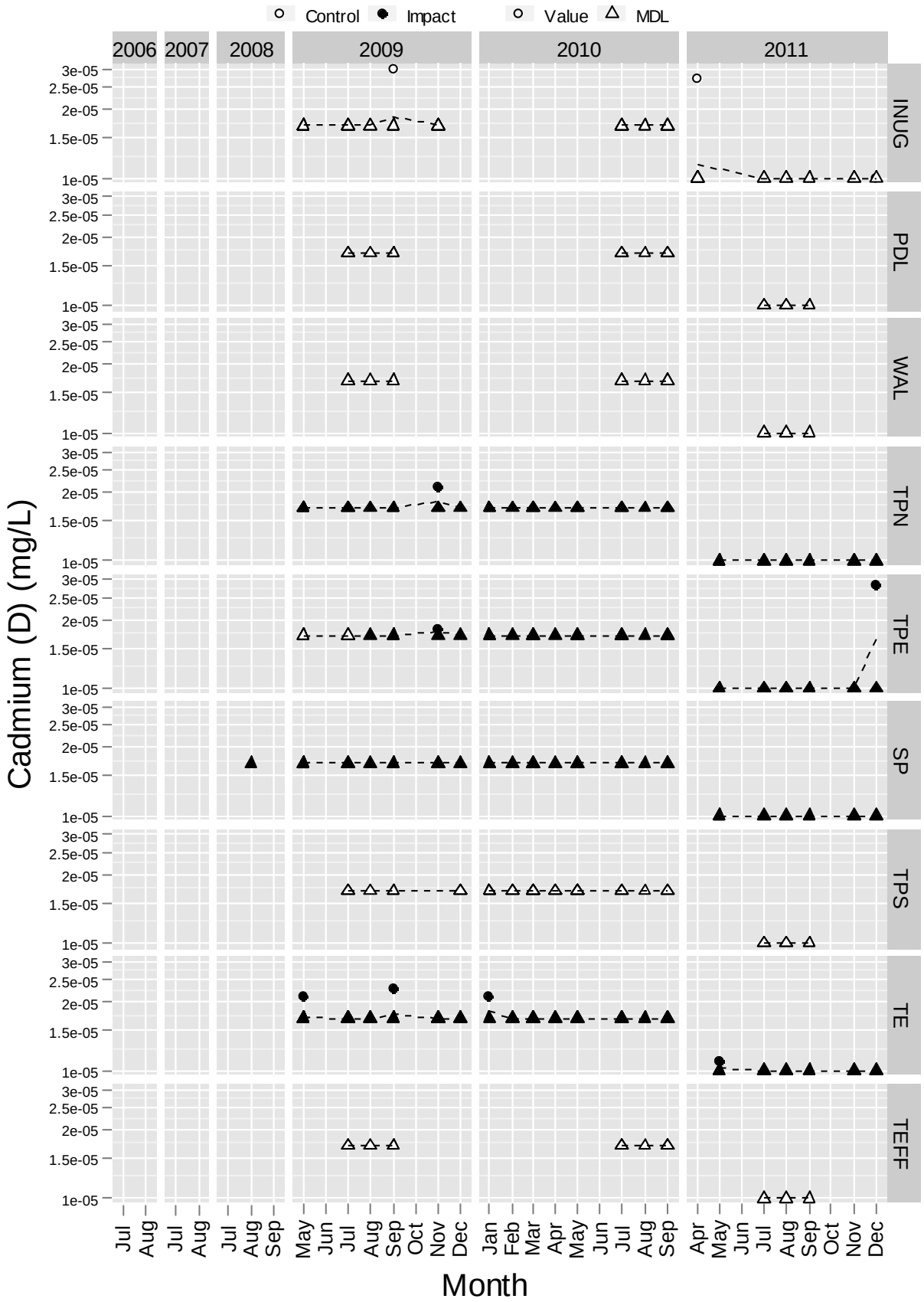


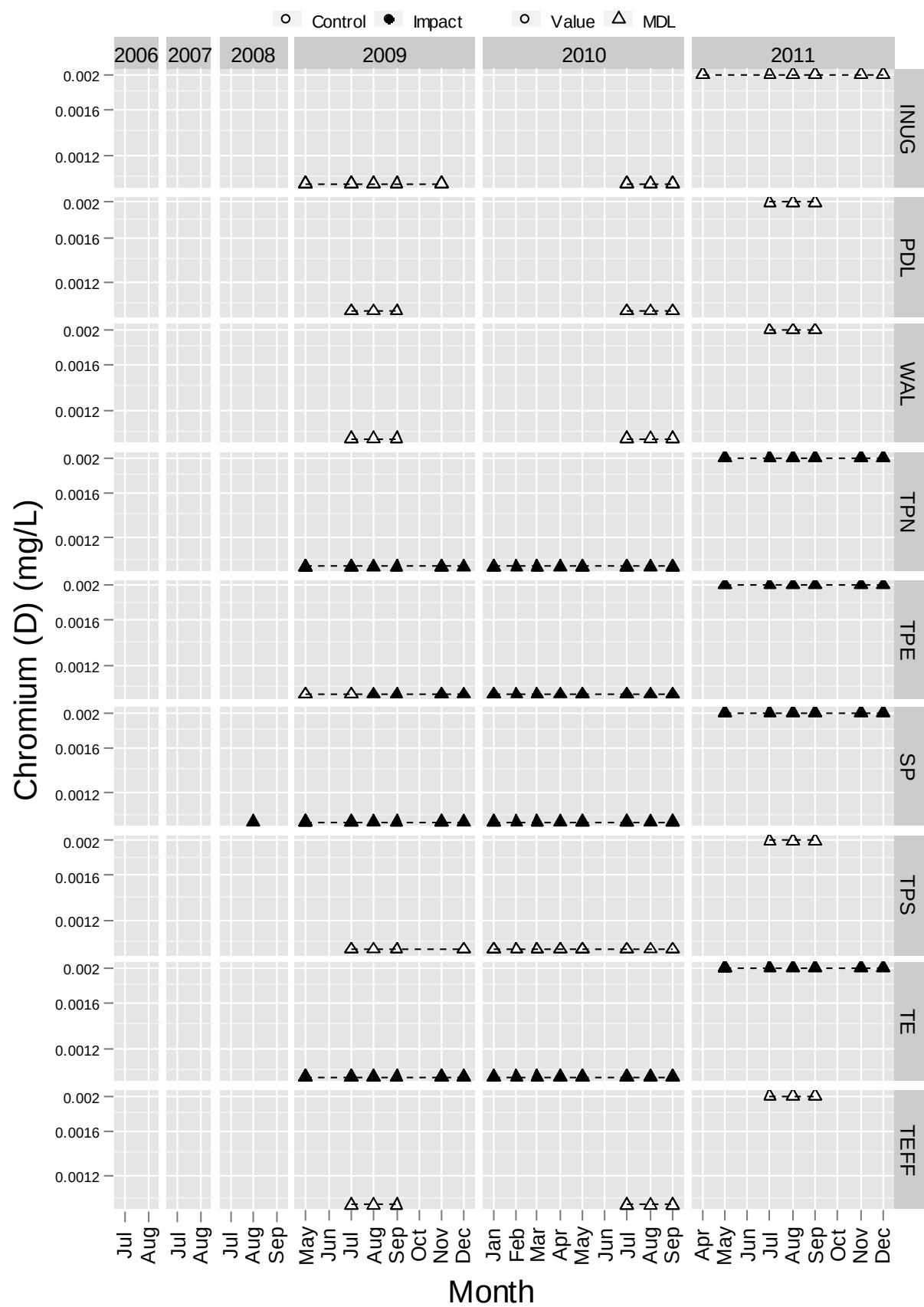


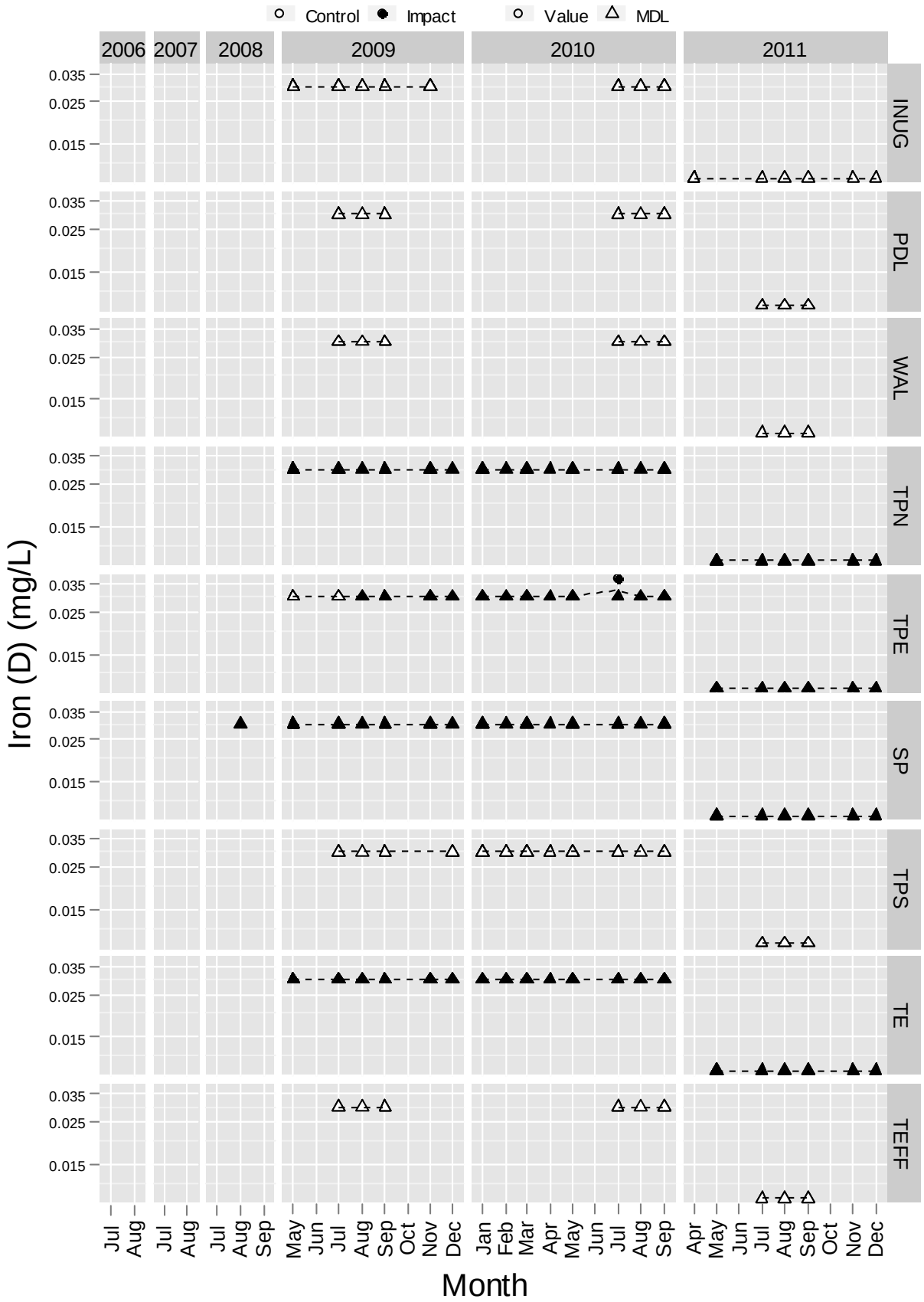


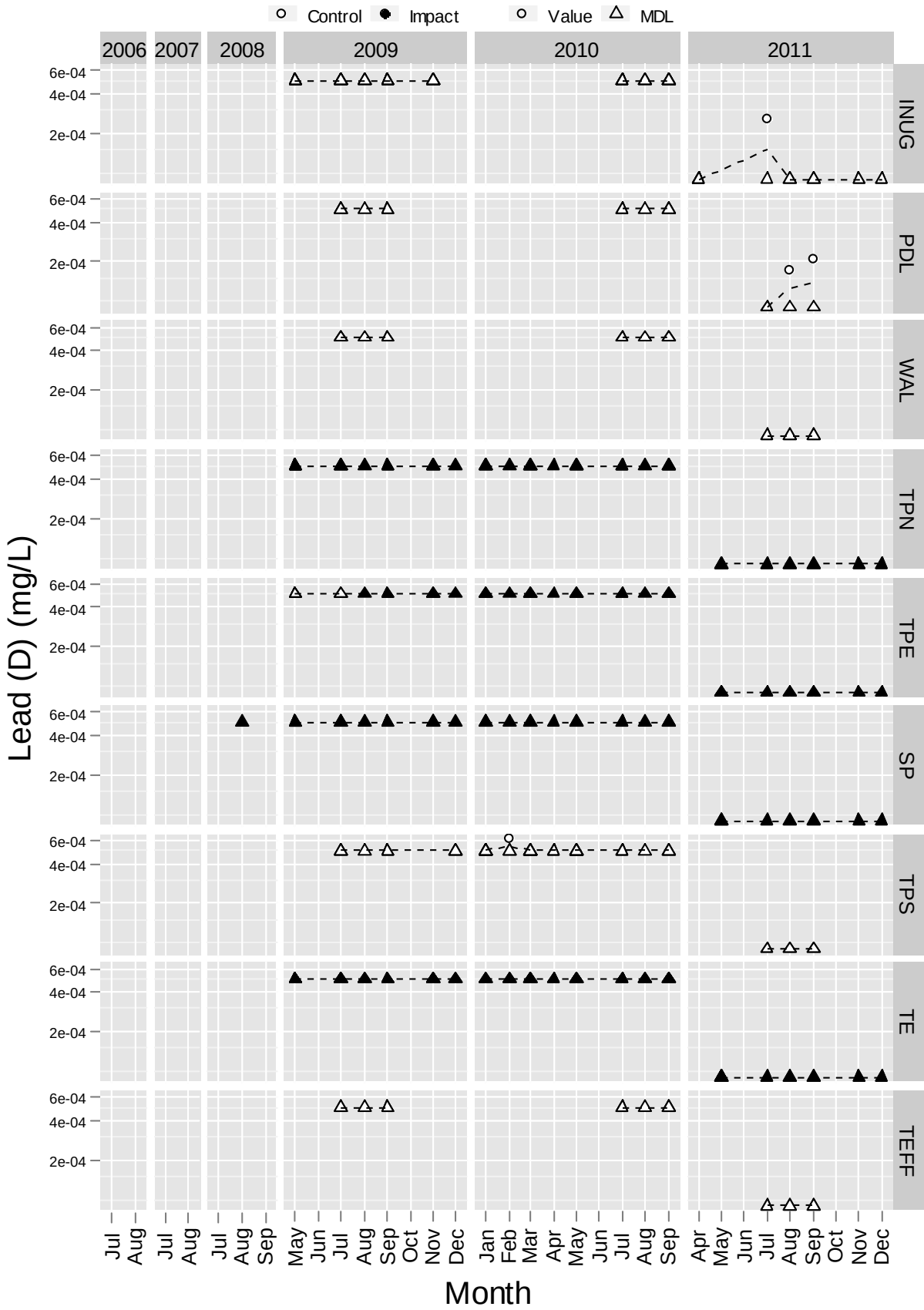


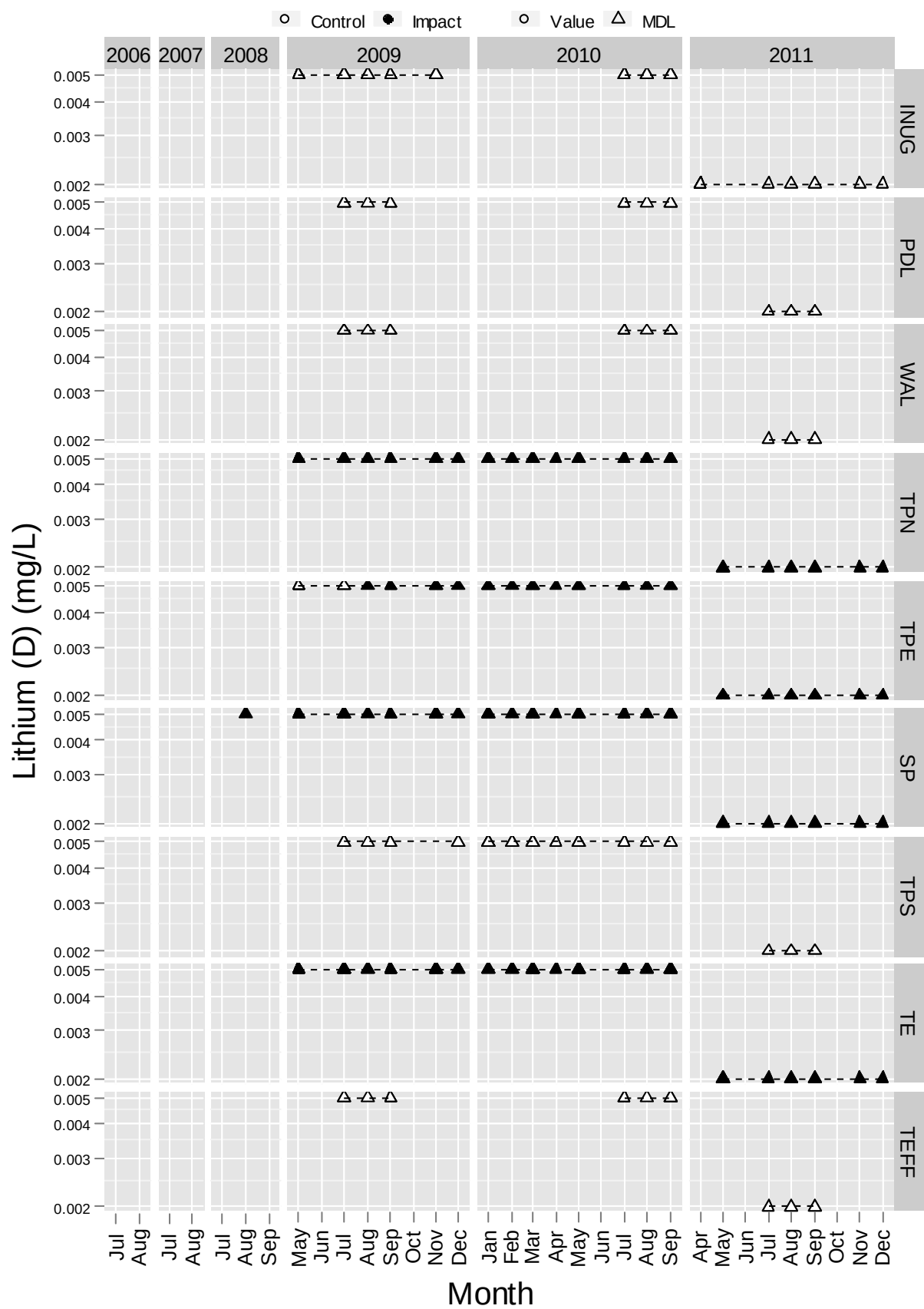


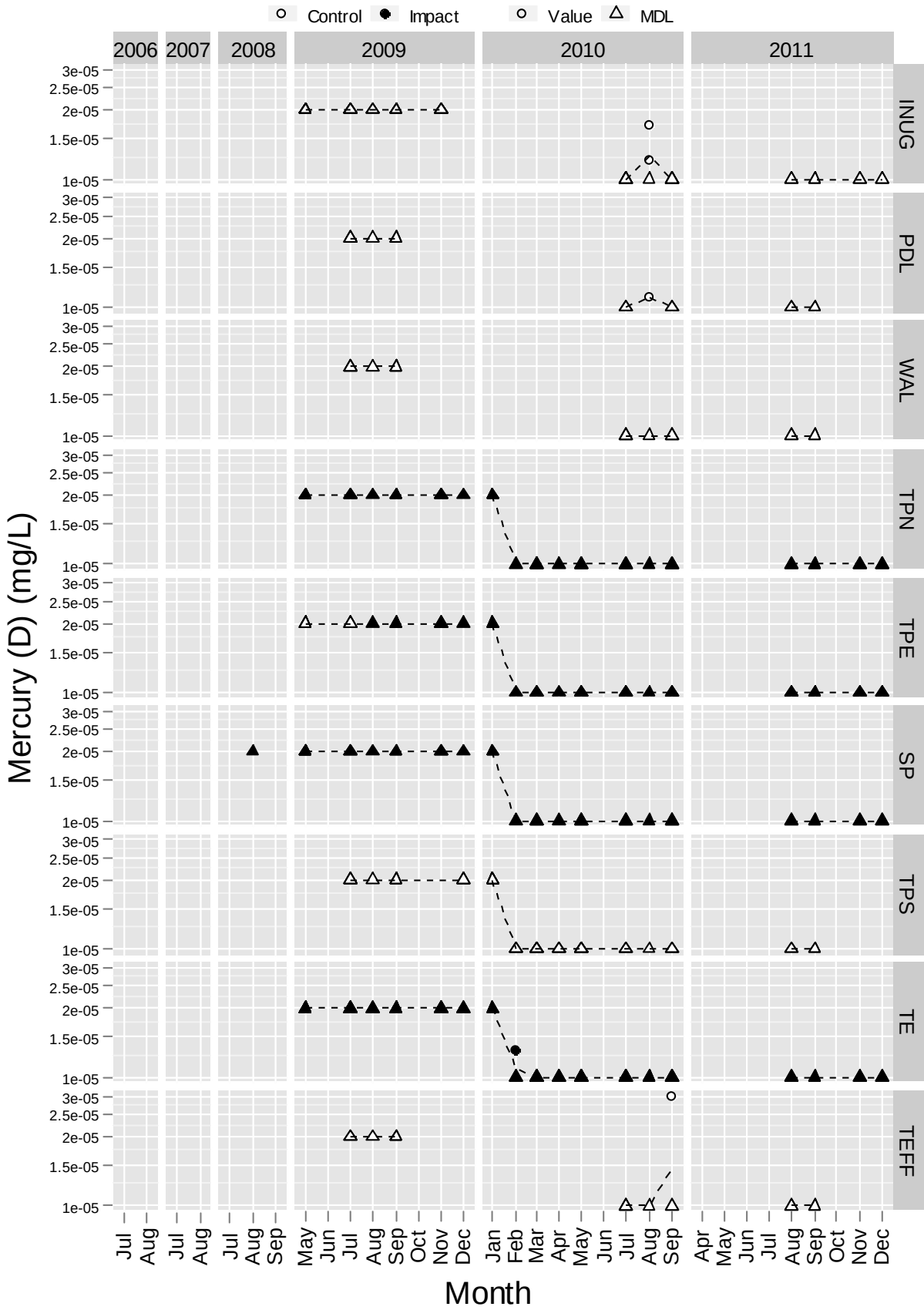


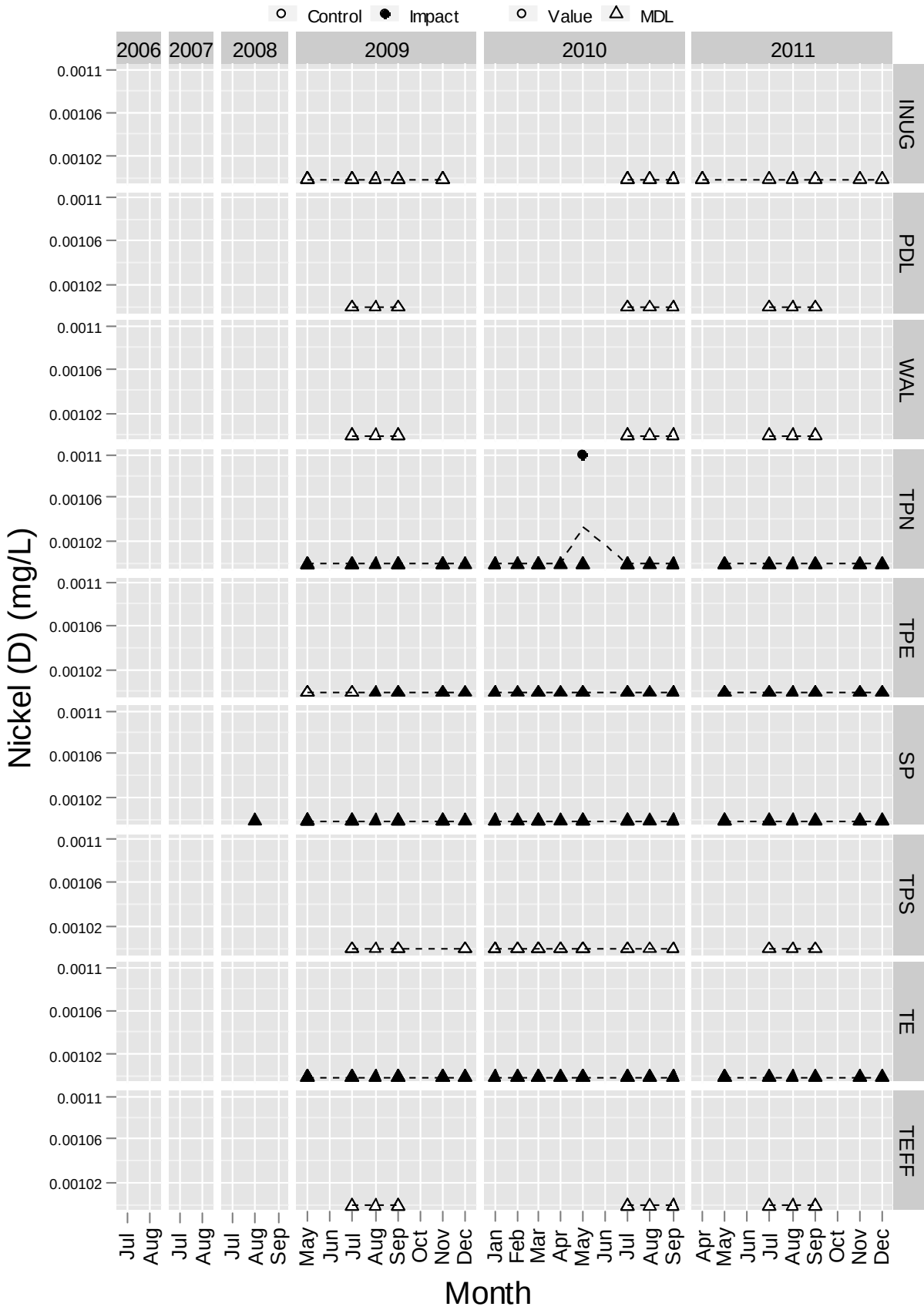


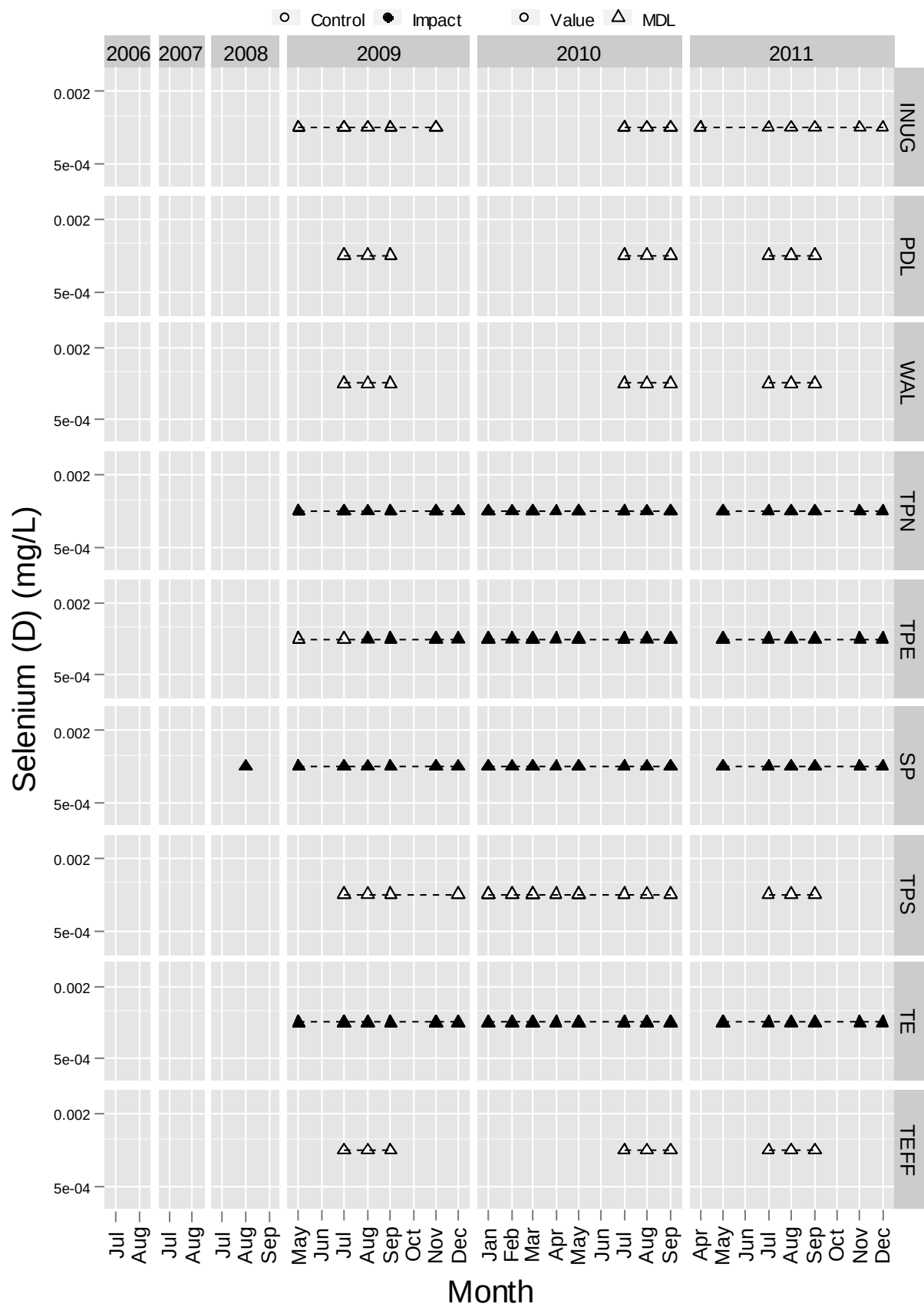


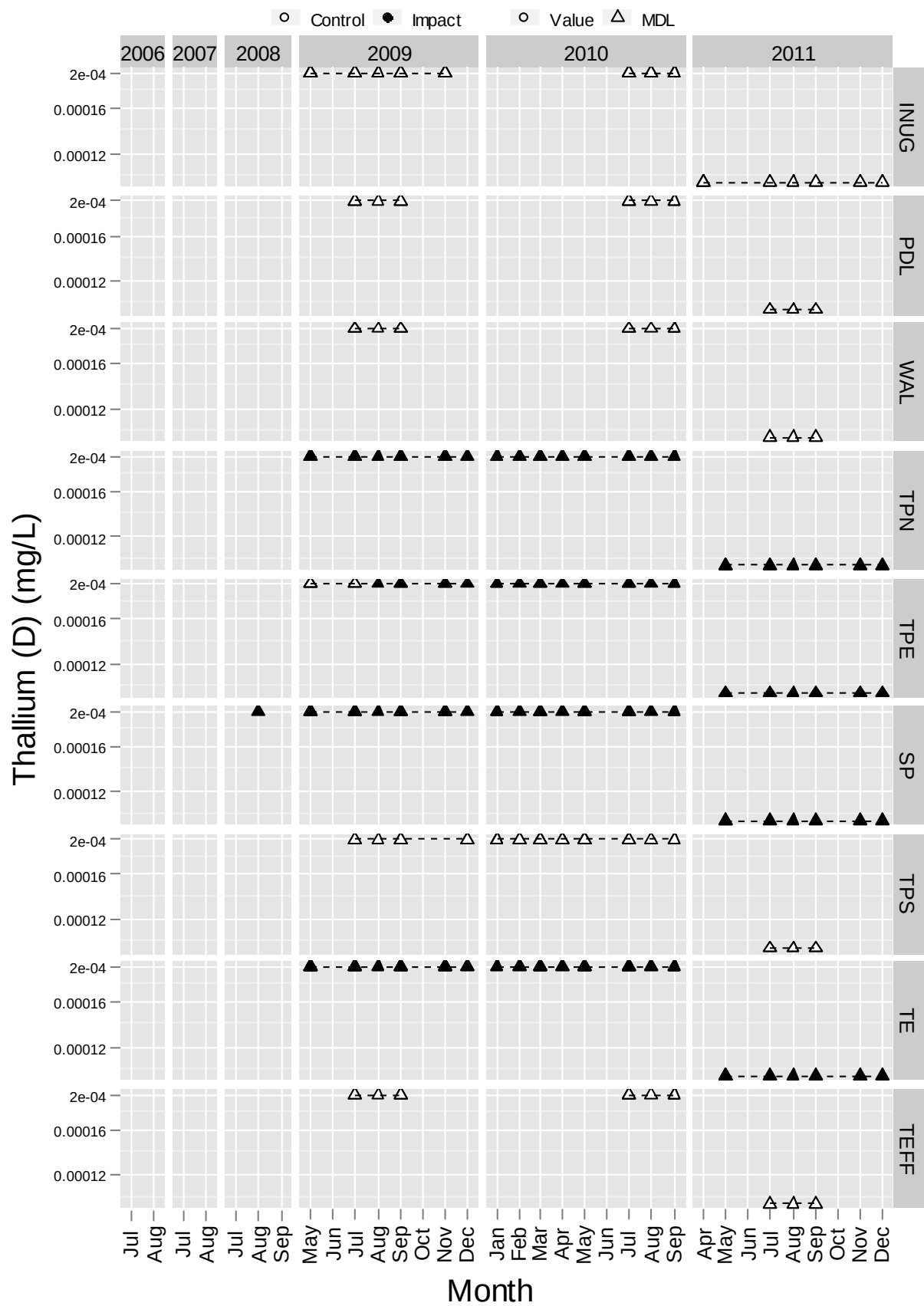


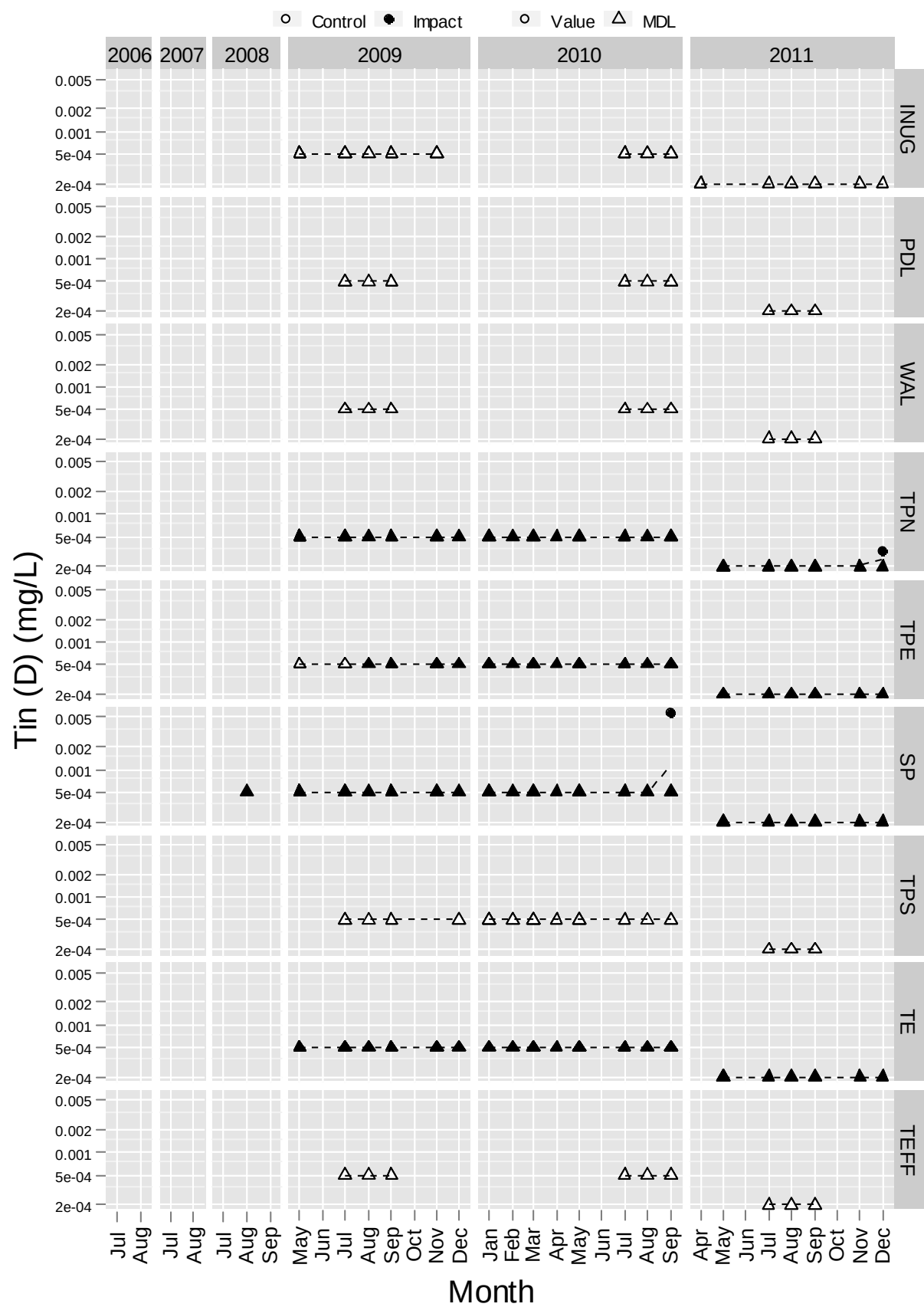


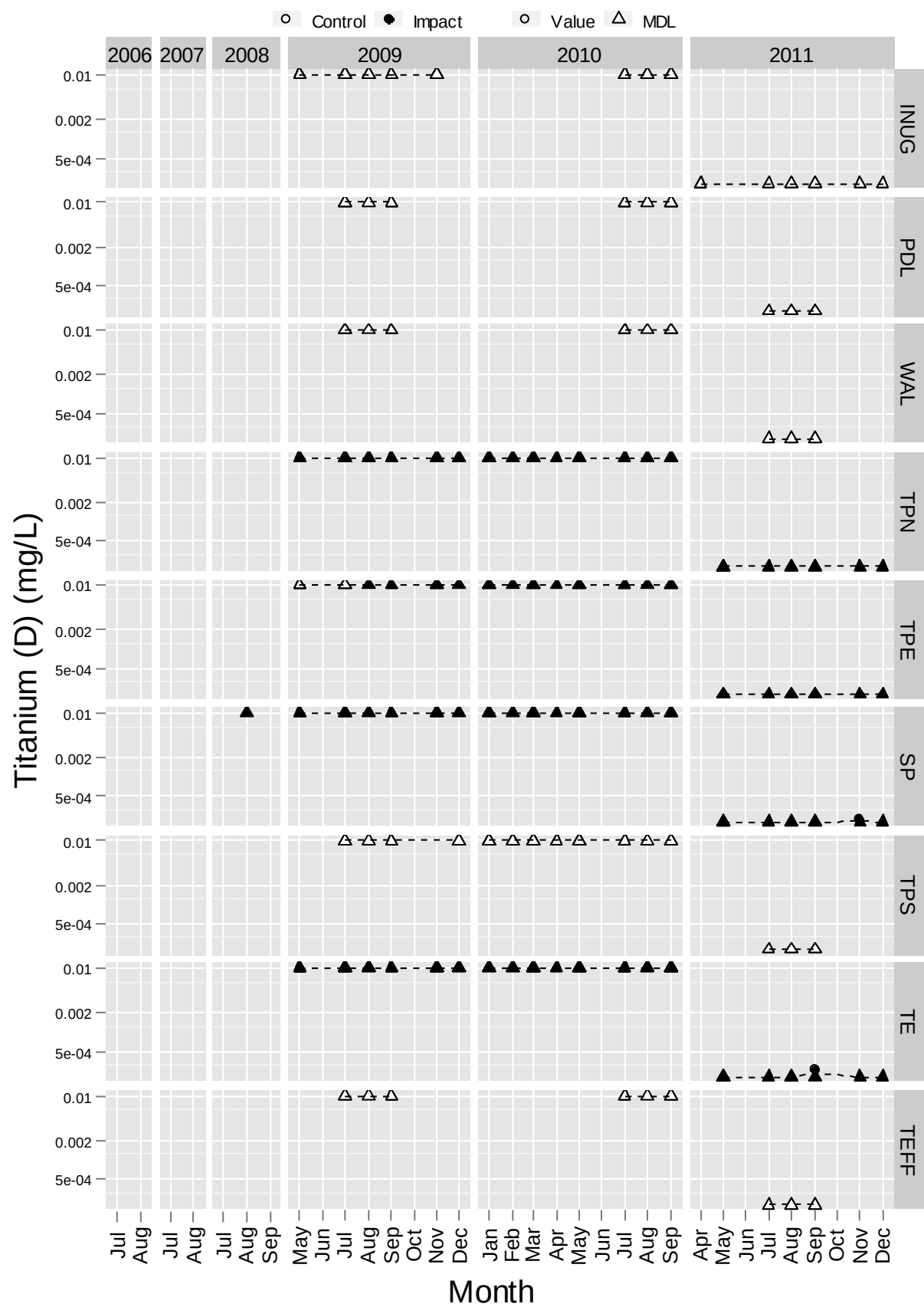


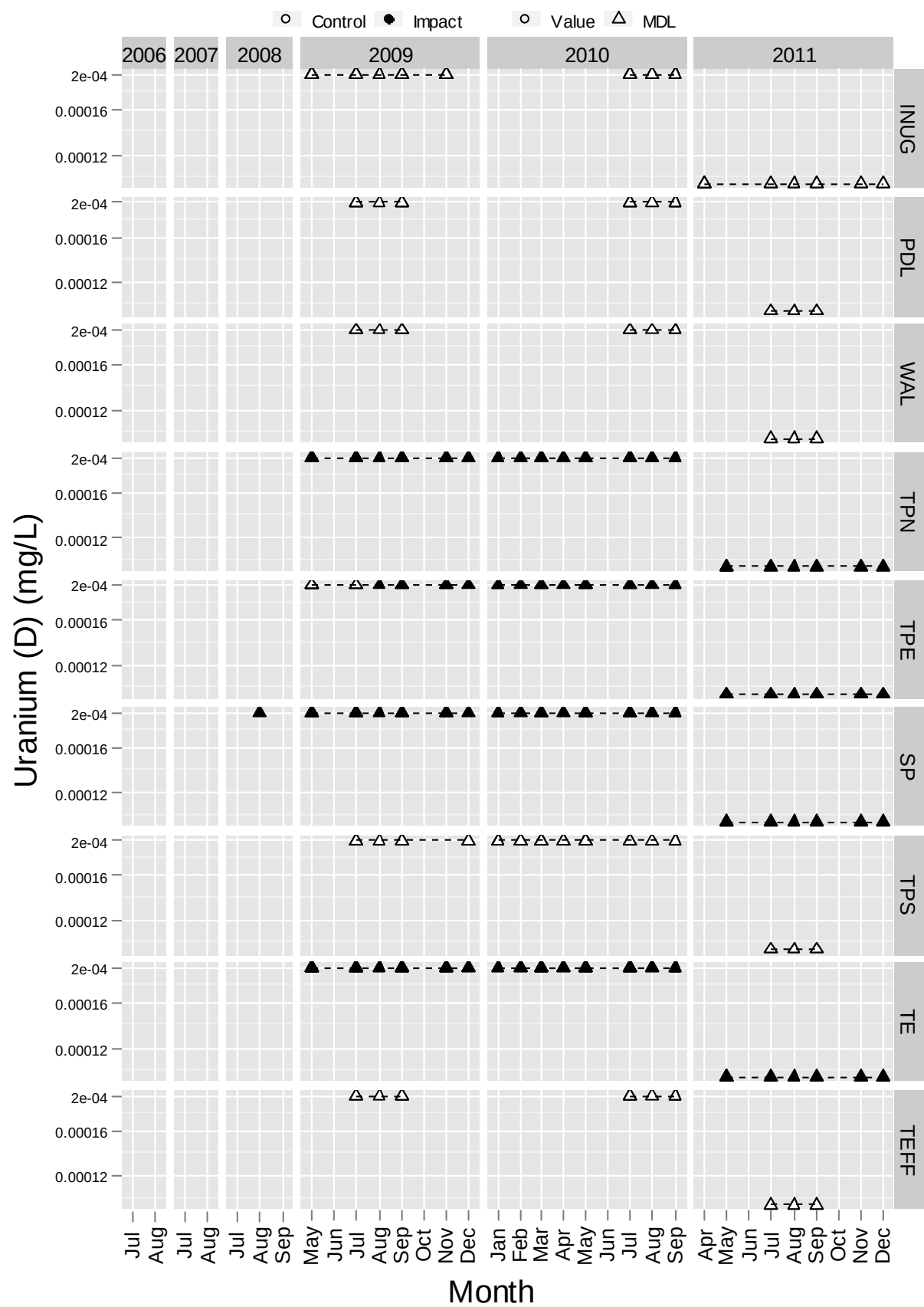


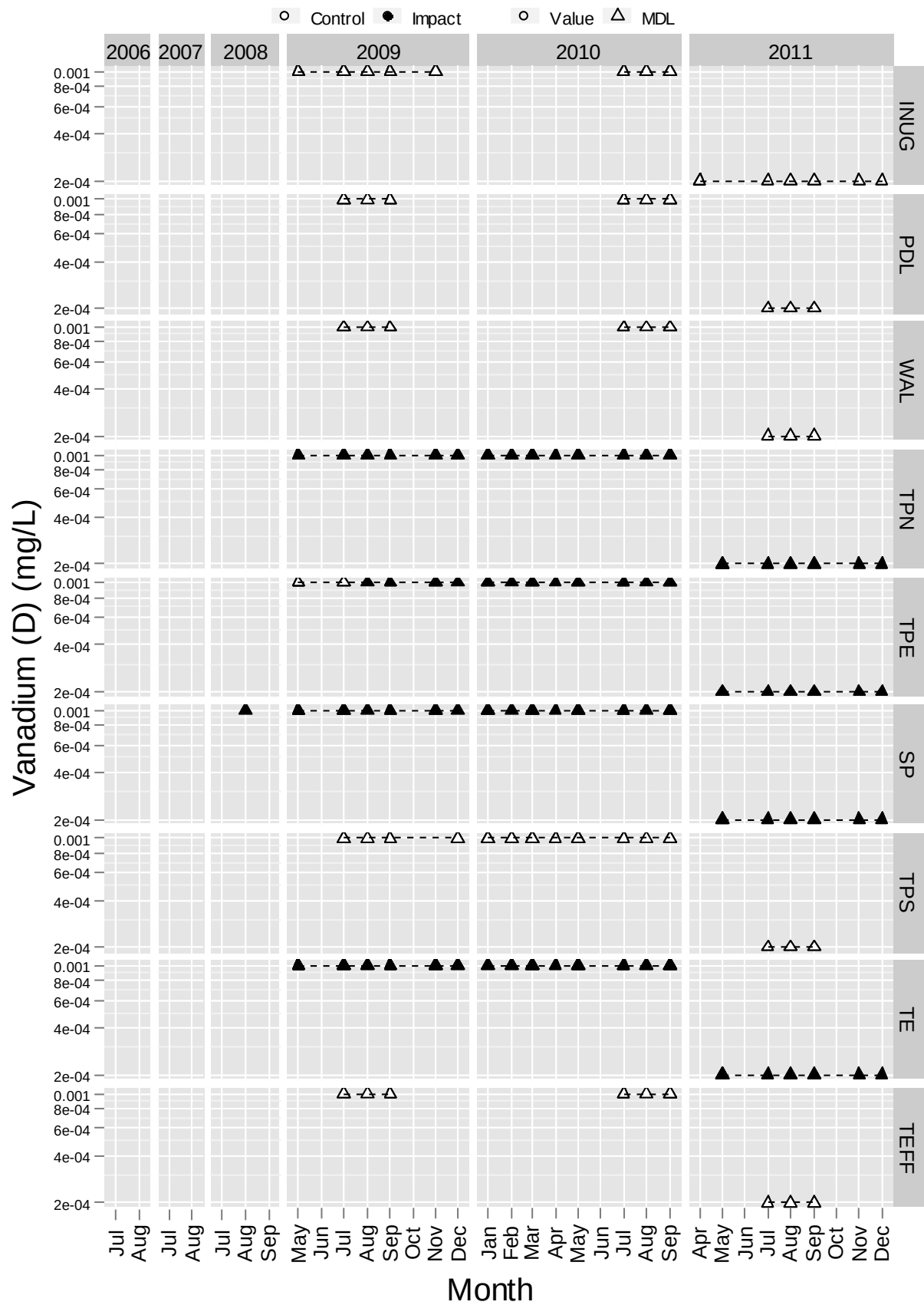


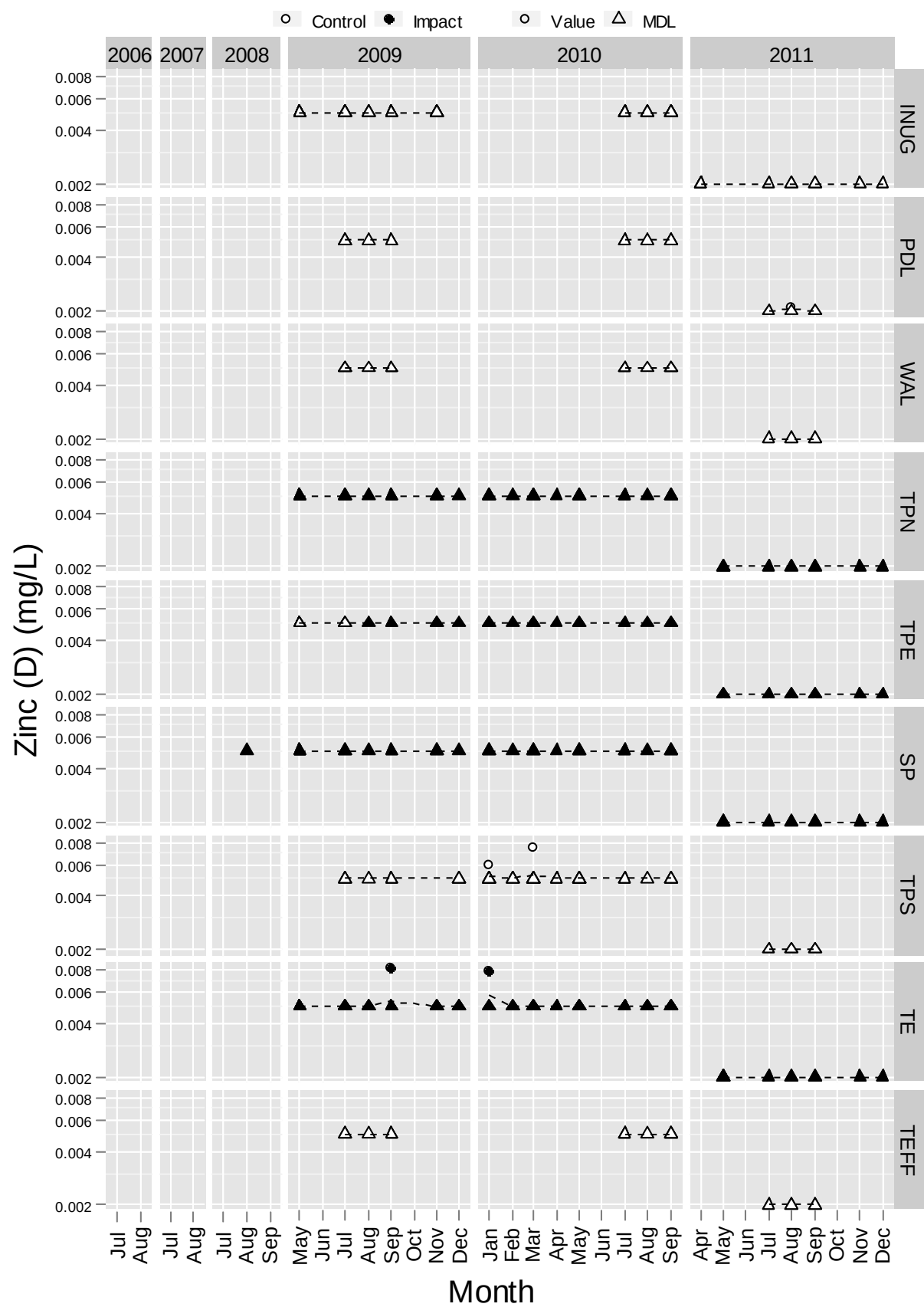






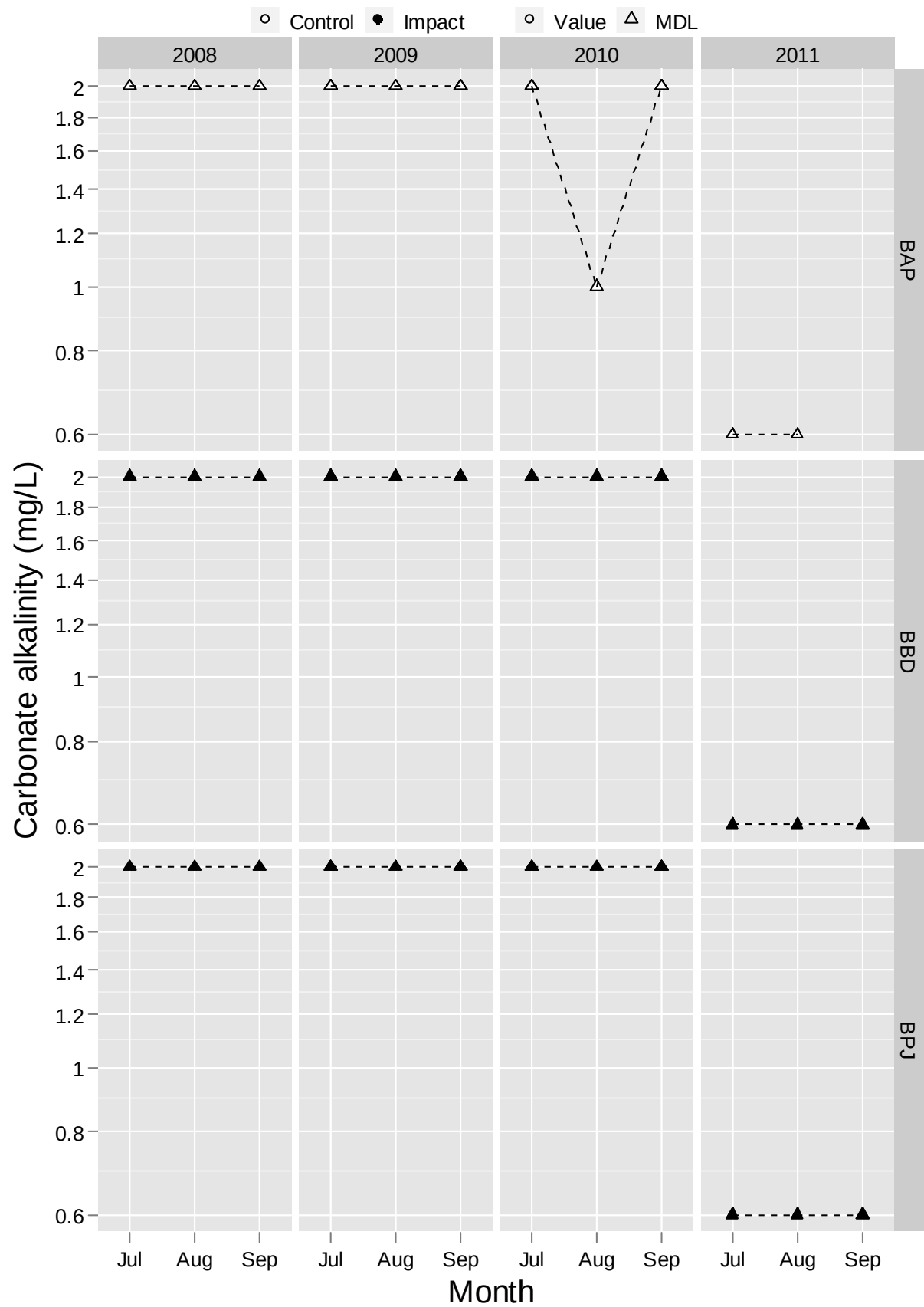


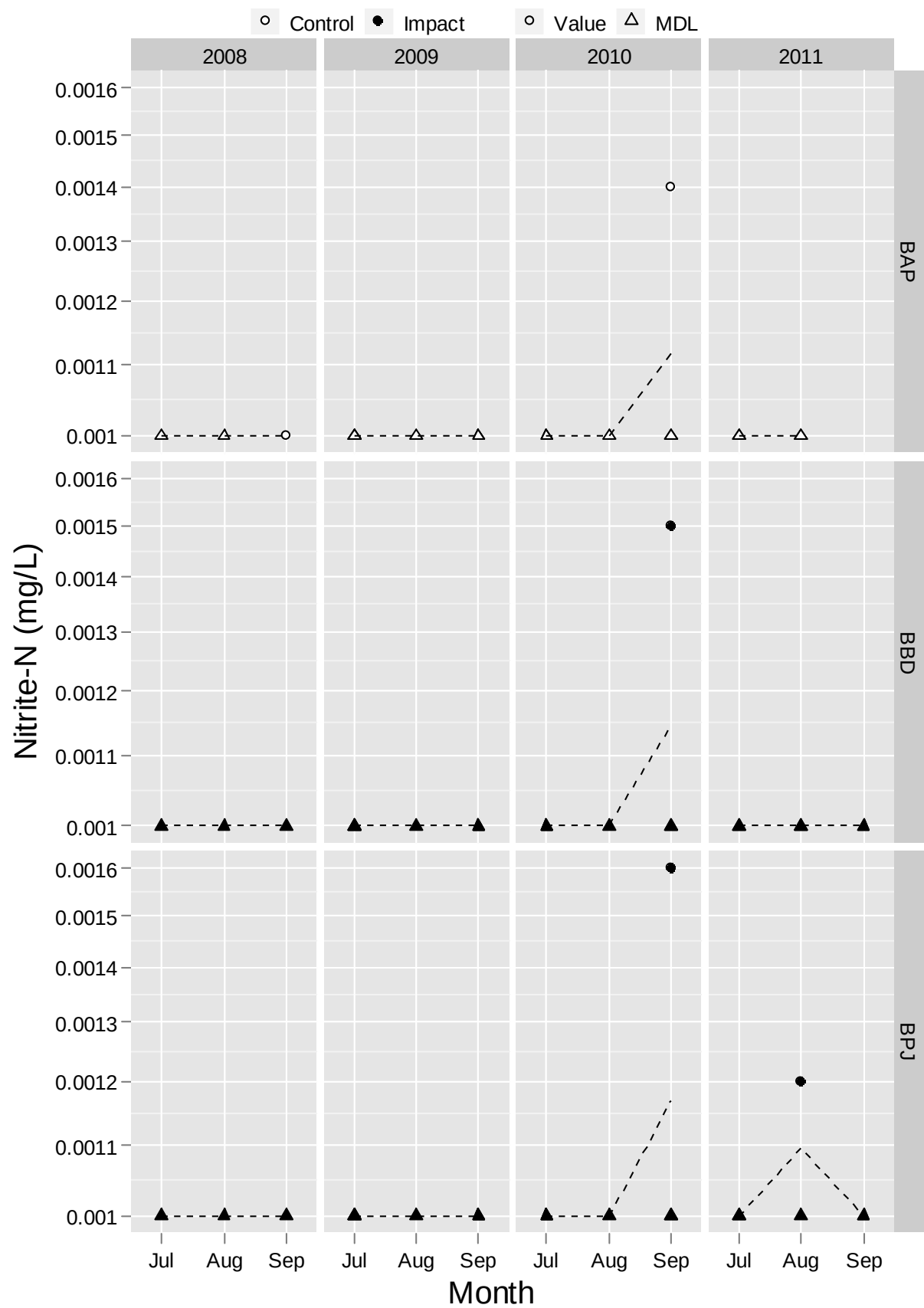


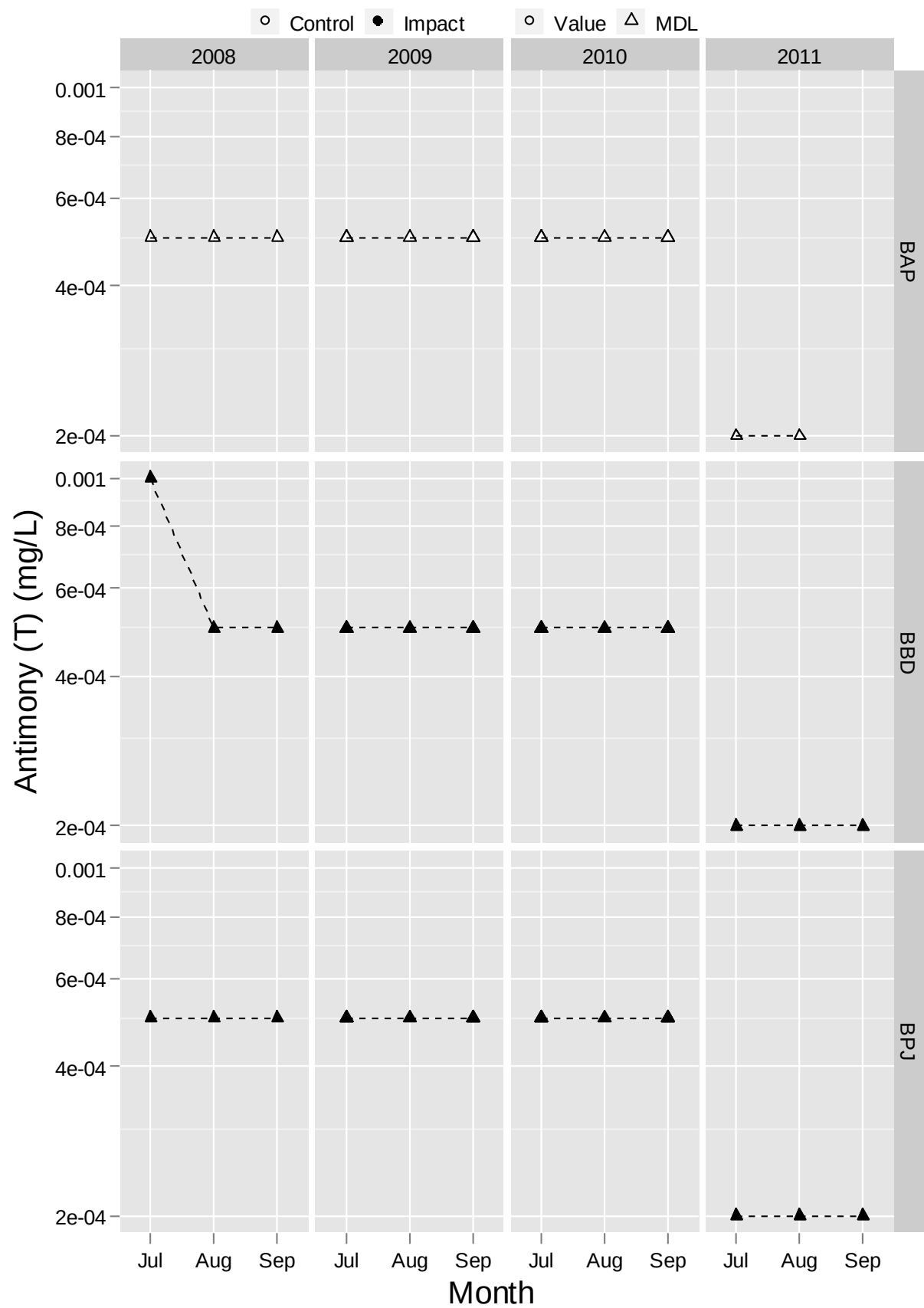


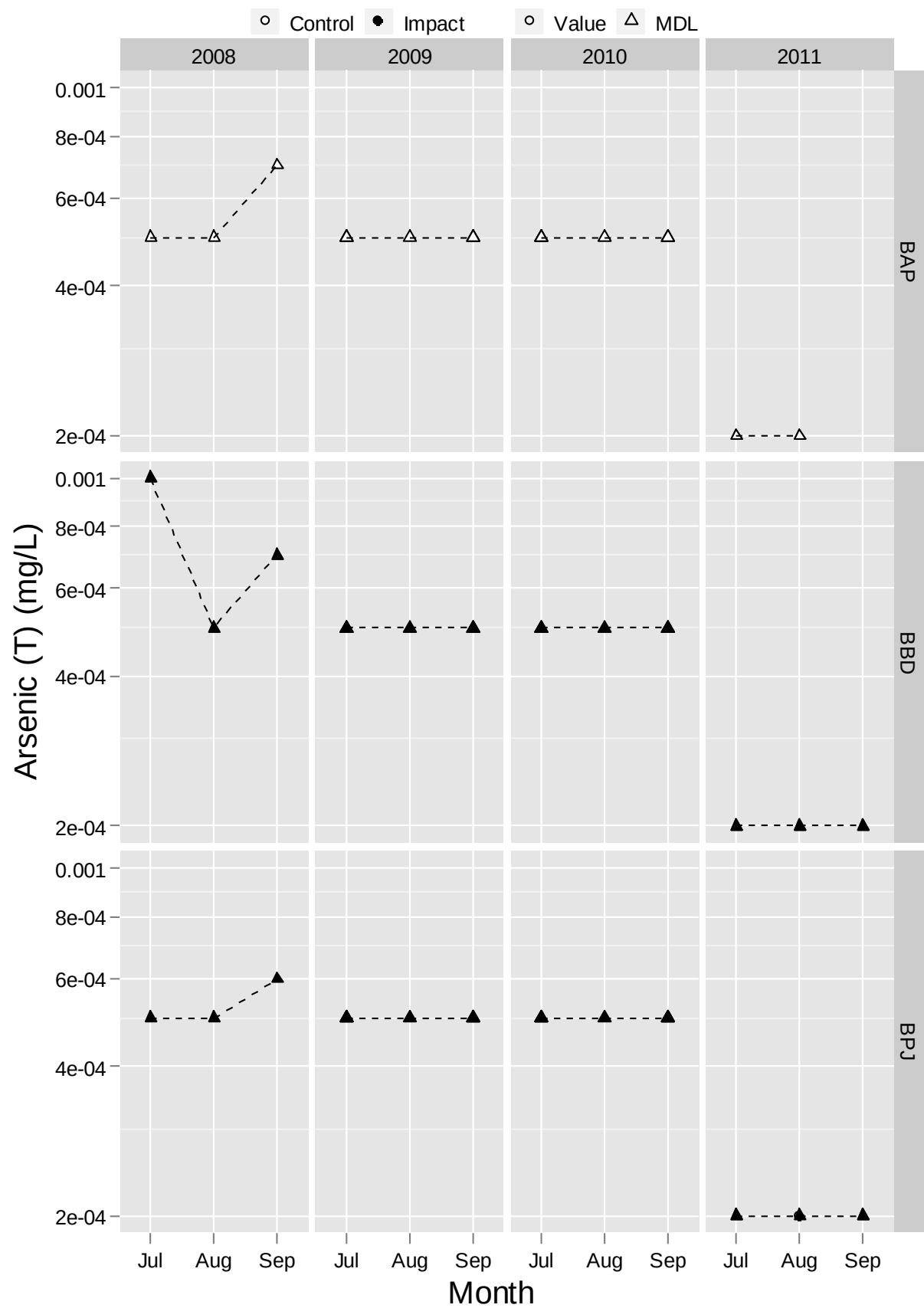
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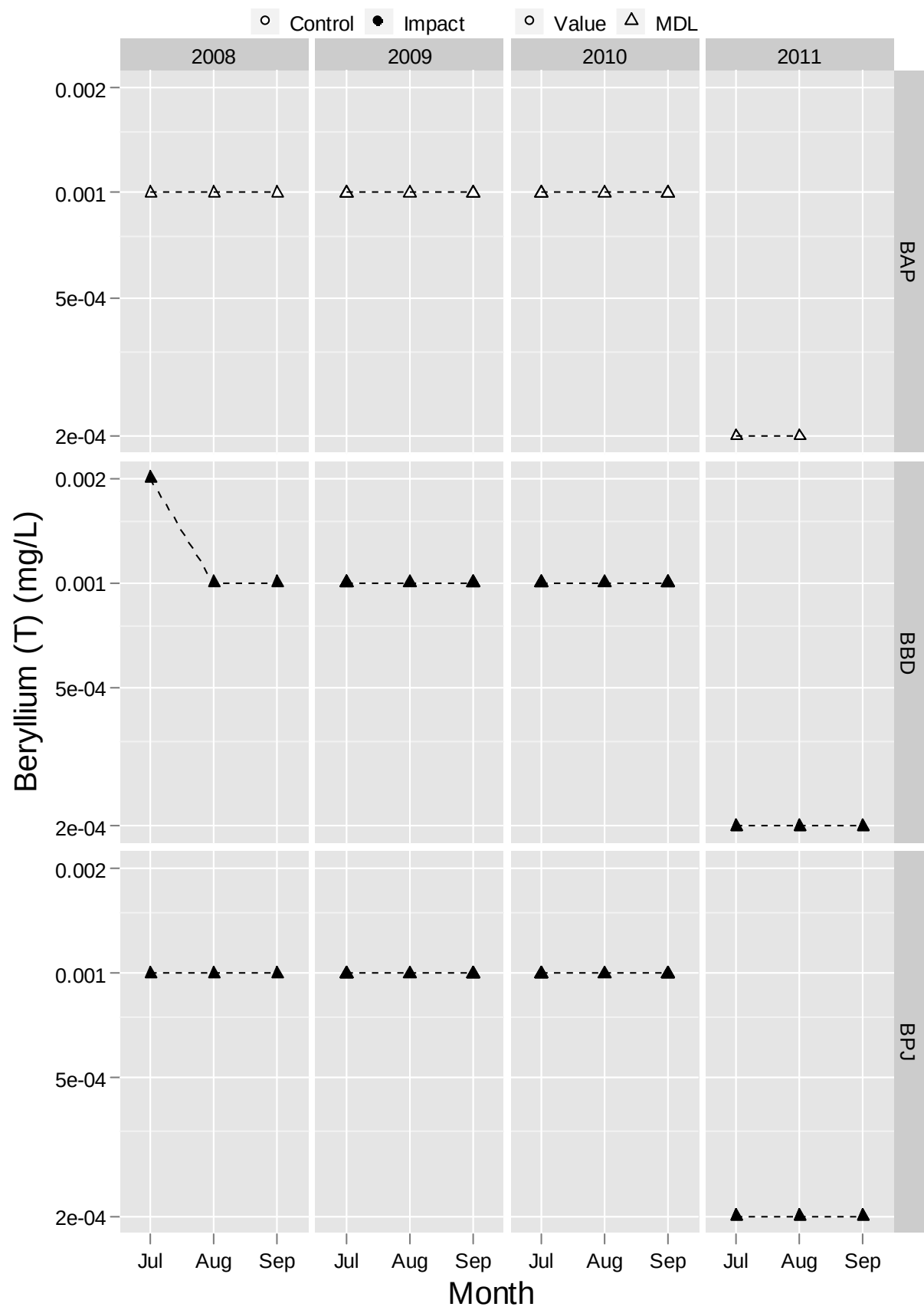
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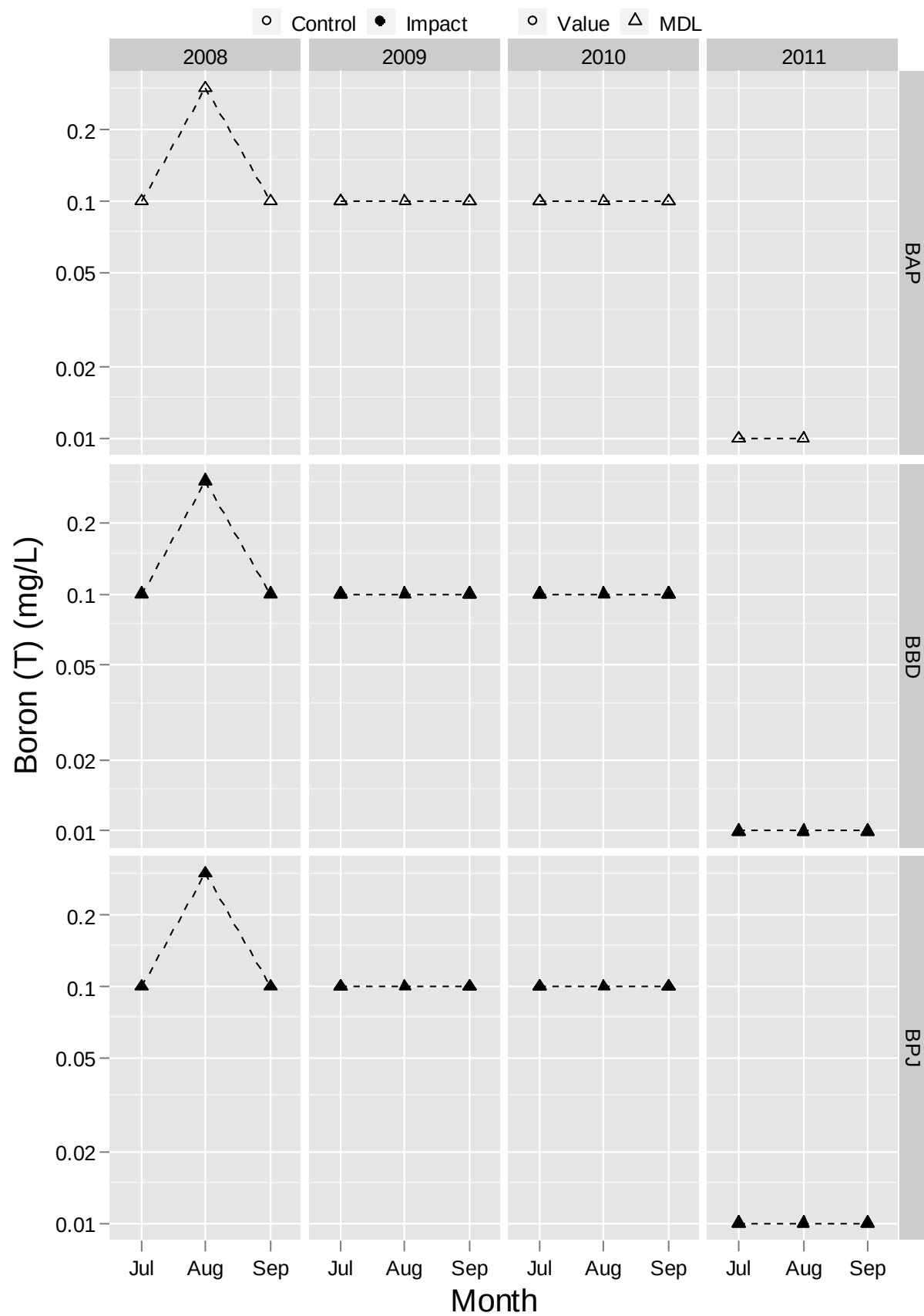


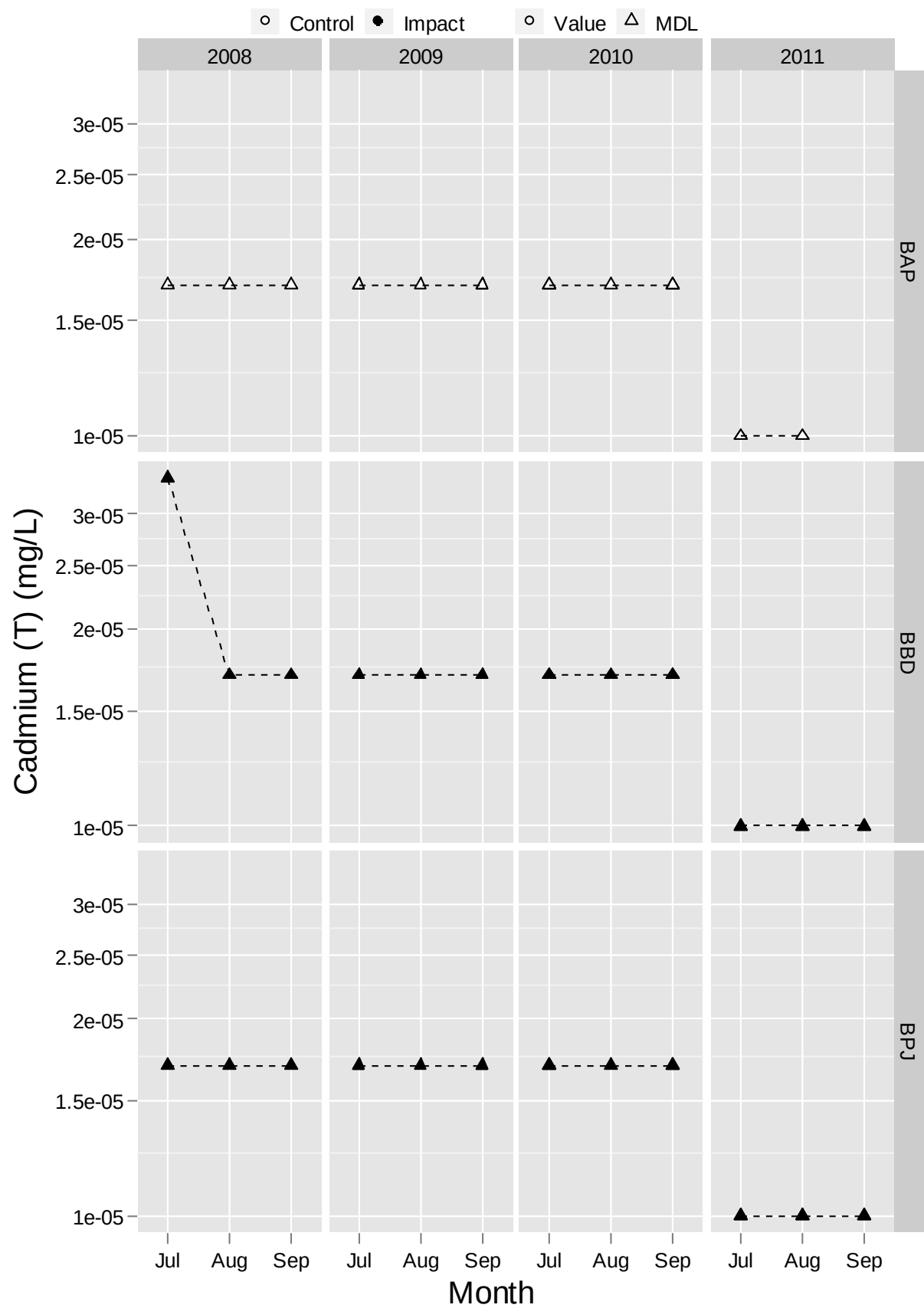


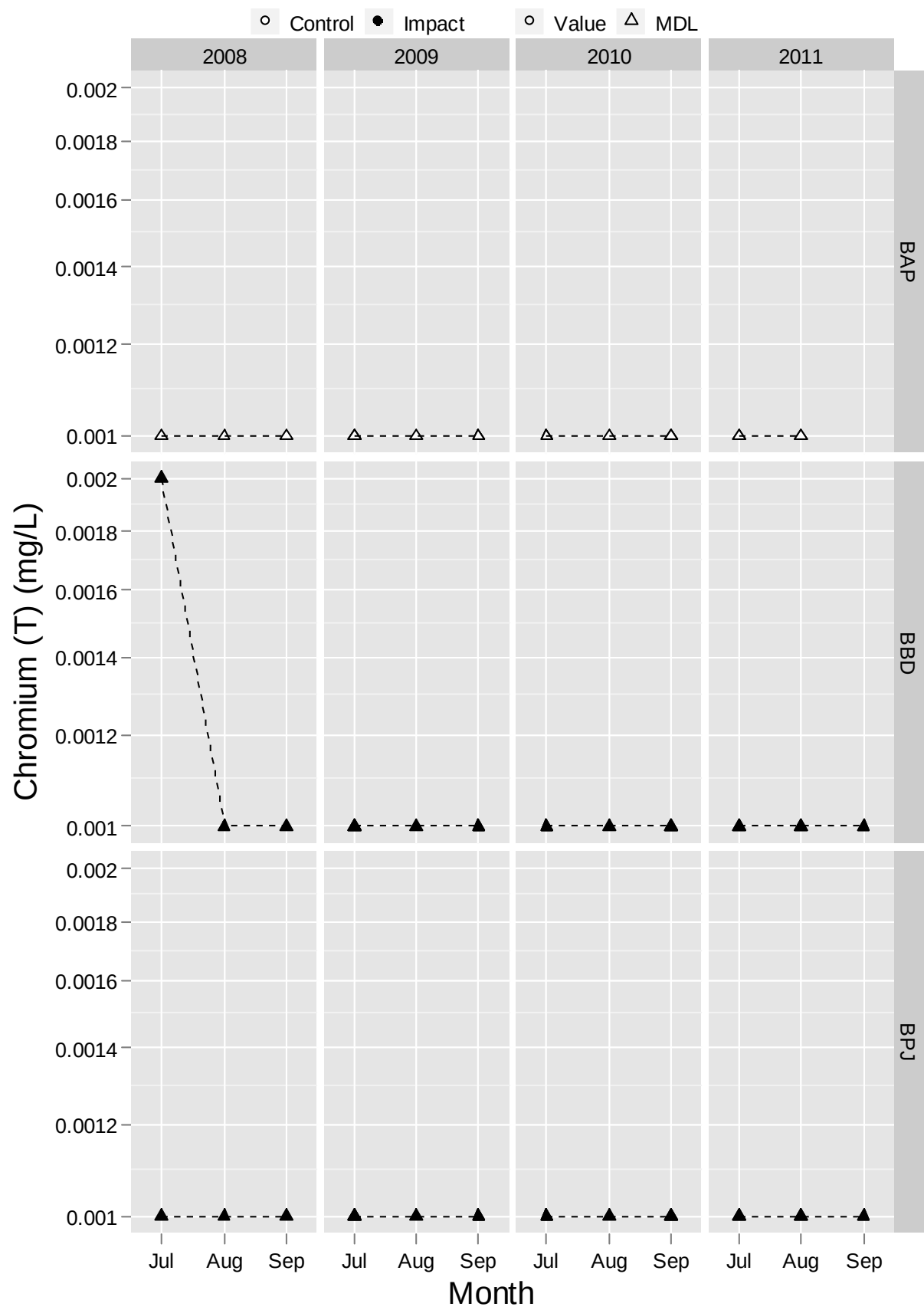


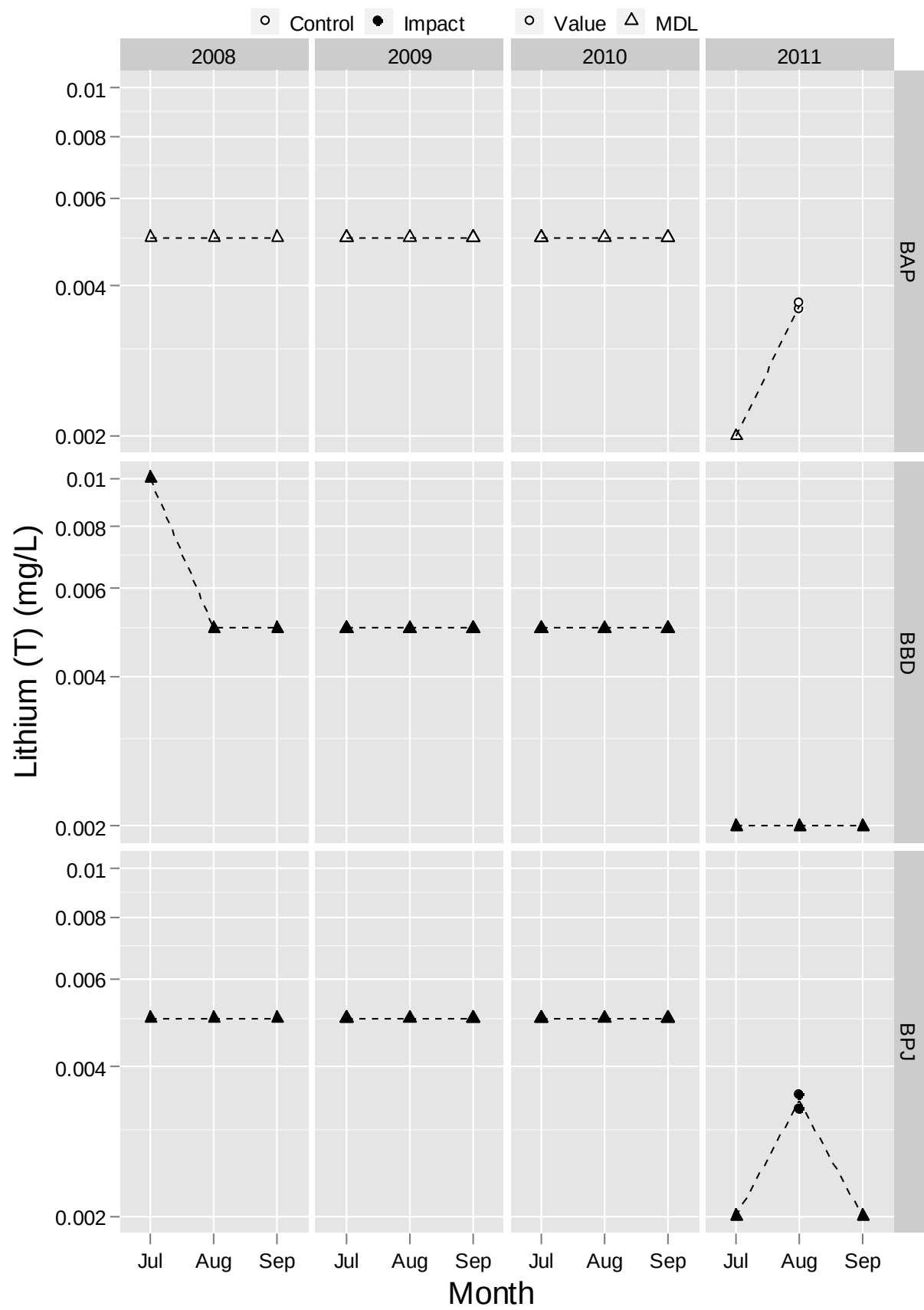


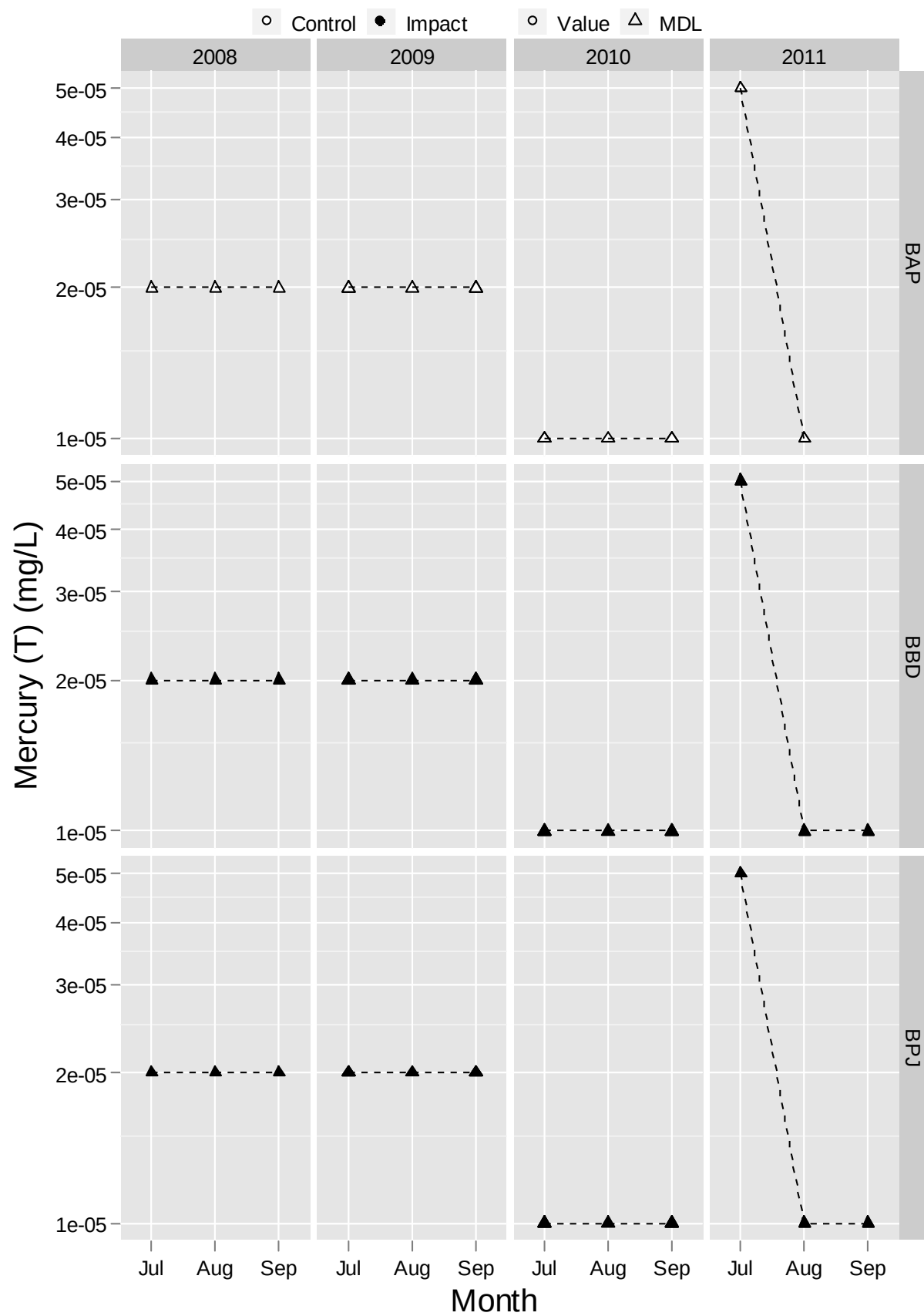


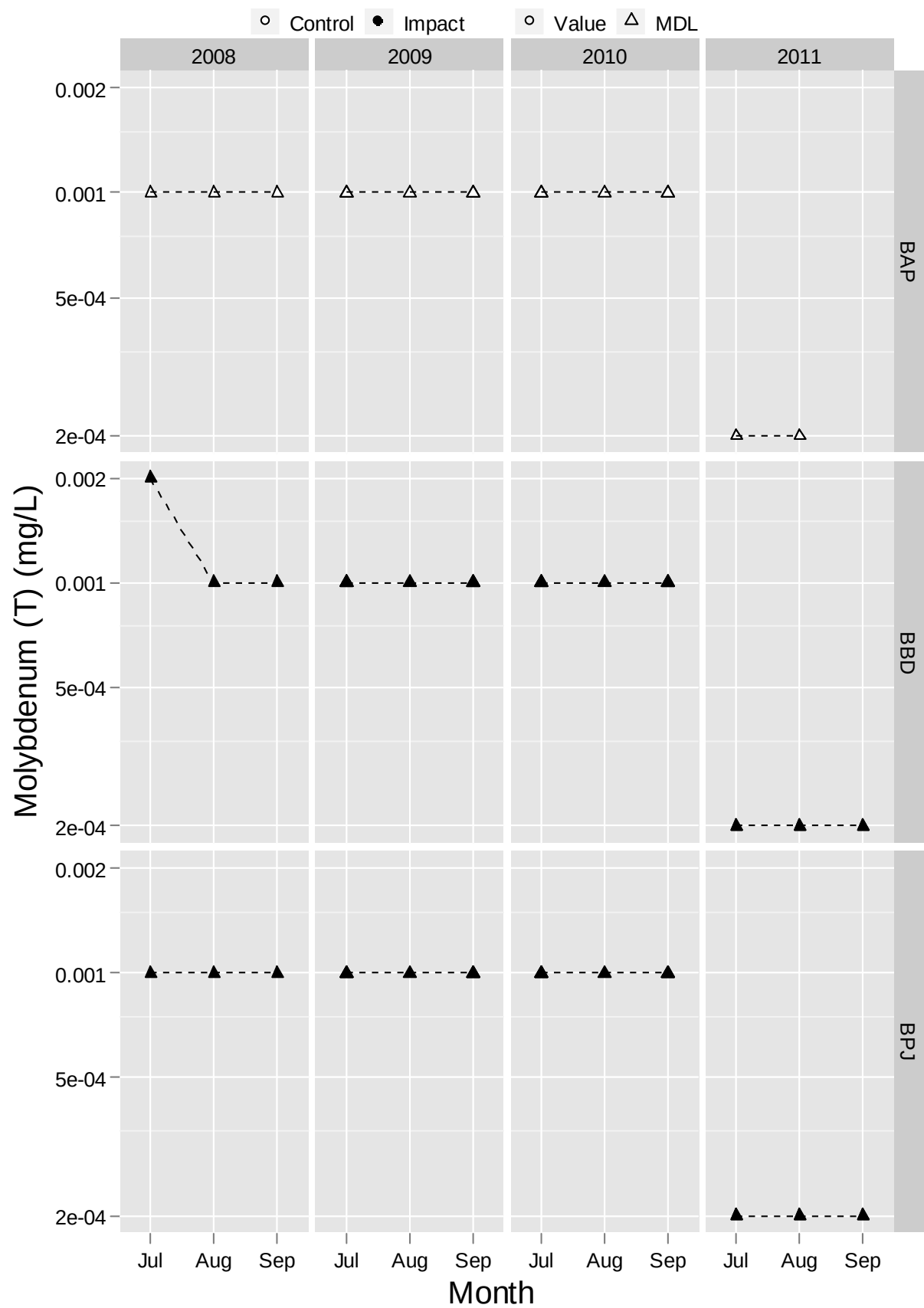


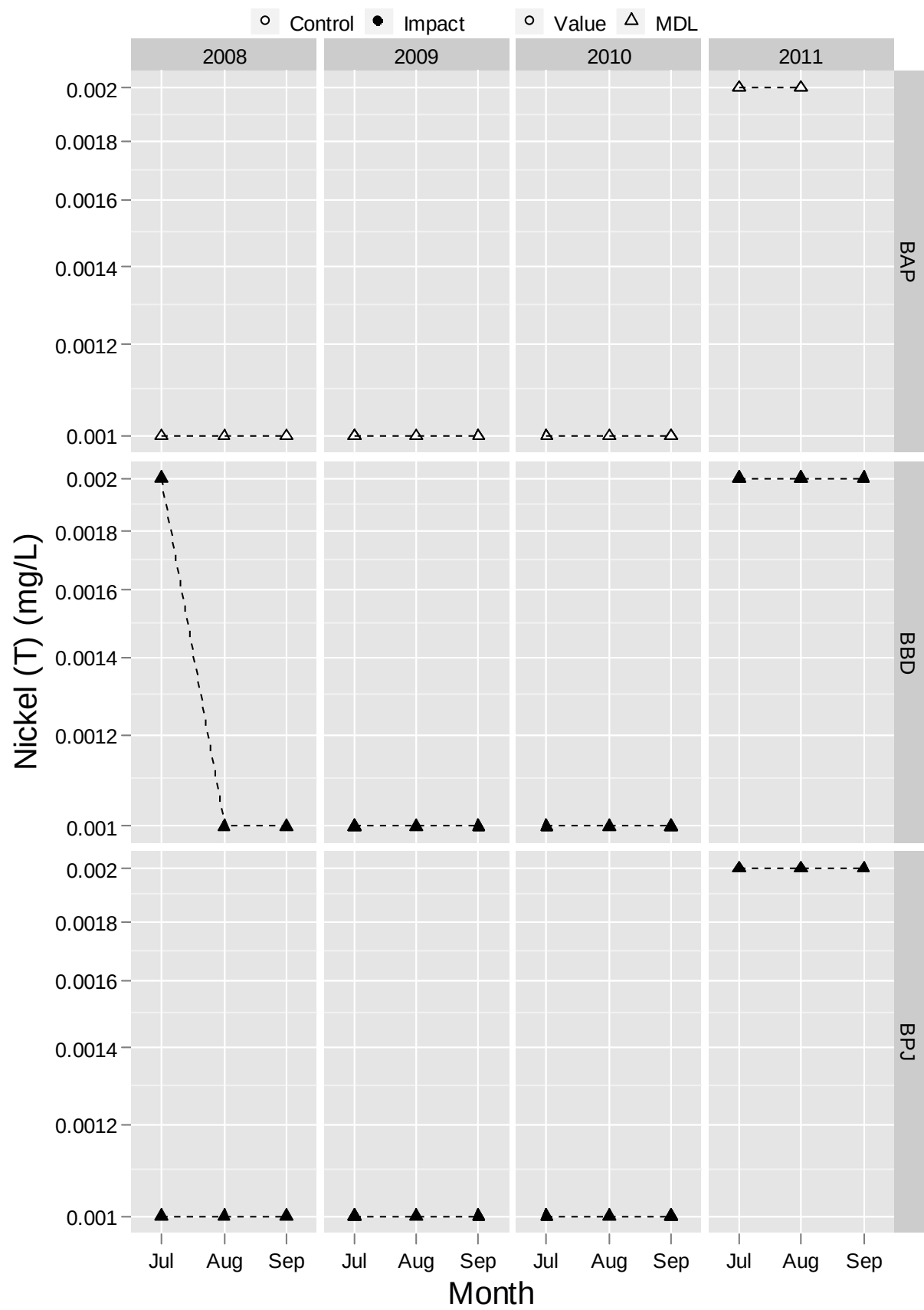


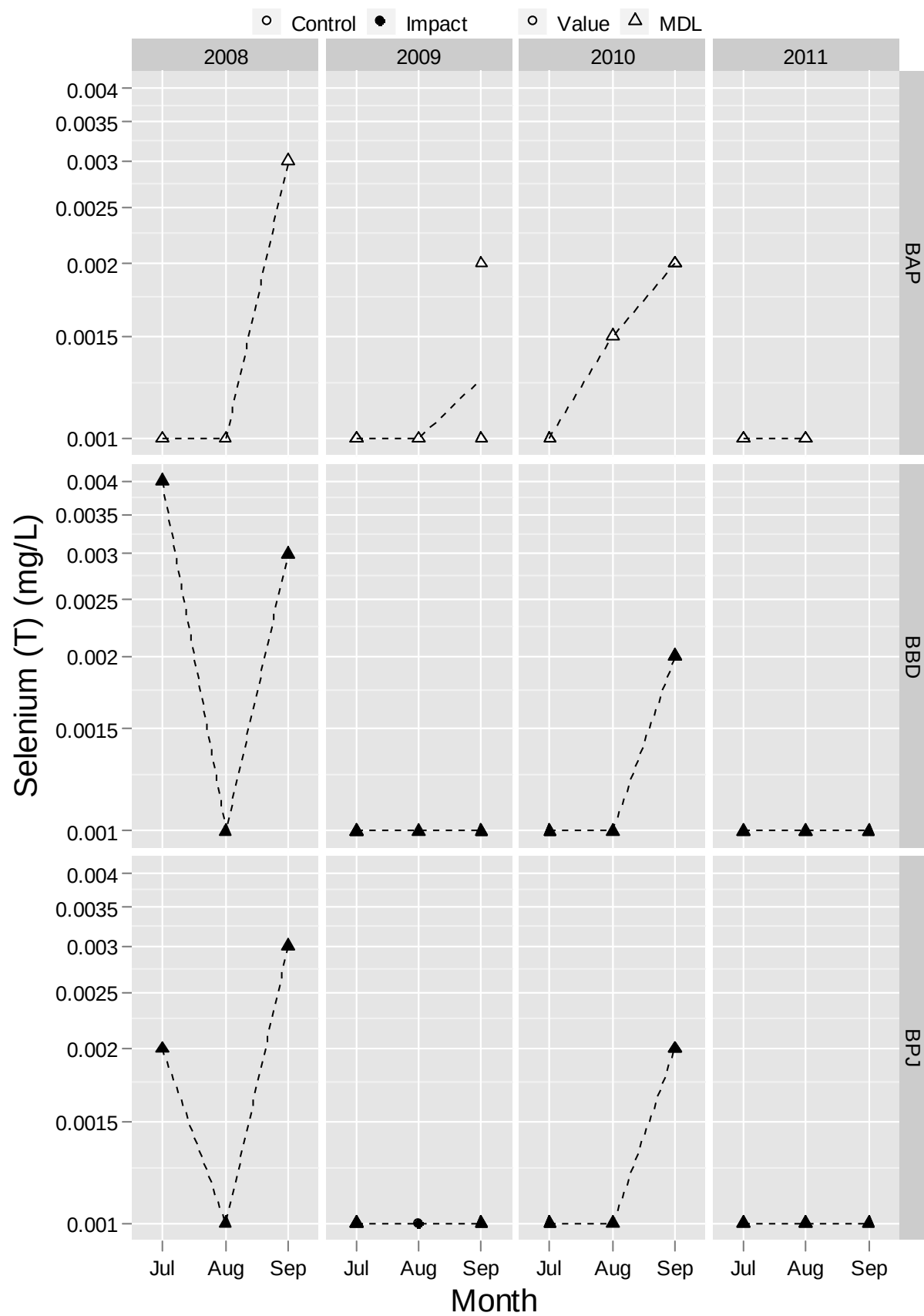


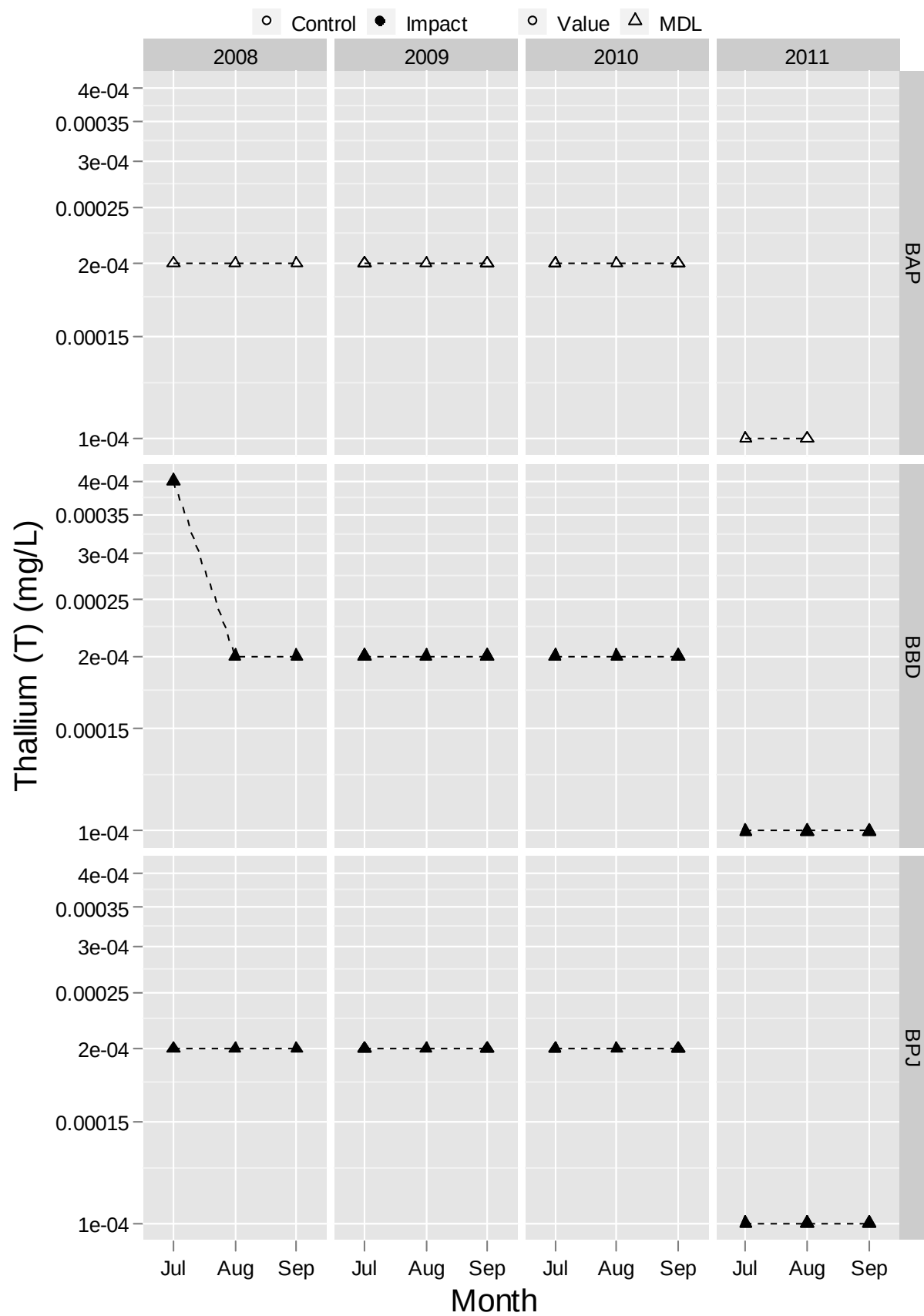


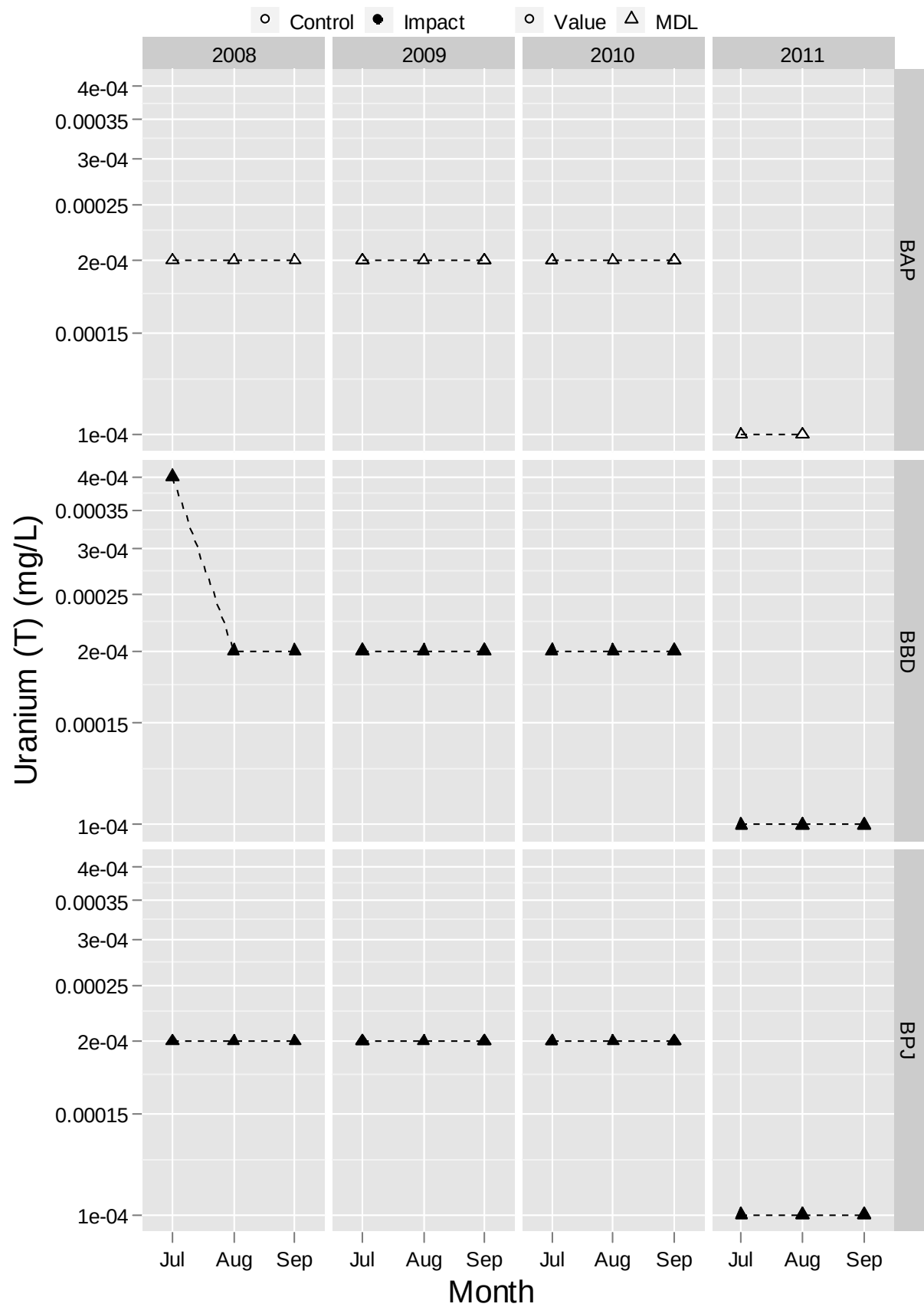


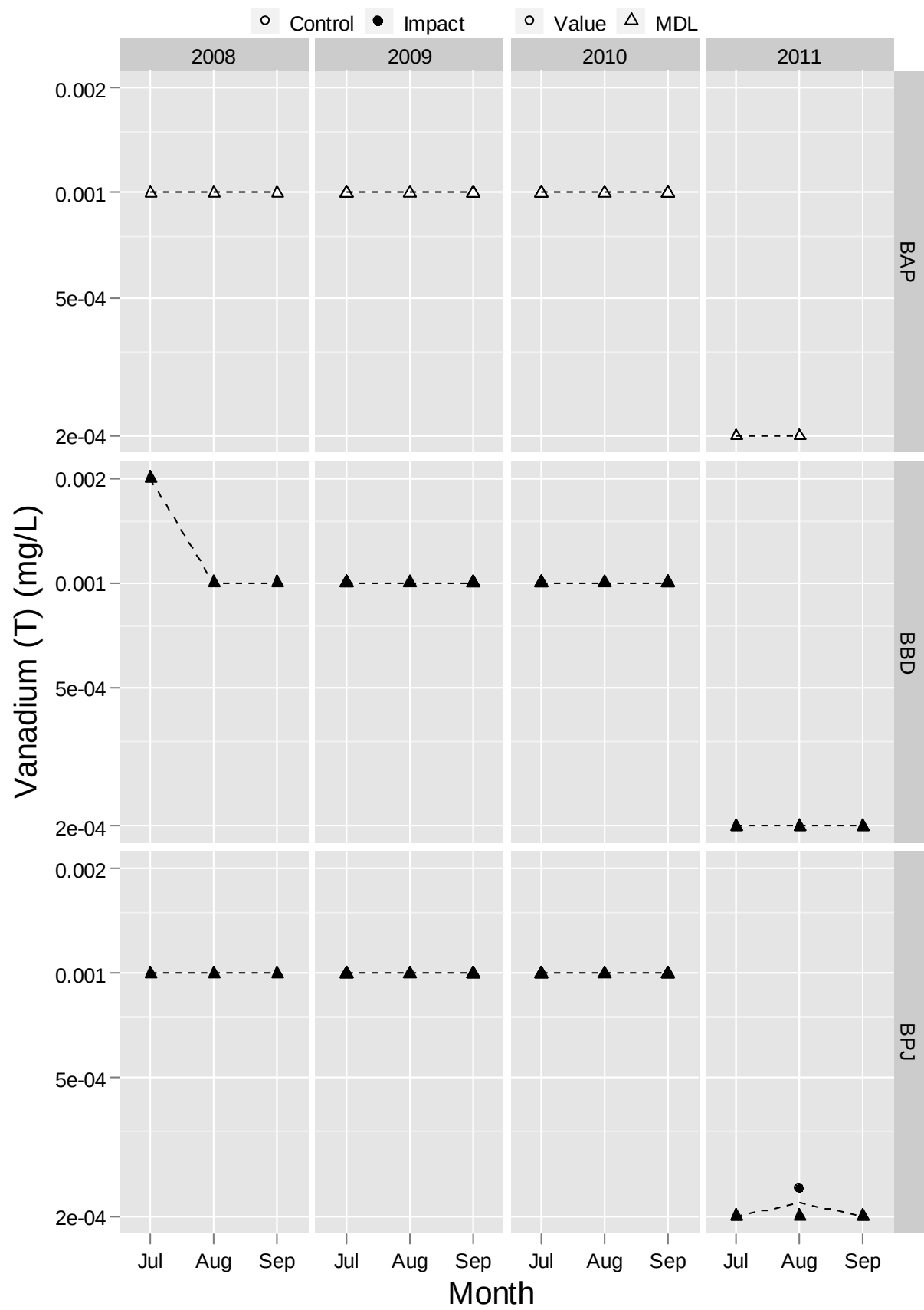


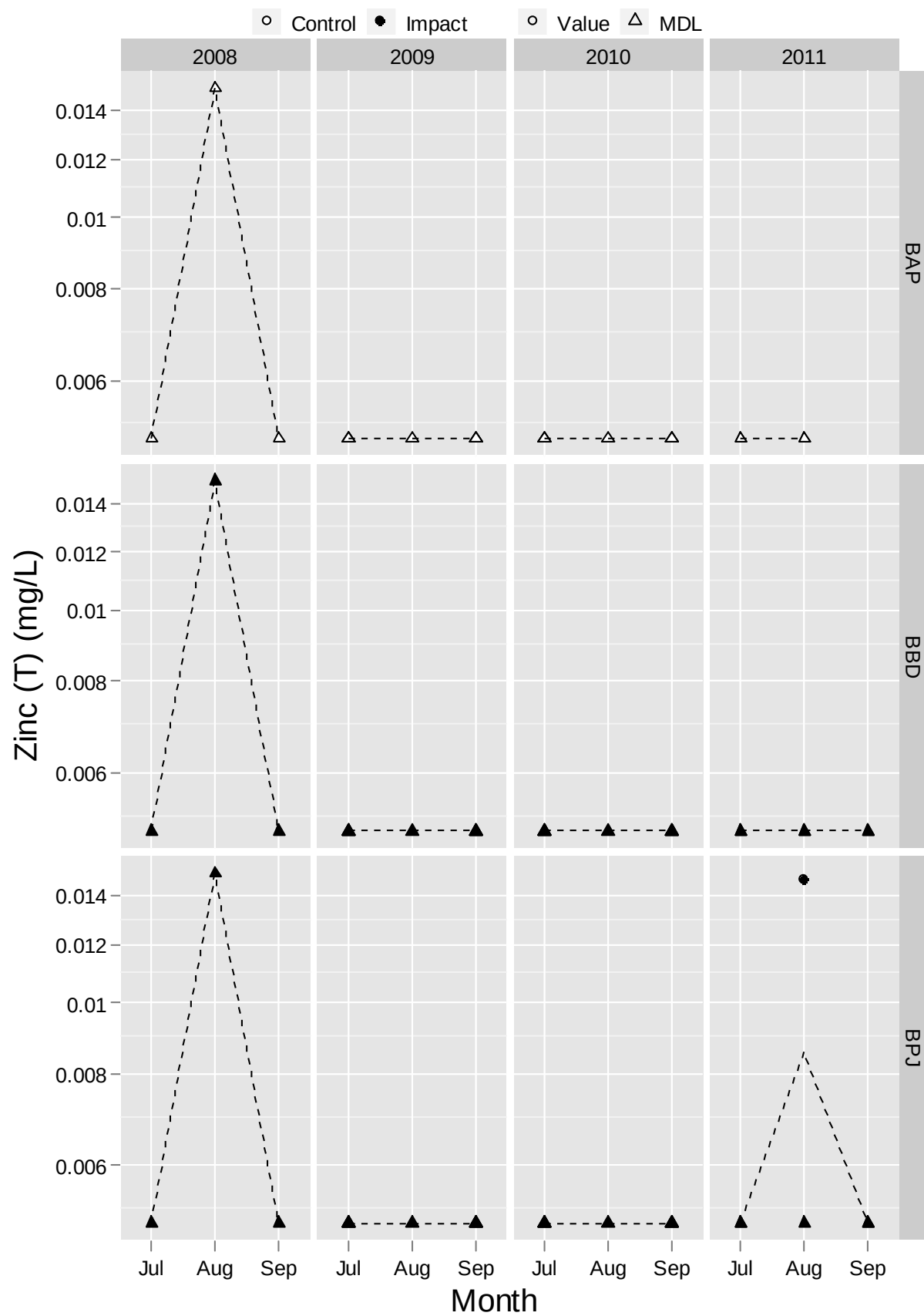


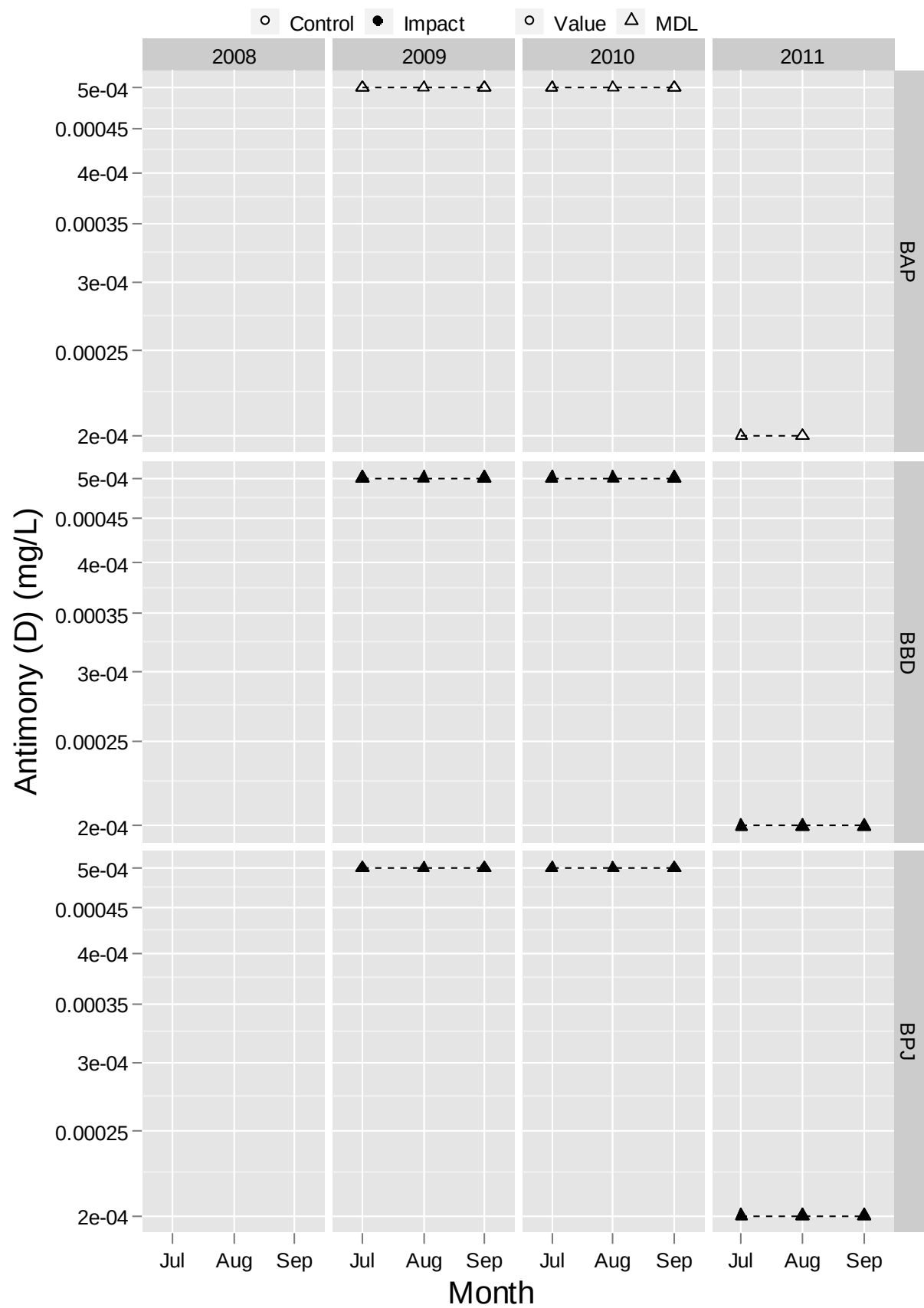


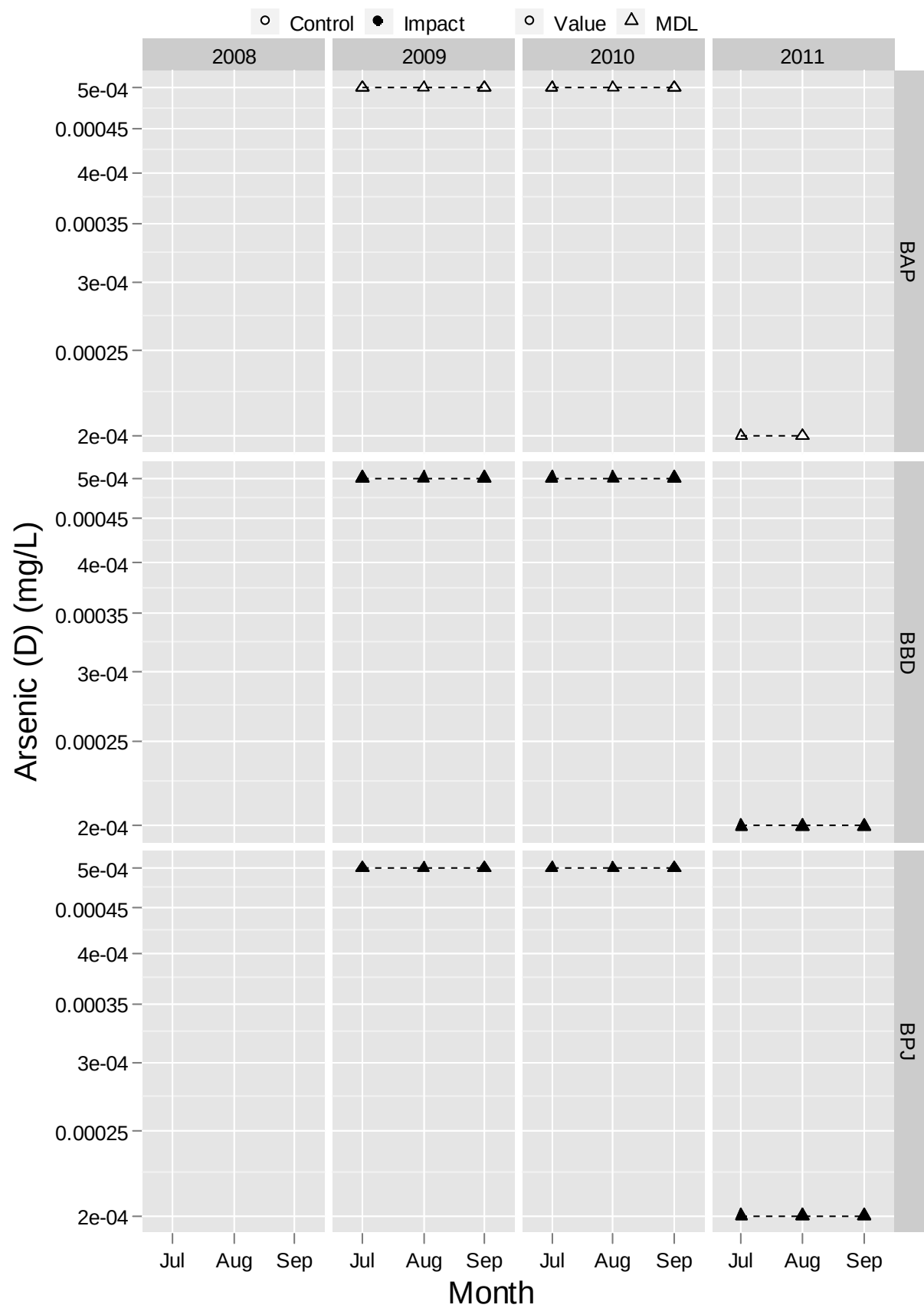


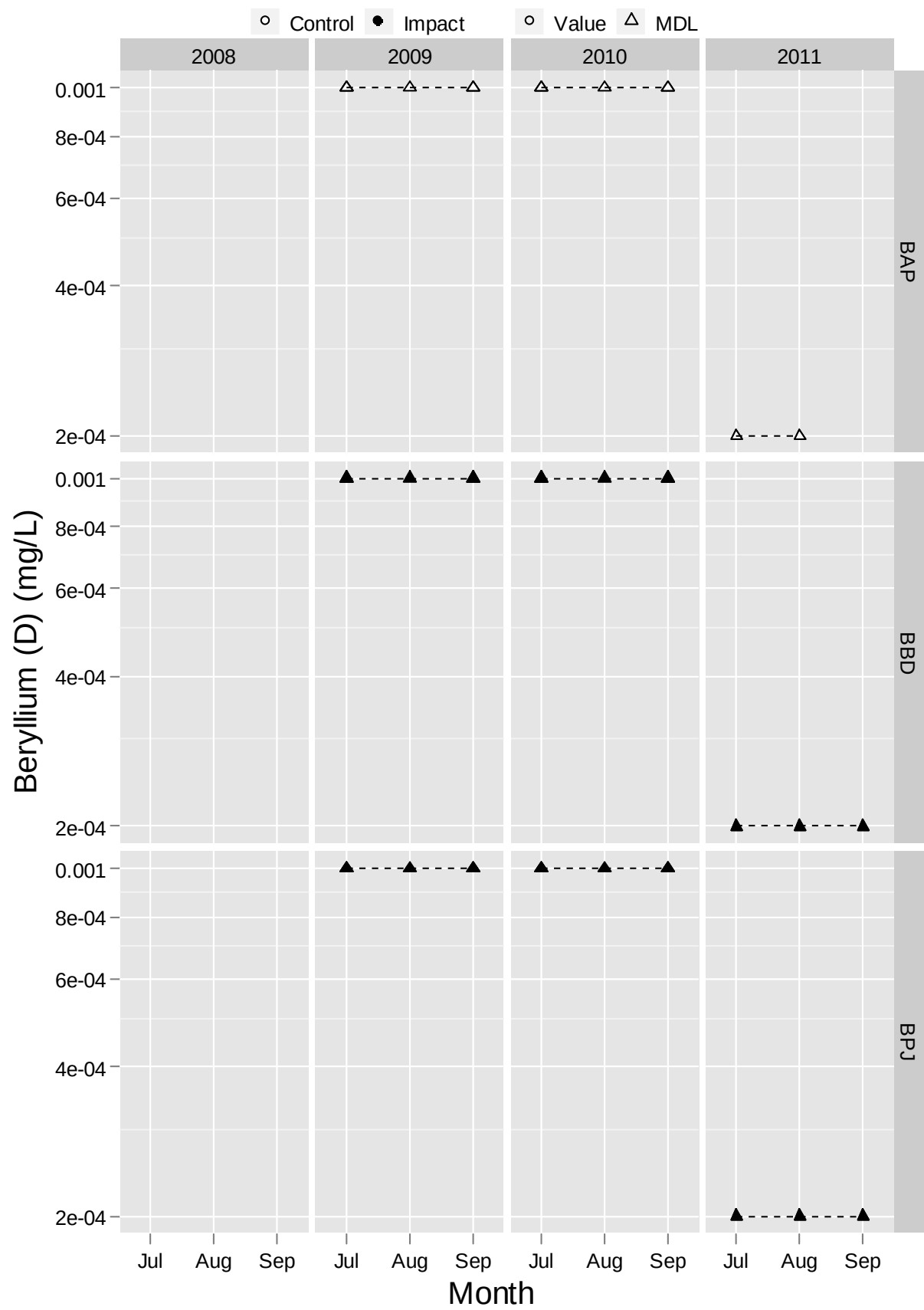


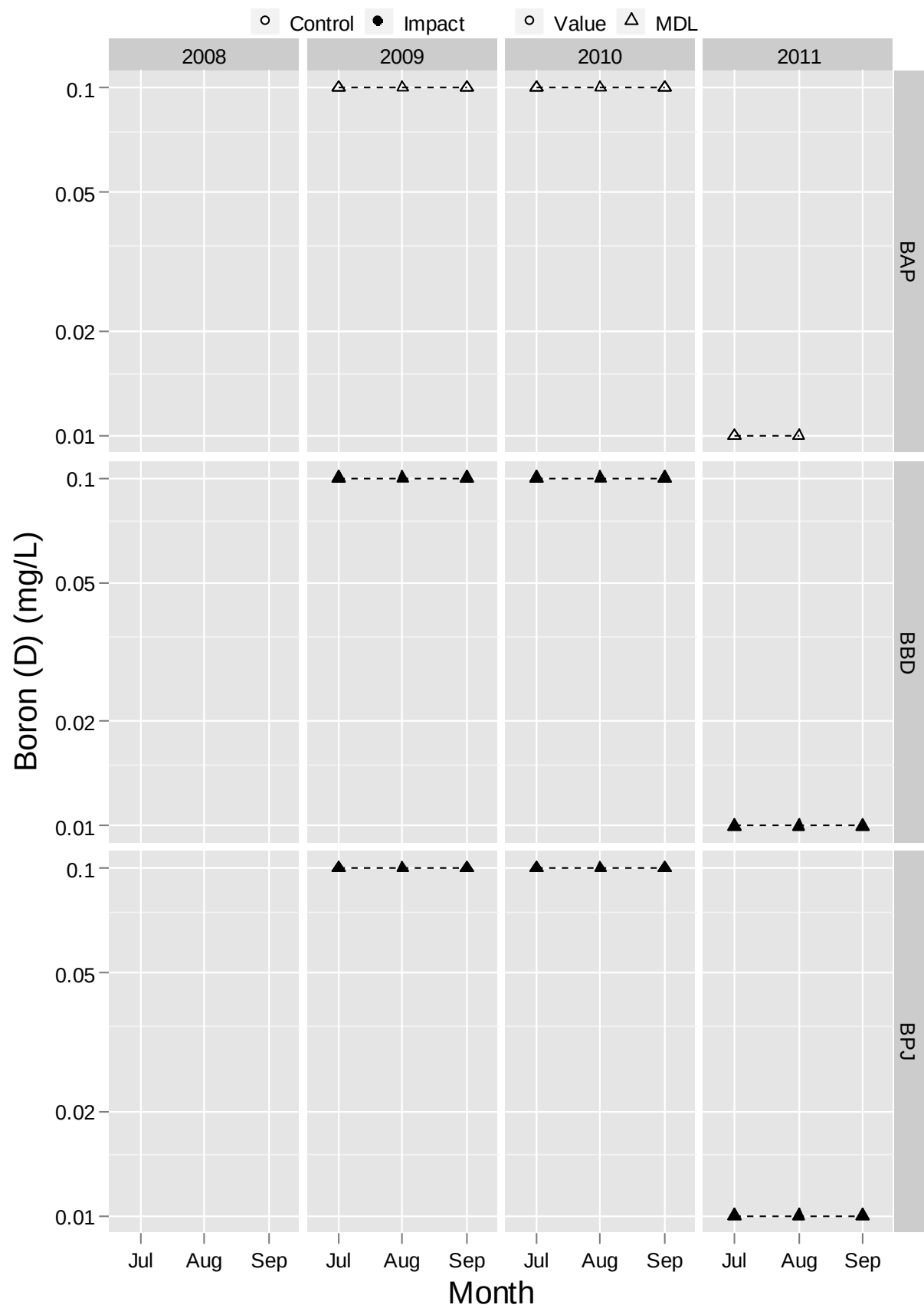


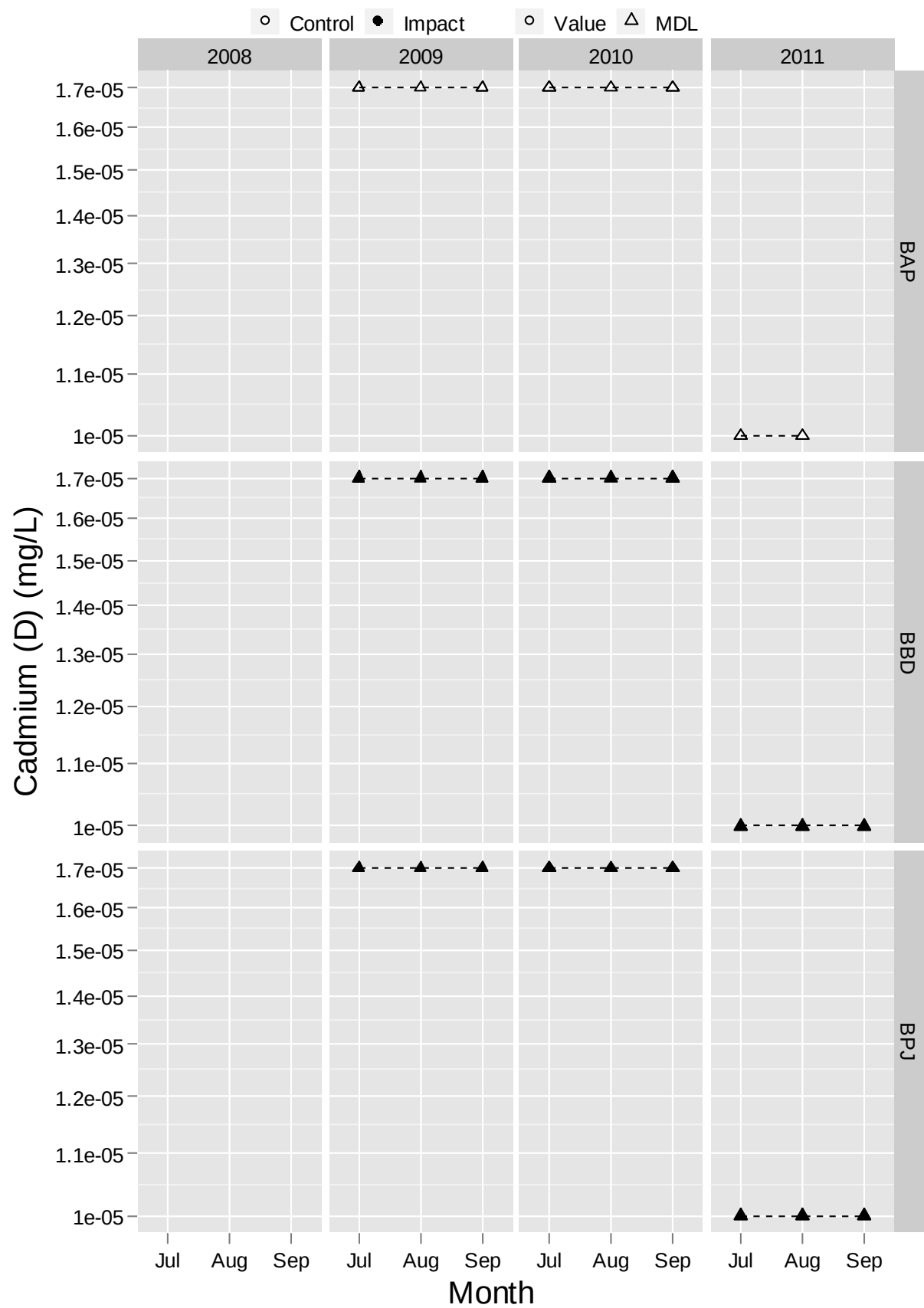


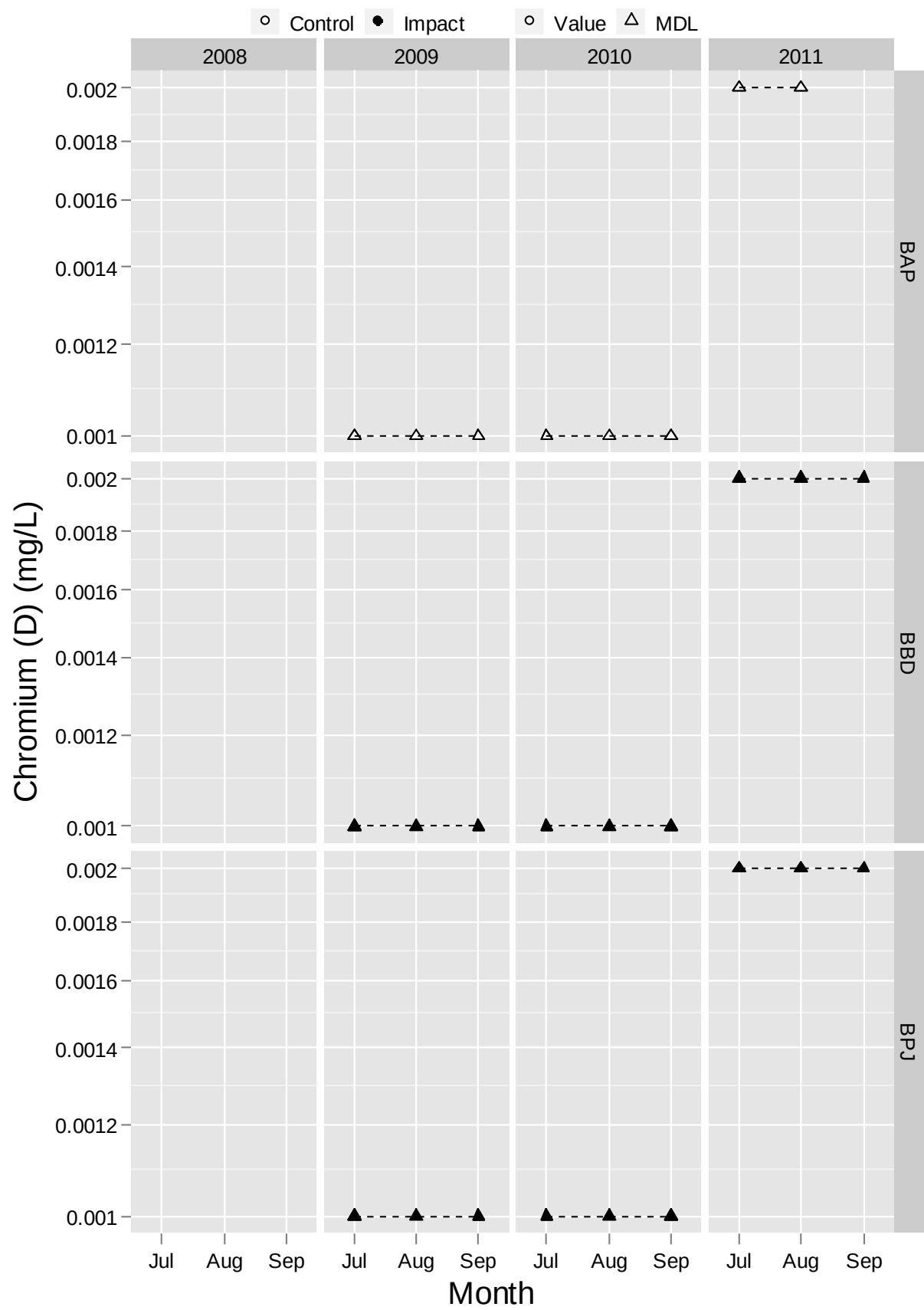


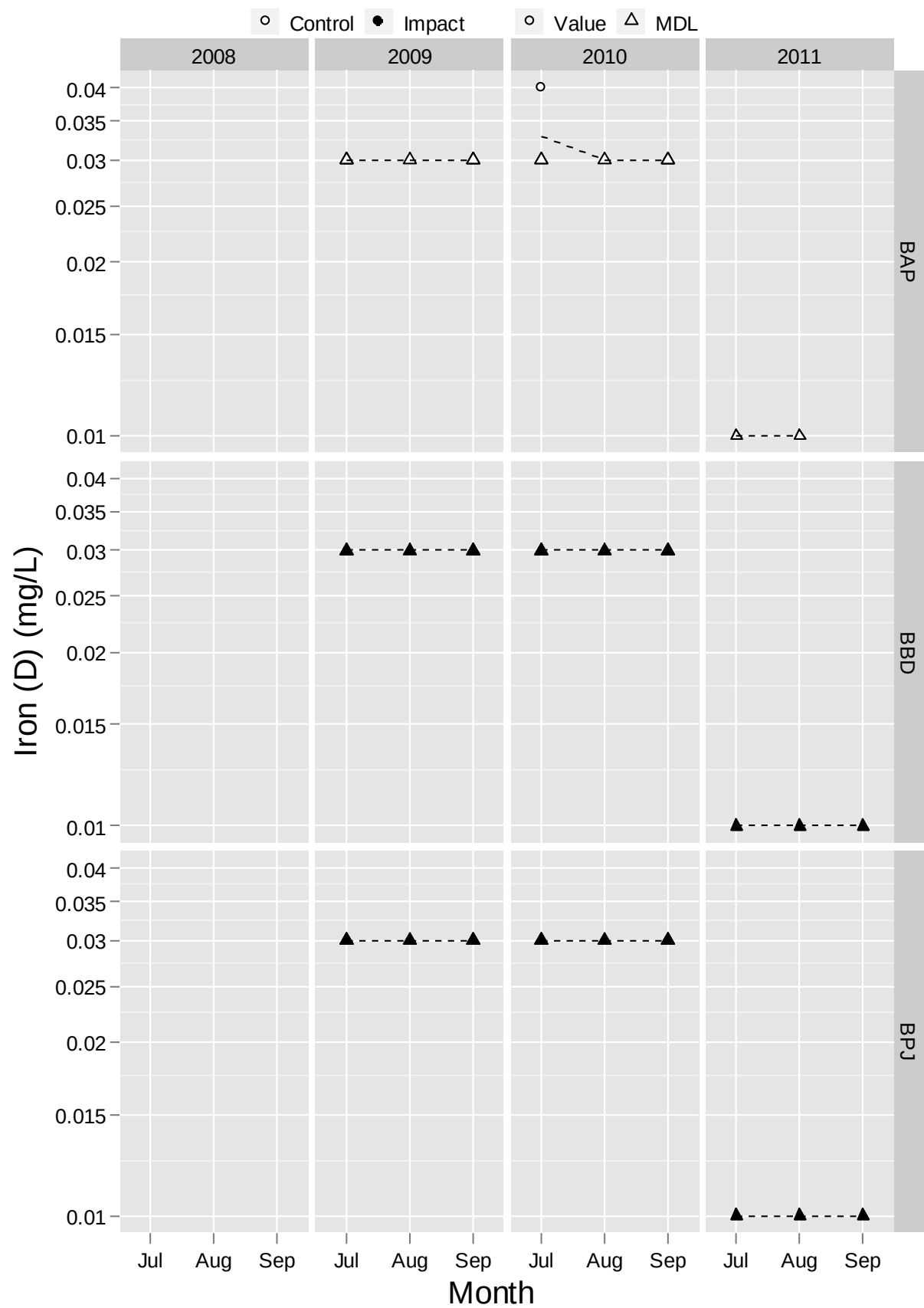


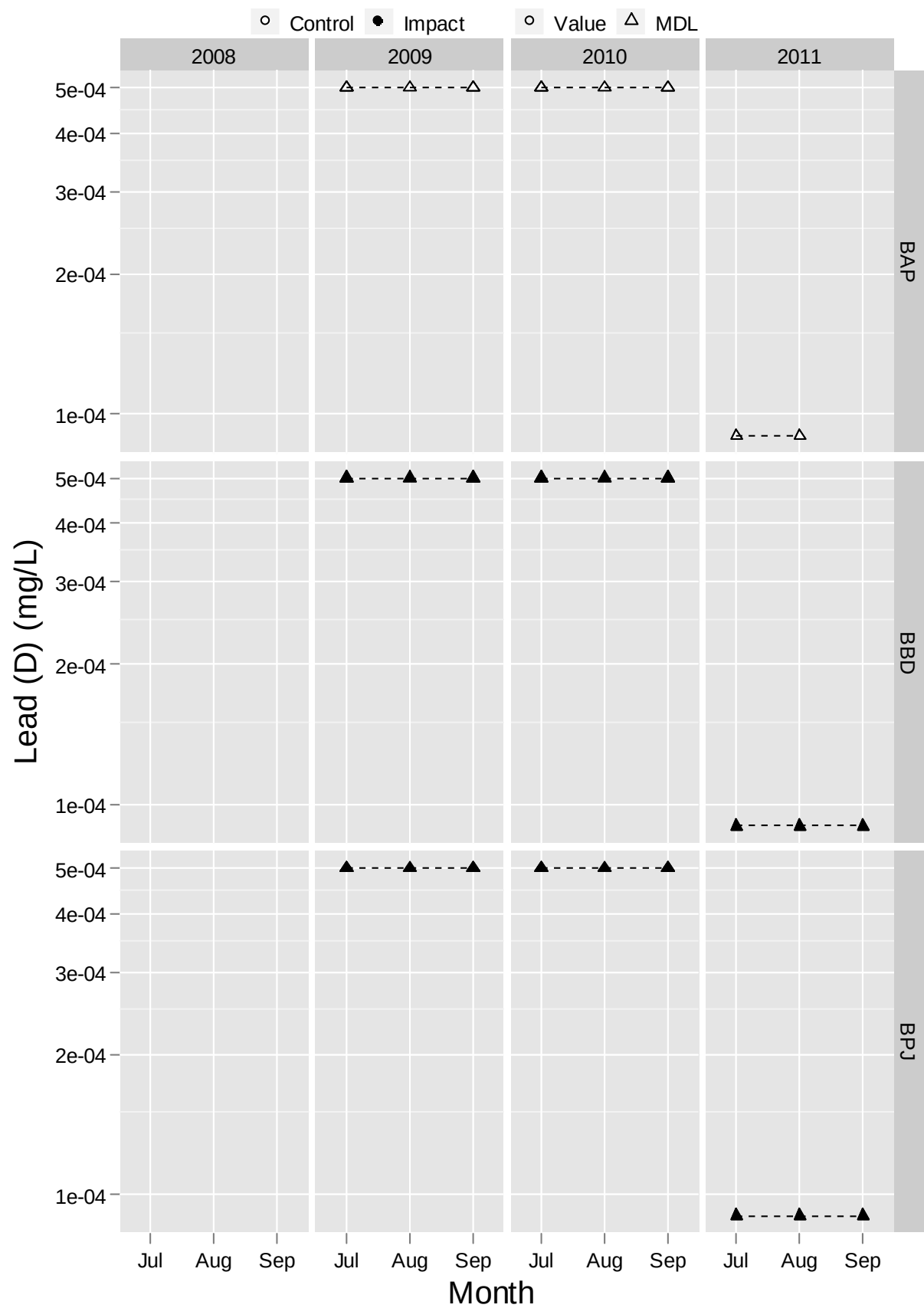


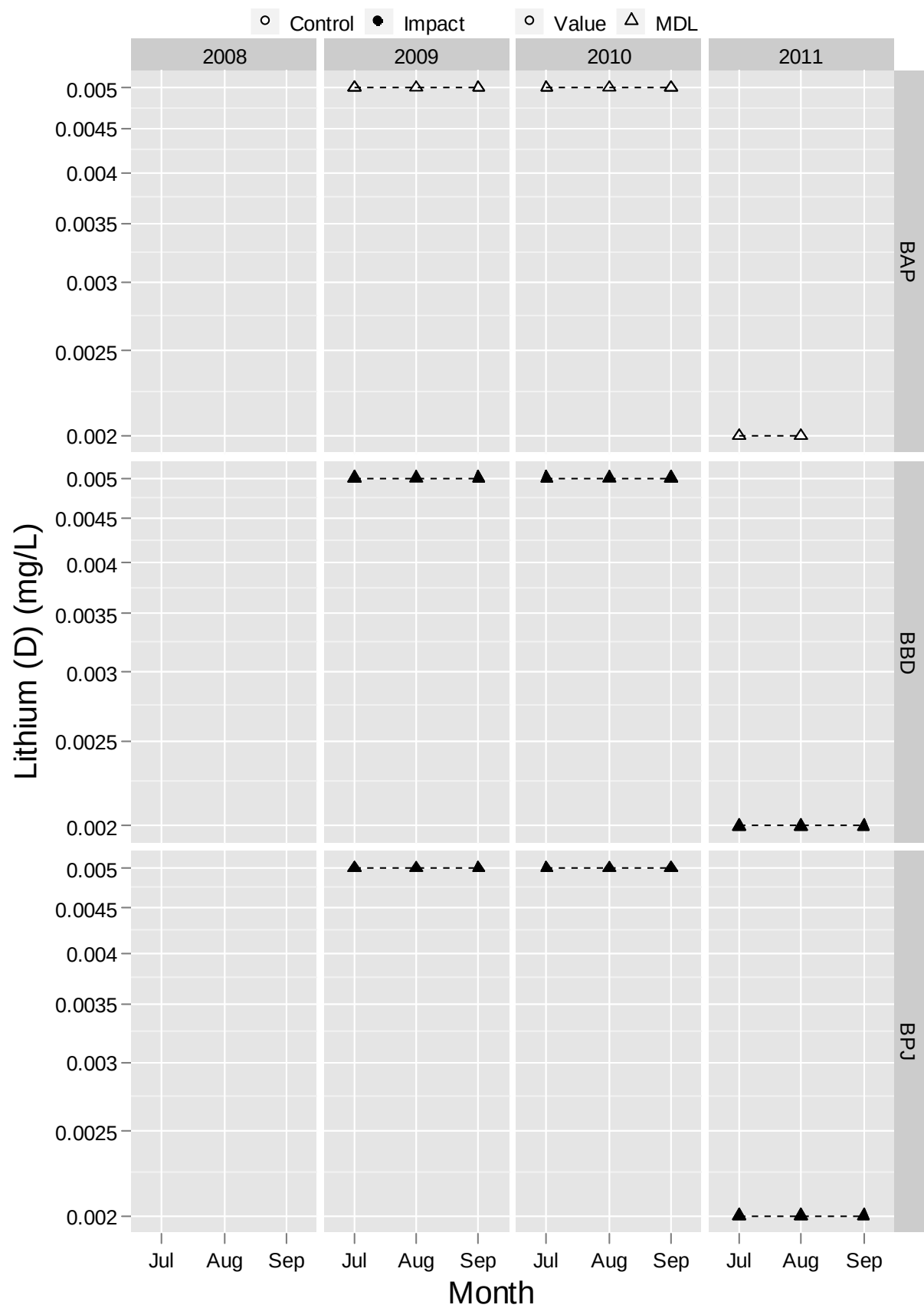


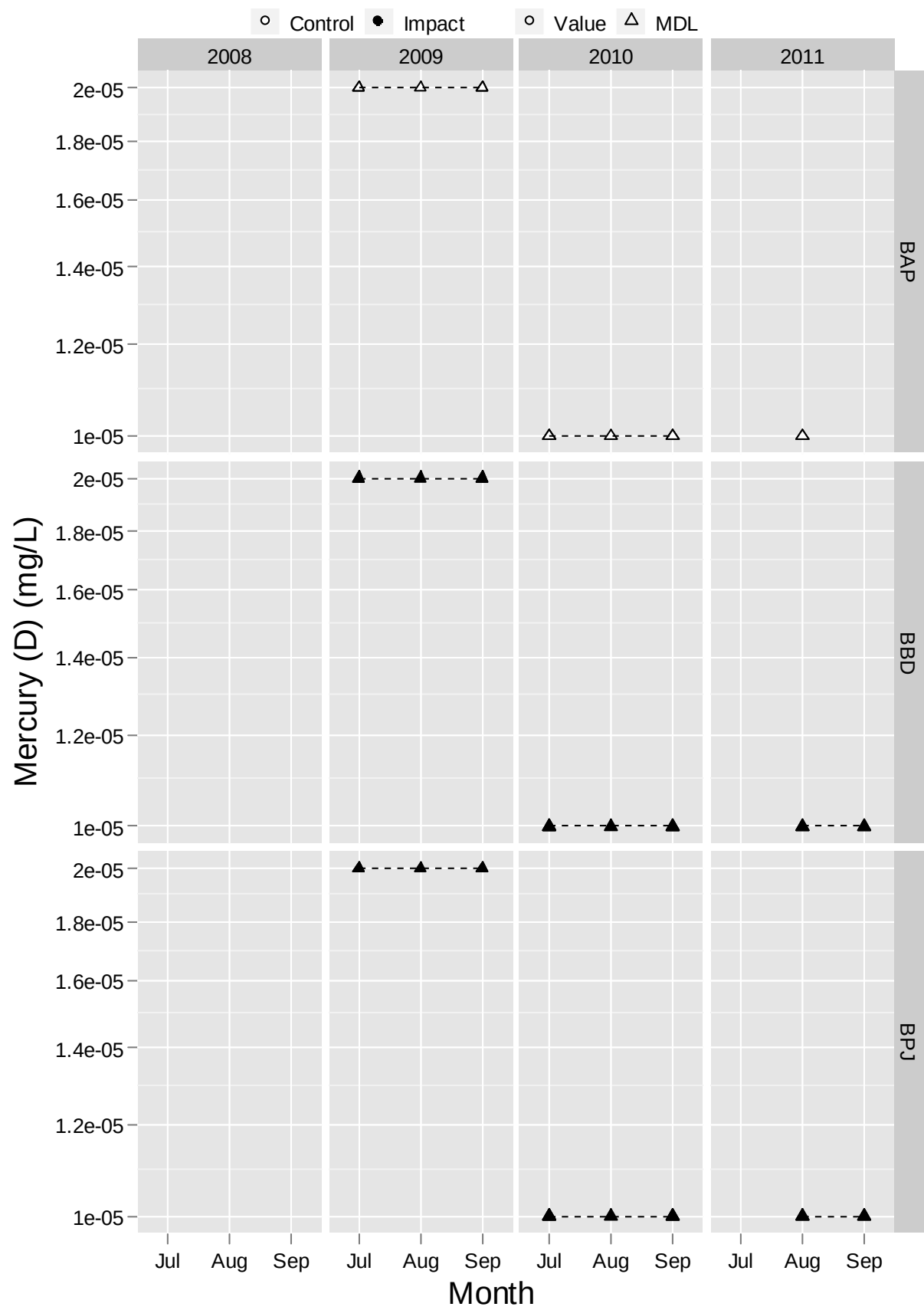


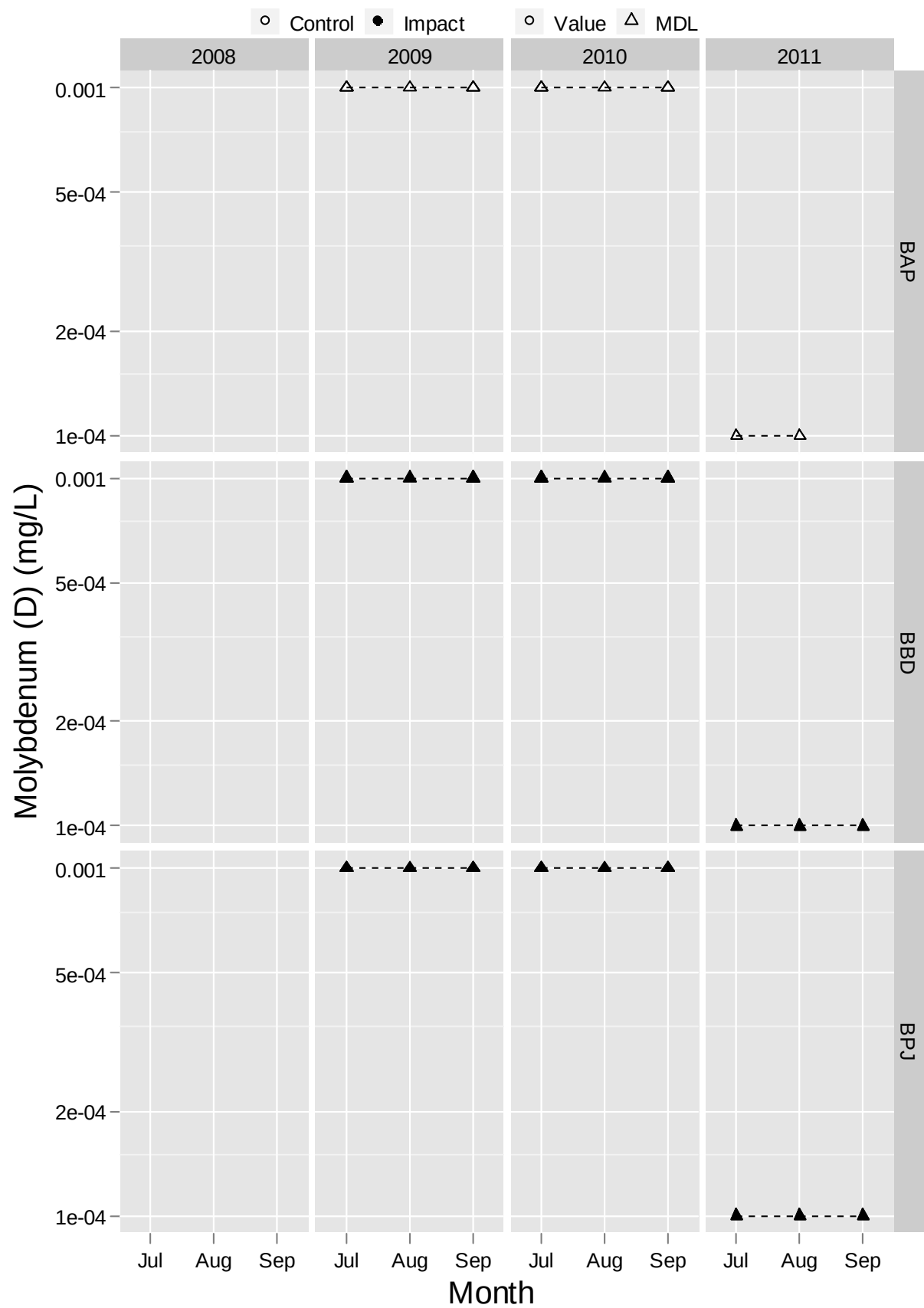


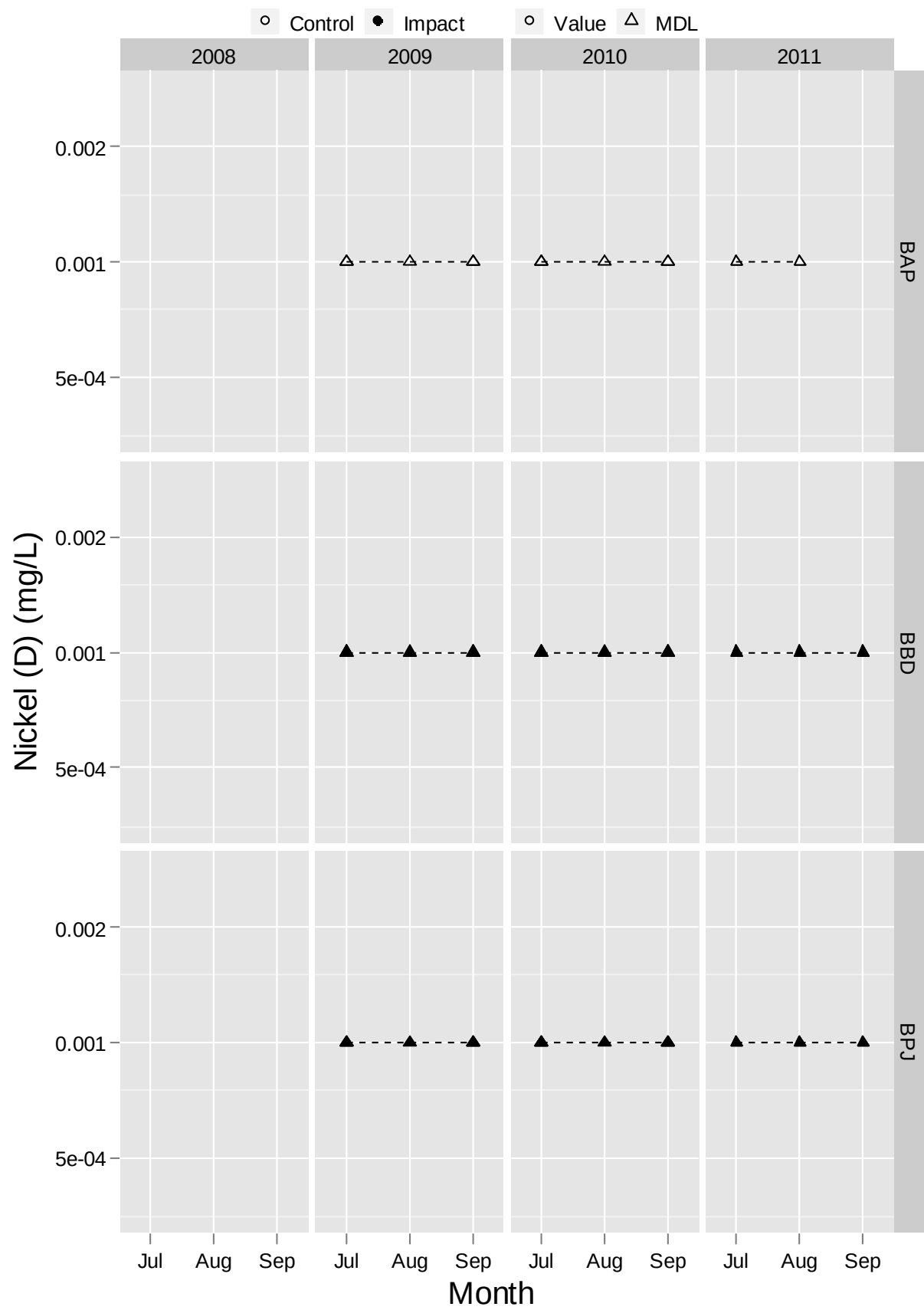


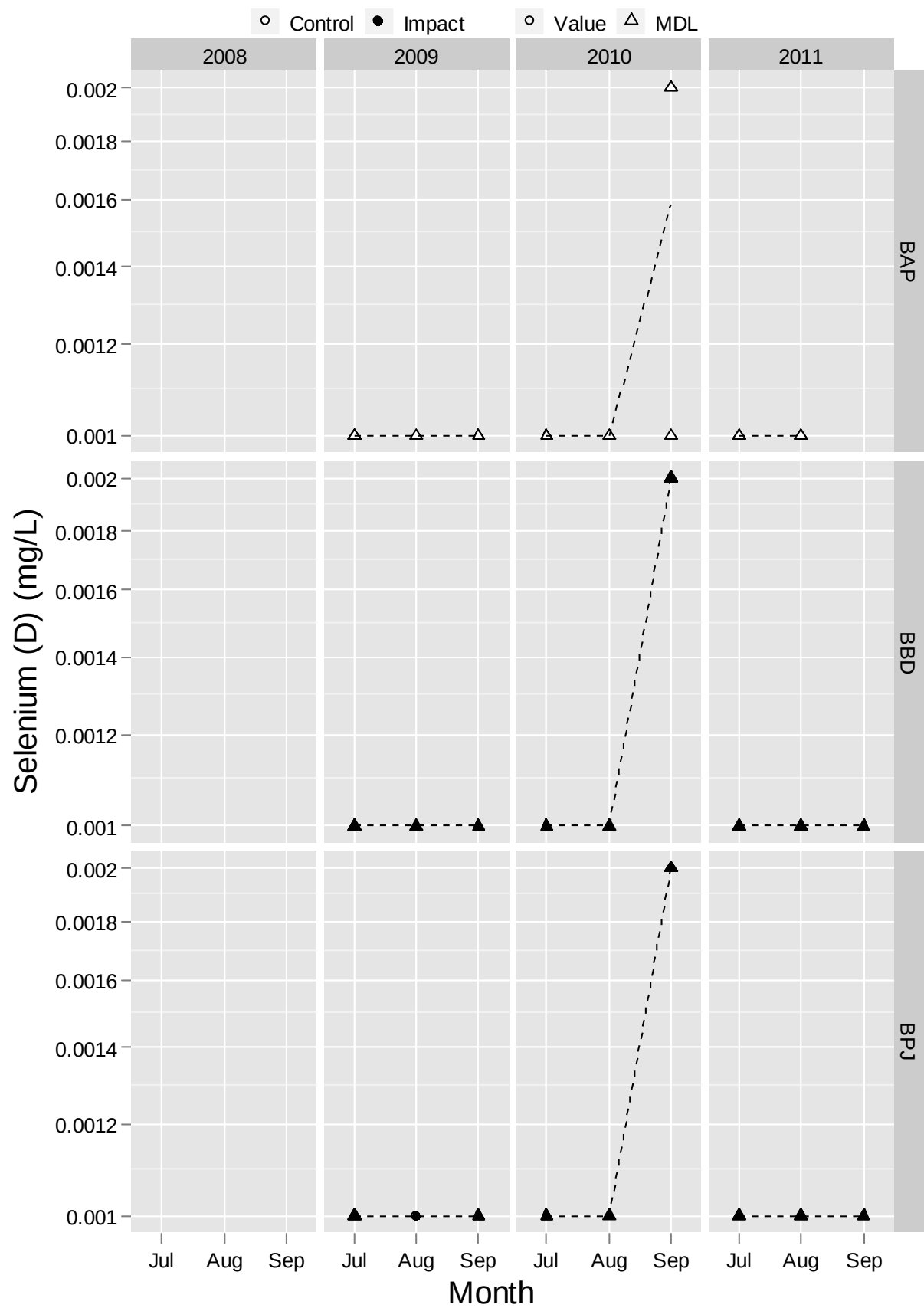


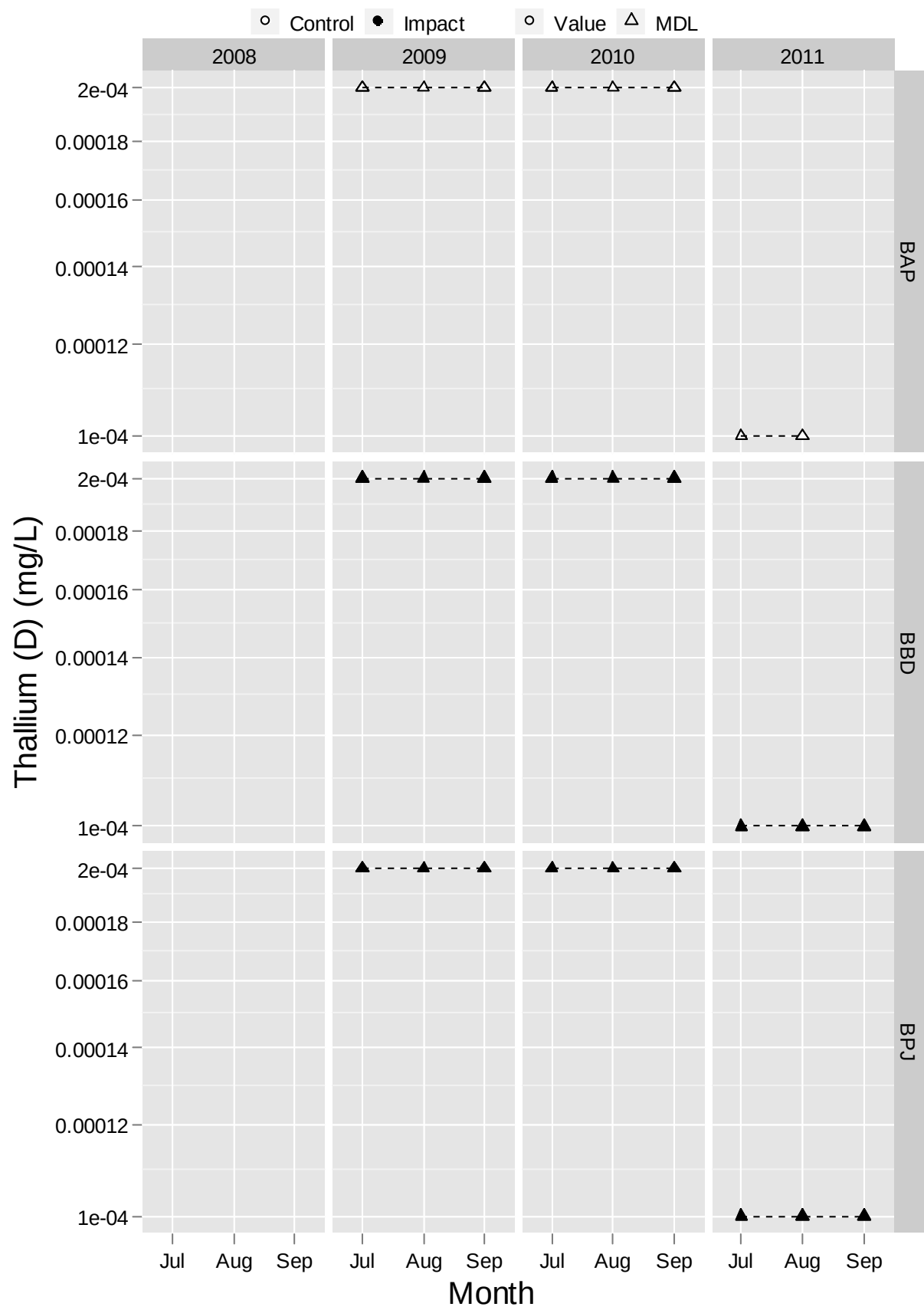


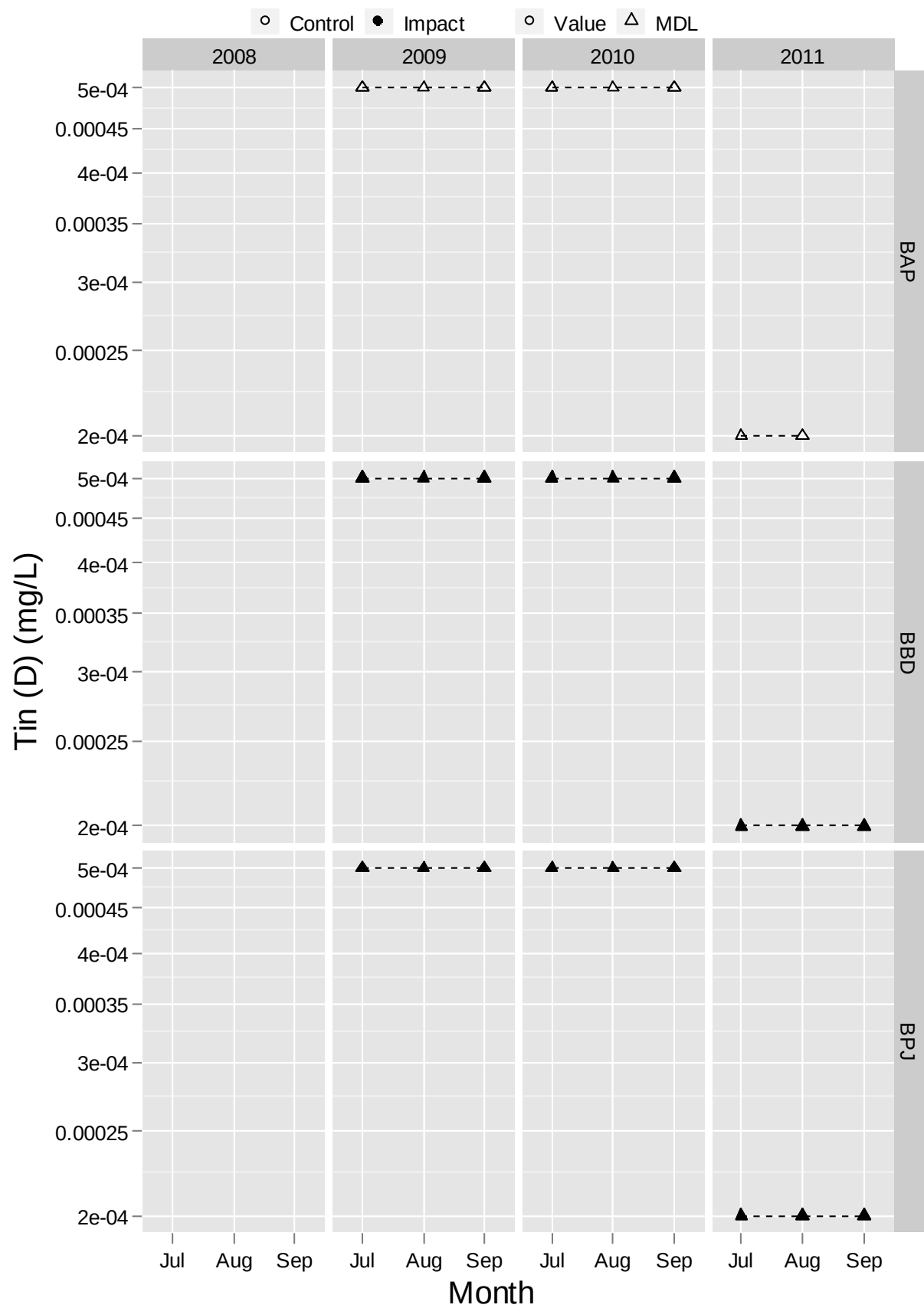


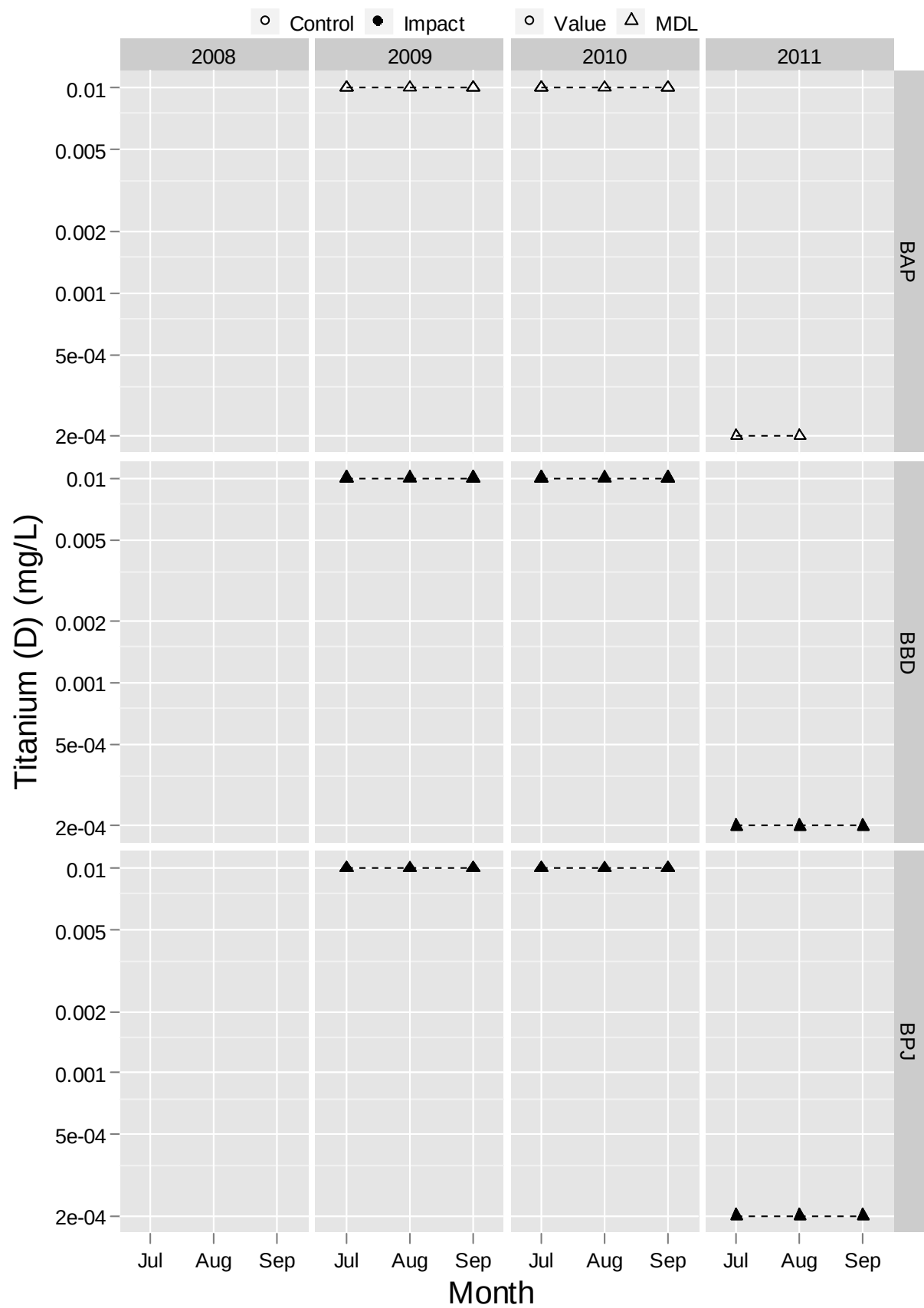


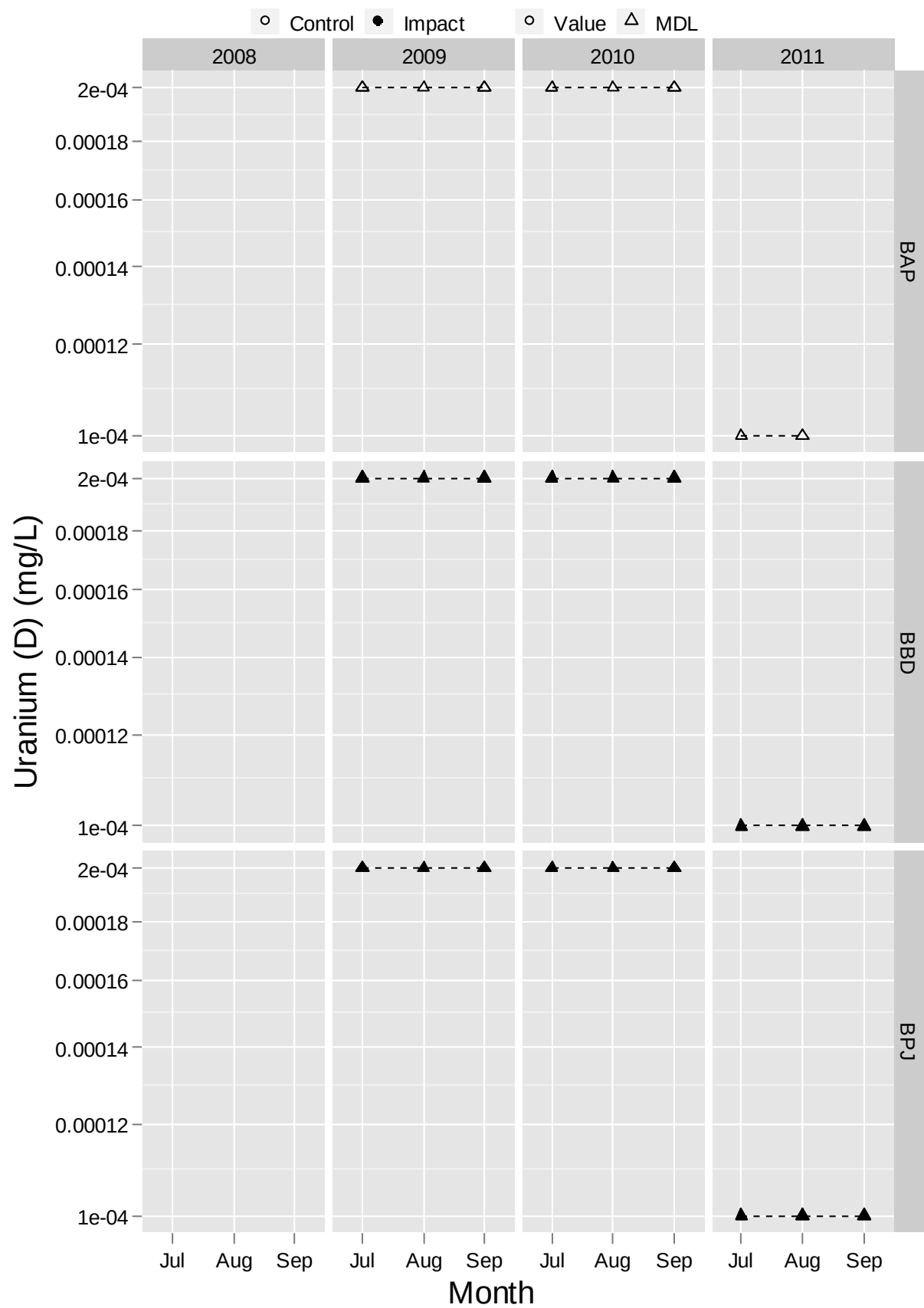


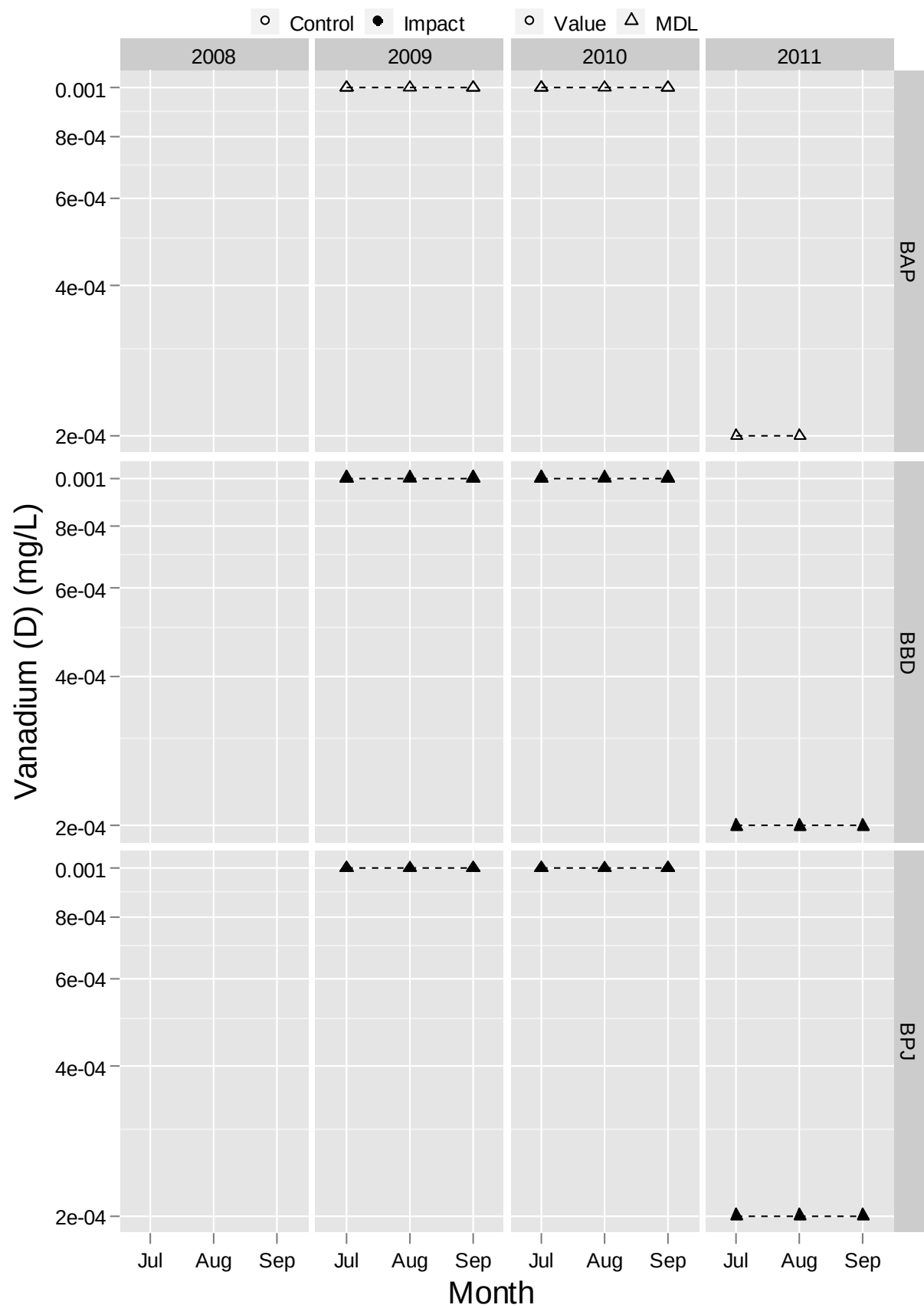


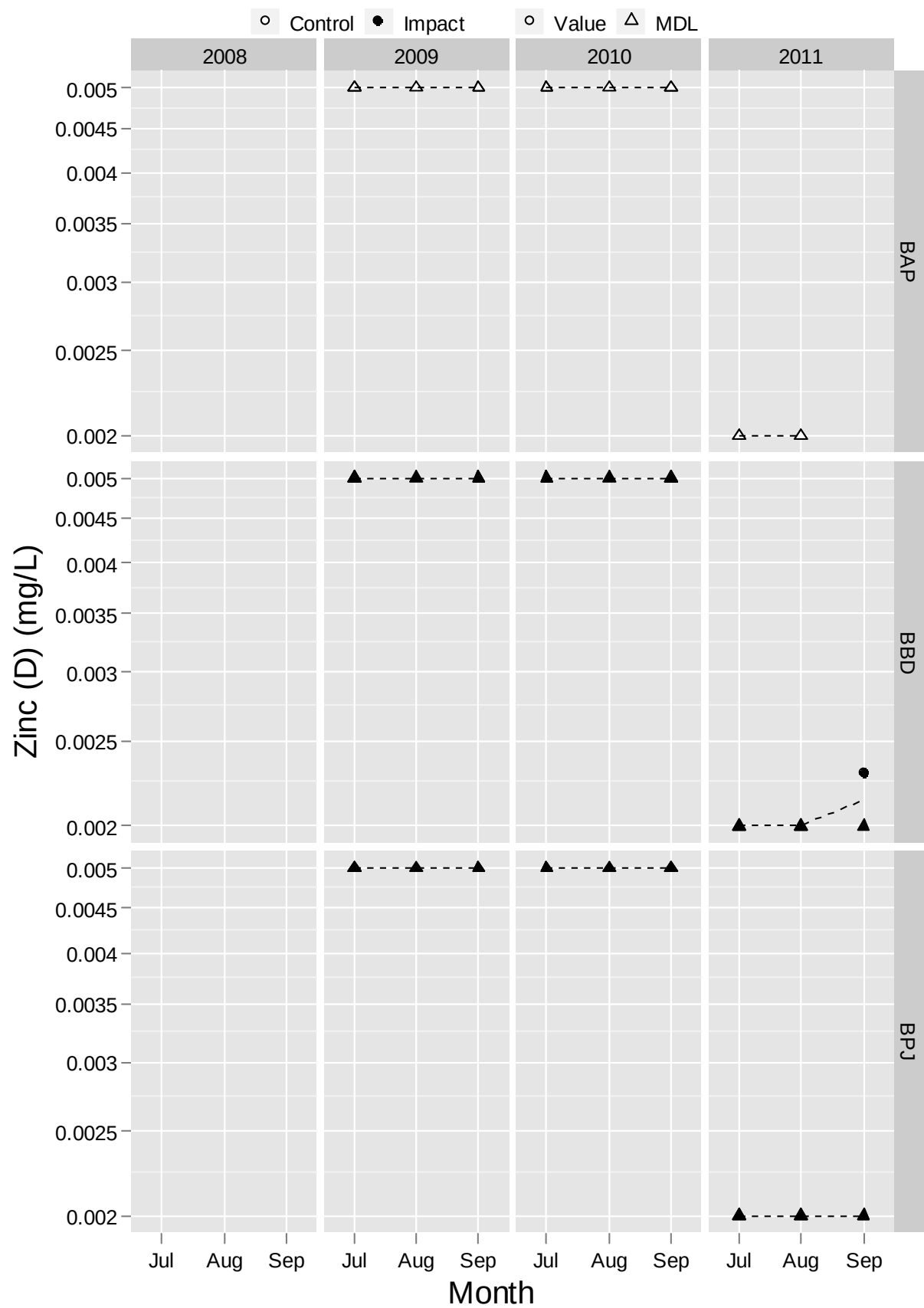












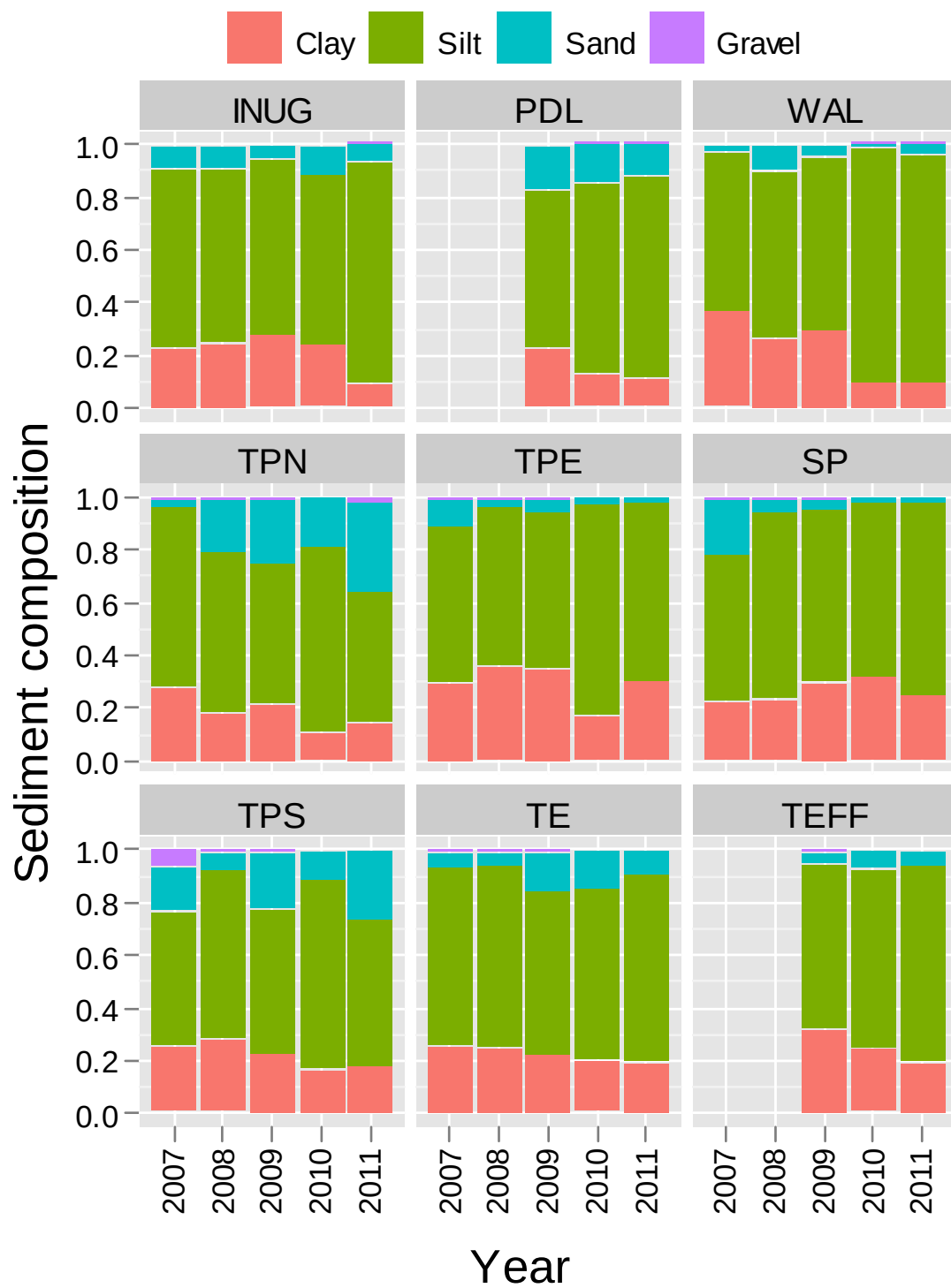
APPENDIX F

**SEDIMENT QUALITY PARAMETER PLOTS 2006 –
2011**



Sediment grain size plot

Meadowbank



APPENDIX G

PRESENCE (+) / ABSENCE (-) MATRIX OF PHYTOPLANKTON SPECIES IN MEADOWBANK STUDY LAKES AND BAKER LAKE, 2011



Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Third Portage Lake - East Basin													
		TPE-34	TPE-35	TPE-36	TPE-37	TPE-38	TPE-39	TPE-40	TPE-41	TPE-42	TPE-43	TPE-44	TPE-45	TPN-34	TPN-35
		4-May-11	4-May-11	27-Jul-11	28-Jul-11	24-Aug-11	24-Aug-11	16-Sep-11	16-Sep-11	22-Nov-11	22-Nov-11	23-Dec-11	23-Dec-11	1-May-11	1-May-11
Cyanophyte															
1007	<i>Aphanocapsa delicatissima</i> W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	<i>Aphanocapsa</i>	-	-	-	-	+	+	-	-	-	-	-	-	-	-
1012	<i>Aphanothece</i>	-	-	-	-	-	-	-	-	+	+	+	-	+	-
1014	<i>Chroococcus limneticus</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1026	<i>Merismopedia tenuissima</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1030	<i>Synechococcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1033	<i>Rhabdogloea lineare</i> Schmidle and Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1037	<i>Myxobakteron smithii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1054	<i>Planktolyngbya limnetica</i>	+	+	+	+	+	+	+	+	+	+	+	-	+	+
1073	<i>Snowella</i>	-	-	-	-	-	-	+	+	-	-	-	-	-	-
1077	<i>Pseudoanabaena</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1088	<i>Anabaena solitaria</i> Klebs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1089	<i>Cyanodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1097	<i>Snowella lacustris</i> (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	+	-	-	-	-
1104	<i>Scytonema</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
1235	<i>Aphanizomenon klebahnii</i> Pechar and Kalina	-	-	+	-	-	-	-	-	-	-	-	-	-	-
Chlorophyte															
2100	<i>Pyramidomonas tetrahynchus</i> Schmarla	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2101	<i>Carteria</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2105	<i>Chlamydomonas</i>	-	+	+	+	+	+	-	+	-	+	-	-	-	-
2112	<i>Sphaerocystis schroeteri</i> Chodat	-	-	-	-	+	+	+	+	-	-	-	-	-	-
2117	<i>Chlorella vulgaris</i> Beyerinck	-	-	-	-	-	-	-	-	-	-	+	+	-	-
2120	<i>Oocystis submarina</i> v. <i>variabilis</i> Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2121	<i>Oocystis lacustris</i> Chodat	+	+	-	+	+	+	-	+	-	-	-	-	-	+
2125	<i>Paulschulzia pseudovolvox</i> (Schulz and Teiling) Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2126	<i>Chodatella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2127	<i>Tetradron minimum</i> (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2132	<i>Scenedesmus denticulatus</i> Lagerhiem	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2136	<i>Dictyosphaerium pulchellum</i> Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2137	<i>Dictyosphaerium simplex</i> Sukja	-	-	-	+	-	-	-	-	+	+	-	-	-	-
2138	<i>Monoraphidium komarkovae</i> (Nyg.) Komarkova-Legnerova	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2141	<i>Monoraphidium contortum</i> (Thur.) Komarkova-Legnerov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142	<i>Monoraphidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	<i>Monoraphidium minutum</i> (Nag.) Komarkova-Legnerova	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2145	<i>Crucigenia quadrata</i> Morr.	-	-	-	-	-	-	-	+	-	-	-	-	-	-
2164	<i>Quadrigula closterioides</i> (Bohl.) Printz	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2167	<i>Elakatothrix gelatinosa</i> Willen	-	-	-	-	+	+	+	+	+	+	-	-	-	-
2169	<i>Planctonema lauterbornii</i> Schmidle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2178	<i>Cosmarium</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
2182	<i>Euastrum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2185	<i>Microsterias</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2186	<i>Xanthidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2187	<i>Staurodesmus extensus</i> (Andersson) Teiling	-	+	-	-	-	-	-	-	+	-	+	-	-	-
2193	<i>Staurodesmus paradoxum</i> Meyen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2199	<i>Spondylosium planum</i> (Wolle) W. and G.S. West	-	-	+	+	+	+	-	-	-	-	-	-	-	-
2205	<i>Mougeotia</i>	-	-	+	-	-	+	-	-	-	-	-	-	-	-
2206	<i>Botryococcus braunii</i> Kutzing	-	-	-	+	+	+	+	+	+	+	+	-	-	-
2209	<i>Coccomyxa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2215	<i>Tetradron caudatum</i> (Corda) Hansgrig	-	-	+	+	+	+	+	+	-	-	-	-	-	-
2217	<i>Collodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222	<i>Treubaria</i>	-	-	-	-	-	-	-	-	+	+	-	-	-	+
2235	<i>Ankistrodesmus spiralis</i> Lemmermann	-	-	-	-	+	-	-	-	-	-	-	-	-	-
2247	<i>Oocystis gigas</i> Archer	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2511	<i>Ulothrix zonata</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	+	-	-
2512	<i>Scenedesmus acuminatus</i> Chodat	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Third Portage Lake - East Basin													
		TPE-34	TPE-35	TPE-36	TPE-37	TPE-38	TPE-39	TPE-40	TPE-41	TPE-42	TPE-43	TPE-44	TPE-45	TPN-34	TPN-35
		4-May-11	4-May-11	27-Jul-11	28-Jul-11	24-Aug-11	24-Aug-11	16-Sep-11	16-Sep-11	22-Nov-11	22-Nov-11	23-Dec-11	23-Dec-11	1-May-11	1-May-11
Chrysophyte															
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	-	-	-	-	+	+
4355	<i>Chrysochromulina parva</i> Lackey	-	-	+	+	-	-	+	-	-	-	-	-	-	-
4356	<i>Chrysococcus minutus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4357	<i>Chrysococcus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4358	<i>Chrysostephanospaera globulifera</i> Scherffel	-	-	-	-	+	-	+	-	-	-	-	-	-	-
4361	<i>Kephyrion boreale</i> Skuja	-	-	+	+	+	+	+	+	+	+	+	-	-	-
4362	<i>Kephyrion</i>	+	+	+	+	+	+	+	+	+	+	-	-	+	-
4363	<i>Spinifiromonas sirratus</i>	-	+	+	+	+	-	+	-	+	+	-	-	-	-
4364	<i>Mallomonas caudata</i> Ivanov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4367	<i>Mallomonas duerschmidtiae</i> Siver, Hamer and Kling	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4368	<i>Mallomonas crassisquama</i> (Asmund) Fott	-	-	-	-	-	-	-	-	+	+	-	-	-	-
4369	<i>Mallomonas pseudocoronata</i> Prescott	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4370	<i>Mallomonas akrokomos</i> Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4375	<i>Synura sphagnicola</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4378	<i>Dinobryon borgei</i> Lemmermann	-	-	+	+	+	-	-	+	-	-	-	-	-	-
4381	<i>Dinobryon mucronutum</i> Nygaard	-	-	-	-	-	+	+	-	+	-	-	-	-	-
4383	<i>Dinobryon bavaricum</i> Imhof	-	-	-	-	+	+	+	+	-	-	-	-	-	-
4384	<i>Dinobryon bavaricum</i> v <i>vanhoeffenii</i> (Bachmann) Krieger	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4387	<i>Dinobryon cylindricum</i> Imhof	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4388	<i>Dinobryon sertularia</i> Ehrenberg	-	-	+	+	+	+	+	+	+	-	-	-	-	-
4390	<i>Dinobryon sociale</i> Ehrenberg	+	+	-	-	+	+	+	+	+	+	+	+	-	+
4394	<i>Epiphyxis</i>	-	-	+	-	+	+	+	+	-	-	-	-	-	-
4396	<i>Chrysalkos skuja</i> (Nauwerck) Willen	-	-	+	+	-	-	-	-	-	-	-	-	-	-
4400	<i>Ochromonas</i>	+	-	-	-	-	-	-	-	-	-	-	-	+	-
4401	<i>Uraglena valvox</i> Ehrenberg	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4403	<i>Chrysosphaerella longispina</i> Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4411	<i>Bitrichia chodatii</i> (Reverdin) Chodat	-	-	-	-	+	-	+	+	-	-	-	-	-	-
4413	<i>Chrysochromulina laurentiana</i> Kling	+	-	+	+	+	-	+	-	-	-	-	-	-	-
4414	<i>Stichogloea</i>	-	-	+	+	+	+	+	+	-	-	-	-	-	-
4415	<i>Bicoeca lacustris</i> Clark	+	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	<i>Salpingoeca frequentissima</i> (Zach.) Lemmermann	+	+	+	-	-	-	+	-	-	-	-	-	-	-
4426	<i>Mallomonas marj.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4431	<i>Synura petersenii</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4436	<i>Dinobryon attenatum</i> Hill	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4437	<i>Pteridomonas</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4444	<i>Dinobryon pediforme</i> (Lemmermann) Steineche	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

<i>Species & Code</i>		Third Portage Lake - East Basin													
		TPE-34	TPE-35	TPE-36	TPE-37	TPE-38	TPE-39	TPE-40	TPE-41	TPE-42	TPE-43	TPE-44	TPE-45	TPN-34	TPN-35
		4-May-11	4-May-11	27-Jul-11	28-Jul-11	24-Aug-11	24-Aug-11	16-Sep-11	16-Sep-11	22-Nov-11	22-Nov-11	23-Dec-11	23-Dec-11	1-May-11	1-May-11
Diatom															
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	+	-	+	-	-	-	+	+	+	+	+	+	-	+
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5509	<i>Cyclotella ocellata</i> Pant.	-	-	-	-	+	+	+	+	+	+	+	+	-	-
5511	<i>Rhizosolenia erianse</i> H.L. Smith	-	-	+	-	+	-	-	-	+	+	-	+	-	+
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	-	-	+	-	-	-	-	-	+	+	-	-	-	-
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	-	-	+	+	+	-	+	+	-	-	-	-	-	-
5518	<i>Synedra acus</i> Kutzing	+	-	+	+	+	-	+	+	+	+	+	-	-	-
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5524	<i>Asterionella formosa</i> Hassall	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5540	<i>Aulacoseira italica</i> v <i>subarctica</i> (O. Muller) Simonsen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5546	<i>Gyrosigma</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	-	+	+	+	+	+	-	+	+	+	+	+
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5720	<i>Cyclotella bodanica</i> Eulens.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	+	-	+	-	-	+	-	-	-	-	-	-	-	-
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	+	-
Cryptophyte															
6554	<i>Rhodomonas minuta</i> Skuja	-	+	+	+	+	+	+	-	+	+	-	-	-	+
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	-	-	-	+	+	+	+	+	+	+	-	-	-	-
6565	<i>Cryptomonas rostratiformis</i> Skuja	-	-	-	+	+	+	-	+	-	-	-	-	+	-
6568	<i>Katablepharis ovalis</i> Skuja	-	+	+	+	+	-	-	-	+	+	-	-	+	+
Dinoflagellate															
7631	<i>Gymnodinium helveticum</i> Penard	-	+	-	-	-	-	-	-	-	-	-	-	-	+
7632	<i>Gymnodinium</i>	+	+	+	+	+	+	+	+	-	-	-	-	+	+
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	-	+	+	+	+	+	+	+	-	-	-	-	-	-
7640	<i>Peridinium gosaviense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Third Portage Lake - North Basin										Third Portage Lake - South Basin				
		TPN-36	TPN-37	TPN-38	TPN-39	TPN-40	TPN-41	TPN-42	TPN-43	TPN-44	TPN-45	TPS-27	TPS-28	TPS-29	TPS-30	TPS-31
		27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11	18-Sep-11	21-Nov-11	21-Nov-11	20-Dec-11	20-Dec-11	27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11
Cyanophyte																
1007	<i>Aphanocapsa delicatissima</i> W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	<i>Aphanocapsa</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-
1012	<i>Aphanothece</i>	-	-	-	-	-	-	+	+	+	+	-	-	-	-	+
1014	<i>Chroococcus limneticus</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
1026	<i>Merismopedia tenuissima</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1030	<i>Synechococcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1033	<i>Rhabdogloea lineare</i> Schmidle and Lauterborn	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-
1037	<i>Myxobakteron smithii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1054	<i>Planktolyngbya limnetica</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
1073	<i>Snowella</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
1077	<i>Pseudoanabaena</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
1088	<i>Anabaena solitaria</i> Klebs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1089	<i>Cyanodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1097	<i>Snowella lacustris</i> (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
1104	<i>Scytonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1235	<i>Aphanizomenon klebahnii</i> Pechar and Kalina	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
Chlorophyte																
2100	<i>Pyramidomonas tetrarhynchus</i> Schmarla	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2101	<i>Carteria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	<i>Chlamydomonas</i>	+	-	-	+	+	+	-	-	-	-	+	+	+	+	+
2112	<i>Sphaerocystis schroeteri</i> Chodat	-	+	+	+	+	+	-	-	-	-	-	+	+	+	+
2117	<i>Chlorella vulgaris</i> Beyerinck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2120	<i>Oocystis submarina</i> v. <i>variabilis</i> Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2121	<i>Oocystis lacustris</i> Chodat	+	+	-	+	+	+	+	-	-	-	+	+	+	-	-
2125	<i>Paulschulzia pseudovolvox</i> (Schulz and Teiling) Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2126	<i>Chodatella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2127	<i>Tetradon minimum</i> (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2132	<i>Scenedesmus denticulatus</i> Lagerhiem	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+
2136	<i>Dictyosphaerium pulchellum</i> Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2137	<i>Dictyosphaerium simplex</i> Sukja	-	+	-	+	+	+	+	+	+	+	-	-	-	-	+
2138	<i>Monoraphidium komarkovae</i> (Nyg.) Komarkova-Legnerova	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2141	<i>Monoraphidium contortum</i> (Thur.) Komarkova-Legnerova	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142	<i>Monoraphidium</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2143	<i>Monoraphidium minutum</i> (Nag.) Komarkova-Legnerova	-	-	-	+	-	-	-	-	-	-	+	-	-	-	+
2145	<i>Crucigenia quadrata</i> Morr.	+	+	-	+	-	+	-	-	-	-	+	+	+	+	+
2164	<i>Quadrigula closterioides</i> (Bohl.) Printz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2167	<i>Elakatothrix gelatinosa</i> Willen	-	-	+	+	+	+	+	+	+	+	-	+	+	+	+
2169	<i>Planctonema lauterbornii</i> Schmidle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2178	<i>Cosmarium</i>	-	-	-	-	+	+	+	+	-	-	-	+	-	-	+
2182	<i>Euastrum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2185	<i>Microsterias</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2186	<i>Xanthidium</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
2187	<i>Stauradesmus extensus</i> (Andersson) Teiling	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+
2193	<i>Stauradesmus paradoxum</i> Meyen	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
2199	<i>Spondylosium planum</i> (Wolle) W. and G.S. West	+	+	-	-	-	+	-	-	-	-	+	+	+	+	+
2205	<i>Mougeotia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
2206	<i>Botryococcus braunii</i> Kutzing	+	-	+	+	+	+	+	+	+	+	-	-	+	+	+
2209	<i>Coccomyxa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2215	<i>Tetradon caudatum</i> (Corda) Hansgrig	+	+	+	+	+	+	-	-	-	-	-	-	+	+	+
2217	<i>Collodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222	<i>Treubaria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2235	<i>Ankistrodesmus spiralis</i> Lemmermann	+	+	+	+	-	+	+	+	-	-	+	+	+	+	+
2247	<i>Oocystis gigas</i> Archer	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
2511	<i>Ulothrix zonata</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2512	<i>Scenedesmus acuminatus</i> Chodat	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Third Portage Lake - North Basin										Third Portage Lake - South Basin				
		TPN-36	TPN-37	TPN-38	TPN-39	TPN-40	TPN-41	TPN-42	TPN-43	TPN-44	TPN-45	TPS-27	TPS-28	TPS-29	TPS-30	TPS-31
		27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11	18-Sep-11	21-Nov-11	21-Nov-11	20-Dec-11	20-Dec-11	27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11
Chrysophyte																
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	-	-	+	+	+	+	+
4355	<i>Chrysochromulina parva</i> Lackey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4356	<i>Chrysococcus minutus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4357	<i>Chrysococcus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4358	<i>Chrysostephanospaera globulifera</i> Scherffel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4361	<i>Kephyrion boreale</i> Skuja	+	-	+	+	-	-	+	+	-	-	+	-	+	+	-
4362	<i>Kephyrion</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4363	<i>Spinifromonas sirratus</i>	-	-	+	-	-	-	-	-	-	-	+	-	+	+	-
4364	<i>Mallomonas caudata</i> Ivanov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4367	<i>Mallomonas duerschmidtiae</i> Siver, Hamer and Kling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4368	<i>Mallomonas crassiquama</i> (Asmund) Fott	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-
4369	<i>Mallomonas pseudocoronata</i> Prescott	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4370	<i>Mallomonas akrokomos</i> Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4375	<i>Synura sphagnicola</i> Korschikow	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
4378	<i>Dinobryon borgei</i> Lemmermann	+	+	+	+	+	+	-	-	+	-	+	+	+	+	+
4381	<i>Dinobryon mucronutum</i> Nygaard	-	-	+	+	+	+	-	+	+	+	-	-	+	+	+
4383	<i>Dinobryon bavaricum</i> Imhof	-	-	+	-	-	+	-	-	-	-	-	-	-	+	+
4384	<i>Dinobryon bavaricum</i> v <i>vanhoeffenii</i> (Bachmann) Krieger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4387	<i>Dinobryon cylindricum</i> Imhof	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4388	<i>Dinobryon sertularia</i> Ehrenberg	+	+	+	+	+	+	-	-	-	-	+	+	+	+	+
4390	<i>Dinobryon sociale</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4394	<i>Epiphyxis</i>	+	+	+	-	-	+	-	-	-	-	+	+	+	-	-
4396	<i>Chrysalkos skuja</i> (Nauwerck) Willen	+	+	+	+	+	+	-	-	-	-	+	+	+	+	+
4400	<i>Ochromonas</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+
4401	<i>Uraglena valvox</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4403	<i>Chrysophaerella longispina</i> Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4411	<i>Bitrichia chodatii</i> (Reverdin) Chodat	-	-	+	-	-	+	-	-	-	-	-	-	-	+	+
4413	<i>Chrysochromulina laurentiana</i> Kling	+	-	+	-	+	+	+	-	-	-	+	+	+	-	+
4414	<i>Stichogloea</i>	-	+	+	+	+	+	+	+	-	-	+	+	+	+	+
4415	<i>Bicoeca lacustris</i> Clark	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	<i>Salpingoeca frequentissima</i> (Zach.) Lemmermann	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+
4426	<i>Mallomonas marj.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4431	<i>Synura petersenii</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4436	<i>Dinobryon attenuatum</i> Hill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4437	<i>Pteridomonas</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4444	<i>Dinobryon pediforme</i> (Lemmermann) Steineche	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Third Portage Lake - North Basin										Third Portage Lake - South Basin				
		TPN-36	TPN-37	TPN-38	TPN-39	TPN-40	TPN-41	TPN-42	TPN-43	TPN-44	TPN-45	TPS-27	TPS-28	TPS-29	TPS-30	TPS-31
		27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11	18-Sep-11	21-Nov-11	21-Nov-11	20-Dec-11	20-Dec-11	27-Jul-11	27-Jul-11	23-Aug-11	23-Aug-11	18-Sep-11
Diatom																
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
5509	<i>Cyclotella ocellata</i> Pant.	-	-	+	+	+	+	+	+	+	+	+	+	-	+	+
5511	<i>Rhizosolenia erianse</i> H.L. Smith	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	-	-	+	-	-	+	-	-	-	-	-	-	+	-	+
5518	<i>Synedra acus</i> Kutzing	-	+	+	+	+	+	+	-	-	-	+	-	+	+	+
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5524	<i>Asterionella formosa</i> Hassall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5540	<i>Aulacoseira italica v subarctica</i> (O. Muller) Simonsen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5546	<i>Gyrosigma</i>	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5720	<i>Cyclotella bodanica</i> Eulens.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptophyte																
6554	<i>Rhodomonas minuta</i> Skuja	-	-	+	+	+	+	+	-	-	-	+	-	+	+	+
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	-	-	+	+	+	+	-	-	-	-	+	-	+	+	+
6565	<i>Cryptomonas rostratiformis</i> Skuja	+	+	+	+	+	+	-	-	-	-	-	-	+	-	+
6568	<i>Katablepharis ovalis</i> Skuja	+	-	+	+	+	-	+	+	-	-	+	+	+	+	+
Dinoflagellate																
7631	<i>Gymnodinium helveticum</i> Penard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7632	<i>Gymnodinium</i>	+	+	+	+	+	+	+	+	-	-	+	+	+	+	+
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+
7640	<i>Peridinium gosaviense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Second Portage Lake													
		TPS-32	SP-34	SP-35	SP-36	SP-37	SP-38	SP-39	SP-40	SP-41	SP-42	SP-43	SP-44	SP-45	TE-34
		18-Sep-11	3-May-11	3-May-11	26-Jul-11	26-Jul-11	18-Aug-11	18-Aug-11	14-Sep-11	14-Sep-11	23-Nov-11	23-Nov-11	23-Dec-11	23-Dec-11	4-May-11
Cyanophyte															
1007	Aphanocapsa delicatissima W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	Aphanocapsa	+	-	-	-	-	-	+	-	-	-	-	-	-	-
1012	Aphanothece	-	-	+	-	-	-	-	-	+	-	-	-	-	-
1014	Chroococcus limneticus Lemmermann	+	-	-	-	-	+	+	-	-	-	-	+	-	-
1026	Merismopedia tenuissima Lemmermann	-	-	-	-	-	-	+	-	-	-	-	-	-	-
1030	Synechococcus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1033	Rhabdogloea lineare Schmidle and Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1037	Myxobaktron smithii	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1054	Planktolyngbya limnetica	+	+	+	+	+	+	+	+	+	+	+	+	+	+
1073	Snowella	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1077	Pseudoanabaena	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1088	Anabaena solitaria Klebs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1089	Cyanodictyon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1097	Snowella lacustris (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104	Scytonema	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1235	Aphanizomenon klebahnii Pechar and Kalina	-	-	-	+	-	-	-	-	-	-	-	-	-	-
Chlorophyte															
2100	Pyramidomonas tetrarhynchus Schmarla	-	-	-	-	-	-	-	-	-	+	-	-	-	-
2101	Carteria	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	Chlamydomonas	-	-	-	+	-	-	+	+	+	+	+	-	+	-
2112	Sphaerocystis schroeteri Chodat	+	-	-	+	+	+	+	+	+	-	-	-	-	-
2117	Chlorella vulgaris Beyerinck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2120	Oocystis submarina v. variabilis Skuja	-	-	-	-	-	-	-	-	-	-	-	+	+	-
2121	Oocystis lacustris Chodat	+	-	-	-	+	+	+	+	+	+	+	-	-	-
2125	Paulschulzia pseudovolvox (Schulz and Teiling) Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2126	Chodatella	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2127	Tetradron minimum (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2132	Scenedesmus denticulatus Lagerhiem	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2136	Dictyosphaerium pulchellum Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2137	Dictyosphaerium simplex Sukja	+	+	+	-	-	+	+	+	-	+	+	+	+	+
2138	Monoraphidium komarkovae (Nyg.) Komarkova-Legnerova	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2141	Monoraphidium contortum (Thur.) Komarkova-Legnerov	-	-	-	-	-	-	-	-	-	-	+	-	-	-
2142	Monoraphidium	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2145	Crucigenia quadrata Morr.	-	-	-	-	-	-	+	-	-	-	-	-	+	-
2164	Quadrigula closterioides (Bohl.) Printz	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2167	Elakatothrix gelatinosa Willen	+	-	-	+	+	+	+	+	-	+	+	+	+	-
2169	Planctonema lauterbornii Schmidle	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2178	Cosmarium	+	-	-	+	-	-	+	+	+	-	-	-	-	-
2182	Euastrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2185	Microsterias	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2186	Xanthidium	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2187	Staurodesmus extensus (Andersson) Teiling	-	-	-	+	+	+	-	-	+	-	-	-	-	-
2193	Staurodesmus paradoxum Meyen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2199	Spondylosium planum (Wolle) W. and G.S. West	-	-	-	+	+	+	+	+	-	-	-	-	-	-
2205	Mougeotia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2206	Botryococcus braunii Kutzing	+	-	-	-	+	+	-	+	+	+	+	+	-	-
2209	Coccomyxa	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2215	Tetradron caudatum (Corda) Hansgrig	+	-	-	+	+	+	+	+	+	-	-	+	-	-
2217	Collodictyon	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222	Treubaria	-	-	-	-	-	-	-	-	-	+	+	-	-	-
2235	Ankistrodesmus spiralis Lemmermann	+	-	-	+	-	-	-	+	+	-	-	+	+	-
2247	Oocystis gigas Archer	-	-	-	+	+	+	+	+	+	-	-	-	-	-
2511	Ulothrix zonata Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2512	Scenedesmus acuminatus Chodat	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		Second Portage Lake													
Species & Code		TPS-32	SP-34	SP-35	SP-36	SP-37	SP-38	SP-39	SP-40	SP-41	SP-42	SP-43	SP-44	SP-45	TE-34
		18-Sep-11	3-May-11	3-May-11	26-Jul-11	26-Jul-11	18-Aug-11	18-Aug-11	14-Sep-11	14-Sep-11	23-Nov-11	23-Nov-11	23-Dec-11	23-Dec-11	4-May-11
Chrysophyte															
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4355	Chrysochromulina parva Lackey	-	-	-	-	-	-	+	-	-	+	+	-	-	-
4356	Chrysococcus minutus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4357	Chrysococcus	+	+	+	+	+	+	+	+	+	+	+	+	-	+
4358	Chrysostephanospaera globulifera Scherffel	-	-	-	-	+	-	+	+	+	+	-	-	-	-
4361	Kephyrion boreale Skuja	+	-	-	-	+	-	-	+	+	+	+	-	-	-
4362	Kephyrion	+	-	+	+	+	+	+	+	+	+	+	+	-	+
4363	Spinifiromonas sirratus	+	-	-	+	+	-	-	-	+	-	+	-	-	-
4364	Mallomonas caudata Ivanov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4367	Mallomonas duerschmidtiae Siver, Hamer and Kling	-	-	-	-	-	-	-	-	-	-	-	-	+	-
4368	Mallomonas crasssquama (Asmund) Fott	-	-	-	-	+	-	+	+	+	+	+	-	-	-
4369	Mallomonas pseudocoronata Prescott	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4370	Mallomonas akrokomos Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4375	Synura sphagnicola Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4378	Dinobryon borgei Lemmermann	+	-	-	+	+	+	+	+	+	+	-	-	-	-
4381	Dinobryon mucronutum Nygaard	+	-	-	+	+	+	+	-	+	-	-	-	-	+
4383	Dinobryon bavaricum Imhof	+	-	-	-	-	+	+	+	+	-	-	-	-	-
4384	Dinobryon bavaricum v vanhoeffenii (Bachmann) Krieger	-	-	-	-	-	-	-	-	+	-	-	-	-	-
4387	Dinobryon cylindricum Imhof	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4388	Dinobryon sertularia Ehrenberg	+	-	-	+	+	+	-	-	+	+	-	+	-	-
4390	Dinobryon sociale Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4394	Epiphyxis	+	-	-	+	+	+	+	+	+	-	-	-	-	-
4396	Chrysolkas skuja (Nauwerck) Willen	+	-	-	+	+	-	-	+	+	+	+	-	-	-
4400	Ochromonas	+	-	+	-	-	-	-	-	-	-	-	-	-	+
4401	Uroglena volvox Ehrenberg	-	-	-	-	-	-	-	-	-	+	+	-	-	-
4403	Chrysosphaerella longispina Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4411	Bitrichia chodatii (Reverdin) Chodat	-	-	-	-	-	+	+	-	+	-	-	-	-	-
4413	Chrysochromulina laurentiana Kling	-	-	-	+	+	+	+	+	-	+	+	-	-	-
4414	Stichogloea	+	-	-	-	-	+	+	+	+	-	-	-	-	-
4415	Bicoeca lacustris Clark	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	Salpingoeca frequentissima (Zach.) Lemmermann	-	+	+	-	-	-	-	+	-	-	+	+	+	+
4426	Mallomonas marj.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4431	Synura petersenii Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4436	Dinobryon attenatum Hill	-	-	-	+	-	-	-	-	-	-	+	-	-	-
4437	Pteridomonas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4444	Dinobryon pediforme (Lemmermann) Steineche	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Second Portage Lake													
		TPS-32	SP-34	SP-35	SP-36	SP-37	SP-38	SP-39	SP-40	SP-41	SP-42	SP-43	SP-44	SP-45	TE-34
		18-Sep-11	3-May-11	3-May-11	26-Jul-11	26-Jul-11	18-Aug-11	18-Aug-11	14-Sep-11	14-Sep-11	23-Nov-11	23-Nov-11	23-Dec-11	23-Dec-11	4-May-11
Diatom															
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	+	-	-	+	-	+	-	+	+	+	+	+	+	+
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5509	<i>Cyclotella ocellata</i> Pant.	+	-	-	+	+	-	-	+	+	+	+	+	-	-
5511	<i>Rhizosolenia erienne</i> H.L. Smith	+	-	+	-	-	-	-	-	-	+	+	+	-	-
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	+	-	-	-	-	-	-	-	-	-	-	-	-	-
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	-	-	-	-	+	+	-	+	+	-	-	-	-	-
5518	<i>Synedra acus</i> Kutzing	+	-	-	+	+	-	+	+	+	+	+	+	+	-
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5524	<i>Asterionella formosa</i> Hassall	-	-	-	-	-	-	-	+	-	-	-	-	-	-
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5540	<i>Aulacoseira italica v subarctica</i> (O. Muller) Simonsen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5546	<i>Gyrosigma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5720	<i>Cyclotella bodanica</i> Eulens.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptophyte															
6554	<i>Rhodomonas minuta</i> Skuja	-	-	+	+	+	+	+	+	+	+	+	+	-	-
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	+	+	+	+	+	-	+	+	+	+	+	+	+
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	+	-	-	+	+	+	+	+	+	+	+	+	-	-
6565	<i>Cryptomonas rostratiformis</i> Skuja	-	-	-	+	+	+	+	+	-	+	+	-	-	-
6568	<i>Katablepharis ovalis</i> Skuja	+	+	+	+	+	+	-	+	+	+	+	-	-	-
Dinoflagellate															
7631	<i>Gymnodinium helveticum</i> Penard	-	-	-	-	-	+	+	-	-	-	+	+	-	-
7632	<i>Gymnodinium</i>	+	-	+	+	+	+	+	+	+	+	-	-	-	+
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	+	+	+	+	+	+	+	+	+	-	+	-	-	-
7640	<i>Peridinium goslawiense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	-	+
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	+	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Tehek Lake											Tehek Lake - Farfield			
		TE-35	TE-36	TE-37	TE-38	TE-39	TE-40	TE-41	TE-42	TE-43	TE-44	TE-45	TEFF-15	TEFF-16	TEFF-17	TEFF-18
		4-May-11	29-Jul-11	29-Jul-11	16-Aug-11	16-Aug-11	13-Sep-11	13-Sep-11	24-Nov-11	24-Nov-11	17-Dec-11	17-Dec-11	29-Jul-11	29-Jul-11	15-Aug-11	15-Aug-11
Cyanophyte																
1007	<i>Aphanocapsa delicatissima</i> W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
1008	<i>Aphanocapsa</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
1012	<i>Aphanothece</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
1014	<i>Chroococcus limneticus</i> Lemmermann	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
1026	<i>Merismopedia tenuissima</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
1030	<i>Synechococcus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
1033	<i>Rhabdogloea lineare</i> Schmidle and Lauterborn	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
1037	<i>Myxobaktron smithii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1054	<i>Planktolyngbya limnetica</i>	-	+	+	+	-	+	+	+	+	+	+	+	+	+	+
1073	<i>Snowella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1077	<i>Pseudoanabaena</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1088	<i>Anabaena solitaria</i> Klebs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1089	<i>Cyanodictyon</i>	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-
1097	<i>Snowella lacustris</i> (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104	<i>Scytonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1235	<i>Aphanizomenon klebahnii</i> Pechar and Kalina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorophyte																
2100	<i>Pyramidomonas tetrarhynchus</i> Schmarda	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
2101	<i>Carteria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	<i>Chlamydomonas</i>	-	-	+	-	+	-	-	+	+	+	+	+	-	-	-
2112	<i>Sphaerocystis schroeteri</i> Chodat	-	-	-	+	+	+	+	-	+	-	-	-	-	+	+
2117	<i>Chlorella vulgaris</i> Beyerinck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2120	<i>Oocystis submarina</i> v. <i>variabilis</i> Skuja	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-
2121	<i>Oocystis lacustris</i> Chodat	-	-	+	+	+	+	+	+	+	-	-	-	-	+	+
2125	<i>Paulschulzia pseudovolvox</i> (Schulz and Teiling) Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2126	<i>Chodatella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2127	<i>Tetraedron minimum</i> (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2132	<i>Scenedesmus denticulatus</i> Lagerhiem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2136	<i>Dictyosphaerium pulchellum</i> Wood	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
2137	<i>Dictyosphaerium simplex</i> Sukja	-	+	+	+	+	+	-	+	-	+	+	-	-	-	+
2138	<i>Monoraphidium komarkovae</i> (Nyg.) Komarkova-Legnere	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2141	<i>Monoraphidium contortum</i> (Thur.) Komarkova-Legnere	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
2142	<i>Monoraphidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	<i>Monoraphidium minutum</i> (Nag.) Komarkova-Legnere	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2145	<i>Crucigenia quadrata</i> Morr.	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2164	<i>Quadrigula closterioides</i> (Bohl.) Printz	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2167	<i>Elakatothrix gelatinosa</i> Willen	-	+	+	+	+	+	-	+	-	-	+	+	+	+	+
2169	<i>Planctonema lauterbornii</i> Schmidle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2178	<i>Cosmarium</i>	-	+	+	-	-	-	-	+	-	-	-	-	-	+	-
2182	<i>Euastrum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2185	<i>Microsterias</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
2186	<i>Xanthidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
2187	<i>Staurodesmus extensus</i> (Andersson) Teiling	-	+	-	+	+	-	-	-	-	-	+	+	-	+	+
2193	<i>Staurodesmus paradoxum</i> Meyen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2199	<i>Spondylosium planum</i> (Wolle) W. and G.S. West	-	+	+	+	+	+	+	-	-	+	+	+	+	+	+
2205	<i>Mougeotia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
2206	<i>Botryococcus braunii</i> Kutzing	-	-	-	-	+	-	+	-	-	+	+	-	-	+	+
2209	<i>Coccomyxa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2215	<i>Tetraedron caudatum</i> (Corda) Hansgrig	-	+	+	+	+	+	+	-	-	-	-	+	+	-	+
2217	<i>Collodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222	<i>Treubaria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2235	<i>Ankistrodesmus spiralis</i> Lemmermann	-	+	+	-	-	+	+	+	+	+	+	+	+	-	+
2247	<i>Oocystis gigas</i> Archer	-	-	+	+	-	-	-	-	-	-	-	+	+	-	-
2511	<i>Ulothrix zonata</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2512	<i>Scenedesmus acuminatus</i> Chodat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Tehek Lake											Tehek Lake - Farfield			
		TE-35	TE-36	TE-37	TE-38	TE-39	TE-40	TE-41	TE-42	TE-43	TE-44	TE-45	TEFF-15	TEFF-16	TEFF-17	TEFF-18
		4-May-11	29-Jul-11	29-Jul-11	16-Aug-11	16-Aug-11	13-Sep-11	13-Sep-11	24-Nov-11	24-Nov-11	17-Dec-11	17-Dec-11	29-Jul-11	29-Jul-11	15-Aug-11	15-Aug-11
Chrysophyte																
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+
4355	<i>Chrysochromulina parva</i> Lackey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4356	<i>Chrysococcus minutus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4357	<i>Chrysococcus</i>	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+
4358	<i>Chrysostephanospora globulifera</i> Scherffel	-	+	-	-	-	-	-	+	+	-	-	-	-	-	-
4361	<i>Kephyrion boreale</i> Skuja	-	-	-	+	-	+	+	+	-	-	-	-	-	-	-
4362	<i>Kephyrion</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
4363	<i>Spinifromonas sirratus</i>	-	-	-	+	+	+	+	+	-	-	-	-	-	-	-
4364	<i>Mallomonas caudata</i> Ivanov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4367	<i>Mallomonas duerschmidtiae</i> Siver, Hamer and Kling	-	-	+	-	-	-	-	-	-	-	+	+	-	-	-
4368	<i>Mallomonas crassisquama</i> (Asmund) Fott	-	-	-	-	-	-	-	+	-	-	-	+	-	-	+
4369	<i>Mallomonas pseudocoronata</i> Prescott	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4370	<i>Mallomonas akrokomos</i> Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4375	<i>Synura sphagnicola</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4378	<i>Dinobryon borgei</i> Lemmermann	-	+	+	+	+	+	+	+	+	-	-	+	+	+	-
4381	<i>Dinobryon mucronutum</i> Nygaard	-	+	+	+	-	-	-	-	-	-	-	+	+	+	-
4383	<i>Dinobryon bavaricum</i> Imhof	-	-	-	+	-	+	+	-	-	-	-	-	-	-	-
4384	<i>Dinobryon bavaricum</i> v <i>vanhoeffenii</i> (Bachmann) Krieger	-	-	+	+	-	-	-	-	-	-	-	-	-	+	-
4387	<i>Dinobryon cylindricum</i> Imhof	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4388	<i>Dinobryon sertularia</i> Ehrenberg	-	+	+	-	-	-	+	+	+	+	+	+	+	+	+
4390	<i>Dinobryon sociale</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4394	<i>Epiphyxis</i>	-	-	+	-	+	-	+	-	-	-	-	+	+	+	-
4396	<i>Chrysalkos skuja</i> (Nauwerck) Willen	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+
4400	<i>Ochromonas</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4401	<i>Uraglena valvox</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4403	<i>Chrysosphaerella longispina</i> Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4411	<i>Bitrichia chodatii</i> (Reverdin) Chodat	-	-	-	-	+	+	+	-	-	-	-	+	+	-	-
4413	<i>Chrysochromulina laurentiana</i> Kling	-	+	+	+	+	+	+	+	+	-	-	+	+	+	+
4414	<i>Stichogloea</i>	-	-	-	+	+	+	+	+	+	-	-	-	-	+	+
4415	<i>Bicoeca lacustris</i> Clark	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	<i>Salpingoeca frequentissima</i> (Zach.) Lemmermann	+	-	-	-	+	+	+	-	+	-	-	-	-	-	-
4426	<i>Mallomonas marj.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4431	<i>Synura petersenii</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4436	<i>Dinobryon attenuatum</i> Hill	-	-	-	-	-	-	-	-	-	-	-	+	+	-	+
4437	<i>Pteridomonas</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4444	<i>Dinobryon pediforme</i> (Lemmermann) Steineche	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Tehek Lake										Tehek Lake - Farfield				
		TE-35	TE-36	TE-37	TE-38	TE-39	TE-40	TE-41	TE-42	TE-43	TE-44	TE-45	TEFF-15	TEFF-16	TEFF-17	TEFF-18
		4-May-11	29-Jul-11	29-Jul-11	16-Aug-11	16-Aug-11	13-Sep-11	13-Sep-11	24-Nov-11	24-Nov-11	17-Dec-11	17-Dec-11	29-Jul-11	29-Jul-11	15-Aug-11	15-Aug-11
Diatom																
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	-	+	+	+	+	-	+	+	+	-	+	+	-	+	-
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5509	<i>Cyclotella ocellata</i> Pant.	-	+	+	+	+	+	+	-	-	+	+	+	+	-	+
5511	<i>Rhizosolenia erianse</i> H.L. Smith	-	+	+	-	+	+	+	+	+	-	-	+	+	+	+
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	-	-	+	-	+	+	+	-	-	+	-	-	-	-	-
5518	<i>Synedra acus</i> Kutzing	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5524	<i>Asterionella formosa</i> Hassall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5540	<i>Aulacoseira italica v subarctica</i> (O. Muller) Simonsen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5546	<i>Gyrosigma</i>	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5720	<i>Cyclotella bodanica</i> Eulenst.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptophyte																
6554	<i>Rhodomonas minuta</i> Skuja	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	-	+	+	+	+	-	+	+	+	-	-	+	+	+	-
6565	<i>Cryptomonas rostratiformis</i> Skuja	-	-	+	+	-	-	+	+	+	+	+	+	+	+	+
6568	<i>Katablepharis ovalis</i> Skuja	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+
Dinoflagellate																
7631	<i>Gymnodinium helveticum</i> Penard	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+
7632	<i>Gymnodinium</i>	+	+	+	+	+	+	+	-	+	-	-	+	+	+	+
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	+	+	+	-	+	+	+	-	-	-	-	+	+	+	+
7640	<i>Peridinium goslawiense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Inuggugayualik Lake													
		TEFF-19	TEFF-20	INUG-22	INUG-23	INUG-24	INUG-25	INUG-26	INUG-27	INUG-28	INUG-29	INUG-30	INUG-31	INUG-32	INUG-33
		13-Sep-11	13-Sep-11	30-Apr-11	30-Apr-11	30-Jul-11	30-Jul-11	13-Aug-11	13-Aug-11	15-Sep-11	15-Sep-11	25-Nov-11	25-Nov-11	24-Dec-11	24-Dec-11
Cyanophyte															
1007	<i>Aphanocapsa delicatissima</i> W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	<i>Aphanocapsa</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
1012	<i>Aphanothece</i>	-	-	-	-	-	-	-	-	+	+	+	+	-	-
1014	<i>Chroococcus limneticus</i> Lemmermann	-	-	-	-	-	-	-	-	-	+	-	-	-	-
1026	<i>Merismopedia tenuissima</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	+
1030	<i>Synechococcus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
1033	<i>Rhabdogloea lineare</i> Schmidle and Lauterborn	-	-	-	-	-	-	-	+	-	-	-	-	-	-
1037	<i>Myxobaktron smithii</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
1054	<i>Planktolyngbya limnetica</i>	+	+	-	-	-	-	+	+	+	+	+	+	+	+
1073	<i>Snowella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1077	<i>Pseudoanabaena</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
1088	<i>Anabaena solitaria</i> Klebs	-	-	-	-	-	-	-	+	+	+	-	-	-	-
1089	<i>Cyanodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
1097	<i>Snowella lacustris</i> (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104	<i>Scytonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1235	<i>Aphanizomenon klebahnii</i> Pechar and Kalina	-	-	-	-	+	-	-	-	-	-	-	-	-	-
Chlorophyte															
2100	<i>Pyramidomonas tetrarhynchus</i> Schmarida	+	-	-	-	-	-	-	-	-	-	-	+	-	-
2101	<i>Carteria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	<i>Chlamydomonas</i>	-	-	+	-	+	-	-	-	-	+	+	+	+	-
2112	<i>Sphaerocystis schroeteri</i> Chodat	-	+	-	-	+	+	-	+	+	+	+	-	-	-
2117	<i>Chlorella vulgaris</i> Beyerinck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2120	<i>Oocystis submarina</i> v. <i>variabilis</i> Skuja	-	-	-	-	-	-	-	-	-	-	-	-	+	-
2121	<i>Oocystis lacustris</i> Chodat	-	-	-	-	-	+	+	-	+	+	-	-	-	-
2125	<i>Paulschulzia pseudovalvox</i> (Schulz and Teiling) Skuja	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2126	<i>Chodatella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2127	<i>Tetraedron minimum</i> (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2132	<i>Scenedesmus denticulatus</i> Lagerhiem	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2136	<i>Dictyosphaerium pulchellum</i> Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2137	<i>Dictyosphaerium simplex</i> Sukja	+	+	-	-	+	-	-	-	-	-	+	+	-	-
2138	<i>Monoraphidium komarkovae</i> (Nyg.) Komarkova-Legnero	+	+	-	-	+	-	+	+	+	-	+	+	-	+
2141	<i>Monoraphidium contortum</i> (Thur.) Komarkova-Legnerov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142	<i>Monoraphidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	<i>Monoraphidium minutum</i> (Nag.) Komarkova-Legnerova	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2145	<i>Crucigenia quadrata</i> Morr.	-	-	-	-	-	-	-	-	+	-	-	-	-	-
2164	<i>Quadrigula closterioides</i> (Bohl.) Printz	-	-	-	-	-	-	-	-	+	+	-	-	-	-
2167	<i>Elakatothrix gelatinosa</i> Willen	+	+	-	-	+	+	+	+	+	+	-	+	+	-
2169	<i>Planctonema lauterbornii</i> Schmidle	+	+	-	-	-	-	-	-	-	-	-	-	-	-
2178	<i>Cosmarium</i>	-	-	-	-	+	-	+	+	-	-	-	-	-	-
2182	<i>Euastrum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2185	<i>Microsterias</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2186	<i>Xanthidium</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
2187	<i>Staurodesmus extensus</i> (Andersson) Teiling	+	-	-	-	+	-	+	-	+	+	+	-	-	-
2193	<i>Staurodesmus paradoxum</i> Meyen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2199	<i>Spondylosium planum</i> (Wolle) W. and G.S. West	-	+	-	-	+	+	-	+	+	-	-	+	-	-
2205	<i>Mougeotia</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
2206	<i>Botryococcus braunii</i> Kutzing	+	-	+	-	+	+	+	+	+	+	+	+	-	+
2209	<i>Coccomyxa</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
2215	<i>Tetraedron caudatum</i> (Corda) Hansgrig	+	+	-	-	-	-	+	+	+	+	-	-	-	-
2217	<i>Collodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222	<i>Treubaria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2235	<i>Ankistrodesmus spiralis</i> Lemmermann	+	+	-	-	+	+	-	-	+	+	+	+	+	-
2247	<i>Oocystis gigas</i> Archer	-	-	-	-	+	-	+	-	-	-	-	-	-	-
2511	<i>Ulothrix zonata</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2512	<i>Scenedesmus acuminatus</i> Chodat	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Inuggugayualik Lake													
		TEFF-19	TEFF-20	INUG-22	INUG-23	INUG-24	INUG-25	INUG-26	INUG-27	INUG-28	INUG-29	INUG-30	INUG-31	INUG-32	INUG-33
		13-Sep-11	13-Sep-11	30-Apr-11	30-Apr-11	30-Jul-11	30-Jul-11	13-Aug-11	13-Aug-11	15-Sep-11	15-Sep-11	25-Nov-11	25-Nov-11	24-Dec-11	24-Dec-11
Chrysophyte															
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4355	<i>Chrysochromulina parva</i> Lackey	-	-	-	+	+	-	-	-	+	-	+	+	-	-
4356	<i>Chrysococcus minutus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
4357	<i>Chrysococcus</i>	+	+	+	+	+	+	+	+	+	+	-	+	+	-
4358	<i>Chrysostephanospaera globulifera</i> Scherffel	-	-	-	-	-	-	-	-	-	+	+	+	-	-
4361	<i>Kephyrion boreale</i> Skuja	+	-	-	-	-	-	-	-	+	+	+	+	-	+
4362	<i>Kephyrion</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	-
4363	<i>Spinifiromonas sirratus</i>	-	+	-	+	-	+	+	+	-	-	-	-	-	-
4364	<i>Mallomonas caudata</i> Ivanov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4367	<i>Mallomonas duerschmidtiae</i> Siver, Hamer and Kling	-	-	-	-	+	-	-	-	-	-	-	-	-	-
4368	<i>Mallomonas crassisquama</i> (Asmund) Fott	+	-	-	-	-	-	-	-	-	-	+	+	-	-
4369	<i>Mallomonas pseudocoronata</i> Prescott	-	-	-	-	-	-	-	-	+	+	-	-	-	-
4370	<i>Mallomonas akrokomos</i> Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4375	<i>Synura sphagnicola</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4378	<i>Dinobryon borgei</i> Lemmermann	+	+	-	-	+	+	+	+	+	+	+	-	+	-
4381	<i>Dinobryon mucronutum</i> Nygaard	+	+	-	-	+	+	+	+	-	-	+	-	-	-
4383	<i>Dinobryon bavaricum</i> Imhof	+	+	-	-	-	-	+	+	+	+	+	-	+	-
4384	<i>Dinobryon bavaricum</i> v <i>vanhoeffenii</i> (Bachmann) Krieger	+	+	-	-	+	+	+	+	+	+	+	+	+	+
4387	<i>Dinobryon cylindricum</i> Imhof	-	-	-	+	-	-	-	-	-	-	-	-	-	-
4388	<i>Dinobryon sertularia</i> Ehrenberg	+	-	-	-	+	+	+	+	-	-	+	+	-	-
4390	<i>Dinobryon sociale</i> Ehrenberg	+	+	-	+	+	+	+	+	+	+	+	+	+	+
4394	<i>Epiphyxis</i>	+	+	-	-	-	-	+	+	-	-	-	-	-	-
4396	<i>Chrysalkos skuja</i> (Nauwerck) Willen	+	-	-	-	+	+	+	+	-	+	+	+	+	-
4400	<i>Ochromonas</i>	-	-	-	+	+	+	-	-	-	-	-	-	-	-
4401	<i>Uroglena volvox</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4403	<i>Chrysosphaerella longispina</i> Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4411	<i>Bitrichia chodatii</i> (Reverdin) Chodat	-	+	-	-	+	-	+	-	+	+	+	+	+	-
4413	<i>Chrysochromulina laurentiana</i> Kling	+	-	-	+	+	+	+	+	+	+	+	+	-	-
4414	<i>Stichogloea</i>	+	+	-	-	-	+	+	+	+	+	+	+	-	-
4415	<i>Bicoeca lacustris</i> Clark	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	<i>Salpingoeca frequentissima</i> (Zach.) Lemmermann	-	-	+	+	+	-	-	-	+	+	+	+	+	+
4426	<i>Mallomonas marj.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4431	<i>Synura petersenii</i> Korschikow	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4436	<i>Dinobryon attenuatum</i> Hill	-	-	-	-	+	+	-	-	-	-	-	-	-	-
4437	<i>Pteridomonas</i>	-	-	-	-	-	-	-	-	-	-	+	+	-	-
4444	<i>Dinobryon pediforme</i> (Lemmermann) Steineche	-	-	-	-	+	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Inuggugayualik Lake													
		TEFF-19	TEFF-20	INUG-22	INUG-23	INUG-24	INUG-25	INUG-26	INUG-27	INUG-28	INUG-29	INUG-30	INUG-31	INUG-32	INUG-33
		13-Sep-11	13-Sep-11	30-Apr-11	30-Apr-11	30-Jul-11	30-Jul-11	13-Aug-11	13-Aug-11	15-Sep-11	15-Sep-11	25-Nov-11	25-Nov-11	24-Dec-11	24-Dec-11
Diatom															
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	+	+	-	-	+	+	-	+	-	+	+	-	-	
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	
5509	<i>Cyclotella ocellata</i> Pant.	+	+	-	-	+	+	+	+	-	+	-	+	+	
5511	<i>Rhizosolenia eriensae</i> H.L. Smith	+	+	-	-	+	+	-	-	+	+	+	+	+	
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	-	+	-	-	+	+	-	-	+	+	-	-	-	
5518	<i>Synedra acus</i> Kutzing	+	+	-	-	+	+	+	+	+	+	+	+	+	
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	
5524	<i>Asterionella formosa</i> Hassall	-	-	-	-	-	-	-	-	-	-	-	-	-	
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	
5540	<i>Aulacoseira italica</i> v <i>subarctica</i> (O. Muller) Simonsen	-	-	-	-	-	-	-	-	-	-	-	-	-	
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	
5546	<i>Gyrosigma</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	+	-	-	-	-	-	-	-	-	-	
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	+	-	+	+	+	+	+	+	+	+	+	
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	
5720	<i>Cyclotella bodanica</i> Eulens.	-	-	-	-	-	-	-	-	-	-	-	-	-	
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	-	-	-	-	-	-	-	-	-	-	-	-	-	
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cryptophyte															
6554	<i>Rhodomonas minuta</i> Skuja	+	+	-	+	+	+	+	-	+	+	+	+	+	
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	-	+	+	+	+	+	+	+	+	+	+	+	
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	+	-	+	-	+	+	-	-	-	-	+	+	+	
6565	<i>Cryptomonas rostratiformis</i> Skuja	+	-	-	-	+	-	-	-	-	-	-	-	-	
6568	<i>Katablepharis ovalis</i> Skuja	+	-	+	-	+	+	+	+	+	+	+	+	+	
Dinoflagellate															
7631	<i>Gymnodinium helveticum</i> Penard	-	-	-	-	-	-	-	-	-	-	-	-	-	
7632	<i>Gymnodinium</i>	+	+	+	+	+	+	+	+	+	+	-	-	-	
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	-	-	-	-	+	-	-	
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	+	+	-	-	+	+	+	-	-	+	+	-	+	
7640	<i>Peridinium gosaviense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	-	
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code	Wally Lake						Pipedream Lake				Baker Lake - AI			
	WAL-15 29-Jul-11	WAL-16 29-Jul-11	WAL-17 15-Aug-11	WAL-18 15-Aug-11	WAL-19 14-Sep-11	WAL-20 14-Sep-11	PDL-15 30-Jul-11	PDL-16 30-Jul-11	PDL-17 11-Aug-11	PDL-18 11-Aug-11	PDL-19 15-Sep-11	PDL-20 15-Sep-11	BAP-15 25-Jul-11	BAP-16 25-Jul-11
Cyanophyte														
1007 <i>Aphanocapsa delicatissima</i> W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008 <i>Aphanocapsa</i>	+	+	-	-	-	-	-	-	-	-	-	-	-	-
1012 <i>Aphanothece</i>	-	+	+	+	+	+	-	-	-	-	-	-	-	-
1014 <i>Chroococcus limneticus</i> Lemmermann	-	-	-	-	-	-	-	-	-	+	-	-	-	-
1026 <i>Merismopedia tenuissima</i> Lemmermann	-	+	-	-	-	-	-	-	-	-	-	-	-	-
1030 <i>Synechococcus</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
1033 <i>Rhabdogloea lineare</i> Schmidle and Lauterborn	-	-	-	+	-	-	-	-	-	-	-	-	-	-
1037 <i>Myxobakteron smithii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1054 <i>Planktolyngbya limnetica</i>	+	+	-	+	+	+	-	-	-	-	+	+	-	-
1073 <i>Snowella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1077 <i>Pseudoanabaena</i>	-	-	-	-	+	-	-	-	-	+	-	-	-	-
1088 <i>Anabaena solitaria</i> Klebs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1089 <i>Cyanodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1097 <i>Snowella lacustris</i> (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104 <i>Scytonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1235 <i>Aphanizomenon klebahnii</i> Pechar and Kalina	+	+	-	-	-	-	-	-	-	-	-	-	-	+
Chlorophyte														
2100 <i>Pyramidomonas tetrahynchus</i> Schmarla	-	-	+	-	-	-	-	-	-	-	+	-	-	-
2101 <i>Carteria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105 <i>Chlamydomonas</i>	-	+	+	+	-	+	+	+	-	-	+	+	+	+
2112 <i>Sphaerocystis schroeteri</i> Chodat	+	-	+	-	-	-	-	-	-	-	+	-	-	-
2117 <i>Chlorella vulgaris</i> Beyerinck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2120 <i>Oocystis submarina</i> v. <i>variabilis</i> Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2121 <i>Oocystis lacustris</i> Chodat	+	+	+	+	+	+	+	-	+	-	+	+	-	+
2125 <i>Paulschulzia pseudovolvox</i> (Schulz and Teiling) Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2126 <i>Chodatella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2127 <i>Tetradron minimum</i> (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	+	-	-	-
2132 <i>Scenedesmus denticulatus</i> Lagerhiem	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2136 <i>Dictyosphaerium pulchellum</i> Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2137 <i>Dictyosphaerium simplex</i> Sukja	-	-	+	-	+	+	-	-	-	-	+	+	+	-
2138 <i>Monoraphidium komarkovae</i> (Nyg.) Komarkova-Legnerova	+	+	+	+	+	+	+	-	-	-	-	-	+	-
2141 <i>Monoraphidium contortum</i> (Thur.) Komarkova-Legnerov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142 <i>Monoraphidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143 <i>Monoraphidium minutum</i> (Nag.) Komarkova-Legnerova	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2145 <i>Crucigenia quadrata</i> Morr.	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2164 <i>Quadrigula closterioides</i> (Bohl.) Printz	-	-	+	+	-	+	-	-	-	-	-	-	-	-
2167 <i>Elakatothrix gelatinosa</i> Willen	+	+	+	+	+	+	+	-	+	-	+	+	-	-
2169 <i>Planctonema lauterbornii</i> Schmidle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2178 <i>Cosmarium</i>	-	-	+	+	+	-	-	-	-	-	-	+	-	-
2182 <i>Euastrum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2185 <i>Microsterias</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2186 <i>Xanthidium</i>	-	-	-	-	-	-	-	-	-	+	+	+	-	-
2187 <i>Staurodesmus extensus</i> (Andersson) Teiling	-	+	+	+	+	-	+	+	+	+	+	+	+	+
2193 <i>Staurodesmus paradoxum</i> Meyen	-	-	-	-	-	+	-	-	-	-	-	-	-	+
2199 <i>Spondylosium planum</i> (Wolle) W. and G.S. West	-	+	+	+	+	+	+	+	+	+	+	+	-	-
2205 <i>Mougeotia</i>	-	+	-	-	+	-	-	-	-	-	-	+	-	-
2206 <i>Botryococcus braunii</i> Kutzing	+	+	+	+	+	+	+	-	+	-	-	-	-	+
2209 <i>Coccomyxa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2215 <i>Tetradron caudatum</i> (Corda) Hansgrig	+	+	+	+	-	+	+	+	+	+	-	+	+	+
2217 <i>Collodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222 <i>Treubaria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2235 <i>Ankistrodesmus spiralis</i> Lemmermann	-	+	+	+	+	+	+	-	-	-	+	-	+	+
2247 <i>Oocystis gigas</i> Archer	+	-	+	+	-	+	+	+	-	-	-	-	-	-
2511 <i>Ulothrix zonata</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2512 <i>Scenedesmus acuminatus</i> Chodat	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Wally Lake						Pipedream Lake						Baker Lake - Al	
		WAL-15	WAL-16	WAL-17	WAL-18	WAL-19	WAL-20	PDL-15	PDL-16	PDL-17	PDL-18	PDL-19	PDL-20	BAP-15	BAP-16
		29-Jul-11	29-Jul-11	15-Aug-11	15-Aug-11	14-Sep-11	14-Sep-11	30-Jul-11	30-Jul-11	11-Aug-11	11-Aug-11	15-Sep-11	15-Sep-11	25-Jul-11	25-Jul-11
Chrysophyte															
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4355	<i>Chrysochromulina parva</i> Lackey	-	+	+	-	-	-	-	-	-	-	-	+	+	+
4356	<i>Chrysococcus minutus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4357	<i>Chrysococcus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4358	<i>Chrysostephanospora globulifera</i> Scherffel	-	-	-	+	+	+	-	+	-	-	+	-	-	+
4361	<i>Kephyrion boreale</i> Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4362	<i>Kephyrion</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4363	<i>Spinifiromonas sirratus</i>	-	-	+	-	-	-	+	+	+	-	+	+	+	+
4364	<i>Mallomonas caudata</i> Ivanov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4367	<i>Mallomonas duerschmidtiae</i> Siver, Hamer and Kling	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4368	<i>Mallomonas crassisquama</i> (Asmund) Fott	-	-	-	-	+	-	-	-	+	-	-	-	-	-
4369	<i>Mallomonas pseudocoronata</i> Prescott	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4370	<i>Mallomonas akrokomos</i> Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	+
4375	<i>Synura sphagnicola</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	+	+
4378	<i>Dinobryon borgei</i> Lemmermann	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4381	<i>Dinobryon mucronutum</i> Nygaard	+	+	-	-	+	-	-	-	+	+	+	+	-	-
4383	<i>Dinobryon bavaricum</i> Imhof	-	-	+	+	+	+	-	-	-	-	-	-	+	+
4384	<i>Dinobryon bavaricum</i> v <i>vanhoeffenii</i> (Bachmann) Krieger	-	-	+	-	+	+	-	-	-	-	-	-	-	-
4387	<i>Dinobryon cylindricum</i> Imhof	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4388	<i>Dinobryon sertularia</i> Ehrenberg	+	+	-	+	-	-	+	+	+	+	+	-	+	+
4390	<i>Dinobryon sociale</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4394	<i>Epiphyxis</i>	+	+	-	-	+	+	+	+	+	+	+	+	-	-
4396	<i>Chrysalkos skuja</i> (Nauwerck) Willen	+	+	-	-	+	-	+	+	+	+	+	+	+	+
4400	<i>Ochromonas</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4401	<i>Uraglena volvox</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4403	<i>Chrysosphaerella longispina</i> Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4411	<i>Bitrichia chodatii</i> (Reverdin) Chodat	-	-	-	+	-	+	-	+	-	-	+	+	-	+
4413	<i>Chrysochromulina laurentiana</i> Kling	+	+	+	-	+	+	+	+	+	+	+	+	+	+
4414	<i>Stichogloea</i>	-	+	+	+	+	+	-	-	+	-	+	+	-	-
4415	<i>Bicoeca lacustris</i> Clark	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	<i>Salpingoeca frequentissima</i> (Zach.) Lemmermann	-	-	-	+	+	+	+	-	+	+	+	+	+	+
4426	<i>Mallomonas marj.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4431	<i>Synura petersenii</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4436	<i>Dinobryon attenatum</i> Hill	-	-	-	-	-	-	+	+	+	+	-	-	+	+
4437	<i>Pteridomonas</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4444	<i>Dinobryon pediforme</i> (Lemmermann) Steineche	-	-	-	-	+	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

<i>Species & Code</i>		Wally Lake						Pipedream Lake						Baker Lake - Al	
		WAL-15 29-Jul-11	WAL-16 29-Jul-11	WAL-17 15-Aug-11	WAL-18 15-Aug-11	WAL-19 14-Sep-11	WAL-20 14-Sep-11	PDL-15 30-Jul-11	PDL-16 30-Jul-11	PDL-17 11-Aug-11	PDL-18 11-Aug-11	PDL-19 15-Sep-11	PDL-20 15-Sep-11	BAP-15 25-Jul-11	BAP-16 25-Jul-11
Diatom															
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	+	+	-	+	+	+	-	+	+	+	+	+	+	+
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5509	<i>Cyclotella ocellata</i> Pant.	+	-	-	+	+	+	+	+	+	+	+	+	-	-
5511	<i>Rhizosolenia erienne</i> H.L. Smith	+	-	+	+	-	+	+	+	+	+	+	+	-	+
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	+	+	-	+	+	-	-	-	-	-	-	+	-	+
5518	<i>Synedra acus</i> Kutzing	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	+	+	-
5524	<i>Asterionella formosa</i> Hassall	-	-	-	-	-	-	-	-	-	-	-	+	+	+
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5540	<i>Aulacoseira italica v subarctica</i> (O. Muller) Simonsen	-	-	-	-	-	-	-	-	-	-	-	-	+	+
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5546	<i>Gyrosigma</i>	-	-	-	-	-	+	-	-	-	-	+	+	-	-
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5720	<i>Cyclotella bodanica</i> Eulenst.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptophyte															
6554	<i>Rhodomonas minuta</i> Skuja	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	+	+	+	+	+	+	+	-	+	+	+	+	+
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	+	-	-	-
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	+	+	+	-	+	+	+	-	+	-	+	-	+	-
6565	<i>Cryptomonas rostratiformis</i> Skuja	+	-	-	-	+	+	+	+	+	-	-	+	+	+
6568	<i>Katablepharis ovalis</i> Skuja	-	-	+	-	+	+	+	+	+	+	+	+	+	+
Dinoflagellate															
7631	<i>Gymnodinium helveticum</i> Penard	-	-	-	-	-	-	+	-	-	-	+	+	-	-
7632	<i>Gymnodinium</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	+	-	-	+	-	+	+	+	+	+	+	+	+	+
7640	<i>Peridinium gosaviense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	-	-	-	-	-	+	-	-	+	+	-	+	+

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Cilahaarjuk Point				Baker Lake - Barge Dock				Baker Lake - Proposed Jetty					
		BAP-17	BAP-18	BBD-15	BBD-16	BBD-17	BBD-18	BBD-19	BBD-20	BPJ-15	BPJ-16	BPJ-17	BPJ-18	BPJ-19	BPJ-20
		21-Aug-11	21-Aug-11	25-Jul-11	25-Jul-11	21-Aug-11	21-Aug-11	19-Sep-11	19-Sep-11	25-Jul-11	25-Jul-11	20-Aug-11	20-Aug-11	20-Sep-11	20-Sep-11
Cyanophyte															
1007	<i>Aphanocapsa delicatissima</i> W. and G.S. West	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	<i>Aphanocapsa</i>	-	-	-	-	-	-	+	+	-	-	-	-	-	-
1012	<i>Aphanothece</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1014	<i>Chroococcus limneticus</i> Lemmermann	+	-	-	-	-	-	-	-	-	-	-	+	-	-
1026	<i>Merismopedia tenuissima</i> Lemmermann	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1030	<i>Synechococcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1033	<i>Rhabdogloea lineare</i> Schmidle and Lauterborn	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1037	<i>Myxobakteria smithii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1054	<i>Planktolyngbya limnetica</i>	+	+	-	+	+	-	+	+	+	+	+	+	+	+
1073	<i>Snowella</i>	+	-	-	-	-	-	-	-	-	-	-	-	+	-
1077	<i>Pseudoanabaena</i>	-	-	-	-	-	+	-	-	-	-	+	-	-	-
1088	<i>Anabaena solitaria</i> Klebs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1089	<i>Cyanodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1097	<i>Snowella lacustris</i> (Chodat) Komarek and Hindak	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104	<i>Scytonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1235	<i>Aphanizomenon klebahnii</i> Pechar and Kalina	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorophyte															
2100	<i>Pyramidomonas tetrarhynchus</i> Schmarla	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2101	<i>Carteria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	<i>Chlamydomonas</i>	+	+	+	+	+	+	+	+	+	-	-	-	+	+
2112	<i>Sphaerocystis Schroeteri</i> Chodat	-	+	-	-	+	-	+	+	-	-	-	+	+	+
2117	<i>Chlorella vulgaris</i> Beyerinck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2120	<i>Oocystis submarina</i> v. <i>variabilis</i> Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2121	<i>Oocystis lacustris</i> Chodat	+	+	-	-	-	-	-	-	+	+	+	+	-	-
2125	<i>Paulschulzia pseudovolvox</i> (Schulz and Teiling) Skuja	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2126	<i>Chodatella</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2127	<i>Tetradron minimum</i> (Brunow) Hansgrig	-	-	-	-	-	-	-	-	-	-	-	+	-	-
2132	<i>Scenedesmus denticulatus</i> Lagerhiem	-	-	-	-	-	+	+	+	-	-	+	+	+	+
2136	<i>Dictyosphaerium pulchellum</i> Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2137	<i>Dictyosphaerium simplex</i> Sukja	-	-	-	-	+	+	+	+	-	-	+	-	+	+
2138	<i>Monoraphidium komarkovae</i> (Nyg.) Komarkova-Legnerova	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2141	<i>Monoraphidium contortum</i> (Thur.) Komarkova-Legnerova	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142	<i>Monoraphidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	<i>Monoraphidium minutum</i> (Nag.) Komarkova-Legnerova	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2145	<i>Crucigenia quadrata</i> Morr.	+	-	-	-	-	+	+	+	-	-	-	-	+	+
2164	<i>Quadrigula closterioides</i> (Bohl.) Printz	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2167	<i>Elakatothrix gelatinosa</i> Willen	+	+	+	-	+	-	+	-	-	-	-	+	-	-
2169	<i>Planctonema lauterbornii</i> Schmidle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2178	<i>Cosmarium</i>	-	-	-	+	-	-	+	-	-	-	-	-	-	-
2182	<i>Euastrum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2185	<i>Microsterias</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2186	<i>Xanthidium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2187	<i>Stauradesmus extensus</i> (Andersson) Teiling	-	-	-	-	-	-	+	-	-	+	-	+	-	+
2193	<i>Stauradesmus paradoxum</i> Meyen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2199	<i>Spondylium planum</i> (Wolle) W. and G.S. West	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2205	<i>Mougeotia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2206	<i>Botryococcus braunii</i> Kutzing	+	-	-	+	+	+	-	+	-	-	-	+	+	-
2209	<i>Coccomyxa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2215	<i>Tetradron caudatum</i> (Corda) Hansgrig	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2217	<i>Collodictyon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2222	<i>Treubaria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2235	<i>Ankistrodesmus spiralis</i> Lemmermann	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2247	<i>Oocystis gigas</i> Archer	+	+	-	-	-	-	-	-	-	-	-	-	-	-
2511	<i>Ulothrix zonata</i> Kutzing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2512	<i>Scenedesmus acuminatus</i> Chodat	-	-	+	+	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Cilahaarjuk Point				Baker Lake - Barge Dock				Baker Lake - Proposed Jetty					
		BAP-17	BAP-18	BBD-15	BBD-16	BBD-17	BBD-18	BBD-19	BBD-20	BPJ-15	BPJ-16	BPJ-17	BPJ-18	BPJ-19	BPJ-20
		21-Aug-11	21-Aug-11	25-Jul-11	25-Jul-11	21-Aug-11	21-Aug-11	19-Sep-11	19-Sep-11	25-Jul-11	25-Jul-11	20-Aug-11	20-Aug-11	20-Sep-11	20-Sep-11
Chrysophyte															
4351	Small chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4352	Large chrysophyceae	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4355	<i>Chrysochromulina parva</i> Lackey	-	+	+	+	-	-	-	-	+	+	+	-	-	-
4356	<i>Chrysococcus minutus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4357	<i>Chrysococcus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4358	<i>Chrysostephanospora globulifera</i> Scherffel	-	+	-	-	+	-	-	-	-	-	+	+	-	-
4361	<i>Kephyrion boreale</i> Skuja	-	+	-	-	-	-	-	-	+	-	+	-	-	-
4362	<i>Kephyrion</i>	+	+	+	+	+	+	+	+	-	+	+	+	+	+
4363	<i>Spinifromonas sirratus</i>	-	+	-	+	-	-	-	-	+	+	+	-	-	-
4364	<i>Mallomonas caudata</i> Ivanov	-	-	-	-	-	-	-	-	-	+	-	-	-	-
4367	<i>Mallomonas duerrschmidtiae</i> Siver, Hamer and Kling	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4368	<i>Mallomonas crassisquama</i> (Asmund) Fott	+	+	+	+	-	+	-	-	+	+	-	-	+	+
4369	<i>Mallomonas pseudocoronata</i> Prescott	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4370	<i>Mallomonas akrokomos</i> Asmund and Kristiansen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4375	<i>Synura sphagnicola</i> Korschikow	-	-	+	-	-	-	-	-	+	+	+	-	-	-
4378	<i>Dinobryon borgei</i> Lemmermann	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4381	<i>Dinobryon mucronutum</i> Nygaard	+	+	+	-	-	-	-	-	-	-	+	+	-	-
4383	<i>Dinobryon bavaricum</i> Imhof	+	-	+	-	+	+	-	+	+	+	+	+	+	-
4384	<i>Dinobryon bavaricum</i> v <i>vanhoeffenii</i> (Bachmann) Krieger	-	-	-	+	-	-	-	-	-	+	-	-	-	-
4387	<i>Dinobryon cylindricum</i> Imhof	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4388	<i>Dinobryon sertularia</i> Ehrenberg	+	+	+	+	+	+	+	-	+	+	+	+	+	+
4390	<i>Dinobryon sociale</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4394	<i>Epiphyxis</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
4396	<i>Chrysalkos skuja</i> (Nauwerck) Willen	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4400	<i>Ochromonas</i>	+	-	-	-	-	+	+	+	-	-	-	-	+	+
4401	<i>Uroglena valvox</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4403	<i>Chrysosphaerella longispina</i> Lauterborn	-	-	+	+	-	-	-	-	+	+	-	-	-	-
4411	<i>Bitrichia chodatii</i> (Reverdin) Chodat	-	+	-	+	-	-	+	-	-	-	-	+	-	-
4413	<i>Chrysochromulina laurentiana</i> Kling	+	+	+	+	-	+	+	+	+	+	+	+	+	+
4414	<i>Stichogloea</i>	-	-	-	-	-	-	-	+	-	+	-	-	-	-
4415	<i>Bicoeca lacustris</i> Clark	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4418	<i>Salpingoeca frequentissima</i> (Zach.) Lemmermann	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4426	<i>Mallomonas marj.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4431	<i>Synura petersenii</i> Korschikow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4436	<i>Dinobryon attenuatum</i> Hill	+	+	+	+	-	+	-	+	+	-	-	+	-	+
4437	<i>Pteridomonas</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4444	<i>Dinobryon pediforme</i> (Lemmermann) Steineche	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix G. Presence (+) / Absence (-) Matrix of Phytoplankton Species in Meadowbank Study Lakes and Baker Lake, 2011.

Species & Code		Cilahaarjuk Point				Baker Lake - Barge Dock				Baker Lake - Proposed Jetty					
		BAP-17	BAP-18	BBD-15	BBD-16	BBD-17	BBD-18	BBD-19	BBD-20	BPJ-15	BPJ-16	BPJ-17	BPJ-18	BPJ-19	BPJ-20
		21-Aug-11	21-Aug-11	25-Jul-11	25-Jul-11	21-Aug-11	21-Aug-11	19-Sep-11	19-Sep-11	25-Jul-11	25-Jul-11	20-Aug-11	20-Aug-11	20-Sep-11	20-Sep-11
Diatom															
5507	<i>Cyclotella stelligera</i> Cleve and Grunow	+	+	+	+	+	+	-	+	+	+	+	+	+	+
5508	<i>Cyclotella pseudostelligera</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
5509	<i>Cyclotella ocellata</i> Pant.	+	+	-	-	+	+	+	+	-	+	+	+	+	+
5511	<i>Rhizosolenia erianse</i> H.L. Smith	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5513	<i>Tabellaria fenestrata</i> (Lyngbye) Kutzing	+	+	+	+	-	+	+	+	+	-	+	-	+	+
5514	<i>Tabellaria flocculsa</i> (Roth) Kutzing	+	+	+	+	+	+	+	+	-	+	+	+	+	+
5518	<i>Synedra acus</i> Kutzing	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5523	<i>Synedra ulna</i> (Nitzsch) Ehrenberg	-	-	-	-	-	-	+	+	-	-	-	-	-	-
5524	<i>Asterionella formosa</i> Hassall	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5529	<i>Eunotia zazumenensis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
5540	<i>Aulacoseira italica v subarctica</i> (O. Muller) Simonsen	+	-	+	+	+	+	+	+	+	+	+	-	+	+
5544	<i>Pinnularia</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
5546	<i>Gyrosigma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5547	<i>Frustulia rhomboides</i> (Ehrenberg) de Toni	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5551	<i>Cyclotella michiganiana</i> Skvortzow	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5702	<i>Achnanthes minutissima</i> Kutzing	-	-	-	-	-	-	+	+	-	-	-	-	+	+
5720	<i>Cyclotella bodanica</i> Eulens.	-	-	-	-	-	-	+	+	-	-	-	-	+	+
5733	<i>Eunotia pectinalis</i> (Kutzing) Rabenhorst	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5916	<i>Fragilaria capucina</i> Grunow	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptophyte															
6554	<i>Rhodomonas minuta</i> Skuja	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6558	<i>Cryptomonas erosa</i> Ehrenberg	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6559	<i>Cryptomonas ovata</i> Ehrenberg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6562	<i>Cryptomonas reflexa</i> (Marsson) Skuja	-	-	+	+	+	+	+	+	+	+	+	-	+	+
6565	<i>Cryptomonas rostratiformis</i> Skuja	-	+	+	+	+	+	+	+	+	+	-	+	+	+
6568	<i>Katablepharis ovalis</i> Skuja	+	+	+	+	-	+	+	+	+	+	+	+	+	+
Dinoflagellate															
7631	<i>Gymnodinium helveticum</i> Penard	-	-	-	+	-	-	-	-	-	-	-	-	-	-
7632	<i>Gymnodinium</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7635	<i>Peridinium willei</i> Huitfeldt-Kaas	-	-	-	-	-	-	-	-	-	-	-	-	-	+
7639	<i>Peridinium pusillum</i> (Penard) Lemmermann	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7640	<i>Peridinium gosaviense</i> Woloszynska	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7641	<i>Peridinium aciculiferum</i> Lemmermann	-	-	+	+	-	-	+	+	+	+	-	-	-	+

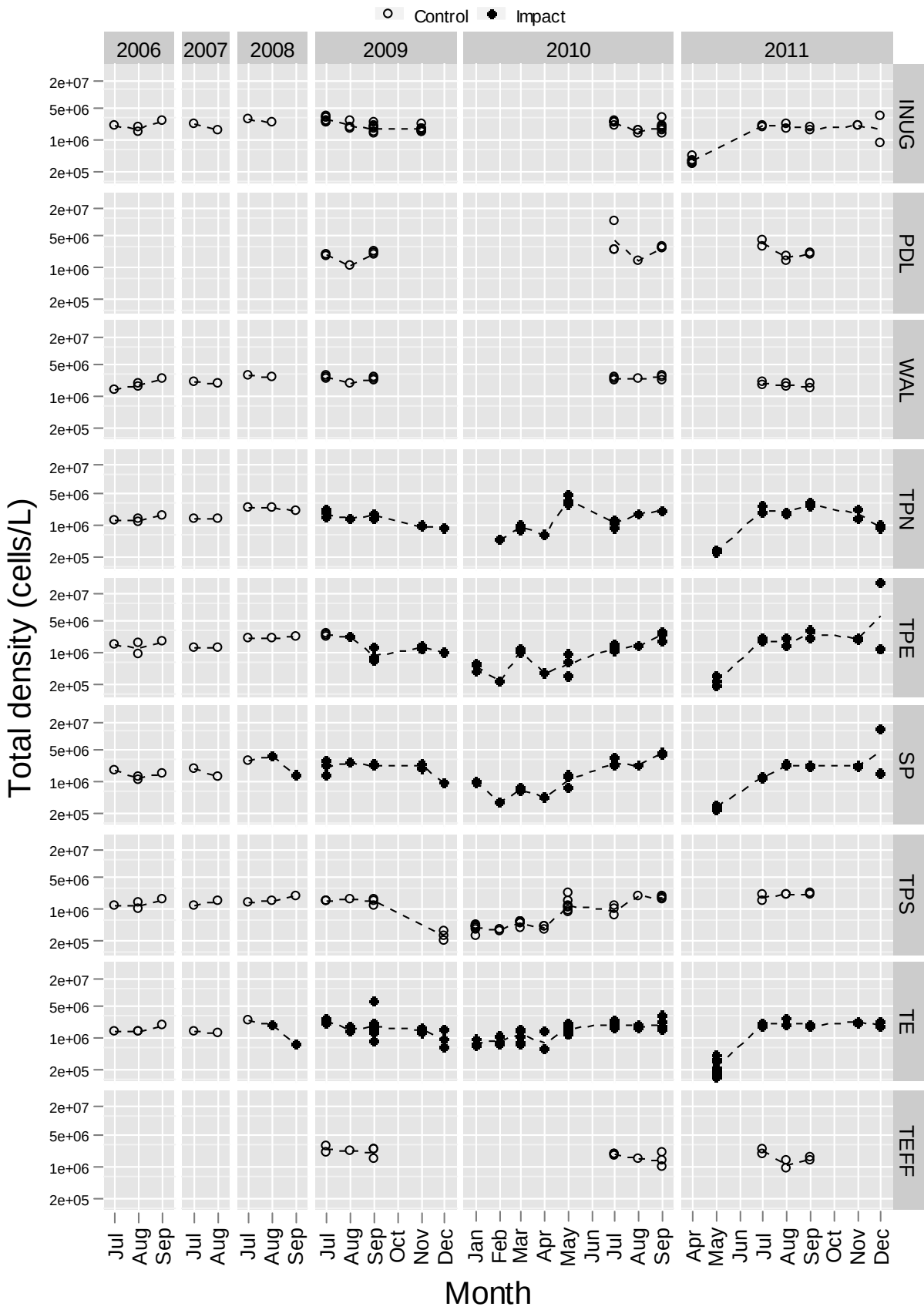
APPENDIX H

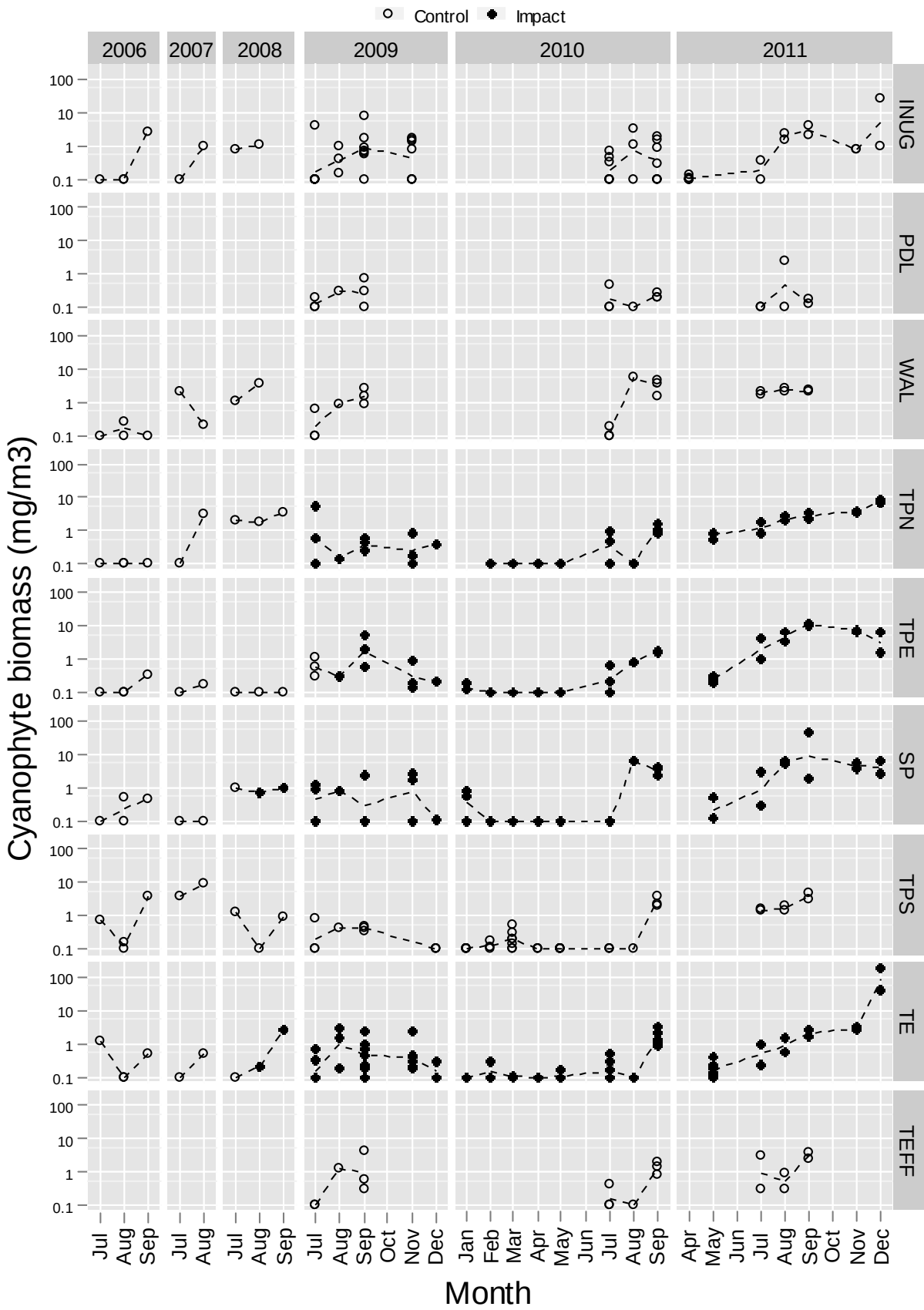
PHYTOPLANKTON PLOTS 2006 – 2011

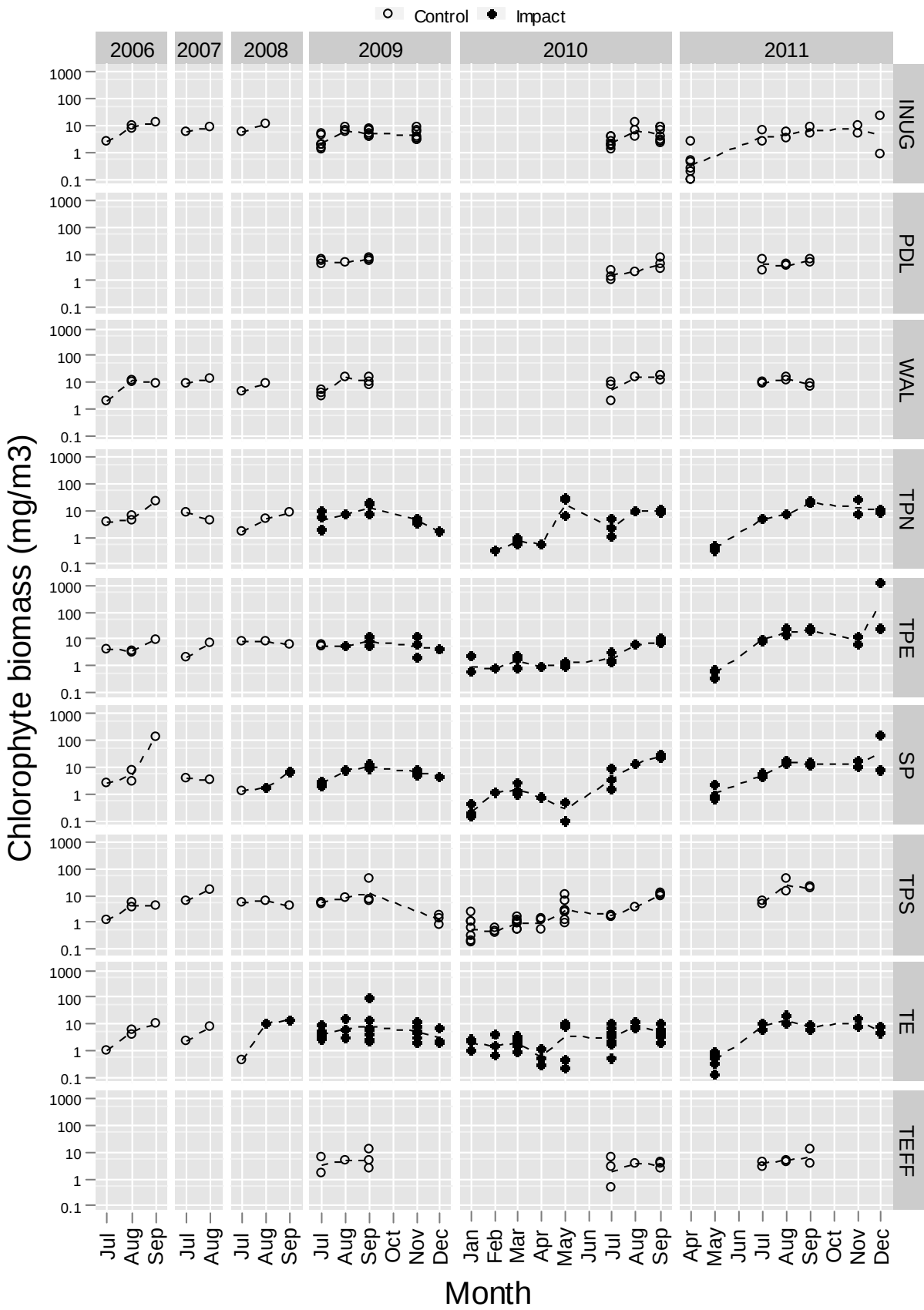


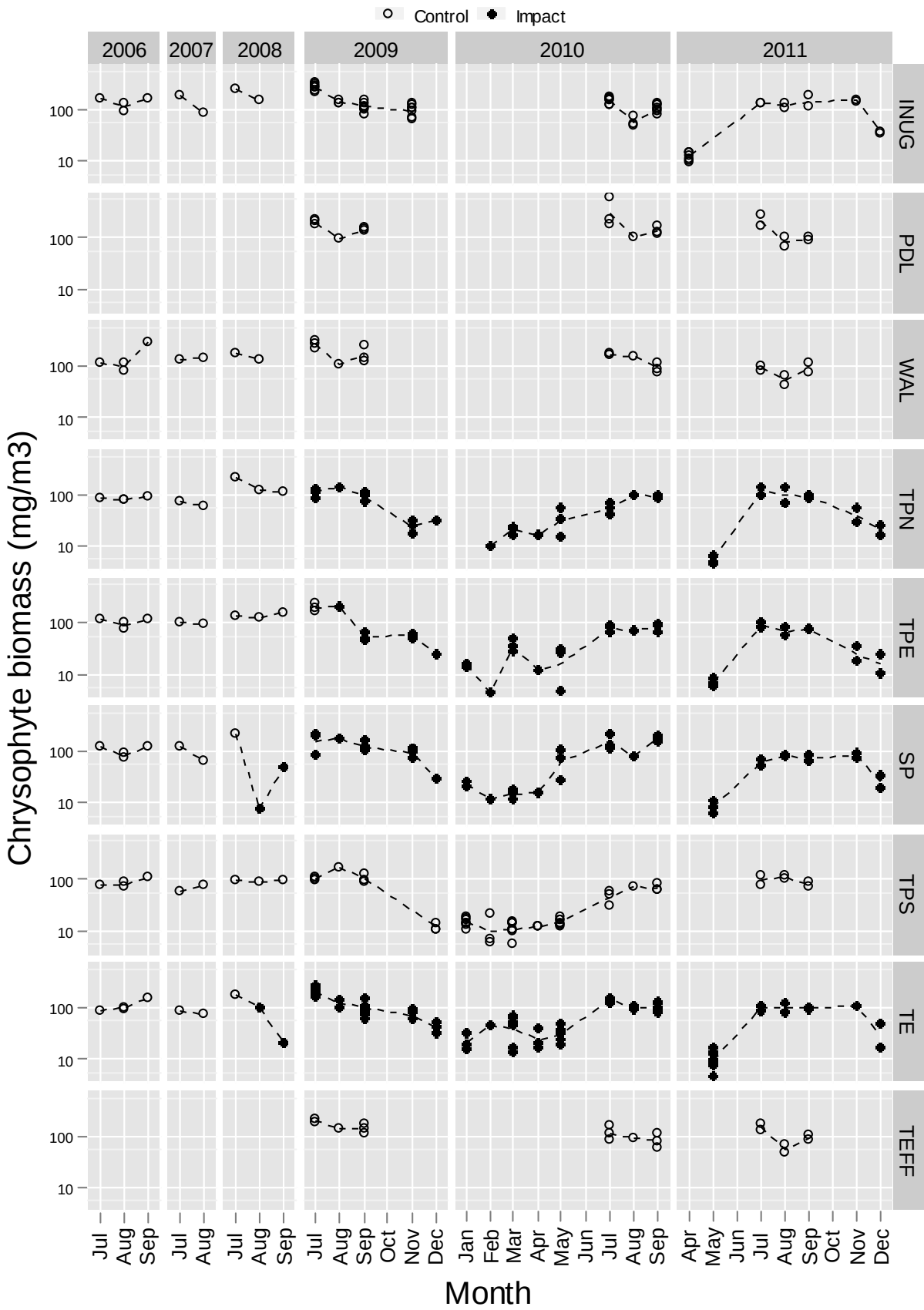
Phytoplankton plots

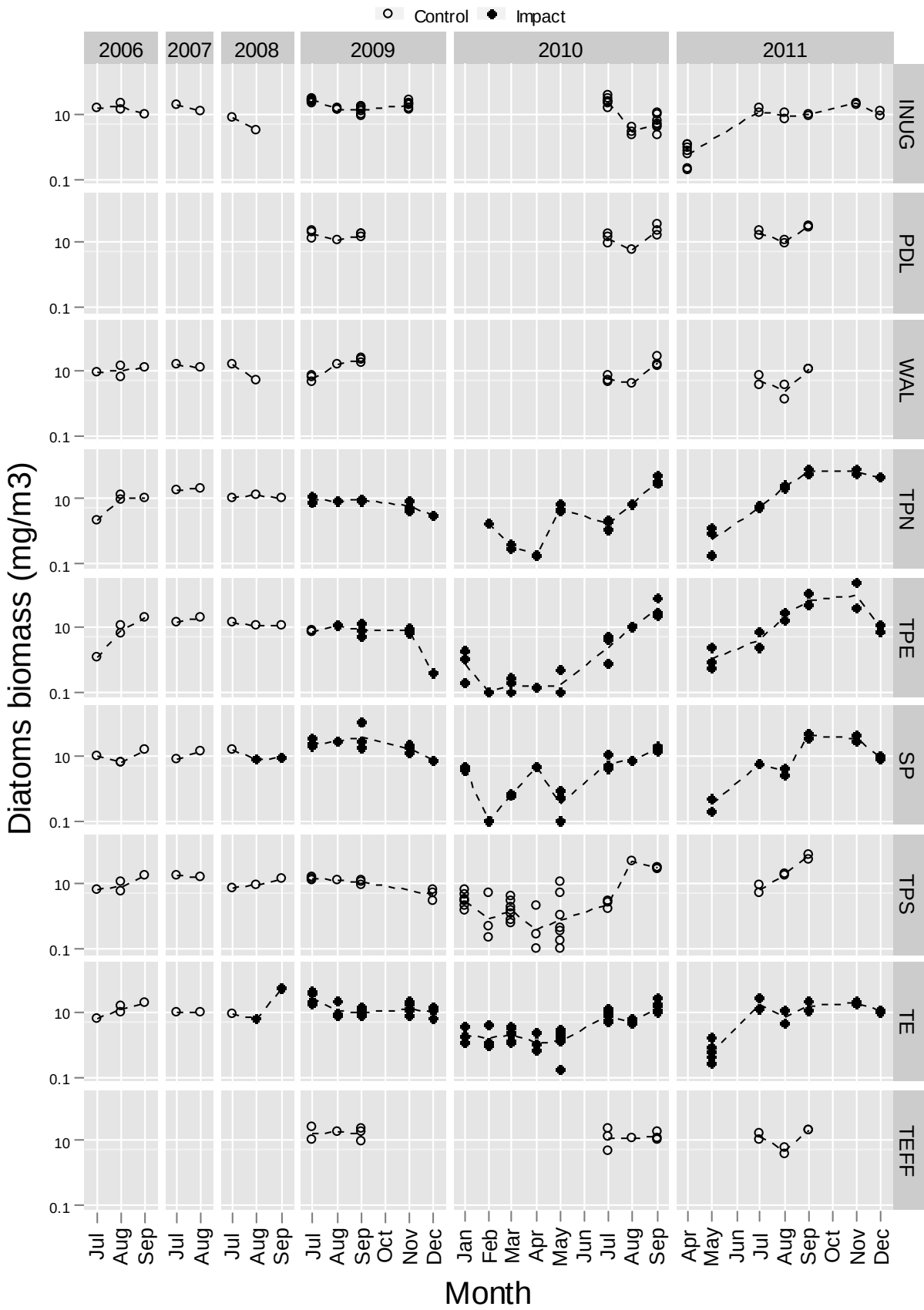
Meadowbank

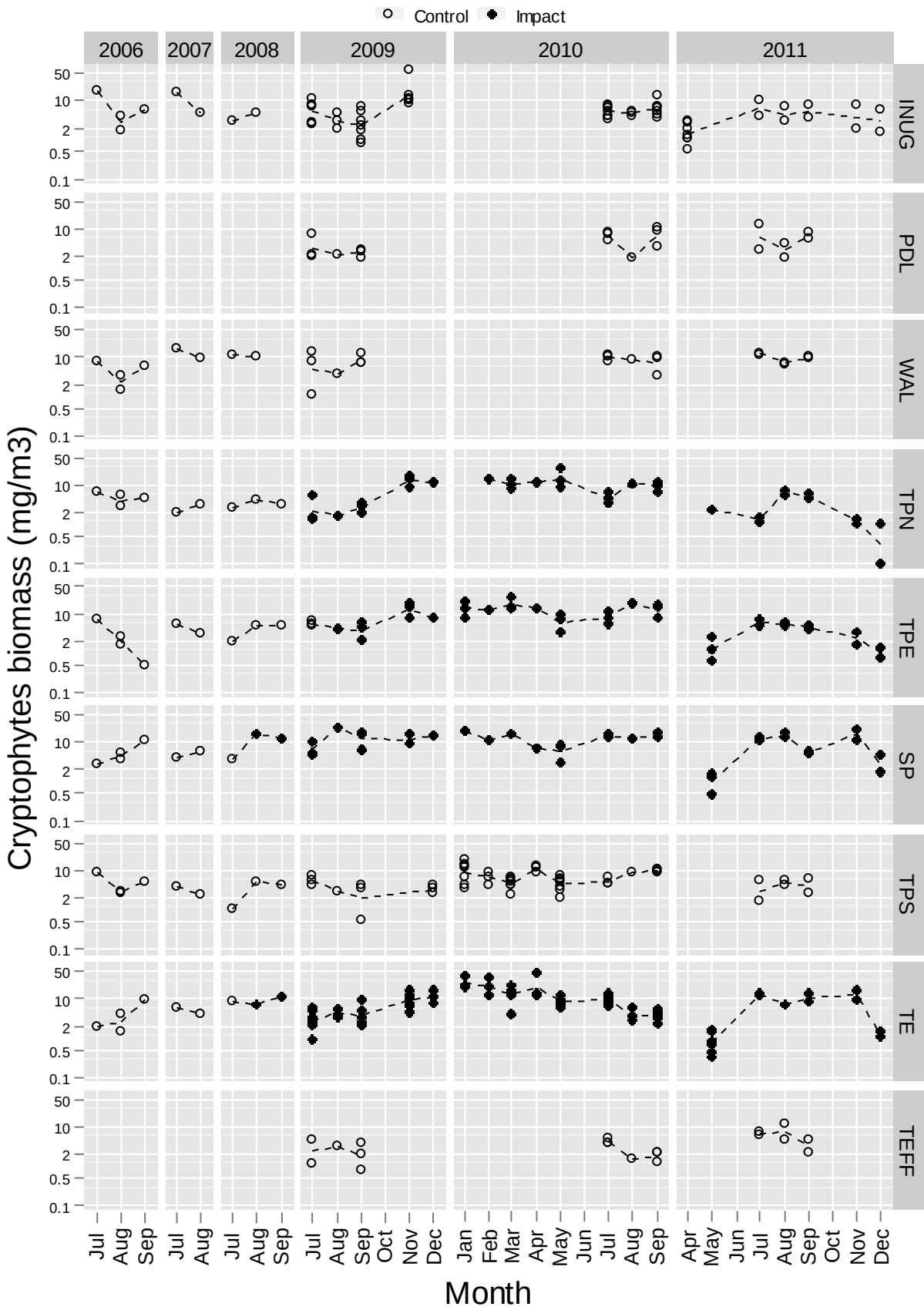


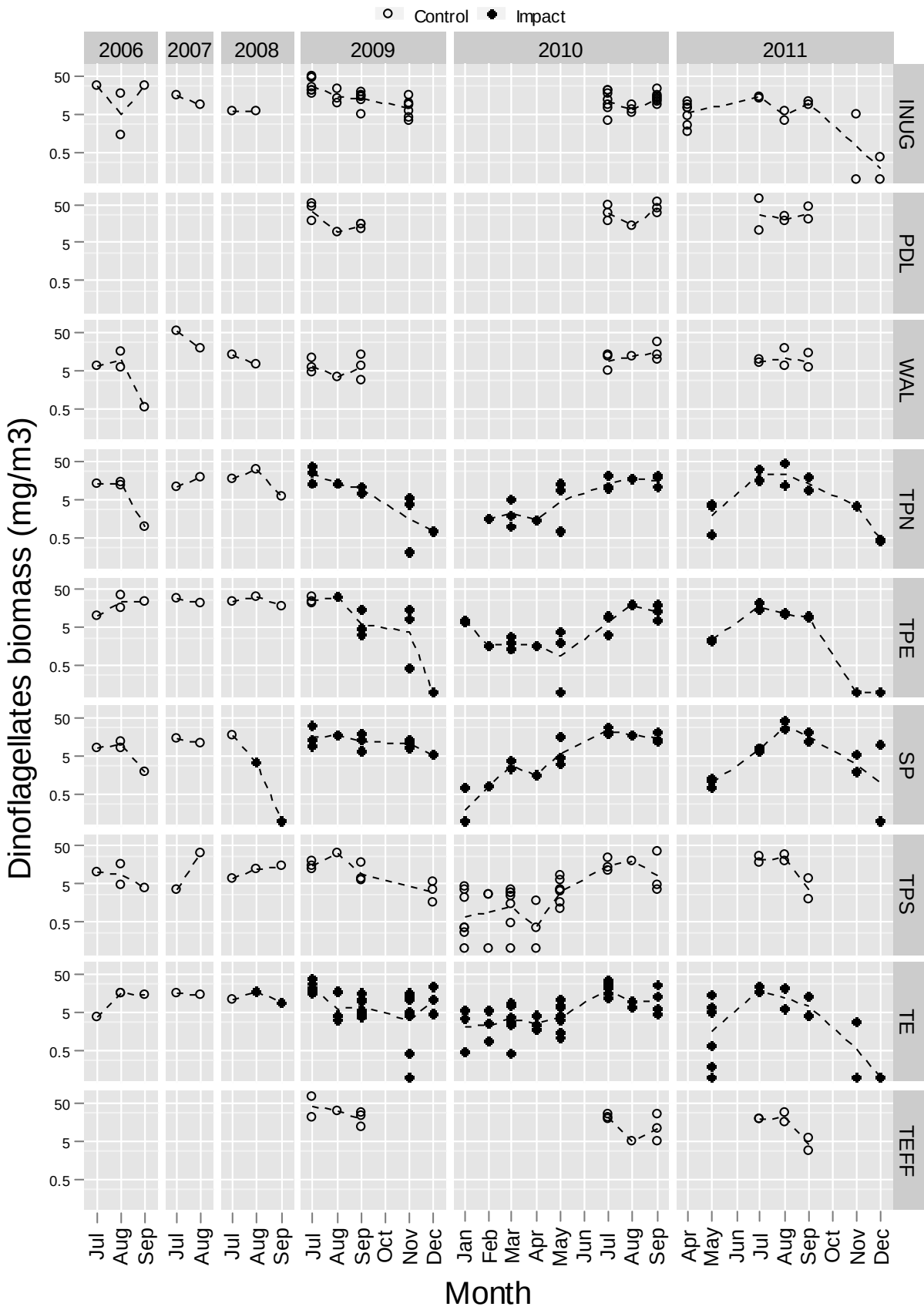


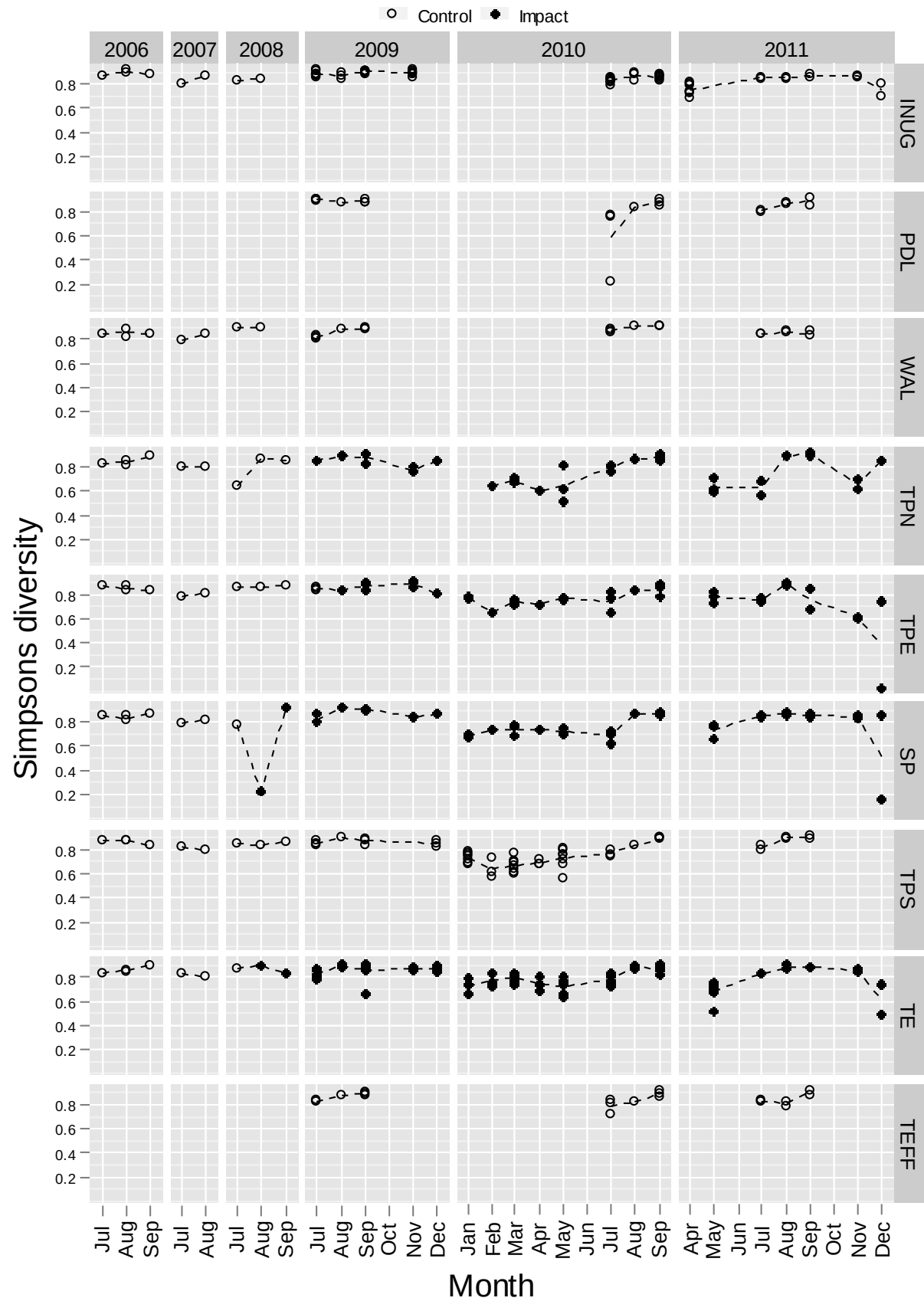


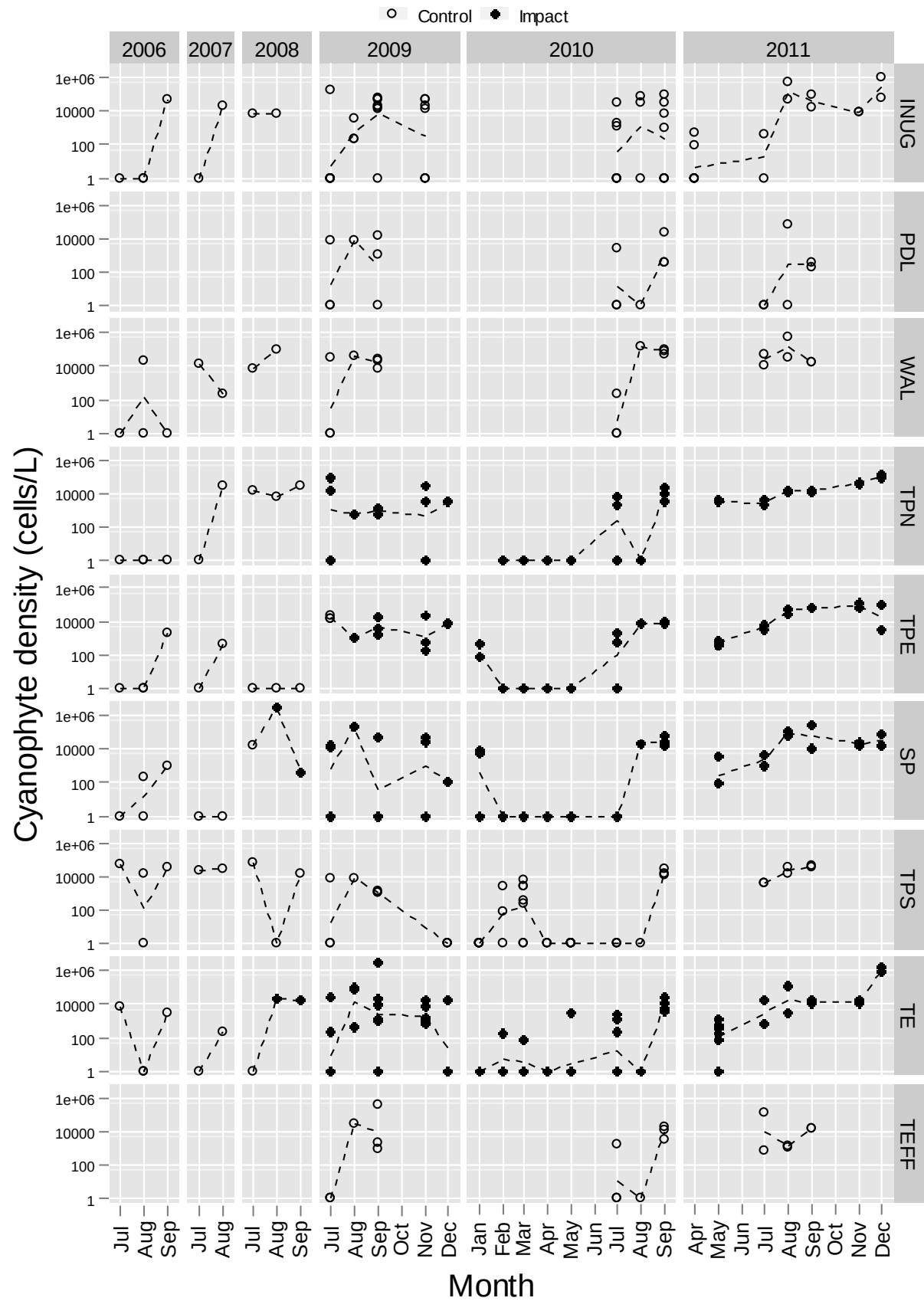


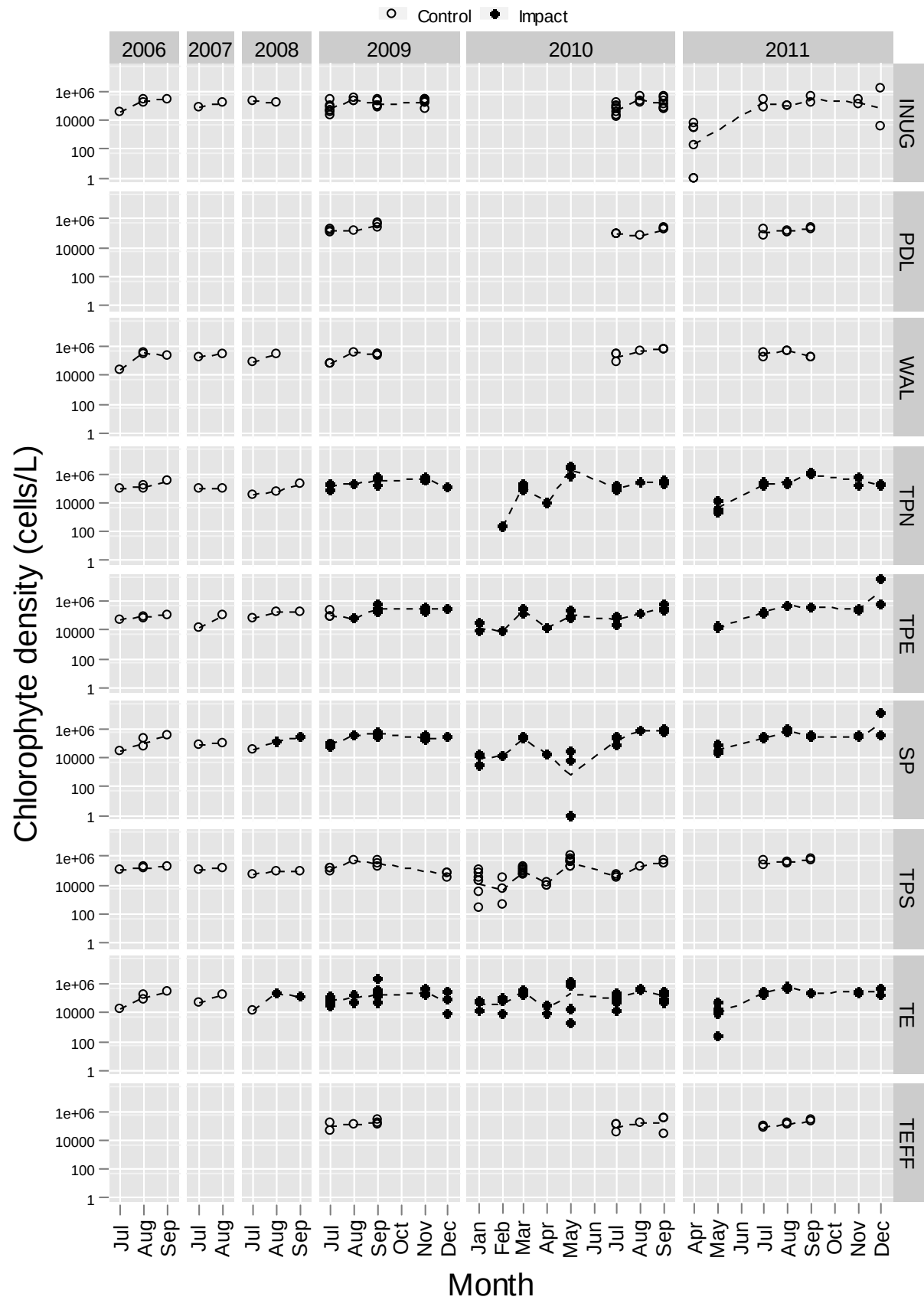


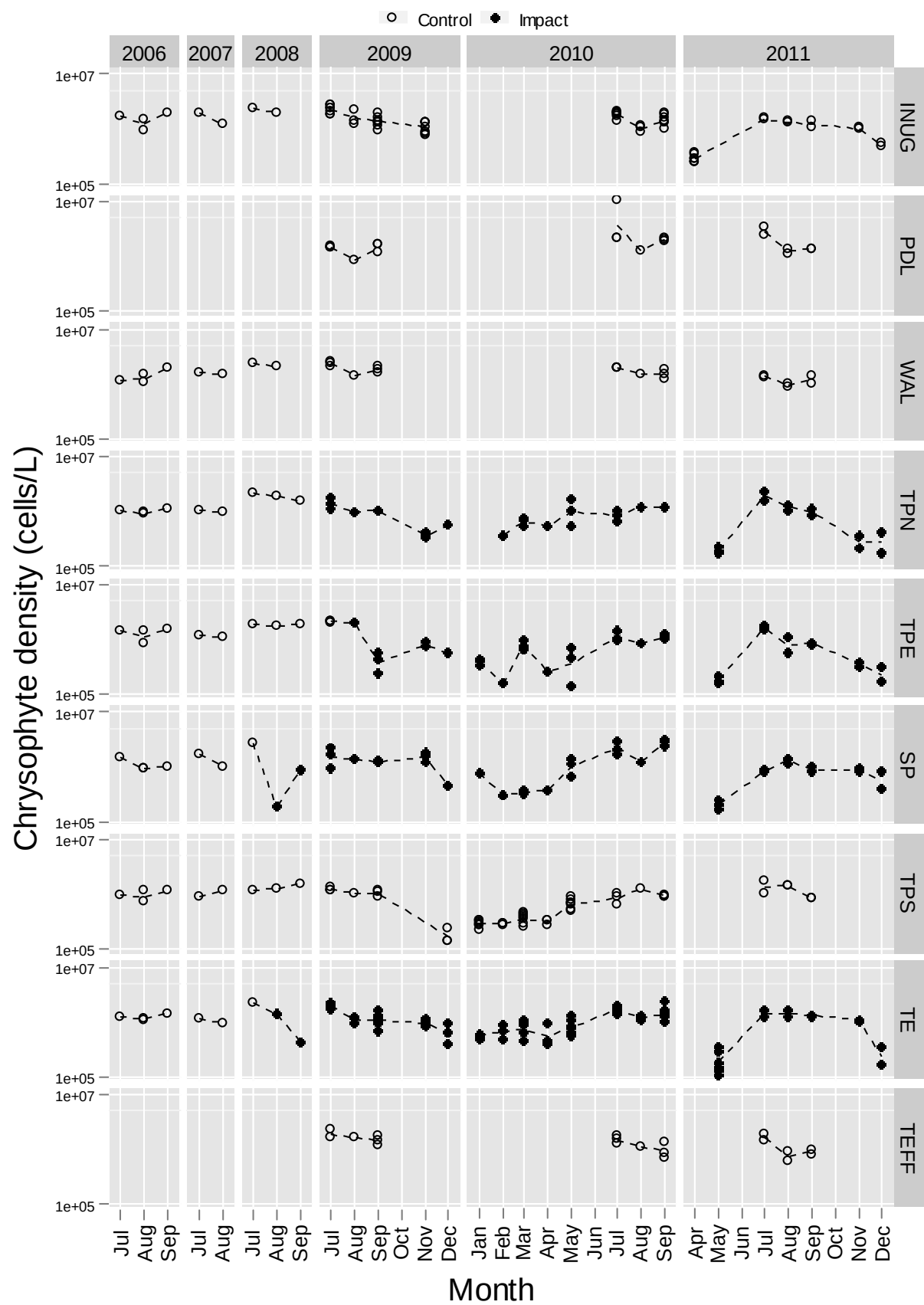


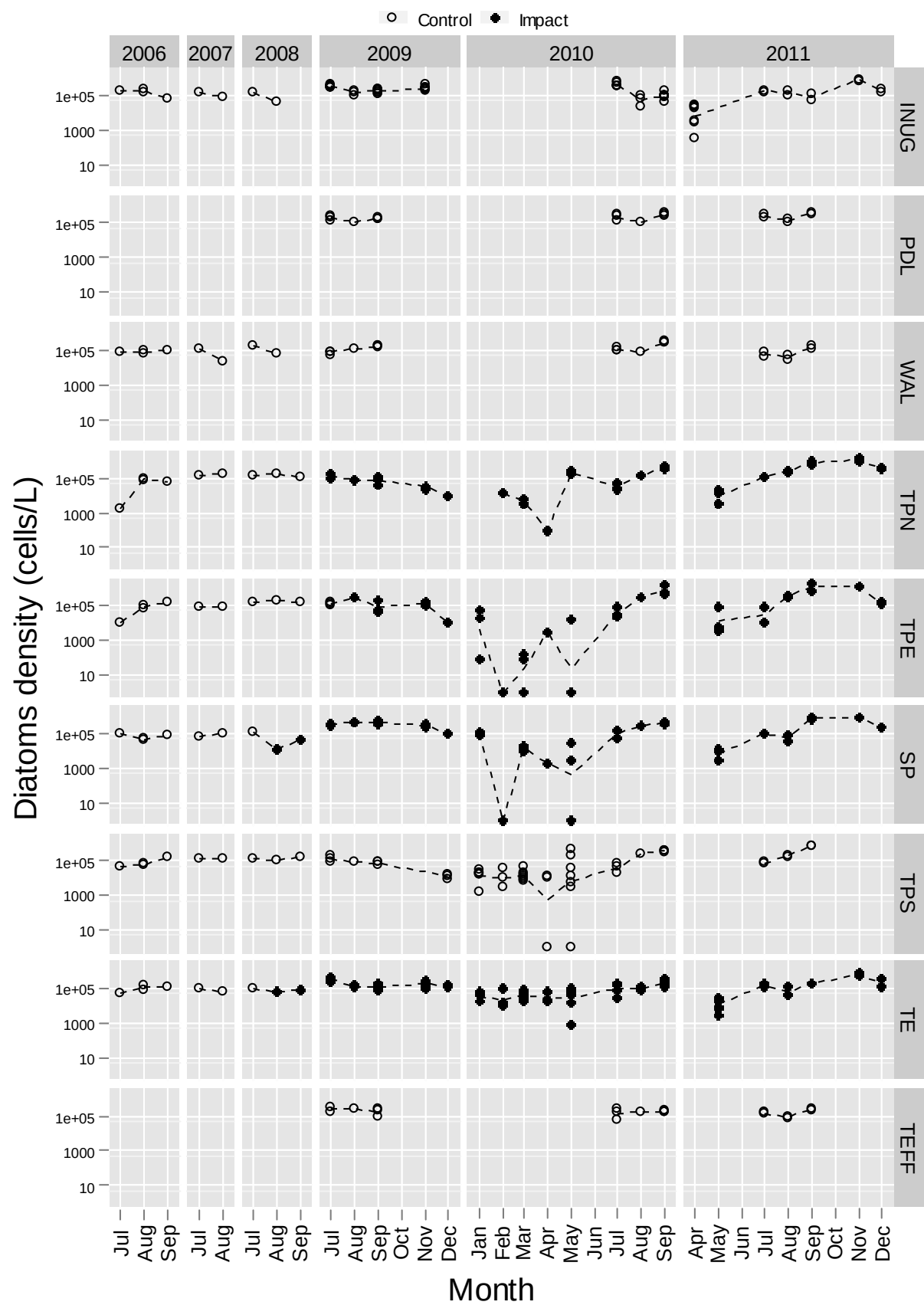


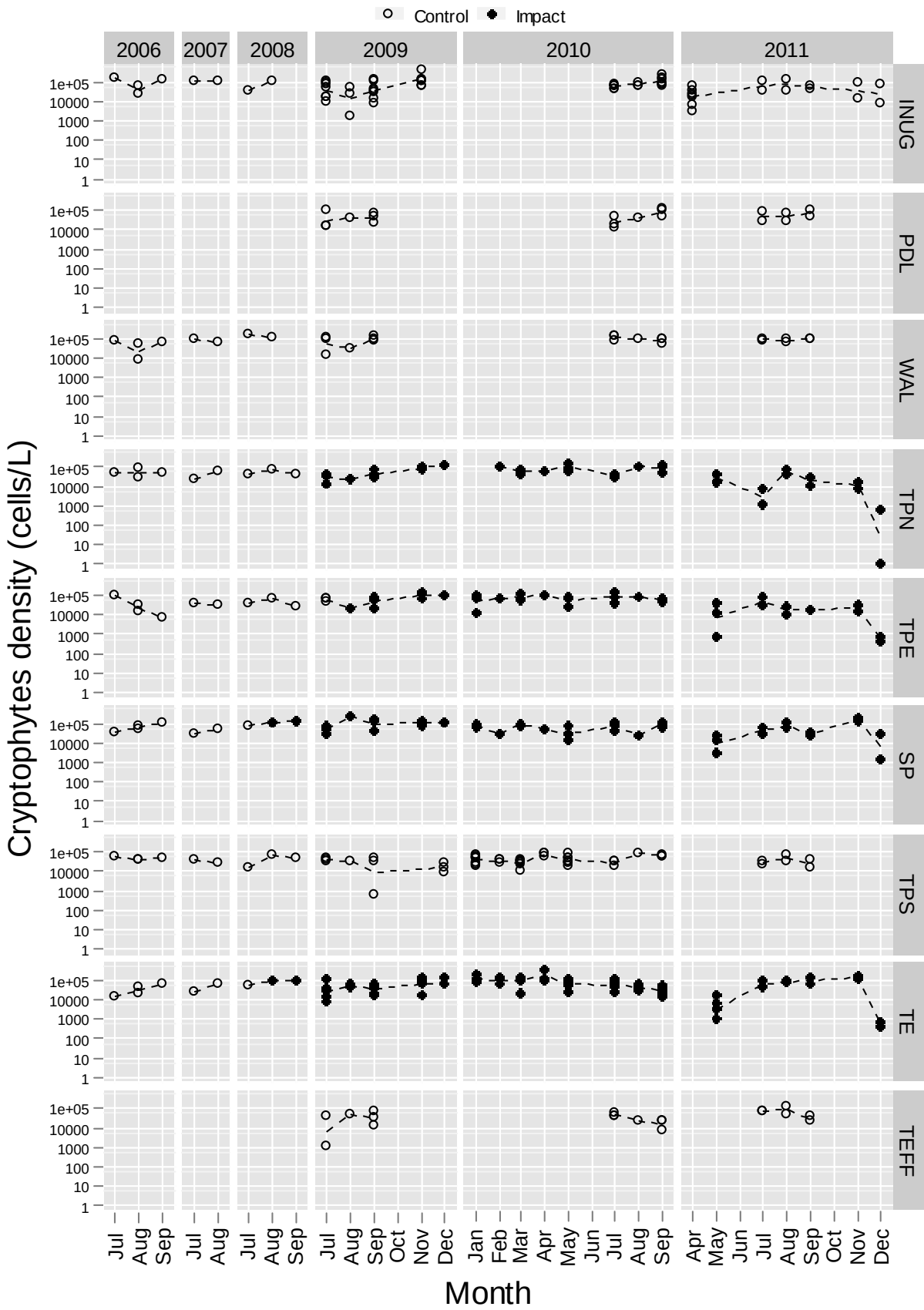


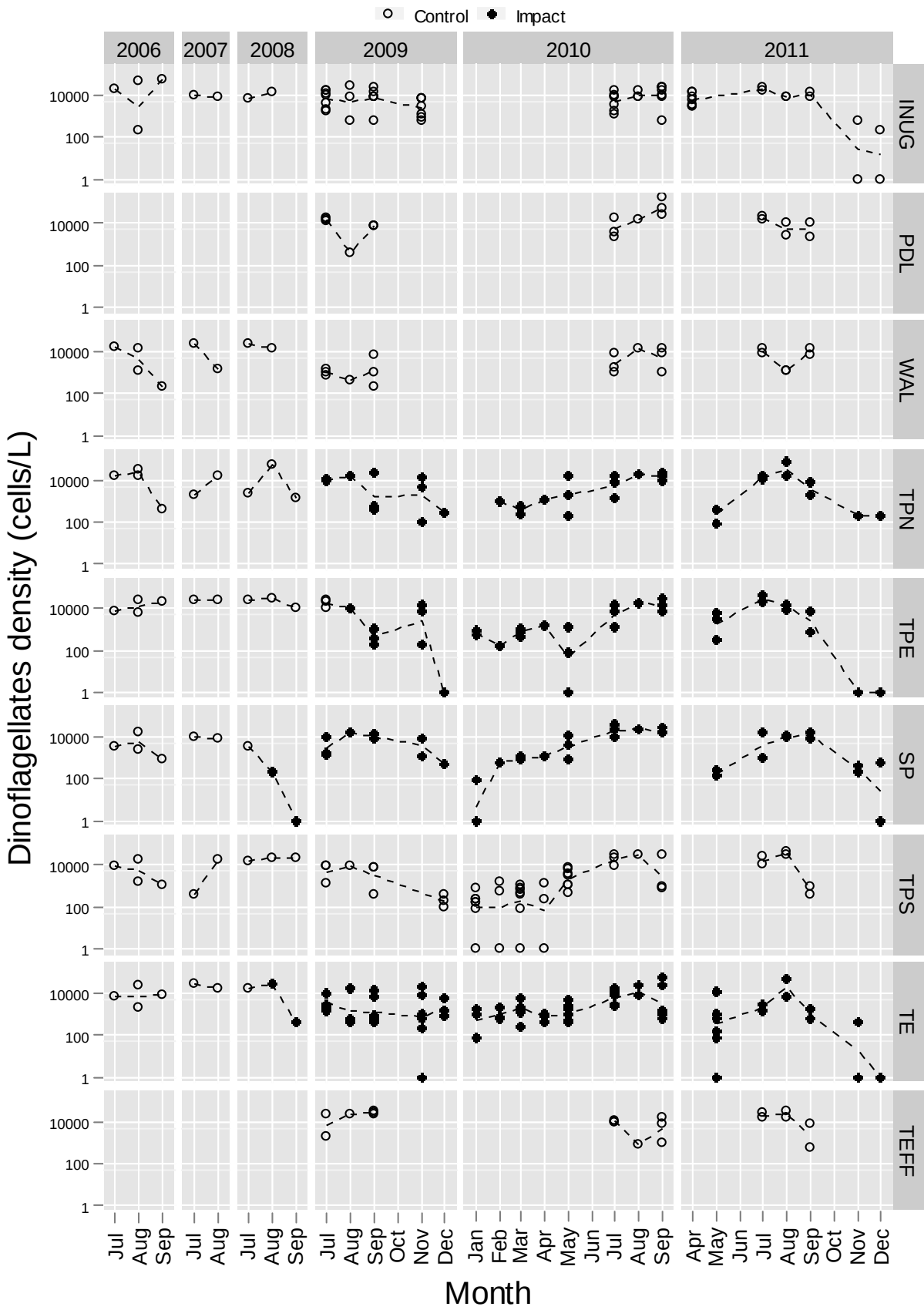


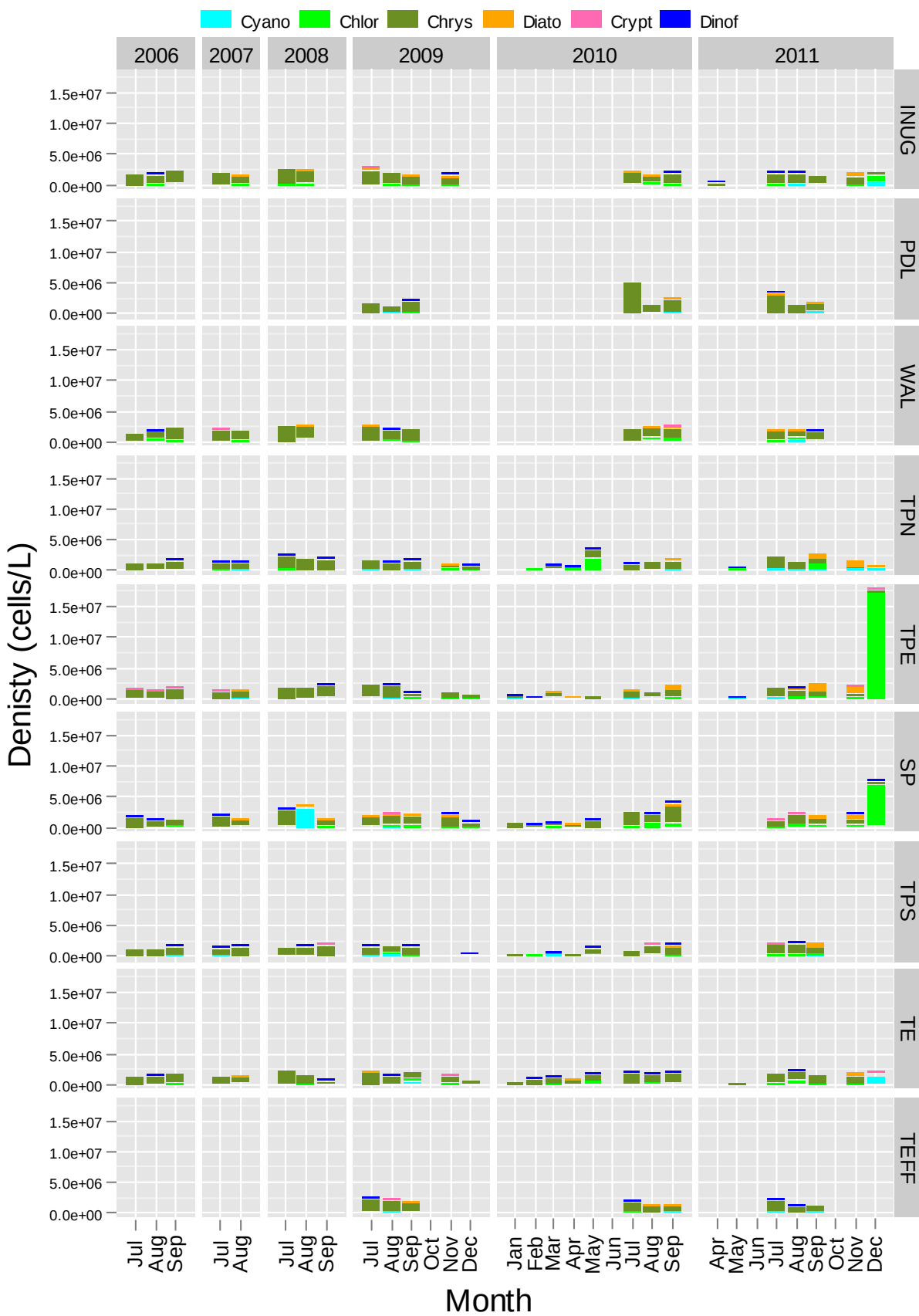


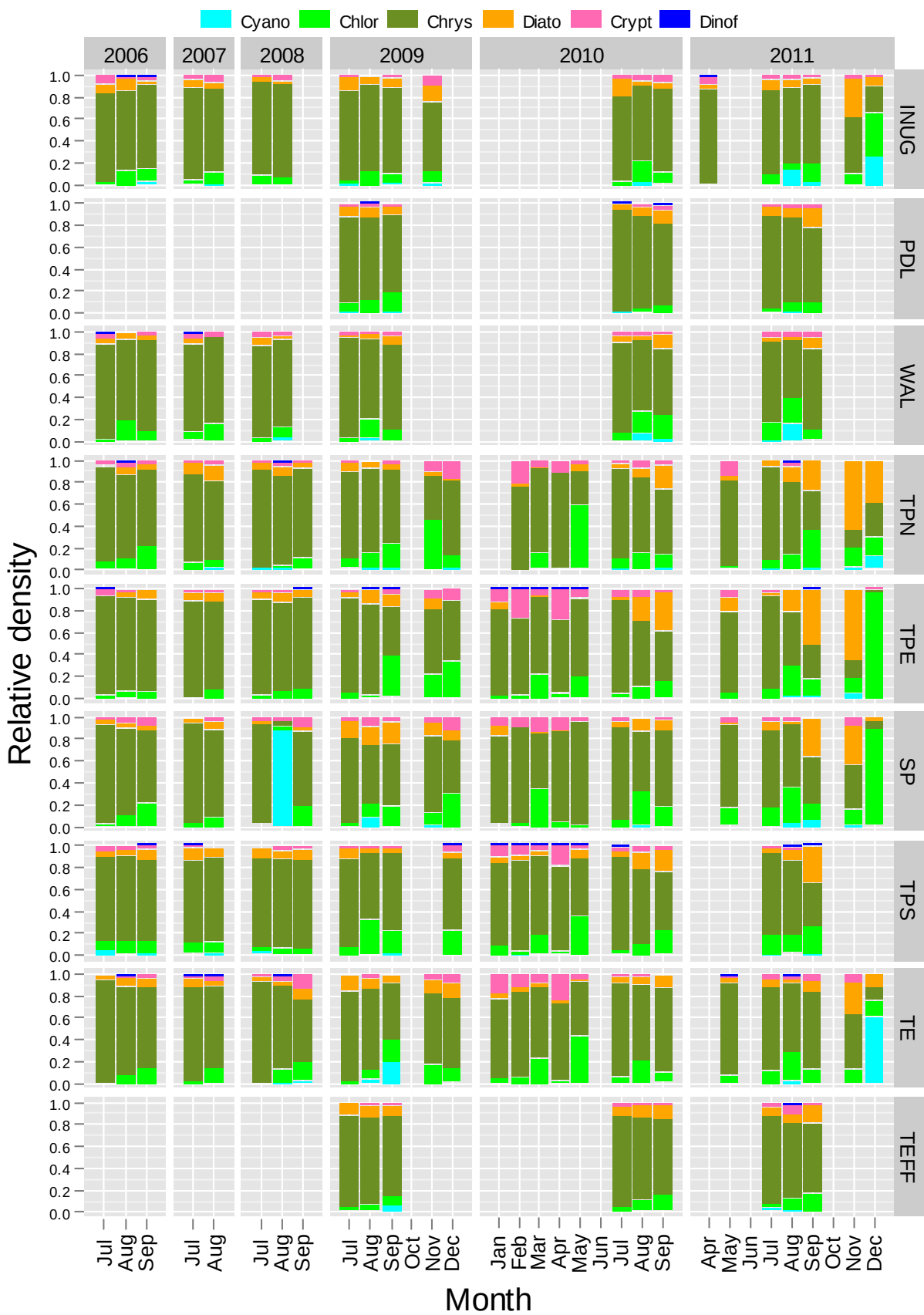






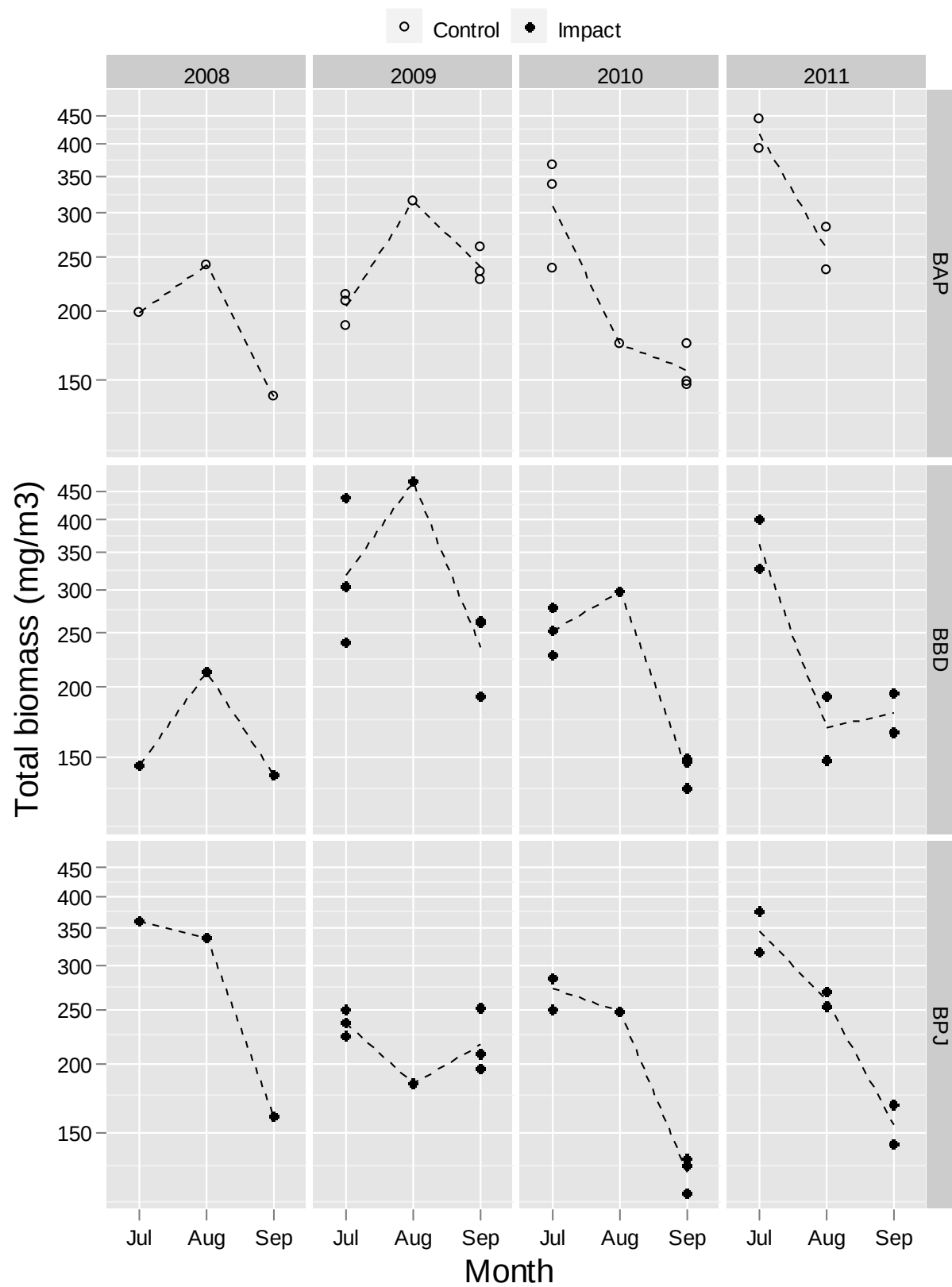


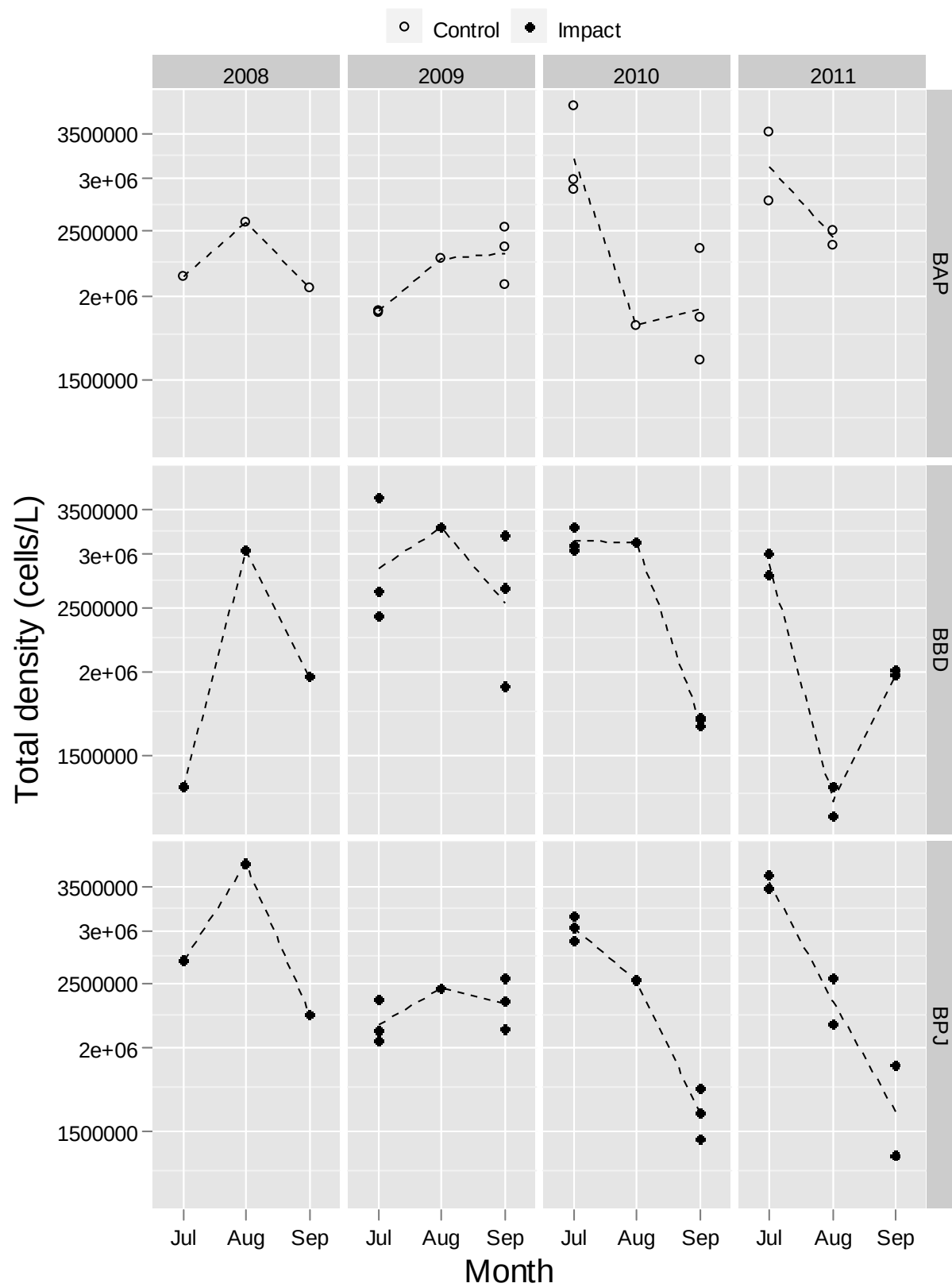


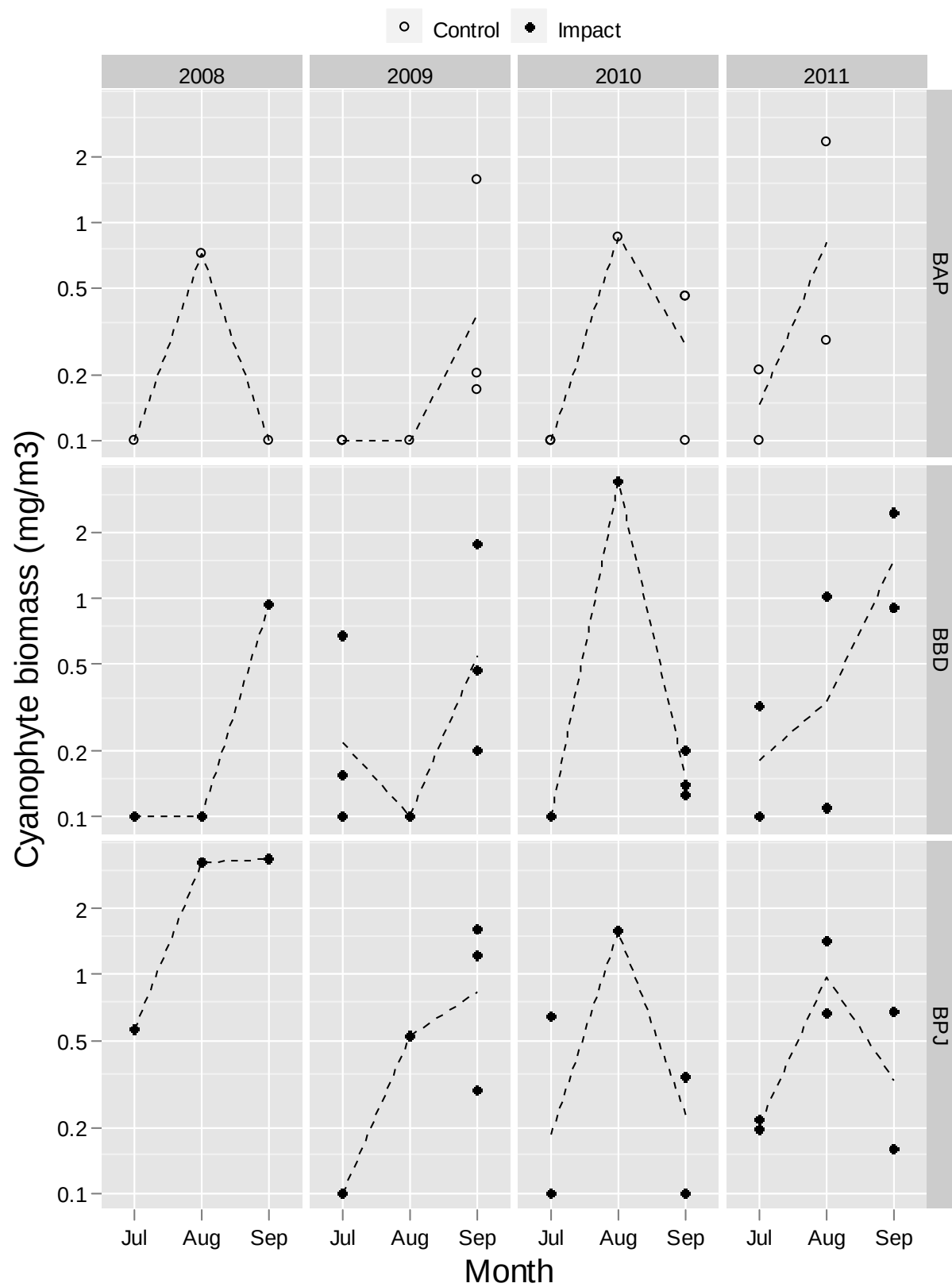


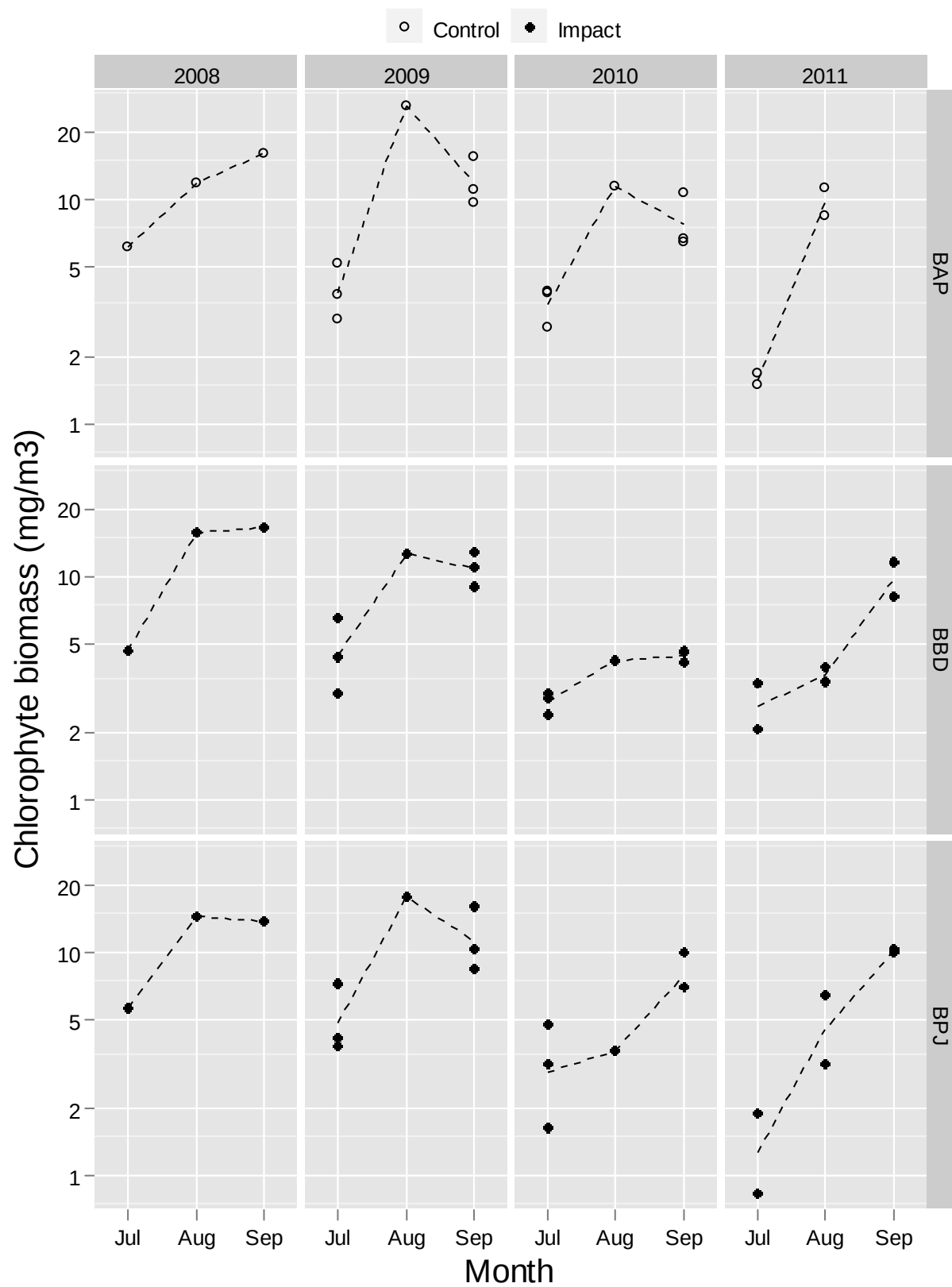
Phytoplankton plots

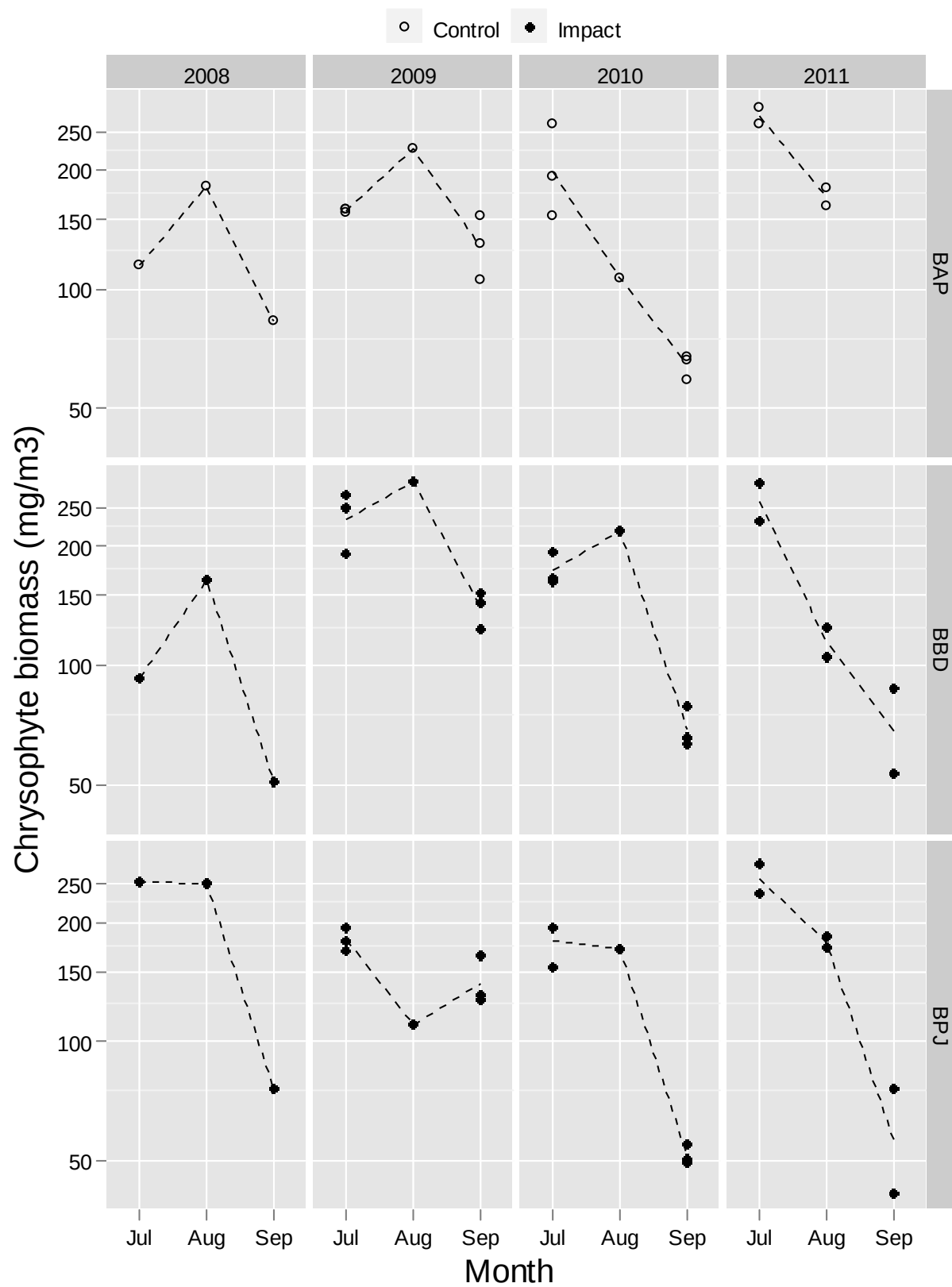
Baker Lake

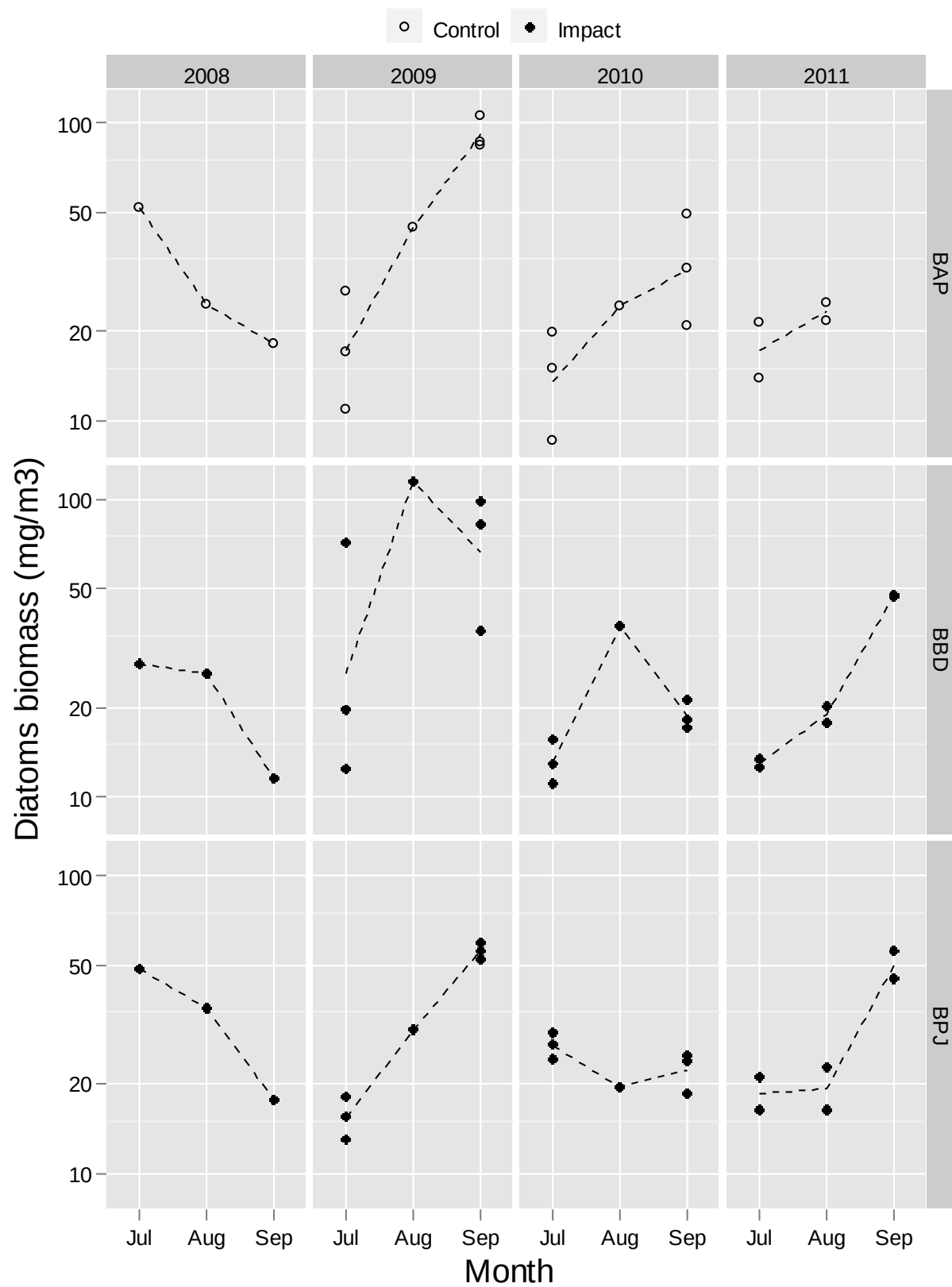


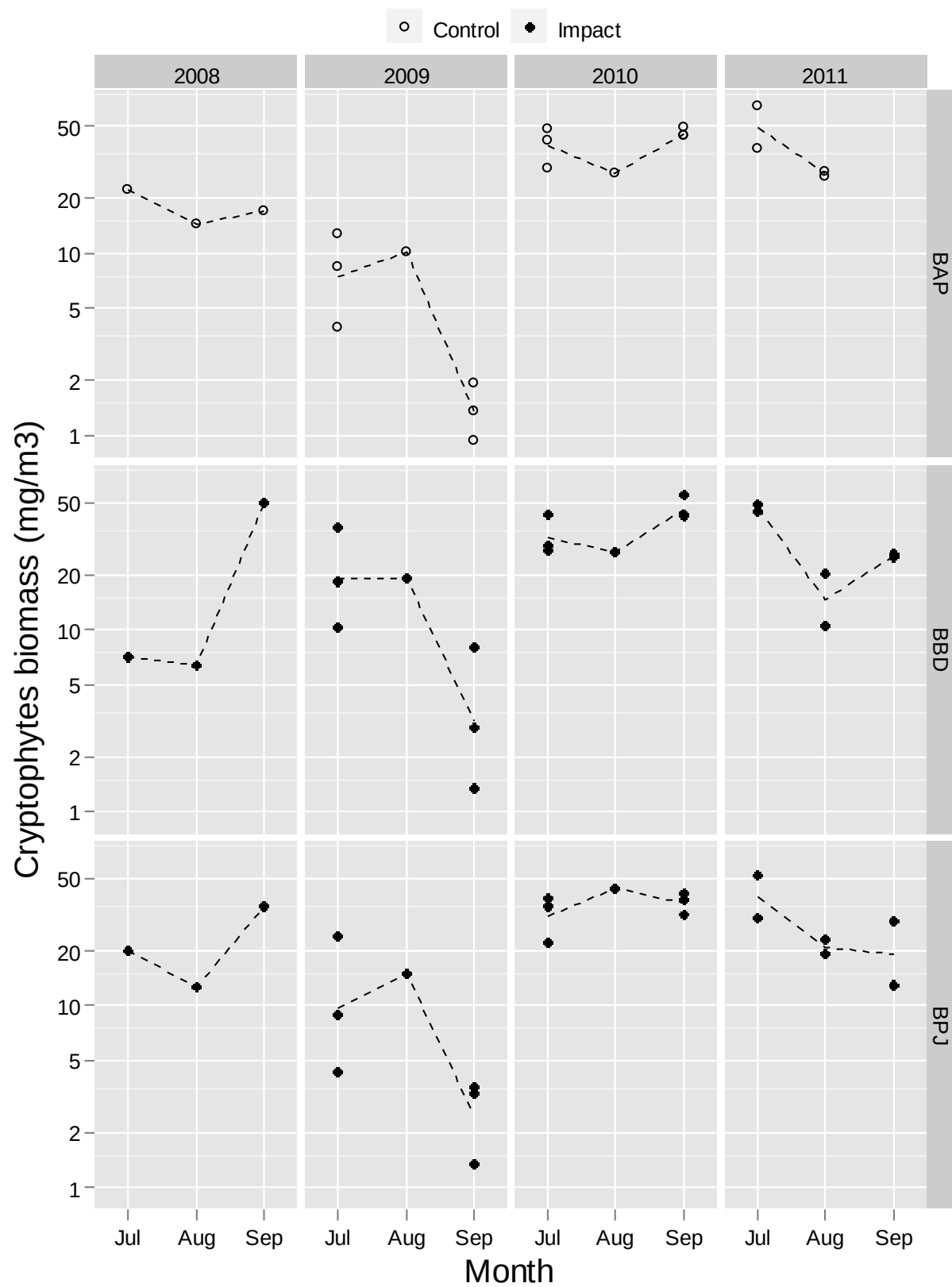


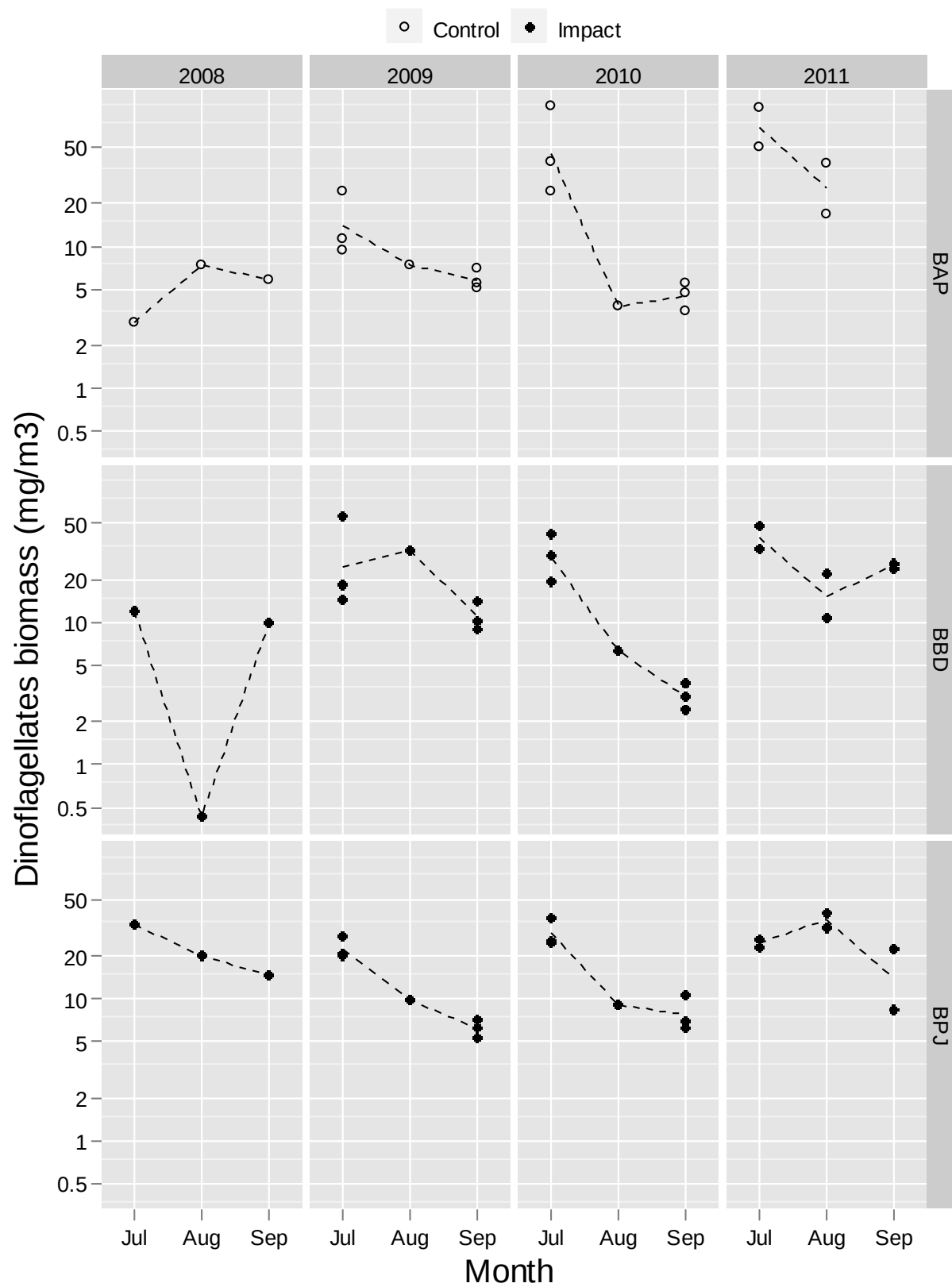


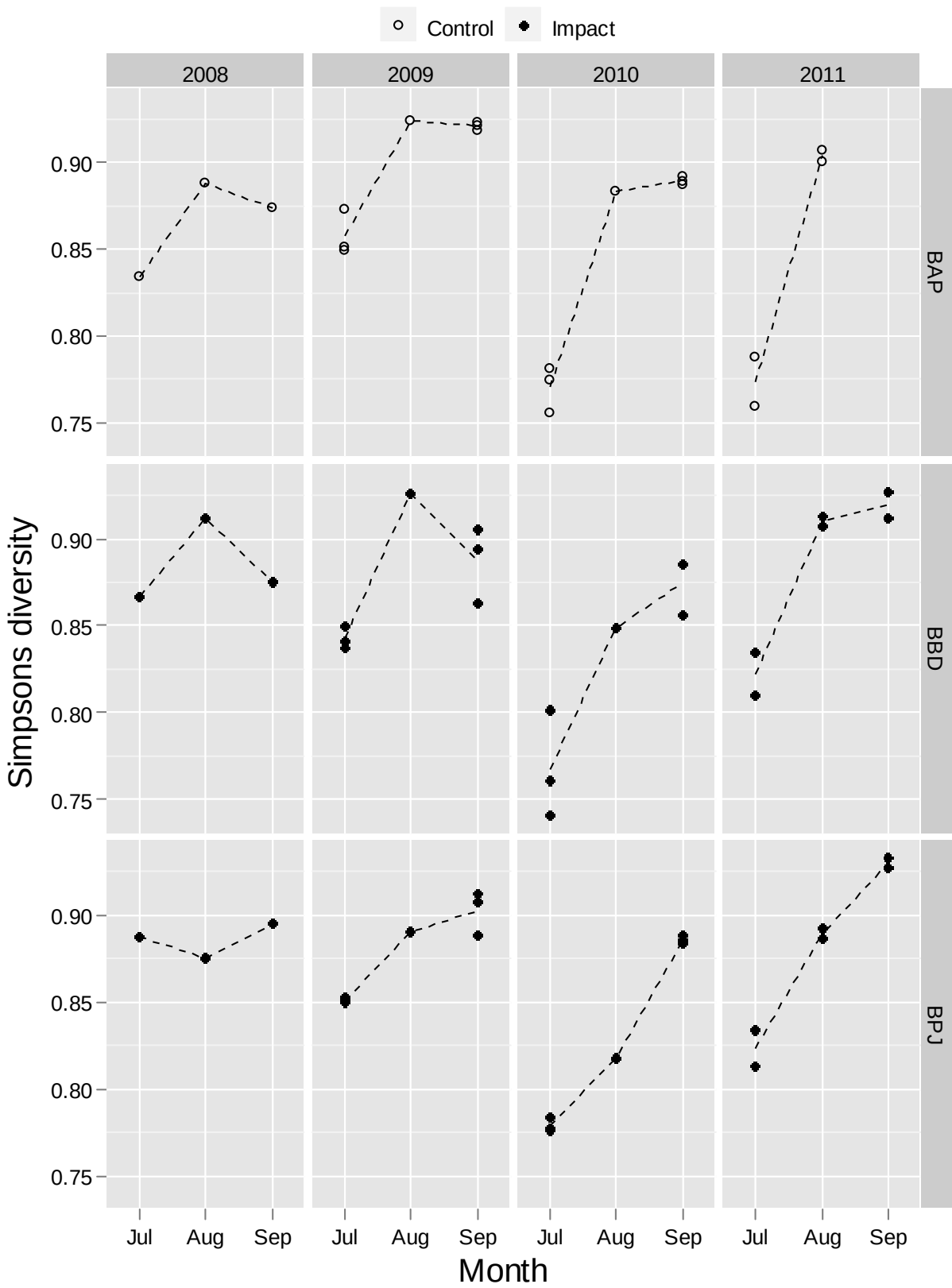


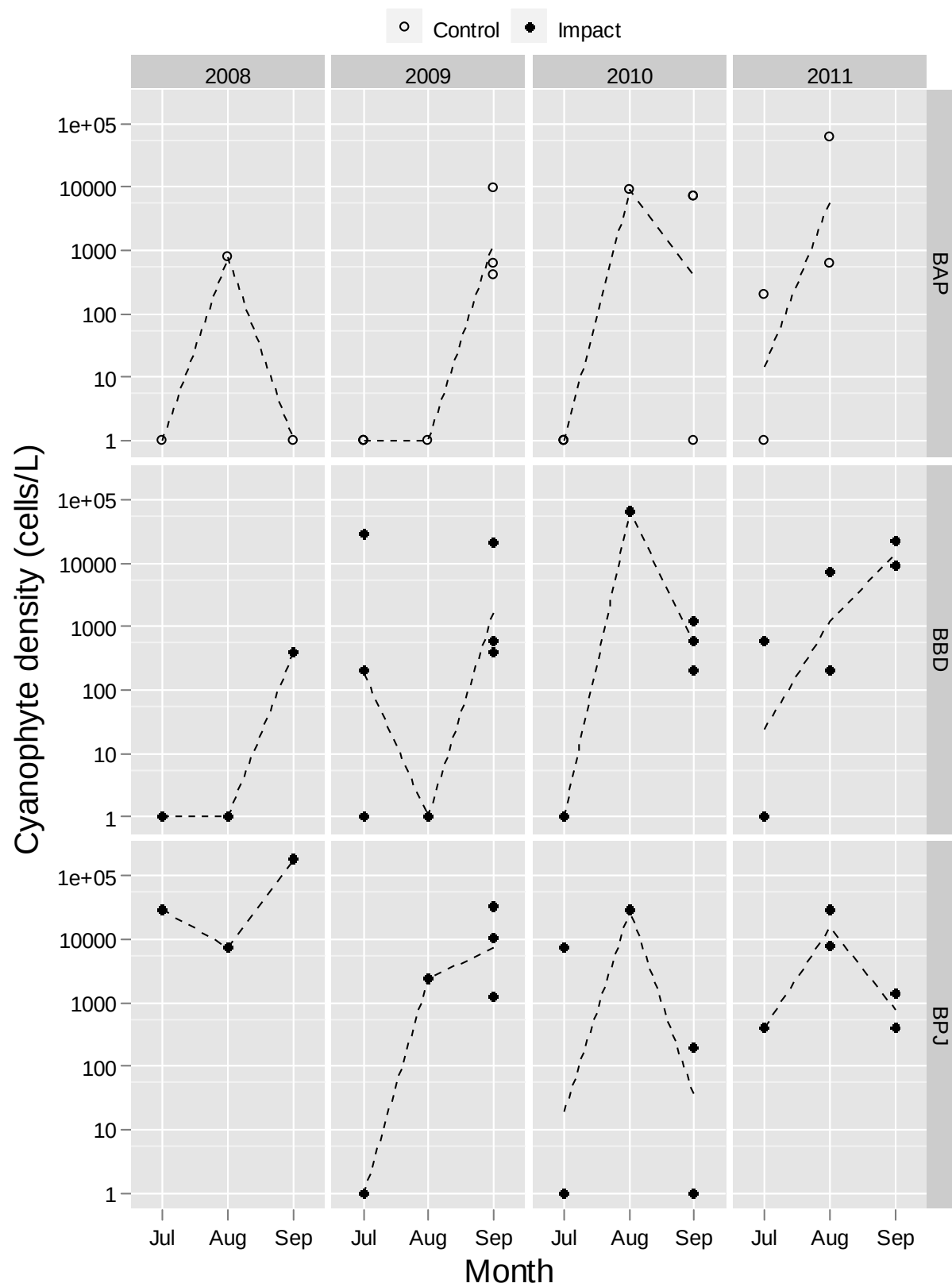


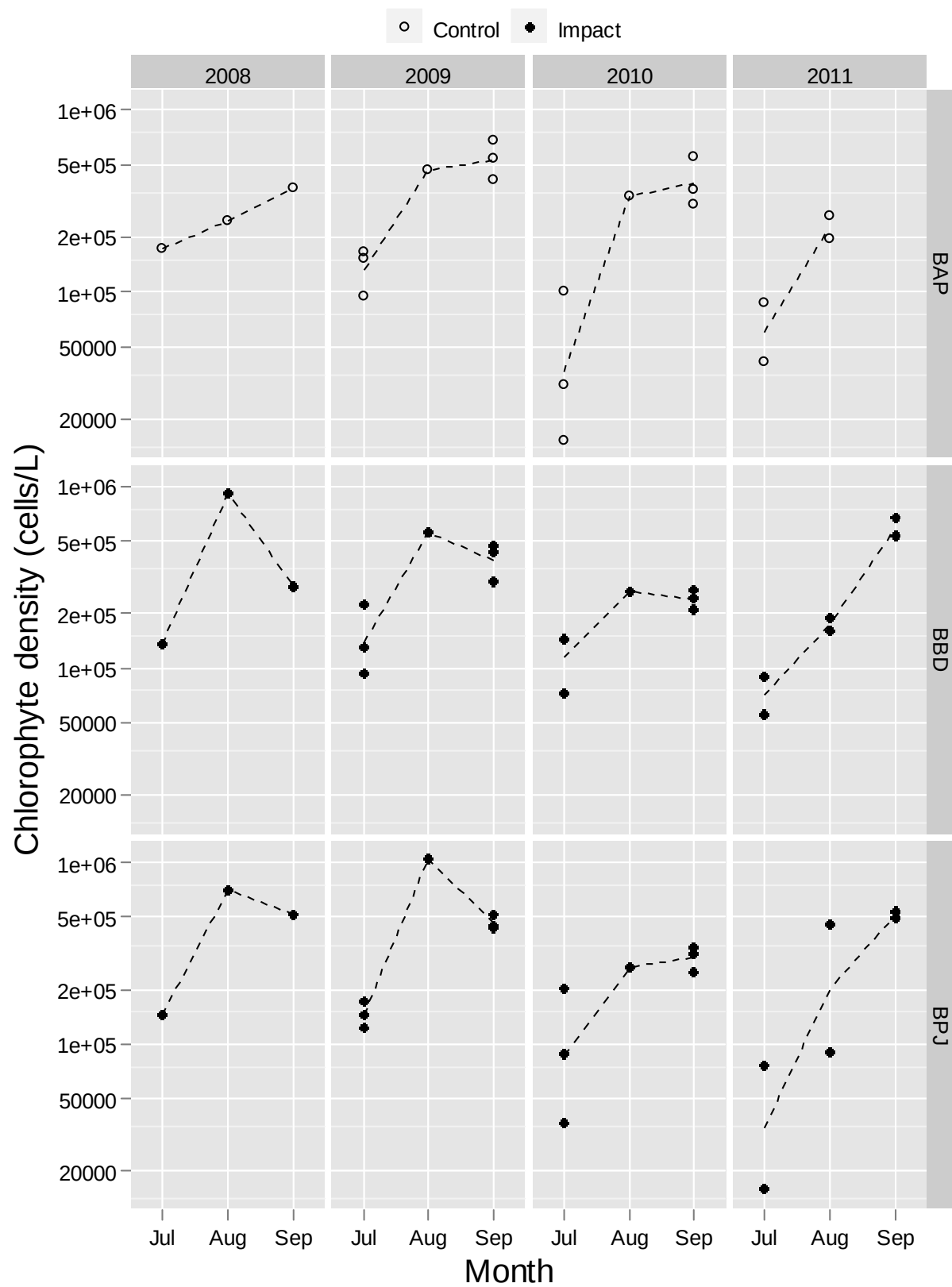


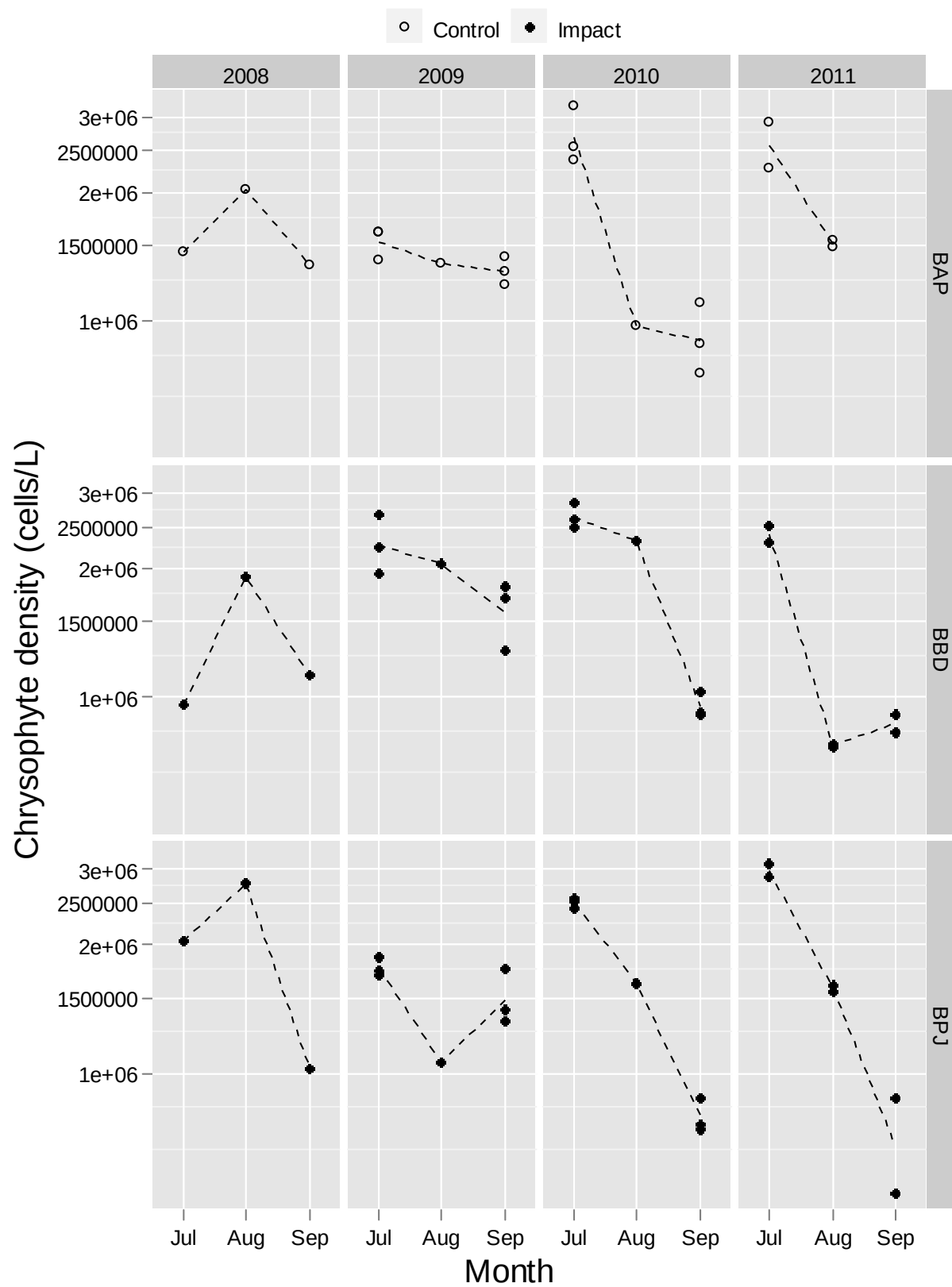


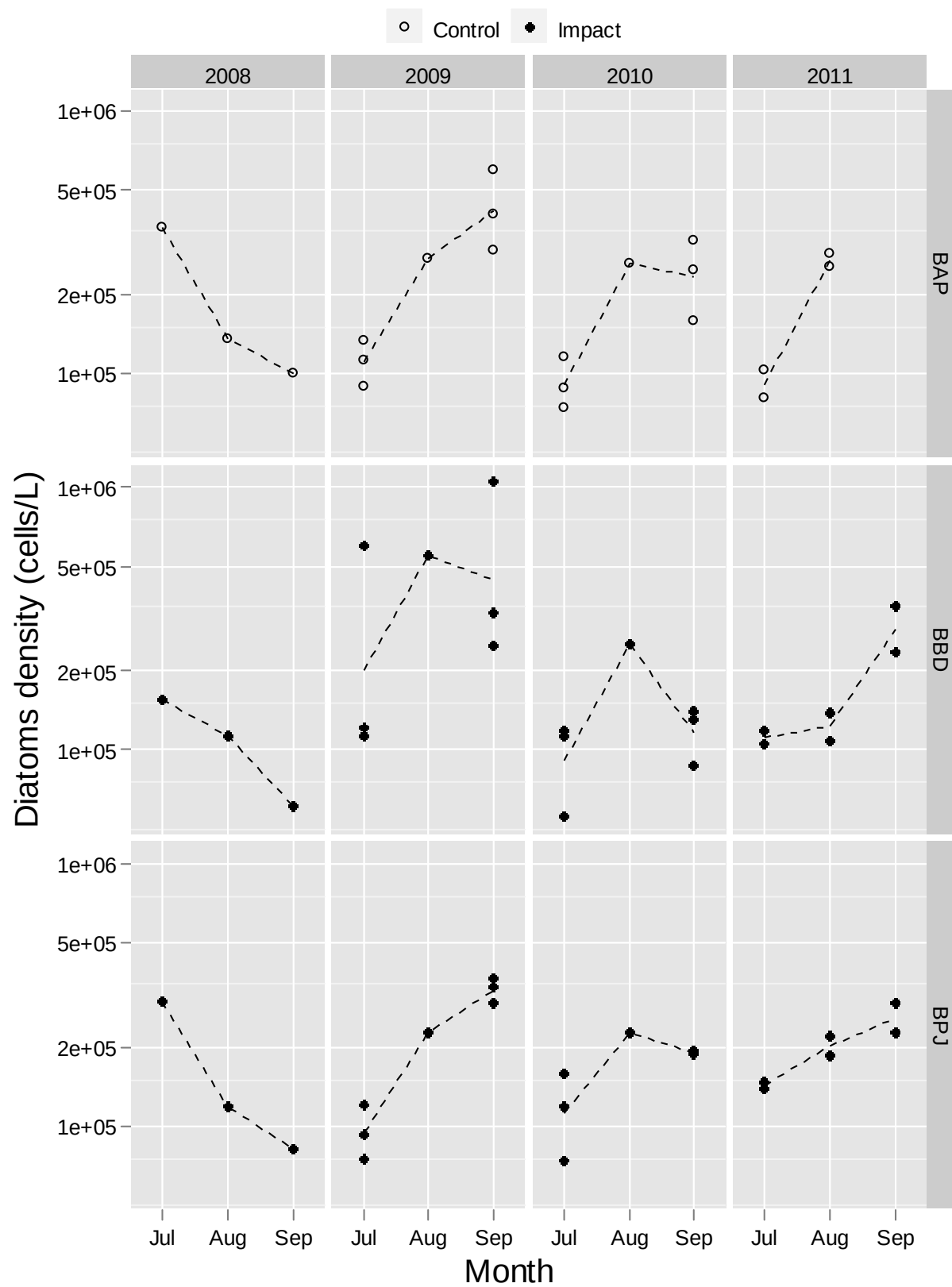


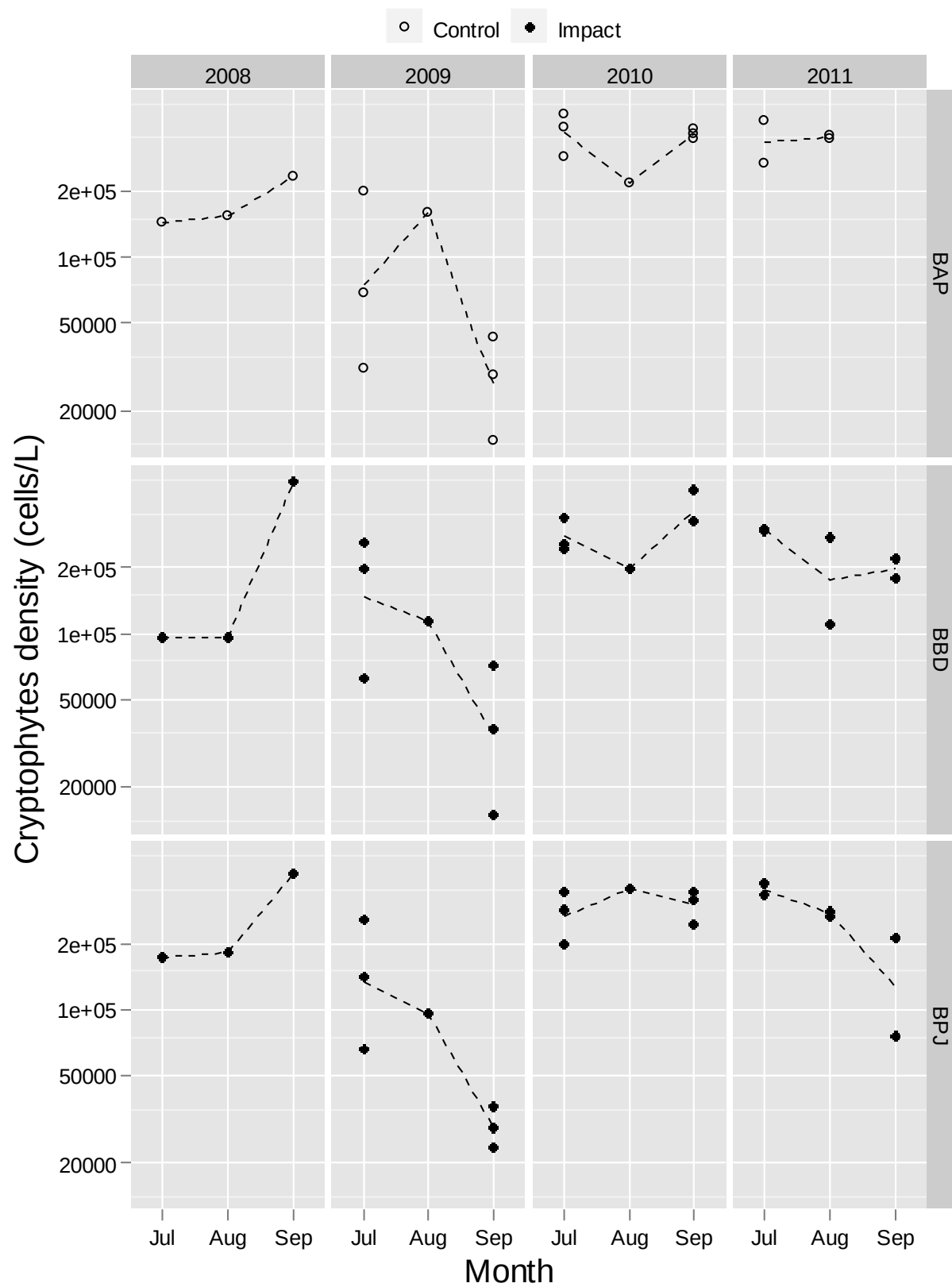


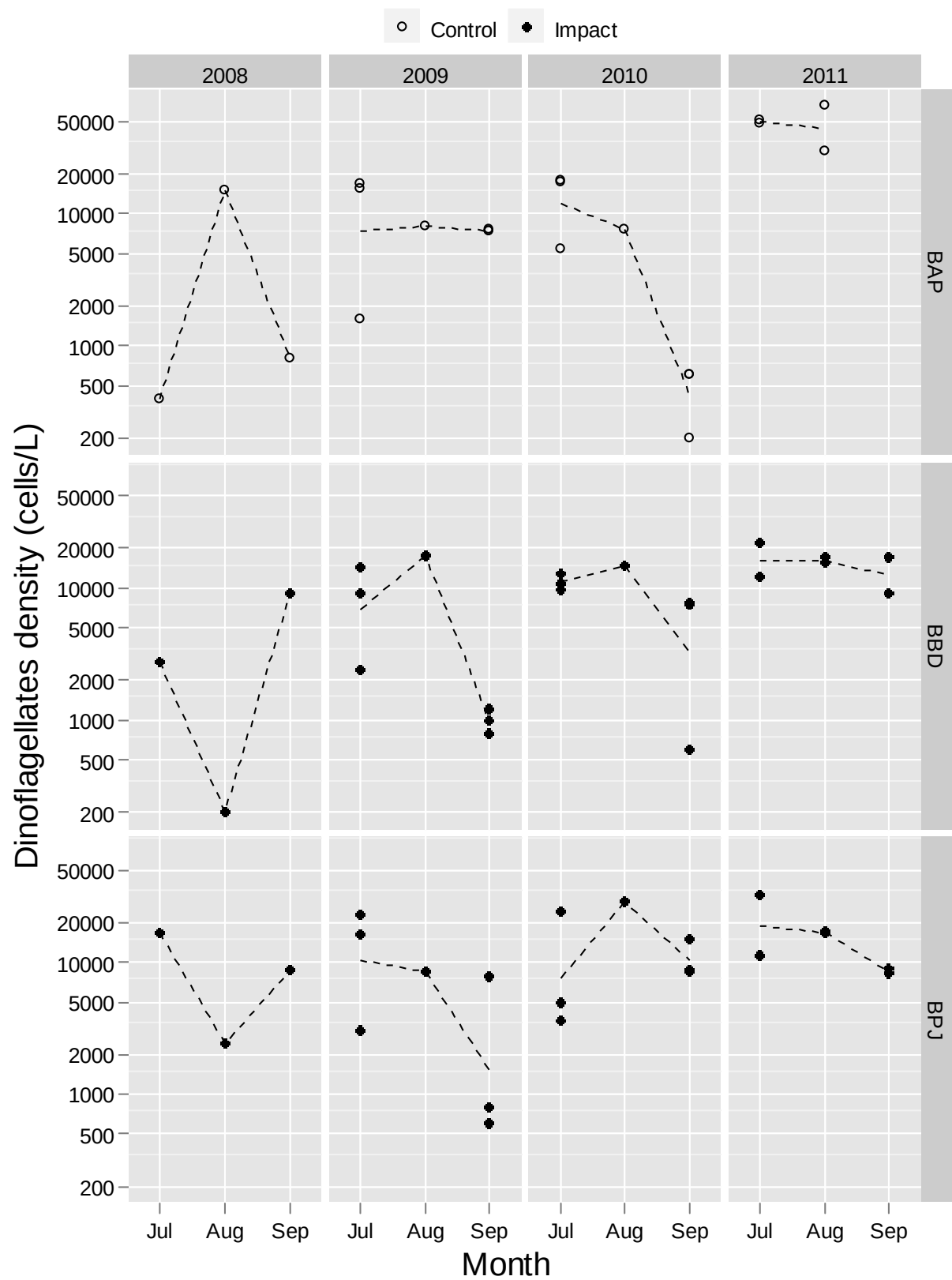


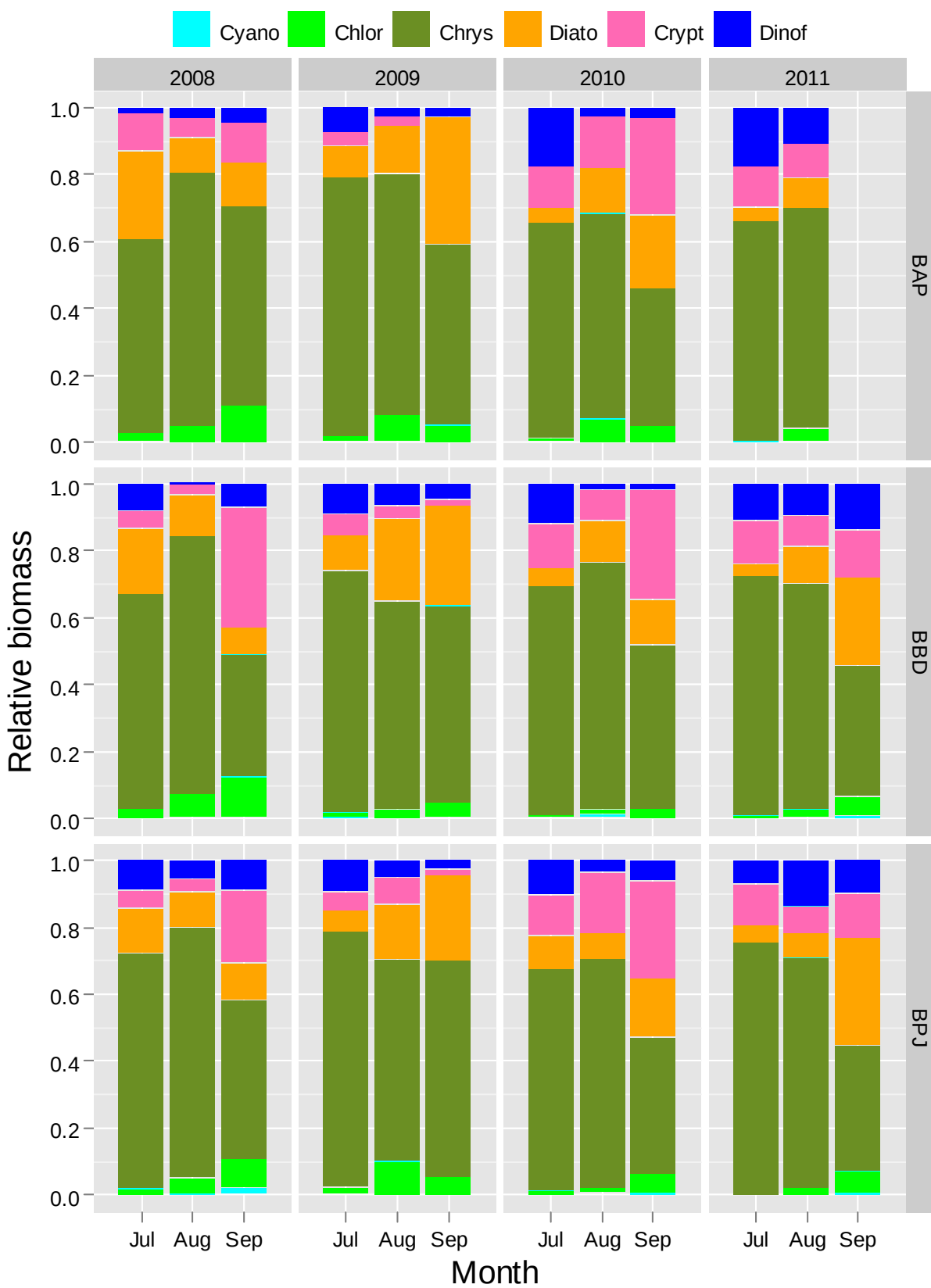


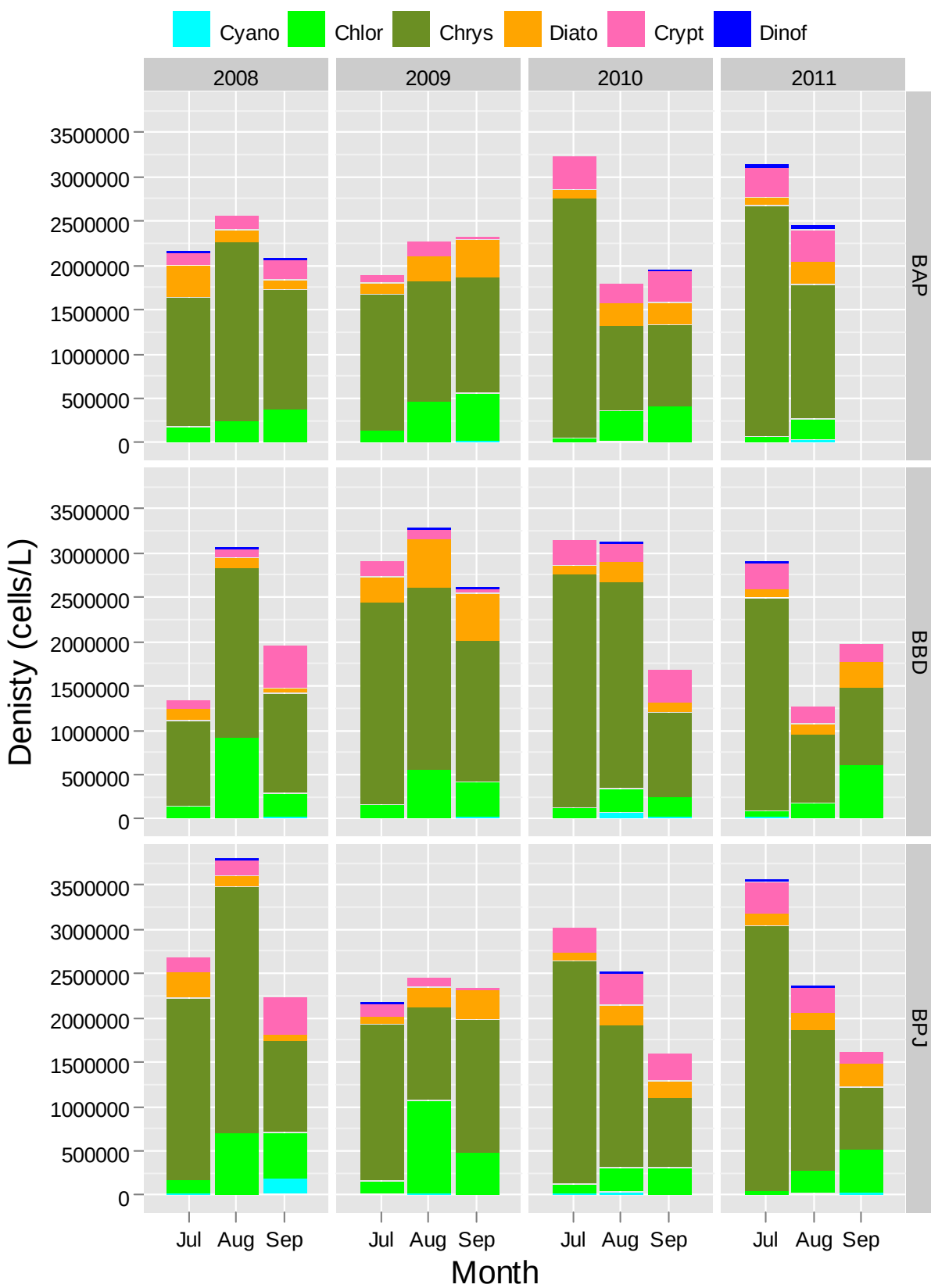


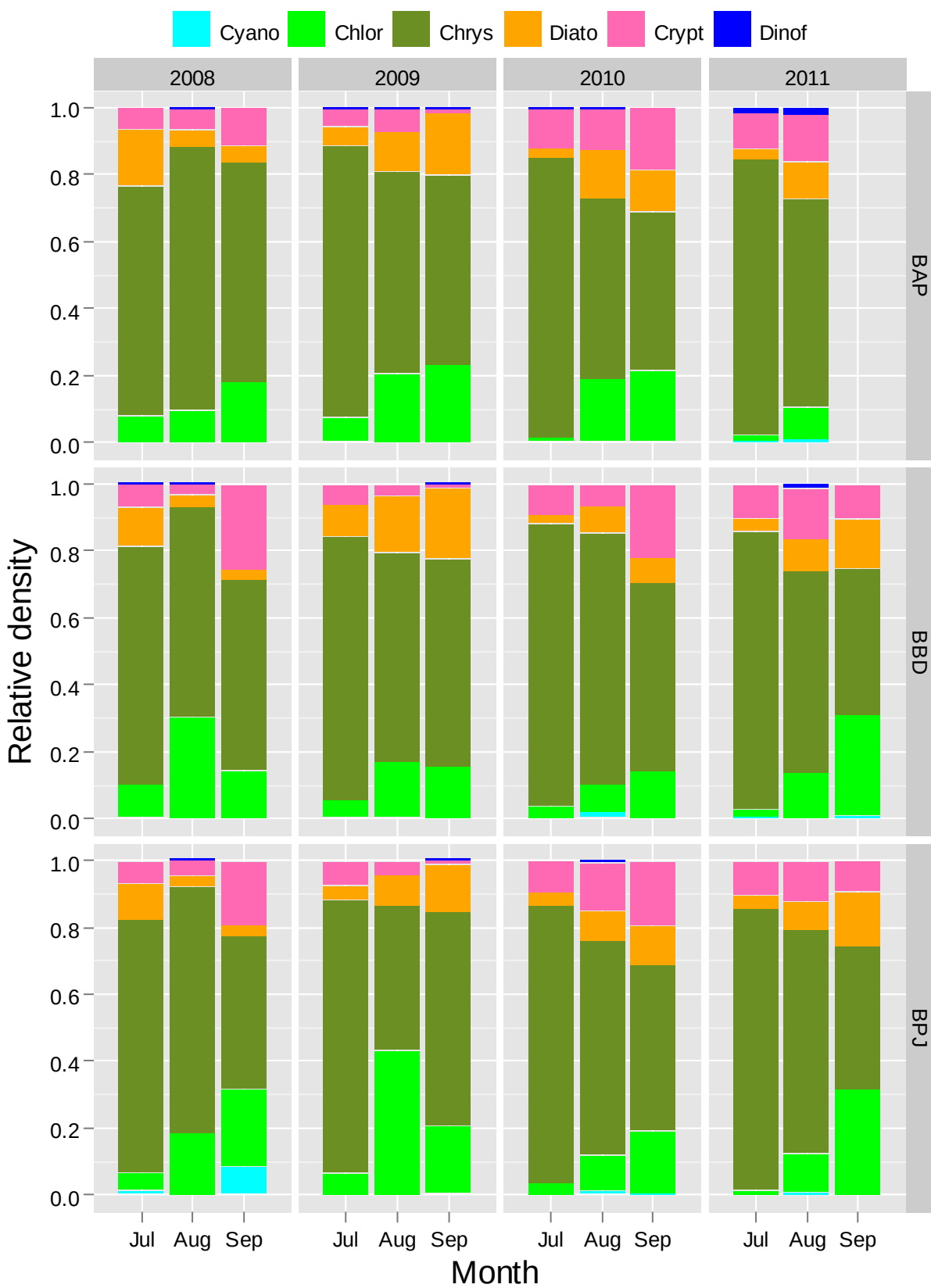












APPENDIX I

**BENTHIC INVERTEBRATE RAW DATA,
MEADOWBANK STUDY LAKES AND BAKER LAKE,
2011**



Appendix I. Benthic Invertebrate raw data (total number of organisms in two 0.023 m² grabs), Meadowbank Study Lakes and Baker Lake, August 2011.

Area	BAP	BAP	BAP	BAP	BAP	BBD	BBD	BBD	BBD	BBD	BES	BES	BES	BES	BES	BPJ	BPJ	BPJ	BPJ	BPJ	INUG																								
Replicate	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1																								
Depth (m)	7.2	7.3	8.9	8.3	8.2	8.0	9.5	8.2	8.2	8.0	8.0	7.9	8.8	9.2	9.1	7.5	6.8	7.8	7.7	8.2	6.9																								
# Grabs/sample	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																								
Mesh Size (µm)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500																								
Date	21-Aug-11	21-Aug-11	21-Aug-11	21-Aug-11	21-Aug-11	20-Aug-11	20-Aug-11	20-Aug-11	20-Aug-11	20-Aug-11	21-Aug-11	21-Aug-11	21-Aug-11	21-Aug-11	21-Aug-11	20-Aug-11	20-Aug-11	20-Aug-11	20-Aug-11	20-Aug-11	14-Aug-11																								
TRUE FLIES																																													
O. Diptera																																													
indeterminate				1																																									
MIDGES																																													
F. Chironomidae																																													
chironomid pupae				3		10		7		14		3		10		3		6		1		18		2		9		7		5		12		7		4		2		7		5			
S.F. Chironominae																																													
Chironomus								1																																					
Cladotanytarsus										4		1				1																													
Constempellina				1		2						4		1																															
Corynocera																																													
Dicrotendipes																																													
Micropsectra				20		7		10		3				34				25		5		2				1		13		4		41				31				4		19			
Microtendipes																																													
Parachironomus																																													
Paracladopelma																																													
Paratanytarsus				19		112		30		111		1		13		6								1		21		1		11		8		23				1		1					
Polypedilum																								2		21		11		11															
Sergentia						1										1																1													
Stempellinella																																													
Stictochironomus				9		46		23		66				4		53		77		40		1		3				3						70		40		3		14		2			
Tanytarsus				5		13				22		4		53		24		36		1		57		5		9		4				8		31		25		5		7					
indeterminate																																													
S.F. Diamesinae																																													
Potthastia				1		3		3		28																																			
Protanypus				7				6				3				3		2		4		3		2				2		1															
Pseudodiamesa				7		3		9				2										4		3		1				2		1						2		1					
S.F. Orthoclaadiinae																																													
Abiskomyia				3		2				1				7		39		103		1		31						1				51		38				12		27		2			
Corynoneura																																													
Cricotopus																																													
Cricotopus/Orthocladus						3		3								1								1		2		3		1		1													
Heterotrissocladius				3		2		3		1		38		4		6		6		2		2		32		16		47		59		60		17		19		6		9		5			
Hydrobaenus																																													
Mesocricotopus								1																																					
Nanocladius																																													
Paracladius				2		1				1										1		10		1		5		3		2		1		2		4				2					
Parakiefferiella																						1				1						1													
Psectrocladius								1																1		1				1															
Psectrocladius (Monopsectrocladius)																																													
Psectrocladius						1		1																																					
Zalutschia														1																															
indeterminate																																													
S.F. Prodiamesinae																																													
Monodiamesa				1				2				4		3		1				9		1				1		1				2		3											
S.F. Tanypodinae																																													
Ablabesmyia																																													
Procladius				12		12		7		17		7		11		6		10		10		10		4		7				2		2		9		15		5		1		4		4	
Thienemannimyia complex						2		1		1		2														2						3		2											
Trissopelopia																																													
indeterminate																																													
F. Empididae																																													
Chelifera/Neoplasta																																													
Chelifera				5				4		3				1						2				1						2		2		1				3		2					
Wiedemannia																																													
pupae																																													
MOLLUSCS																																													
P. Mollusca																																													
CLAMS																																													
Cl. Bivalvia																																													
F. Sphaeriidae																																													
Cyclocalyx/Neopisidium				21		35		19				27		1		4		5				1		4		21		5		5		22		33		38				1		3		8	
Cyclocalyx				2		3		5										1														3		2				2							
Cyclocalyx nitidum																																													
Cyclocalyx (Pisidium)																																													
Sphaerium nitidum																																													
TOTAL NUMBER OF TAXA ¹																																													
TOTAL NUMBER OF ORGANISMS ²																																													

Notes:

¹ Number of taxa totals exclude nematodes & ostracods, immatures & pupae (Tubificidae, Limnephilidae, Chironomidae, Empididae) and indeterminates (Lumbriculidae, Diptera, Chironominae, Orthocladinae, Tanypodinae).

² Number of organisms totals exclude nematodes (P. Nemata) & ostracods (Cl. Ostracoda)

TPE,TPN,TPS=Third Portage Lake - East, North, South basins; SP=Second Portage Lake; TE,TEFF=Tehek Lake - Farfield;

INUG=Inuggugayualik Lake; WAL=Wally Lake; PDL=Pipedream Lake;

BBD,BPJ,BAP,BES=Baker Lake - Barge Dock, Proposed Jetty, Akilahaarjuk Point, East Shore.

Appendix I. Benthic Invertebrate raw data (total number of organisms in two 0.023 m2 grabs), Meadowbank Study Lakes and Baker Lake, August 2011.

Area	INUG	INUG	INUG	INUG	PDL	PDL	PDL	PDL	PDL	SP	SP	SP	SP	SP	TE	TE	TE	TE	TE	TEFF	TEFF	TEFF
Replicate	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3
Depth (m)	6.8	7.6	8.5	9.2	6.5	6.8	6.9	7.6	6.7	8.8	7.5	7.8	8.0	6.5	7.2	8.3	7.7	7.3	6.5	6.9	8.2	6.9
# Grabs/sample	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mesh Size (µm)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Date	14-Aug-11	14-Aug-11	14-Aug-11	14-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	17-Aug-11	17-Aug-11	17-Aug-11	17-Aug-11	17-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	15-Aug-11	15-Aug-11	15-Aug-11
ROUNDWORMS																						
P. Nemata	1	1	2	3	1			1	2	1	2		3		1	3	3	1	6	3	2	5
FLATWORMS																						
P. Platyhelminthes																						
Cl. Turbellaria																						
indeterminate																						
ANNELEIDS																						
P. Annelida																						
WORMS																						
Cl. Oligochaeta																						
F. Enchytraeidae																						
F. Naididae																						
Nais barbata																						
Nais communis																						
Nais																						
Slavina appendiculata																						
F. Tubificidae																						
Limnodrilus hoffmeisteri																						
Rhyacodrilus coccineus													1							1		
Rhyacodrilus montana																						
Rhyacodrilus sodalis																						
Tasserkidrilus americanus							3			1												
immatures with hair chaetae					3					1				1								
immatures without hair chaetae																						
F. Lumbriculidae																						
Lumbriculus	2	3	4	3		1	4						1		2	1						
Stylodrilus																						
indeterminate																						
ARTHROPODS																						
P. Arthropoda																						
MITES																						
Cl. Arachnida																						
O. Acarina	1	2	1	1	3		3	1	1	5	2	2	2	1		3	1	4	2	2		5
HARPACTICIDS																						
O. Harpacticoida																						
SEED SHRIMPS																						
Cl. Ostracoda	1	3	5		5	2				5	2		1	7	2	3		5		1	9	44
FAIRY SHRIMP																						
O. Notostraca																						
Lepidurus arcticus			5															1				
WATER SCUDS																						
O. Amphipoda																						
F. Gammaracanthidae																						
Gammaracanthus aestuarius																						
F. Hyalellidae																						
Hyalella																						
INSECTS																						
Cl. Insecta																						
BEETLES																						
O. Coleoptera																						
F. Staphylinidae																						
MAYFLIES																						
O. Ephemeroptera																						
F. Baetidae																						
indeterminate																						
CADDISFLIES																						
O. Trichoptera																						
F. Limnephilidae																						
Grammotaulius																						
Grensia praeterita						1			1					1	1			1				
pupae																						
immature																						

Appendix I. Benthic Invertebrate raw data (total number of organisms in two 0.023 m2 grabs), Meadowbank Study Lakes and Baker Lake, August 2011.

Area	INUG	INUG	INUG	INUG	PDL	PDL	PDL	PDL	PDL	SP	SP	SP	SP	SP	TE	TE	TE	TE	TE	TEFF	TEFF	TEFF
Replicate	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3
Depth (m)	6.8	7.6	8.5	9.2	6.5	6.8	6.9	7.6	6.7	8.8	7.5	7.8	8.0	6.5	7.2	8.3	7.7	7.3	6.5	6.9	8.2	6.9
# Grabs/sample	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mesh Size (µm)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Date	14-Aug-11	14-Aug-11	14-Aug-11	14-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	17-Aug-11	17-Aug-11	17-Aug-11	17-Aug-11	17-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	15-Aug-11	15-Aug-11	15-Aug-11
TRUE FLIES																						
O. Diptera																						
indeterminate																						
MIDGES																						
F. Chironomidae																						
chironomid pupae				1		1		1	1						1	1				1		1
S.F. Chironominae																						
Chironomus																						
Cladotanytarsus																						
Constempellina																						
Corynocera																						
Dicrotendipes																						
Micropsectra	1	2	3	1	1						1									2		3
Microtendipes	1		3	1																		
Parachironomus																						
Paracladopelma																						
Paratanytarsus			2	2					2	1										1	1	5
Polypedilum																						
Sergentia																						
Stempellinella													2									
Stictochironomus	9	2	1	1	15	8	17	5	16		1							3			2	1
Tanytarsus		2	2			1			2	1			1	1								
indeterminate																						
S.F. Diamesinae																						
Potthastia																						
Protanypus					2	1	1			1		1	2							1		
Pseudodiamesa																						
S.F. Orthoclaadiinae																						
Abiskomyia					1			2			1		1	1				1				1
Corynoneura																						
Cricotopus					2																	
Cricotopus/Orthocladius																						
Heterotrissocladius			1	2		1	4	1	2	4	1	1	3	1						1	1	5
Hydrobaenus					1																	
Mesocricotopus													1									
Nanocladius																						
Paracladius										2			1								1	
Parakiefferiella																						
Psectrocladius																						
Psectrocladius (Monopsectrocladius																						
Psectrocladius			5		1	6			2	3	3	3	2		11	17	5	26	11		3	10
Zalutschia			1										1									4
indeterminate																						
S.F. Prodiamesinae																						
Monodiamesa			2		1					1	2	2	1	1	2	2		4	1	2	1	
S.F. Tanypodinae																						
Ablabesmyia																						
Procladius	7	5	26	9	5	4	3	7	7	3	2	2	1	2	4	7	1	7	8			6
Thienemannimyia complex																						4
Trissopelopia																						
indeterminate																						
F. Empididae																						
Chelifera/Neoplasta																						
Chelifera																		1				
Wiedemannia																						
pupae																						
MOLLUSCS																						
P. Mollusca																						
CLAMS																						
Cl. Bivalvia																						
F. Sphaeriidae																						
Cyclocalyx/Neopisidium	13	17	40	9	12	13	19	14	2	11	16	15	11	5	14	7	5	15	19	6	16	24
Cyclocalyx	5	1	1	2	2	3			5		2			1								
Cyclocalyx nitidum																						
Cyclocalyx (Pisidium)																						
Sphaerium nitidum	1	4	4	2																		
TOTAL NUMBER OF TAXA ¹	9	9	16	11	12	10	8	6	11	10	10	7	15	9	6	6	4	10	5	8	7	11
TOTAL NUMBER OF ORGANISMS ²	40	38	101	34	49	40	54	31	43	32	31	27	31	14	35	38	12	63	41	17	25	69

Notes:

¹ Number of taxa totals exclude nematodes & ostracods, immatures & pupae (Tubificidae, Limnephilidae, Chironomidae, Empididae), and indeterminates (Lumbriculidae, Diptera, Chironominae, Orthoclaadiinae, Tanypodinae).

² Number of organisms totals exclude nematodes (P. Nemata) & ostracods (Cl. Ostracoda).

TPE,TPN,TPS=Third Portage Lake - East, North, South basins; SP=Second Portage Lake; TE,TEFF=Tehek Lake - Farfield;
INUG=Inuggugayualik Lake; WAL=Wally Lake; PDL=Pipedream Lake;
BBD,BPJ,BAP,BES=Baker Lake - Barge Dock, Proposed Jetty, Akilahaarjuk Point, East Shore.

Appendix I. Benthic Invertebrate raw data (total number of organisms in two 0.023 m2 grabs), Meadowbank Study Lakes and Baker Lake, August 2011.

Area	TEFF	TEFF	TPE	TPE	TPE	TPE	TPE	TPN	TPN	TPN	TPN	TPN	TPS	TPS	TPS	TPS	TPS	WAL	WAL	WAL	WAL	WAL
Replicate	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Depth (m)	7.0	7.0	7.7	8.4	8.2	9.5	7.9	7.0	9.0	9.2	8.6	8.4	6.9	6.7	7.3	8.1	8.4	8.6	7.0	8.3	7.9	7.2
# Grabs/sample	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mesh Size (µm)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Date	15-Aug-11	15-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	19-Aug-11	22-Aug-11	22-Aug-11	22-Aug-11	22-Aug-11	22-Aug-11	14-Aug-11	14-Aug-11	14-Aug-11	14-Aug-11	14-Aug-11
ROUNDWORMS																						
P. Nemata	1	5	3	1	1		3	3		1			4	10	6	12	1		1	3	1	2
FLATWORMS																						
P. Platyhelminthes																						
Cl. Turbellaria																						
indeterminate																						
ANNELEIDS																						
P. Annelida																						
WORMS																						
Cl. Oligochaeta																						
F. Enchytraeidae																						
F. Naididae																						
Nais barbata																						
Nais communis																						
Nais					1																	
Slavina appendiculata																						
F. Tubificidae																						
Limnodrilus hoffmeisteri																						
Rhyacodrilus coccineus			21	8	3		6						1	1								
Rhyacodrilus montana																						
Rhyacodrilus sodalis																						
Tasserkidrilus americanus										1												
immatures with hair chaetae						1				1			1	2								
immatures without hair chaetae																						
F. Lumbriculidae																						
Lumbriculus					1	1	2	1					1		1	2		1		2	1	1
Stylodrilus																						
indeterminate																						
ARTHROPODS																						
P. Arthropoda																						
MITES																						
Cl. Arachnida																						
O. Acarina	1			5	4	2	1			1	2								2	1	1	
HARPACTICIDS																						
O. Harpacticoida																						
SEED SHRIMPS																						
Cl. Ostracoda	12	18	72	68	69	45	41	1	1	1	2	6	26	26	19	23	19	7	3	16	4	4
FAIRY SHRIMP																						
O. Notostraca																						
Lepidurus arcticus																						
WATER SCUDS																						
O. Amphipoda																						
F. Gammaracanthidae																						
Gammaracanthus aestuarius																						
F. Hyalellidae																						
Hyalella																						
INSECTS																						
Cl. Insecta																						
BEETLES																						
O. Coleoptera																						
F. Staphylinidae																						
MAYFLIES																						
O. Ephemeroptera																						
F. Baetidae																						
indeterminate																						
CADDISFLIES																						
O. Trichoptera																						
F. Limnephilidae																						
Grammotaulius																						
Grensia praeterita	1	1										1										
pupae																						
immature																						
																						1

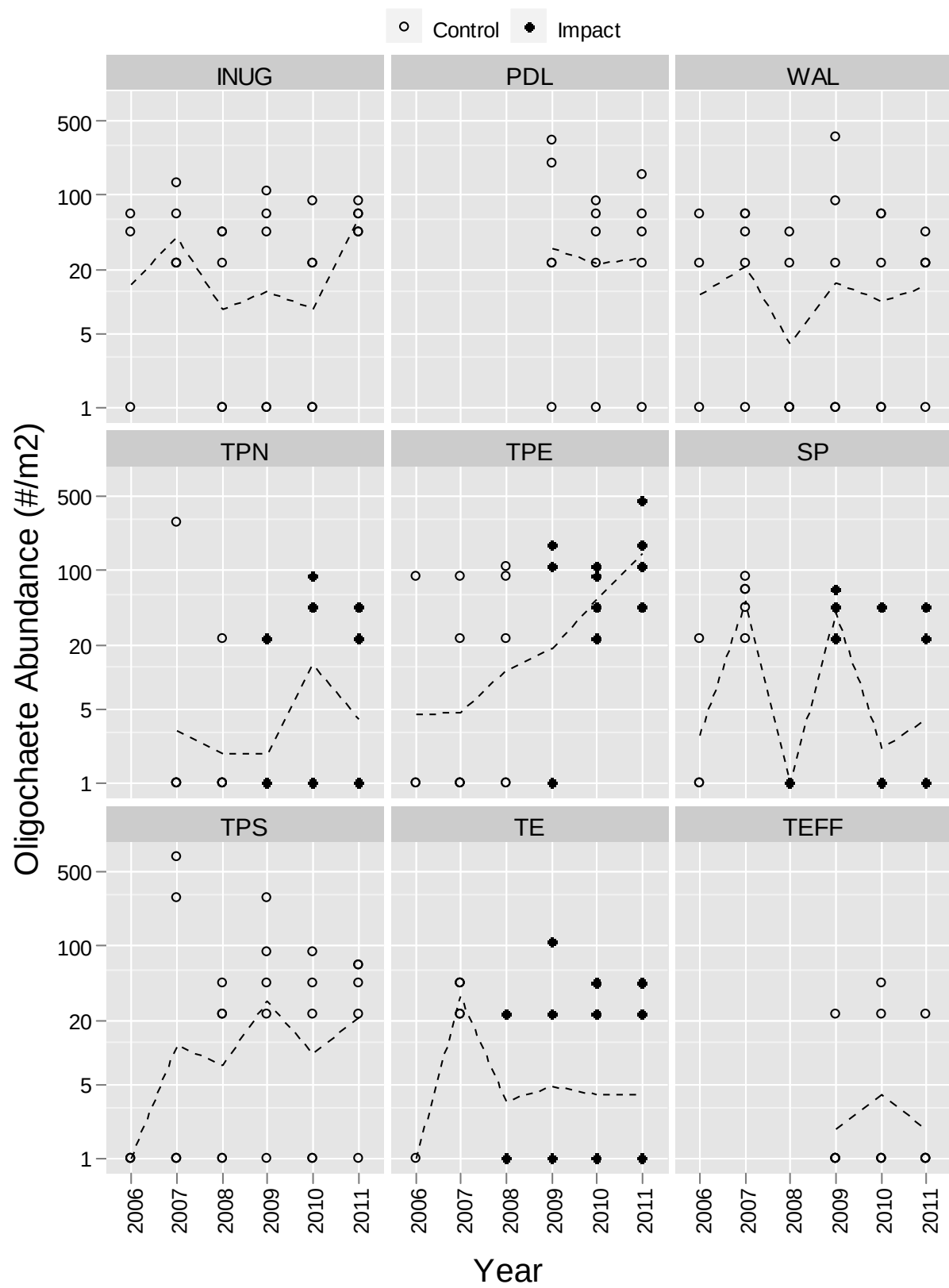
APPENDIX J

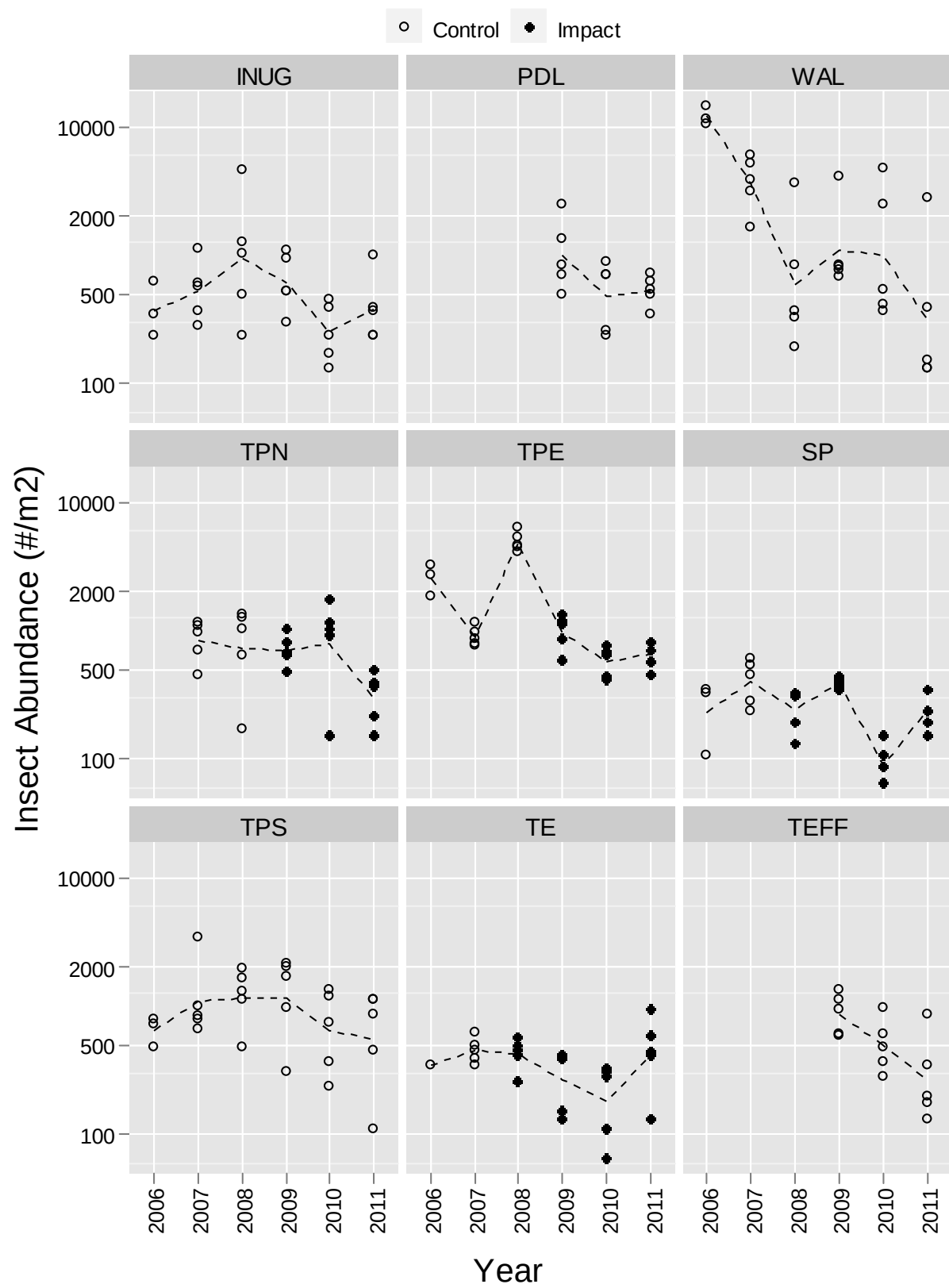
BENTHIC INVERTEBRATE PLOTS 2006 – 2011

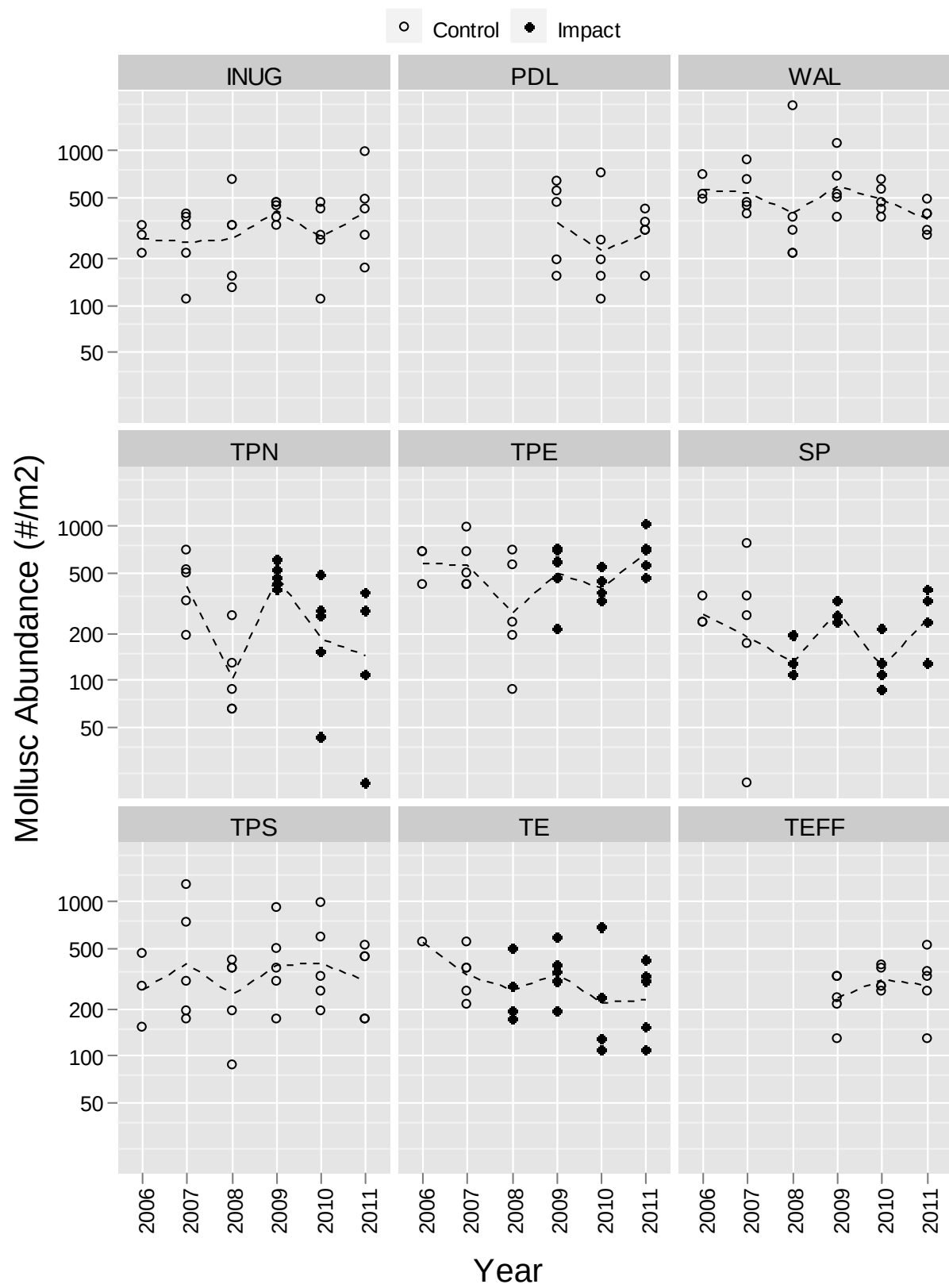


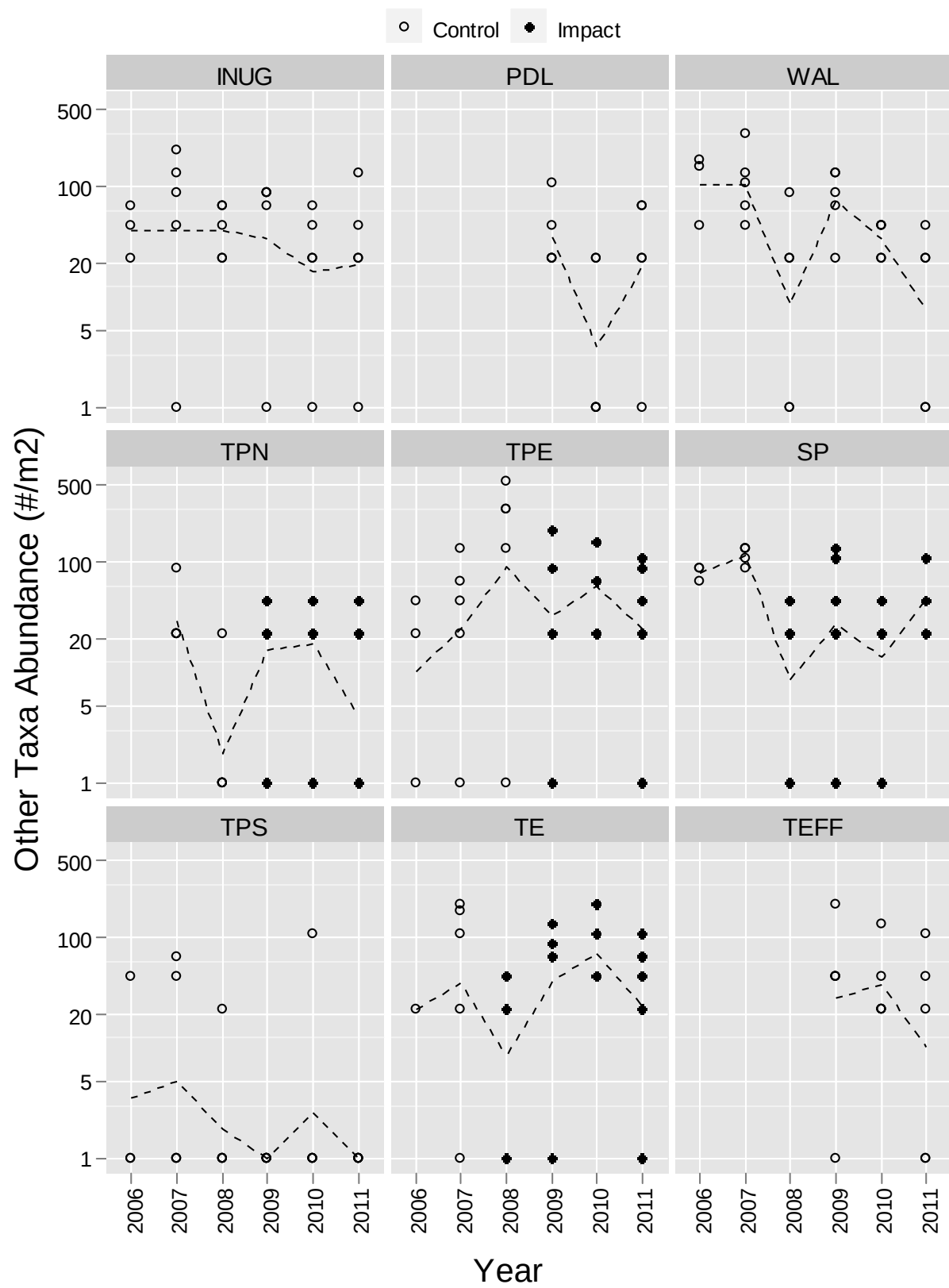
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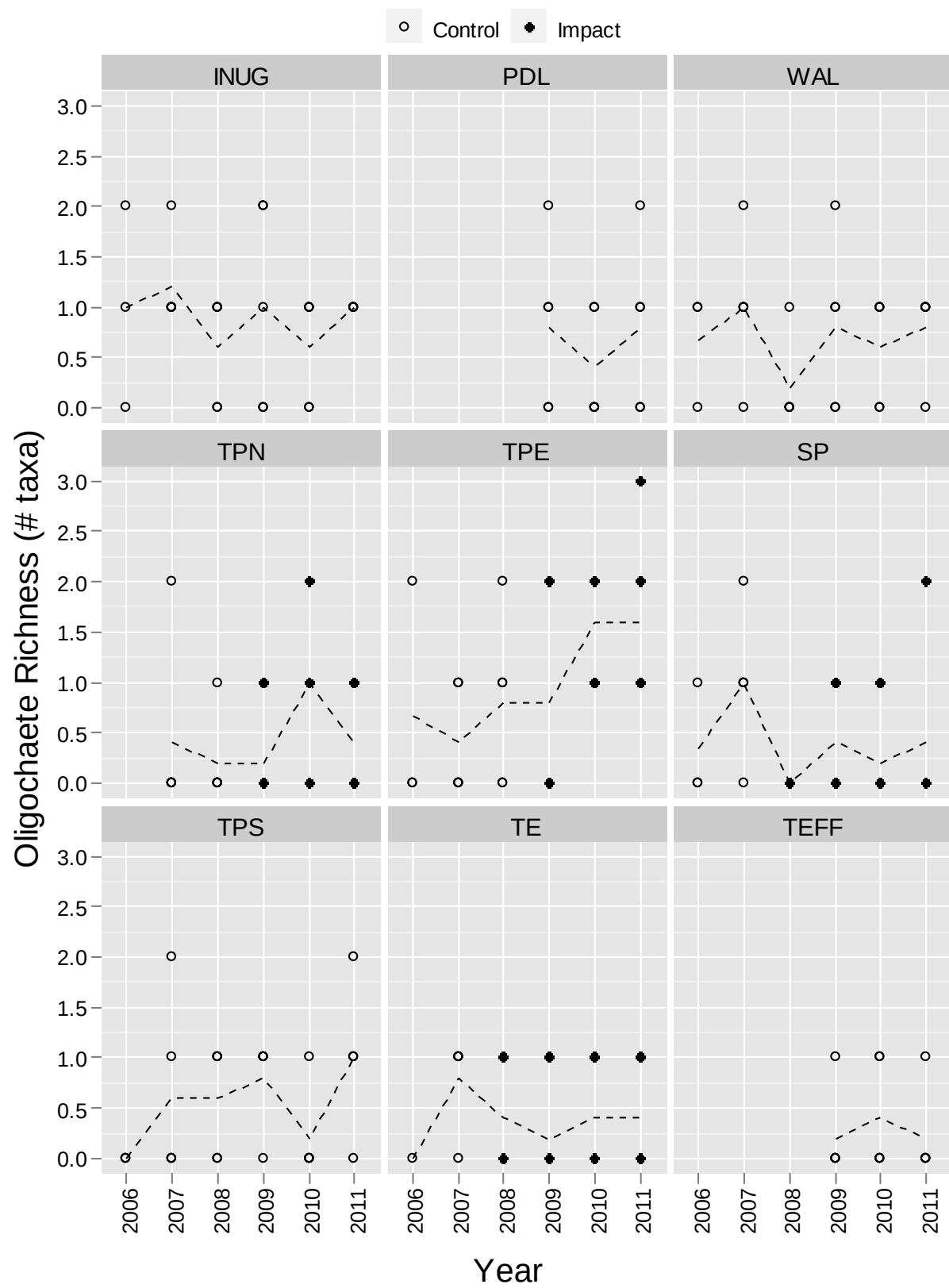
Meadowbank

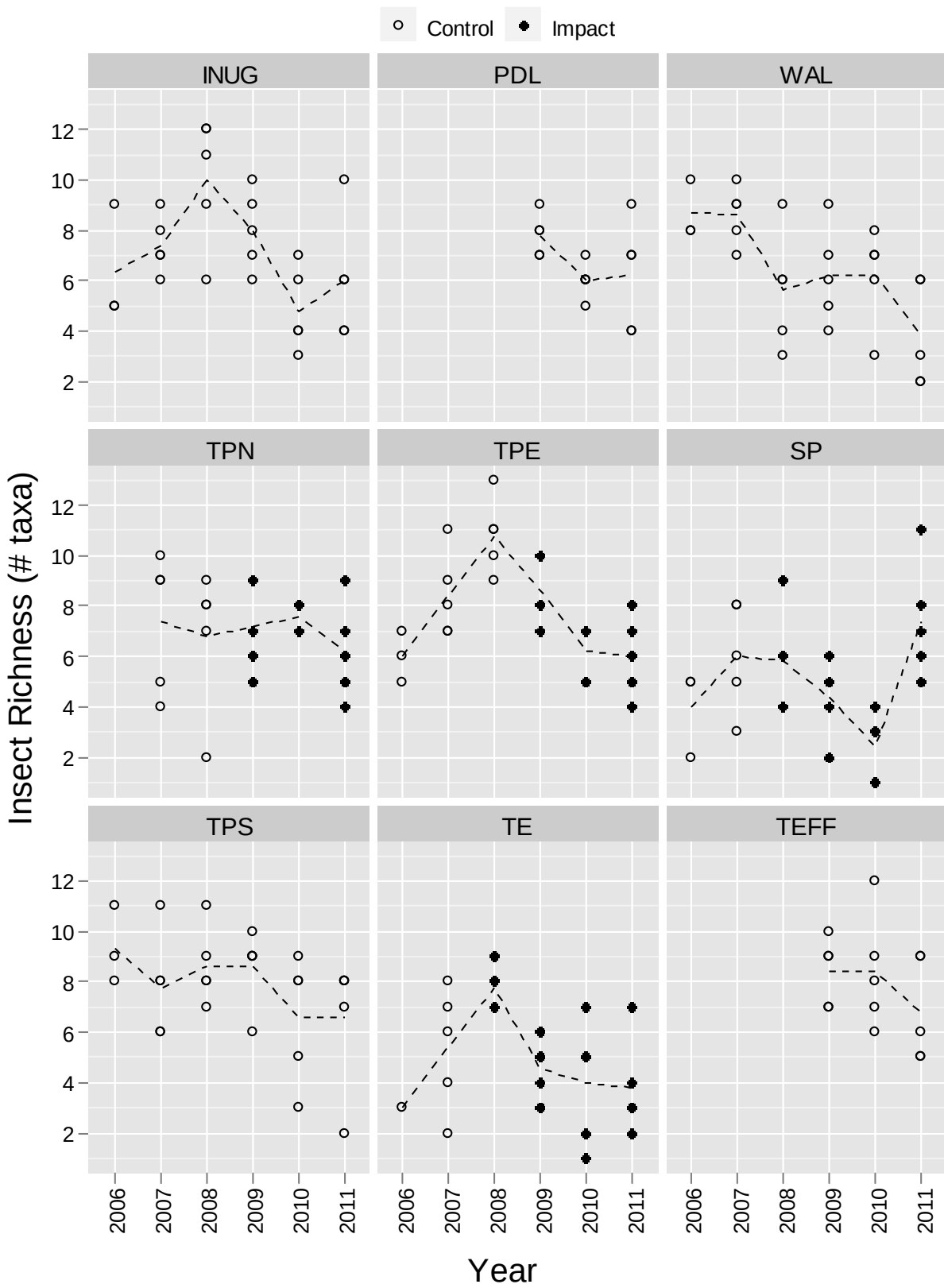


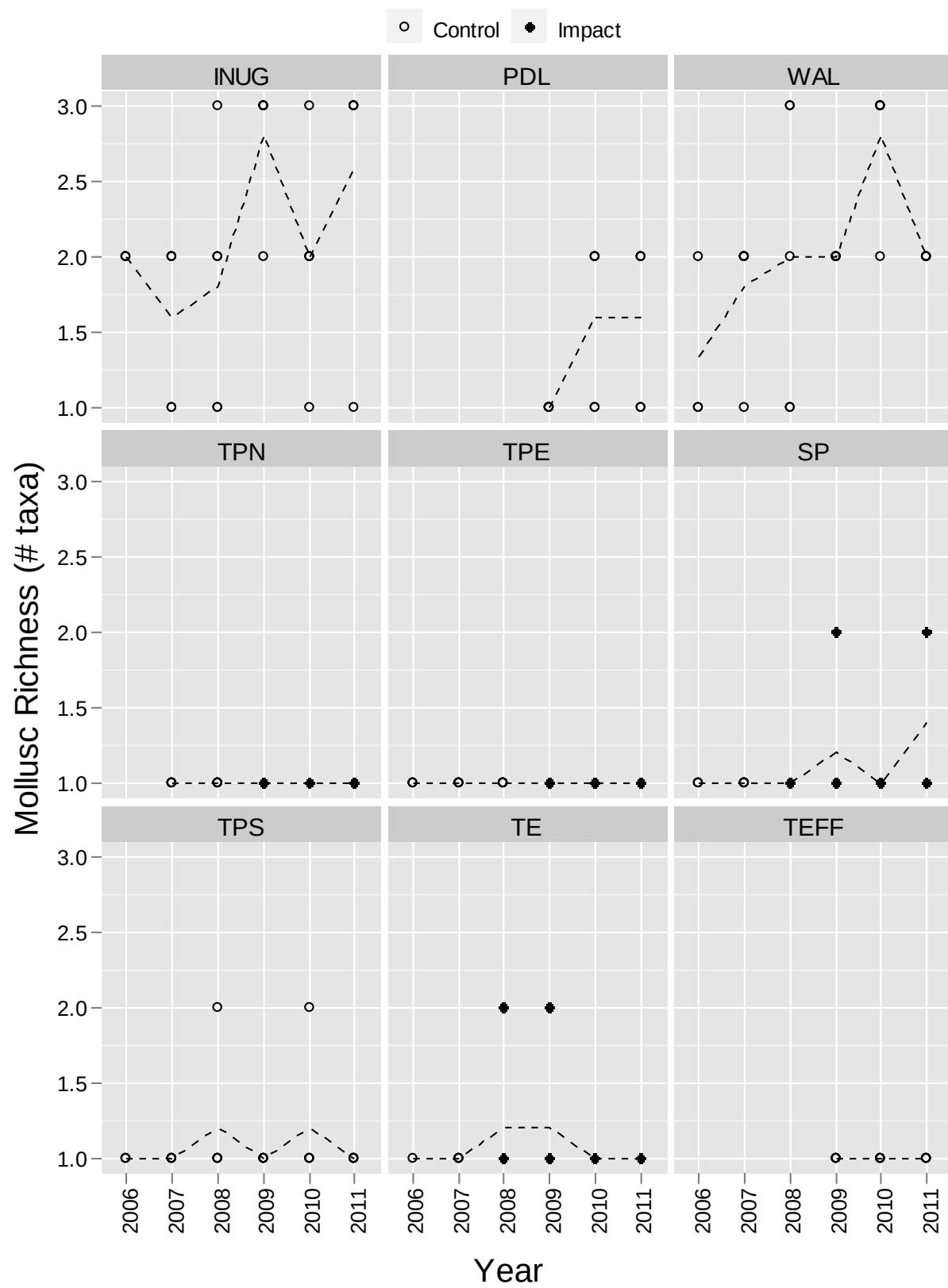


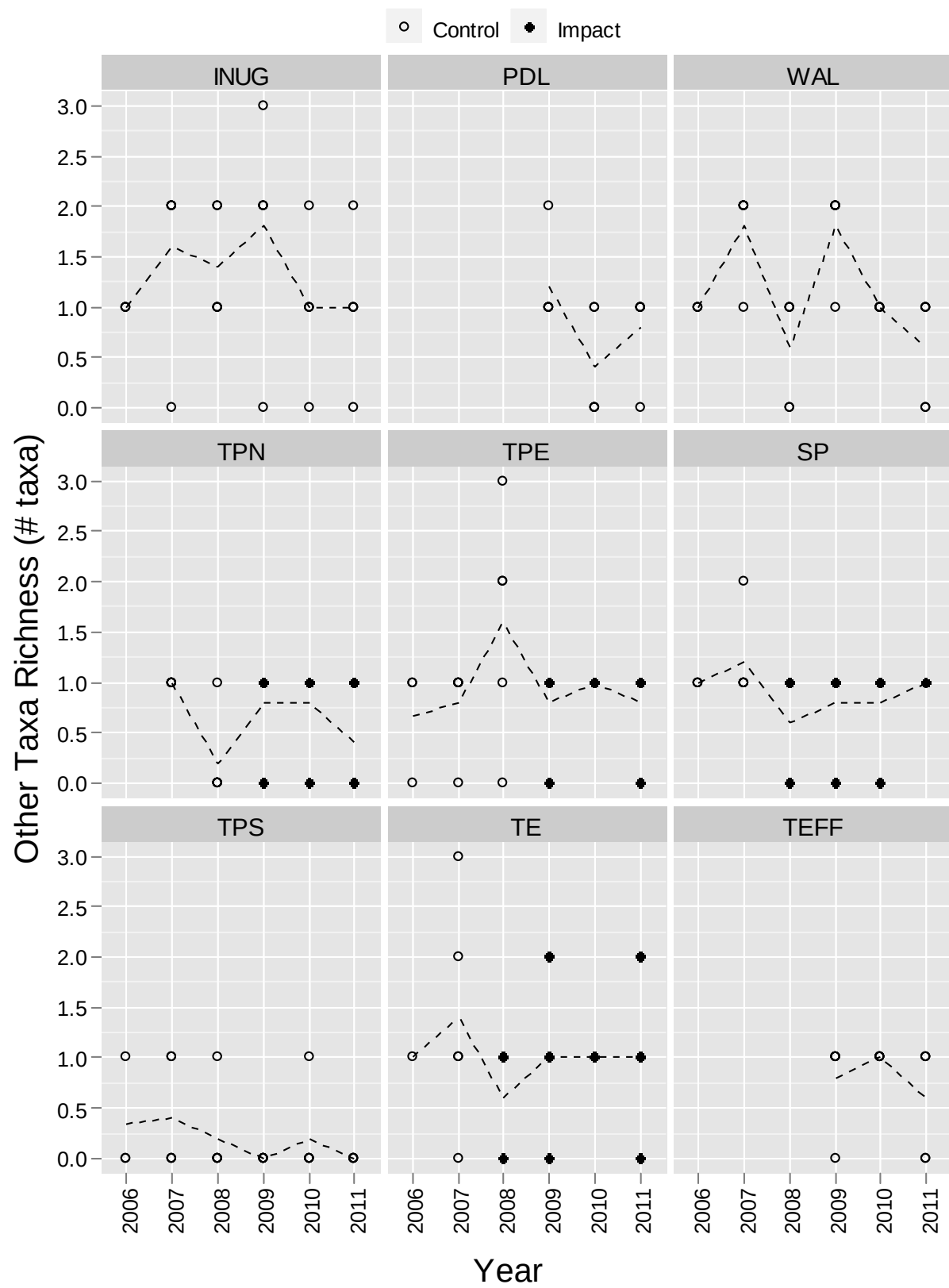


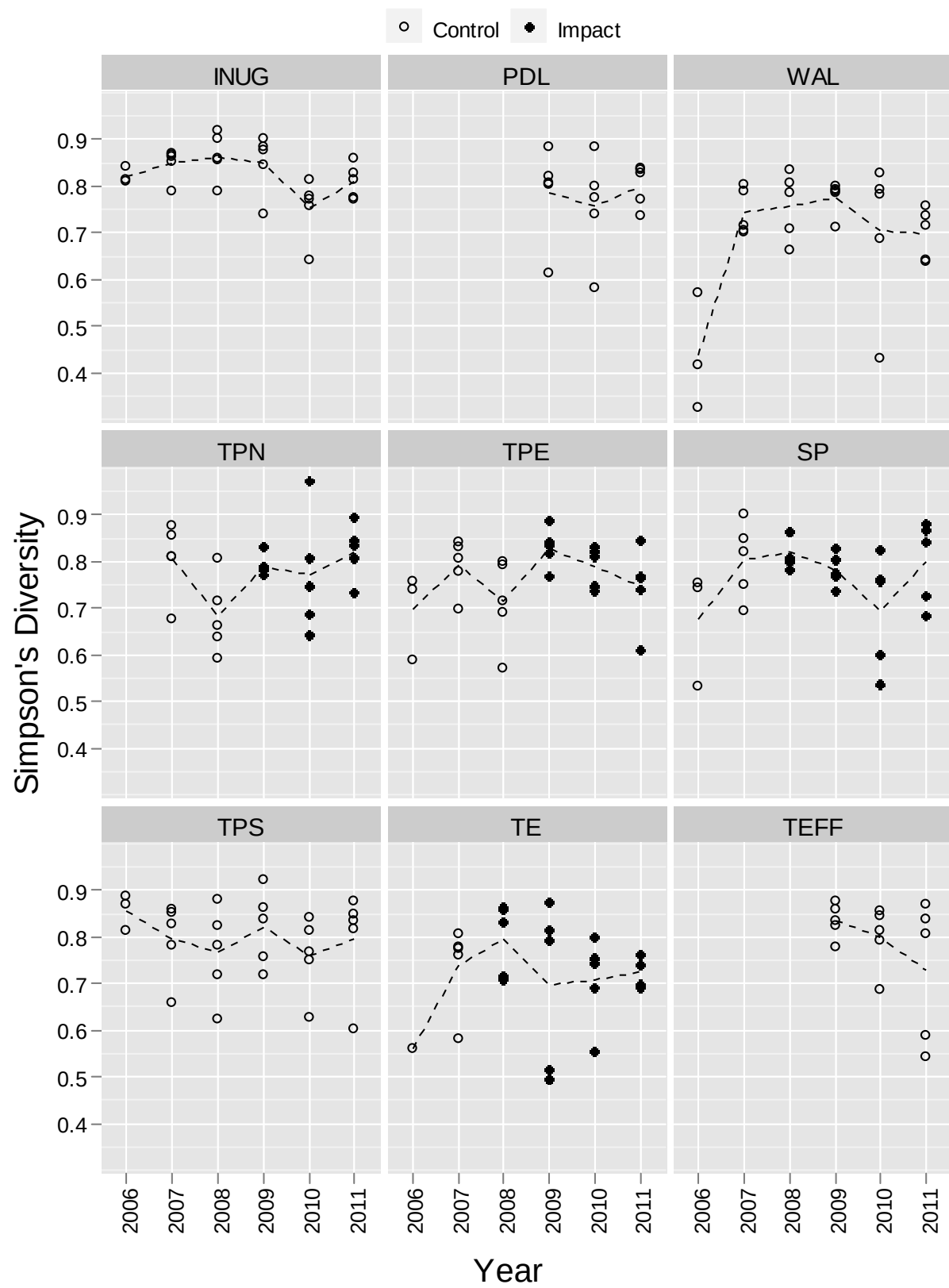


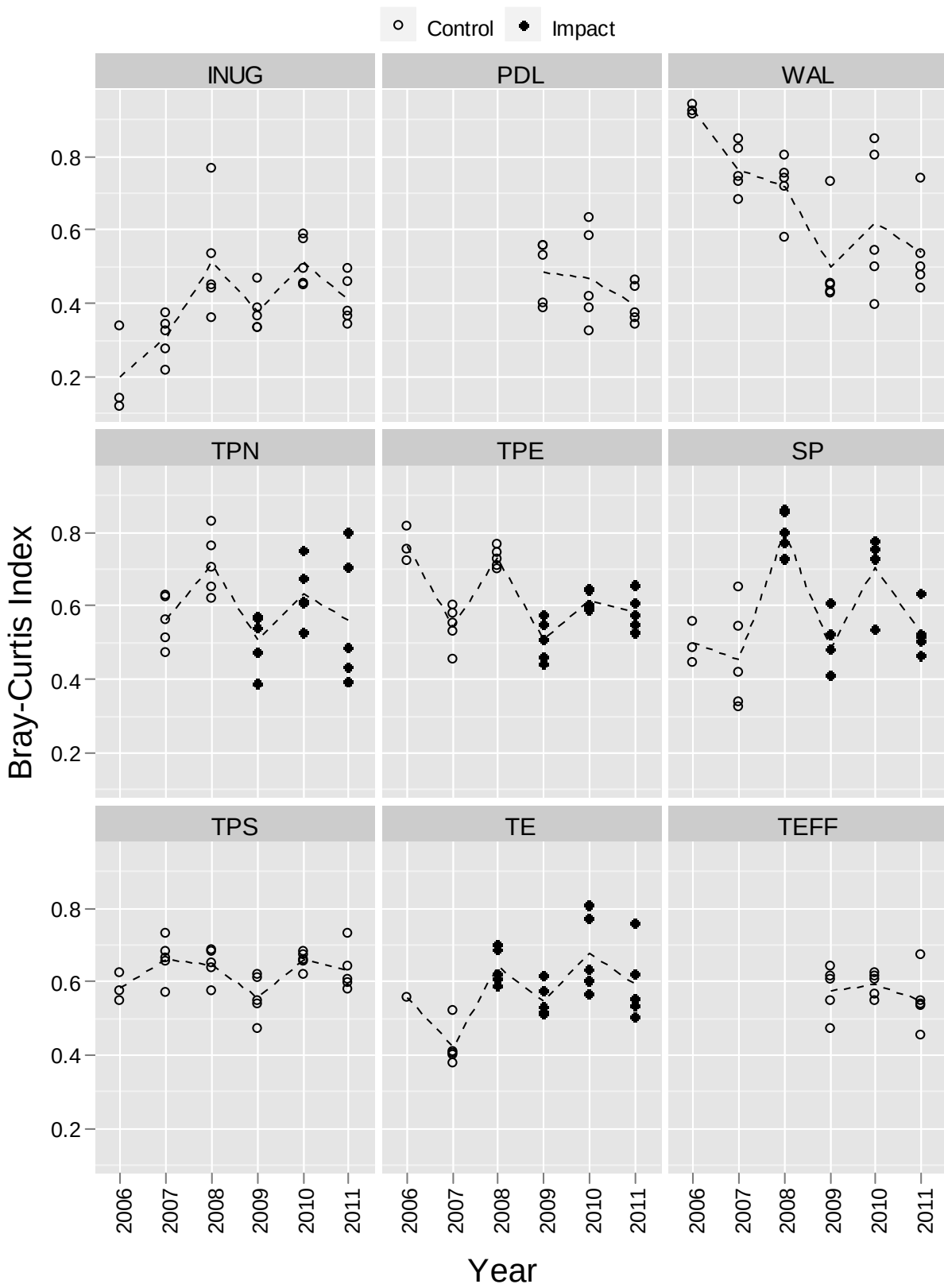






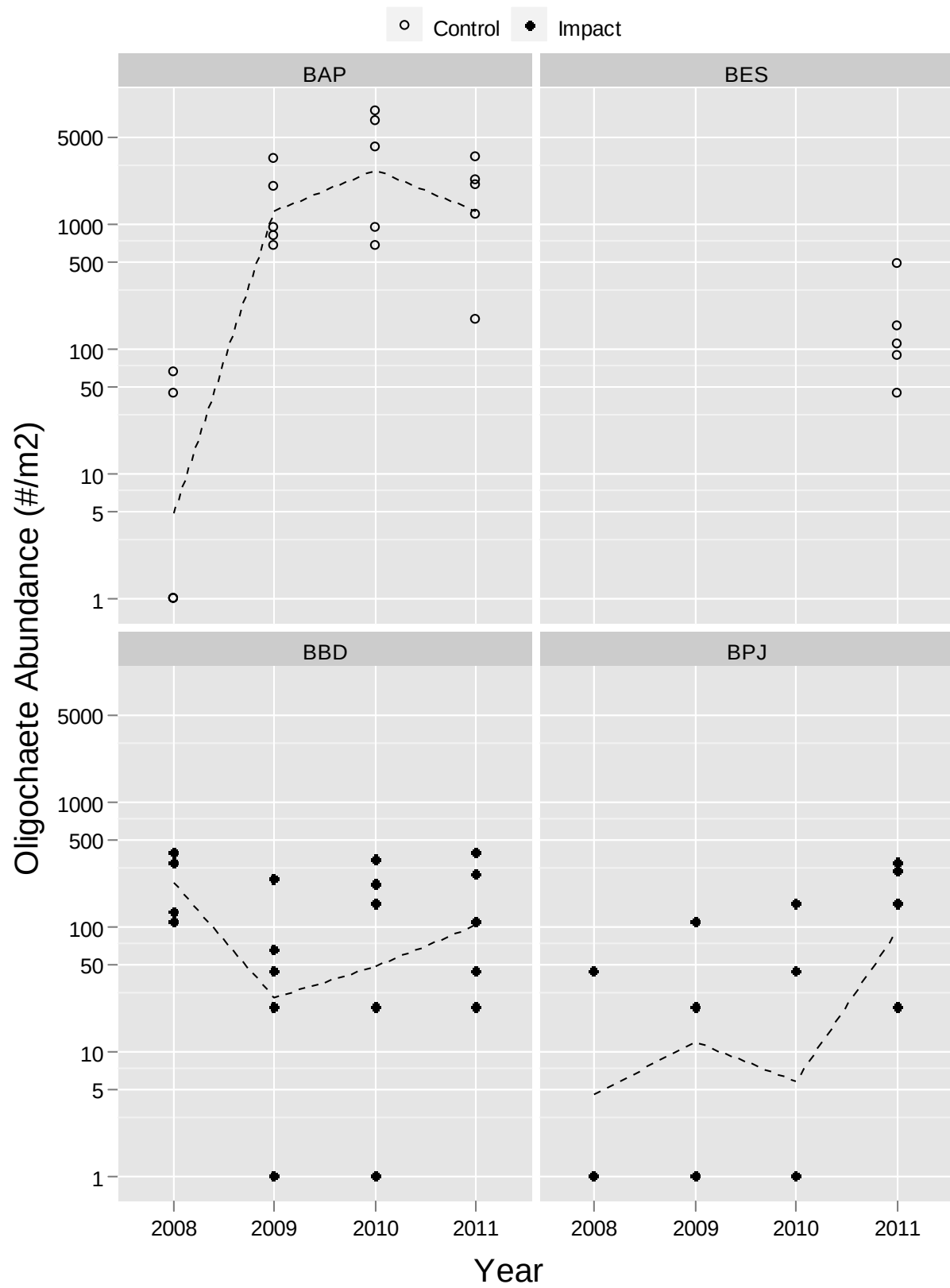


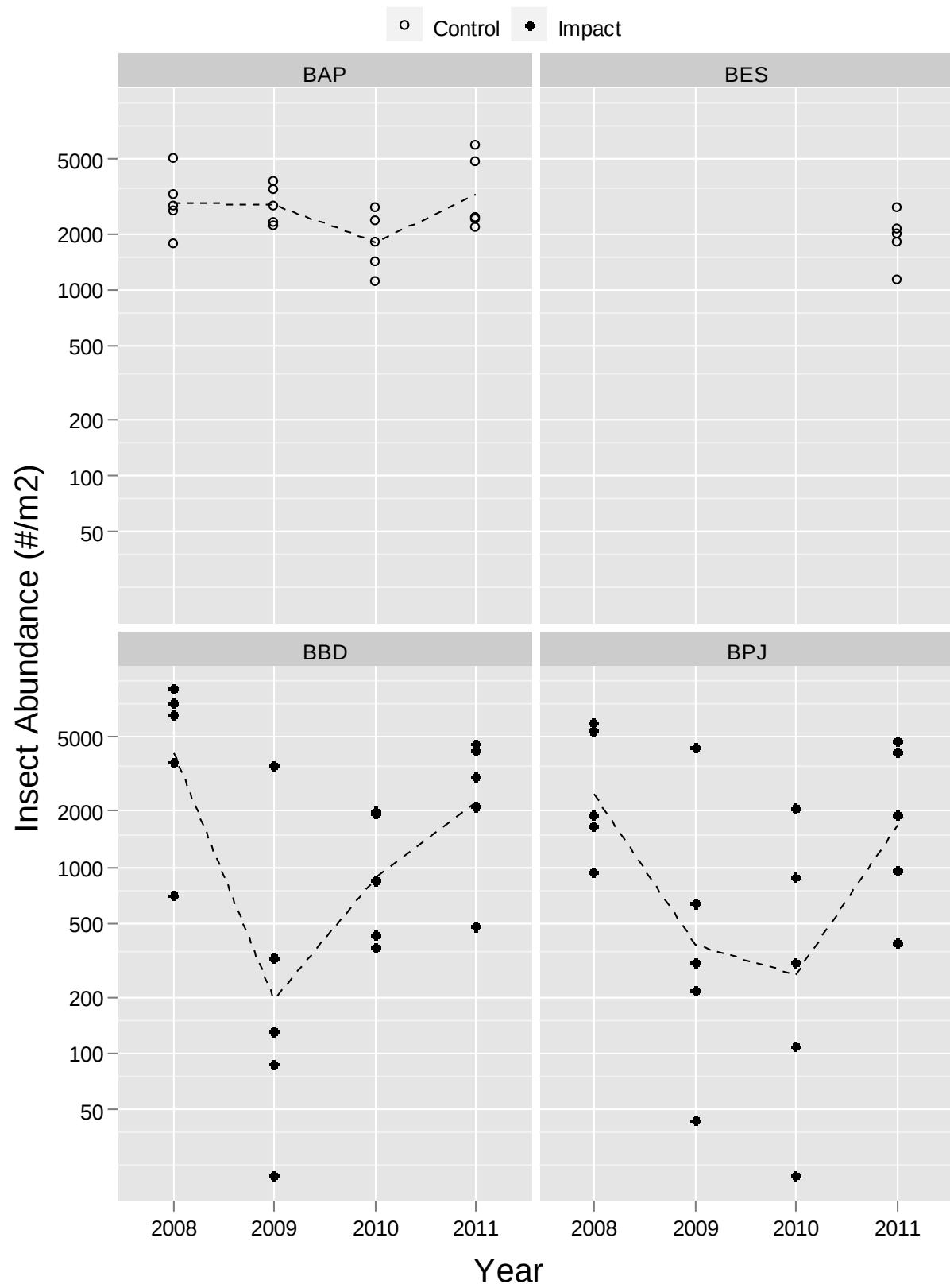


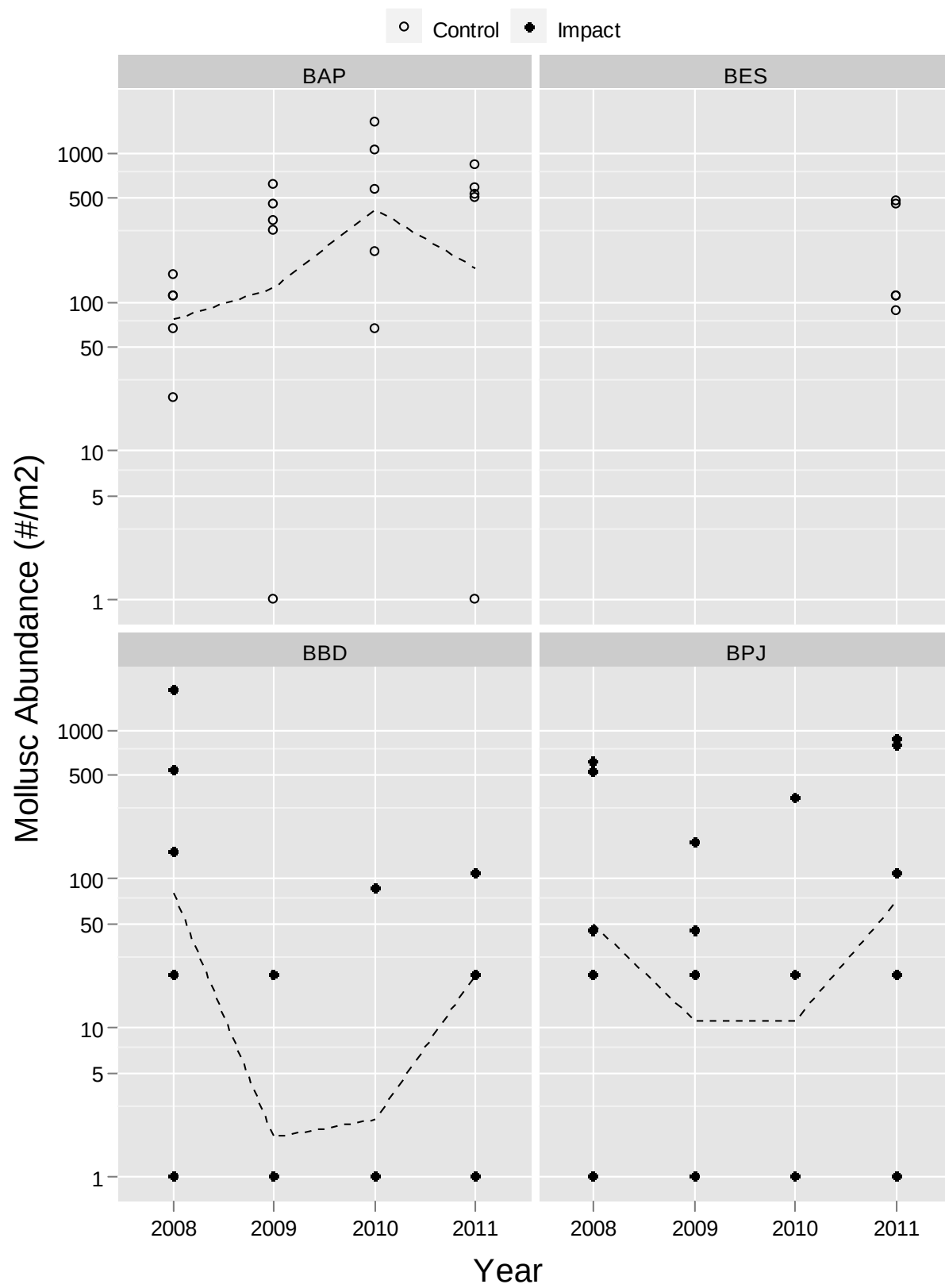


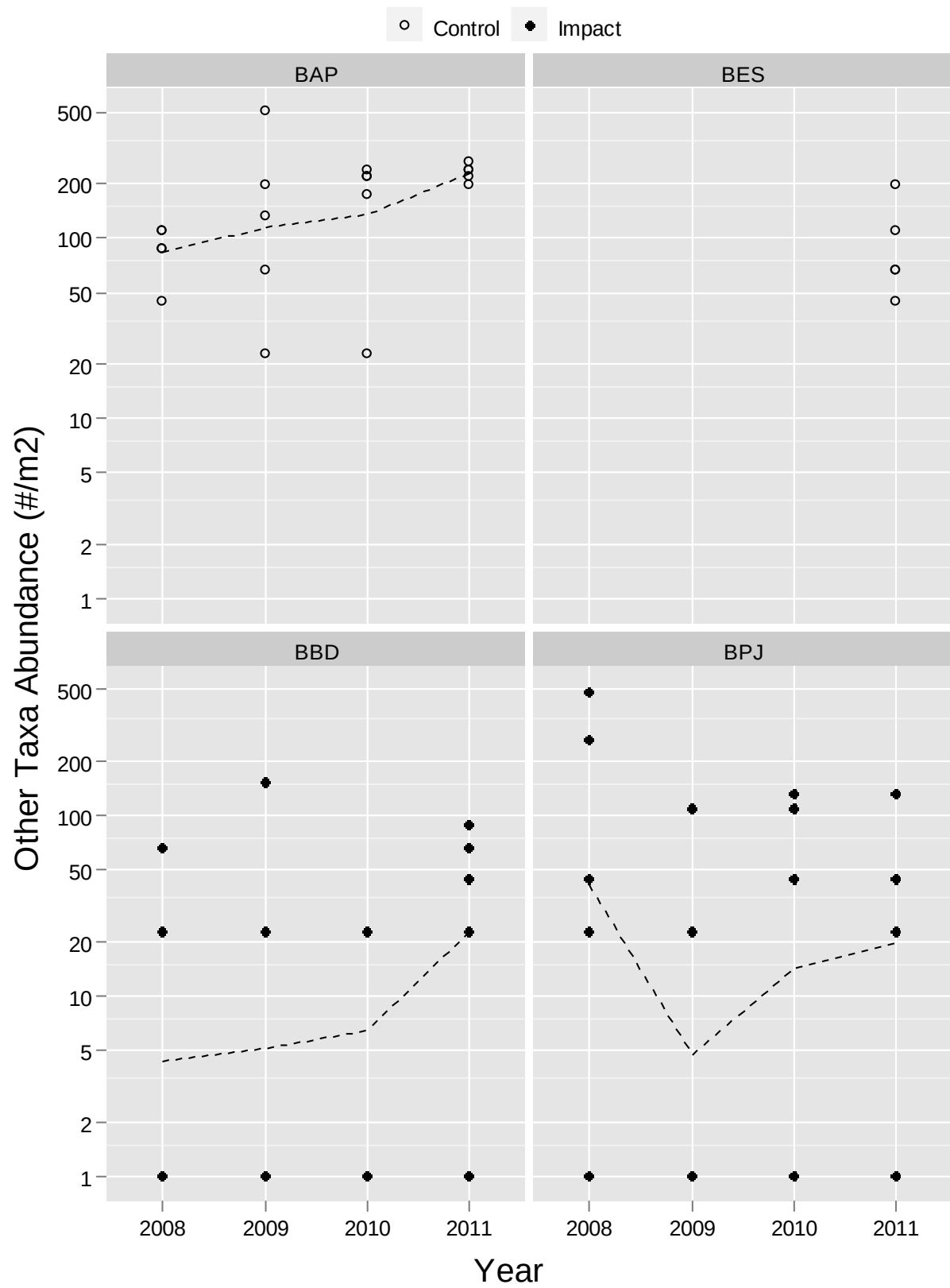
Benthos plots

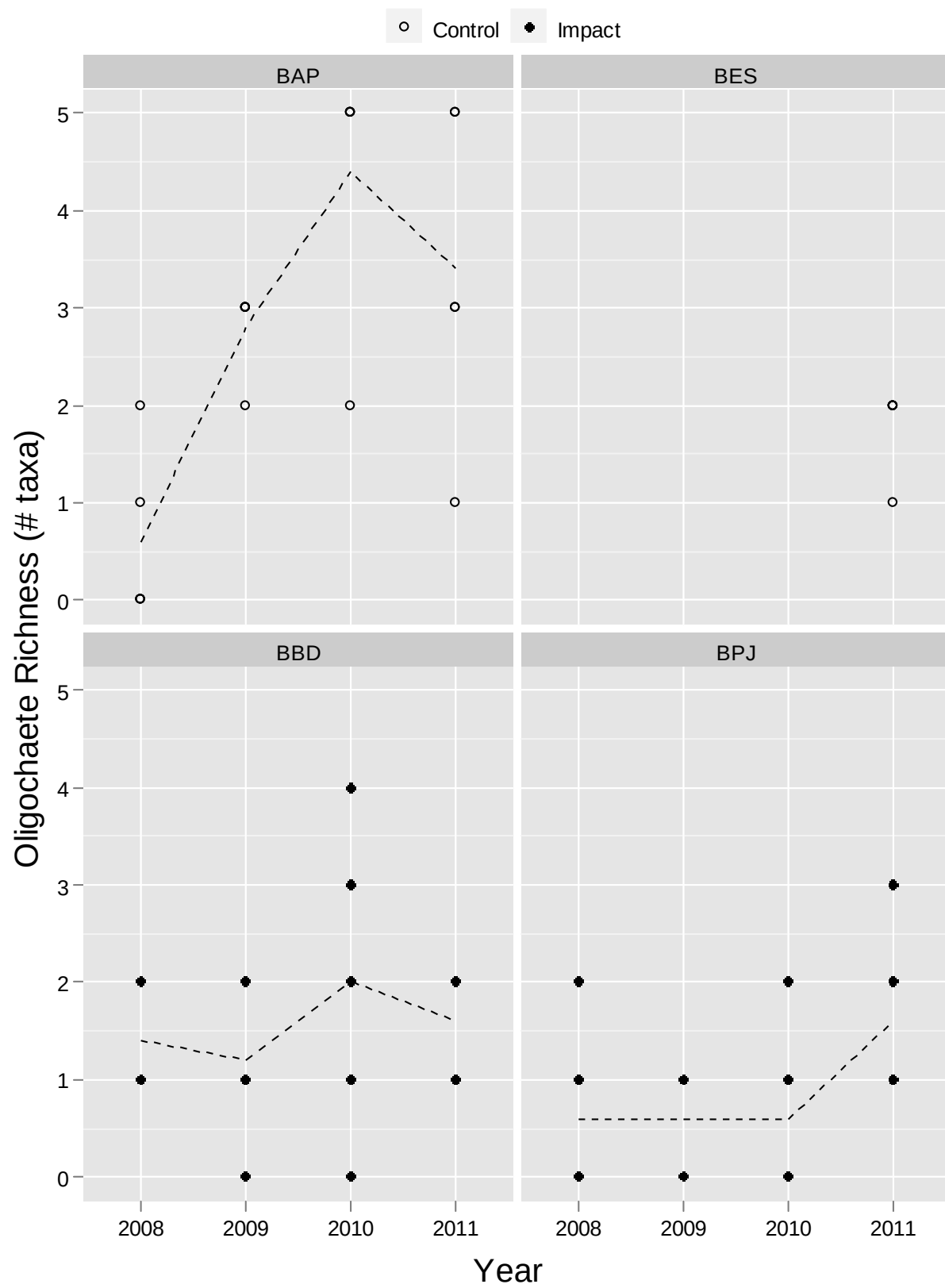
Baker Lake

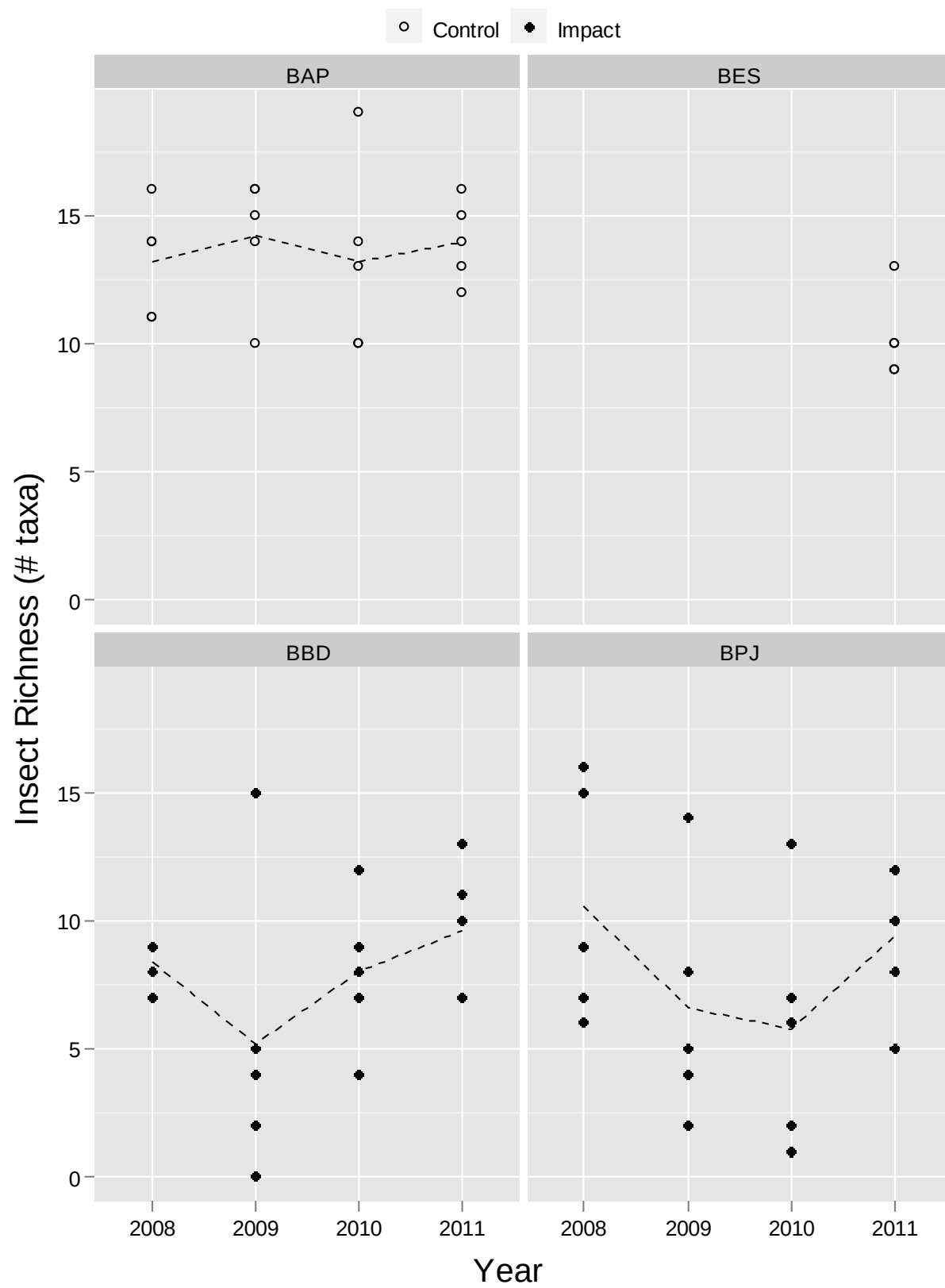


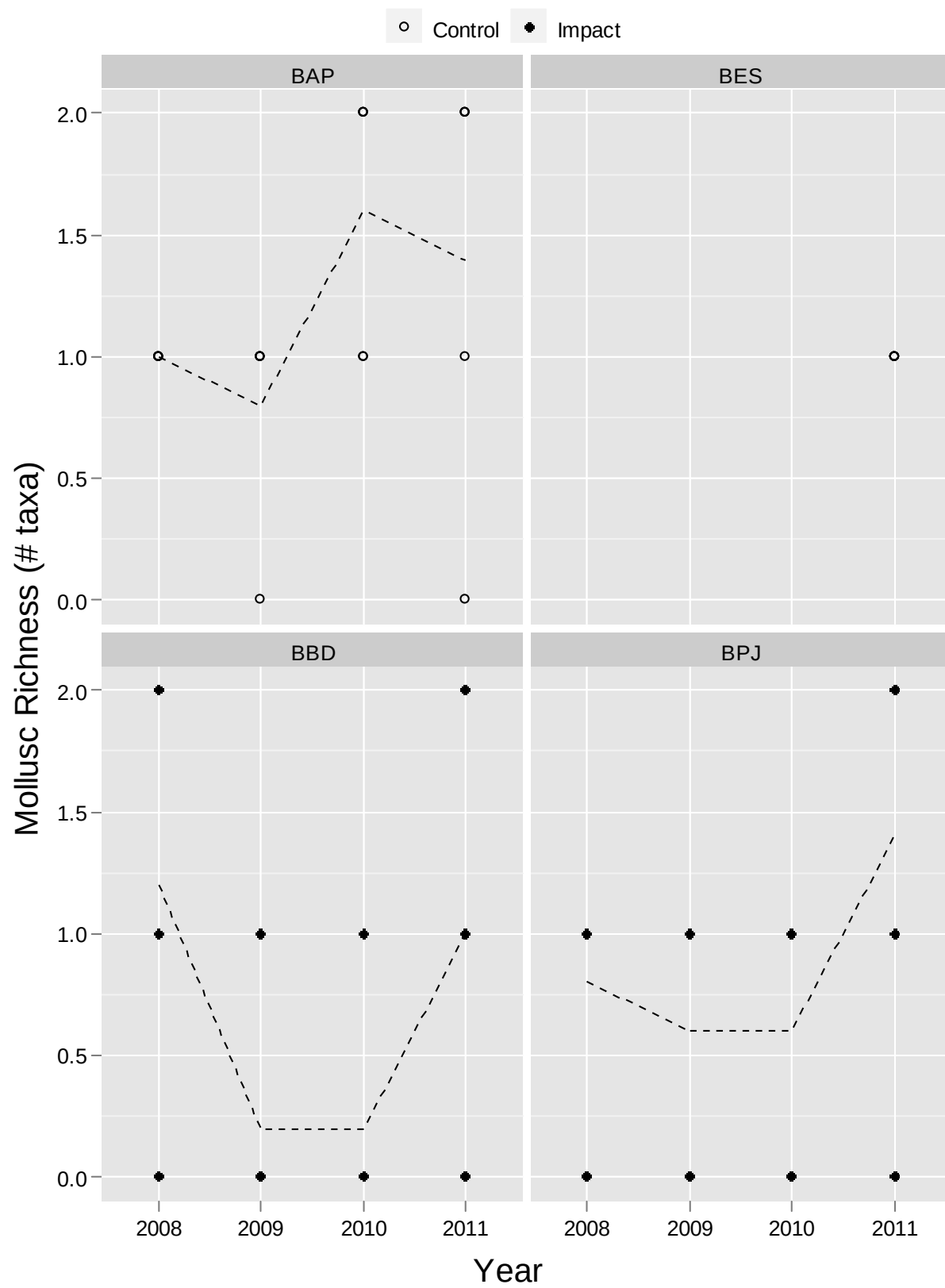


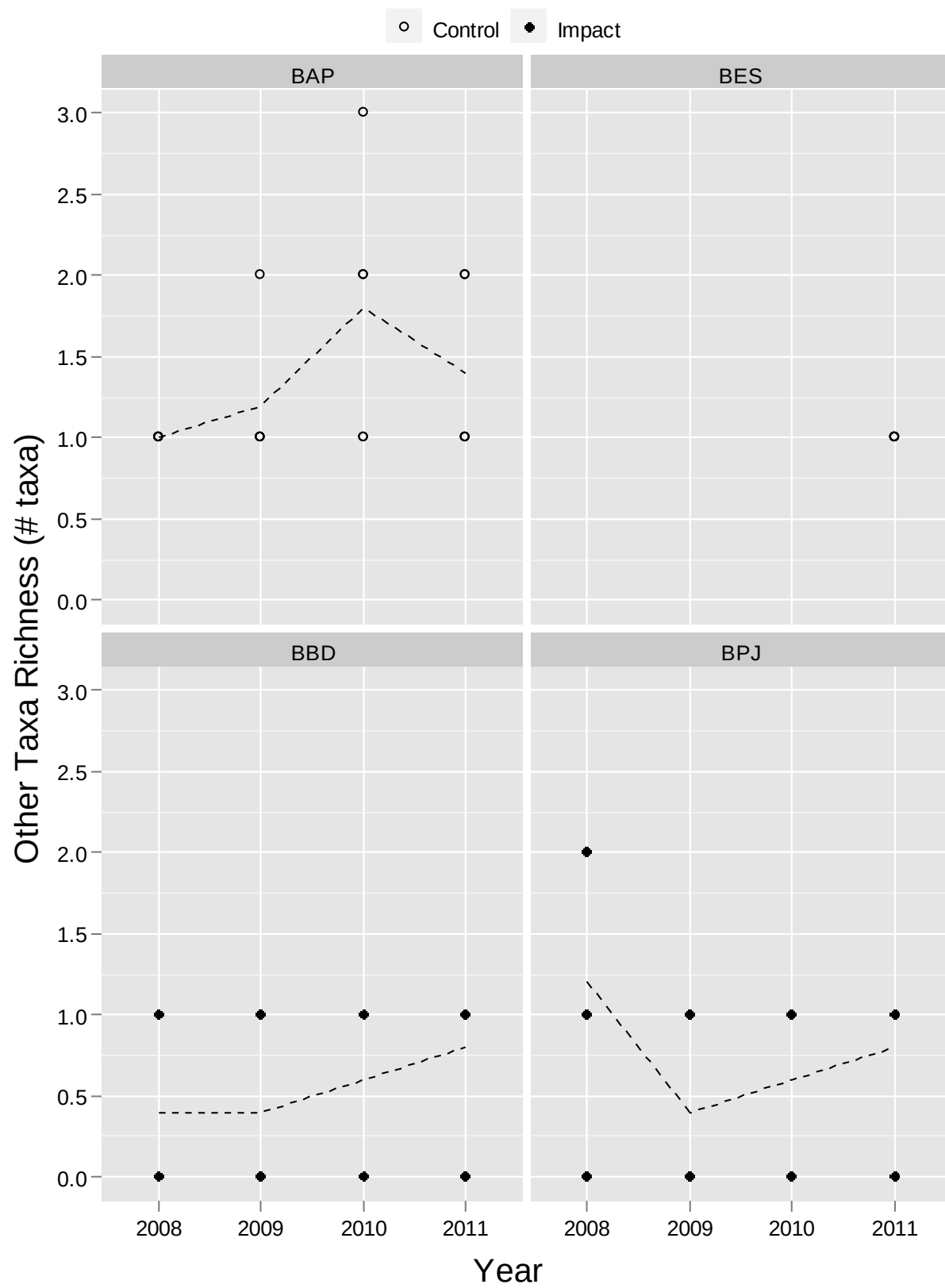


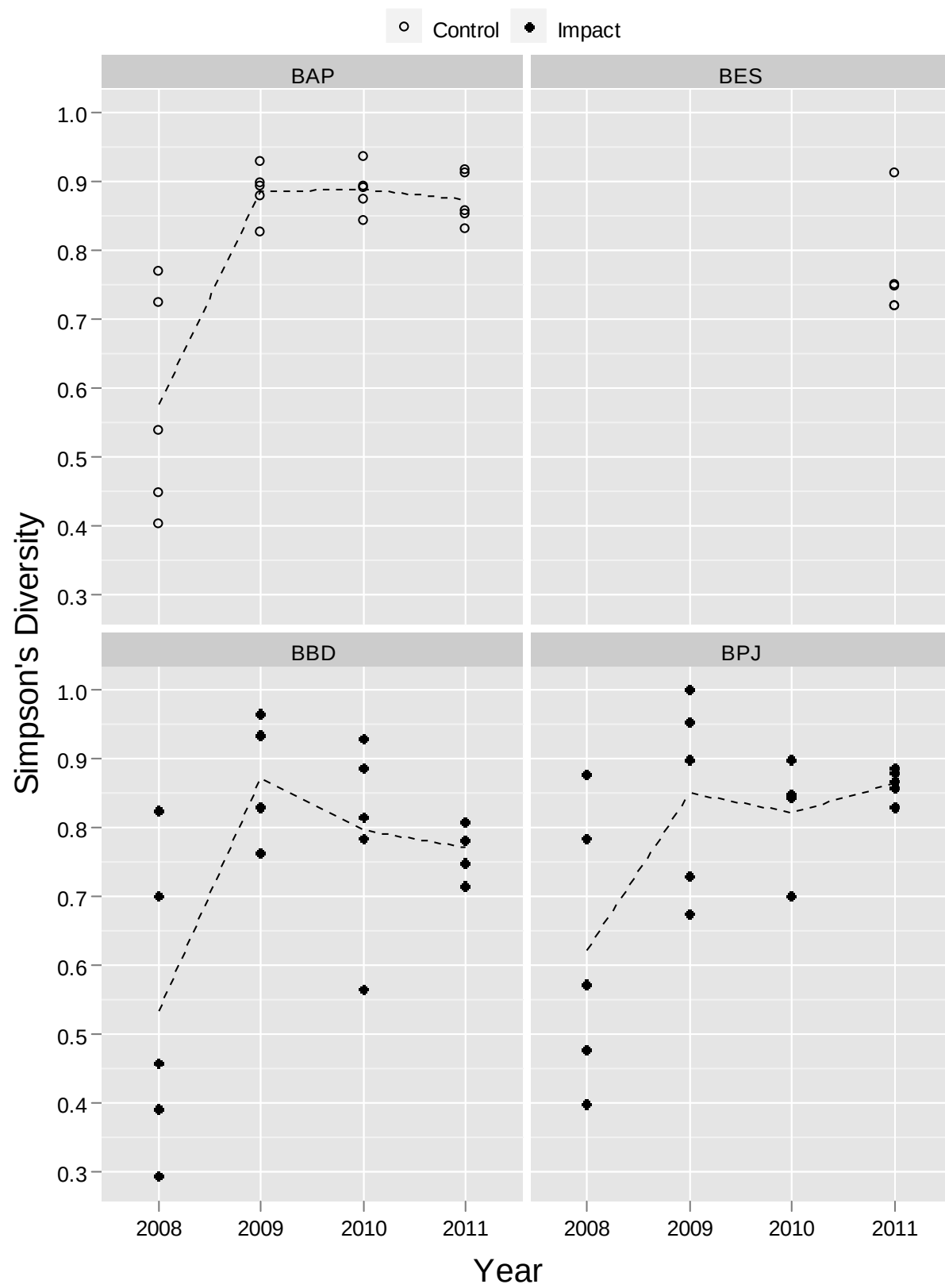


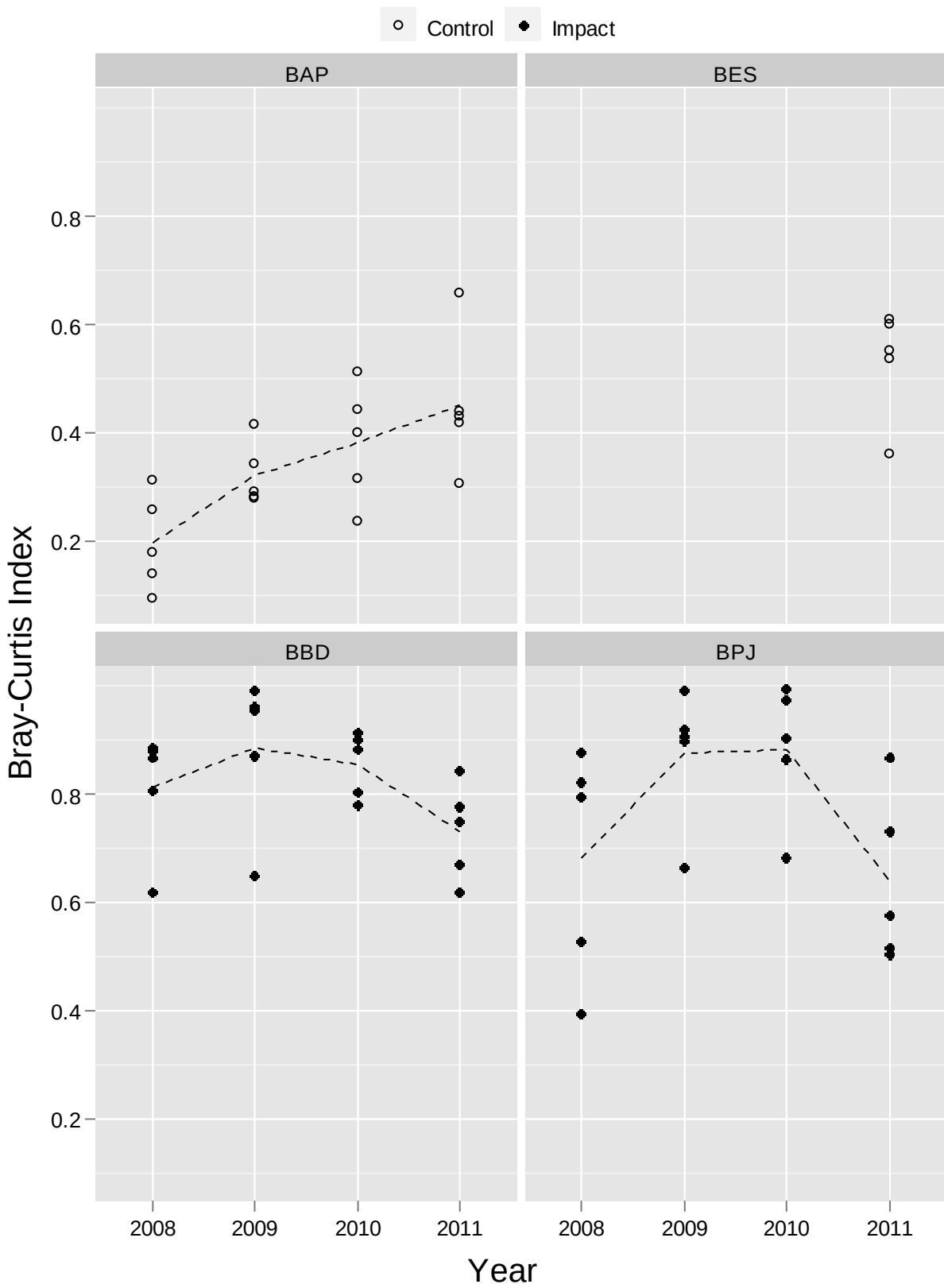


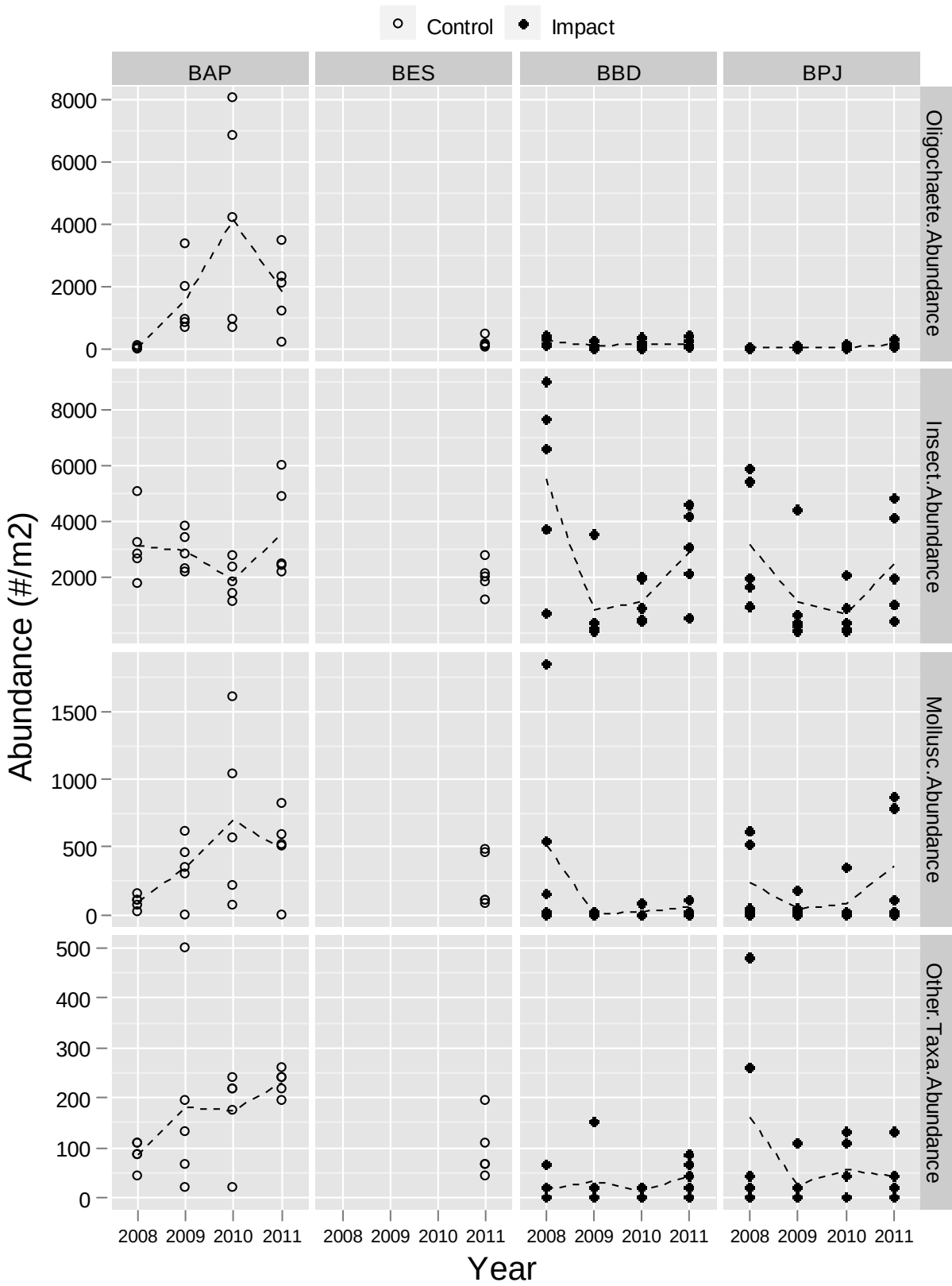


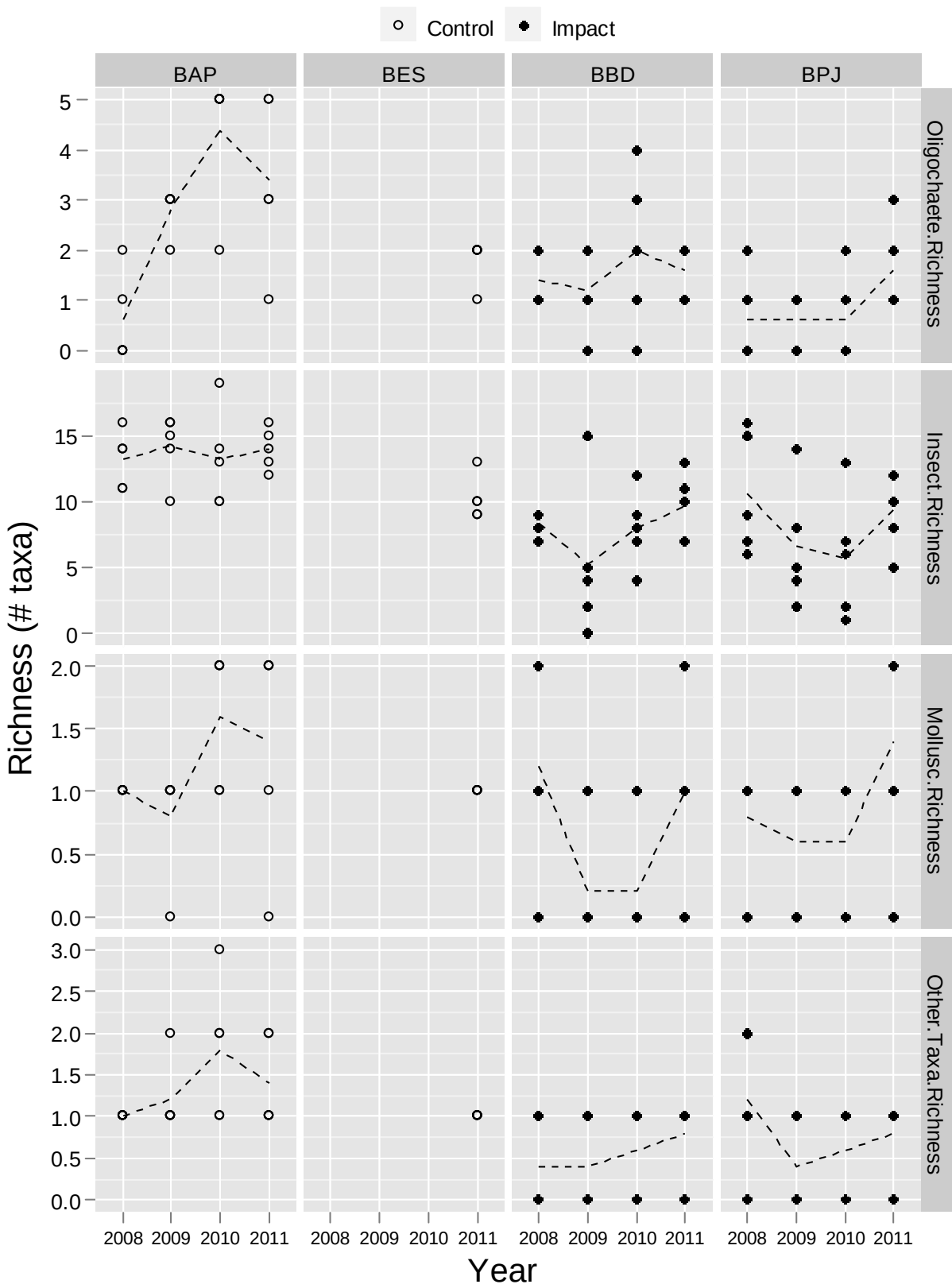


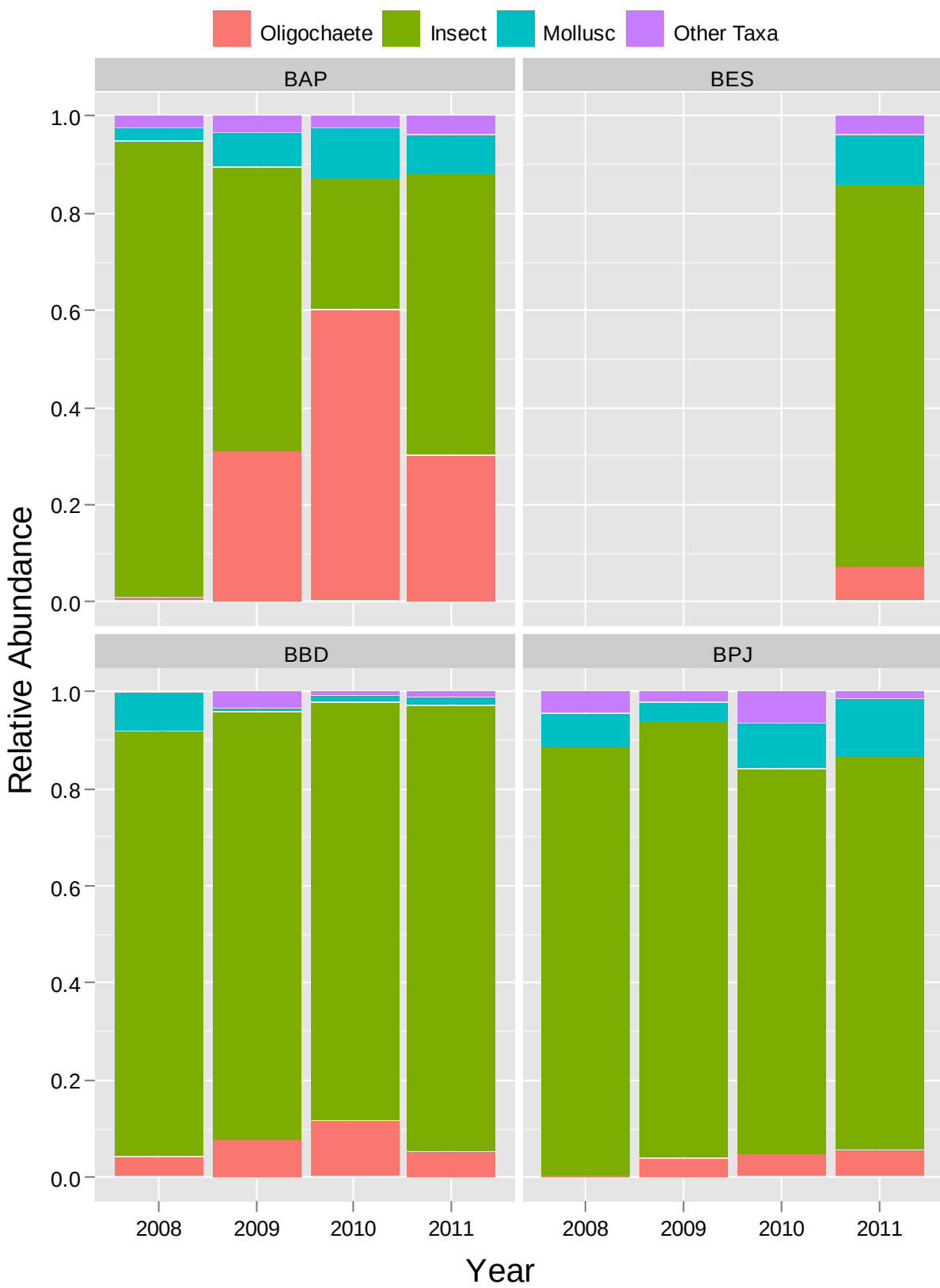


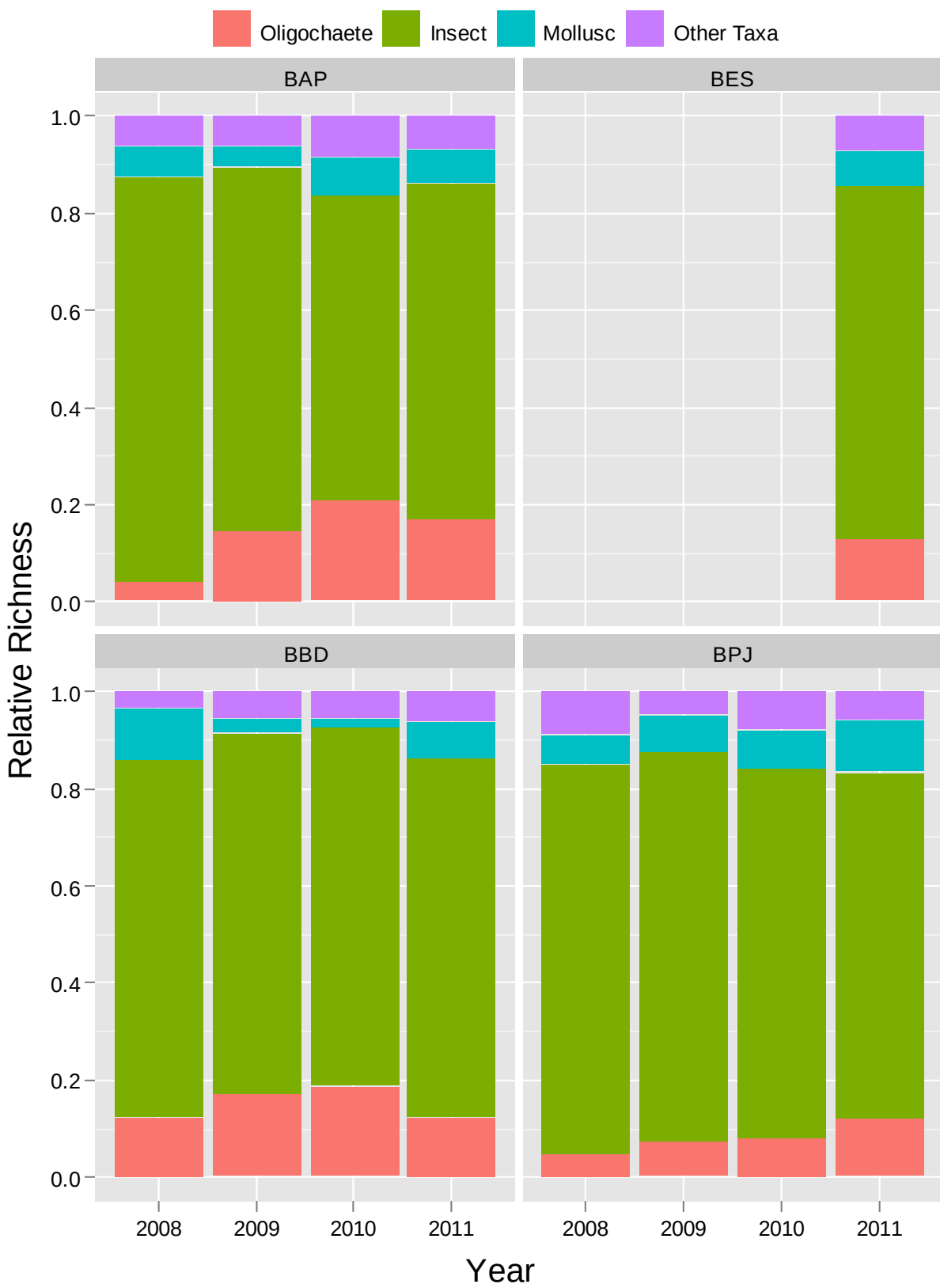












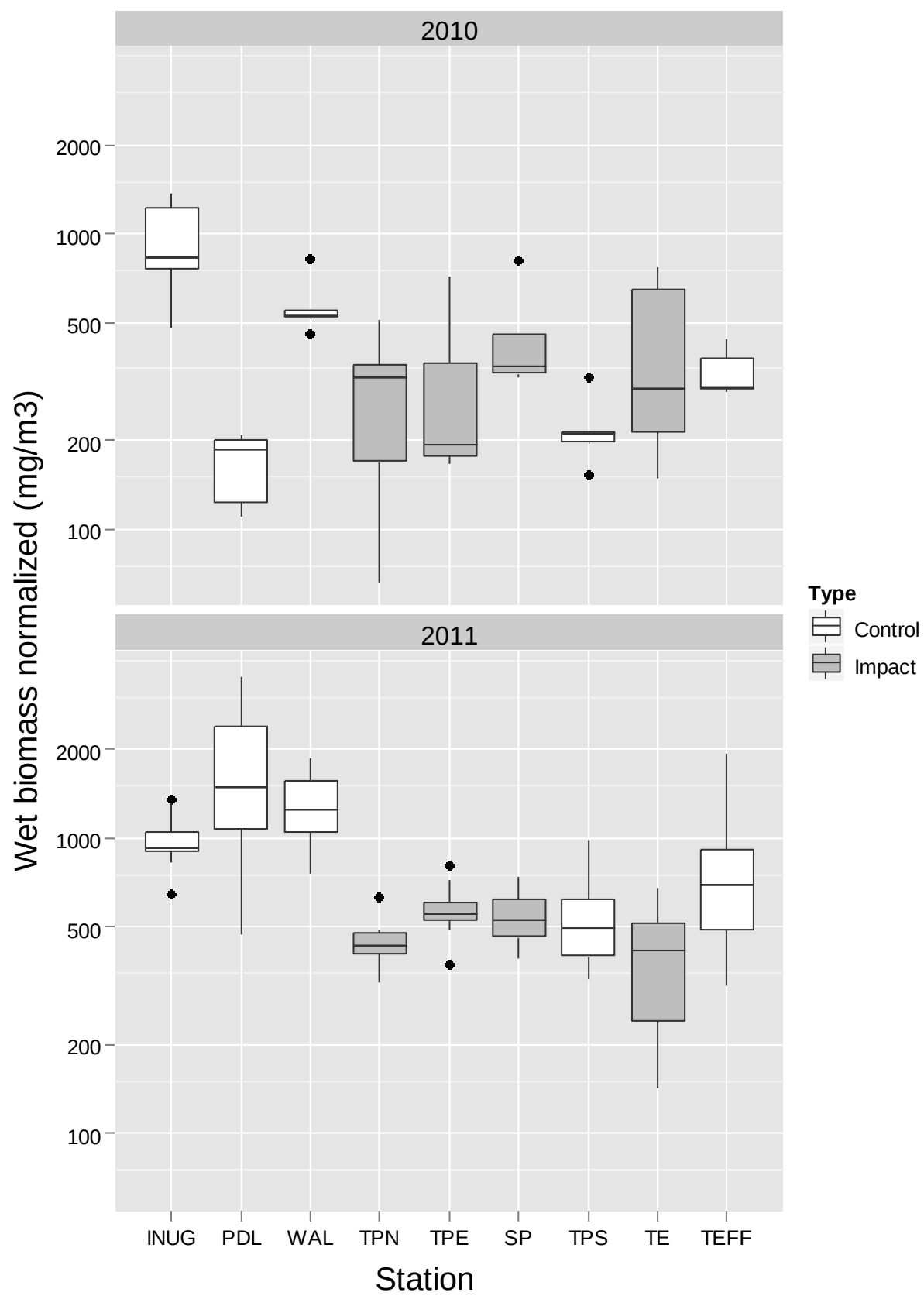
APPENDIX K

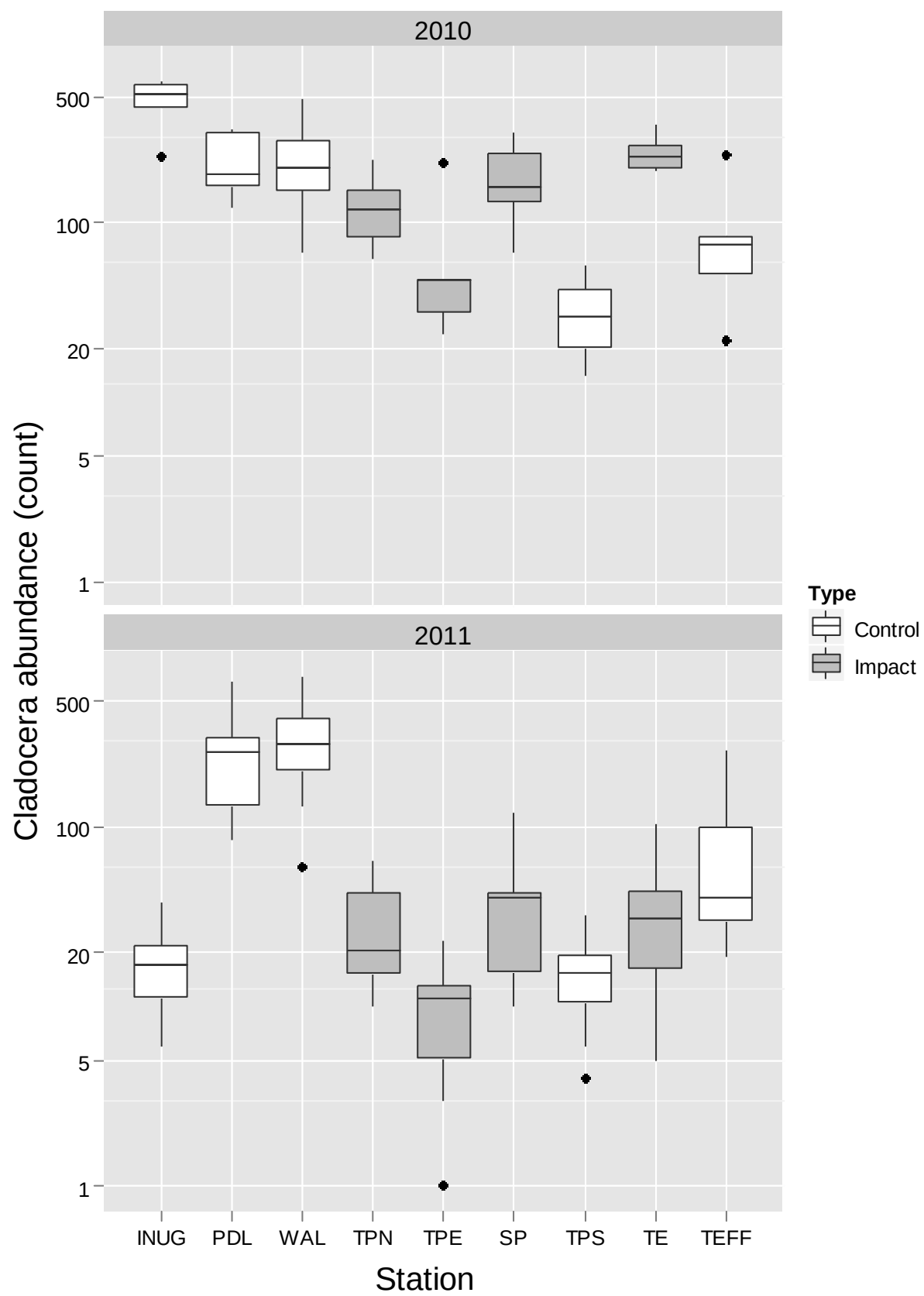
ZOOPLANKTON PLOTS 2006 – 2011

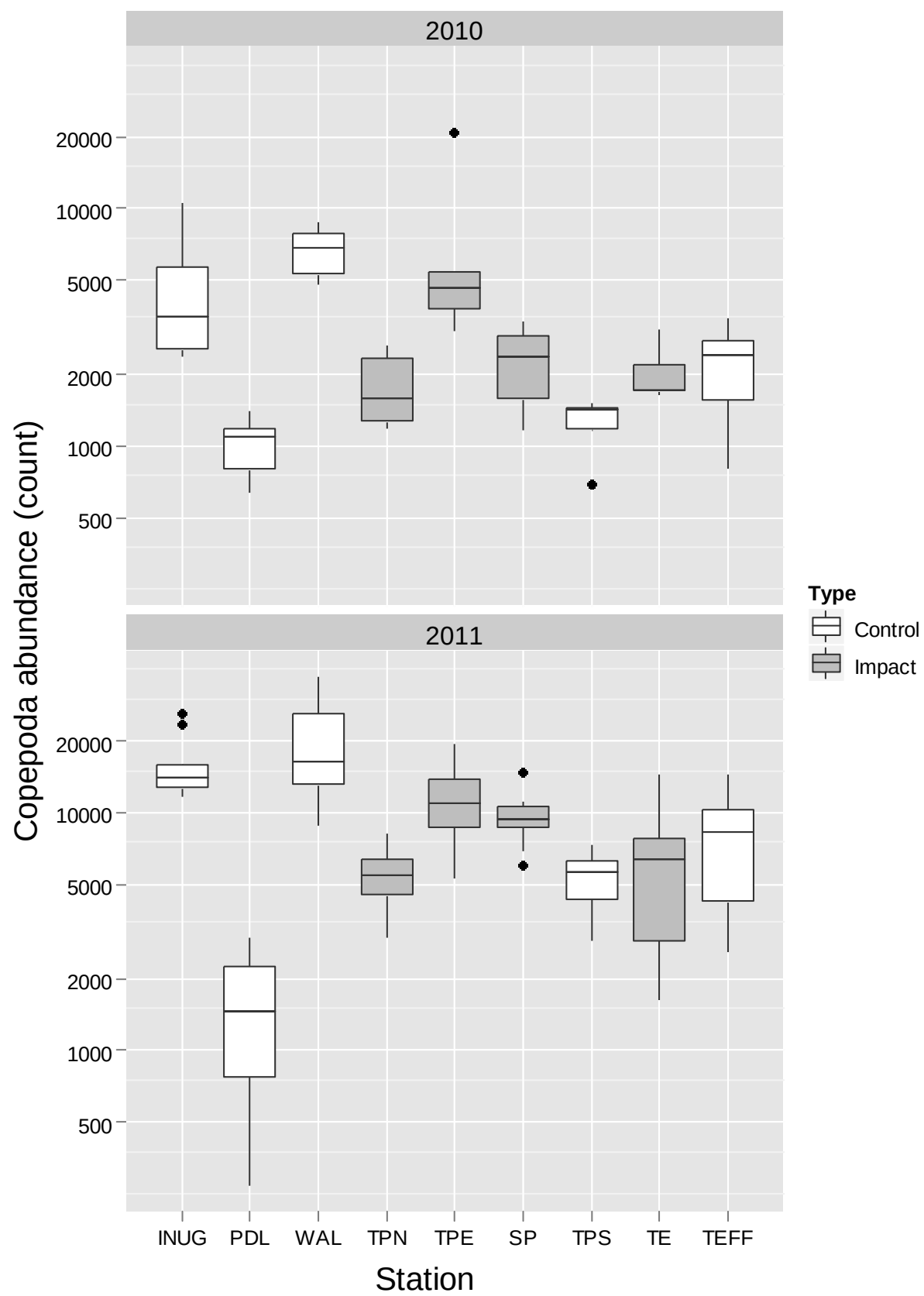


Zooplankton plots

Meadowbank







APPENDIX L

**ZOOPLANKTON TAXONOMIC IDENTIFICATION RAW
DATA, 2011**



Appendix L. Total abundance of taxa identified from a composite of two zooplankton tows (per replicate), Meadowbank study lakes, 2011.

Area-Replicate ID	INUG-1	INUG-2	INUG-3	INUG-4	INUG-5	INUG-6	INUG-7	INUG-8	INUG-9	INUG-10	PDL-1	PDL-2	PDL-3	PDL-4	PDL-5
Date	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	13-Aug-11	11-Aug-11	11-Aug-11	11-Aug-11	11-Aug-11	11-Aug-11
Acarina															
Ostracoda															
<i>Hydra sp.</i>															
DIPTERA															
Chironomidae adult (unid)															
Chironomidae pupa (unid)					1										
Chironomidae larva (unid)															
CLADOCERA															
Daphniidae															
<i>Daphnia longiremis</i> Sars			1					1							
<i>Daphnia middendorffiana</i> Fischer	5	2	7	11		13	8	2	10	15	1	2		1	8
Bosminidae															
<i>Bosmina longirostris</i> (O.F. Muller)	1	5	3	6	1	2		3	3	2	13	6	3	3	4
Chydoridae															
<i>Acroperus harpae</i> Baird															
<i>Alona guttata</i> Sars															
<i>Chydorus sp.</i>															
Holopedidae															
<i>Holopedium gibberum</i> Zaddach	25	1	5	6	5	23	7	4	5	1	102	82	82	264	164
CLADOCERA TOTAL:	31	8	16	23	6	38	15	10	18	18	116	90	85	268	176
COPEPODA															
Calanoida															
Calanoida copepodite	6528	4864	8320	6144	5248	15488	9280	4096	12352	4288	1792	464	832	2608	1120
Diaptomidae															
<i>Diaptomus ashlandi</i> Marsh														20	4
<i>Diaptomus minutus</i> Lilljeborg	320	640	1088	320	960	673	960	448	640	576					
<i>Diaptomus probilifensis</i> Juday and Muttkowski											4	4			
<i>Diaptomus sicilis</i> S.A. Forbes	64													4	8
<i>Diaptomus sp.</i> (unid. Females)	2912	1408	2784	2624	3520	5888	1728	1792	4032	2048	4	24	108	124	32
Temoridae															
<i>Epischura lacustris</i> Forbes	288	608	432	160	336	560	336	240	304	80	84	52	64	72	116
<i>Heterocope septentrionalis</i> Juday and Muttkowski	25	28	160	59	41	99	32	99	47	51	62	29	54	121	54
Cyclopoida															
Cyclopoid copepodite	320	1088	820	768	820	768	1280	960	1280	1344	128	16	32	16	16
Cyclopidae															
<i>Cyclops scutifer</i> Sars	1664	4334	1792	3648	1536	2688	2304	6848	4608	3200	400	144	464	16	16
Harpacticoida															
Harpacticoida (unid)															
COPEPODA TOTAL:	12121	12970	15396	13723	12461	26164	15920	14483	23263	11587	2474	733	1554	2981	1366
GRAND TOTAL:	12152	12978	15412	13746	12468	26202	15935	14493	23281	11605	2590	823	1639	3249	1542

Appendix L. Total abundance of taxa identified from a composite of two zooplankton tows (per replicate), Meadowbank study lakes, 2011.

Area-Replicate ID	PDL-6	PDL-7	PDL-8	PDL-9	PDL-10	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-8	SP-9	SP-10
Date	11-Aug-11	11-Aug-11	11-Aug-11	11-Aug-11	11-Aug-11	18-Aug-11	17-Aug-11	17-Aug-11	18-Aug-11	17-Aug-11	17-Aug-11	18-Aug-11	17-Aug-11	18-Aug-11	18-Aug-11
Acarina															
Ostracoda													1		
<i>Hydra sp.</i>						1	3			1		1			1
DIPTERA															
Chironomidae adult (unid)															
Chironomidae pupa (unid)															
Chironomidae larva (unid)						1	4	3		1	2	3	27	6	4
CLADOCERA															
Daphniidae															
<i>Daphnia longiremis</i> Sars						2		4	5	2	2	1		4	1
<i>Daphnia middendorffiana</i> Fischer	1			1		29	3	28	10	11	9	4	3	4	1
Bosminidae															
<i>Bosmina longirostris</i> (O.F. Muller)	114	8	10	4	17	32	9	6	105	2	5	37	37	32	8
Chydoridae															
<i>Acroperus harpae</i> Baird															
<i>Alona guttata</i> Sars															
<i>Chydorus sp.</i>															
Holopedidae															
<i>Holopedium gibberum</i> Zaddach	163	316	248	508	629	1	3	5			1				
CLADOCERA TOTAL:	278	324	258	513	646	64	15	43	120	15	17	42	40	40	10
COPEPODA															
Calanoida															
Calanoida copepodite	112	193	1200	560	2288	1344	1280	16	2112	2048	1216	1856	1088	1024	2048
Diaptomidae															
<i>Diaptomus ashlandi</i> Marsh		8	4	4											
<i>Diaptomus minutus</i> Lilljeborg						384	432	192	512	512	512	256	288	384	1556
<i>Diaptomus probilifensis</i> Juday and Muttkowski		8			4	192	192	320	224	254	320	288	256	224	1056
<i>Diaptomus sicilis</i> S.A. Forbes			12												
<i>Diaptomus sp.</i> (unid. Females)	8	48	56	48	40	1984	1472	768	2112	1920	1792	1554	1920	1408	2688
Temoridae															
<i>Epischura lacustris</i> Forbes	68	38	248	144	116			8	16	16	16				
<i>Heterocope septentrionalis</i> Juday and Muttkowski	29	42	28	28	55	63	12	32	50	76	57	12	10	17	18
Cyclopoida															
Cyclopoid copepodite	48	32	48			1536	1280	1888	1792	768	1600	1760	1664	1600	1664
Cyclopidae															
<i>Cyclops scutifer</i> Sars	4	208	132	128	108	5632	2240	2720	4032	4096	4608	3328	3392	4224	5760
Harpacticoida															
Harpacticoida (unid)															
COPEPODA TOTAL:	269	577	1728	912	2611	11135	6908	5944	10850	9690	10121	9054	8618	8881	14790
GRAND TOTAL:	547	901	1986	1425	3257	11201	6930	5990	10970	9707	10140	9100	8686	8927	14805

Appendix L. Total abundance of taxa identified from a composite of two zooplankton tows (per replicate), Meadowbank study lakes, 2011.

Area-Replicate ID	TE-1	TE-2	TE-3	TE-4	TE-5	TE-6	TE-7	TE-8	TE-9	TE-10	TEFF-1	TEFF-2	TEFF-3	TEFF-4	TEFF-5
Date	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	16-Aug-11	15-Aug-11	15-Aug-11	15-Aug-11	15-Aug-11	15-Aug-11
Acarina	1														1
Ostracoda															
<i>Hydra sp.</i>			1												
DIPTERA															
Chironomidae adult (unid)															1
Chironomidae pupa (unid)															
Chironomidae larva (unid)		1		1				1							
CLADOCERA															
Daphniidae															
<i>Daphnia longiremis</i> Sars	3			14	3	1	6	11	3	11			1		
<i>Daphnia middendorffiana</i> Fischer	4	1		13	7		2	6	6	6			3		2
Bosminidae															
<i>Bosmina longirostris</i> (O.F. Muller)	9	6	5	67	10	15	24	14	14	5	9	1	10	2	5
Chydoridae															
<i>Acroperus harpae</i> Baird															
<i>Alona guttata</i> Sars															
<i>Chydorus sp.</i>															
Holopedidae															
<i>Holopedium gibberum</i> Zaddach	1			10	24			13	36	8	27	45	90	32	114
CLADOCERA TOTAL:	17	7	5	104	44	16	32	44	59	30	36	46	104	34	121
COPEPODA															
Calanoida															
Calanoida copepodite	160	256	480	928	960	176	1024	896	832	2432	2816	5888	992	1888	8832
Diaptomidae															
<i>Diaptomus ashlandi</i> Marsh															
<i>Diaptomus minutus</i> Lilljeborg	64	122	64	64	96	48	160	128	128	192	1024	640	352	608	960
<i>Diaptomus probilifensis</i> Juday and Muttkowski		48		16		8	96								
<i>Diaptomus sicilis</i> S.A. Forbes				16									16		128
<i>Diaptomus sp.</i> (unid. Females)	192	512	448	704	416	64	576	896	1219	1472	1920	2304	672	492	1856
Temoridae															
<i>Epischura lacustris</i> Forbes	96	304	144	344	232	160	42	24	128	928	288	208	264	160	224
<i>Heterocope septentrionalis</i> Juday and Muttkowski	51	5	3	11	14	6	10	7	9	6	12	42	43	182	19
Cyclopoida															
Cyclopoid copepodite	32	96	64	128	64	64	96	64	64	256	384	256	288	160	640
Cyclopidae															
<i>Cyclops scutifer</i> Sars	1472	1984	1536	4768	3936	1112	5952	8768	5120	9152	706	896	256	256	1728
Harpacticoida															
Harpacticoida (unid)															
COPEPODA TOTAL:	2067	3327	2739	6979	5718	1638	7956	10783	7500	14438	7150	10234	2883	3746	14387
GRAND TOTAL:	2085	3335	2745	7084	5762	1654	7988	10828	7559	14468	7186	10280	2987	3780	14510

Appendix L. Total abundance of taxa identified from a composite of two zooplankton tows (per replicate), Meadowbank study lakes, 2011.

Area-Replicate ID Date	TEFF-6 15-Aug-11	TEFF-7 15-Aug-11	TEFF-8 15-Aug-11	TEFF-9 15-Aug-11	TEFF-10 15-Aug-11	TPE-1 23-Aug-11	TPE-2 23-Aug-11	TPE-3 23-Aug-11	TPE-4 23-Aug-11	TPE-5 23-Aug-11	TPE-6 23-Aug-11	TPE-7 23-Aug-11	TPE-8 23-Aug-11	TPE-9 23-Aug-11	TPE-10 23-Aug-11
Acarina															
Ostracoda								2							
<i>Hydra sp.</i>						1	3			1					
DIPTERA															
Chironomidae adult (unid)															
Chironomidae pupa (unid)															
Chironomidae larva (unid)										1	1				
CLADOCERA															
Daphniidae															
<i>Daphnia longiremis</i> Sars						6	2	6		6	3		1	4	
<i>Daphnia middendorffiana</i> Fischer	2	1	1		12	9	5	1	2	2	1		5		
Bosminidae															
<i>Bosmina longirostris</i> (O.F. Muller)	5	12	9	14	3	8	5	6	1	4	6	1	2	3	3
Chydoridae															
<i>Acroperus harpae</i> Baird														1	
<i>Alona guttata</i> Sars											1				
<i>Chydorus sp.</i>														1	
Holopedidae															
<i>Holopedium gibberum</i> Zaddach	21	6	11	71	252			1	1	1	2		2	1	
CLADOCERA TOTAL:	28	19	21	85	267	23	12	14	4	13	13	1	10	10	3
COPEPODA															
Calanoida															
Calanoida copepodite	2816	1056	4416	3584	5504	3104	6976	2624	3648	2240	2432	3936	2756	5932	1600
Diaptomidae															
<i>Diaptomus ashlandi</i> Marsh															
<i>Diaptomus minutus</i> Lilljeborg	640	128	800	1152	1024										
<i>Diaptomus probilifensis</i> Juday and Muttkowski						552	1568	1232	1536	1216	1472	2176	752	2512	400
<i>Diaptomus sicilis</i> S.A. Forbes	64	16		64	64	48	80	48	128	64	64	192	64	32	8
<i>Diaptomus sp.</i> (unid. Females)	1184	416	2176	1664	2560	912	2512	1776	3008	2240	1920	2208	2944	1280	982
Temoridae															
<i>Epischura lacustris</i> Forbes	248	56	336	368	160					64		1			
<i>Heterocope septentrionalis</i> Juday and Muttkowski	72	27	29	9	33	22	44	45	66	43	13	45	37	29	56
Cyclopoida															
Cyclopoid copepodite	352	144	320	768	832	224	768	768	256	1280	576	256	124	1600	256
Cyclopidae															
<i>Cyclops scutifer</i> Sars	448	736	2112	2112	2112	976	4416	4928	3008	7552	3136	1632	1792	7936	2016
Harpacticoida															
Harpacticoida (unid)															
COPEPODA TOTAL:	5824	2579	10189	9721	12289	5838	16364	11421	11650	14699	9613	10446	8469	19321	5318
GRAND TOTAL:	5852	2598	10210	9806	12556	5862	16379	11437	11654	14714	9627	10447	8479	19331	5321

Appendix L. Total abundance of taxa identified from a composite of two zooplankton tows (per replicate), Meadowbank study lakes, 2011.

Area-Replicate ID	TPN-1	TPN-2	TPN-3	TPN-4	TPN-5	TPN-6	TPN-7	TPN-8	TPN-9	TPN-10	TPS-1	TPS-2	TPS-3	TPS-4	TPS-5
Date	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	24-Aug-11	23-Aug-11	23-Aug-11	24-Aug-11	22-Aug-11	22-Aug-11
Acarina															
Ostracoda															
<i>Hydra sp.</i>															
DIPTERA															
Chironomidae adult (unid)															
Chironomidae pupa (unid)															
Chironomidae larva (unid)															
CLADOCERA															
Daphniidae															
<i>Daphnia longiremis</i> Sars	2	1	4	4	2	1		5			4				
<i>Daphnia middendorffiana</i> Fischer	7	5	30	6	28	12	5	4	2		2	4	3		4
Bosminidae															
<i>Bosmina longirostris</i> (O.F. Muller)	1	1	2	9		5		4	5	1		2	3	1	1
Chydoridae															
<i>Acroperus harpae</i> Baird															
<i>Alona guttata</i> Sars															
<i>Chydorus sp.</i>															
Holopedidae															
<i>Holopedium gibberum</i> Zaddach	4	5	29	26	32	5	13	5	30	9		6	14	3	27
CLADOCERA TOTAL:	14	12	65	45	62	23	18	18	37	10	6	12	20	4	32
COPEPODA															
Calanoida															
Calanoida copepodite	2432	4928	3008	2432	1792	1728	3232	2176	6400	2980	5440	2752	3424	4288	4736
Diaptomidae															
<i>Diaptomus ashlandi</i> Marsh															
<i>Diaptomus minutus</i> Lilljeborg															
<i>Diaptomus probilifensis</i> Juday and Muttkowski	8		8	24	8	8	2	32	16	32	24	32			
<i>Diaptomus sicilis</i> S.A. Forbes	224	96	544	96	208	96	368	176	284	200	216	128	224	256	248
<i>Diaptomus sp.</i> (unid. Females)	256	208	704	416	368	232	568	360	552	424	128	192	288	160	384
Temoridae															
<i>Epischura lacustris</i> Forbes															
<i>Heterocope septentrionalis</i> Juday and Muttkowski	29	63	28	59	46	23	15	20	58	13	176	44	41	38	40
Cyclopoida															
Cyclopoid copepodite	160	416	352	288	448	192	384	288	320	448	168	224	96	132	128
Cyclopidae															
<i>Cyclops scutifer</i> Sars	1472	2336	992	1120	640	704	1984	2688	576	1184	152	608	184	384	448
Harpacticoida															
Harpacticoida (unid)															
COPEPODA TOTAL:	4581	8047	5636	4435	3510	2983	6553	5740	8206	5281	6304	3980	4257	5258	5984
GRAND TOTAL:	4595	8059	5701	4480	3572	3006	6571	5758	8243	5291	6310	3992	4277	5262	6016

Appendix L. Total abundance of taxa identified from a composite of two zooplankton tows (per replicate), Meadowbank study lakes, 2011.

Area-Replicate ID	TPS-6	TPS-7	TPS-8	TPS-9	TPS-10	WAL-1	WAL-2	WAL-3	WAL-4	WAL-5	WAL-6	WAL-7	WAL-8	WAL-9	WAL-10
Date	22-Aug-11	23-Aug-11	22-Aug-11	22-Aug-11	22-Aug-11	15-Aug-11	14-Aug-11	14-Aug-11	15-Aug-11	15-Aug-11	15-Aug-11	14-Aug-11	14-Aug-11	15-Aug-11	15-Aug-11
Acarina								1	1						
Ostracoda										1					
<i>Hydra sp.</i>															
DIPTERA															
Chironomidae adult (unid)			1												
Chironomidae pupa (unid)															
Chironomidae larva (unid)								1				1			
CLADOCERA															
Daphniidae															
<i>Daphnia longiremis</i> Sars			1		1	18	8	3	3	34	4	15	4	6	
<i>Daphnia middendorffiana</i> Fischer	3	4	2	11	5	21	10	3	3	11	3	16	21	7	1
Bosminidae															
<i>Bosmina longirostris</i> (O.F. Muller)	1	1	1		4	10	1	10	4	6	19	2	3	9	5
Chydoridae															
<i>Acroperus harpae</i> Baird															
<i>Alona guttata</i> Sars															
<i>Chydorus sp.</i>															
Holopedidae															
<i>Holopedium gibberum</i> Zaddach	13	5	12	12	5	385	319	114	214	369	284	654	169	242	53
CLADOCERA TOTAL:	17	10	16	23	15	434	338	130	224	420	310	687	197	264	59
COPEPODA															
Calanoida															
Calanoida copepodite	3648	1664	5376	5536	4672	3752	3136	8192	15488	6464	3200	13504	13952	3328	5824
Diaptomidae															
<i>Diaptomus ashlandi</i> Marsh						128	384	192	192	192	64	128	64	96	192
<i>Diaptomus minutus</i> Lilljeborg	8					128	256	64	512	128	448	128	192	160	320
<i>Diaptomus probilifensis</i> Juday and Muttkowski		32	8		8										
<i>Diaptomus sicilis</i> S.A. Forbes	120	160	576	112	320										
<i>Diaptomus sp.</i> (unid. Females)	284	352	512	64	832	2752	3712	2048	3456	3454	2368	2432	2176	2496	4224
Temoridae															
<i>Epischura lacustris</i> Forbes						112	48	32	96	64	48	48	80	96	208
<i>Heterocope septentrionalis</i> Juday and Muttkowski	38	49	45	41	52	25	72	38	25	17	57	81	51	80	20
Cyclopoida															
Cyclopoid copepodite	128	160	256	96	160	192	1472	2112	1280	960	1152	2752	1792	576	768
Cyclopidae															
<i>Cyclops scutifer</i> Sars	240	480	542	416	704	4664	3704	5248	12800	9600	5888	18304	9600	2048	3392
Harpacticoida															
Harpacticoida (unid)															
COPEPODA TOTAL:	4466	2897	7315	6265	6748	11753	12784	17926	33849	20879	13225	37377	27907	8880	14948
GRAND TOTAL:	4483	2907	7332	6288	6763	12187	13122	18058	34074	21300	13535	38065	28104	9144	15007

APPENDIX M

LABORATORY REPORTS 2011





Agnico-Eagle Mining Ltd
ATTN: RYAN VANENGEN
MEADOWBANK DIV.
P.O. BOX 540
BAKER LAKE NU X0X 0A0

Date Received: 10-MAY-11
Report Date: 27-MAY-11 15:48 (MT)
Version: FINAL

Client Phone: 604-622-6527

Certificate of Analysis

Lab Work Order #: L1003082
Project P.O. #: NOT SUBMITTED
Job Reference: CREMP
Legal Site Desc:
C of C Numbers:

Paul Nicolas
Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-1 INUG-21-S							
Sampled By: CLIENT on 30-APR-11 @ 10:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		17-MAY-11	R2190497
Chloride	0.84		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	2.8		1.0	mg/L		17-MAY-11	R2189836
Fluoride	0.065		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	7.49		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)	7.49		0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0077		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate	1.10		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	10.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon	2.8		1.0	mg/L		17-MAY-11	R2189836
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.18		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00260		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.53		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00061		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.891		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00056		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.467		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00067		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.186		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-1 INUG-21-S							
Sampled By: CLIENT on 30-APR-11 @ 10:00							
Matrix: WATER							
Total Metals by ICP-MS							
Sodium (Na)-Total	0.758		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00877		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0023		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00234		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	0.000027		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.43		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.785		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00020		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00012		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.430		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00059		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.162		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.660		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00725		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-1	INUG-21-S							
Sampled By: CLIENT on 30-APR-11 @ 10:00								
Matrix: WATER								
Alkalinity								
Alkalinity, Total (as CaCO3)		7.4		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)		9.0		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)		<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)		<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity		21.2		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		6.72		0.10	pH units		10-MAY-11	R2187579
L1003082-2	INUG-21-INT							
Sampled By: CLIENT on 30-APR-11 @ 10:05								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		17-MAY-11	R2190497
Chloride		0.94		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		3.0		1.0	mg/L		17-MAY-11	R2189836
Fluoride		0.065		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		8.11		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)		8.11		0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0094		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		1.25		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		14.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon		3.1		1.0	mg/L		17-MAY-11	R2189836
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.21		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0072		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00317		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		1.66		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00078		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-2 INUG-21-INT							
Sampled By: CLIENT on 30-APR-11 @ 10:05							
Matrix: WATER							
Total Metals by ICP-MS							
Lead (Pb)-Total	0.000106		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.963		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00138		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.503		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.231		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.810		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00957		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	0.00023		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0024		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00283		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.60		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00052		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.890		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00020		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.451		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00062		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.204		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-2	INUG-21-INT							
Sampled By:	CLIENT on 30-APR-11 @ 10:05							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Sodium (Na)-Dissolved	0.689			0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00791			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	8.2			1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)	10.1			2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)	<0.60			0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)	<0.40			0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity	23.3			0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH	6.68			0.10	pH units		10-MAY-11	R2187579
L1003082-3	INUG-21-D							
Sampled By:	CLIENT on 30-APR-11 @ 10:15							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.050			0.050	mg/L		18-MAY-11	R2191016
Chloride	1.06			0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	3.1			1.0	mg/L		14-MAY-11	R2189232
Fluoride	0.065			0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	10.0			0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)	10.0			0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050			0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0129			0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070			0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010			0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020			0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010			0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.010			0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive	<0.0010			0.0010	mg/L		19-MAY-11	R2191533
Sulfate	1.44			0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	12.0			5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010			0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20			0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon	3.0			1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids	<2.0			2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.19			0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-3 INUG-21-D							
Sampled By: CLIENT on 30-APR-11 @ 10:15							
Matrix: WATER							
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0052		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00460		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.05		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00077		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	1.19		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00153		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.602		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00085		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.298		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.936		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0118		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0025		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00352		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.83		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-3 INUG-21-D								
Sampled By: CLIENT on 30-APR-11 @ 10:15								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Copper (Cu)-Dissolved		0.00050		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved		0.965		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved		0.00035		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved		0.507		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved		0.00066		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved		0.261		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved		0.729		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved		0.00904		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		9.1		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)		11.1		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)		<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)		<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity		25.5		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		6.62		0.10	pH units		10-MAY-11	R2187579
L1003082-4 INUG-22-S								
Sampled By: CLIENT on 30-APR-11 @ 11:00								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.70		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.2		1.0	mg/L		14-MAY-11	R2189232
Fluoride		0.058		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		5.91		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)		5.91		0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		<0.0050		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-4 INUG-22-S							
Sampled By: CLIENT on 30-APR-11 @ 11:00							
Matrix: WATER							
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate	0.91		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	6.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon	2.3		1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.19		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00205		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.20		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00052		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.708		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00047		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.372		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00056		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.145		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.596		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00691		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-4 INUG-22-S Sampled By: CLIENT on 30-APR-11 @ 11:00 Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00176		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.14		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00031		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.650		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.336		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00046		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.132		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.522		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00578		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.4		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)	7.9		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)	<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)	<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity							
Conductivity	15.2		0.40	umhos/cm		11-MAY-11	R2187529
pH							
pH	6.79		0.10	pH units		10-MAY-11	R2187579
L1003082-5 INUG-22-INT Sampled By: CLIENT on 30-APR-11 @ 11:10 Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-5							
INUG-22-INT							
Sampled By: CLIENT on 30-APR-11 @ 11:10							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride	0.72		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	2.4		1.0	mg/L		14-MAY-11	R2189232
Fluoride	0.056		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	6.32		0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)	6.32		0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0135		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate	0.94		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	8.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon	2.4		1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.28		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0070		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00238		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.28		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00053		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	0.000350		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.756		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00140		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.397		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.216		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-5							
INUG-22-INT							
Sampled By: CLIENT on 30-APR-11 @ 11:10							
Matrix: WATER							
Total Metals by ICP-MS							
Sodium (Na)-Total	0.632		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00750		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00215		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.18		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.696		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00021		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.360		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00048		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.177		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.727		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00632		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-5	INUG-22-INT							
Sampled By:	CLIENT on 30-APR-11 @ 11:10							
Matrix:	WATER							
Alkalinity								
Alkalinity, Total (as CaCO3)		6.7		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)		8.1		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)		<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)		<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity		15.8		0.40	umhos/cm		11-MAY-11	R2187529
pH								
pH		6.66		0.10	pH units		10-MAY-11	R2187579
L1003082-6	INUG-22-D							
Sampled By:	CLIENT on 30-APR-11 @ 11:20							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.70		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.2		1.0	mg/L		14-MAY-11	R2189232
Fluoride		0.056		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		6.17		0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)		6.17		0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0255		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		0.93		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		8.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon		2.2		1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.29		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00235		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		1.25		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00045		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-6 INUG-22-D							
Sampled By: CLIENT on 30-APR-11 @ 11:20							
Matrix: WATER							
Total Metals by ICP-MS							
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.738		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00188		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.385		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00051		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.290		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.578		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00687		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00224		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.24		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00033		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.686		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00048		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.389		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00048		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.249		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-6	INUG-22-D							
Sampled By:	CLIENT on 30-APR-11 @ 11:20							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Sodium (Na)-Dissolved	0.538			0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00642			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	6.6			1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)	8.1			2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)	<0.60			0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)	<0.40			0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity	15.9			0.40	umhos/cm		11-MAY-11	R2187529
pH								
pH	6.54			0.10	pH units		10-MAY-11	R2187579
L1003082-7	INUG-23-S							
Sampled By:	CLIENT on 30-APR-11 @ 12:20							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.050			0.050	mg/L		18-MAY-11	R2191016
Chloride	0.91			0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	2.4			1.0	mg/L		14-MAY-11	R2189232
Fluoride	0.066			0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	7.47			0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)	7.47			0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050			0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	<0.0050			0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070			0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010			0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.010			0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total	<0.0020			0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive	<0.0010			0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010			0.010	mg/L		11-MAY-11	R2187919
Sulfate	1.18			0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	10.0			5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010			0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20			0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon	2.6			1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids	<2.0			2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.16			0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-7 INUG-23-S							
Sampled By: CLIENT on 30-APR-11 @ 12:20							
Matrix: WATER							
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00281		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.50		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00045		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.904		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00051		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.477		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00063		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.199		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.723		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00826		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00258		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.39		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-7	INUG-23-S							
Sampled By: CLIENT on 30-APR-11 @ 12:20								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Copper (Cu)-Dissolved		0.00041		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved		0.803		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved		0.00015		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved		0.432		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved		0.00059		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved		<0.00010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved		0.167		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved		0.657		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved		0.00763		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		7.9		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)		9.6		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)		<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)		<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity		22.0		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		6.78		0.10	pH units		10-MAY-11	R2187579
L1003082-8	TPN-33-S							
Sampled By: CLIENT on 01-MAY-11 @ 16:10								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		0.36	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.55		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		1.8		1.0	mg/L		14-MAY-11	R2189232
Fluoride		0.063		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		6.84		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)		6.84		0.20	mg/L		12-MAY-11	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-8 TPN-33-S							
Sampled By: CLIENT on 01-MAY-11 @ 16:10							
Matrix: WATER							
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0056		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate	2.10		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	10.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total	<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon	2.0		1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.18		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00267		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.61		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00041		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.683		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00082		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.408		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.108		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.649		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00713		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-8 TPN-33-S							
Sampled By: CLIENT on 01-MAY-11 @ 16:10							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00252		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.54		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.652		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00020		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.412		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00054		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.089		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.614		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00683		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.8		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)	8.3		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)	<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)	<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity							
Conductivity	20.1		0.40	umhos/cm		10-MAY-11	R2187579
pH							
pH	6.90		0.10	pH units		10-MAY-11	R2187579

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-8	TPN-33-S							
Sampled By: CLIENT on 01-MAY-11 @ 16:10								
Matrix: WATER								
L1003082-9	TPN-34-S							
Sampled By: CLIENT on 01-MAY-11 @ 15:10								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		0.30	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.54		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		1.7		1.0	mg/L		14-MAY-11	R2189232
Fluoride		0.064		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		6.71		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)		6.71		0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0054		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate		1.96		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		10.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	10-MAY-11	12-MAY-11	R2188129
Total Organic Carbon		1.9		1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.25		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00272		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		1.57		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00047		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total		<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total		<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total		0.676		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total		0.00068		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-9 TPN-34-S							
Sampled By: CLIENT on 01-MAY-11 @ 15:10							
Matrix: WATER							
Total Metals by ICP-MS							
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.401		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00061		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.106		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.625		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00747		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00243		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.45		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00032		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.588		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00012		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.378		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00052		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.086		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.557		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00641		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-9	TPN-34-S							
Sampled By:	CLIENT on 01-MAY-11 @ 15:10							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		6.7		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)		8.2		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)		<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)		<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity		20.9		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		6.91		0.10	pH units		10-MAY-11	R2187579
L1003082-10	TPN-35-S							
Sampled By:	CLIENT on 01-MAY-11 @ 14:00							
Matrix:	WATER							
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		0.31	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.56		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		1.6		1.0	mg/L		14-MAY-11	R2189232
Fluoride		0.064		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		7.09		0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)		7.09		0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		<0.0050		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		2.02		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		10.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon		1.8		1.0	mg/L		14-MAY-11	R2189232
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.24		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-10 TPN-35-S							
Sampled By: CLIENT on 01-MAY-11 @ 14:00							
Matrix: WATER							
Total Metals by ICP-MS							
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00280		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.68		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00052		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.706		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00068		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.440		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00064		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.114		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.667		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00787		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00252		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.54		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-10 TPN-35-S								
Sampled By: CLIENT on 01-MAY-11 @ 14:00								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved		0.655		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved		0.00013		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved		0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved		0.390		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved		0.00056		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved		0.091		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved		0.597		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved		0.00655		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		6.9		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)		8.5		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)		<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)		<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity								
Conductivity		20.4		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		6.91		0.10	pH units		10-MAY-11	R2187579
L1003082-11 TE-33-S								
Sampled By: CLIENT on 04-MAY-11 @ 09:45								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		0.23	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.73		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.0		1.0	mg/L		18-MAY-11	R2190393
Fluoride		0.078		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		11.5		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)		11.5		0.20	mg/L		12-MAY-11	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-11 TE-33-S							
Sampled By: CLIENT on 04-MAY-11 @ 09:45							
Matrix: WATER							
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0319		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate	2.67		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	6.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon	2.2		1.0	mg/L		18-MAY-11	R2190393
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.18		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0057		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	0.00025		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00352		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.88		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00063		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	1.05		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00071		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.568		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00092		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.262		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.784		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0136		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-11 TE-33-S							
Sampled By: CLIENT on 04-MAY-11 @ 09:45							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00024		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00321		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.59		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00054		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.905		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00014		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.535		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00081		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.235		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.669		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0123		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.5		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)	12.8		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)	<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)	<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity							
Conductivity	31.4		0.40	umhos/cm		11-MAY-11	R2188031
pH							
pH	7.19		0.10	pH units		11-MAY-11	R2188031

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-11	TE-33-S							
Sampled By:	CLIENT on 04-MAY-11 @ 09:45							
Matrix:	WATER							
L1003082-12	TE-33-INT							
Sampled By:	CLIENT on 04-MAY-11 @ 09:45							
Matrix:	WATER							
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		0.16	RRR	0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.71		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.0		1.0	mg/L		18-MAY-11	R2190393
Fluoride		0.074		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		11.6		0.30	mg/L		13-MAY-11	
Hardness (as CaCO3)		11.6		0.20	mg/L		13-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0281		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		0.0051		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		2.66		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		14.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		0.017		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon		2.3		1.0	mg/L		18-MAY-11	R2190393
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.23		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0117		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		0.00022		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00377		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		2.92		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00077		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total		0.000107		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total		<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total		1.05		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total		0.00093		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	11-MAY-11	12-MAY-11	R2188344

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-12 TE-33-INT							
Sampled By: CLIENT on 04-MAY-11 @ 09:45							
Matrix: WATER							
Total Metals by ICP-MS							
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.564		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00089		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.315		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.761		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0139		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00021		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00321		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	0.000011		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.70		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00061		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.885		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00023		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	10-MAY-11	12-MAY-11	R2188344
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.499		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00077		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.264		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.637		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0123		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-13	TE-33-D						
Sampled By:	CLIENT on 04-MAY-11 @ 09:45						
Matrix:	WATER						
Total Metals by ICP-MS							
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00350		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.86		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00097		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.990		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00076		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.525		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00087		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.333		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.704		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0138		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00313		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.75		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00054		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-13	TE-33-D							
Sampled By: CLIENT on 04-MAY-11 @ 09:45 Matrix: WATER Dissolved Metals by ICP-MS Iron (Fe)-Dissolved<0.100.10mg/L10-MAY-1111-MAY-11R2187813 Lead (Pb)-Dissolved<0.0000900.000090mg/L10-MAY-1111-MAY-11R2187813 Lithium (Li)-Dissolved<0.00200.0020mg/L10-MAY-1111-MAY-11R2187813 Magnesium (Mg)-Dissolved0.9780.010mg/L10-MAY-1111-MAY-11R2187813 Manganese (Mn)-Dissolved0.000140.00010mg/L10-MAY-1111-MAY-11R2187813 Molybdenum (Mo)-Dissolved0.000110.00010mg/L10-MAY-1111-MAY-11R2187813 Nickel (Ni)-Dissolved<0.00100.0010mg/L10-MAY-1111-MAY-11R2187813 Phosphorus (P)-Dissolved<0.100.10mg/L10-MAY-1111-MAY-11R2187813 Potassium (K)-Dissolved0.5030.020mg/L10-MAY-1111-MAY-11R2187813 Rubidium (Rb)-Dissolved0.000770.00020mg/L10-MAY-1111-MAY-11R2187813 Selenium (Se)-Dissolved<0.00100.0010mg/L10-MAY-1111-MAY-11R2187813 Silicon (Si)-Dissolved0.2960.050mg/L10-MAY-1111-MAY-11R2187813 Silver (Ag)-Dissolved<0.000100.00010mg/L10-MAY-1111-MAY-11R2187813 Sodium (Na)-Dissolved0.6610.020mg/L10-MAY-1111-MAY-11R2187813 Strontium (Sr)-Dissolved0.01260.00010mg/L10-MAY-1111-MAY-11R2187813 Tellurium (Te)-Dissolved<0.000200.00020mg/L10-MAY-1111-MAY-11R2187813 Thallium (Tl)-Dissolved<0.000100.00010mg/L10-MAY-1111-MAY-11R2187813 Thorium (Th)-Dissolved<0.000100.00010mg/L10-MAY-1111-MAY-11R2187813 Tin (Sn)-Dissolved<0.000200.00020mg/L10-MAY-1111-MAY-11R2187813 Titanium (Ti)-Dissolved<0.000200.00020mg/L10-MAY-1111-MAY-11R2187813 Tungsten (W)-Dissolved<0.000200.00020mg/L10-MAY-1111-MAY-11R2187813 Uranium (U)-Dissolved<0.000100.00010mg/L10-MAY-1111-MAY-11R2187813 Vanadium (V)-Dissolved<0.000200.00020mg/L10-MAY-1111-MAY-11R2187813 Zinc (Zn)-Dissolved<0.00200.0020mg/L10-MAY-1111-MAY-11R2187813 Zirconium (Zr)-Dissolved<0.000400.00040mg/L10-MAY-1111-MAY-11R2187813 pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO₃)10.61.0mg/L11-MAY-11R2188031 Bicarbonate (HCO₃)12.92.0mg/L11-MAY-11R2188031 Carbonate (CO₃)<0.600.60mg/L11-MAY-11R2188031 Hydroxide (OH)<0.400.40mg/L11-MAY-11R2188031 Conductivity Conductivity29.70.40umhos/cm10-MAY-11R2187579 pH pH6.900.10pH units10-MAY-11R2187579								
L1003082-14	TE-34-S							
Sampled By: CLIENT on 04-MAY-11 @ 10:30 Matrix: WATER Chlorophyll a Chlorophyll a, Pheophytin by fluorometry Chlorophyll a0.14RRR0.10ug/L19-MAY-1119-MAY-11R2191559 Phaeophytin a0.15RRR0.10ug/L19-MAY-1119-MAY-11R2191559 Miscellaneous Parameters Ammonia as N<0.0500.050mg/L18-MAY-11R2191016 Chloride0.740.20mg/L11-MAY-11R2188254 Iron (Fe)-Dissolved<0.0100.010mg/L16-MAY-11R2189706 Dissolved Organic Carbon2.21.0mg/L18-MAY-11R2191044 Fluoride0.0730.020mg/L11-MAY-11R2188254 Hardness (as CaCO₃)9.670.30mg/L12-MAY-11 Hardness (as CaCO₃)9.670.20mg/L12-MAY-11								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-14 TE-34-S							
Sampled By: CLIENT on 04-MAY-11 @ 10:30							
Matrix: WATER							
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0136		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate	2.60		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	12.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon	2.4		1.0	mg/L		18-MAY-11	R2191044
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.21		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00330		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.36		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00055		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.917		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00055		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.537		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00093		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.243		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.757		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0120		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-14 TE-34-S							
Sampled By: CLIENT on 04-MAY-11 @ 10:30							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00307		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.29		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00044		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.833		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00013		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.502		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00084		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.214		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.683		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0110		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	9.0		1.0	mg/L		11-MAY-11	R2188031
Bicarbonate (HCO3)	11.0		2.0	mg/L		11-MAY-11	R2188031
Carbonate (CO3)	<0.60		0.60	mg/L		11-MAY-11	R2188031
Hydroxide (OH)	<0.40		0.40	mg/L		11-MAY-11	R2188031
Conductivity							
Conductivity	26.5		0.40	umhos/cm		10-MAY-11	R2187579
pH							
pH	6.90		0.10	pH units		10-MAY-11	R2187579

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-14	TE-34-S							
Sampled By:	CLIENT on 04-MAY-11 @ 10:30							
Matrix:	WATER							
L1003082-15	TE-34-INT							
Sampled By:	CLIENT on 04-MAY-11 @ 10:30							
Matrix:	WATER							
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.11		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.68		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.0		1.0	mg/L		18-MAY-11	R2191044
Fluoride		0.070		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		9.60		0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)		9.60		0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0109		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		2.39		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		14.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon		2.1		1.0	mg/L		18-MAY-11	R2191044
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.33		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00342		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		2.36		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00048		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total		<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total		<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total		0.904		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total		0.00045		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-15 TE-34-INT Sampled By: CLIENT on 04-MAY-11 @ 10:30 Matrix: WATER							
Total Metals by ICP-MS							
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.548		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00101		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.236		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.789		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0121		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00274		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	0.000011		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.07		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.763		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00018		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.441		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00076		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.221		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.620		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0101		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-16 TE-34-D Sampled By: CLIENT on 04-MAY-11 @ 10:30 Matrix: WATER							
Total Metals by ICP-MS							
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00284		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.19		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00051		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.801		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00088		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.449		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00077		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.286		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.634		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0110		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00255		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.95		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00044		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-17 TE-35-S							
Sampled By: CLIENT on 04-MAY-11 @ 11:10							
Matrix: WATER							
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0084		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate	2.72		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	12.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total	0.011		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon	2.6		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids	<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity	0.24		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0088		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00312		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.28		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00072		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	0.000136		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.850		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00083		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.492		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00085		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.271		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.707		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0111		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-17 TE-35-S							
Sampled By: CLIENT on 04-MAY-11 @ 11:10							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00311		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.17		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00040		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.808		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00015		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.492		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00090		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.212		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.712		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0111		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.8		1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)	10.8		2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)	<0.60		0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)	<0.40		0.40	mg/L		12-MAY-11	R2188422
Conductivity							
Conductivity	27.3		0.40	umhos/cm		10-MAY-11	R2187579
pH							
pH	6.91		0.10	pH units		10-MAY-11	R2187579

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Version: FINAL

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-17	TE-35-S							
Sampled By:	CLIENT on 04-MAY-11 @ 11:10							
Matrix:	WATER							
L1003082-18	TPE-33-S							
Sampled By:	CLIENT on 04-MAY-11 @ 14:30							
Matrix:	WATER							
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.63		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.0		1.0	mg/L		19-MAY-11	R2192041
Fluoride		0.072		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		8.50		0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)		8.50		0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0296		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		11-MAY-11	R2187919
Sulfate		2.17		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		14.0		5.0	mg/L		11-MAY-11	R2187977
Iron (Fe)-Total		<0.010		0.010	mg/L		16-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon		2.0		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids		<2.0		2.0	mg/L		11-MAY-11	R2187977
Turbidity		0.23		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0067		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		0.00028		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00334		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		2.03		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00053		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total		<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total		<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total		0.831		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total		0.00051		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-18 TPE-33-S							
Sampled By: CLIENT on 04-MAY-11 @ 14:30							
Matrix: WATER							
Total Metals by ICP-MS							
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.505		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00076		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.147		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.694		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00906		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00028		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00330		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	1.87		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00043		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.737		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00016		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.474		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00069		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.118		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.592		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.00828		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-19 TPE-34-S							
Sampled By: CLIENT on 04-MAY-11 @ 11:45							
Matrix: WATER							
Total Metals by ICP-MS							
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	0.00047		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00341		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.25		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00057		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.908		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00039		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	0.00022		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.535		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00080		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.146		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.690		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0101		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0022		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00049		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00329		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.18		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00055		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-19	TPE-34-S							
Sampled By: CLIENT on 04-MAY-11 @ 11:45								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved		0.816		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved		0.00014		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved		0.00024		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved		0.506		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved		0.00076		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved		0.127		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved		0.632		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved		0.00924		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		9.1		1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)		11.1		2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)		<0.60		0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)		<0.40		0.40	mg/L		12-MAY-11	R2188422
Conductivity								
Conductivity		27.4		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		7.02		0.10	pH units		10-MAY-11	R2187579
L1003082-20	TPE-35-S							
Sampled By: CLIENT on 04-MAY-11 @ 15:35								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.13		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.74		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.1		1.0	mg/L		19-MAY-11	R2192041
Fluoride		0.084		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		10.2		0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)		10.2		0.30	mg/L		12-MAY-11	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-20 TPE-35-S							
Sampled By: CLIENT on 04-MAY-11 @ 15:35							
Matrix: WATER							
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0409		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		11-MAY-11	R2187919
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate	2.48		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	16.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total	<0.010		0.010	mg/L		17-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon	1.9		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids	<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity	0.22		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0074		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	0.00044		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00394		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.44		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00061		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.997		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00049		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.587		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00089		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.157		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.779		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0111		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-20 TPE-35-S							
Sampled By: CLIENT on 04-MAY-11 @ 15:35							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00044		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00354		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.42		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00073		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.946		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00024		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00018		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.560		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00081		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.125		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.703		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0102		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	9.6		1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)	11.7		2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)	<0.60		0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)	<0.40		0.40	mg/L		12-MAY-11	R2188422
Conductivity							
Conductivity	28.3		0.40	umhos/cm		10-MAY-11	R2187579
pH							
pH	7.00		0.10	pH units		10-MAY-11	R2187579

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-20	TPE-35-S							
Sampled By:	CLIENT on 04-MAY-11 @ 15:35							
Matrix:	WATER							
L1003082-21	SP-33-S							
Sampled By:	CLIENT on 03-MAY-11 @ 15:50							
Matrix:	WATER							
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.68		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon		2.1		1.0	mg/L		19-MAY-11	R2192041
Fluoride		0.078		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		12.0		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)		12.0		0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0340		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		2.59		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		20.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total		<0.010		0.010	mg/L		17-MAY-11	R2189929
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	11-MAY-11	25-MAY-11	R2193583
Total Organic Carbon		2.0		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids		<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity		0.22		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0085		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total		0.00038		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total		0.00355		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total		3.01		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total		0.00065		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total		<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total		<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total		<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total		1.08		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total		0.00047		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total		<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-21 SP-33-S							
Sampled By: CLIENT on 03-MAY-11 @ 15:50							
Matrix: WATER							
Total Metals by ICP-MS							
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.563		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00085		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.250		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.718		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0135		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	0.00027		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0024		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00037		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00323		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.72		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00061		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.979		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00011		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00019		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.511		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00075		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.201		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.645		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0123		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-22 SP-34-S							
Sampled By: CLIENT on 03-MAY-11 @ 17:00							
Matrix: WATER							
Total Metals by ICP-MS							
Barium (Ba)-Total	0.00353		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.93		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00067		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	1.04		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00052		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.561		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00085		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.230		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.724		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0131		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00040		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00315		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.66		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00058		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-22	SP-34-S							
Sampled By:	CLIENT on 03-MAY-11 @ 17:00							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Lithium (Li)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.949			0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00013			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00018			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.544			0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00073			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.204			0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.621			0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0119			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	10.7			1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)	13.1			2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)	<0.60			0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)	<0.40			0.40	mg/L		12-MAY-11	R2188422
Conductivity								
Conductivity	30.4			0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH	7.04			0.10	pH units		10-MAY-11	R2187579
L1003082-23	SP-35-S							
Sampled By:	CLIENT on 03-MAY-11 @ 15:00							
Matrix:	WATER							
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	<0.10			0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a	<0.10			0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N	<0.050			0.050	mg/L		18-MAY-11	R2191016
Chloride	0.63			0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	2.0			1.0	mg/L		19-MAY-11	R2192041
Fluoride	0.072			0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	11.5			0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)	11.5			0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050			0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0245			0.0050	mg/L		11-MAY-11	R2188254

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-23 SP-35-S							
Sampled By: CLIENT on 03-MAY-11 @ 15:00							
Matrix: WATER							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate	2.45		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	16.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total	<0.010		0.010	mg/L		17-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	24-MAY-11	R2193052
Total Organic Carbon	2.2		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids	<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity	0.21		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0063		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	0.00031		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00315		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.93		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00080		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	1.02		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00048		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.515		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.247		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.664		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0129		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-24 CREMP-MAY DUP-1							
Sampled By: CLIENT on 03-MAY-11							
Matrix: WATER							
Chlorophyll a							
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a	<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride	0.62		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	2.0		1.0	mg/L		19-MAY-11	R2192041
Fluoride	0.071		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	11.0		0.30	mg/L		12-MAY-11	
Hardness (as CaCO3)	11.0		0.20	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	0.0236		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate	2.44		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	16.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total	<0.010		0.010	mg/L		17-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	24-MAY-11	R2193052
Total Organic Carbon	2.0		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids	<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity	0.20		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0059		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	0.00029		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00295		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	2.80		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00067		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.977		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00044		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.490		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00077		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-24 CREMP-MAY DUP-1							
Sampled By: CLIENT on 03-MAY-11							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.234		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.638		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.0129		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	0.00031		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	0.00294		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	2.82		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00063		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	0.918		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	0.00017		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	0.506		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	0.00071		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	0.208		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	0.623		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	0.0125		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-24 CREMP-MAY DUP-1								
Sampled By: CLIENT on 03-MAY-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.5		1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)		12.8		2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)		<0.60		0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)		<0.40		0.40	mg/L		12-MAY-11	R2188422
Conductivity								
Conductivity		29.3		0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH		7.04		0.10	pH units		10-MAY-11	R2187579
L1003082-25 CREMP-MAY DUP-2								
Sampled By: CLIENT on 04-MAY-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	19-MAY-11	R2191559
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		18-MAY-11	R2191016
Chloride		0.63		0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		18-MAY-11	R2190809
Dissolved Organic Carbon		1.8		1.0	mg/L		19-MAY-11	R2192041
Fluoride		0.058		0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)		8.16		0.30	mg/L		16-MAY-11	
Hardness (as CaCO3)		8.16		0.20	mg/L		16-MAY-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N		0.0325		0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N		<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N		0.0076		0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total		<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate		2.16		0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids		14.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total		<0.010		0.010	mg/L		17-MAY-11	R2190217
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	11-MAY-11	24-MAY-11	R2193052
Total Organic Carbon		1.9		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids		<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity		0.20		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0176		0.0050	mg/L	11-MAY-11	13-MAY-11	R2189229
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Arsenic (As)-Total		0.00029		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Barium (Ba)-Total		0.00352		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Boron (B)-Total		<0.010		0.010	mg/L	11-MAY-11	13-MAY-11	R2189229

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-25 CREMP-MAY DUP-2							
Sampled By: CLIENT on 04-MAY-11							
Matrix: WATER							
Total Metals by ICP-MS							
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	13-MAY-11	R2189229
Calcium (Ca)-Total	2.13		0.10	mg/L	11-MAY-11	13-MAY-11	R2189229
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	13-MAY-11	R2189229
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	13-MAY-11	R2189229
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Copper (Cu)-Total	0.00061		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	13-MAY-11	R2189229
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	13-MAY-11	R2189229
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	13-MAY-11	R2189229
Magnesium (Mg)-Total	0.849		0.010	mg/L	11-MAY-11	13-MAY-11	R2189229
Manganese (Mn)-Total	0.00054		0.00030	mg/L	11-MAY-11	13-MAY-11	R2189229
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	13-MAY-11	R2189229
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	13-MAY-11	R2189229
Potassium (K)-Total	0.510		0.020	mg/L	11-MAY-11	13-MAY-11	R2189229
Rubidium (Rb)-Total	0.00080		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	13-MAY-11	R2189229
Silicon (Si)-Total	0.149		0.050	mg/L	11-MAY-11	13-MAY-11	R2189229
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	13-MAY-11	R2189229
Sodium (Na)-Total	0.714		0.030	mg/L	11-MAY-11	13-MAY-11	R2189229
Strontium (Sr)-Total	0.00950		0.00010	mg/L	11-MAY-11	13-MAY-11	R2189229
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	13-MAY-11	R2189229
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	13-MAY-11	R2189229
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Titanium (Ti)-Total	0.00024		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	13-MAY-11	R2189229
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	13-MAY-11	R2189229
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	13-MAY-11	R2189229
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	13-MAY-11	R2189229
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	13-MAY-11	R2189229
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0022		0.0020	mg/L	10-MAY-11	13-MAY-11	R2189229
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Arsenic (As)-Dissolved	0.00030		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Barium (Ba)-Dissolved	0.00342		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	13-MAY-11	R2189229
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	13-MAY-11	R2189229
Calcium (Ca)-Dissolved	1.99		0.050	mg/L	10-MAY-11	13-MAY-11	R2189229
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	13-MAY-11	R2189229
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Copper (Cu)-Dissolved	0.00046		0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	13-MAY-11	R2189229
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	10-MAY-11	13-MAY-11	R2189229
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	13-MAY-11	R2189229
Magnesium (Mg)-Dissolved	0.777		0.010	mg/L	10-MAY-11	13-MAY-11	R2189229
Manganese (Mn)-Dissolved	0.00011		0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-25	CREMP-MAY DUP-2							
Sampled By:	CLIENT on 04-MAY-11							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	10-MAY-11	13-MAY-11	R2189229
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	10-MAY-11	13-MAY-11	R2189229
Potassium (K)-Dissolved	0.491			0.020	mg/L	10-MAY-11	13-MAY-11	R2189229
Rubidium (Rb)-Dissolved	0.00073			0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	10-MAY-11	13-MAY-11	R2189229
Silicon (Si)-Dissolved	0.129			0.050	mg/L	10-MAY-11	13-MAY-11	R2189229
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Sodium (Na)-Dissolved	0.663			0.020	mg/L	10-MAY-11	13-MAY-11	R2189229
Strontium (Sr)-Dissolved	0.00885			0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	13-MAY-11	R2189229
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	13-MAY-11	R2189229
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	13-MAY-11	R2189229
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	10-MAY-11	13-MAY-11	R2189229
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	8.0			1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)	9.7			2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)	<0.60			0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)	<0.40			0.40	mg/L		12-MAY-11	R2188422
Conductivity								
Conductivity	24.1			0.40	umhos/cm		10-MAY-11	R2187579
pH								
pH	6.93			0.10	pH units		10-MAY-11	R2187579
L1003082-26	CREMP-MAY EB-1							
Sampled By:	CLIENT on 02-MAY-11							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.050			0.050	mg/L		18-MAY-11	R2191016
Chloride	<0.20			0.20	mg/L		11-MAY-11	R2188254
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	<1.0			1.0	mg/L		19-MAY-11	R2192041
Fluoride	<0.020			0.020	mg/L		11-MAY-11	R2188254
Hardness (as CaCO3)	<0.20			0.20	mg/L		12-MAY-11	
Hardness (as CaCO3)	<0.30			0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050			0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	<0.0050			0.0050	mg/L		11-MAY-11	R2188254
Nitrate and Nitrite as N	<0.070			0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010			0.0010	mg/L		11-MAY-11	R2188254
Phosphorus (P)-Total	<0.010			0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total	<0.0020			0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total Reactive	<0.0010			0.0010	mg/L		19-MAY-11	R2191533
Sulfate	<0.50			0.50	mg/L		11-MAY-11	R2188254
Total Dissolved Solids	<5.0			5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total	<0.010			0.010	mg/L		17-MAY-11	R2189929

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-26 CREMP-MAY EB-1							
Sampled By: CLIENT on 02-MAY-11							
Matrix: WATER							
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	24-MAY-11	R2193052
Total Organic Carbon	<1.0		1.0	mg/L		20-MAY-11	R2192041
Total Suspended Solids	<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity	0.25		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00163		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	0.00127		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	<0.020		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	<0.050		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	<0.030		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-26	CREMP-MAY EB-1							
Sampled By:	CLIENT on 02-MAY-11							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Calcium (Ca)-Dissolved	0.093			0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00137			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10			0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	0.000921			0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	<0.010			0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	0.00015			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	<0.020			0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	<0.050			0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	<0.020			0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	2.3			1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)	2.8			2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)	<0.60			0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)	<0.40			0.40	mg/L		12-MAY-11	R2188422
Conductivity								
Conductivity	1.14			0.40	umhos/cm		11-MAY-11	R2187529
pH								
pH	6.04			0.10	pH units		10-MAY-11	R2187579
L1003082-27	CREMP-MAY EB-2							
Sampled By:	CLIENT on 02-MAY-11							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	0.062			0.050	mg/L		18-MAY-11	R2191016
Chloride	<0.20			0.20	mg/L		12-MAY-11	R2189270
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		16-MAY-11	R2189706
Dissolved Organic Carbon	<1.0			1.0	mg/L		19-MAY-11	R2192041
Fluoride	<0.020			0.020	mg/L		12-MAY-11	R2189270
Hardness (as CaCO3)	8.28			0.20	mg/L		12-MAY-11	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-27 CREMP-MAY EB-2							
Sampled By: CLIENT on 02-MAY-11							
Matrix: WATER							
Hardness (as CaCO3)	8.28		0.30	mg/L		12-MAY-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	11-MAY-11	11-MAY-11	R2188046
Nitrate-N	<0.0050		0.0050	mg/L		12-MAY-11	R2189270
Nitrate and Nitrite as N	<0.070		0.070	mg/L		10-MAY-11	
Nitrite-N	<0.0010		0.0010	mg/L		12-MAY-11	R2189270
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		19-MAY-11	R2191442
Phosphorus (P)-Total	<0.010		0.010	mg/L		11-MAY-11	R2187514
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		19-MAY-11	R2191533
Sulfate	<0.50		0.50	mg/L		12-MAY-11	R2189270
Total Dissolved Solids	<5.0		5.0	mg/L		12-MAY-11	R2188520
Iron (Fe)-Total	<0.010		0.010	mg/L		17-MAY-11	R2189929
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	11-MAY-11	24-MAY-11	R2193052
Total Organic Carbon	1.2		1.0	mg/L		19-MAY-11	R2192041
Total Suspended Solids	<2.0		2.0	mg/L		12-MAY-11	R2188520
Turbidity	0.57		0.10	NTU		10-MAY-11	R2187180
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0066		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Arsenic (As)-Total	0.00027		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Barium (Ba)-Total	0.00348		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Boron (B)-Total	<0.010		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-MAY-11	11-MAY-11	R2187920
Calcium (Ca)-Total	1.96		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Copper (Cu)-Total	0.00083		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Iron (Fe)-Total	<0.10		0.10	mg/L	11-MAY-11	11-MAY-11	R2187920
Lead (Pb)-Total	<0.000090		0.000090	mg/L	11-MAY-11	11-MAY-11	R2187920
Lithium (Li)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Magnesium (Mg)-Total	0.821		0.010	mg/L	11-MAY-11	11-MAY-11	R2187920
Manganese (Mn)-Total	0.00048		0.00030	mg/L	11-MAY-11	11-MAY-11	R2187920
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-MAY-11	11-MAY-11	R2187920
Phosphorus (P)-Total	<0.20		0.20	mg/L	11-MAY-11	11-MAY-11	R2187920
Potassium (K)-Total	0.494		0.020	mg/L	11-MAY-11	11-MAY-11	R2187920
Rubidium (Rb)-Total	0.00076		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Selenium (Se)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Silicon (Si)-Total	0.148		0.050	mg/L	11-MAY-11	11-MAY-11	R2187920
Silver (Ag)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Sodium (Na)-Total	0.690		0.030	mg/L	11-MAY-11	11-MAY-11	R2187920
Strontium (Sr)-Total	0.00902		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Thorium (Th)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920
Tin (Sn)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Tungsten (W)-Total	<0.0010		0.0010	mg/L	11-MAY-11	11-MAY-11	R2187920
Uranium (U)-Total	<0.00010		0.00010	mg/L	11-MAY-11	11-MAY-11	R2187920

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-27 CREMP-MAY EB-2							
Sampled By: CLIENT on 02-MAY-11							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	11-MAY-11	11-MAY-11	R2187920
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	11-MAY-11	11-MAY-11	R2187920
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	11-MAY-11	11-MAY-11	R2187920
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Boron (B)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Cadmium (Cd)-Dissolved	0.000012		0.000010	mg/L	10-MAY-11	11-MAY-11	R2187813
Calcium (Ca)-Dissolved	0.079		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Copper (Cu)-Dissolved	0.00143		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Lead (Pb)-Dissolved	0.000971		0.000090	mg/L	10-MAY-11	11-MAY-11	R2187813
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	10-MAY-11	11-MAY-11	R2187813
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	10-MAY-11	11-MAY-11	R2187813
Potassium (K)-Dissolved	<0.020		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	10-MAY-11	11-MAY-11	R2187813
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	10-MAY-11	11-MAY-11	R2187813
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	10-MAY-11	11-MAY-11	R2187813
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	10-MAY-11	11-MAY-11	R2187813
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	10-MAY-11	11-MAY-11	R2187813
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	10-MAY-11	11-MAY-11	R2187813
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	2.3		1.0	mg/L		12-MAY-11	R2188422
Bicarbonate (HCO3)	2.8		2.0	mg/L		12-MAY-11	R2188422
Carbonate (CO3)	<0.60		0.60	mg/L		12-MAY-11	R2188422
Hydroxide (OH)	<0.40		0.40	mg/L		12-MAY-11	R2188422
Conductivity							
Conductivity	2.06		0.40	umhos/cm		11-MAY-11	R2187529
pH							
pH	5.78		0.10	pH units		10-MAY-11	R2187579

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-27	CREMP-MAY EB-2							
Sampled By: CLIENT on 02-MAY-11								
Matrix: WATER								
L1003082-28	INUG-A							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
L1003082-29	INUG-B							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
L1003082-30	INUG-C							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.12		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
L1003082-31	INUG-D							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.18		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
L1003082-32	INUG-E							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
L1003082-33	INUG-F							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								
Chlorophyll a								
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
Phaeophytin a		<0.10		0.10	ug/L	19-MAY-11	20-MAY-11	R2191806
L1003082-34	INUG-G							
Sampled By: CLIENT on 30-APR-11								
Matrix: WATER								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1003082-34 INUG-G Sampled By: CLIENT on 30-APR-11 Matrix: WATER Chlorophyll a Chlorophyll a, Pheophytin by fluorometry Chlorophyll a Pheophytin a	 <0.10 0.11		 0.10 0.10	 ug/L ug/L	 19-MAY-11 19-MAY-11	 20-MAY-11 20-MAY-11	 R2191806 R2191806

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

ALK-TOT-WP Water Alkalinity APHA 2320B

Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO₃⁻ and H₂CO₃ endpoints indicated electrometrically.

C-DIS-ORG-WP Water Dissolved Organic Carbon APHA 5310 B-INSTRUMENTAL-WP

This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.

The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.

TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.

C-TOT-ORG-WP Water Total Organic Carbon APHA 5310 B-INSTRUMENTAL-WP

This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.

The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.

TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.

CHL,PHEO-FLUORO-WP Water Chlorophyll a, Pheophytin by fluorometry EPA 445.0

Chlorophyll a is filtered from the sample and extracted with 90% (v/v) acetone. The sample is analyzed fluorometrically. The extract is then acidified, converting chlorophyll a to pheophytin a. The sample is analyzed fluorometrically again after acidification. The chlorophyll a concentration is determined from the decrease upon acidification.

CL-L-IC-WP Water Chloride EPA 300.1 IC

This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-HARDNESS-DIS-WP Water Hardness Calculated HARDNESS CALCULATED

ETL-HARDNESS-TOT-WP Water Hardness Calculated HARDNESS CALCULATED

F-L-IC-WP Water Fluoride EPA 300.1 IC

This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".

FE-D-L-ICP-ED Water Diss. Fe in Water by ICPOES (Low Level) APHA 3120 B-ICP-OES

FE-T-L-ICP-ED Water Total Fe in Water by ICPOES (Low Level) APHA 3120 B-ICP-OES

HG-T-CVAF-WP Water Mercury Total EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-D-L-MS-WP Water Dissolved Metals by ICP-MS U.S. EPA 200.8-DL

Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	Quickchem method 10-107-06-2-E Lachat
Samples are digested with a sulphuric acid solution, cooled, diluted with water, and analyzed for ammonia. Total Kjeldahl nitrogen is the sum of free-ammonia and organic nitrogen compounds which are converted to ammonium sulphate through this digestion process. Analysis is performed by Flow Injection Analysis (FIA). The pH of the digested sample is raised to a known, basic pH by neutralization with a concentrated buffer solution. This neutralization converts the ammonium cation to ammonia. The ammonia produced is heated with salicylate and hypochlorite to produce blue colour which is proportional to the ammonia concentration.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 LR
The residue retained by a prepared 1.5 um Whatman 934-AH glass microfibre filter dried at 105 degrees C. A method detection limit of 2 mg/L can be achieved when 500 mL of sample is used.			
TURBIDITY-WP	Water	Turbidity	APHA, 1998, 2130B
A strong light beam is sent through a transparent tube containing the sample. Light that is reflected at 90 degrees to the axis by suspended particles is detected by the photocell. The electrical response is proportional to the sample turbidity.			
** ALS test methods may incorporate modifications from specified reference methods to improve performance.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

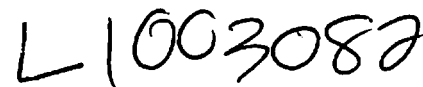
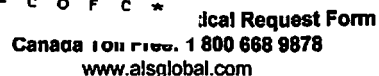
D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

**Environmental Division**

COC #

Page 1 of 4

Report to:			Report Format / Distribution			Service Requested:																
Company: Agnico-Eagle Mines Ltd.			☒ Standard ☐ Other			☒ Regular Service (Default)																
Contact: Ryan VanEngen			☒ PDF ☒ Excel ☐ Fax			☐ Rush Service (2-3 Days)																
Address: Meadowbank Division PO Box 540 Baker Lake Nun.			Email 1: rvanengen@agnico-eagle.com			☐ Priority Service (1 Day or ASAP)																
			Email 2: mtheriault@agnico-eagle.com			☐ Emergency Service (<1 Day / Wkend) - Contact ALS																
Phone: 867 793 4610x8759 Fax:						Analysis Request																
Invoice To: ☒ Same as Report			Indicate Bottles: Filtered / Preserved (F/P) →				P	P	P					P	F							
Company: Agnico-Eagle Mining Ltd.			Client / Project Information:			CI, F, NO2, NO3, SO4 TOC/DOC Metals & Hg (total) Dissolved Metals P-Total & Ortho pH, EC, Alkalinity Turbidity TSS, TDS TKN, NH3 Chloro-a Hazardous? Highly Contaminated? Number of Containers																
Contact: Accounts Payable-Meadowbank Division			Job #: CREMP																			
Address: email electronic invoice to rvanengen@agnico-eagle.com			PO/AFE:																			
Sample			Legal Site Description:																			
Phone: Fax:			Quote #: Q21514																			
Lab Work Order # (lab use only)			ALS Contact: Christine Herrod			Sampler (Initials):																
Sample #	Sample Identification (This description will appear on the report)		Date dd-mm-yy	Time hh:mm	Sample Type (Select from drop-down list)	CI	F	NO2	NO3	SO4	TOC/DOC	Metals & Hg (total)	Dissolved Metals	P-Total & Ortho	pH, EC, Alkalinity	Turbidity	TSS, TDS	TKN, NH3	Chloro-a	Hazardous?	Highly Contaminated?	Number of Containers
	INUG-21-S ✓		30-Apr-11	10:00	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	INUG-21-INT ✓		30-Apr-11	10:05	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	INUG-21-D ✓		30-Apr-11	10:15	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	INUG-22-S ✓		30-Apr-11	11:00	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	INUG-22-INT ✓		30-Apr-11	11:10	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	INUG-22-D ✓		30-Apr-11	11:20	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	INUG-23-S ✓		30-Apr-11	12:20	Water	X	X	X	X	X	X	X	X	X	X	X	X	X				
	TPN-33-S ✓		01-May-11	16:10	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	TPN-34-S ✓		01-May-11	15:10	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	TPN-35-S ✓		01-May-11	14:00	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Guidelines / Regulations					Special Instructions / Hazardous Details																	
					Please use "low range anion" analysis																	
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																						
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																						
Relinquished By:	S. Gaudreault	Date & Time:	5/1/2011	Received By:	Am 10m	Date & Time:	1005	Sample Condition (lab use only)														
Relinquished By:		Date & Time:		Received By:		Date & Time:		Temperature	9.0	Samples Received in Good Condition? Y / N (if no provided details)												



form

COC #

Page 2 of 4

Report to:			Report Format / Distribution			Service Requested:													
Company: Agnico-Eagle Mines Ltd.						Regular Service (Default)													
Contact: Ryan VanEngen						Rush Service (2-3 Days)													
Address: Meadowbank Division PO Box 540 Baker Lake Nun.			Email 1: rVanengen@agnico-eagle.com			Priority Service (1 Day or ASAP)													
			Email 2: mtheriault@agnico-eagle.com			Emergency Service (<1 Day / Wkend) - Contact ALS													
Phone: 867 793 4610x6759 Fax:						Analysis Request													
Invoice To:			Indicate Bottles: Filtered / Preserved (F/P) →→			P	P	P						P	F				
Company: Agnico-Eagle Mining Ltd.			Client / Project Information:			Cl, F, NO2, NO3, SO4	TOC/DOC	Metals & Hg (total)	Dissolved Metals	P-Total & Ortho	pH, EC, Alkalinity	Turbidity	TSS, TDS	TKN, NH3	Chloro-a	Hazardous?	Highly Contaminated?	Number of Containers	
Contact: Accounts Payable-Meadowbank Division			Job #: CREMP																
Address: email electronic invoice to rvanengen@agnico-eagle.com			PO/AFE:																
Sample			Legal Site Description:																
Phone: Fax:			Quote #: Q21514																
Lab Work Order # (lab use only)		ALS Contact: Chrisine Herrod		Sampler (Initials):															
Sample #	Sample Identification (This description will appear on the report)		Date dd-mmm-yy	Time hh:mm	Sample Type (Select from drop-down list)														
	TE-33-S ✓		04-May-11	9:45	Water	X	X	X	X	X	X	X	X	X	X				
	TE-33-INT ✓		04-May-11	9:45	Water	X	X	X	X	X	X	X	X	X	X				
	TE-33-D ✓		04-May-11	9:45	Water	X	X	X	X	X	X	X	X	X	X				
	TE-34-S ✓		04-May-11	10:30	Water	X	X	X	X	X	X	X	X	X	X				
	TE-34-INT ✓		04-May-11	10:30	Water	X	X	X	X	X	X	X	X	X	X				
	TE-34-D ✓		04-May-11	10:30	Water	X	X	X	X	X	X	X	X	X	X				
	TE-35-S ✓		04-May-11	11:10	Water	X	X	X	X	X	X	X	X	X	X				
	TPE-33-S ✓		04-May-11	14:30	Water	X	X	X	X	X	X	X	X	X	X				
	TPE-34-S ✓		04-May-11	11:45	Water	X	X	X	X	X	X	X	X	X	X				
	TPE-35-S ✓		04-May-11	15:35	Water	X	X	X	X	X	X	X	X	X	X				
Guidelines / Regulations			Special Instructions / Hazardous Details																
			Please use "low range anion" analysis																
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																			
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																			
Relinquished By:	S. Gaudresult	Date & Time:	5/1/2011	Received By:		Date & Time:		Sample Condition (lab use only)											
Relinquished By:		Date & Time:		Received By:		Date & Time:		Temperature	Samples Received In Good Condition? Y / N (If no provided details)										



Quest Form
9878

COC # _____

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Report to:			Report Format / Distribution			Service Requested:													
Company: Agnico-Eagle Mines Ltd.						Regular Service (Default)													
Contact: Ryan VanEngen						Rush Service (2-3 Days)													
Address: Meadowbank Division PO Box 540 Baker Lake Nun.			Email 1: rVanengen@agnico-eagle.com			Priority Service (1 Day or ASAP)													
			Email 2: mtheriault@agnico-eagle.com			Emergency Service (<1 Day / Wkend) - Contact ALS													
Phone: 867 793 4610x6759 Fax:						Analysis Request													
Invoice To:			Indicate Bottles: Filtered / Preserved (F/P) →→			P	P	P					P	F					
Company: Agnico-Eagle Mining Ltd.			Client / Project Information:			Cl, F, NO2, NO3, SO4	TOC/DOC	Metals & Hg (total)	Dissolved Metals	P-Total & Ortho	pH, EC, Alkalinity	Turbidity	TSS, TDS	TKN, NH3	Chloro-a	Hazardous?	Highly Contaminated?	Number of Containers	
Contact: Accounts Payable-Meadowbank Division			Job #: CREMP																
Address: email electronic invoice to rvanengen@agnico-eagle.com			PO/AFE:																
Sample			Legal Site Description:																
Phone: Fax:			Quote #: Q21514																
Lab Work Order # (lab use only)			ALS Contact: Christine Herrod			Sampler (Initials):													
Sample #	Sample Identification (This description will appear on the report)		Date dd-mmm-yy	Time hh:mm	Sample Type (Select from drop-down list)														
	SP-33-S ✓		03-May-11	15:50	Water	X	X	X	X	X	X	X	X	X	X	X			
	SP-34-S ✓		03-May-11	17:00	Water	X	X	X	X	X	X	X	X	X	X	X			
	SP-35-S ✓		03-May-11	15:00	Water	X	X	X	X	X	X	X	X	X	X	X			
	CREMP-May DUP-1 ✓		03-May-11		Water	X	X	X	X	X	X	X	X	X	X	X			
	CREMP-May DUP-2 ✓		04-May-11		Water	X	X	X	X	X	X	X	X	X	X	X			
	CREMP-May EB-1 ✓		02-May-11		Water	X	X	X	X	X	X	X	X	X	X				
	CREMP-May EB-2 ✓		02-May-11		Water	X	X	X	X	X	X	X	X	X	X				
	INUG-A		30-Apr-11		Water											X			
	INUG-B		30-Apr-11		Water											X			
	INUG-C		30-Apr-11		Water											X			
Guidelines / Regulations					Special Instructions / Hazardous Details														
					Please use "low range anion" analysis														
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																			
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																			
Relinquished By:	S. Gaudreault	Date & Time:	5/4/2011	Received By:		Date & Time:		Sample Condition (lab use only)											
Relinquished By:		Date & Time:		Received By:		Date & Time:		Temperature	Samples Received in Good Condition? Y / N (if no provided details)										





Agnico-Eagle - Meadowbank Division
ATTN: RYAN VANENGEN
MEADOWBANK DIV.
P.O. BOX 540
BAKER LAKE NU X0X 0A0

Date Received: 05-AUG-11
Report Date: 31-AUG-11 14:15 (MT)
Version: FINAL

Client Phone: 604-622-6527

Certificate of Analysis

Lab Work Order #: L1040679
Project P.O. #: NOT SUBMITTED
Job Reference: CREMP
C of C Numbers:
Legal Site Desc:

Robert S. Kitlar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-1 JUL INUG-24-S							
Sampled By: CLIENT on 30-JUL-11 @ 14:50							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	0.62		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	2.2		1.0	mg/L		11-AUG-11	R2234173
Fluoride	0.054		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	4.94		0.20	mg/L		09-AUG-11	
Hardness (as CaCO3)	4.94		0.30	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	0.0047		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.290		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	0.79		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	<5.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.012		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	2.5		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.25		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0095		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Barium (Ba)-Total	0.00200		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	1.07		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00047		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	0.606		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00387		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.357		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00051		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-1 JUL INUG-24-S							
Sampled By: CLIENT on 30-JUL-11 @ 14:50							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.157		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	0.485		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.00603		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0041		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00194		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.01		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.589		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00148		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.333		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00046		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.142		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.477		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00571		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-2 JUL INUG-25-S							
Sampled By: CLIENT on 30-JUL-11 @ 15:30							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	1.14		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00047		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	0.00140		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	0.652		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00376		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.380		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00054		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Silicon (Si)-Total	0.165		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	0.522		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.00648		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	0.00025		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0058		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00202		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.05		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	0.000259		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.609		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-3 JUL BAP-15 S							
Sampled By: CLIENT on 25-JUL-11 @ 10:35							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	0.0073		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.309		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.22		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	46.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.024		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	3.2		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.29		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0194		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Barium (Ba)-Total	0.0182		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	2.84		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00045		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	1.93		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00355		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.683		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00086		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Silicon (Si)-Total	0.188		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	7.69		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.0228		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	0.00035		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-3 JUL BAP-15 S							
Sampled By: CLIENT on 25-JUL-11 @ 10:35							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0048		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.0180		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.66		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00033		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	1.80		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00107		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.607		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00079		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.164		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	6.85		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0207		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	2.03		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.45		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.0		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	12.2		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	70.9		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.22		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-4 JUL BAP-16 S							
Sampled By: CLIENT on 25-JUL-11 @ 12:55							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	11.8		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	3.1		1.0	mg/L		11-AUG-11	R2234173
Fluoride	0.050		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	14.0		0.30	mg/L		09-AUG-11	
Hardness (as CaCO3)	14.0		0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	0.0079		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	0.0059		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.311		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.04		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	44.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.017		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	3.2		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.30		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0144		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Barium (Ba)-Total	0.0159		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	2.45		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00040		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	1.59		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00288		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.573		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00077		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-4 JUL BAP-16 S							
Sampled By: CLIENT on 25-JUL-11 @ 12:55							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.166		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	6.08		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.0194		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	0.00033		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0045		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.0158		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.67		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00031		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	1.79		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00115		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.603		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00075		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.163		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	6.05		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0199		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-5 JUL BBD-15 S							
Sampled By: CLIENT on 25-JUL-11 @ 16:05							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	2.48		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00034		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	1.10		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00331		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.398		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00080		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Silicon (Si)-Total	0.156		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	0.911		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.0175		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0043		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.0181		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.45		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00029		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	1.09		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-6 JUL BBD-16 S							
Sampled By: CLIENT on 25-JUL-11 @ 15:30							
Matrix: WATER							
Phosphorus (P)-Total	0.0439		0.0020	mg/L		23-AUG-11	R2239913
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		18-AUG-11	R2236632
Phosphorus (P)-Total Reactive	0.014		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.297		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	0.76		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	22.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.015		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	3.2		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.36		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0129		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Barium (Ba)-Total	0.0185		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	2.57		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00036		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	1.15		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00342		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.419		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00082		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Silicon (Si)-Total	0.169		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	0.987		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.0179		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	0.00029		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-6 JUL BBD-16 S							
Sampled By: CLIENT on 25-JUL-11 @ 15:30							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0047		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.0180		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.43		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00028		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	1.09		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00121		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.389		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00072		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.151		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.777		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0163		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	1.40		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.38		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.4		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	12.6		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	30.4		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.20		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-7 JUL BPJ-15 S							
Sampled By: CLIENT on 25-JUL-11 @ 15:05							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	1.72		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	3.4		1.0	mg/L		11-AUG-11	R2234173
Fluoride	0.053		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	10.5		0.30	mg/L		09-AUG-11	
Hardness (as CaCO3)	10.5		0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	0.0104		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	0.0059		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.290		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	0.67		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	20.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.018		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	3.3		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.38		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0135		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Barium (Ba)-Total	0.0159		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231251
Calcium (Ca)-Total	2.16		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Copper (Cu)-Total	0.00201		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231251
Lead (Pb)-Total	0.000106		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231251
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Magnesium (Mg)-Total	0.987		0.010	mg/L	08-AUG-11	08-AUG-11	R2231251
Manganese (Mn)-Total	0.00336		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231251
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231251
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231251
Potassium (K)-Total	0.394		0.020	mg/L	08-AUG-11	08-AUG-11	R2231251
Rubidium (Rb)-Total	0.00073		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-7 JUL BPJ-15 S							
Sampled By: CLIENT on 25-JUL-11 @ 15:05							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.157		0.050	mg/L	08-AUG-11	08-AUG-11	R2231251
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Sodium (Na)-Total	1.00		0.030	mg/L	08-AUG-11	08-AUG-11	R2231251
Strontium (Sr)-Total	0.0152		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Titanium (Ti)-Total	0.00022		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231251
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231251
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231251
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231251
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231251
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0049		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.0181		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.40		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00031		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	1.11		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00134		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.396		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00073		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.158		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	1.01		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0164		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-7 JUL BPJ-15 S Sampled By: CLIENT on 25-JUL-11 @ 15:05 Matrix: WATER Dissolved Metals by ICP-MS Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved Chlorophyll a, Pheophytin by fluorometry Chlorophyll a Phaeophytin a pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH	<0.0020 <0.00040 1.02 0.42 10.3 12.6 <0.60 <0.40 27.2 7.24		0.0020 0.00040 0.10 0.10 1.0 2.0 0.60 0.40 0.40 0.10	mg/L mg/L ug/L ug/L mg/L mg/L mg/L mg/L umhos/cm pH units	05-AUG-11 05-AUG-11 16-AUG-11 16-AUG-11 05-AUG-11 05-AUG-11	08-AUG-11 08-AUG-11 17-AUG-11 17-AUG-11 13-AUG-11 13-AUG-11 13-AUG-11 13-AUG-11 05-AUG-11 05-AUG-11	R2231274 R2231274 R2236249 R2236249 R2234042 R2234042 R2234042 R2234042 R2230218 R2230218
L1040679-8 JUL BPJ-16 S Sampled By: CLIENT on 25-JUL-11 @ 14:20 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Hardness (as CaCO3) Mercury (Hg)-Total Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Silica, Reactive (as SiO2) Sulfate Total Dissolved Solids Iron (Fe)-Total Total Kjeldahl Nitrogen Total Organic Carbon Total Suspended Solids Turbidity Total Metals by ICP-MS Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total Barium (Ba)-Total Beryllium (Be)-Total	<0.050 <0.10 4.48 <0.010 3.3 0.055 10.7 10.7 <0.000050 0.0102 <0.070 <0.0010 <0.010 0.0056 <0.0010 <0.010 <0.010 0.290 1.06 26.0 0.014 <0.20 3.3 <2.0 0.28 0.0100 <0.00020 <0.00020 0.0171 <0.00020		0.050 0.10 0.20 0.010 1.0 0.020 0.30 0.20 0.000050 0.0050 0.070 0.0010 0.010 0.0020 0.0010 0.010 0.0050 0.50 5.0 0.010 0.20 1.0 2.0 0.10 0.0050 0.00020 0.00020 0.00020 0.00020	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	09-AUG-11 09-AUG-11 05-AUG-11 08-AUG-11 08-AUG-11 08-AUG-11 08-AUG-11 08-AUG-11	15-AUG-11 05-AUG-11 05-AUG-11 11-AUG-11 11-AUG-11 05-AUG-11 09-AUG-11 09-AUG-11 09-AUG-11 05-AUG-11 05-AUG-11 05-AUG-11 09-AUG-11 16-AUG-11 09-AUG-11 08-AUG-11 11-AUG-11 05-AUG-11 10-AUG-11 12-AUG-11 07-AUG-11 11-AUG-11 10-AUG-11 05-AUG-11 08-AUG-11 08-AUG-11 08-AUG-11 08-AUG-11 08-AUG-11	R2234880 R2230817 R2230817 R2232962 R2234173 R2230817 R2231461 R2230817 R2230817 R2231657 R2235732 R2231926 R2230829 R2232767 R2230817 R2232587 R2234214 R2230944 R2234173 R2232587 R2231211 R2231387 R2231387 R2231387 R2231387 R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-8 JUL BPJ-16 S							
Sampled By: CLIENT on 25-JUL-11 @ 14:20							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	2.26		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00034		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	1.24		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00321		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.408		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.153		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	2.44		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.0167		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0049		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.0172		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.55		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	1.31		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-8 JUL BPJ-16 S								
Sampled By: CLIENT on 25-JUL-11 @ 14:20								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved	0.00155			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.407			0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00077			0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.163			0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	2.49			0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0178			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	0.88			0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.39			0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	10.4			1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	12.6			2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60			0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40			0.40	mg/L		13-AUG-11	R2234042
Conductivity								
Conductivity	37.1			0.40	umhos/cm		05-AUG-11	R2230218
pH								
pH	7.26			0.10	pH units		05-AUG-11	R2230218
L1040679-9 JUL PDL-15 S								
Sampled By: CLIENT on 30-JUL-11 @ 11:02								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N	<0.050			0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10			0.10	mg/L		05-AUG-11	R2230817
Chloride	0.55			0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	2.0			1.0	mg/L		12-AUG-11	R2234173
Fluoride	0.034			0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	8.50			0.30	mg/L		09-AUG-11	
Hardness (as CaCO3)	8.50			0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050			0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050			0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070			0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010			0.0010	mg/L		05-AUG-11	R2230817

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-9 JUL PDL-15 S							
Sampled By: CLIENT on 30-JUL-11 @ 11:02							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.282		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	1.44		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	2.0		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.21		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0055		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00198		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	2.11		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00057		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.787		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00156		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.328		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00042		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.151		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.486		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00846		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-9 JUL PDL-15 S							
Sampled By: CLIENT on 30-JUL-11 @ 11:02							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0023		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00192		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.10		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.719		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00090		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.333		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00039		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.148		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.468		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00825		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.60		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.21		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.5		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	10.4		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	22.3		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.25		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-10 JUL PDL-16 S							
Sampled By: CLIENT on 30-JUL-11 @ 12:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	0.54		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	1.9		1.0	mg/L		11-AUG-11	R2234173
Fluoride	0.034		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	8.55		0.20	mg/L		09-AUG-11	
Hardness (as CaCO3)	8.55		0.30	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.287		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	1.44		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	2.0		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.20		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0054		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00202		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	2.17		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00053		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.760		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00157		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.340		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00043		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-10 JUL PDL-16 S							
Sampled By: CLIENT on 30-JUL-11 @ 12:00							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.152		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.488		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00869		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0027		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00192		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.11		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00049		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.736		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00095		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.338		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00040		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.153		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.476		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00822		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-10	JUL PDL-16 S							
Sampled By: CLIENT on 30-JUL-11 @ 12:00								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.51		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a		0.18		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		8.8		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)		10.7		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)		<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)		<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity								
Conductivity		21.1		0.40	umhos/cm		05-AUG-11	R2230218
pH								
pH		7.22		0.10	pH units		05-AUG-11	R2230218
L1040679-11	JUL SP-36 S							
Sampled By: CLIENT on 26-JUL-11 @ 17:50								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)		<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride		0.50		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon		1.9		1.0	mg/L		11-AUG-11	R2234173
Fluoride		0.056		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)		10.4		0.20	mg/L		09-AUG-11	
Hardness (as CaCO3)		10.4		0.30	mg/L		09-AUG-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N		0.0108		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N		<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total		<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)		0.485		0.0050	mg/L		11-AUG-11	R2232767
Sulfate		2.20		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids		14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total		0.015		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon		2.0		1.0	mg/L		11-AUG-11	R2234173
Total Suspended Solids		<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity		0.27		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0101		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total		0.00037		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total		0.00249		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-11 JUL SP-36 S							
Sampled By: CLIENT on 26-JUL-11 @ 17:50							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	2.66		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00076		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.911		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00193		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.411		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00068		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.263		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.548		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.0126		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0055		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00037		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00244		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.69		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00069		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.875		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-12 JUL SP-37 S							
Sampled By: CLIENT on 26-JUL-11 @ 16:20							
Matrix: WATER							
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.524		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.25		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	16.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.016		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	2.7		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.29		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0117		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	0.00034		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00251		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	2.57		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00075		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.875		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00190		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.404		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00067		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.248		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.510		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.0126		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	0.00022		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-12 JUL SP-37 S							
Sampled By: CLIENT on 26-JUL-11 @ 16:20							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0051		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00031		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00248		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.81		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00067		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.907		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00129		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.423		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00065		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.266		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.504		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0124		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.28		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.10		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.5		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	12.8		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	26.0		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.31		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-13 JUL TE-36 S							
Sampled By: CLIENT on 29-JUL-11 @ 16:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	0.48		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	1.8		1.0	mg/L		12-AUG-11	R2234173
Fluoride	0.055		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	7.97		0.30	mg/L		09-AUG-11	
Hardness (as CaCO3)	7.97		0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.433		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	1.81		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.013		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	05-AUG-11	07-AUG-11	R2230944
Total Organic Carbon	1.9		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.35		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0108		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00229		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	2.02		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00056		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.715		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00244		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.371		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00067		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-13 JUL TE-36 S							
Sampled By: CLIENT on 29-JUL-11 @ 16:00							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.228		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.521		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00976		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	0.00022		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0181		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00220		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.01		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00057		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.699		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00155		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.379		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00063		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.225		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.509		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00945		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-14 JUL TE-37 S							
Sampled By: CLIENT on 29-JUL-11 @ 15:30							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.96		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00054		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.716		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00222		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.372		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00066		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.228		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.510		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00963		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	0.00024		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0041		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00220		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.07		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00050		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.706		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-15 JUL TEFF-15 S							
Sampled By: CLIENT on 29-JUL-11 @ 14:05							
Matrix: WATER							
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		09-AUG-11	R2231926
Silica, Reactive (as SiO2)	0.293		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	1.70		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	<5.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	1.5		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.22		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0062		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00210		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.30		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00036		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.555		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00179		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.329		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00069		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.151		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.509		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00720		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-15 JUL TEFF-15 S							
Sampled By: CLIENT on 29-JUL-11 @ 14:05							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0039		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00211		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.41		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00034		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.565		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00119		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.354		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00064		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.158		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.517		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00701		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.33		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.11		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.5		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	7.9		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	16.3		0.40	umhos/cm		10-AUG-11	R2234014
pH							
pH	7.06		0.10	pH units		05-AUG-11	R2230218

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-16 JUL TEFF-16 S							
Sampled By: CLIENT on 29-JUL-11 @ 15:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	0.50		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	1.4		1.0	mg/L		12-AUG-11	R2234173
Fluoride	0.054		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	5.64		0.30	mg/L		09-AUG-11	
Hardness (as CaCO3)	5.64		0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	0.0013		0.0010	mg/L		12-AUG-11	R2233850
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.301		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	1.72		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	<5.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.011		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	1.4		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.26		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0094		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00207		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.34		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00053		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.554		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00201		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.343		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00069		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-16 JUL TEFF-16 S							
Sampled By: CLIENT on 29-JUL-11 @ 15:00							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.161		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.522		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00761		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0032		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00220		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.48		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00033		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.572		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00128		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.362		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00066		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.164		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.524		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00730		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-17 JUL TPE-36 S							
Sampled By: CLIENT on 27-JUL-11 @ 17:35							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.83		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00053		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.733		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00285		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.450		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00069		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.132		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.649		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00835		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	0.00023		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0055		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00047		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00268		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.91		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00046		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.720		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-18 JUL TPE-37 S							
Sampled By: CLIENT on 28-JUL-11 @ 15:45							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		10-AUG-11	R2232506
Silica, Reactive (as SiO2)	0.218		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.01		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.013		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	1.5		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.26		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0128		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	0.00057		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00276		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.96		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00056		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.760		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00192		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	0.00021		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.486		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.131		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.633		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00900		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	0.00024		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-18 JUL TPE-37 S							
Sampled By: CLIENT on 28-JUL-11 @ 15:45							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0053		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00057		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00266		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.92		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00046		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.730		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00116		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	0.00021		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.471		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00071		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.124		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.594		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00834		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.33		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	<0.10		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.2		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	9.9		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	22.0		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.23		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-19 JUL TPN-36 S							
Sampled By: CLIENT on 27-JUL-11 @ 14:20							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	0.54		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	1.6		1.0	mg/L		12-AUG-11	R2234173
Fluoride	0.058		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	7.00		0.20	mg/L		09-AUG-11	
Hardness (as CaCO3)	7.00		0.30	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	0.0380		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	0.0011		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		10-AUG-11	R2232506
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.233		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	3.13		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	1.9		1.0	mg/L		16-AUG-11	R2235508
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.19		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0084		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00294		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.66		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00038		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.697		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00854		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.395		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-19 JUL TPN-36 S							
Sampled By: CLIENT on 27-JUL-11 @ 14:20							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.122		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.860		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00813		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0042		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00304		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.75		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00040		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.698		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00795		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	0.00018		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.429		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00056		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.131		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.896		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00783		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-20 JUL TPN-37 S							
Sampled By: CLIENT on 27-JUL-11 @ 14:50							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.69		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00049		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.675		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00851		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.408		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00057		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.128		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.863		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00785		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0048		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00290		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.66		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00041		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.663		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-21 JUL TPS-27 S							
Sampled By: CLIENT on 27-JUL-11 @ 15:45							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		10-AUG-11	R2232506
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.228		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.59		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	1.6		1.0	mg/L		16-AUG-11	R2235508
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.21		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0069		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00262		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.62		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00060		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.652		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00543		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.410		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.123		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.771		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00726		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-21 JUL TPS-27 S							
Sampled By: CLIENT on 27-JUL-11 @ 15:45							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0064		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00273		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.58		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00045		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.636		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00447		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.403		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00051		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.124		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.764		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00691		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.49		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
Phaeophytin a	0.14		0.10	ug/L	16-AUG-11	17-AUG-11	R2236249
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.8		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	8.3		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	20.5		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.11		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-22 JUL TPS-28 S							
Sampled By: CLIENT on 27-JUL-11 @ 16:40							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	0.54		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	1.4		1.0	mg/L		12-AUG-11	R2234173
Fluoride	0.060		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	6.61		0.30	mg/L		09-AUG-11	
Hardness (as CaCO3)	6.61		0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	0.0237		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	0.0116		0.0020	mg/L		23-AUG-11	R2239913
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		18-AUG-11	R2236632
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.230		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.84		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	14.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	1.4		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.20		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0078		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00278		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	1.58		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00043		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.645		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00599		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.391		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00054		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-22 JUL TPS-28 S							
Sampled By: CLIENT on 27-JUL-11 @ 16:40							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.124		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.784		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.00747		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0033		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00271		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	1.57		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.633		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00483		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.392		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00053		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.119		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.764		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00729		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-23 JUL WAL-15 S							
Sampled By: CLIENT on 29-JUL-11 @ 10:40							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	3.08		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00095		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.922		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00138		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.346		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00052		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.329		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.450		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.0162		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0034		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00021		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00181		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	3.23		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00095		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.938		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-24 JUL WAL-16 S							
Sampled By: CLIENT on 29-JUL-11 @ 11:05							
Matrix: WATER							
Phosphorus (P)-Total	0.0043		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		10-AUG-11	R2232506
Silica, Reactive (as SiO2)	0.714		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.20		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	22.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.013		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	2.4		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.23		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0065		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	0.00024		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	0.00189		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	3.18		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	0.00095		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	0.904		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	0.00150		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	0.340		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	0.00050		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	0.347		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	0.450		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	0.0156		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-24 JUL WAL-16 S							
Sampled By: CLIENT on 29-JUL-11 @ 11:05							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0034		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00021		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00180		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	3.22		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00090		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.923		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00059		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.353		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00048		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.349		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.458		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0157		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.40		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
Phaeophytin a	0.14		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	11.4		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	13.8		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	28.5		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.42		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-25 CREMP (JULY) EB-1 Sampled By: CLIENT on 26-JUL-11 @ 14:00 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		16-AUG-11	R2235534
Bromide (Br)	<0.10		0.10	mg/L		05-AUG-11	R2230817
Chloride	<0.20		0.20	mg/L		05-AUG-11	R2230817
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	<1.0		1.0	mg/L		16-AUG-11	R2235508
Fluoride	<0.020		0.020	mg/L		05-AUG-11	R2230817
Hardness (as CaCO3)	<0.20		0.20	mg/L		09-AUG-11	
Hardness (as CaCO3)	<0.30		0.30	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050		0.0050	mg/L		05-AUG-11	R2230817
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		05-AUG-11	R2230817
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		10-AUG-11	R2232506
Silica, Reactive (as SiO2)	<0.0050		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	<0.50		0.50	mg/L		05-AUG-11	R2230817
Total Dissolved Solids	<5.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	<1.0		1.0	mg/L		16-AUG-11	R2235508
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.13		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Arsenic (As)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Barium (Ba)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Boron (B)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-AUG-11	08-AUG-11	R2231387
Calcium (Ca)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	<0.020		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-25 CREMP (JULY) EB-1							
Sampled By: CLIENT on 26-JUL-11 @ 14:00							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	<0.050		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	<0.030		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	<0.020		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-26 CREMP (JULY) EB-2							
Sampled By: CLIENT on 30-JUL-11 @ 18:30							
Matrix: WATER							
Total Metals by ICP-MS							
Calcium (Ca)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Copper (Cu)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Iron (Fe)-Total	<0.10		0.10	mg/L	08-AUG-11	08-AUG-11	R2231387
Lead (Pb)-Total	<0.000090		0.000090	mg/L	08-AUG-11	08-AUG-11	R2231387
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Magnesium (Mg)-Total	<0.010		0.010	mg/L	08-AUG-11	08-AUG-11	R2231387
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	08-AUG-11	08-AUG-11	R2231387
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-AUG-11	08-AUG-11	R2231387
Phosphorus (P)-Total	<0.20		0.20	mg/L	08-AUG-11	08-AUG-11	R2231387
Potassium (K)-Total	<0.020		0.020	mg/L	08-AUG-11	08-AUG-11	R2231387
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Selenium (Se)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Silicon (Si)-Total	<0.050		0.050	mg/L	08-AUG-11	08-AUG-11	R2231387
Silver (Ag)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Sodium (Na)-Total	<0.030		0.030	mg/L	08-AUG-11	08-AUG-11	R2231387
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Thorium (Th)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Tin (Sn)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Tungsten (W)-Total	<0.0010		0.0010	mg/L	08-AUG-11	08-AUG-11	R2231387
Uranium (U)-Total	<0.00010		0.00010	mg/L	08-AUG-11	08-AUG-11	R2231387
Vanadium (V)-Total	<0.00020		0.00020	mg/L	08-AUG-11	08-AUG-11	R2231387
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	08-AUG-11	08-AUG-11	R2231387
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	08-AUG-11	08-AUG-11	R2231387
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0030		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-27 CREMP (JULY) DUP-1							
Sampled By: CLIENT on 26-JUL-11 @ 18:00							
Matrix: WATER							
Total Dissolved Solids	20.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.016		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	2.0		1.0	mg/L		16-AUG-11	R2235508
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.32		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0112		0.0050	mg/L	09-AUG-11	09-AUG-11	R2231881
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Arsenic (As)-Total	0.00042		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Barium (Ba)-Total	0.00261		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Boron (B)-Total	<0.010		0.010	mg/L	09-AUG-11	09-AUG-11	R2231881
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	09-AUG-11	09-AUG-11	R2231881
Calcium (Ca)-Total	2.88		0.10	mg/L	09-AUG-11	09-AUG-11	R2231881
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Copper (Cu)-Total	0.00080		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Iron (Fe)-Total	<0.10		0.10	mg/L	09-AUG-11	09-AUG-11	R2231881
Lead (Pb)-Total	<0.000090		0.000090	mg/L	09-AUG-11	09-AUG-11	R2231881
Lithium (Li)-Total	<0.0020		0.0020	mg/L	09-AUG-11	09-AUG-11	R2231881
Magnesium (Mg)-Total	0.893		0.010	mg/L	09-AUG-11	09-AUG-11	R2231881
Manganese (Mn)-Total	0.00197		0.00030	mg/L	09-AUG-11	09-AUG-11	R2231881
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	09-AUG-11	09-AUG-11	R2231881
Phosphorus (P)-Total	<0.20		0.20	mg/L	09-AUG-11	09-AUG-11	R2231881
Potassium (K)-Total	0.452		0.020	mg/L	09-AUG-11	09-AUG-11	R2231881
Rubidium (Rb)-Total	0.00074		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Selenium (Se)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Silicon (Si)-Total	0.247		0.050	mg/L	09-AUG-11	09-AUG-11	R2231881
Silver (Ag)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Sodium (Na)-Total	0.562		0.030	mg/L	09-AUG-11	09-AUG-11	R2231881
Strontium (Sr)-Total	0.0131		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Thorium (Th)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Tin (Sn)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Titanium (Ti)-Total	0.00026		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Tungsten (W)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Uranium (U)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Vanadium (V)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	09-AUG-11	09-AUG-11	R2231881
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	09-AUG-11	09-AUG-11	R2231881
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0049		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00038		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00242		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-27	CREMP (JULY) DUP-1						
Sampled By:	CLIENT on 26-JUL-11 @ 18:00						
Matrix:	WATER						
Dissolved Metals by ICP-MS							
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.59		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00070		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.872		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00124		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.418		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00063		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.250		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.525		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0118		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.34		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
Phaeophytin a	<0.10		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	9.7		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	11.9		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	26.0		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.35		0.10	pH units		05-AUG-11	R2230218
L1040679-28	CREMP (JULY) DUP-2						
Sampled By:	CLIENT on 29-JUL-11 @ 11:10						
Matrix:	WATER						
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)	<0.10		0.10	mg/L		06-AUG-11	R2231452

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-28 CREMP (JULY) DUP-2							
Sampled By: CLIENT on 29-JUL-11 @ 11:10							
Matrix: WATER							
Chloride	0.43		0.20	mg/L		06-AUG-11	R2231452
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon	2.3		1.0	mg/L		12-AUG-11	R2234173
Fluoride	0.038		0.020	mg/L		06-AUG-11	R2231452
Hardness (as CaCO3)	12.4		0.30	mg/L		10-AUG-11	
Hardness (as CaCO3)	11.9		0.20	mg/L		09-AUG-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N	<0.0050		0.0050	mg/L		06-AUG-11	R2231452
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		06-AUG-11	R2231452
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total	0.0071		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		10-AUG-11	R2232506
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		08-AUG-11	R2230829
Silica, Reactive (as SiO2)	0.720		0.0050	mg/L		11-AUG-11	R2232767
Sulfate	2.14		0.50	mg/L		06-AUG-11	R2231452
Total Dissolved Solids	20.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total	0.014		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon	2.4		1.0	mg/L		12-AUG-11	R2234173
Total Suspended Solids	<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity	0.27		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0065		0.0050	mg/L	09-AUG-11	09-AUG-11	R2231881
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Arsenic (As)-Total	0.00027		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Barium (Ba)-Total	0.00196		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Boron (B)-Total	<0.010		0.010	mg/L	09-AUG-11	09-AUG-11	R2231881
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	09-AUG-11	09-AUG-11	R2231881
Calcium (Ca)-Total	3.38		0.10	mg/L	09-AUG-11	09-AUG-11	R2231881
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Copper (Cu)-Total	0.00101		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Iron (Fe)-Total	<0.10		0.10	mg/L	09-AUG-11	09-AUG-11	R2231881
Lead (Pb)-Total	<0.000090		0.000090	mg/L	09-AUG-11	09-AUG-11	R2231881
Lithium (Li)-Total	<0.0020		0.0020	mg/L	09-AUG-11	09-AUG-11	R2231881
Magnesium (Mg)-Total	0.966		0.010	mg/L	09-AUG-11	09-AUG-11	R2231881
Manganese (Mn)-Total	0.00151		0.00030	mg/L	09-AUG-11	09-AUG-11	R2231881
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	09-AUG-11	09-AUG-11	R2231881
Phosphorus (P)-Total	<0.20		0.20	mg/L	09-AUG-11	09-AUG-11	R2231881
Potassium (K)-Total	0.366		0.020	mg/L	09-AUG-11	09-AUG-11	R2231881
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Selenium (Se)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Silicon (Si)-Total	0.362		0.050	mg/L	09-AUG-11	09-AUG-11	R2231881
Silver (Ag)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Sodium (Na)-Total	0.476		0.030	mg/L	09-AUG-11	09-AUG-11	R2231881

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-28 CREMP (JULY) DUP-2							
Sampled By: CLIENT on 29-JUL-11 @ 11:10							
Matrix: WATER							
Total Metals by ICP-MS							
Strontium (Sr)-Total	0.0171		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Thorium (Th)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Tin (Sn)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Tungsten (W)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Uranium (U)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Vanadium (V)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	09-AUG-11	09-AUG-11	R2231881
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	09-AUG-11	09-AUG-11	R2231881
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0036		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	0.00025		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00181		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	3.20		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00091		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.936		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00063		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.359		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00049		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.355		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.465		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.0155		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-28	CREMP (JULY) DUP-2							
Sampled By:	CLIENT on 29-JUL-11 @ 11:10							
Matrix:	WATER							
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.37		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
Phaeophytin a		0.11		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		11.4		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)		13.9		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)		<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)		<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity								
Conductivity		29.2		0.40	umhos/cm		05-AUG-11	R2230218
pH								
pH		7.44		0.10	pH units		05-AUG-11	R2230218
L1040679-29	CREMP (JULY) DUP-3							
Sampled By:	CLIENT on 30-JUL-11 @ 11:40							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		15-AUG-11	R2234880
Bromide (Br)		<0.10		0.10	mg/L		06-AUG-11	R2231452
Chloride		0.52		0.20	mg/L		06-AUG-11	R2231452
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		11-AUG-11	R2232962
Dissolved Organic Carbon		1.9		1.0	mg/L		16-AUG-11	R2235508
Fluoride		0.032		0.020	mg/L		06-AUG-11	R2231452
Hardness (as CaCO3)		8.08		0.20	mg/L		09-AUG-11	
Hardness (as CaCO3)		8.74		0.30	mg/L		10-AUG-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	09-AUG-11	09-AUG-11	R2231461
Nitrate-N		<0.0050		0.0050	mg/L		06-AUG-11	R2231452
Nitrate and Nitrite as N		<0.070		0.070	mg/L		05-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		06-AUG-11	R2231452
Phosphorus (P)-Total		0.0068		0.0020	mg/L		16-AUG-11	R2235732
Phosphorus (P)-Total		<0.010		0.010	mg/L		09-AUG-11	R2231657
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		08-AUG-11	R2230829
Phosphorus (P)-Total Reactive		0.0011		0.0010	mg/L		10-AUG-11	R2232506
Silica, Reactive (as SiO2)		0.290		0.0050	mg/L		11-AUG-11	R2232767
Sulfate		1.40		0.50	mg/L		06-AUG-11	R2231452
Total Dissolved Solids		16.0		5.0	mg/L		10-AUG-11	R2232587
Iron (Fe)-Total		<0.010		0.010	mg/L		12-AUG-11	R2234214
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	06-AUG-11	11-AUG-11	R2232686
Total Organic Carbon		1.9		1.0	mg/L		16-AUG-11	R2235508
Total Suspended Solids		<2.0		2.0	mg/L		10-AUG-11	R2232587
Turbidity		0.22		0.10	NTU		05-AUG-11	R2231211
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0063		0.0050	mg/L	09-AUG-11	09-AUG-11	R2231881
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Arsenic (As)-Total		<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Barium (Ba)-Total		0.00210		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Boron (B)-Total		<0.010		0.010	mg/L	09-AUG-11	09-AUG-11	R2231881
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	09-AUG-11	09-AUG-11	R2231881

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-29 CREMP (JULY) DUP-3							
Sampled By: CLIENT on 30-JUL-11 @ 11:40							
Matrix: WATER							
Total Metals by ICP-MS							
Calcium (Ca)-Total	2.26		0.10	mg/L	09-AUG-11	09-AUG-11	R2231881
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Copper (Cu)-Total	0.00059		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Iron (Fe)-Total	<0.10		0.10	mg/L	09-AUG-11	09-AUG-11	R2231881
Lead (Pb)-Total	<0.000090		0.000090	mg/L	09-AUG-11	09-AUG-11	R2231881
Lithium (Li)-Total	<0.0020		0.0020	mg/L	09-AUG-11	09-AUG-11	R2231881
Magnesium (Mg)-Total	0.751		0.010	mg/L	09-AUG-11	09-AUG-11	R2231881
Manganese (Mn)-Total	0.00160		0.00030	mg/L	09-AUG-11	09-AUG-11	R2231881
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	09-AUG-11	09-AUG-11	R2231881
Phosphorus (P)-Total	<0.20		0.20	mg/L	09-AUG-11	09-AUG-11	R2231881
Potassium (K)-Total	0.366		0.020	mg/L	09-AUG-11	09-AUG-11	R2231881
Rubidium (Rb)-Total	0.00043		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Selenium (Se)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Silicon (Si)-Total	0.158		0.050	mg/L	09-AUG-11	09-AUG-11	R2231881
Silver (Ag)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Sodium (Na)-Total	0.472		0.030	mg/L	09-AUG-11	09-AUG-11	R2231881
Strontium (Sr)-Total	0.00869		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Thorium (Th)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Tin (Sn)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Tungsten (W)-Total	<0.0010		0.0010	mg/L	09-AUG-11	09-AUG-11	R2231881
Uranium (U)-Total	<0.00010		0.00010	mg/L	09-AUG-11	09-AUG-11	R2231881
Vanadium (V)-Total	<0.00020		0.00020	mg/L	09-AUG-11	09-AUG-11	R2231881
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	09-AUG-11	09-AUG-11	R2231881
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	09-AUG-11	09-AUG-11	R2231881
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0023		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Barium (Ba)-Dissolved	0.00192		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Boron (B)-Dissolved	<0.010		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	05-AUG-11	08-AUG-11	R2231274
Calcium (Ca)-Dissolved	2.07		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	05-AUG-11	08-AUG-11	R2231274
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Magnesium (Mg)-Dissolved	0.705		0.010	mg/L	05-AUG-11	08-AUG-11	R2231274
Manganese (Mn)-Dissolved	0.00091		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1040679-29 CREMP (JULY) DUP-3 Sampled By: CLIENT on 30-JUL-11 @ 11:40 Matrix: WATER							
Dissolved Metals by ICP-MS							
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	05-AUG-11	08-AUG-11	R2231274
Potassium (K)-Dissolved	0.328		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Rubidium (Rb)-Dissolved	0.00038		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	05-AUG-11	08-AUG-11	R2231274
Silicon (Si)-Dissolved	0.149		0.050	mg/L	05-AUG-11	08-AUG-11	R2231274
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Sodium (Na)-Dissolved	0.466		0.020	mg/L	05-AUG-11	08-AUG-11	R2231274
Strontium (Sr)-Dissolved	0.00826		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	05-AUG-11	08-AUG-11	R2231274
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	05-AUG-11	08-AUG-11	R2231274
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	05-AUG-11	08-AUG-11	R2231274
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.55		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
Phaeophytin a	0.18		0.10	ug/L	11-AUG-11	12-AUG-11	R2233950
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.8		1.0	mg/L		13-AUG-11	R2234042
Bicarbonate (HCO3)	10.8		2.0	mg/L		13-AUG-11	R2234042
Carbonate (CO3)	<0.60		0.60	mg/L		13-AUG-11	R2234042
Hydroxide (OH)	<0.40		0.40	mg/L		13-AUG-11	R2234042
Conductivity							
Conductivity	21.2		0.40	umhos/cm		05-AUG-11	R2230218
pH							
pH	7.27		0.10	pH units		05-AUG-11	R2230218

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Individual Samples Listed:

Sample Number	Client ID	Qualifier	Description
L1040679-1	JUL INUG-24-S	LPM	Lab Preserved for Metals. Received with pH > 2, preserved at the lab and held for 16 hours in accordance with EPA 200.8

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.			
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.			
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CHL,PHEO-FLUORO-WP	Water	Chlorophyll a, Pheophytin by fluorometry	EPA 445.0
Chlorophyll a is filtered from the sample and extracted with 90% (v/v) acetone. The sample is analyzed fluorometrically. The extract is then acidified, converting chlorophyll a to pheophytin a. The sample is analyzed fluorometrically again after acidification. The chlorophyll a concentration is determined from the decrease upon acidification.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-DIS-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-D-L-ICP-ED	Water	Diss. Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-T-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0
Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.			
MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	Quickchem method 10-107-06-2-E Lachat
Samples are digested with a sulphuric acid solution, cooled, diluted with water, and analyzed for ammonia. Total Kjeldahl nitrogen is the sum of free-ammonia and organic nitrogen compounds which are converted to ammonium sulphate through this digestion process. Analysis is performed by Flow Injection Analysis (FIA). The pH of the digested sample is raised to a known, basic pH by neutralization with a concentrated buffer solution. This neutralization converts the ammonium cation to ammonia. The ammonia produced is heated with salicylate and hypochlorite to produce blue colour which is proportional to the ammonia concentration.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SIO2-L-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2
This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 LR

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
The residue retained by a prepared 1.5 um Whatman 934-AH glass microfibre filter dried at 105 degrees C. A method detection limit of 2 mg/L can be achieved when 500 mL of sample is used.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Report to:			Report Format / Distribution			Service Requested:														
Company: Agnico-Eagle Mines Ltd.			☒ Standard ☐ Other			☒ Regular Service (Default)														
Contact: Ryan VanEngen			☒ PDF ☒ Excel ☐ Fax			☐ Rush Service (2-3 Days)														
Address: Meadowbank Division PO Box 540 Baker Lake Nun.			Email 1: rVanengen@agnico-eagle.com			☐ Priority Service (1 Day or ASAP)														
			Email 2: mtheriault@agnico-eagle.com			☐ Emergency Service (<1 Day / Wkend) - Contact ALS														
Phone: 867 793 4610x6759 Fax:						Analysis Request														
Invoice To: ☒ Same as Report			Indicate Bottles: Filtered / Preserved (F/P) →→																	
Company: Agnico-Eagle Mining Ltd.			Client / Project Information:																	
Contact: Accounts Payable-Meadowbank Division			Job #: CREMP																	
Address: email electronic invoice to rvanengen@agnico-eagle.com			PO/AFE:																	
Sample			Legal Site Description:																	
Phone: Fax:			Quote #: Q21514																	
Lab Work Order # (lab use only)				ALS Contact: Christine Herrod		Sampler (Initials):														
Sample #	Sample Identification (This description will appear on the report)			Date dd-mmm-yy	Time hh:mm	Sample Type (Select from drop-down list)		Cl, F, Br, NO2, NO3, SO4, TDS	TOC/DOC, Hardness	Metals & Hg (total)	Dissolved Metals	P-Total & Ortho	pH, E Conductivity, Alkalinity (	Silicate, Turbidity	TSS-low	TKN, NH3	Chloro-a	Hazardous?	Highly Contaminated?	Number of Containers
	JUL INUG-24-S			30-07-2011	14:50	Water		X	X	X	X	X	X	X	X	X	X			
	JUL INUG-25-S			30-07-2011	15:30	Water		X	X	X	X	X	X	X	X	X	X			
	JUL BAP-15 S			25-07-2011	10:35	Water		X	X	X	X	X	X	X	X	X	X			
	JUL BAP-16 S			25-07-2011	12:55	Water		X	X	X	X	X	X	X	X	X	X			
	JUL BBD-15 S			25-07-2011	16:05	Water		X	X	X	X	X	X	X	X	X	X			
	JUL BBD-16 S			25-07-2011	15:30	Water		X	X	X	X	X	X	X	X	X	X			
	JUL BPJ-15 S			25-07-2011	15:05	Water		X	X	X	X	X	X	X	X	X	X			
	JUL BPJ-16 S			25-07-2011	14:20	Water		X	X	X	X	X	X	X	X	X	X			
	JUL PDL 15 S			30-07-2011	11:20	Water		X	X	X	X	X	X	X	X	X	X			
	JUL PDL 16 S			30-07-2011	12:00	Water		X	X	X	X	X	X	X	X	X	X			
Guidelines / Regulations				Special Instructions / Hazardous Details																
				Please use "low range anion" analysis																
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																				
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																				
Relinquished By:	M Theriault	Date & Time:	31-07-2011	Received By:	DK	Date & Time:	AUG 5 2011	Sample Condition (lab use only)												
Relinquished By:		Date & Time:		Received By:		Date & Time:	09:00	Temperature	18.2°C	Samples Received in Good Condition? Y / N (if no provided details)										



Report to:			Report From:			Service Requested:												
Company: Agnico-Eagle Mines Ltd.						☒ Regular Service (Default) ☐ Rush Service (2-3 Days) ☐ Priority Service (1 Day or ASAP) ☐ Emergency Service (<1 Day / Wkend) - Contact ALS												
Contact: Ryan VanEngen																		
Address: Meadowbank Division PO Box 540 Baker Lake Nun.			Email 1: rVanengen@agnico-eagle.com															
			Email 2: mtheriault@agnico-eagle.com															
Phone: 867 793 4610x6759 Fax:																		
Invoice To:						Analysis Request												
			Indicate Bottles: Filtered / Preserved (F/P) →→															
Company: Agnico-Eagle Mining Ltd.			Client / Project Information:															
Contact: Accounts Payable-Meadowbank Division			Job #: CREMP															
Address: email electronic invoice to rvanengen@agnico-eagle.com			PO/AFE:															
Sample			Legal Site Description:															
Phone: Fax:			Quote #: Q21514															
Lab Work Order # (lab use only)			ALS Contact: Chrisine Herrod			Sampler (Initials):												
Sample #	Sample Identification (This description will appear on the report)		Date dd-mmm-yy	Time hh:mm	Sample Type (Select from drop-down list)	Cl, F, Br, NO2, NO3, SO4, TDS	TOC/DOC, Hardness	Metals & Hg (total)	Dissolved Metals	P-Total & Ortho	pH, E Conductivity, Alkalinity (°C)	Silicate, Turbidity	TSS-low	TKN, NH3	Chloro-a	Hazardous?	Highly Contaminated?	Number of Containers
	JUL SP-36 S		26-07-2011	17:50	Water	X	X	X	X	X	X	X	X	X	X			
	JUL SP-37 S		26-07-2011	16:20	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TE-36 S		29-07-2011	16:00	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TE-37 S		29-07-2011	15:30	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TEFF-15 S		29-07-2011	14:05	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TEFF-16 S		29-07-2011	15:00	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TPE-36 S		27-07-2011	17:35	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TPE-37 S		28-07-2011	15:45	Water	X	X	X	X	X	X	X	X	X	X			
NO →	JUL TPN-36 S 385 ← instead		27-07-2011	14:20	Water	X	X	X	X	X	X	X	X	X	X			
	JUL TPN-37 S		27-07-2011	14:50	Water	X	X	X	X	X	X	X	X	X	X			
Guidelines / Regulations						Special Instructions / Hazardous Details												
						Please use "low range anion" analysis												
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																		
Relinquished By:	M Theriault	Date & Time:	31-07-2011	Received By:		Date & Time:												
Relinquished By:		Date & Time:		Received By:		Date & Time:												
						Temperature		Sample Condition (lab use only):										
								Samples Received in Good Condition? Y / N (if no provided details)										



Ch



COC #

Page 3 of 3

Report to:		Report Format / Distribution:		Service Requested:												
Company: Agnico-Eagle Mines Ltd.				☒ Regular Service (Default) ☐ Rush Service (2-3 Days) ☐ Priority Service (1 Day or ASAP) ☐ Emergency Service (<1 Day / Wkend) - Contact ALS												
Contact: Ryan VanEngen		Email 1: rVanengen@agnico-eagle.com														
Address: Meadowbank Division PO Box 540 Baker Lake Nun.		Email 2: mtheriault@agnico-eagle.com														
Phone: 867 793 4610x6759 Fax:																
Invoice To:		Indicate Bottles: Filtered / Preserved (F/P) →		Analysis Request												
Company: Agnico-Eagle Mining Ltd.		Client / Project Information:		CI, F, Br, NO2, NO3, SO4, TDS TOC/DOC, Hardness Metals & Hg (total) Dissolved Metals P-Total & Ortho pH, E Conductivity, Alkalinity Silicate, Turbidity TSS-low TKN, NH3 Chloro-a Hazardous? Highly Contaminated? Number of Containers	☐ P	☐ P	☐ P	☐	☐	☐	☐	☐	☐	☐	☐	☐
Contact: Accounts Payable-Meadowbank Division		Job #: CREMP														
Address: email electronic invoice to rvanengen@agnico-eagle.com		PO/AFE:														
Sample		Legal Site Description:														
Phone: Fax:		Quote #: Q21514														
Lab Work Order # (lab use only)		ALS Contact: Christine Herrod		Sampler (Initials):												
Sample #	Sample Identification (This description will appear on the report)	Date dd-mm-yy	Time hh:mm	Sample Type (Select from drop-down list)												
	JUL TPS-27 S	27-07-2011	15:45	Water		X	X	X	X	X	X	X	X	X	X	
	JUL TPS-28 S	27-07-2011	16:40	Water		X	X	X	X	X	X	X	X	X	X	
	JUL WAL-15 S	29-07-2011	10:40	Water		X	X	X	X	X	X	X	X	X	X	
	JUL WAL-16 S	29-07-2011	11:05	Water		X	X	X	X	X	X	X	X	X	X	
	CREMP (July) EB-1	26-07-2011	14:00	Water		X	X	X	X	X	X	X		X		
	CREMP (July) EB-2 <i>EB-3 instead</i>	30-07-2011	18:30	Water		X	X	X	X	X	X	X		X		
	CREMP (July) DUP-1	26-07-2011	18:00	Water		X	X	X	X	X	X	X	X	X	X	
	CREMP (July) DUP-2	29-07-2011	11:10	Water		X	X	X	X	X	X	X	X	X	X	
	CREMP (July) DUP-3	30-07-2011	11:40	Water		X	X	X	X	X	X	X	X	X	X	
				Water												
Guidelines / Regulations				Special Instructions / Hazardous Details												
				Please use "low range anion" analysis												
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																
Relinquished By:	M Theriault	Date & Time:	31-07-2011	Received By:		Date & Time:		Sample Condition (lab use only)								
Relinquished By:		Date & Time:		Received By:		Date & Time:		Temperature Samples Received in Good Condition? Y / N (if no provided details)								



Agnico-Eagle - Meadowbank Division
ATTN: RYAN VANENGEN
MEADOWBANK DIV.
P.O. BOX 540
BAKER LAKE NU X0X 0A0

Date Received: 19-AUG-11
Report Date: 06-SEP-11 10:40 (MT)
Version: FINAL

Client Phone: 604-622-6527

Certificate of Analysis

Lab Work Order #: L1047237
Project P.O. #: NOT SUBMITTED
Job Reference: MEADOWBANK MINE CREMP
C of C Numbers:
Legal Site Desc:

Paul Nicolas
Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-1 PDL-17-S							
Sampled By: MM,MF,TT on 11-AUG-11							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)	<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride	0.54		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon	1.7		1.0	mg/L		25-AUG-11	R2240983
Fluoride	0.034		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)	8.10		0.20	mg/L		24-AUG-11	
Hardness (as CaCO3)	8.15		0.30	mg/L		24-AUG-11	
Nitrate-N	<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N	<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total	0.0041		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)	0.293		0.0050	mg/L		01-SEP-11	R2244688
Sulfate	1.43		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen	0.118		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids	12.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total	<0.010		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	2.1		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.24		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0057		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00201		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	2.07		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00059		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.727		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00133		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.327		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00039		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-1 PDL-17-S Sampled By: MM,MF,TT on 11-AUG-11 Matrix: WATER							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.151		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.465		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00835		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0026		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00196		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	2.01		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.747		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00055		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.318		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00039		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.137		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	0.473		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	0.00781		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-1 PDL-17-S								
Sampled By: MM,MF,TT on 11-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		8.2		1.0	mg/L		25-AUG-11	R2241157
Bicarbonate (HCO3)		10.0		2.0	mg/L		25-AUG-11	R2241157
Carbonate (CO3)		<0.60		0.60	mg/L		25-AUG-11	R2241157
Hydroxide (OH)		<0.40		0.40	mg/L		25-AUG-11	R2241157
Conductivity								
Conductivity		20.2		0.40	umhos/cm		19-AUG-11	R2238806
pH								
pH		7.23		0.10	pH units		19-AUG-11	R2238806
L1047237-2 PDL-18-S								
Sampled By: MM,MF,TT on 11-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.54		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.3		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.034		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		8.31		0.30	mg/L		24-AUG-11	
Hardness (as CaCO3)		8.15		0.20	mg/L		25-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total		0.0068		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)		0.284		0.0050	mg/L		01-SEP-11	R2244688
Sulfate		1.43		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen		0.123		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids		16.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total		<0.010		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon		2.3		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids		<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity		0.24		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0064		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total		0.00220		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-2 PDL-18-S							
Sampled By: MM,MF,TT on 11-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	2.13		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00054		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.730		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00138		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.329		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00040		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.159		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.471		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00859		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0023		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00197		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	24-AUG-11	R2240489
Calcium (Ca)-Dissolved	2.05		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	0.000173		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.735		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00060		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-2	PDL-18-S							
Sampled By: MM,MF,TT on 11-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved		0.317		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved		0.00038		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved		0.132		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved		0.456		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved		0.00800		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved		0.0021		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		8.3		1.0	mg/L		25-AUG-11	R2241157
Bicarbonate (HCO3)		10.1		2.0	mg/L		25-AUG-11	R2241157
Carbonate (CO3)		<0.60		0.60	mg/L		25-AUG-11	R2241157
Hydroxide (OH)		<0.40		0.40	mg/L		25-AUG-11	R2241157
Conductivity								
Conductivity		20.2		0.40	umhos/cm		19-AUG-11	R2238806
pH								
pH		7.23		0.10	pH units		19-AUG-11	R2238806
L1047237-3	INUG-26-S							
Sampled By: MM,MF,TT on 13-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.61		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.6		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.053		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		5.08		0.20	mg/L		24-AUG-11	
Hardness (as CaCO3)		5.28		0.30	mg/L		24-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total		0.0060		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-AUG-11	R2240580

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-3 INUG-26-S							
Sampled By: MM,MF,TT on 13-AUG-11							
Matrix: WATER							
Silica, Reactive (as SiO2)	0.293		0.0050	mg/L		01-SEP-11	R2244688
Sulfate	0.77		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen	0.157		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids	16.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total	0.015		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	2.6		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.28		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0134		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00203		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	1.06		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00051		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.638		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00266		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.360		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00049		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.167		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.508		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00597		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00027		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0033		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-3 INUG-26-S								
Sampled By: MM,MF,TT on 13-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Barium (Ba)-Dissolved		0.00185		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved		<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved		<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved		1.00		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved		0.00040		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved		0.626		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved		0.00042		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved		0.337		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved		0.00045		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved		0.139		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved		0.495		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved		0.00527		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		5.8		1.0	mg/L		25-AUG-11	R2241157
Bicarbonate (HCO3)		7.1		2.0	mg/L		25-AUG-11	R2241157
Carbonate (CO3)		<0.60		0.60	mg/L		25-AUG-11	R2241157
Hydroxide (OH)		<0.40		0.40	mg/L		25-AUG-11	R2241157
Conductivity								
Conductivity		12.5		0.40	umhos/cm		30-AUG-11	R2243558
pH								
pH		6.94		0.10	pH units		25-AUG-11	R2241157
L1047237-4 INUG-27-S								
Sampled By: MM,MF,TT on 13-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-4	INUG-27-S						
Sampled By:	MM,MF,TT on 13-AUG-11						
Matrix:	WATER						
Chloride	0.60		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon	2.7		1.0	mg/L		25-AUG-11	R2240983
Fluoride	0.053		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)	5.12		0.30	mg/L		24-AUG-11	
Hardness (as CaCO3)	5.11		0.20	mg/L		24-AUG-11	
Nitrate-N	<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N	<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total	0.0087		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)	0.289		0.0050	mg/L		01-SEP-11	R2244688
Sulfate	0.75		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen	0.116		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids	18.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total	0.019		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	2.7		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.30		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0097		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00197		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	1.03		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00046		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.617		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00258		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.349		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00047		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.166		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-4 INUG-27-S							
Sampled By: MM,MF,TT on 13-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Sodium (Na)-Total	0.498		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00579		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00022		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0034		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00185		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	0.986		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.644		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00033		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.331		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00044		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.139		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	0.497		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	0.00534		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-4	INUG-27-S							
Sampled By:	MM,MF,TT on 13-AUG-11							
Matrix:	WATER							
Alkalinity								
Alkalinity, Total (as CaCO3)		5.8		1.0	mg/L		25-AUG-11	R2241157
Bicarbonate (HCO3)		7.0		2.0	mg/L		25-AUG-11	R2241157
Carbonate (CO3)		<0.60		0.60	mg/L		25-AUG-11	R2241157
Hydroxide (OH)		<0.40		0.40	mg/L		25-AUG-11	R2241157
Conductivity								
Conductivity		12.5		0.40	umhos/cm		30-AUG-11	R2243558
pH								
pH		7.05		0.10	pH units		19-AUG-11	R2238806
L1047237-5	WAL-17-S							
Sampled By:	MM,MF,TT on 15-AUG-11							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.44		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.9		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.042		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		11.8		0.30	mg/L		24-AUG-11	
Hardness (as CaCO3)		4.93		0.20	mg/L		24-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total		0.0067		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		22-AUG-11	R2238704
Silica, Reactive (as SiO2)		0.852		0.0050	mg/L		01-SEP-11	R2244688
Sulfate		2.12		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen		0.109		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids		16.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total		0.031		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon		2.9		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids		<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity		0.30		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0072		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total		0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total		0.00189		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total		<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total		3.23		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-5 WAL-17-S Sampled By: MM,MF,TT on 15-AUG-11 Matrix: WATER							
Total Metals by ICP-MS							
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00104		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.909		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00165		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.361		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00054		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.411		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.469		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.0155		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00025		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0034		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00183		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	0.942		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00039		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.626		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00031		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.333		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00046		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-5	WAL-17-S							
Sampled By:	MM,MF,TT on 15-AUG-11							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610	
Silicon (Si)-Dissolved	0.134		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610	
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610	
Sodium (Na)-Dissolved	0.487		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Strontium (Sr)-Dissolved	0.00527		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610	
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610	
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610	
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610	
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610	
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610	
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	11.2		1.0	mg/L		25-AUG-11	R2241157	
Bicarbonate (HCO3)	13.7		2.0	mg/L		25-AUG-11	R2241157	
Carbonate (CO3)	<0.60		0.60	mg/L		25-AUG-11	R2241157	
Hydroxide (OH)	<0.40		0.40	mg/L		25-AUG-11	R2241157	
Conductivity								
Conductivity	27.4		0.40	umhos/cm		19-AUG-11	R2238806	
pH								
pH	7.40		0.10	pH units		19-AUG-11	R2238806	
L1047237-6	WAL-18-S							
Sampled By:	MM,MF,TT on 15-AUG-11							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010		0.010	mg/L		29-AUG-11	R2242724	
Bromide (Br)	<0.10		0.10	mg/L		22-AUG-11	R2240430	
Chloride	0.45		0.20	mg/L		22-AUG-11	R2240430	
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		26-AUG-11	R2241368	
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		24-AUG-11	R2239714	
Dissolved Organic Carbon	2.8		1.0	mg/L		25-AUG-11	R2240983	
Fluoride	0.040		0.020	mg/L		22-AUG-11	R2240430	
Hardness (as CaCO3)	12.3		0.20	mg/L		24-AUG-11		
Hardness (as CaCO3)	11.9		0.30	mg/L		24-AUG-11		
Nitrate-N	<0.0050		0.0050	mg/L		22-AUG-11	R2240430	
Nitrate and Nitrite as N	<0.070		0.070	mg/L		19-AUG-11		
Nitrite-N	<0.0010		0.0010	mg/L		22-AUG-11	R2240430	
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-AUG-11	R2238710	
Phosphorus (P)-Total	0.0071		0.0020	mg/L		27-AUG-11	R2241827	
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-AUG-11	R2240580	
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		22-AUG-11	R2238704	
Silica, Reactive (as SiO2)	0.867		0.0050	mg/L		01-SEP-11	R2244688	
Sulfate	2.14		0.50	mg/L		22-AUG-11	R2240430	
Total Kjeldahl Nitrogen	0.099		0.050	mg/L		24-AUG-11	R2239975	
Total Dissolved Solids	20.0		5.0	mg/L		23-AUG-11	R2239591	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-6 WAL-18-S							
Sampled By: MM,MF,TT on 15-AUG-11							
Matrix: WATER							
Iron (Fe)-Total	0.015		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	2.8		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.29		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0073		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	0.00024		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00188		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	3.25		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00100		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.921		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00114		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.364		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.403		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.465		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.0163		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0032		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	0.00027		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00174		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-6	WAL-18-S							
Sampled By:	MM,MF,TT on 15-AUG-11							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Cadmium (Cd)-Dissolved	<0.000010			0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	3.28			0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020			0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00098			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10			0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090			0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020			0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.992			0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00041			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.372			0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00053			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.378			0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	0.481			0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	0.0153			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	22.6			1.0	mg/L		25-AUG-11	R2241157
Bicarbonate (HCO3)	27.6			2.0	mg/L		25-AUG-11	R2241157
Carbonate (CO3)	<0.60			0.60	mg/L		25-AUG-11	R2241157
Hydroxide (OH)	<0.40			0.40	mg/L		25-AUG-11	R2241157
Conductivity								
Conductivity	27.7			0.40	umhos/cm		19-AUG-11	R2238806
pH								
pH	7.42			0.10	pH units		19-AUG-11	R2238806
L1047237-7	TEFF-17-S							
Sampled By:	MM,MF,TT on 15-AUG-11							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010			0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)	<0.10			0.10	mg/L		22-AUG-11	R2240430
Chloride	0.49			0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved	<0.000010			0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon	2.1			1.0	mg/L		25-AUG-11	R2240983

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-7 TEFF-17-S							
Sampled By: MM,MF,TT on 15-AUG-11							
Matrix: WATER							
Fluoride	0.053		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)	6.06		0.20	mg/L		24-AUG-11	
Hardness (as CaCO3)	5.83		0.30	mg/L		24-AUG-11	
Nitrate-N	<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N	<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total	0.0036		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		23-AUG-11	R2239289
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)	0.315		0.0050	mg/L		01-SEP-11	R2244688
Sulfate	1.71		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen	0.098		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids	14.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total	<0.010		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	2.1		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.26		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0099		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00215		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	1.42		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00041		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.554		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00152		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.345		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00065		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.156		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.497		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00749		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-7 TEFF-17-S							
Sampled By: MM,MF,TT on 15-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00026		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0037		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00193		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	1.46		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.586		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00067		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.347		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00063		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.151		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	0.513		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	0.00733		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	12.0		1.0	mg/L		25-AUG-11	R2241157
Bicarbonate (HCO3)	14.6		2.0	mg/L		25-AUG-11	R2241157
Carbonate (CO3)	<0.60		0.60	mg/L		25-AUG-11	R2241157

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-7	TEFF-17-S							
Sampled By: MM,MF,TT on 15-AUG-11								
Matrix: WATER								
Alkalinity Hydroxide (OH)		<0.40		0.40	mg/L		25-AUG-11	R2241157
Conductivity Conductivity		14.8		0.40	umhos/cm		30-AUG-11	R2243558
pH pH		7.09		0.10	pH units		19-AUG-11	R2238806
L1047237-8	TEFF-18-S							
Sampled By: MM,MF,TT on 15-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.48		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.0		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.052		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		5.76		0.30	mg/L		24-AUG-11	
Hardness (as CaCO3)		5.57		0.20	mg/L		24-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total		0.0035		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)		0.300		0.0050	mg/L		01-SEP-11	R2244688
Sulfate		1.67		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen		0.094		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids		14.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total		0.011		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon		2.1		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids		<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity		0.26		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0064		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total		0.00219		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total		<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total		1.41		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total		0.00047		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total		<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-8 TEFF-18-S							
Sampled By: MM,MF,TT on 15-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.546		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00159		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.351		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00065		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.154		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.506		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00708		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00023		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0031		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00207		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	1.33		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00038		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.547		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00073		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.328		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00066		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.127		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-8 TEFF-18-S								
Sampled By: MM,MF,TT on 15-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Sodium (Na)-Dissolved		0.529		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved		0.00641		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		5.8		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		7.1		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		14.2		0.40	umhos/cm		30-AUG-11	R2243558
pH								
pH		7.09		0.10	pH units		19-AUG-11	R2238806
L1047237-9 TE-38-S								
Sampled By: MM,MF,TT on 16-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.48		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.3		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.056		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		7.11		0.30	mg/L		24-AUG-11	
Hardness (as CaCO3)		7.08		0.20	mg/L		24-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total		0.0030		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)		0.407		0.0050	mg/L		01-SEP-11	R2244688
Sulfate		1.81		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen		0.114		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids		16.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total		0.019		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon		2.2		1.0	mg/L		25-AUG-11	R2240983

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-9 TE-38-S							
Sampled By: MM,MF,TT on 16-AUG-11							
Matrix: WATER							
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.32		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0096		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00227		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	1.78		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00057		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.647		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00179		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.365		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00066		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.205		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.496		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00901		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00033		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0039		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00206		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	1.75		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-9 TE-38-S								
Sampled By: MM,MF,TT on 16-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Chromium (Cr)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved		0.00045		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved		0.659		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved		0.00055		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved		0.356		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved		0.00066		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved		0.185		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved		0.505		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved		0.00873		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		7.1		1.0	mg/L		30-AUG-11	R2243553
Bicarbonate (HCO3)		8.7		2.0	mg/L		30-AUG-11	R2243553
Carbonate (CO3)		<0.60		0.60	mg/L		30-AUG-11	R2243553
Hydroxide (OH)		<0.40		0.40	mg/L		30-AUG-11	R2243553
Conductivity								
Conductivity		17.1		0.40	umhos/cm		30-AUG-11	R2243558
pH								
pH		7.19		0.10	pH units		19-AUG-11	R2238806
L1047237-10 TE-39-S								
Sampled By: MM,MF,TT on 16-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.50		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.4		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.061		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		9.52		0.30	mg/L		24-AUG-11	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-10 TE-39-S							
Sampled By: MM,MF,TT on 16-AUG-11							
Matrix: WATER							
Hardness (as CaCO3)	8.81		0.20	mg/L		24-AUG-11	
Nitrate-N	<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N	<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total	0.0060		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		22-AUG-11	R2238704
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Silica, Reactive (as SiO2)	0.490		0.0050	mg/L		01-SEP-11	R2244688
Sulfate	2.06		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen	0.087		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids	14.0		5.0	mg/L		23-AUG-11	R2239591
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	2.4		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity	0.43		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0216		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00266		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	2.48		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00096		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	0.13		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	0.806		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00289		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.427		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00070		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.279		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.540		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.0114		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00101		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-10 TE-39-S							
Sampled By: MM,MF,TT on 16-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0043		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	0.00022		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00223		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	2.23		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00054		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.786		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00065		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.390		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00061		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.219		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	0.511		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	0.0101		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.8		1.0	mg/L		30-AUG-11	R2243553
Bicarbonate (HCO3)	10.8		2.0	mg/L		30-AUG-11	R2243553
Carbonate (CO3)	<0.60		0.60	mg/L		30-AUG-11	R2243553
Hydroxide (OH)	<0.40		0.40	mg/L		30-AUG-11	R2243553
Conductivity							
Conductivity	23.1		0.40	umhos/cm		19-AUG-11	R2238806
pH							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-10	TE-39-S							
Sampled By:	MM,MF,TT on 16-AUG-11							
Matrix:	WATER							
pH	pH	7.31		0.10	pH units		19-AUG-11	R2238806
L1047237-11	CREMP AUG. DUP-1							
Sampled By:	MM,MF,TT							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		0.60		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		2.6		1.0	mg/L		25-AUG-11	R2240983
Fluoride		0.053		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		5.20		0.30	mg/L		24-AUG-11	
Hardness (as CaCO3)		5.21		0.20	mg/L		24-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total		0.0060		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		22-AUG-11	R2238704
Silica, Reactive (as SiO2)		0.294		0.0050	mg/L		01-SEP-11	R2244688
Sulfate		0.75		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen		0.129		0.050	mg/L		24-AUG-11	R2239975
Total Dissolved Solids		16.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total		0.030		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon		2.6		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids		<1.0		1.0	mg/L		23-AUG-11	R2239546
Turbidity		0.31		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0109		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total		0.00208		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total		<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total		1.05		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total		0.00055		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total		<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total		<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total		<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total		0.626		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total		0.00276		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-11 CREMP AUG. DUP-1							
Sampled By: MM,MF,TT							
Matrix: WATER							
Total Metals by ICP-MS							
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	0.350		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	0.00047		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	0.157		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	0.496		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00582		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00034		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0042		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	0.00183		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	1.05		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00049		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	0.631		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	0.00034		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	0.336		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	0.00046		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	0.138		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	0.492		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	0.00548		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-11 CREMP AUG. DUP-1 Sampled By: MM,MF,TT Matrix: WATER Dissolved Metals by ICP-MS Thorium (Th)-Dissolved Tin (Sn)-Dissolved Titanium (Ti)-Dissolved Tungsten (W)-Dissolved Uranium (U)-Dissolved Vanadium (V)-Dissolved Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH	<0.00010 <0.00020 <0.00020 <0.00020 <0.00010 <0.00020 <0.0020 <0.00040 5.8 7.1 <0.60 <0.40 12.4 7.05		0.00010 0.00020 0.00020 0.00020 0.00010 0.00020 0.0020 0.00040 1.0 2.0 0.60 0.40 0.40 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L umhos/cm pH units	19-AUG-11 19-AUG-11 19-AUG-11 19-AUG-11 19-AUG-11 19-AUG-11 19-AUG-11 19-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 19-AUG-11	R2239610 R2239610 R2239610 R2239610 R2239610 R2239610 R2239610 R2239610 R2243553 R2243553 R2243553 R2243553 R2243558 R2238806	
L1047237-12 CREMP AUG. EB-1 Sampled By: MM,MF,TT on 16-AUG-11 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Mercury (Hg)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Hardness (as CaCO3) Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Silica, Reactive (as SiO2) Sulfate Total Kjeldahl Nitrogen Total Dissolved Solids Iron (Fe)-Total Mercury (Hg)-Total Total Organic Carbon Total Suspended Solids Turbidity Total Metals by ICP-MS Aluminum (Al)-Total	<0.010 <0.10 <0.20 <0.010 <0.000010 <1.0 <0.020 0.24 <0.30 <0.0050 <0.070 <0.0010 0.0023 <0.010 <0.0010 <0.010 <0.0050 <0.50 0.077 14.0 <0.010 <0.000010 <1.0 <5.0 0.21 <0.0050		0.010 0.10 0.20 0.010 0.000010 1.0 0.020 0.20 0.30 0.0050 0.070 0.0010 0.0020 0.010 0.0010 0.010 0.0050 0.50 0.050 5.0 0.010 0.000010 1.0 5.0 0.10 0.0050	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	29-AUG-11 22-AUG-11 22-AUG-11 26-AUG-11 24-AUG-11 25-AUG-11 22-AUG-11 24-AUG-11 24-AUG-11 22-AUG-11 19-AUG-11 22-AUG-11 27-AUG-11 22-AUG-11 25-AUG-11 22-AUG-11 01-SEP-11 22-AUG-11 24-AUG-11 23-AUG-11 26-AUG-11 24-AUG-11 25-AUG-11 23-AUG-11 19-AUG-11 23-AUG-11	R2242724 R2240430 R2240430 R2241368 R2239714 R2240983 R2240430 R2240430 R2240430 R2240430 R2240430 R2241827 R2238710 R2240580 R2238704 R2244688 R2240430 R2239975 R2239591 R2241372 R2239714 R2240983 R2239591 R2239779 R2239499	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-12 CREMP AUG. EB-1							
Sampled By: MM,MF,TT on 16-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	0.12		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	<0.020		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	<0.050		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	<0.030		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	0.00012		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00023		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	0.071		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-12 CREMP AUG. EB-1								
Sampled By: MM,MF,TT on 16-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved		0.015		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved		<0.020		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved		<0.050		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved		<0.020		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved		0.00022		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		1.9		1.0	mg/L		30-AUG-11	R2243553
Bicarbonate (HCO3)		2.3		2.0	mg/L		30-AUG-11	R2243553
Carbonate (CO3)		<0.60		0.60	mg/L		30-AUG-11	R2243553
Hydroxide (OH)		<0.40		0.40	mg/L		30-AUG-11	R2243553
Conductivity								
Conductivity		0.88		0.40	umhos/cm		30-AUG-11	R2243558
pH								
pH		5.81		0.10	pH units		20-AUG-11	R2238911
L1047237-13 TB								
Sampled By: MM,MF,TT								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		29-AUG-11	R2242724
Bromide (Br)		<0.10		0.10	mg/L		22-AUG-11	R2240430
Chloride		<0.20		0.20	mg/L		22-AUG-11	R2240430
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		26-AUG-11	R2241368
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Dissolved Organic Carbon		<1.0		1.0	mg/L		25-AUG-11	R2240983
Fluoride		<0.020		0.020	mg/L		22-AUG-11	R2240430
Hardness (as CaCO3)		0.28		0.20	mg/L		24-AUG-11	
Hardness (as CaCO3)		<0.30		0.30	mg/L		24-AUG-11	
Nitrate-N		<0.0050		0.0050	mg/L		22-AUG-11	R2240430
Nitrate and Nitrite as N		<0.070		0.070	mg/L		19-AUG-11	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-13 TB							
Sampled By: MM,MF,TT							
Matrix: WATER							
Nitrite-N	<0.0010		0.0010	mg/L		22-AUG-11	R2240430
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		27-AUG-11	R2241827
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-AUG-11	R2238710
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-AUG-11	R2240580
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		22-AUG-11	R2238704
Silica, Reactive (as SiO2)	<0.0050		0.0050	mg/L		01-SEP-11	R2244688
Sulfate	<0.50		0.50	mg/L		22-AUG-11	R2240430
Total Kjeldahl Nitrogen	0.196		0.050	mg/L		26-AUG-11	R2241562
Total Dissolved Solids	12.0		5.0	mg/L		23-AUG-11	R2239591
Iron (Fe)-Total	0.014		0.010	mg/L		26-AUG-11	R2241372
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		24-AUG-11	R2239714
Total Organic Carbon	<1.0		1.0	mg/L		25-AUG-11	R2240983
Total Suspended Solids	<5.0		5.0	mg/L		23-AUG-11	R2239591
Turbidity	<0.10		0.10	NTU		19-AUG-11	R2239779
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0113		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Arsenic (As)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Barium (Ba)-Total	0.00023		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Boron (B)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-11	23-AUG-11	R2239499
Calcium (Ca)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Copper (Cu)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Iron (Fe)-Total	<0.10		0.10	mg/L	23-AUG-11	23-AUG-11	R2239499
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-11	23-AUG-11	R2239499
Lithium (Li)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Magnesium (Mg)-Total	<0.010		0.010	mg/L	23-AUG-11	23-AUG-11	R2239499
Manganese (Mn)-Total	0.00146		0.00030	mg/L	23-AUG-11	23-AUG-11	R2239499
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-11	23-AUG-11	R2239499
Phosphorus (P)-Total	<0.20		0.20	mg/L	23-AUG-11	23-AUG-11	R2239499
Potassium (K)-Total	<0.020		0.020	mg/L	23-AUG-11	23-AUG-11	R2239499
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Silicon (Si)-Total	<0.050		0.050	mg/L	23-AUG-11	23-AUG-11	R2239499
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Sodium (Na)-Total	<0.030		0.030	mg/L	23-AUG-11	23-AUG-11	R2239499
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Titanium (Ti)-Total	0.00033		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499
Tungsten (W)-Total	<0.0010		0.0010	mg/L	23-AUG-11	23-AUG-11	R2239499
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-11	23-AUG-11	R2239499
Vanadium (V)-Total	<0.00020		0.00020	mg/L	23-AUG-11	23-AUG-11	R2239499

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1047237-13 TB							
Sampled By: MM,MF,TT							
Matrix: WATER							
Total Metals by ICP-MS							
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	23-AUG-11	23-AUG-11	R2239499
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-11	23-AUG-11	R2239499
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Boron (B)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	19-AUG-11	23-AUG-11	R2239610
Calcium (Ca)-Dissolved	0.111		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Copper (Cu)-Dissolved	0.00021		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	19-AUG-11	23-AUG-11	R2239610
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	19-AUG-11	23-AUG-11	R2239610
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	19-AUG-11	23-AUG-11	R2239610
Potassium (K)-Dissolved	<0.020		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	19-AUG-11	23-AUG-11	R2239610
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	19-AUG-11	23-AUG-11	R2239610
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	19-AUG-11	23-AUG-11	R2239610
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	19-AUG-11	23-AUG-11	R2239610
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	19-AUG-11	23-AUG-11	R2239610
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	19-AUG-11	23-AUG-11	R2239610
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	1.9		1.0	mg/L		30-AUG-11	R2243553
Bicarbonate (HCO3)	2.3		2.0	mg/L		30-AUG-11	R2243553
Carbonate (CO3)	<0.60		0.60	mg/L		30-AUG-11	R2243553
Hydroxide (OH)	<0.40		0.40	mg/L		30-AUG-11	R2243553
Conductivity							
Conductivity	0.87		0.40	umhos/cm		30-AUG-11	R2243558
pH							
pH	5.84		0.10	pH units		20-AUG-11	R2238911

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Individual Samples Listed:

Sample Number	Client ID	Qualifier	Description
L1047237-13	TB	SFPL	Sample was Filtered and Preserved at the laboratory

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-DIS-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-D-L-ICP-ED	Water	Diss. Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL
Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
NH3-L-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourimetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SIO2-L-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2
This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540D
The residue retained by a prepared 1.5 um Whatman 934-AH glass microfibre filter dried at 105 degrees C.			
TKN-COL-VA	Water	TKN in Water by Colour	APHA 4500-NORG (TKN)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total Kjeldahl Nitrogen is determined using automated colourimetry.			
TSS-LOW-VA	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 Gravimetric
This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



f Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

L1047237 ^{COC #} _____ Page 1 of 2

Report To				at / Distribution				Service Requested (Rush for routine analysis subject to availability)													
Company: Agnico-Eagle Mining Ltd.				☐ Other ☒ PDF ☒ Excel ☐ Digital ☐ Fax				☒ Regular (Standard Turnaround Times - Business Days) ☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT ☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT ☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT													
Contact: Ryan Vanengen				☒ PDF ☒ Excel ☐ Digital ☐ Fax																	
Address: Meadowbank Division - PO Box 540				Email 1: rVanengen@agnico-eagle.com																	
Baker Lake, NU X0X 0A0				Email 2: gmann@azimuthgroup.ca																	
Phone: (867) 793-4610 x 6759 Fax:				Email 3: mmccconnell@azimuthgroup.ca																	
Invoice To Same as Report? ☐ Yes ☒ No				Client / Project Information				Analysis Request													
Hardcopy of Invoice with Report? ☐ Yes ☐ No				Job #: Meadowbank Mine CREMP				Please indicate below Filtered, Preserved or both (F, P, F/P)													
Company: Agnico-Eagle Mining Ltd.				PO / AFE:																	
Contact: Accounts Payable - Meadowbank Division				LSD:																	
Address: 20 ROUTE 395, Cadillac, QC J0Y 1C0																					
Phone: Fax:				Quote #: Q21514																	
Lab Work Order #				ALS Contact: Judy Dalmajjer				Sampler: MM, MF, TT													
(lab use only)																					
Sample #	Sample Identification (This description will appear on the report)			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Cl,F,Br,N2,N3,SO4	TOC / DOC	Metals (Tot & Dis)	TKN(Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va), TDS	P-Total & Ortho	**Chlorophyll-A	Number of Containers			
	PDL-17-S			11-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	PDL-18-S			11-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	INUG-26-S			13-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	INUG-27-S			13-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	WAL-17-S			15-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	WAL-18-S			15-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	TEFF-17-S			15-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	TEFF-18-S			15-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	TE-38-S			16-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
	TE-39-S			16-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8			
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																					
**samples analyzed for "chlorophyll-a" have a preserved & frozen filter (tin foil wrapped) included in the coolers in addition to water sample bottles; filters are included in container count.																					
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																					
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																					
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																					
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)													
Released by: Maggie McConnell		Date (dd-mmm-yy) 17-Aug-11		Time (hh-mm)		Received by:		Date:		Time:		Temperature:		Verified by:		Date:		Time:		Observations Yes / No ? If Yes add SI	
												18 °C									

Page 2 of 2[illegible]



Agnico-Eagle - Meadowbank Division
ATTN: RYAN VANENGEN
Meadowbank Division
PO Box 540
Baker Lake NU X0X 0A0

Date Received: 30-AUG-11
Report Date: 16-SEP-11 14:53 (MT)
Version: FINAL

Client Phone: 867-793-4610

Certificate of Analysis

Lab Work Order #: L1051774
Project P.O. #: NOT SUBMITTED
Job Reference: MEADOWBANK MINE CREMP
C of C Numbers:
Legal Site Desc:

Paul Nicolas
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-1 SP-38-S							
Sampled By: MM, MF, TT on 18-AUG-11							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)	<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride	0.50		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon	1.3		1.0	mg/L		02-SEP-11	R2246133
Fluoride	0.061		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)	9.71		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)	11.4		0.30	mg/L		06-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0053		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)	0.499		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	2.20		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	0.136		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	14.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	0.022		0.010	mg/L		08-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	2.0		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.36		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0104		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	0.00035		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.00210		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	2.93		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00072		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.980		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00270		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.482		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-1 SP-38-S							
Sampled By: MM, MF, TT on 18-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.238		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.604		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0129		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00028		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0042		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	0.00036		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00227		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.53		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00058		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	0.823		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00052		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	0.00015		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.413		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00065		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.227		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	0.517		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.0116		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-1 SP-38-S								
Sampled By: MM, MF, TT on 18-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.73		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		0.46		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		9.7		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		11.9		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		24.2		0.40	umhos/cm		31-AUG-11	R2244256
pH								
pH		7.31		0.10	pH units		31-AUG-11	R2244256
L1051774-2 SP-39-S								
Sampled By: MM, MF, TT on 18-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		0.49		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		2.3		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.059		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		9.53		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)		10.5		0.30	mg/L		06-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total		0.0055		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)		0.485		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		2.19		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		0.095		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids		12.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total		0.027		0.010	mg/L		08-SEP-11	R2248492
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon		2.3		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids		<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity		1.06		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0108		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total		0.00032		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-2 SP-39-S Sampled By: MM, MF, TT on 18-AUG-11 Matrix: WATER							
Total Metals by ICP-MS							
Barium (Ba)-Total	0.00207		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	2.75		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.0128		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.885		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00245		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.433		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00070		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.238		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.543		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0125		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00028		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0044		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	0.00034		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00240		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.49		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00100		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-2	SP-39-S							
Sampled By: MM, MF, TT on 18-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved		0.801		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved		0.00056		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved		0.00017		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved		0.403		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved		0.00065		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved		0.221		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved		0.501		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved		0.0115		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.87		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		0.52		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		9.8		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		12.0		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		24.5		0.40	umhos/cm		31-AUG-11	R2244256
pH								
pH		7.30		0.10	pH units		31-AUG-11	R2244256
L1051774-3	TPN-38-S							
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		0.52		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		1.9		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.059		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		7.30		0.30	mg/L		06-SEP-11	
Hardness (as CaCO3)		7.47		0.20	mg/L		15-SEP-11	
Nitrate-N		0.0326		0.0050	mg/L		31-AUG-11	R2245156

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-3 TPN-38-S							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0036		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		13-SEP-11	R2251458
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)	0.203		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	2.87		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	0.163		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	10.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	0.047		0.010	mg/L		08-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	1.9		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.88		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0089		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.00383		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	1.89		0.10	mg/L	01-SEP-11	14-SEP-11	R2252101
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00050		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.703		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00606		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.448		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00063		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.140		0.050	mg/L	01-SEP-11	14-SEP-11	R2252101
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.843		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00813		0.00010	mg/L	01-SEP-11	14-SEP-11	R2252101
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	0.00035		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-3 TPN-38-S							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0098		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	0.00032		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00226		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	1.65		0.050	mg/L	30-AUG-11	14-SEP-11	R2252101
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00064		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	0.812		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00041		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	0.00016		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.415		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00065		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.097		0.050	mg/L	30-AUG-11	14-SEP-11	R2252101
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	0.510		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.00795		0.00010	mg/L	30-AUG-11	14-SEP-11	R2252101
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	1.52		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a	0.40		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.2		1.0	mg/L		01-SEP-11	R2245002
Bicarbonate (HCO3)	7.5		2.0	mg/L		01-SEP-11	R2245002
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-11	R2245002
Hydroxide (OH)	<0.40		0.40	mg/L		01-SEP-11	R2245002
Conductivity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-3	TPN-38-S							
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Conductivity								
Conductivity		20.3		0.40	umhos/cm		01-SEP-11	R2245002
pH								
pH		7.00		0.10	pH units		01-SEP-11	R2245002
L1051774-4	TPN-39-S							
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		0.53		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		1.9		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.059		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		6.57		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)		7.15		0.30	mg/L		06-SEP-11	
Nitrate-N		0.0300		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		0.0027		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Phosphorus (P)-Total Reactive		0.0020		0.0010	mg/L		01-SEP-11	R2244700
Silica, Reactive (as SiO2)		0.198		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		2.83		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		0.100		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids		6.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total		<0.010		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon		2.0		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids		<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity		0.28		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0093		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total		0.00265		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total		<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total		1.70		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total		0.00042		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total		<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total		<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total		<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-4 TPN-39-S							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Magnesium (Mg)-Total	0.707		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00498		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.433		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00059		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.115		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.857		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00783		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0039		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00284		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	1.58		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	0.639		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00449		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	0.00018		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.404		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00054		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.096		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	0.783		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.00717		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-4 TPN-39-S								
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.61		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		0.39		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		6.2		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		7.6		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		16.9		0.40	umhos/cm		07-SEP-11	R2247187
pH								
pH		7.08		0.10	pH units		31-AUG-11	R2244256
L1051774-5 TPS-29-S								
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		0.51		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		1.7		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.059		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		6.37		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)		6.94		0.30	mg/L		06-SEP-11	
Nitrate-N		0.0255		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total		0.0034		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive		0.0012		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)		0.199		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		2.72		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		0.134		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids		<5.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total		0.015		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		09-SEP-11	R2248917

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-5 TPS-29-S							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Total Organic Carbon	2.0		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.28		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0093		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.00266		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	1.66		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00039		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.680		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00447		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.428		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00061		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.111		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.815		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00769		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00023		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0033		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00267		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	1.56		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-5 TPS-29-S								
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Cesium (Cs)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved		0.00034		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved		0.605		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved		0.00356		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved		0.00016		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved		0.396		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved		0.00055		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved		0.100		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved		0.727		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved		0.00727		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.35		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		0.45		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		6.3		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		7.7		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		17.5		0.40	umhos/cm		07-SEP-11	R2247187
pH								
pH		7.13		0.10	pH units		31-AUG-11	R2244256
L1051774-6 TPS-30-S								
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		0.51		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-6 TPS-30-S							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Dissolved Organic Carbon	1.9		1.0	mg/L		02-SEP-11	R2246133
Fluoride	0.059		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)	6.90		0.30	mg/L		06-SEP-11	
Hardness (as CaCO3)	6.55		0.20	mg/L		16-SEP-11	
Nitrate-N	0.0251		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0051		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		01-SEP-11	R2244700
Silica, Reactive (as SiO2)	0.200		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	2.72		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	0.112		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	6.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	<0.010		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	2.0		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.26		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0089		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.00253		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	1.66		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00048		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.671		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00459		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.424		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.102		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.802		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00733		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-6 TPS-30-S							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00024		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0031		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00270		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	1.59		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	0.625		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00297		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	0.00016		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.393		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00056		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.097		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	0.733		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.00726		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	1.60		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a	0.37		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity							
Alkalinity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-6	TPS-30-S							
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Alkalinity								
Alkalinity, Total (as CaCO3)		6.3		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		7.7		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		17.8		0.40	umhos/cm		07-SEP-11	R2247187
pH								
pH		7.12		0.10	pH units		31-AUG-11	R2244256
L1051774-7	TPE-38-S							
Sampled By: MM, MF, TT on 24-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		0.50		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		1.9		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.068		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		8.17		0.30	mg/L		06-SEP-11	
Hardness (as CaCO3)		6.23		0.20	mg/L		16-SEP-11	
Nitrate-N		0.0165		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		0.0043		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total Reactive		0.0011		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)		0.183		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		2.16		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		0.148		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids		12.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total		0.013		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon		1.9		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids		<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity		0.27		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0121		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total		0.00087		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total		0.00253		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total		<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total		2.06		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-7 TPE-38-S							
Sampled By: MM, MF, TT on 24-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00046		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.733		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00154		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	0.00027		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.497		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00072		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.112		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.633		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00868		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0043		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00283		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	1.52		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	0.593		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00019		0.00010	mg/L	30-AUG-11	13-SEP-11	R2250178
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.382		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00053		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-7 TPE-38-S Sampled By: MM, MF, TT on 24-AUG-11 Matrix: WATER Dissolved Metals by ICP-MS Selenium (Se)-Dissolved Silicon (Si)-Dissolved Silver (Ag)-Dissolved Sodium (Na)-Dissolved Strontium (Sr)-Dissolved Tellurium (Te)-Dissolved Thallium (Tl)-Dissolved Thorium (Th)-Dissolved Tin (Sn)-Dissolved Titanium (Ti)-Dissolved Tungsten (W)-Dissolved Uranium (U)-Dissolved Vanadium (V)-Dissolved Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved Chlorophyll a, Pheophytin by fluorometry Chlorophyll a Phaeophytin a pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH	<0.0010 0.094 <0.00010 0.746 0.00672 <0.00020 <0.00010 <0.00010 <0.00010 <0.00020 <0.00020 <0.00020 <0.00010 <0.00020 <0.0020 <0.00040 1.31 0.31 8.1 9.9 <0.60 <0.40 21.2 7.27		0.0010 0.050 0.00010 0.020 0.00010 0.00020 0.00010 0.00010 0.00020 0.00020 0.00020 0.00010 0.00020 0.0020 0.00040 0.10 0.10 1.0 2.0 0.60 0.40 0.40 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L ug/L ug/L mg/L mg/L mg/L mg/L umhos/cm pH units	30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 12-SEP-11 12-SEP-11 31-AUG-11 31-AUG-11 31-AUG-11 31-AUG-11 31-AUG-11 31-AUG-11	06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 13-SEP-11 13-SEP-11 31-AUG-11 31-AUG-11 31-AUG-11 31-AUG-11 31-AUG-11 31-AUG-11	R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2252055 R2252055 R2244256 R2244256 R2244256 R2244256 R2244256 R2244256
L1051774-8 TPE-39-S Sampled By: MM, MF, TT on 24-AUG-11 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Mercury (Hg)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Hardness (as CaCO3) Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Silica, Reactive (as SiO2) Sulfate	<0.010 <0.10 0.51 <0.010 <0.000010 1.9 0.069 8.01 7.46 0.0147 <0.070 <0.0010 0.0040 <0.010 <0.010 <0.0010 0.180 2.22		0.010 0.10 0.20 0.010 0.000010 1.0 0.020 0.30 0.20 0.0050 0.070 0.0010 0.0020 0.010 0.010 0.0010 0.0050 0.50	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L		12-SEP-11 31-AUG-11 31-AUG-11 14-SEP-11 09-SEP-11 02-SEP-11 31-AUG-11 06-SEP-11 16-SEP-11 31-AUG-11 30-AUG-11 31-AUG-11 09-SEP-11 01-SEP-11 31-AUG-11 01-SEP-11 10-SEP-11 31-AUG-11	R2250236 R2245156 R2245156 R2251525 R2248917 R2246133 R2245156 R2245156 R2245156 R2245156 R2245156 R2245156 R2248770 R2244442 R2243975 R2244700 R2250166 R2245156

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-8 TPE-39-S							
Sampled By: MM, MF, TT on 24-AUG-11							
Matrix: WATER							
Total Kjeldahl Nitrogen	0.107		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	6.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	0.011		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	2.0		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.29		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0104		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	0.00067		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.00250		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	1.98		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00048		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.744		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00161		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	0.00023		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.486		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00070		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.101		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	0.652		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00875		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00022		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0045		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	0.00086		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.00258		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-8 TPE-39-S								
Sampled By: MM, MF, TT on 24-AUG-11								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Bismuth (Bi)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved		<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved		<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved		1.87		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved		0.00039		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved		0.676		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved		0.00062		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved		0.00026		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved		0.455		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved		0.00070		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved		0.093		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved		0.583		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved		0.00853		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.20		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		0.30		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		15.5		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		18.9		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		20.7		0.40	umhos/cm		31-AUG-11	R2244256
pH								
pH		7.02		0.10	pH units		31-AUG-11	R2244256
L1051774-9 BBD-17-S								
Sampled By: MM, MF, TT on 21-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-9 BBD-17-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Bromide (Br)	<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride	10.3		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon	3.8		1.0	mg/L		07-SEP-11	R2247543
Fluoride	0.052		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)	12.1		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)	14.3		0.30	mg/L		06-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0093		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Phosphorus (P)-Total Reactive	0.0011		0.0010	mg/L		01-SEP-11	R2244700
Silica, Reactive (as SiO2)	0.263		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	1.89		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	0.235		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	26.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	0.034		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	3.9		1.0	mg/L		07-SEP-11	R2247543
Total Suspended Solids	<1.0		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.52		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0266		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.0190		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	2.83		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00039		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	1.76		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00409		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.645		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00091		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.210		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-9 BBD-17-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	5.86		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0219		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	0.00052		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00061		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0047		0.0020	mg/L	30-AUG-11	07-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0187		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	07-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	07-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.31		0.050	mg/L	30-AUG-11	07-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	07-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00027		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	07-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	07-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	07-SEP-11	R2248751
Magnesium (Mg)-Dissolved	1.54		0.010	mg/L	30-AUG-11	07-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00051		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	07-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	07-SEP-11	R2248751
Potassium (K)-Dissolved	0.540		0.020	mg/L	30-AUG-11	07-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00073		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	07-SEP-11	R2248751
Silicon (Si)-Dissolved	0.127		0.050	mg/L	30-AUG-11	07-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Sodium (Na)-Dissolved	5.12		0.020	mg/L	30-AUG-11	07-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.0185		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	07-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	07-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	07-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-9	BBD-17-S							
Sampled By:	MM, MF, TT on 21-AUG-11							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	07-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		4.05		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		1.17		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.6		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)		12.9		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)		<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity								
Conductivity		57.4		0.40	umhos/cm		31-AUG-11	R2244256
pH								
pH		7.32		0.10	pH units		31-AUG-11	R2244256
L1051774-10	BBD-18-S							
Sampled By:	MM, MF, TT on 21-AUG-11							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		10.3		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		3.8		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.056		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		12.9		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)		13.9		0.30	mg/L		06-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total		0.0083		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)		0.262		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		2.68		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		0.240		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids		30.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total		0.033		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon		3.7		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids		1.1		1.0	mg/L		07-SEP-11	R2248064
Turbidity		0.48		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0295		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total		0.0190		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-10 BBD-18-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	2.82		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00038		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	1.66		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00388		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.607		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00092		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.194		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	5.51		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0218		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	0.00031		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00060		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0046		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0189		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.56		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00061		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	1.57		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-10 BBD-18-S Sampled By: MM, MF, TT on 21-AUG-11 Matrix: WATER Dissolved Metals by ICP-MS Manganese (Mn)-Dissolved Molybdenum (Mo)-Dissolved Nickel (Ni)-Dissolved Phosphorus (P)-Dissolved Potassium (K)-Dissolved Rubidium (Rb)-Dissolved Selenium (Se)-Dissolved Silicon (Si)-Dissolved Silver (Ag)-Dissolved Sodium (Na)-Dissolved Strontium (Sr)-Dissolved Tellurium (Te)-Dissolved Thallium (Tl)-Dissolved Thorium (Th)-Dissolved Tin (Sn)-Dissolved Titanium (Ti)-Dissolved Tungsten (W)-Dissolved Uranium (U)-Dissolved Vanadium (V)-Dissolved Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved Chlorophyll a, Pheophytin by fluorometry Chlorophyll a Phaeophytin a pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH	0.00046 <0.00010 <0.0010 <0.10 0.559 0.00079 <0.0010 0.133 <0.00010 5.07 0.0190 <0.00020 <0.00010 <0.00010 <0.00020 <0.00020 <0.00020 <0.00010 <0.00020 <0.00020 <0.00020 4.35 1.36		0.00010 0.00010 0.0010 0.10 0.020 0.00020 0.0010 0.050 0.00010 0.020 0.00010 0.00020 0.00010 0.00010 0.00020 0.00020 0.00010 0.00020 0.00020 0.00020 0.10 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L ug/L ug/L	30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 30-AUG-11 12-SEP-11 12-SEP-11	06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 06-SEP-11 13-SEP-11 13-SEP-11	R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2252055 R2252055
L1051774-11 BPJ-17-S Sampled By: MM, MF, TT on 20-AUG-11 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Mercury (Hg)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Hardness (as CaCO3) Nitrate-N Nitrate and Nitrite as N Nitrite-N	<0.010 <0.10 9.90 <0.010 <0.000010 3.8 0.055 16.9 12.3 <0.0050 <0.070 <0.0010		0.010 0.10 0.20 0.010 0.000010 1.0 0.020 0.30 0.20 0.0050 0.070 0.0010	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L		12-SEP-11 31-AUG-11 31-AUG-11 14-SEP-11 09-SEP-11 02-SEP-11 31-AUG-11 06-SEP-11 16-SEP-11 31-AUG-11 30-AUG-11 31-AUG-11	R2250236 R2245156 R2245156 R2251525 R2248917 R2246133 R2245156 R2245156 R2245156 R2245156 R2245156 R2245156

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-11 BPJ-17-S							
Sampled By: MM, MF, TT on 20-AUG-11							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0108		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Phosphorus (P)-Total Reactive	0.0011		0.0010	mg/L		01-SEP-11	R2244700
Silica, Reactive (as SiO2)	0.262		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	1.82		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	30.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	0.038		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	3.8		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	1.4		1.0	mg/L		13-SEP-11	R2251052
Turbidity	0.53		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0352		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.0184		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	3.53		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00217		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	0.0033		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	1.97		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00409		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.804		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00098		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.211		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	6.68		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0228		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	0.00035		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.0325		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	0.00024		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	0.0147		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-11 BPJ-17-S							
Sampled By: MM, MF, TT on 20-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0066		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0190		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.50		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00030		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	1.47		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00050		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.520		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00079		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.136		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	4.66		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.0186		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	4.16		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a	1.18		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.3		1.0	mg/L		31-AUG-11	R2244256
Bicarbonate (HCO3)	12.6		2.0	mg/L		31-AUG-11	R2244256
Carbonate (CO3)	<0.60		0.60	mg/L		31-AUG-11	R2244256
Hydroxide (OH)	<0.40		0.40	mg/L		31-AUG-11	R2244256
Conductivity							
Conductivity	55.7		0.40	umhos/cm		31-AUG-11	R2244256
pH							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-11 BPJ-17-S Sampled By: MM, MF, TT on 20-AUG-11 Matrix: WATER pH pH	7.31		0.10	pH units		31-AUG-11	R2244256
L1051774-12 BPJ-18-S Sampled By: MM, MF, TT on 20-AUG-11 Matrix: WATER Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)	<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride	14.1		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon	3.7		1.0	mg/L		07-SEP-11	R2247543
Fluoride	0.053		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)	13.4		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)	17.8		0.30	mg/L		06-SEP-11	
Nitrate-N	0.0051		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	0.0012		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0095		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Phosphorus (P)-Total Reactive	0.0015		0.0010	mg/L		01-SEP-11	R2244700
Silica, Reactive (as SiO2)	0.252		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	2.41		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	0.182		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	38.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	0.042		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	4.0		1.0	mg/L		07-SEP-11	R2247543
Total Suspended Solids	<1.0		1.0	mg/L		13-SEP-11	R2251052
Turbidity	0.53		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0428		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.0187		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	3.52		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00059		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	0.0035		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	2.18		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00383		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-12 BPJ-18-S							
Sampled By: MM, MF, TT on 20-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.856		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00101		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.223		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	8.82		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0238		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00110		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0035		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0183		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.49		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00031		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	1.74		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00033		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.610		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00087		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.119		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	7.12		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.0205		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-12 BPJ-18-S Sampled By: MM, MF, TT on 20-AUG-11 Matrix: WATER Dissolved Metals by ICP-MS Thorium (Th)-Dissolved Tin (Sn)-Dissolved Titanium (Ti)-Dissolved Tungsten (W)-Dissolved Uranium (U)-Dissolved Vanadium (V)-Dissolved Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved Chlorophyll a, Pheophytin by fluorometry Chlorophyll a Phaeophytin a pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO ₃) Bicarbonate (HCO ₃) Carbonate (CO ₃) Hydroxide (OH) Conductivity Conductivity pH pH	<0.00010 <0.00020 <0.00020 <0.00020 <0.00010 <0.00020 <0.0020 <0.00040 3.99 1.08 10.3 12.6 <0.60 <0.40 69.7 7.31	 	 	 	 	 	R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2248751 R2252055 R2252055 R2244256 R2244256 R2244256 R2244256 R2244256 R2244256
L1051774-13 BAP-17-S Sampled By: MM, MF, TT on 21-AUG-11 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Mercury (Hg)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO ₃) Hardness (as CaCO ₃) Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Silica, Reactive (as SiO ₂) Sulfate Total Kjeldahl Nitrogen Total Dissolved Solids Iron (Fe)-Total Mercury (Hg)-Total Total Organic Carbon Total Suspended Solids	<0.010 <0.10 20.2 <0.010 <0.000010 3.8 0.055 15.7 18.5 <0.0050 <0.070 <0.0010 0.0068 <0.010 <0.010 0.0011 0.244 3.31 0.184 48.0 0.021 <0.000010 3.8 <1.0	 	 	 	 	 	R2250236 R2245156 R2245156 R2251525 R2248917 R2246133 R2245156 R2245156 R2245156 R2248770 R2244442 R2243975 R2244700 R2250166 R2245156 R2247321 R2246454 R2248492 R2248917 R2246133 R2248064

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-13 BAP-17-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Turbidity	0.30		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0176		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.0171		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	3.34		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00049		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	0.0036		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	2.47		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00250		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.921		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00097		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.161		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	10.3		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0251		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00046		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0035		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0179		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.75		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-13 BAP-17-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00034		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	2.15		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00029		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.756		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00092		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.123		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	10.6		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.0225		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	3.73		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a	1.24		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.1		1.0	mg/L		01-SEP-11	R2245002
Bicarbonate (HCO3)	12.3		2.0	mg/L		01-SEP-11	R2245002
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-11	R2245002
Hydroxide (OH)	<0.40		0.40	mg/L		01-SEP-11	R2245002
Conductivity							
Conductivity	93.6		0.40	umhos/cm		01-SEP-11	R2245002
pH							
pH	7.16		0.10	pH units		01-SEP-11	R2245002
L1051774-14 BAP-18-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)	<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride	18.7		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon	3.7		1.0	mg/L		02-SEP-11	R2246133
Fluoride	0.056		0.020	mg/L		31-AUG-11	R2245156

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-14 BAP-18-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Hardness (as CaCO3)	15.3		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)	17.5		0.30	mg/L		06-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total	0.0092		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive	0.0013		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)	0.248		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	3.08		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	0.164		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids	48.0		5.0	mg/L		13-SEP-11	R2251450
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	3.9		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	1.1		1.0	mg/L		07-SEP-11	R2248064
Turbidity	0.31		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0200		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.0173		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	3.17		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00054		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	0.0037		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	2.33		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00288		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.826		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00096		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.154		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	11.0		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0251		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00041		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-14 BAP-18-S							
Sampled By: MM, MF, TT on 21-AUG-11							
Matrix: WATER							
Total Metals by ICP-MS							
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0047		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0178		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.75		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	0.00032		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	2.05		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00029		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.735		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00091		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.128		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	9.87		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	0.0233		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	3.84		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a	1.22		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.1		1.0	mg/L		01-SEP-11	R2245002
Bicarbonate (HCO3)	12.3		2.0	mg/L		01-SEP-11	R2245002
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-11	R2245002

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-14	BAP-18-S							
Sampled By:	MM, MF, TT on 21-AUG-11							
Matrix:	WATER							
Alkalinity								
Hydroxide (OH)		<0.40		0.40	mg/L		01-SEP-11	R2245002
Conductivity								
Conductivity		91.5		0.40	umhos/cm		01-SEP-11	R2245002
pH								
pH		7.32		0.10	pH units		01-SEP-11	R2245002
L1051774-15	CREMP AUG DUP-2							
Sampled By:	MM, MF, TT							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		0.016		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		14.3		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		3.8		1.0	mg/L		02-SEP-11	R2246133
Fluoride		0.056		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		13.1		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)		16.2		0.30	mg/L		06-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total		0.0115		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive		0.0017		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)		0.252		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		2.48		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		0.306		0.050	mg/L		05-SEP-11	R2246106
Total Dissolved Solids		40.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total		0.038		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon		3.8		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids		1.3		1.0	mg/L		07-SEP-11	R2248064
Turbidity		0.66		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0346		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total		0.0183		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total		<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total		3.11		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total		0.00045		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total		<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-15 CREMP AUG DUP-2							
Sampled By: MM, MF, TT							
Matrix: WATER							
Total Metals by ICP-MS							
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	0.0030		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	2.04		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00360		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	0.740		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	0.00100		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	0.182		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	8.07		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.0244		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	0.00088		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0037		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	0.0185		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	2.48		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	13-SEP-11	R2250178
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	1.67		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	0.00035		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	0.593		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	0.00083		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	0.119		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-15 CREMP AUG DUP-2								
Sampled By: MM, MF, TT								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Sodium (Na)-Dissolved		6.86		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved		0.0210		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		4.01		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
Phaeophytin a		1.11		0.10	ug/L	12-SEP-11	13-SEP-11	R2252055
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.2		1.0	mg/L		01-SEP-11	R2245002
Bicarbonate (HCO3)		12.4		2.0	mg/L		01-SEP-11	R2245002
Carbonate (CO3)		<0.60		0.60	mg/L		01-SEP-11	R2245002
Hydroxide (OH)		<0.40		0.40	mg/L		01-SEP-11	R2245002
Conductivity								
Conductivity		75.3		0.40	umhos/cm		01-SEP-11	R2245002
pH								
pH		7.32		0.10	pH units		01-SEP-11	R2245002
L1051774-16 CREMP AUG EB-2								
Sampled By: MM, MF, TT on 23-AUG-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)		<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride		<0.20		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon		<1.0		1.0	mg/L		02-SEP-11	R2246133
Fluoride		<0.020		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)		<0.20		0.20	mg/L		16-SEP-11	
Hardness (as CaCO3)		0.46		0.30	mg/L		06-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N		<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N		<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total		<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total		0.0045		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		31-AUG-11	R2243975
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		01-SEP-11	R2244700
Silica, Reactive (as SiO2)		<0.0050		0.0050	mg/L		10-SEP-11	R2250166
Sulfate		<0.50		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen		<0.050		0.050	mg/L		05-SEP-11	R2246166
Total Dissolved Solids		<5.0		5.0	mg/L		02-SEP-11	R2246454

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-16 CREMP AUG EB-2							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Iron (Fe)-Total	0.017		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	<1.0		1.0	mg/L		02-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		13-SEP-11	R2251052
Turbidity	0.16		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0128		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	0.00027		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	0.16		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	0.00033		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	0.013		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	0.00036		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	<0.020		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	<0.050		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	<0.030		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	0.00013		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tin (Sn)-Total	0.00037		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-16 CREMP AUG EB-2							
Sampled By: MM, MF, TT on 23-AUG-11							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	30-AUG-11	13-SEP-11	R2250178
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	13-SEP-11	R2250178
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	13-SEP-11	R2250178
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	<0.020		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	13-SEP-11	R2250178
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	2.2		1.0	mg/L		01-SEP-11	R2245002
Bicarbonate (HCO3)	2.7		2.0	mg/L		01-SEP-11	R2245002
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-11	R2245002
Hydroxide (OH)	<0.40		0.40	mg/L		01-SEP-11	R2245002
Conductivity							
Conductivity	1.24		0.40	umhos/cm		07-SEP-11	R2247187
pH							
pH	6.33		0.10	pH units		01-SEP-11	R2245002
L1051774-17 TB							
Sampled By: MM, MF, TT							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		12-SEP-11	R2250236
Bromide (Br)	<0.10		0.10	mg/L		31-AUG-11	R2245156
Chloride	<0.20		0.20	mg/L		31-AUG-11	R2245156
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		14-SEP-11	R2251525
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Dissolved Organic Carbon	<1.0		1.0	mg/L		03-SEP-11	R2246133

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-17 TB							
Sampled By: MM, MF, TT							
Matrix: WATER							
Fluoride	<0.020		0.020	mg/L		31-AUG-11	R2245156
Hardness (as CaCO3)	<0.30		0.30	mg/L		06-SEP-11	
Hardness (as CaCO3)	0.29		0.20	mg/L		16-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		31-AUG-11	R2245156
Nitrate and Nitrite as N	<0.070		0.070	mg/L		30-AUG-11	
Nitrite-N	<0.0010		0.0010	mg/L		31-AUG-11	R2245156
Phosphorus (P)-Total	0.0038		0.0020	mg/L		09-SEP-11	R2248770
Phosphorus (P)-Total	<0.010		0.010	mg/L		01-SEP-11	R2244442
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		01-SEP-11	R2244700
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		31-AUG-11	R2243975
Silica, Reactive (as SiO2)	<0.0050		0.0050	mg/L		10-SEP-11	R2250166
Sulfate	<0.50		0.50	mg/L		31-AUG-11	R2245156
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L		05-SEP-11	R2246166
Total Dissolved Solids	34.0		5.0	mg/L		02-SEP-11	R2246454
Iron (Fe)-Total	<0.010		0.010	mg/L		09-SEP-11	R2248492
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		09-SEP-11	R2248917
Total Organic Carbon	1.0		1.0	mg/L		03-SEP-11	R2246133
Total Suspended Solids	<1.0		1.0	mg/L		13-SEP-11	R2251052
Turbidity	<0.10		0.10	NTU		01-SEP-11	R2244676
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Arsenic (As)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Barium (Ba)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	01-SEP-11	02-SEP-11	R2246612
Calcium (Ca)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Copper (Cu)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Iron (Fe)-Total	<0.10		0.10	mg/L	01-SEP-11	02-SEP-11	R2246612
Lead (Pb)-Total	<0.000090		0.000090	mg/L	01-SEP-11	02-SEP-11	R2246612
Lithium (Li)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Magnesium (Mg)-Total	<0.010		0.010	mg/L	01-SEP-11	02-SEP-11	R2246612
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	01-SEP-11	02-SEP-11	R2246612
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	01-SEP-11	02-SEP-11	R2246612
Phosphorus (P)-Total	<0.20		0.20	mg/L	01-SEP-11	02-SEP-11	R2246612
Potassium (K)-Total	<0.020		0.020	mg/L	01-SEP-11	02-SEP-11	R2246612
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Selenium (Se)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Silicon (Si)-Total	<0.050		0.050	mg/L	01-SEP-11	02-SEP-11	R2246612
Silver (Ag)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Sodium (Na)-Total	<0.030		0.030	mg/L	01-SEP-11	02-SEP-11	R2246612
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-17 TB							
Sampled By: MM, MF, TT							
Matrix: WATER							
Total Metals by ICP-MS							
Tin (Sn)-Total	0.00027		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Tungsten (W)-Total	<0.0010		0.0010	mg/L	01-SEP-11	02-SEP-11	R2246612
Uranium (U)-Total	<0.00010		0.00010	mg/L	01-SEP-11	02-SEP-11	R2246612
Vanadium (V)-Total	<0.00020		0.00020	mg/L	01-SEP-11	02-SEP-11	R2246612
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	01-SEP-11	02-SEP-11	R2246612
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	01-SEP-11	02-SEP-11	R2246612
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0040		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Boron (B)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	30-AUG-11	06-SEP-11	R2248751
Calcium (Ca)-Dissolved	0.117		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	30-AUG-11	06-SEP-11	R2248751
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	30-AUG-11	06-SEP-11	R2248751
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	30-AUG-11	06-SEP-11	R2248751
Potassium (K)-Dissolved	<0.020		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	30-AUG-11	06-SEP-11	R2248751
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	30-AUG-11	06-SEP-11	R2248751
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	30-AUG-11	06-SEP-11	R2248751
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	30-AUG-11	06-SEP-11	R2248751
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zinc (Zn)-Dissolved	0.0032		0.0020	mg/L	30-AUG-11	06-SEP-11	R2248751
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	30-AUG-11	06-SEP-11	R2248751
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	1.8		1.0	mg/L		01-SEP-11	R2245002
Bicarbonate (HCO3)	2.2		2.0	mg/L		01-SEP-11	R2245002
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-11	R2245002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1051774-17	TB							
Sampled By:	MM, MF, TT							
Matrix:	WATER							
Alkalinity								
Hydroxide (OH)		<0.40		0.40	mg/L		01-SEP-11	R2245002
Conductivity								
Conductivity		0.83		0.40	umhos/cm		07-SEP-11	R2247187
pH								
pH		6.03		0.10	pH units		01-SEP-11	R2245002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.			
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.			
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CHL,PHEO-FLUORO-WP	Water	Chlorophyll a, Pheophytin by fluorometry	EPA 445.0
Chlorophyll a is filtered from the sample and extracted with 90% (v/v) acetone. The sample is analyzed fluorometrically. The extract is then acidified, converting chlorophyll a to pheophytin a. The sample is analyzed fluorometrically again after acidification. The chlorophyll a concentration is determined from the decrease upon acidification.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-DIS-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-D-L-ICP-ED	Water	Diss. Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL
Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
NH3-L-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SIO2-L-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2
This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
TKN-COL-VA	Water	TKN in Water by Colour	APHA 4500-NORG (TKN)
This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total Kjeldahl Nitrogen is determined using automated colourimetry.			
TSS-LOW-VA	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 Gravimetric

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



COC #

L 1051774

Page 1 of 2

[illegible]



11051774

Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)																
Company: Agnico-Eagle Mining Ltd.				☐ Standard ☐ Other				☒ Regular (Standard Turnaround Times - Business Days)																
Contact: Ryan Vanengen				☒ PDF ☒ Excel ☐ Digital ☐ Fax				☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT																
Address: Meadowbank Division - PO Box 540				Email 1: rvanengen@agnico-eagle.com				☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT																
Baker Lake, NU X0X 0A0				Email 2: gmann@azimuthgroup.ca				☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT																
Phone: (867) 793-4610 x 6759 Fax:				Email 3: mmccconnell@azimuthgroup.ca				Analysis Request																
Invoice To Same as Report? ☐ Yes ☒ No				Client / Project Information				Please indicate below Filtered, Preserved or both (F, P, F/P)																
Hardcopy of Invoice with Report? ☐ Yes ☐ No				Job #: Meadowbank Mine CREMP (BL)				P	F/P	F/P	P	F/P												
Company: Agnico-Eagle Mining Ltd.				PO / AFE:				Cl.F.Br.N2.N3.SO4	TOC / DOC	Metals (Tot & Dis)	TKN(Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va), TDS	P-Total & Ortho	**Chlorophyll-A	Number of Containers					
Contact: Accounts Payable - Meadowbank Division				LSD:																				
Address: 20 ROUTE 395, Cadillac, QC J0Y 1C0				Quote #: Q21514																				
Phone: Fax:				ALS Contact: Judy Dalmaijer																				
Lab Work Order # (lab use only)				Sampler: MM, MF, TT																				
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh mm)	Sample Type	Cl.F.Br.N2.N3.SO4	TOC / DOC	Metals (Tot & Dis)	TKN(Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va), TDS	P-Total & Ortho	**Chlorophyll-A	Number of Containers								
9	BBD-17-S	21-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8								
10	BBD-18-S	21-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8								
11	BPJ-17-S	20-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8								
12	BPJ-18-S	20-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8								
13	BAP-17-S	21-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8								
14	BAP-18-S	21-Aug-11		Water	X	X	X	X	X	X	X	X	X	X	X	8								
15	CREMP Aug. DUP-2	--		Water	X	X	X	X	X	X	X	X	X	X	X	8								
16	CREMP Aug. EB-2	23-Aug-11		Water	X	X	X	X	X	X	X	X	X	X		6								
17	TB	--		Water	X	X	X	X	X	X	X	X	X	X		4								
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																								
**samples analyzed for "chlorophyll-a" have a preserved & frozen filter (tin foil wrapped) included in the coolers in addition to water sample bottles; filters are included in container count.																								
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																								
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																								
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																								
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)																
Released by: Maggie McConnell	Date (dd-mmm-yy) 28-Aug-11	Time (hh-mm)		Received by:	Date:	Time:	Temperature: °C	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF													



AZIMUTH CONSULTING GROUP INC.
ATTN: Maggie McConnell
218 - 2902 West Broadway
Vancouver BC V6K 2G8

Date Received: 06-SEP-11
Report Date: 15-SEP-11 17:49 (MT)
Version: FINAL

Client Phone: 604-730-1220

Certificate of Analysis

Lab Work Order #: L1054122
Project P.O. #: NOT SUBMITTED
Job Reference: MEADOWBANK MINE CREMP (BL)
C of C Numbers: 1, 2, 3, 4, 5, 6, 7
Legal Site Desc:

Comments: Please note that the detection limits of various parameters reported in the following data tables have been increased due to the elevated Moisture content of the samples.

Brent Mack
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-1 SEDIMENT 13-AUG-11 PDL-1	L1054122-2 SEDIMENT 13-AUG-11 PDL-2	L1054122-3 SEDIMENT 13-AUG-11 PDL-3	L1054122-4 SEDIMENT 13-AUG-11 PDL-4	L1054122-5 SEDIMENT 13-AUG-11 PDL-5
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	78.8	79.3	72.1	79.4	80.8
	pH (1:2 soil:water) (pH)	7.87	5.87	5.97	5.87	6.12
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	13.7	14.9	15.8	5.71	12.6
	% Silt (0.063mm - 4um) (%)	74.0	75.0	76.0	77.3	81.4
	% Clay (<4um) (%)	12.3	10.1	8.18	16.9	6.05
Organic / Inorganic Carbon	Total Organic Carbon (%)	2.44	2.64	1.77	2.76	3.09
Metals	Aluminum (Al) (mg/kg)	19000	15100	17300	23900	17200
	Antimony (Sb) (mg/kg)	0.24	0.18	0.23	0.30	0.20
	Arsenic (As) (mg/kg)	20.2	7.45	91.9	41.4	8.45
	Barium (Ba) (mg/kg)	81.9	77.1	72.3	104	90.2
	Beryllium (Be) (mg/kg)	0.94	0.70	0.77	1.12	0.76
	Bismuth (Bi) (mg/kg)	0.86	0.60	0.72	1.10	0.70
	Cadmium (Cd) (mg/kg)	0.122	0.187	0.122	0.141	0.223
	Calcium (Ca) (mg/kg)	1790	1660	1690	2140	1850
	Chromium (Cr) (mg/kg)	124	97.2	114	157	111
	Cobalt (Co) (mg/kg)	11.6	8.25	17.5	20.4	9.61
	Copper (Cu) (mg/kg)	46.3	33.5	35.5	57.9	38.8
	Iron (Fe) (mg/kg)	33400	19700	58900	46200	22600
	Lead (Pb) (mg/kg)	13.7	10.4	11.8	16.6	12.0
	Lithium (Li) (mg/kg)	32.0	27.0	28.6	37.9	30.2
	Magnesium (Mg) (mg/kg)	10400	8150	9830	12400	9320
	Manganese (Mn) (mg/kg)	359	216	873	1410	255
	Mercury (Hg) (mg/kg)	0.0099	0.0084	0.0107	0.0118	0.0103
	Molybdenum (Mo) (mg/kg)	2.80	1.26	4.64	3.46	1.42
	Nickel (Ni) (mg/kg)	74.7	64.1	71.4	99.8	71.6
	Phosphorus (P) (mg/kg)	531	318	964	547	387
	Potassium (K) (mg/kg)	2360	1890	2140	3220	2110
	Selenium (Se) (mg/kg)	0.41	0.29	0.39	0.34	0.31
	Silver (Ag) (mg/kg)	0.15	0.17	0.13	<0.10	0.19
	Sodium (Na) (mg/kg)	110	<100	<100	100	<100
	Strontium (Sr) (mg/kg)	20.2	17.4	19.3	24.0	18.0
	Thallium (Tl) (mg/kg)	0.169	0.133	0.159	0.212	0.154
	Tin (Sn) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Titanium (Ti) (mg/kg)	486	394	485	501	402
	Uranium (U) (mg/kg)	8.13	5.82	6.31	10.7	6.70
	Vanadium (V) (mg/kg)	33.7	25.3	31.1	41.0	28.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-6 SEDIMENT 14-AUG-11 INUG-1	L1054122-7 SEDIMENT 14-AUG-11 INUG-2	L1054122-8 SEDIMENT 14-AUG-11 INUG-3	L1054122-9 SEDIMENT 14-AUG-11 INUG-4	L1054122-10 SEDIMENT 14-AUG-11 INUG-5
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	79.0	79.7	84.6	83.1	82.4
	pH (1:2 soil:water) (pH)	5.96	6.08	5.69	5.73	6.01
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	11.5	13.6	5.08	2.69	2.71
	% Silt (0.063mm - 4um) (%)	75.1	78.9	90.1	87.3	88.1
	% Clay (<4um) (%)	13.4	7.49	4.86	9.98	9.20
Organic / Inorganic Carbon	Total Organic Carbon (%)	2.93	2.99	4.84	4.01	4.22
Metals	Aluminum (Al) (mg/kg)	21900	21000	21600	19800	15500
	Antimony (Sb) (mg/kg)	0.16	0.14	0.21	0.18	0.16
	Arsenic (As) (mg/kg)	23.4	6.63	34.1	155	78.3
	Barium (Ba) (mg/kg)	103	107	133	116	90.8
	Beryllium (Be) (mg/kg)	1.21	1.19	1.35	1.20	0.89
	Bismuth (Bi) (mg/kg)	1.14	1.05	1.58	1.07	0.86
	Cadmium (Cd) (mg/kg)	0.111	0.096	0.250	0.179	0.149
	Calcium (Ca) (mg/kg)	1630	1800	1790	1600	1330
	Chromium (Cr) (mg/kg)	110	103	108	96.9	76.0
	Cobalt (Co) (mg/kg)	15.3	9.26	14.0	13.0	14.1
	Copper (Cu) (mg/kg)	43.8	39.5	48.2	42.2	33.1
	Iron (Fe) (mg/kg)	57700	27800	64700	121000	94900
	Lead (Pb) (mg/kg)	12.5	12.1	14.9	12.2	10.5
	Lithium (Li) (mg/kg)	34.2	33.6	33.4	28.8	17.6
	Magnesium (Mg) (mg/kg)	9870	9620	9520	8560	6900
	Manganese (Mn) (mg/kg)	1530	406	1340	1540	2680
	Mercury (Hg) (mg/kg)	0.0156	0.0161	0.0281	0.0228	0.0223
	Molybdenum (Mo) (mg/kg)	4.20	2.02	4.59	7.61	10.2
	Nickel (Ni) (mg/kg)	72.0	65.9	85.9	67.6	61.4
	Phosphorus (P) (mg/kg)	560	637	1230	3190	841
	Potassium (K) (mg/kg)	3520	3330	3450	3170	2290
	Selenium (Se) (mg/kg)	0.46	0.39	0.68	0.66	0.57
	Silver (Ag) (mg/kg)	<0.10	0.12	0.19	0.17	0.12
	Sodium (Na) (mg/kg)	120	120	140	120	<100
	Strontium (Sr) (mg/kg)	23.0	23.9	24.4	22.5	17.9
	Thallium (Tl) (mg/kg)	0.203	0.185	0.217	0.188	0.160
	Tin (Sn) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Titanium (Ti) (mg/kg)	556	541	525	472	384
	Uranium (U) (mg/kg)	16.1	13.9	16.8	14.1	10.8
	Vanadium (V) (mg/kg)	35.1	34.8	34.9	31.5	24.8

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1054122-11	L1054122-12	L1054122-13	L1054122-14	L1054122-15
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	14-AUG-11	14-AUG-11	14-AUG-11	14-AUG-11	14-AUG-11
		Sampled Time					
		Client ID	WAL-1	WAL-2	WAL-3	WAL-4	WAL-5
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)	80.1	89.6	90.0			
	pH (1:2 soil:water) (pH)	6.21	6.33	6.49			
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	<0.10	<0.10	
	% Sand (2.0mm - 0.063mm) (%)	4.21	3.12	4.40	2.57	5.42	
	% Silt (0.063mm - 4um) (%)	82.9	87.5	83.2	86.8	88.4	
	% Clay (<4um) (%)	12.9	9.36	12.4	10.6	6.17	
Organic / Inorganic Carbon	Total Organic Carbon (%)	3.96	7.85	7.44	8.37	7.87	
Metals	Aluminum (Al) (mg/kg)	34600	22100	21500			
	Antimony (Sb) (mg/kg)	0.68	0.38	0.45			
	Arsenic (As) (mg/kg)	18.1	35.6	18.1			
	Barium (Ba) (mg/kg)	202	125	131			
	Beryllium (Be) (mg/kg)	2.38	1.77	1.66			
	Bismuth (Bi) (mg/kg)	3.25	2.20	2.13			
	Cadmium (Cd) (mg/kg)	1.21	0.488	0.685			
	Calcium (Ca) (mg/kg)	4090	3800	3870			
	Chromium (Cr) (mg/kg)	84.3	65.3	61.7			
	Cobalt (Co) (mg/kg)	12.8	9.59	9.21			
	Copper (Cu) (mg/kg)	169	161	160			
	Iron (Fe) (mg/kg)	34700	38000	26500			
	Lead (Pb) (mg/kg)	44.2	34.7	34.2			
	Lithium (Li) (mg/kg)	80.7	37.4	38.9			
	Magnesium (Mg) (mg/kg)	12900	8690	8560			
	Manganese (Mn) (mg/kg)	509	397	323			
	Mercury (Hg) (mg/kg)	0.0213	0.0461	0.0432			
	Molybdenum (Mo) (mg/kg)	7.58	9.65	5.81			
	Nickel (Ni) (mg/kg)	74.4	54.7	53.1			
	Phosphorus (P) (mg/kg)	572	719	549			
	Potassium (K) (mg/kg)	6430	3540	3540			
	Selenium (Se) (mg/kg)	1.14	0.93	1.01			
	Silver (Ag) (mg/kg)	0.52	0.59	0.70			
	Sodium (Na) (mg/kg)	170	190	190			
	Strontium (Sr) (mg/kg)	35.7	24.1	24.4			
	Thallium (Tl) (mg/kg)	0.515	0.320	0.327			
	Tin (Sn) (mg/kg)	2.2	<2.0	<2.0			
	Titanium (Ti) (mg/kg)	1080	617	634			
	Uranium (U) (mg/kg)	28.9	16.9	17.3			
	Vanadium (V) (mg/kg)	47.0	35.2	32.4			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1054122-16	L1054122-17	L1054122-18	L1054122-19	L1054122-20
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	15-AUG-11	15-AUG-11	15-AUG-11	15-AUG-11	15-AUG-11
		Sampled Time					
		Client ID	TEFF-1	TEFF-2	TEFF-3	TEFF-4	TEFF-5
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)	84.3	74.8	84.2			
	pH (1:2 soil:water) (pH)	6.01	6.01	6.18			
Particle Size	% Gravel (>2mm) (%)	<0.10	0.52	<0.10	<0.10	<0.10	
	% Sand (2.0mm - 0.063mm) (%)	4.80	4.18	8.70	7.66	4.67	
	% Silt (0.063mm - 4um) (%)	81.2	64.8	77.4	74.1	75.4	
	% Clay (<4um) (%)	14.0	30.5	13.9	18.3	20.0	
Organic / Inorganic Carbon	Total Organic Carbon (%)	3.33	2.00	3.51	3.15	3.48	
Metals	Aluminum (Al) (mg/kg)	22800	28000	20100			
	Antimony (Sb) (mg/kg)	0.18	0.14	0.16			
	Arsenic (As) (mg/kg)	11.1	11.6	10.0			
	Barium (Ba) (mg/kg)	116	141	101			
	Beryllium (Be) (mg/kg)	1.83	2.18	1.82			
	Bismuth (Bi) (mg/kg)	1.79	2.17	1.61			
	Cadmium (Cd) (mg/kg)	0.126	0.141	0.137			
	Calcium (Ca) (mg/kg)	1910	1850	1900			
	Chromium (Cr) (mg/kg)	54.0	61.8	49.9			
	Cobalt (Co) (mg/kg)	12.8	15.9	11.2			
	Copper (Cu) (mg/kg)	49.9	55.2	43.5			
	Iron (Fe) (mg/kg)	40000	45900	34200			
	Lead (Pb) (mg/kg)	19.9	23.6	18.2			
	Lithium (Li) (mg/kg)	57.0	65.7	45.7			
	Magnesium (Mg) (mg/kg)	8330	10100	7540			
	Manganese (Mn) (mg/kg)	1910	2510	1600			
	Mercury (Hg) (mg/kg)	0.0163	0.0115	0.0164			
	Molybdenum (Mo) (mg/kg)	4.75	6.13	4.03			
	Nickel (Ni) (mg/kg)	37.1	40.4	31.8			
	Phosphorus (P) (mg/kg)	429	356	375			
	Potassium (K) (mg/kg)	4230	5190	3780			
	Selenium (Se) (mg/kg)	0.46	0.23	0.52			
	Silver (Ag) (mg/kg)	<0.10	<0.10	<0.10			
	Sodium (Na) (mg/kg)	180	150	170			
	Strontium (Sr) (mg/kg)	19.3	17.5	15.7			
	Thallium (Tl) (mg/kg)	0.398	0.495	0.345			
	Tin (Sn) (mg/kg)	<2.0	<2.0	<2.0			
	Titanium (Ti) (mg/kg)	807	1160	773			
	Uranium (U) (mg/kg)	22.4	26.7	19.2			
	Vanadium (V) (mg/kg)	36.1	46.2	33.1			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1054122-21	L1054122-22	L1054122-23	L1054122-24	L1054122-25
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	16-AUG-11	16-AUG-11	16-AUG-11	16-AUG-11	16-AUG-11
		Sampled Time					
		Client ID	TE-1	TE-2	TE-3	TE-4	TE-5
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)	74.9	78.9	81.2			
	pH (1:2 soil:water) (pH)	5.73	6.14	6.15			
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	<0.10	<0.10	
	% Sand (2.0mm - 0.063mm) (%)	17.5	14.0	6.85	5.31	4.10	
	% Silt (0.063mm - 4um) (%)	60.7	71.2	72.5	74.7	75.4	
	% Clay (<4um) (%)	21.7	14.8	20.7	20.0	20.6	
Organic / Inorganic Carbon	Total Organic Carbon (%)	1.85	2.33	2.50	2.73	2.85	
Metals	Aluminum (Al) (mg/kg)	19800	18000	22800			
	Antimony (Sb) (mg/kg)	0.14	0.16	0.17			
	Arsenic (As) (mg/kg)	11.5	19.4	15.0			
	Barium (Ba) (mg/kg)	96.9	93.0	106			
	Beryllium (Be) (mg/kg)	1.77	1.68	2.11			
	Bismuth (Bi) (mg/kg)	1.85	1.68	2.00			
	Cadmium (Cd) (mg/kg)	0.109	0.156	0.190			
	Calcium (Ca) (mg/kg)	1890	1630	1880			
	Chromium (Cr) (mg/kg)	51.4	47.1	56.7			
	Cobalt (Co) (mg/kg)	9.38	10.6	11.4			
	Copper (Cu) (mg/kg)	47.9	47.5	52.3			
	Iron (Fe) (mg/kg)	37500	62900	49800			
	Lead (Pb) (mg/kg)	18.6	17.3	19.8			
	Lithium (Li) (mg/kg)	40.6	35.0	48.1			
	Magnesium (Mg) (mg/kg)	7930	6940	8180			
	Manganese (Mn) (mg/kg)	723	1840	1600			
	Mercury (Hg) (mg/kg)	0.0159	0.0204	0.0203			
	Molybdenum (Mo) (mg/kg)	3.29	7.35	4.86			
	Nickel (Ni) (mg/kg)	32.2	31.4	39.4			
	Phosphorus (P) (mg/kg)	604	500	476			
	Potassium (K) (mg/kg)	3670	3320	4120			
	Selenium (Se) (mg/kg)	0.37	0.64	0.61			
	Silver (Ag) (mg/kg)	0.12	0.11	0.11			
	Sodium (Na) (mg/kg)	140	140	170			
	Strontium (Sr) (mg/kg)	14.1	13.2	15.8			
	Thallium (Tl) (mg/kg)	0.316	0.287	0.354			
	Tin (Sn) (mg/kg)	<2.0	<2.0	<2.0			
	Titanium (Ti) (mg/kg)	869	762	868			
	Uranium (U) (mg/kg)	17.3	15.8	18.5			
	Vanadium (V) (mg/kg)	32.7	29.6	35.5			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-26 SEDIMENT	L1054122-27 SEDIMENT	L1054122-30 SEDIMENT 17-AUG-11	L1054122-31 SEDIMENT 17-AUG-11	L1054122-32 SEDIMENT 17-AUG-11
		DUP-1	DUP-2	SP-1	SP-2	SP-3
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	79.5	74.9	85.1	85.3	84.3
	pH (1:2 soil:water) (pH)	6.02	5.76	6.60	6.16	6.18
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	11.2	17.4	2.34	1.92	1.34
	% Silt (0.063mm - 4um) (%)	72.8	72.7	81.9	73.0	68.8
	% Clay (<4um) (%)	16.0	9.95	15.8	25.1	29.9
Organic / Inorganic Carbon	Total Organic Carbon (%)	2.62	1.89	3.46	3.48	3.36
Metals	Aluminum (Al) (mg/kg)	20400	21600	26400	26200	26200
	Antimony (Sb) (mg/kg)	0.15	0.16	0.27	0.28	0.25
	Arsenic (As) (mg/kg)	23.0	12.3	25.8	37.5	35.3
	Barium (Ba) (mg/kg)	91.6	101	139	130	125
	Beryllium (Be) (mg/kg)	1.19	1.73	2.03	2.06	2.06
	Bismuth (Bi) (mg/kg)	1.08	1.97	2.38	2.39	2.45
	Cadmium (Cd) (mg/kg)	0.107	0.108	0.320	0.285	0.221
	Calcium (Ca) (mg/kg)	1630	2070	2230	2340	2080
	Chromium (Cr) (mg/kg)	107	54.9	85.4	87.4	87.5
	Cobalt (Co) (mg/kg)	14.7	9.90	17.0	19.6	17.4
	Copper (Cu) (mg/kg)	42.7	50.2	80.0	79.2	80.5
	Iron (Fe) (mg/kg)	57300	39900	57600	79000	66600
	Lead (Pb) (mg/kg)	11.9	19.4	22.2	21.8	22.5
	Lithium (Li) (mg/kg)	27.8	44.8	48.3	45.9	45.8
	Magnesium (Mg) (mg/kg)	9140	8120	9830	10100	10000
	Manganese (Mn) (mg/kg)	1370	743	3680	3230	1600
	Mercury (Hg) (mg/kg)	0.0171	0.0166	0.0285	0.0269	0.0251
	Molybdenum (Mo) (mg/kg)	4.09	3.46	6.57	7.41	6.81
	Nickel (Ni) (mg/kg)	65.7	34.5	72.9	68.8	62.9
	Phosphorus (P) (mg/kg)	489	687	587	574	630
	Potassium (K) (mg/kg)	3110	4020	4550	4320	4490
	Selenium (Se) (mg/kg)	0.48	0.37	0.69	0.68	0.64
	Silver (Ag) (mg/kg)	<0.10	0.12	0.15	0.11	<0.10
	Sodium (Na) (mg/kg)	130	160	190	170	180
	Strontium (Sr) (mg/kg)	20.7	16.1	19.7	19.3	18.5
	Thallium (Tl) (mg/kg)	0.192	0.340	0.402	0.375	0.375
	Tin (Sn) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Titanium (Ti) (mg/kg)	569	957	842	790	843
	Uranium (U) (mg/kg)	14.4	18.1	20.0	19.9	20.8
	Vanadium (V) (mg/kg)	34.3	34.5	42.6	42.4	42.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L1054122-33 SEDIMENT 17-AUG-11 SP-4	L1054122-34 SEDIMENT 17-AUG-11 SP-5	L1054122-35 SEDIMENT 19-AUG-11 TPN-1	L1054122-36 SEDIMENT 19-AUG-11 TPN-2	L1054122-37 SEDIMENT 19-AUG-11 TPN-3
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)				76.1	85.8	71.9
	pH (1:2 soil:water) (pH)				6.06	6.03	5.63
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	0.64	<0.10	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	1.70	1.54	46.0	14.5	46.8	
	% Silt (0.063mm - 4um) (%)	74.6	69.8	42.8	70.8	46.5	
	% Clay (<4um) (%)	23.7	28.6	10.6	14.7	6.74	
Organic / Inorganic Carbon	Total Organic Carbon (%)	3.55	3.72	1.80	3.71	1.25	
Metals	Aluminum (Al) (mg/kg)				13300	17600	11900
	Antimony (Sb) (mg/kg)				0.15	0.20	0.10
	Arsenic (As) (mg/kg)				8.89	13.7	5.93
	Barium (Ba) (mg/kg)				48.6	73.4	41.1
	Beryllium (Be) (mg/kg)				0.70	1.07	0.64
	Bismuth (Bi) (mg/kg)				0.77	1.13	0.66
	Cadmium (Cd) (mg/kg)				0.068	0.236	0.055
	Calcium (Ca) (mg/kg)				1220	1590	867
	Chromium (Cr) (mg/kg)				89.5	115	73.5
	Cobalt (Co) (mg/kg)				7.56	10.5	6.88
	Copper (Cu) (mg/kg)				33.4	54.1	27.9
	Iron (Fe) (mg/kg)				20800	27200	16700
	Lead (Pb) (mg/kg)				11.3	15.2	8.67
	Lithium (Li) (mg/kg)				19.9	32.1	19.2
	Magnesium (Mg) (mg/kg)				6830	8430	6070
	Manganese (Mn) (mg/kg)				279	407	190
	Mercury (Hg) (mg/kg)				0.0109	0.0162	0.0074
	Molybdenum (Mo) (mg/kg)				1.56	2.75	1.72
	Nickel (Ni) (mg/kg)				44.6	64.4	39.9
	Phosphorus (P) (mg/kg)				374	569	213
	Potassium (K) (mg/kg)				1650	2290	1550
	Selenium (Se) (mg/kg)				0.29	0.70	0.23
	Silver (Ag) (mg/kg)				<0.10	0.18	<0.10
	Sodium (Na) (mg/kg)				<100	120	<100
	Strontium (Sr) (mg/kg)				10.8	13.9	8.65
	Thallium (Tl) (mg/kg)				0.144	0.217	0.130
	Tin (Sn) (mg/kg)				<2.0	<2.0	<2.0
	Titanium (Ti) (mg/kg)				384	454	380
	Uranium (U) (mg/kg)				9.16	15.2	8.09
	Vanadium (V) (mg/kg)				24.8	31.9	21.0

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-38 SEDIMENT 19-AUG-11	L1054122-39 SEDIMENT 19-AUG-11	L1054122-40 SEDIMENT 19-AUG-11	L1054122-41 SEDIMENT 19-AUG-11	L1054122-42 SEDIMENT 19-AUG-11
		TPN-4	TPN-5	TPE-1	TPE-2	TPE-3
		Grouping	Analyte			
SOIL						
Physical Tests	Moisture (%)	57.8	39.2	87.8	86.7	87.6
	pH (1:2 soil:water) (pH)	5.95	5.25	6.44	6.02	6.54
Particle Size	% Gravel (>2mm) (%)	3.62	4.49	<0.10	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	38.7	25.3	1.84	1.58	1.61
	% Silt (0.063mm - 4um) (%)	46.8	42.2	71.4	68.4	73.6
	% Clay (<4um) (%)	10.9	28.1	26.8	30.0	24.8
Organic / Inorganic Carbon	Total Organic Carbon (%)	0.66	0.51	3.75	3.27	3.88
Metals	Aluminum (Al) (mg/kg)	14700	21100	24300	22000	20800
	Antimony (Sb) (mg/kg)	0.10	0.11	0.28	0.22	0.28
	Arsenic (As) (mg/kg)	15.6	10.7	17.5	14.8	22.1
	Barium (Ba) (mg/kg)	56.2	102	135	110	158
	Beryllium (Be) (mg/kg)	0.83	0.90	1.71	1.54	1.44
	Bismuth (Bi) (mg/kg)	0.85	1.05	2.23	2.13	1.93
	Cadmium (Cd) (mg/kg)	<0.050	0.098	0.464	0.177	0.488
	Calcium (Ca) (mg/kg)	829	1610	2360	2040	2230
	Chromium (Cr) (mg/kg)	88.8	97.4	118	96.4	106
	Cobalt (Co) (mg/kg)	9.72	13.6	16.7	14.1	17.0
	Copper (Cu) (mg/kg)	34.3	26.7	51.6	45.7	46.6
	Iron (Fe) (mg/kg)	24400	31100	41700	37100	49100
	Lead (Pb) (mg/kg)	10.2	13.8	20.7	18.3	19.3
	Lithium (Li) (mg/kg)	31.7	55.9	52.4	47.9	43.8
	Magnesium (Mg) (mg/kg)	7480	10500	10400	8970	9020
	Manganese (Mn) (mg/kg)	456	700	2910	1710	10100
	Mercury (Hg) (mg/kg)	0.0055	<0.0050	0.0182	0.0158	0.0233
	Molybdenum (Mo) (mg/kg)	3.63	2.68	3.94	3.55	4.40
	Nickel (Ni) (mg/kg)	45.6	63.1	122	65.8	109
	Phosphorus (P) (mg/kg)	228	305	443	346	404
	Potassium (K) (mg/kg)	1960	3720	4230	3860	3590
	Selenium (Se) (mg/kg)	<0.20	<0.20	0.80	0.80	0.80
	Silver (Ag) (mg/kg)	<0.10	<0.10	<0.10	<0.10	0.13
	Sodium (Na) (mg/kg)	<100	130	180	160	160
	Strontium (Sr) (mg/kg)	8.38	15.7	20.9	17.6	19.7
	Thallium (Tl) (mg/kg)	0.174	0.285	0.488	0.376	0.431
	Tin (Sn) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Titanium (Ti) (mg/kg)	438	968	816	755	706
	Uranium (U) (mg/kg)	10.0	12.2	15.9	15.0	13.1
	Vanadium (V) (mg/kg)	25.4	38.4	41.2	36.6	35.7

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-43 SEDIMENT 19-AUG-11 TPE-4	L1054122-44 SEDIMENT 19-AUG-11 TPE-5	L1054122-45 SEDIMENT DUP-3	L1054122-47 SEDIMENT 22-AUG-11 TPS-1	L1054122-48 SEDIMENT TPS-2
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)			88.3	82.9	78.5
	pH (1:2 soil:water) (pH)			6.56	6.01	6.15
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	1.70	2.19	1.48	21.9	35.7
	% Silt (0.063mm - 4um) (%)	61.2	65.8	63.5	61.4	46.6
	% Clay (<4um) (%)	37.1	32.1	35.0	16.7	17.8
Organic / Inorganic Carbon	Total Organic Carbon (%)	3.42	3.23	3.73	2.84	2.33
Metals	Aluminum (Al) (mg/kg)			19900	20100	15400
	Antimony (Sb) (mg/kg)			0.21	0.19	0.14
	Arsenic (As) (mg/kg)			14.7	11.7	10.0
	Barium (Ba) (mg/kg)			113	94.1	61.9
	Beryllium (Be) (mg/kg)			1.38	1.29	0.95
	Bismuth (Bi) (mg/kg)			1.84	1.21	0.95
	Cadmium (Cd) (mg/kg)			0.395	0.219	0.092
	Calcium (Ca) (mg/kg)			2060	1910	1350
	Chromium (Cr) (mg/kg)			94.6	101	79.2
	Cobalt (Co) (mg/kg)			13.5	11.7	9.69
	Copper (Cu) (mg/kg)			42.4	49.5	37.5
	Iron (Fe) (mg/kg)			34100	25600	22700
	Lead (Pb) (mg/kg)			17.4	17.0	13.8
	Lithium (Li) (mg/kg)			43.7	41.1	34.0
	Magnesium (Mg) (mg/kg)			8430	9460	7630
	Manganese (Mn) (mg/kg)			2380	391	405
	Mercury (Hg) (mg/kg)			0.0166	0.0149	0.0122
	Molybdenum (Mo) (mg/kg)			3.20	2.78	2.13
	Nickel (Ni) (mg/kg)			99.6	65.9	48.2
	Phosphorus (P) (mg/kg)			371	382	352
	Potassium (K) (mg/kg)			3170	3010	2270
	Selenium (Se) (mg/kg)			0.65	0.49	0.32
	Silver (Ag) (mg/kg)			<0.10	0.14	<0.10
	Sodium (Na) (mg/kg)			150	140	<100
	Strontium (Sr) (mg/kg)			16.7	16.0	10.8
	Thallium (Tl) (mg/kg)			0.412	0.262	0.200
	Tin (Sn) (mg/kg)			<2.0	<2.0	<2.0
	Titanium (Ti) (mg/kg)			669	708	545
	Uranium (U) (mg/kg)			13.0	14.5	10.6
	Vanadium (V) (mg/kg)			33.7	36.1	28.2

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-49 SEDIMENT 22-AUG-11 TPS-3	L1054122-50 SEDIMENT 22-AUG-11 TPS-4	L1054122-51 SEDIMENT 22-AUG-11 TPS-5	L1054122-52 SEDIMENT 20-AUG-11 BBD-1	L1054122-53 SEDIMENT 20-AUG-11 BBD-2
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	81.7			45.7	25.1
	pH (1:2 soil:water) (pH)	5.91			6.48	6.53
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	<0.10	0.17	<0.10
	% Sand (2.0mm - 0.063mm) (%)	12.4	4.24	55.4	27.4	87.5
	% Silt (0.063mm - 4um) (%)	60.3	81.2	28.1	58.0	9.92
	% Clay (<4um) (%)	27.3	14.5	16.6	14.5	2.52
Organic / Inorganic Carbon	Total Organic Carbon (%)	2.41	3.82	0.30	0.26	<0.10
Metals	Aluminum (Al) (mg/kg)	18900			9540	3770
	Antimony (Sb) (mg/kg)	0.15			0.17	<0.10
	Arsenic (As) (mg/kg)	11.4			44.0	3.45
	Barium (Ba) (mg/kg)	83.2			165	38.6
	Beryllium (Be) (mg/kg)	1.11			0.46	<0.20
	Bismuth (Bi) (mg/kg)	1.24			0.22	<0.20
	Cadmium (Cd) (mg/kg)	0.137			0.058	<0.050
	Calcium (Ca) (mg/kg)	1450			2720	1020
	Chromium (Cr) (mg/kg)	94.1			23.7	8.88
	Cobalt (Co) (mg/kg)	10.1			6.46	2.98
	Copper (Cu) (mg/kg)	49.6			10.0	2.83
	Iron (Fe) (mg/kg)	26100			25400	8760
	Lead (Pb) (mg/kg)	16.0			8.79	2.85
	Lithium (Li) (mg/kg)	39.0			11.7	5.7
	Magnesium (Mg) (mg/kg)	8620			5410	3030
	Manganese (Mn) (mg/kg)	348			825	143
	Mercury (Hg) (mg/kg)	0.0118			0.0052	<0.0050
	Molybdenum (Mo) (mg/kg)	1.68			2.02	<0.50
	Nickel (Ni) (mg/kg)	56.6			13.8	5.94
	Phosphorus (P) (mg/kg)	517			1800	325
	Potassium (K) (mg/kg)	2810			1770	520
	Selenium (Se) (mg/kg)	0.41			0.20	<0.20
	Silver (Ag) (mg/kg)	0.13			<0.10	<0.10
	Sodium (Na) (mg/kg)	110			140	<100
	Strontium (Sr) (mg/kg)	12.9			55.0	25.6
	Thallium (Tl) (mg/kg)	0.230			0.091	<0.050
	Tin (Sn) (mg/kg)	<2.0			<2.0	<2.0
	Titanium (Ti) (mg/kg)	586			382	169
	Uranium (U) (mg/kg)	14.6			3.31	0.532
	Vanadium (V) (mg/kg)	33.2			31.3	11.2

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-54 SEDIMENT 20-AUG-11 BBD-3	L1054122-55 SEDIMENT 20-AUG-11 BBD-4	L1054122-56 SEDIMENT 20-AUG-11 BBD-5	L1054122-57 SEDIMENT 20-AUG-11 BPJ-1	L1054122-58 SEDIMENT 20-AUG-11 BPJ-2
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	31.6			57.0	47.7
	pH (1:2 soil:water) (pH)	6.64			7.50	7.46
Particle Size	% Gravel (>2mm) (%)	<0.10	3.85	2.67	0.19	0.43
	% Sand (2.0mm - 0.063mm) (%)	74.7	61.3	35.2	32.5	42.7
	% Silt (0.063mm - 4um) (%)	20.4	26.9	50.1	52.3	43.3
	% Clay (<4um) (%)	4.93	8.04	12.1	15.0	13.7
Organic / Inorganic Carbon	Total Organic Carbon (%)	<0.10	<0.10	0.28	0.45	0.35
Metals	Aluminum (Al) (mg/kg)	2910			9230	7640
	Antimony (Sb) (mg/kg)	<0.10			0.13	0.14
	Arsenic (As) (mg/kg)	4.89			15.5	14.3
	Barium (Ba) (mg/kg)	33.3			146	131
	Beryllium (Be) (mg/kg)	<0.20			0.42	0.37
	Bismuth (Bi) (mg/kg)	<0.20			0.22	<0.20
	Cadmium (Cd) (mg/kg)	<0.050			0.095	0.071
	Calcium (Ca) (mg/kg)	902			2600	2440
	Chromium (Cr) (mg/kg)	6.34			21.7	20.7
	Cobalt (Co) (mg/kg)	2.28			8.28	8.03
	Copper (Cu) (mg/kg)	2.87			9.32	8.15
	Iron (Fe) (mg/kg)	6940			21700	21000
	Lead (Pb) (mg/kg)	2.61			9.39	9.42
	Lithium (Li) (mg/kg)	4.2			10.6	9.7
	Magnesium (Mg) (mg/kg)	1880			5260	4800
	Manganese (Mn) (mg/kg)	195			2600	2360
	Mercury (Hg) (mg/kg)	<0.0050			0.0108	0.0077
	Molybdenum (Mo) (mg/kg)	<0.50			2.06	2.23
	Nickel (Ni) (mg/kg)	4.37			14.8	13.3
	Phosphorus (P) (mg/kg)	299			1090	1060
	Potassium (K) (mg/kg)	440			1560	1370
	Selenium (Se) (mg/kg)	<0.20			<0.20	<0.20
	Silver (Ag) (mg/kg)	<0.10			<0.10	<0.10
	Sodium (Na) (mg/kg)	<100			140	110
	Strontium (Sr) (mg/kg)	18.4			50.6	48.3
	Thallium (Tl) (mg/kg)	<0.050			0.082	0.075
	Tin (Sn) (mg/kg)	<2.0			<2.0	<2.0
	Titanium (Ti) (mg/kg)	134			386	376
	Uranium (U) (mg/kg)	0.477			2.14	1.93
	Vanadium (V) (mg/kg)	8.23			26.1	25.1

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-59 SEDIMENT 20-AUG-11 BPJ-3	L1054122-60 SEDIMENT 20-AUG-11 BPJ-4	L1054122-61 SEDIMENT 20-AUG-11 BPJ-5	L1054122-62 SEDIMENT 21-AUG-11 BAP-1	L1054122-63 SEDIMENT 21-AUG-11 BAP-2
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	44.3			40.2	36.2
	pH (1:2 soil:water) (pH)	6.61			6.36	6.32
Particle Size	% Gravel (>2mm) (%)	1.98	5.81	0.83	<0.10	<0.10
	% Sand (2.0mm - 0.063mm) (%)	20.4	55.2	64.4	75.3	85.5
	% Silt (0.063mm - 4um) (%)	61.0	30.9	27.6	20.1	11.9
	% Clay (<4um) (%)	16.6	8.07	7.19	4.62	2.54
Organic / Inorganic Carbon	Total Organic Carbon (%)	0.31	0.15	<0.10	0.23	0.19
Metals	Aluminum (Al) (mg/kg)	8660			4620	3650
	Antimony (Sb) (mg/kg)	0.12			0.14	0.13
	Arsenic (As) (mg/kg)	31.2			4.74	5.16
	Barium (Ba) (mg/kg)	112			278	306
	Beryllium (Be) (mg/kg)	0.37			0.29	0.22
	Bismuth (Bi) (mg/kg)	0.22			<0.20	<0.20
	Cadmium (Cd) (mg/kg)	<0.050			<0.050	<0.050
	Calcium (Ca) (mg/kg)	2370			1960	1820
	Chromium (Cr) (mg/kg)	20.0			16.6	13.1
	Cobalt (Co) (mg/kg)	7.07			3.85	3.34
	Copper (Cu) (mg/kg)	9.21			4.51	4.59
	Iron (Fe) (mg/kg)	23800			11600	11000
	Lead (Pb) (mg/kg)	8.93			4.31	3.33
	Lithium (Li) (mg/kg)	10.2			6.9	5.4
	Magnesium (Mg) (mg/kg)	5080			3170	2620
	Manganese (Mn) (mg/kg)	1230			146	195
	Mercury (Hg) (mg/kg)	0.0062			<0.0050	0.0084
	Molybdenum (Mo) (mg/kg)	2.17			<0.50	<0.50
	Nickel (Ni) (mg/kg)	12.6			9.72	7.81
	Phosphorus (P) (mg/kg)	1310			662	633
	Potassium (K) (mg/kg)	1330			1040	830
	Selenium (Se) (mg/kg)	<0.20			<0.20	<0.20
	Silver (Ag) (mg/kg)	<0.10			<0.10	<0.10
	Sodium (Na) (mg/kg)	120			<100	<100
	Strontium (Sr) (mg/kg)	44.0			40.2	37.7
	Thallium (Tl) (mg/kg)	0.072			0.058	<0.050
	Tin (Sn) (mg/kg)	<2.0			<2.0	<2.0
	Titanium (Ti) (mg/kg)	299			262	217
	Uranium (U) (mg/kg)	1.86			1.22	1.00
	Vanadium (V) (mg/kg)	23.4			17.7	15.0

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L1054122-64 SEDIMENT 21-AUG-11 BAP-3	L1054122-65 SEDIMENT 21-AUG-11 BAP-4	L1054122-66 SEDIMENT 21-AUG-11 BAP-5	L1054122-67 SEDIMENT 21-AUG-11 BES-1	L1054122-68 SEDIMENT 21-AUG-11 BES-2
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)	45.5				38.0	39.1
	pH (1:2 soil:water) (pH)	6.06				7.41	7.68
Particle Size	% Gravel (>2mm) (%)	<0.10	<0.10	4.23	0.17	<0.10	
	% Sand (2.0mm - 0.063mm) (%)	69.1	58.7	72.7	78.3	79.9	
	% Silt (0.063mm - 4um) (%)	26.3	35.6	19.8	18.0	16.9	
	% Clay (<4um) (%)	4.65	5.65	3.33	3.52	3.09	
Organic / Inorganic Carbon	Total Organic Carbon (%)	0.41	0.98	0.25	0.20	0.17	
Metals	Aluminum (Al) (mg/kg)	5410				4890	4580
	Antimony (Sb) (mg/kg)	0.15				0.11	0.11
	Arsenic (As) (mg/kg)	8.84				2.72	2.78
	Barium (Ba) (mg/kg)	317				111	137
	Beryllium (Be) (mg/kg)	0.31				0.26	0.24
	Bismuth (Bi) (mg/kg)	<0.20				<0.20	<0.20
	Cadmium (Cd) (mg/kg)	<0.050				<0.050	<0.050
	Calcium (Ca) (mg/kg)	2140				2060	2000
	Chromium (Cr) (mg/kg)	16.9				15.7	15.4
	Cobalt (Co) (mg/kg)	4.50				3.97	3.86
	Copper (Cu) (mg/kg)	5.80				4.50	3.67
	Iron (Fe) (mg/kg)	14500				11900	11400
	Lead (Pb) (mg/kg)	5.22				4.25	4.15
	Lithium (Li) (mg/kg)	7.5				6.9	6.7
	Magnesium (Mg) (mg/kg)	3540				3470	3380
	Manganese (Mn) (mg/kg)	181				395	424
	Mercury (Hg) (mg/kg)	0.0055				<0.0050	<0.0050
	Molybdenum (Mo) (mg/kg)	0.61				<0.50	<0.50
	Nickel (Ni) (mg/kg)	10.4				9.59	9.51
	Phosphorus (P) (mg/kg)	739				661	647
	Potassium (K) (mg/kg)	1230				950	890
	Selenium (Se) (mg/kg)	<0.20				<0.20	<0.20
	Silver (Ag) (mg/kg)	<0.10				<0.10	<0.10
	Sodium (Na) (mg/kg)	<100				<100	<100
	Strontium (Sr) (mg/kg)	45.1				35.1	33.1
	Thallium (Tl) (mg/kg)	0.067				<0.050	<0.050
	Tin (Sn) (mg/kg)	<2.0				<2.0	<2.0
	Titanium (Ti) (mg/kg)	314				271	257
	Uranium (U) (mg/kg)	1.60				1.00	0.980
	Vanadium (V) (mg/kg)	21.0				18.1	17.0

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L1054122-69 SEDIMENT 21-AUG-11 BES-3	L1054122-70 SEDIMENT 21-AUG-11 BES-4	L1054122-71 SEDIMENT 21-AUG-11 BES-5	L1054122-72 SEDIMENT DUP-4	
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)	32.4				39.8	
	pH (1:2 soil:water) (pH)	6.83				6.53	
Particle Size	% Gravel (>2mm) (%)	0.20	0.38	0.62	<0.10		
	% Sand (2.0mm - 0.063mm) (%)	70.8	61.4	63.6	75.3		
	% Silt (0.063mm - 4um) (%)	24.1	31.4	32.1	23.4		
	% Clay (<4um) (%)	4.96	6.79	3.72	1.35		
Organic / Inorganic Carbon	Total Organic Carbon (%)	0.30	0.24	0.25	0.29		
Metals	Aluminum (Al) (mg/kg)	5150			4560		
	Antimony (Sb) (mg/kg)	0.12			0.13		
	Arsenic (As) (mg/kg)	3.43			5.27		
	Barium (Ba) (mg/kg)	95.6			269		
	Beryllium (Be) (mg/kg)	0.28			0.29		
	Bismuth (Bi) (mg/kg)	<0.20			<0.20		
	Cadmium (Cd) (mg/kg)	<0.050			<0.050		
	Calcium (Ca) (mg/kg)	2040			1870		
	Chromium (Cr) (mg/kg)	16.6			15.1		
	Cobalt (Co) (mg/kg)	4.25			3.88		
	Copper (Cu) (mg/kg)	4.81			4.63		
	Iron (Fe) (mg/kg)	12100			11700		
	Lead (Pb) (mg/kg)	4.64			4.31		
	Lithium (Li) (mg/kg)	7.2			6.6		
	Magnesium (Mg) (mg/kg)	3620			3150		
	Manganese (Mn) (mg/kg)	855			145		
	Mercury (Hg) (mg/kg)	0.0064			<0.0050		
	Molybdenum (Mo) (mg/kg)	0.75			<0.50		
	Nickel (Ni) (mg/kg)	10.1			9.28		
	Phosphorus (P) (mg/kg)	694			637		
	Potassium (K) (mg/kg)	990			1000		
	Selenium (Se) (mg/kg)	<0.20			<0.20		
	Silver (Ag) (mg/kg)	<0.10			<0.10		
	Sodium (Na) (mg/kg)	<100			<100		
	Strontium (Sr) (mg/kg)	36.2			38.2		
	Thallium (Tl) (mg/kg)	0.055			0.058		
	Tin (Sn) (mg/kg)	<2.0			<2.0		
	Titanium (Ti) (mg/kg)	265			252		
	Uranium (U) (mg/kg)	1.09			1.21		
	Vanadium (V) (mg/kg)	18.0			17.7		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-1 SEDIMENT 13-AUG-11 PDL-1	L1054122-2 SEDIMENT 13-AUG-11 PDL-2	L1054122-3 SEDIMENT 13-AUG-11 PDL-3	L1054122-4 SEDIMENT 13-AUG-11 PDL-4	L1054122-5 SEDIMENT 13-AUG-11 PDL-5
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	76.4	60.5	67.0	87.3	67.8
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<950	<950	<675	<900	<1025
Hydrocarbons	EPH10-19 (mg/kg)	<350	<430	<290	<400	<400
	EPH19-32 (mg/kg)	<350	<430	<290	<400	<400
	LEPH (mg/kg)	<350	<430	<290	<400	<400
	HEPH (mg/kg)	<350	<430	<290	<400	<400
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0055 ^{DLHM}	<0.0050	<0.0050	<0.010 ^{DLM}
	Acenaphthylene (mg/kg)	<0.0050	<0.0055 ^{DLHM}	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0044 ^{DLHM}	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Benzo(b)fluoranthene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.020 ^{DLM}	<0.020 ^{DLM}
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.016 ^{DLHM}	<0.015	<0.022	<0.022
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0055 ^{DLHM}	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	2-Methylnaphthalene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Naphthalene (mg/kg)	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.010	<0.020 ^{DLB}	<0.020 ^{DLB}
	Phenanthrene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.011 ^{DLHM}	<0.010	<0.010	<0.010
	Surrogate: Acenaphthene d10 (%)	81	87	87	95	86
	Surrogate: Chrysene d12 (%)	69	74	70	80	73
	Surrogate: Naphthalene d8 (%)	79	86	80	84	81
	Surrogate: Phenanthrene d10 (%)	73	79	74	83	76
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-6 SEDIMENT 14-AUG-11 INUG-1	L1054122-7 SEDIMENT 14-AUG-11 INUG-2	L1054122-8 SEDIMENT 14-AUG-11 INUG-3	L1054122-9 SEDIMENT 14-AUG-11 INUG-4	L1054122-10 SEDIMENT 14-AUG-11 INUG-5
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	80.0	76.2	89.6	76.3	61.9
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<900	<950	<1300	<1125	<1050
Hydrocarbons	EPH10-19 (mg/kg)	<370	<400 ^{DLHM}	<510 ^{DLHM}	<520 ^{DLHM}	<480 ^{DLHM}
	EPH19-32 (mg/kg)	<370	<400 ^{DLHM}	<510 ^{DLHM}	<520 ^{DLHM}	<480 ^{DLHM}
	LEPH (mg/kg)	<370	<400	<510	<520	<480
	HEPH (mg/kg)	<370	<400	<510	<520	<480
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0065 ^{DLHM}	<0.0065 ^{DLHM}	<0.0065 ^{DLHM}
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0065 ^{DLHM}	<0.0065 ^{DLHM}	<0.0065 ^{DLHM}
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0052 ^{DLHM}	<0.0052 ^{DLHM}	<0.0052 ^{DLHM}
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Benzo(b)fluoranthene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.018 ^{DLHM}	<0.018 ^{DLHM}	<0.018 ^{DLHM}
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Chrysene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0065 ^{DLHM}	<0.0065 ^{DLHM}	<0.0065 ^{DLHM}
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Fluorene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Naphthalene (mg/kg)	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Pyrene (mg/kg)	<0.010	<0.010	<0.013 ^{DLHM}	<0.013 ^{DLHM}	<0.013 ^{DLHM}
	Surrogate: Acenaphthene d10 (%)	84	93	82	91	90
	Surrogate: Chrysene d12 (%)	75	93	78	81	76
	Surrogate: Naphthalene d8 (%)	83	91	80	88	87
	Surrogate: Phenanthrene d10 (%)	79	93	79	84	81
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-11 SEDIMENT 14-AUG-11 WAL-1	L1054122-12 SEDIMENT 14-AUG-11 WAL-2	L1054122-13 SEDIMENT 14-AUG-11 WAL-3	L1054122-14 SEDIMENT 14-AUG-11 WAL-4	L1054122-15 SEDIMENT 14-AUG-11 WAL-5
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	164	121	118		
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<1000	<1900	<1950		
Hydrocarbons	EPH10-19 (mg/kg)	<440 ^{DLHM}	<740 ^{DLHM}	<780 ^{DLHM}		
	EPH19-32 (mg/kg)	<440 ^{DLHM}	<740 ^{DLHM}	<780 ^{DLHM}		
	LEPH (mg/kg)	<440	<740	<780		
	HEPH (mg/kg)	<440 ^{DLHM}	<740 ^{DLHM}	<780 ^{DLHM}		
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0060 ^{DLHM}	<0.010 ^{DLHM}	<0.010 ^{DLHM}		
	Acenaphthylene (mg/kg)	<0.0060 ^{DLHM}	<0.010 ^{DLHM}	<0.010 ^{DLHM}		
	Anthracene (mg/kg)	<0.0048 ^{DLHM}	<0.0080 ^{DLHM}	<0.0080 ^{DLHM}		
	Benz(a)anthracene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Benzo(a)pyrene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Benzo(b)fluoranthene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.017 ^{DLHM}	<0.028 ^{DLHM}	<0.028 ^{DLHM}		
	Benzo(g,h,i)perylene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Benzo(k)fluoranthene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Chrysene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Dibenz(a,h)anthracene (mg/kg)	<0.0060 ^{DLHM}	<0.010 ^{DLHM}	<0.010 ^{DLHM}		
	Fluoranthene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Fluorene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	2-Methylnaphthalene (mg/kg)	<0.012 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}		
	Naphthalene (mg/kg)	<0.020 ^{DLHM}	<0.030 ^{DLHM}	<0.030 ^{DLHM}		
	Phenanthrene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Pyrene (mg/kg)	<0.012 ^{DLHM}	<0.020 ^{DLHM}	<0.020 ^{DLHM}		
	Surrogate: Acenaphthene d10 (%)	100	83	88		
	Surrogate: Chrysene d12 (%)	77	80	78		
	Surrogate: Naphthalene d8 (%)	97	80	87		
	Surrogate: Phenanthrene d10 (%)	82	83	81		
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020		
	IACR (CCME) (mg/kg)	<0.15	<0.21	<0.21		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-16 SEDIMENT 15-AUG-11 TEFF-1	L1054122-17 SEDIMENT 15-AUG-11 TEFF-2	L1054122-18 SEDIMENT 15-AUG-11 TEFF-3	L1054122-19 SEDIMENT 15-AUG-11 TEFF-4	L1054122-20 SEDIMENT 15-AUG-11 TEFF-5
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	106	115	89.4		
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<1275	<750	<1100		
Hydrocarbons	EPH10-19 (mg/kg)	<520 ^{DLHM}	<360 ^{DLHM}	<500 ^{DLHM}		
	EPH19-32 (mg/kg)	<520 ^{DLHM}	<360 ^{DLHM}	<500 ^{DLHM}		
	LEPH (mg/kg)	<520	<360	<500		
	HEPH (mg/kg)	<520	<360	<500		
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0075 ^{DLHM}	<0.0050	<0.0060 ^{DLHM}		
	Acenaphthylene (mg/kg)	<0.0075 ^{DLHM}	<0.0050	<0.0060 ^{DLHM}		
	Anthracene (mg/kg)	<0.0060 ^{DLHM}	<0.0040	<0.0048 ^{DLHM}		
	Benz(a)anthracene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Benzo(a)pyrene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Benzo(b)fluoranthene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.021 ^{DLHM}	<0.015	<0.017 ^{DLHM}		
	Benzo(g,h,i)perylene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Benzo(k)fluoranthene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Chrysene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Dibenz(a,h)anthracene (mg/kg)	<0.0075 ^{DLHM}	<0.0050	<0.0060 ^{DLHM}		
	Fluoranthene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Fluorene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	2-Methylnaphthalene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Naphthalene (mg/kg)	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}		
	Phenanthrene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Pyrene (mg/kg)	<0.015 ^{DLHM}	<0.010	<0.012 ^{DLHM}		
	Surrogate: Acenaphthene d10 (%)	88	87	94		
	Surrogate: Chrysene d12 (%)	71	78	74		
	Surrogate: Naphthalene d8 (%)	85	82	90		
	Surrogate: Phenanthrene d10 (%)	76	79	79		
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020		
	IACR (CCME) (mg/kg)	<0.16	<0.15	<0.15		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

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Sample ID Description Sampled Date Sampled Time Client ID		L1054122-21 SEDIMENT 16-AUG-11 TE-1	L1054122-22 SEDIMENT 16-AUG-11 TE-2	L1054122-23 SEDIMENT 16-AUG-11 TE-3	L1054122-24 SEDIMENT 16-AUG-11 TE-4	L1054122-25 SEDIMENT 16-AUG-11 TE-5
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	87.4	81.6	101		
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<750	<975	<1025		
Hydrocarbons	EPH10-19 (mg/kg)	<350 ^{DLHM}	<380 ^{DLHM}	<440 ^{DLHM}		
	EPH19-32 (mg/kg)	<350 ^{DLHM}	<380 ^{DLHM}	<440 ^{DLHM}		
	LEPH (mg/kg)	<350	<380	<440		
	HEPH (mg/kg)	<350	<380	<440 ^{DLHM}		
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0060 ^{DLHM}		
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0060 ^{DLHM}		
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0048 ^{DLHM}		
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Benzo(b)fluoranthene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.017 ^{DLHM}		
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Chrysene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0060 ^{DLHM}		
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Fluorene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Naphthalene (mg/kg)	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}		
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Pyrene (mg/kg)	<0.010	<0.010	<0.012 ^{DLHM}		
	Surrogate: Acenaphthene d10 (%)	92	84	89		
	Surrogate: Chrysene d12 (%)	79	70	83		
	Surrogate: Naphthalene d8 (%)	89	82	87		
	Surrogate: Phenanthrene d10 (%)	84	75	86		
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020		
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

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Sample ID Description Sampled Date Sampled Time Client ID		L1054122-26 SEDIMENT	L1054122-27 SEDIMENT	L1054122-30 SEDIMENT 17-AUG-11	L1054122-31 SEDIMENT 17-AUG-11	L1054122-32 SEDIMENT 17-AUG-11
		DUP-1	DUP-2	SP-1	SP-2	SP-3
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	78.8	93.8	124	125	122
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<925	<775	<1400	<1400	<1300
Hydrocarbons	EPH10-19 (mg/kg)	<380 ^{DLHM}	<300 ^{DLHM}	<530 ^{DLHM}	<560 ^{DLHM}	<200
	EPH19-32 (mg/kg)	<380 ^{DLHM}	<300 ^{DLHM}	<530 ^{DLHM}	<560 ^{DLHM}	<200
	LEPH (mg/kg)	<380	<300	<530	<560	<200
	HEPH (mg/kg)	<380	<300	<530	<560	<200
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0075 ^{DLHM}	<0.0075 ^{DLHM}	<0.0075 ^{DLHM}
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0075 ^{DLHM}	<0.0075 ^{DLHM}	<0.0075 ^{DLHM}
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0060 ^{DLHM}	<0.0060 ^{DLHM}	<0.0060 ^{DLHM}
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Benzo(b)fluoranthene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.021 ^{DLHM}	<0.021 ^{DLHM}	<0.021 ^{DLHM}
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Chrysene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0075 ^{DLHM}	<0.0075 ^{DLHM}	<0.0075 ^{DLHM}
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Fluorene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Naphthalene (mg/kg)	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Pyrene (mg/kg)	<0.010	<0.010	<0.015 ^{DLHM}	<0.015 ^{DLHM}	<0.015 ^{DLHM}
	Surrogate: Acenaphthene d10 (%)	86	93	83	91	87
	Surrogate: Chrysene d12 (%)	69	77	75	77	78
	Surrogate: Naphthalene d8 (%)	84	91	81	85	84
	Surrogate: Phenanthrene d10 (%)	76	85	80	83	81
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.16	<0.16	<0.16

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

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Sample ID Description Sampled Date Sampled Time Client ID		L1054122-33 SEDIMENT 17-AUG-11 SP-4	L1054122-34 SEDIMENT 17-AUG-11 SP-5	L1054122-35 SEDIMENT 19-AUG-11 TPN-1	L1054122-36 SEDIMENT 19-AUG-11 TPN-2	L1054122-37 SEDIMENT 19-AUG-11 TPN-3
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)			56.0	84.3	54.0
Aggregate Organics	Mineral Oil and Grease (mg/kg)			<800	<1400	<750
Hydrocarbons	EPH10-19 (mg/kg)			<340 ^{DLHM}	<640 ^{DLHM}	<300 ^{DLHM}
	EPH19-32 (mg/kg)			<340 ^{DLHM}	<640 ^{DLHM}	<300 ^{DLHM}
	LEPH (mg/kg)			<340	<640	<300
	HEPH (mg/kg)			<340	<640 ^{DLHM}	<300
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)			<0.0050	<0.0080 ^{DLHM}	<0.0050
	Acenaphthylene (mg/kg)			<0.0050	<0.0080 ^{DLHM}	<0.0050
	Anthracene (mg/kg)			<0.0040	<0.0064 ^{DLHM}	<0.0040
	Benz(a)anthracene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Benzo(a)pyrene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Benzo(b)fluoranthene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.020 ^{DLB}
	Benzo(b+j+k)fluoranthene (mg/kg)			<0.015	<0.023 ^{DLHM}	<0.022
	Benzo(g,h,i)perylene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Benzo(k)fluoranthene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Chrysene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Dibenz(a,h)anthracene (mg/kg)			<0.0050	<0.0080 ^{DLHM}	<0.0050
	Fluoranthene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Fluorene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	2-Methylnaphthalene (mg/kg)			<0.010	<0.016 ^{DLB}	<0.010 ^{DLB}
	Naphthalene (mg/kg)			<0.020 ^{DLB}	<0.030 ^{DLB}	<0.020 ^{DLB}
	Phenanthrene (mg/kg)			<0.010	<0.016 ^{DLHM}	0.011
	Pyrene (mg/kg)			<0.010	<0.016 ^{DLHM}	<0.010
	Surrogate: Acenaphthene d10 (%)			96	91	100
	Surrogate: Chrysene d12 (%)			82	74	75
	Surrogate: Naphthalene d8 (%)			94	86	87
	Surrogate: Phenanthrene d10 (%)			89	80	80
	B(a)P Total Potency Equivalent (mg/kg)			<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)			<0.15	<0.17	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-38 SEDIMENT 19-AUG-11 TPN-4	L1054122-39 SEDIMENT 19-AUG-11 TPN-5	L1054122-40 SEDIMENT 19-AUG-11 TPE-1	L1054122-41 SEDIMENT 19-AUG-11 TPE-2	L1054122-42 SEDIMENT 19-AUG-11 TPE-3
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	66.4	86.9	113	92.8	101
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<500	<500	<1550	<1475	<1575
Hydrocarbons	EPH10-19 (mg/kg)	<200	<200	<680 ^{DLHM}	<580 ^{DLHM}	<610 ^{DLHM}
	EPH19-32 (mg/kg)	<200	<200	<680 ^{DLHM}	<580 ^{DLHM}	<610 ^{DLHM}
	LEPH (mg/kg)	<200	<200	<680	<580	<610
	HEPH (mg/kg)	<200	<200	<680 ^{DLHM}	<580 ^{DLHM}	<610 ^{DLHM}
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0090 ^{DLHM}	<0.0075 ^{DLHM}	<0.0080 ^{DLHM}
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0090 ^{DLHM}	<0.0075 ^{DLHM}	<0.0080 ^{DLHM}
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0072 ^{DLHM}	<0.0060 ^{DLHM}	<0.0064 ^{DLHM}
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Benzo(b)fluoranthene (mg/kg)	<0.020 ^{DLM}	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.022	<0.015	<0.025 ^{DLHM}	<0.021 ^{DLHM}	<0.023 ^{DLHM}
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Chrysene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0090 ^{DLHM}	<0.0075 ^{DLHM}	<0.0080 ^{DLHM}
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Fluorene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.018 ^{DLB}	<0.015 ^{DLB}	<0.016 ^{DLB}
	Naphthalene (mg/kg)	<0.010	<0.010	<0.030 ^{DLHM}	<0.020 ^{DLHM}	<0.025 ^{DLHM}
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Pyrene (mg/kg)	<0.010	<0.010	<0.018 ^{DLHM}	<0.015 ^{DLHM}	<0.016 ^{DLHM}
	Surrogate: Acenaphthene d10 (%)	90	72	84	97	89
	Surrogate: Chrysene d12 (%)	73	74	64	82	70
	Surrogate: Naphthalene d8 (%)	83	69	78	96	85
	Surrogate: Phenanthrene d10 (%)	77	78	71	90	76
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.19	<0.16	<0.17

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-43 SEDIMENT 19-AUG-11 TPE-4	L1054122-44 SEDIMENT 19-AUG-11 TPE-5	L1054122-45 SEDIMENT DUP-3	L1054122-47 SEDIMENT 22-AUG-11 TPS-1	L1054122-48 SEDIMENT TPS-2
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)			92.5	90.2	69.5
Aggregate Organics	Mineral Oil and Grease (mg/kg)			<1775	<1200	<900
Hydrocarbons	EPH10-19 (mg/kg)			<700 ^{DLHM}	<470 ^{DLHM}	<360 ^{DLHM}
	EPH19-32 (mg/kg)			<700 ^{DLHM}	<470 ^{DLHM}	<360 ^{DLHM}
	LEPH (mg/kg)			<700	<470	<360
	HEPH (mg/kg)			<700 ^{DLHM}	<470 ^{DLHM}	<360 ^{DLHM}
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)			<0.0090 ^{DLHM}	<0.0060 ^{DLHM}	<0.0050
	Acenaphthylene (mg/kg)			<0.0090 ^{DLHM}	<0.0060 ^{DLHM}	<0.0050
	Anthracene (mg/kg)			<0.0072 ^{DLHM}	<0.0048 ^{DLHM}	<0.0040
	Benz(a)anthracene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Benzo(a)pyrene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Benzo(b)fluoranthene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)			<0.025 ^{DLHM}	<0.017 ^{DLHM}	<0.015
	Benzo(g,h,i)perylene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Benzo(k)fluoranthene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Chrysene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Dibenz(a,h)anthracene (mg/kg)			<0.0090 ^{DLHM}	<0.0060 ^{DLHM}	<0.0050
	Fluoranthene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Fluorene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	2-Methylnaphthalene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Naphthalene (mg/kg)			<0.030 ^{DLB}	<0.020 ^{DLB}	<0.020 ^{DLB}
	Phenanthrene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Pyrene (mg/kg)			<0.018 ^{DLHM}	<0.012 ^{DLHM}	<0.010
	Surrogate: Acenaphthene d10 (%)			97	89	96
	Surrogate: Chrysene d12 (%)			74	75	78
	Surrogate: Naphthalene d8 (%)			93	87	94
	Surrogate: Phenanthrene d10 (%)			81	79	82
	B(a)P Total Potency Equivalent (mg/kg)			<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)			<0.19	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-49 SEDIMENT 22-AUG-11 TPS-3	L1054122-50 SEDIMENT 22-AUG-11 TPS-4	L1054122-51 SEDIMENT 22-AUG-11 TPS-5	L1054122-52 SEDIMENT 20-AUG-11 BBD-1	L1054122-53 SEDIMENT 20-AUG-11 BBD-2
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	77.2			36.7	17.9
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<1050			<500	<500
Hydrocarbons	EPH10-19 (mg/kg)	<200			<200	<200
	EPH19-32 (mg/kg)	<200			<200	<200
	LEPH (mg/kg)	<200			<200	<200
	HEPH (mg/kg)	<200			<200	<200
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	^{DLHM} <0.0060			<0.0050	<0.0050
	Acenaphthylene (mg/kg)	^{DLHM} <0.0060			<0.0050	<0.0050
	Anthracene (mg/kg)	^{DLHM} <0.0048			<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Benzo(b)fluoranthene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.017			<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Chrysene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	^{DLHM} <0.0060			<0.0050	<0.0050
	Fluoranthene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Fluorene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	2-Methylnaphthalene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Naphthalene (mg/kg)	^{DLB} <0.020			<0.010	<0.010
	Phenanthrene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Pyrene (mg/kg)	^{DLHM} <0.012			<0.010	<0.010
	Surrogate: Acenaphthene d10 (%)	90			97	77
	Surrogate: Chrysene d12 (%)	82			85	71
	Surrogate: Naphthalene d8 (%)	85			92	76
	Surrogate: Phenanthrene d10 (%)	85			88	75
	B(a)P Total Potency Equivalent (mg/kg)	<0.020			<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15			<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-54 SEDIMENT 20-AUG-11 BBD-3	L1054122-55 SEDIMENT 20-AUG-11 BBD-4	L1054122-56 SEDIMENT 20-AUG-11 BBD-5	L1054122-57 SEDIMENT 20-AUG-11 BPJ-1	L1054122-58 SEDIMENT 20-AUG-11 BPJ-2
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	13.2			41.1	35.0
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<500			<500	<500
Hydrocarbons	EPH10-19 (mg/kg)	<200			<220 ^{DLHM}	<200
	EPH19-32 (mg/kg)	<200			<220 ^{DLHM}	<200
	LEPH (mg/kg)	<200			<220	<200
	HEPH (mg/kg)	<200			<220	<200
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050			<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050			<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040			<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(b)fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015			<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Chrysene (mg/kg)	<0.010			<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050			<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Fluorene (mg/kg)	<0.010			<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010			<0.010	<0.010
	2-Methylnaphthalene (mg/kg)	<0.010			<0.010	<0.010
	Naphthalene (mg/kg)	<0.010			<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010			<0.010	<0.010
	Pyrene (mg/kg)	<0.010			<0.010	<0.010
	Surrogate: Acenaphthene d10 (%)	94			73	85
	Surrogate: Chrysene d12 (%)	82			74	71
	Surrogate: Naphthalene d8 (%)	91			71	83
	Surrogate: Phenanthrene d10 (%)	97			76	77
	B(a)P Total Potency Equivalent (mg/kg)	<0.020			<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15			<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-59 SEDIMENT 20-AUG-11 BPJ-3	L1054122-60 SEDIMENT 20-AUG-11 BPJ-4	L1054122-61 SEDIMENT 20-AUG-11 BPJ-5	L1054122-62 SEDIMENT 21-AUG-11 BAP-1	L1054122-63 SEDIMENT 21-AUG-11 BAP-2
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	36.1			20.6	15.8
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<500			<500	<500
Hydrocarbons	EPH10-19 (mg/kg)	<200			<200	<200
	EPH19-32 (mg/kg)	<200			<200	<200
	LEPH (mg/kg)	<200			<200	<200
	HEPH (mg/kg)	<200			<200	<200
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050			<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050			<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040			<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(b)fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015			<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Chrysene (mg/kg)	<0.010			<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050			<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Fluorene (mg/kg)	<0.010			<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010			<0.010	<0.010
	2-Methylnaphthalene (mg/kg)	<0.010			<0.010	<0.010
	Naphthalene (mg/kg)	<0.010			<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010			<0.010	<0.010
	Pyrene (mg/kg)	<0.010			<0.010	<0.010
	Surrogate: Acenaphthene d10 (%)	90			81	88
	Surrogate: Chrysene d12 (%)	80			76	78
	Surrogate: Naphthalene d8 (%)	86			78	84
	Surrogate: Phenanthrene d10 (%)	85			80	84
	B(a)P Total Potency Equivalent (mg/kg)	<0.020			<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15			<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-64 SEDIMENT 21-AUG-11 BAP-3	L1054122-65 SEDIMENT 21-AUG-11 BAP-4	L1054122-66 SEDIMENT 21-AUG-11 BAP-5	L1054122-67 SEDIMENT 21-AUG-11 BES-1	L1054122-68 SEDIMENT 21-AUG-11 BES-2
Grouping	Analyte					
SOIL						
Metals	Zinc (Zn) (mg/kg)	23.6			20.3	20.0
Aggregate Organics	Mineral Oil and Grease (mg/kg)	<500			<500	<500
Hydrocarbons	EPH10-19 (mg/kg)	<200			<200	<200
	EPH19-32 (mg/kg)	<200			<200	<200
	LEPH (mg/kg)	<200			<200	<200
	HEPH (mg/kg)	<200			<200	<200
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050			<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050			<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040			<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(b)fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015			<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010			<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Chrysene (mg/kg)	<0.010			<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050			<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010			<0.010	<0.010
	Fluorene (mg/kg)	<0.010			<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010			<0.010	<0.010
	2-Methylnaphthalene (mg/kg)	<0.010			<0.010	<0.010
	Naphthalene (mg/kg)	<0.010			<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010			<0.010	<0.010
	Pyrene (mg/kg)	<0.010			<0.010	<0.010
	Surrogate: Acenaphthene d10 (%)	83			89	83
	Surrogate: Chrysene d12 (%)	75			71	75
	Surrogate: Naphthalene d8 (%)	80			86	80
	Surrogate: Phenanthrene d10 (%)	77			79	77
	B(a)P Total Potency Equivalent (mg/kg)	<0.020			<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15			<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L1054122-69 SEDIMENT 21-AUG-11 BES-3	L1054122-70 SEDIMENT 21-AUG-11 BES-4	L1054122-71 SEDIMENT 21-AUG-11 BES-5	L1054122-72 SEDIMENT DUP-4	
Grouping	Analyte						
SOIL							
Metals	Zinc (Zn) (mg/kg)		22.0			21.1	
Aggregate Organics	Mineral Oil and Grease (mg/kg)		<500			<500	
Hydrocarbons	EPH10-19 (mg/kg)		<200			<200	
	EPH19-32 (mg/kg)		<200			<200	
	LEPH (mg/kg)		<200			<200	
	HEPH (mg/kg)		<200			<200	
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)		<0.0050			<0.0050	
	Acenaphthylene (mg/kg)		<0.0050			<0.0050	
	Anthracene (mg/kg)		<0.0040			<0.0040	
	Benz(a)anthracene (mg/kg)		<0.010			<0.010	
	Benzo(a)pyrene (mg/kg)		<0.010			<0.010	
	Benzo(b)fluoranthene (mg/kg)		<0.010			<0.010	
	Benzo(b+j+k)fluoranthene (mg/kg)		<0.015			<0.015	
	Benzo(g,h,i)perylene (mg/kg)		<0.010			<0.010	
	Benzo(k)fluoranthene (mg/kg)		<0.010			<0.010	
	Chrysene (mg/kg)		<0.010			<0.010	
	Dibenz(a,h)anthracene (mg/kg)		<0.0050			<0.0050	
	Fluoranthene (mg/kg)		<0.010			<0.010	
	Fluorene (mg/kg)		<0.010			<0.010	
	Indeno(1,2,3-c,d)pyrene (mg/kg)		<0.010			<0.010	
	2-Methylnaphthalene (mg/kg)		<0.010			<0.010	
	Naphthalene (mg/kg)		<0.010			<0.010	
	Phenanthrene (mg/kg)		<0.010			<0.010	
	Pyrene (mg/kg)		<0.010			<0.010	
	Surrogate: Acenaphthene d10 (%)		88			80	
	Surrogate: Chrysene d12 (%)		73			76	
	Surrogate: Naphthalene d8 (%)		87			75	
	Surrogate: Phenanthrene d10 (%)		79			78	
	B(a)P Total Potency Equivalent (mg/kg)		<0.020			<0.020	
	IACR (CCME) (mg/kg)		<0.15			<0.15	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1054122-28 OTHER	L1054122-29 OTHER	L1054122-46 OTHER	L1054122-73 OTHER	
		SWIPE-1	SWIPE-2	SWIPE-3	SWIPE-4	
Grouping	Analyte					
SWAB						
Metals	Aluminum (Al)-Total (ug)	20	<20	21	<20	
	Antimony (Sb)-Total (ug)	<20	<20	<20	<20	
	Arsenic (As)-Total (ug)	<20	<20	<20	<20	
	Barium (Ba)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Beryllium (Be)-Total (ug)	<0.50	<0.50	<0.50	<0.50	
	Bismuth (Bi)-Total (ug)	<20	<20	<20	<20	
	Cadmium (Cd)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Calcium (Ca)-Total (ug)	25.1	27.1	35.2	30.1	
	Chromium (Cr)-Total (ug)	3.5	3.9	2.8	3.0	
	Cobalt (Co)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Copper (Cu)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Iron (Fe)-Total (ug)	31.3	30.1	35.8	22.5	
	Lead (Pb)-Total (ug)	<5.0	<5.0	<5.0	<5.0	
	Lithium (Li)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Magnesium (Mg)-Total (ug)	<10	<10	17	12	
	Manganese (Mn)-Total (ug)	0.70	<0.50	1.15	<0.50	
	Mercury (Hg)-Total (ug)	<0.010	<0.010	<0.010	<0.010	
	Molybdenum (Mo)-Total (ug)	<3.0	<3.0	<3.0	<3.0	
	Nickel (Ni)-Total (ug)	<5.0	<5.0	<5.0	<5.0	
	Phosphorus (P)-Total (ug)	<30	<30	<30	<30	
	Potassium (K)-Total (ug)	<200	<200	<200	<200	
	Selenium (Se)-Total (ug)	<20	<20	<20	<20	
	Silver (Ag)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Sodium (Na)-Total (ug)	<200	<200	<200	<200	
	Strontium (Sr)-Total (ug)	<0.50	<0.50	<0.50	<0.50	
	Thallium (Tl)-Total (ug)	<20	<20	<20	<20	
	Tin (Sn)-Total (ug)	<3.0	4.1	6.5	5.4	
	Titanium (Ti)-Total (ug)	<1.0	<1.0	<1.0	<1.0	
	Vanadium (V)-Total (ug)	<3.0	<3.0	<3.0	<3.0	
	Zinc (Zn)-Total (ug)	0.64	0.85	1.13	0.56	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Calcium (Ca)	DUP-H	L1054122-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Magnesium (Mg)	DUP-H	L1054122-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Method Blank	Manganese (Mn)	MB-LOR	L1054122-16, -35, -36, -37, -38, -39, -40, -41, -42, -45, -47, -48, -49, -52, -53, -54, -57, -58, -59, -62, -63, -64, -67, -68, -69, -72
Method Blank	Manganese (Mn)	MB-LOR	L1054122-16, -35, -36, -37, -38, -39, -40, -41, -42, -45, -47, -48, -49, -52, -53, -54, -57, -58, -59, -62, -63, -64, -67, -68, -69, -72

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLB	Detection limit was raised due to detection of analyte at comparable level in Method Blank.
DLHM	Detection Limit Adjusted: Sample has High Moisture Content
DLM	Detection Limit Adjusted For Sample Matrix Effects
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

C-TOT-ORG-LECO-SK Soil Organic Carbon by combustion method SSSA (1996) p. 973
Total Organic Carbon (C-TOT-ORG-LECO-SK, C-TOT-ORG-SK)

Total C and inorganic C are determined on separate samples. The total C is determined by combustion and thermal conductivity detection, while inorganic C is determined by weight loss after addition of hydrochloric acid. Organic C is calculated by the difference between these two determinations.

Reference for Total C:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference for Inorganic C:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

EPH-TUMB-FID-VA Soil EPH in Solids by Tumbler and GCFID BCMELP CSR

Extractable Hydrocarbons in Sediment/Soil

This analysis is carried out in accordance with the British Columbia Ministry of Environment, Lands and Parks (BCMELP) Analytical Method for Contaminated Sites "Extractable Petroleum Hydrocarbons in Solids by GC/FID, Version 2.1 July 1999". The procedure, based on EPA 3570, uses a rotary extraction technique to extract a subsample of the sediment/soil with a 1:1 mixture of hexane and acetone. The extract is then solvent exchanged to toluene or kept in hexane/acetone and analyzed by capillary column gas chromatography with flame ionization detection (GC/FID). EPH results include Polycyclic Aromatic Hydrocarbons (PAH) and are therefore not equivalent to Light and Heavy Extractable Petroleum Hydrocarbons (LEPH/HEPH).

Accuracy target values for Reference Materials used in this method are derived from averages of long-term method performance, as certified values do not exist for the reported parameters.

HG-200.2-CVAF-VA Soil Mercury in Soil by CVAFS EPA 200.2/245.7

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

HG-UG-CVAF-VA Swab Mercury in Swab by CVAFS NIOSH 7303/EPA 245.7

This analysis is carried out using procedures adapted from Method 7303 in the NIOSH Manual of Analytical Methods (NMAM). The procedure involves a hot block digestion of the swab material, using a combination of nitric acid and hydrochloric acid. Instrumental analysis of the swab extract is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

LEPH/HEPH-CALC-VA Soil LEPHs and HEPHs BC MOE LABORATORY MANUAL (2005)

Light and Heavy Extractable Petroleum Hydrocarbons in Solids. These results are determined according to the British Columbia Ministry of

Reference Information

Environment, Lands, and Parks Analytical Method for Contaminated Sites "Calculation of Light and Heavy Extractable Petroleum Hydrocarbons in Solids or Water". According to this method, LEPH and HEPH are calculated by subtracting selected Polycyclic Aromatic Hydrocarbon results from Extractable Petroleum Hydrocarbon results. To calculate LEPH, the individual results for Naphthalene and Phenanthrene are subtracted from EPH(C10-19). To calculate HEPH, the individual results for Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Indeno(1,2,3-c,d)pyrene, and Pyrene are subtracted from EPH(C19-32). Analysis of Extractable Petroleum Hydrocarbons adheres to all prescribed elements of the BCMELP method "Extractable Petroleum Hydrocarbons in Solids by GC/FID" (Version 2.1, July 20, 1999).

MET-200.2-CCMS-VA Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is dried at 40 C, then ground to < 2 mm particle size using a stainless steel flail grinder. A representative portion is digested with concentrated nitric and hydrochloric acids for 2 hours in an open vessel digester at 95 degrees. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

MET-UG-ICP-VA Swab Metals in Swab by ICPOES NIOSH 7303/EPA 6010B

This analysis is carried out using procedures adapted from Method 7303 in the NIOSH Manual of Analytical Methods (NMAM). The procedure involves a hot block digestion of the swab material, using a combination of nitric acid and hydrochloric acid. Instrumental analysis of the swab extract is by inductively coupled plasma - optical emission spectrophotometry (EPA 6010B).

MOISTURE-VA Soil Moisture content ASTM D2974-00 Method A

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

OGG-TUMB-SG-VA Soil CWS MOG with Silica Gel CCME PETROLEUM HYDROCARBONS-
GRAVIMETRIC

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2000." A subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extraction apparatus. The extract undergoes a silica-gel clean-up to remove polar compounds, and is analyzed gravimetrically. Mineral Oil and Grease is equivalent to fraction F4G of the Canada-wide Standard for Petroleum Hydrocarbons.

Accuracy target values for Reference Materials used in this method are derived from averages of long-term method performance, as certified values do not exist for the reported parameters.

PAH-TMB-H/A-MS-VA Soil PAH - Rotary Extraction (Hexane/Acetone) EPA 3570/8270

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Methods 3545 & 8270, published by the United States Environmental Protection Agency (EPA). The procedure uses a mechanical shaking technique to extract a subsample of the sediment/soil with a 1:1 mixture of hexane and acetone. The extract is then solvent exchanged to toluene. The final extract is analysed by capillary column gas chromatography with mass spectrometric detection (GC/MS). Surrogate recoveries may not be reported in cases where interferences from the sample matrix prevent accurate quantitation. Because the two isomers cannot be readily chromatographically separated, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.

PH-1:2-VA Soil pH in Soil (1:2 Soil:Water Extraction) BC WLAP METHOD: PH, ELECTROMETRIC, SOIL

This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.

PSA-PIPET+GRAVEL-SK Soil Particle size - Sieve and Pipette SSIR-51 METHOD 3.2.1

Particle size distribution is determined by a combination of techniques. Dry sieving is performed for coarse particles, wet sieving for sand particles and the pipette sedimentation method for clay particles.

Reference:

Burt, R. (2009). Soil Survey Field and Laboratory Methods Manual. Soil Survey Investigations Report No. 5. Method 3.2.1.2.2. United States Department of Agriculture Natural Resources Conservation Service.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location

VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA

Reference Information

Chain of Custody Numbers:

1	2	3	4	5
6	7			

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg ww - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

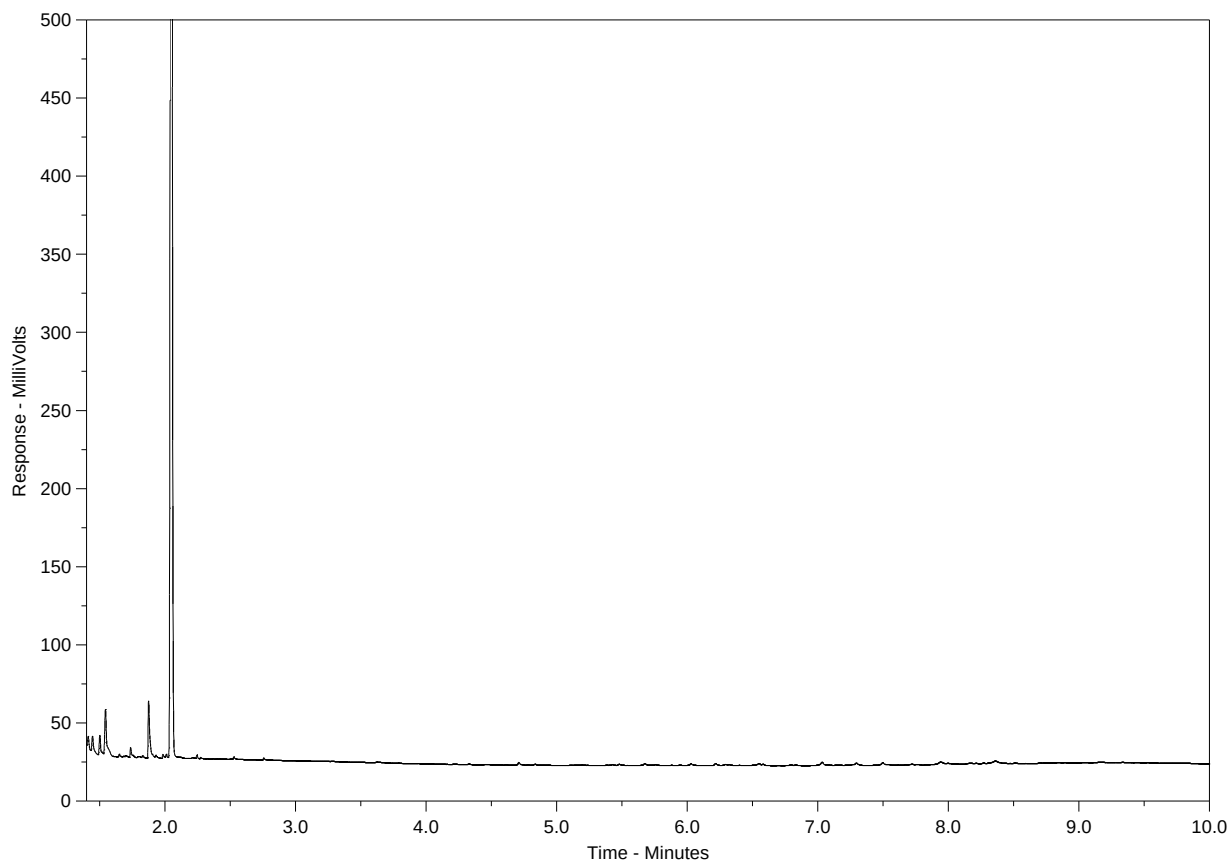
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-1
Client Sample ID: PDL-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

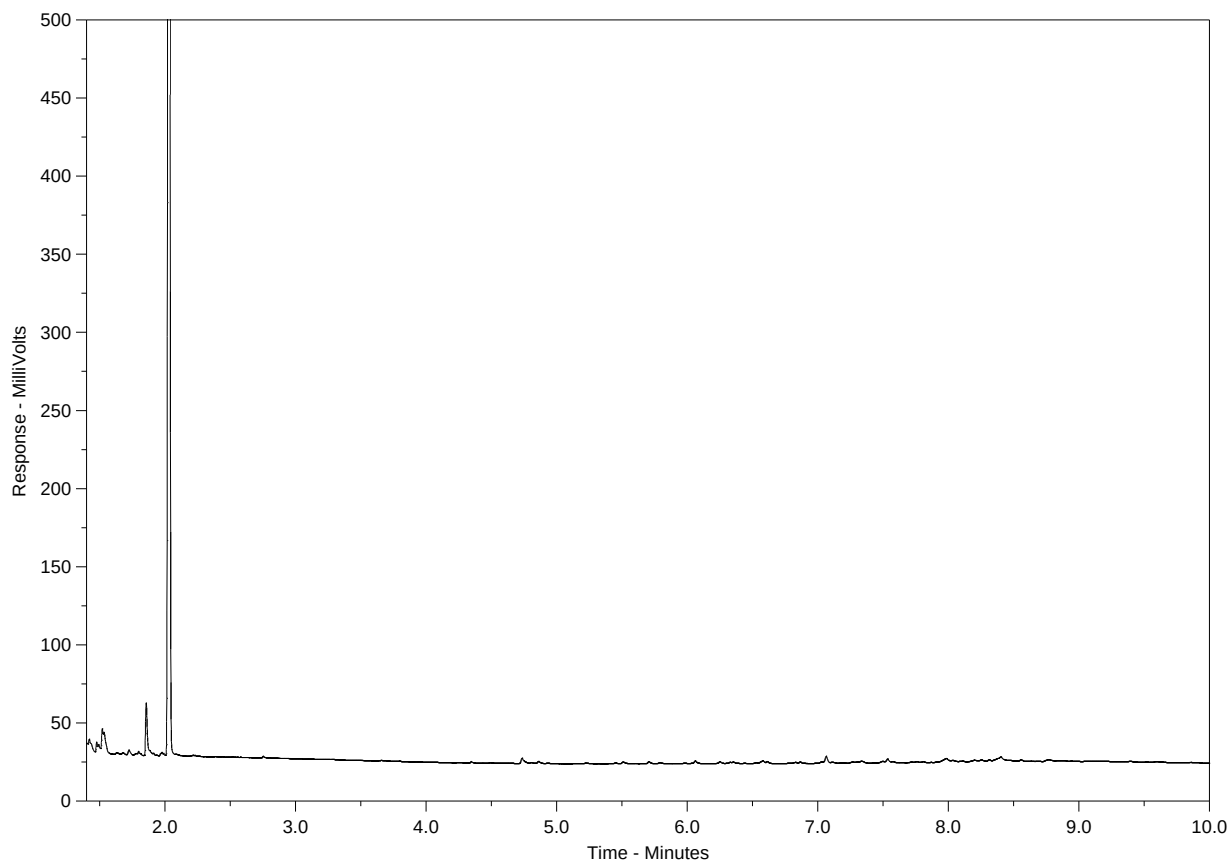
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-2
Client Sample ID: PDL-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

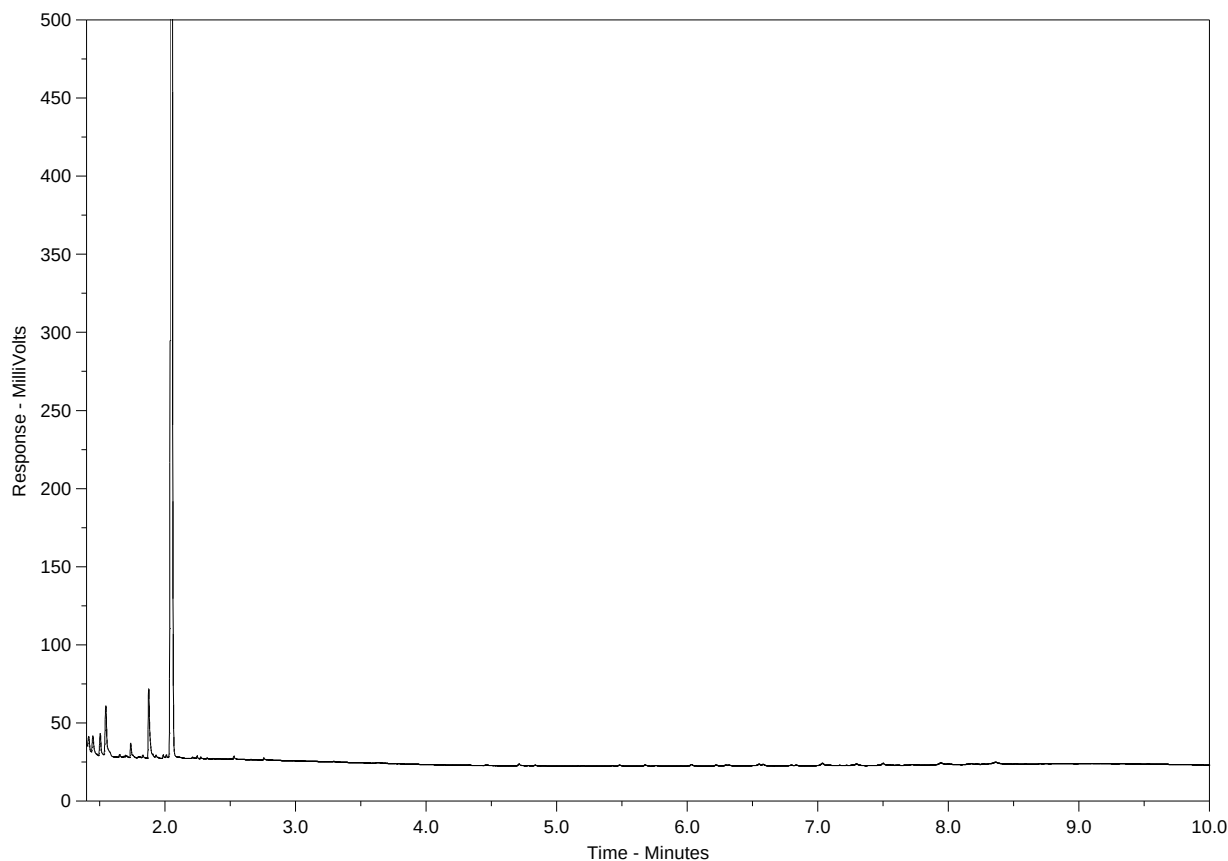
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-3
Client Sample ID: PDL-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

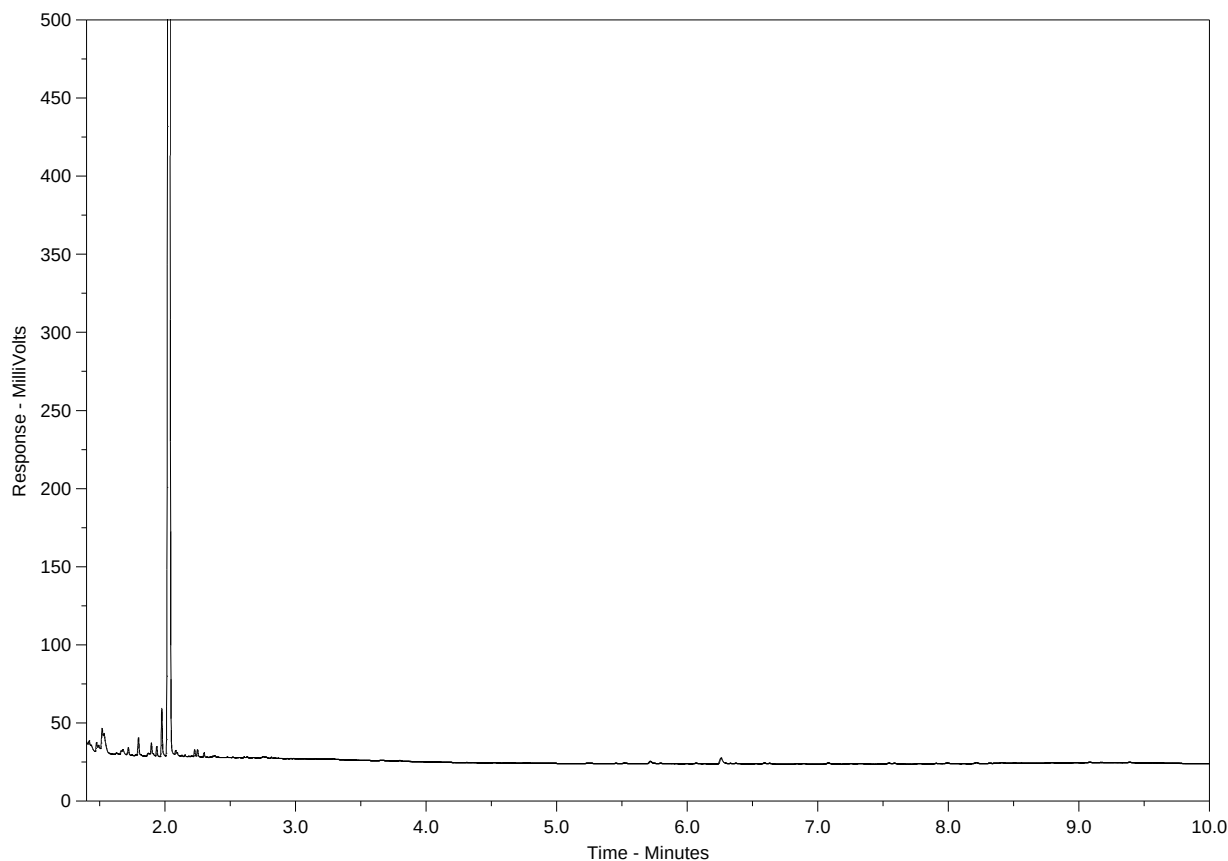
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-4
Client Sample ID: PDL-4



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

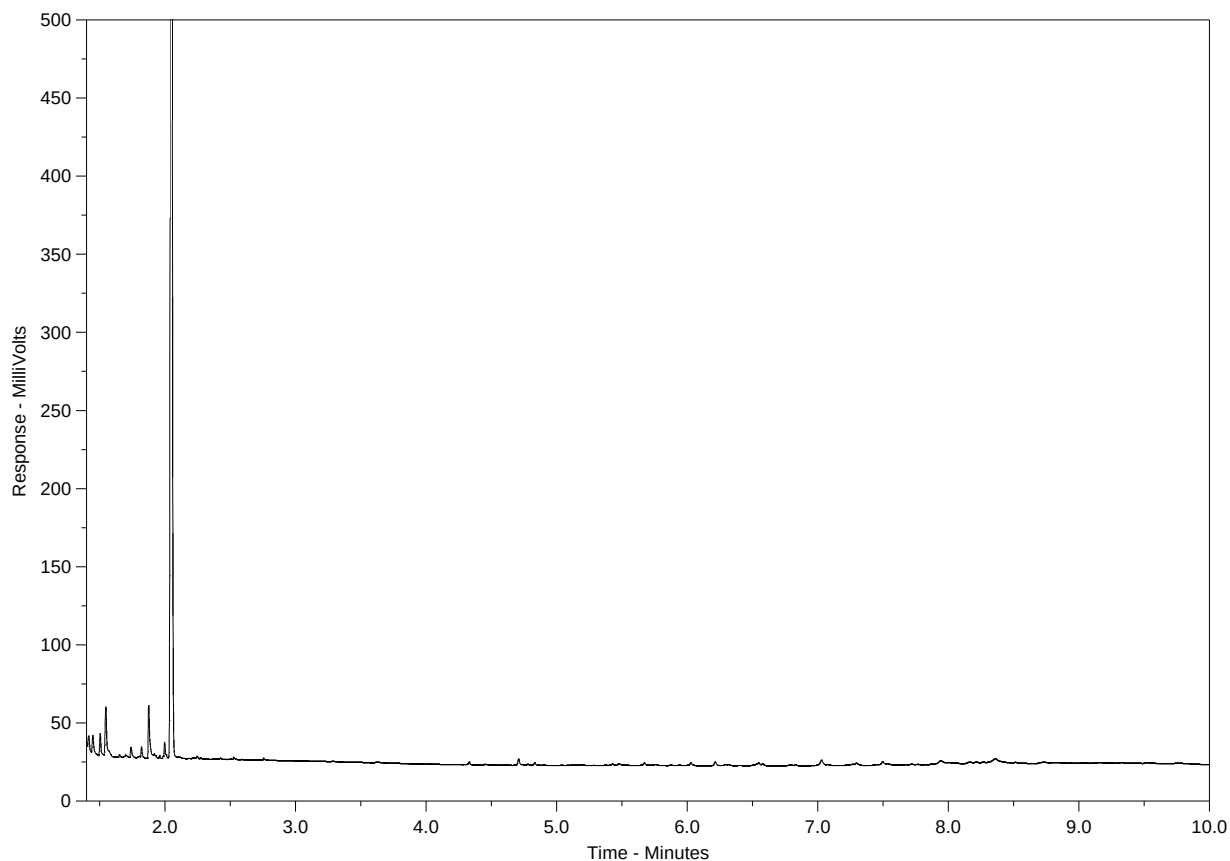
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-5
Client Sample ID: PDL-5



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

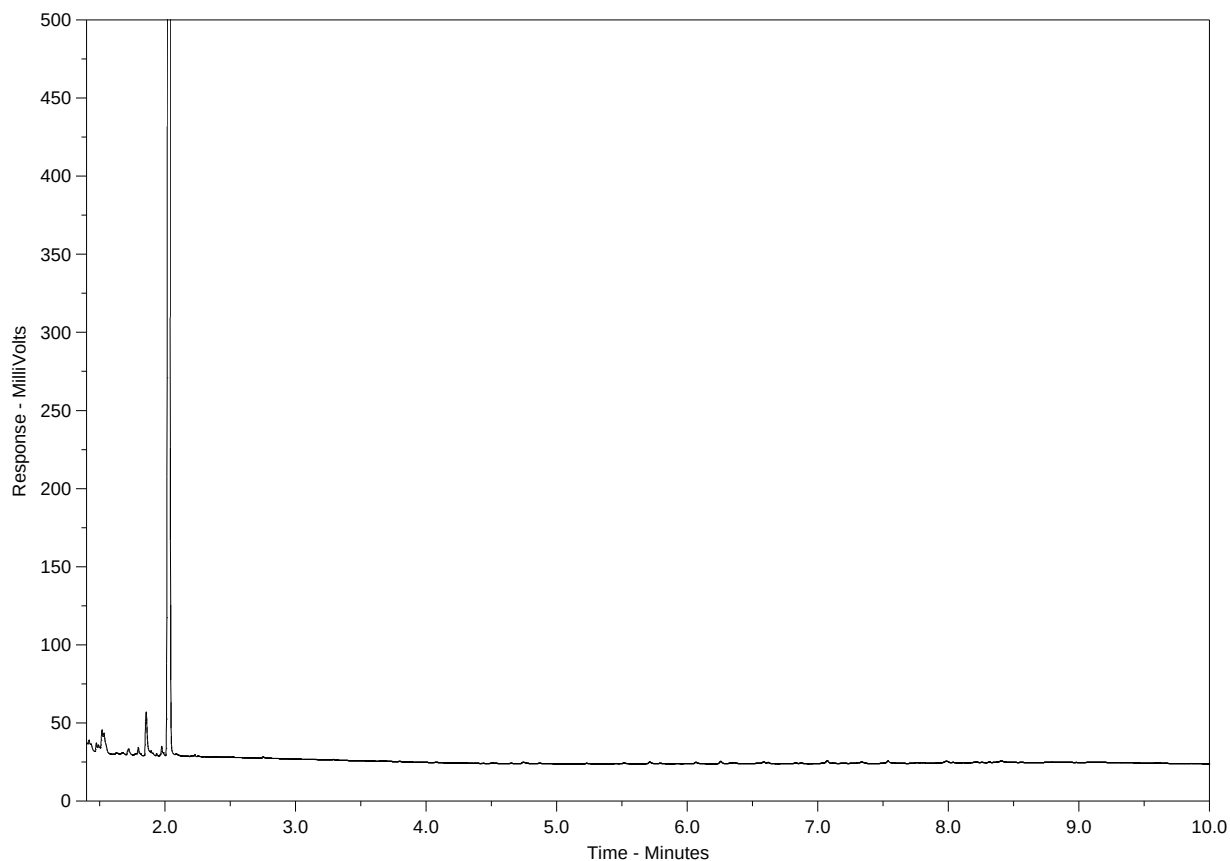
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-6
Client Sample ID: INUG-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

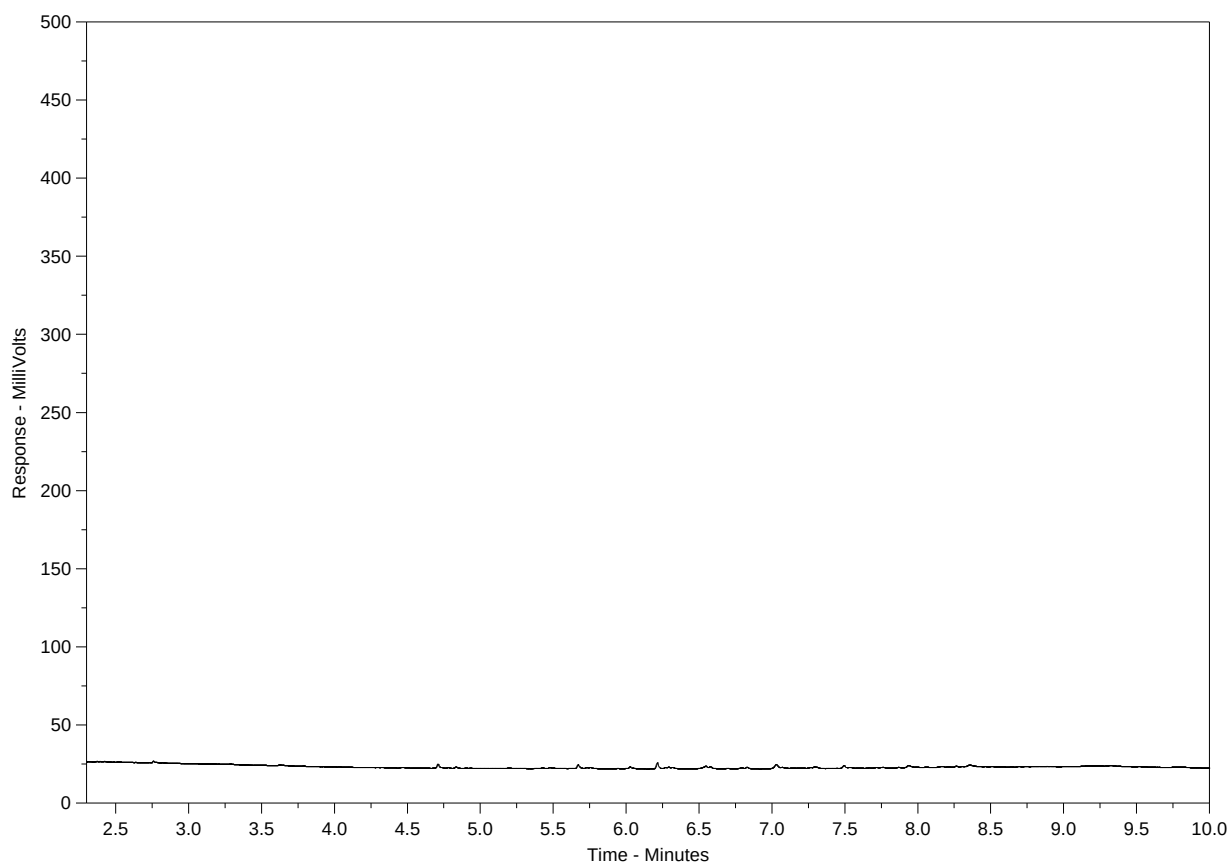
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-7
Client Sample ID: INUG-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

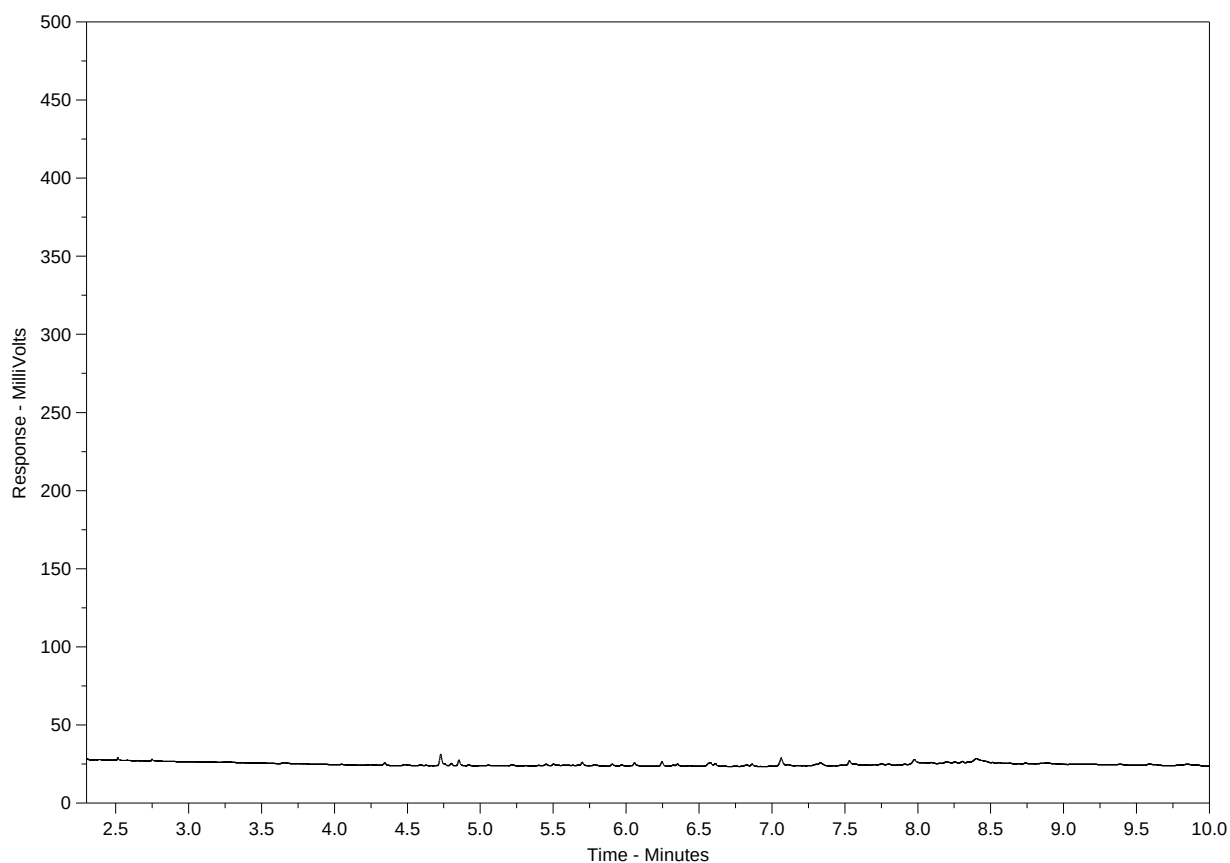
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-8
Client Sample ID: INUG-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

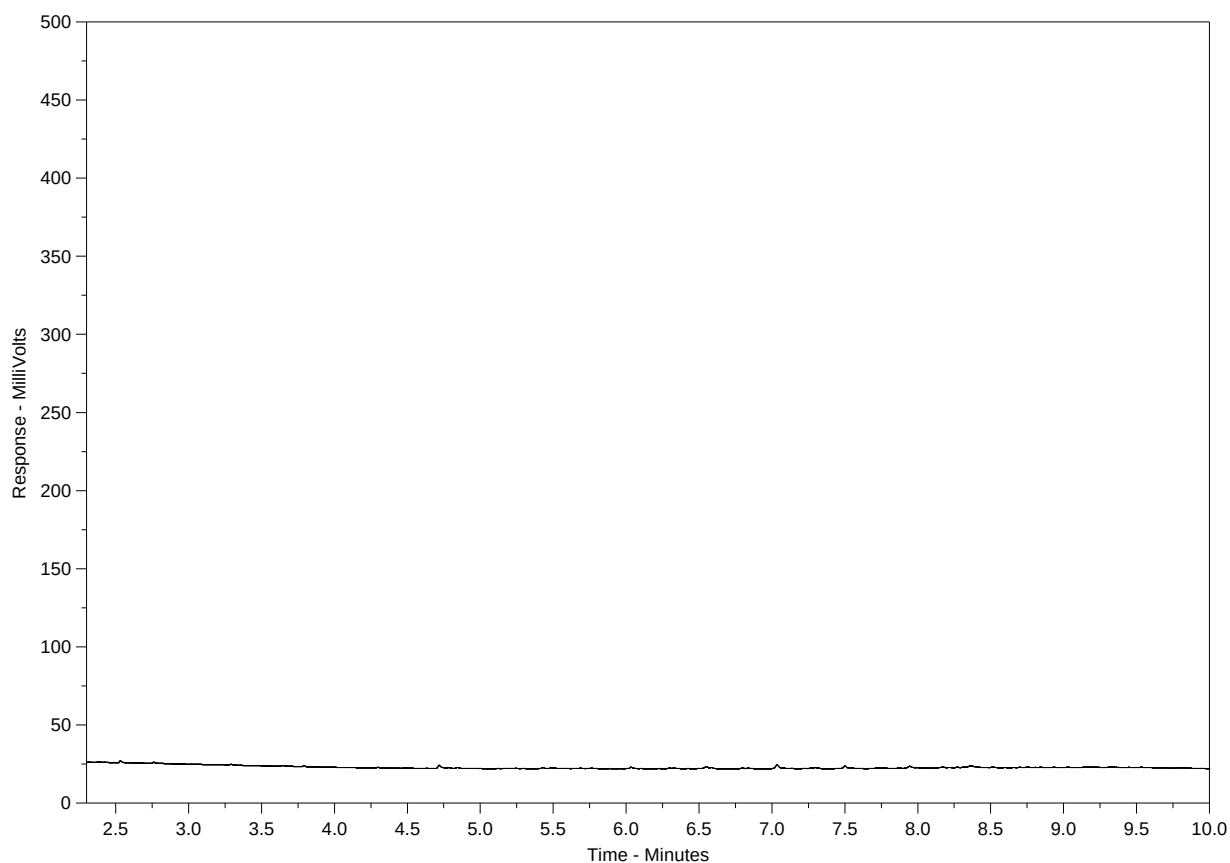
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-9
Client Sample ID: INUG-4



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

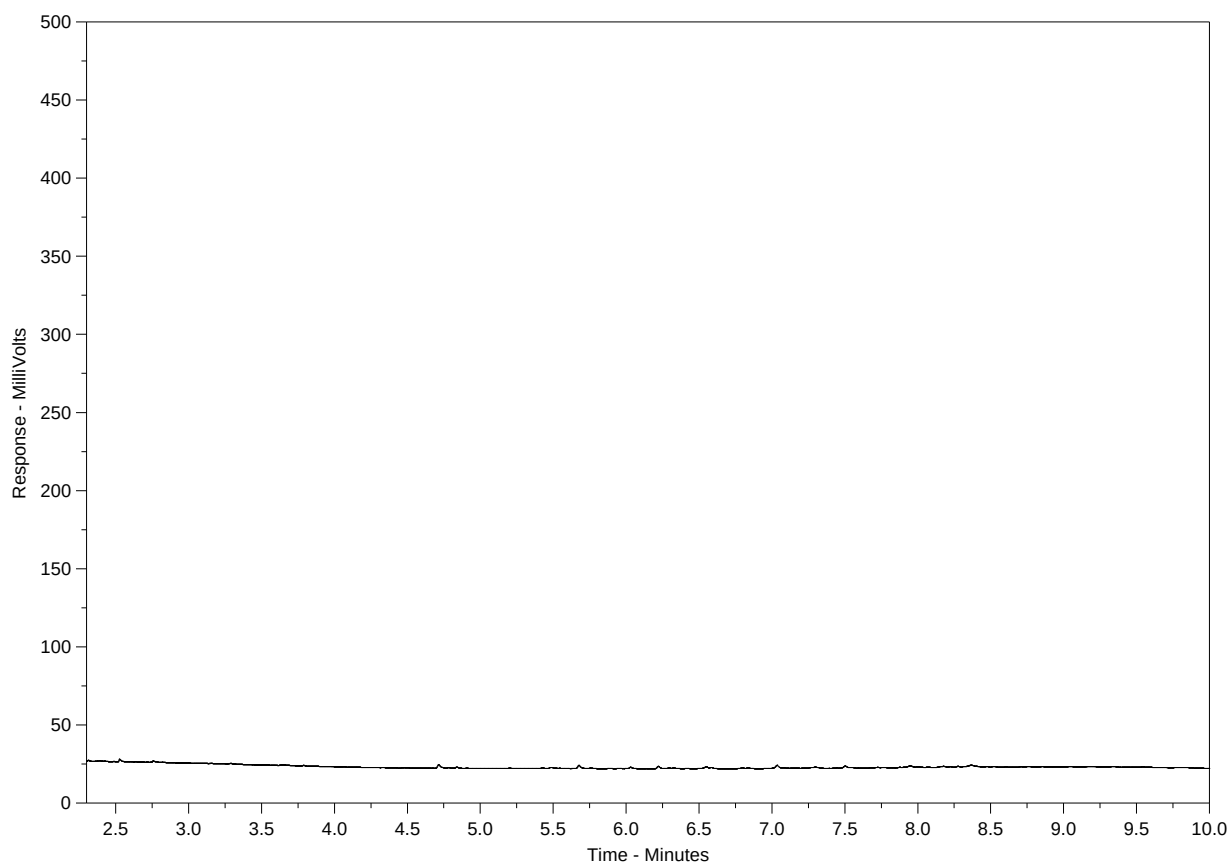
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-10
Client Sample ID: INUG-5



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

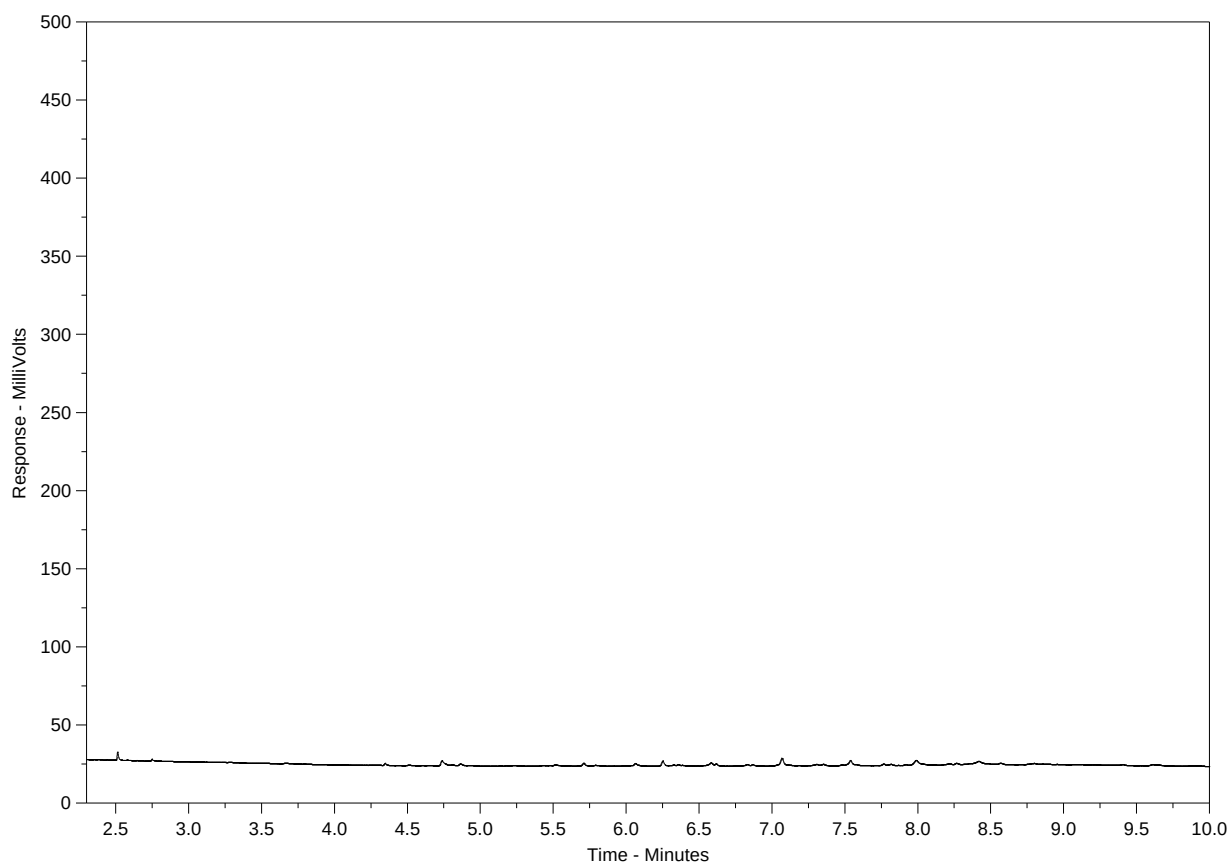
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-11
Client Sample ID: WAL-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

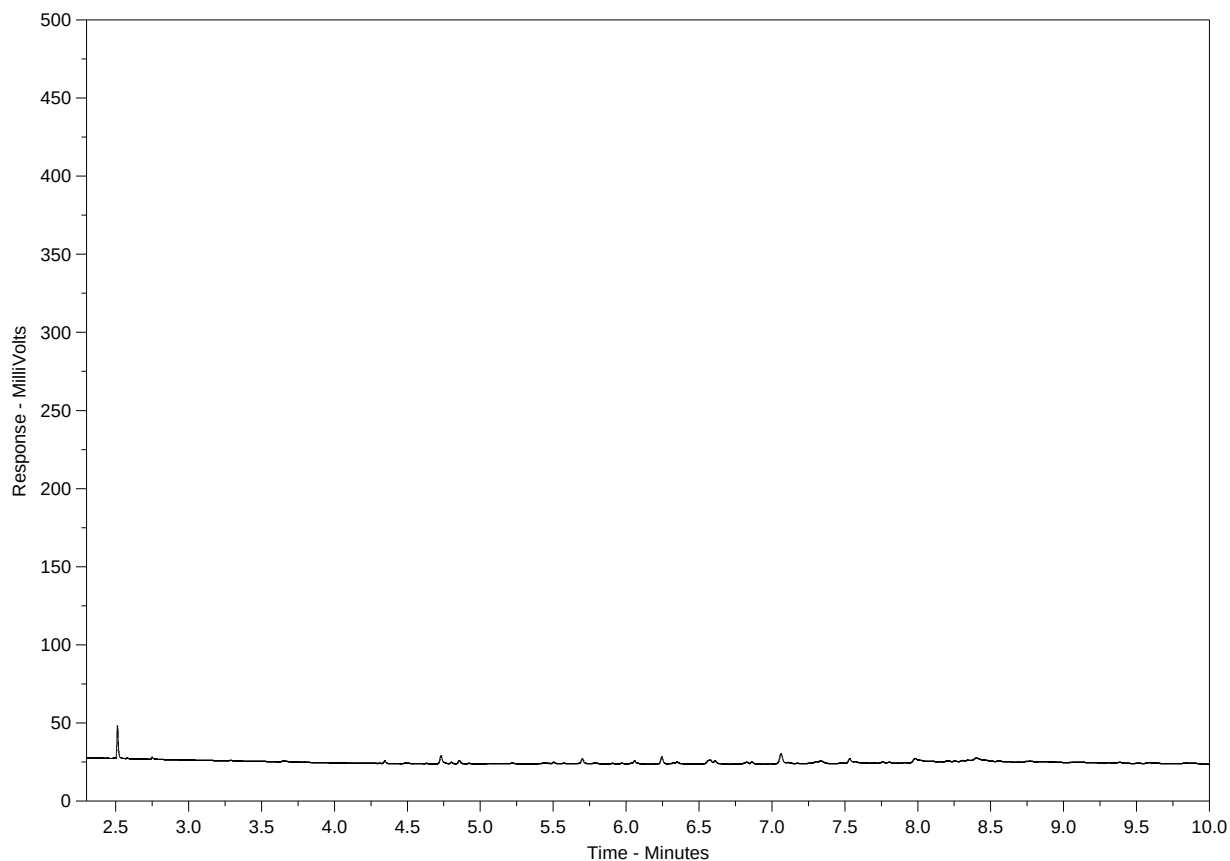
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-12
Client Sample ID: WAL-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

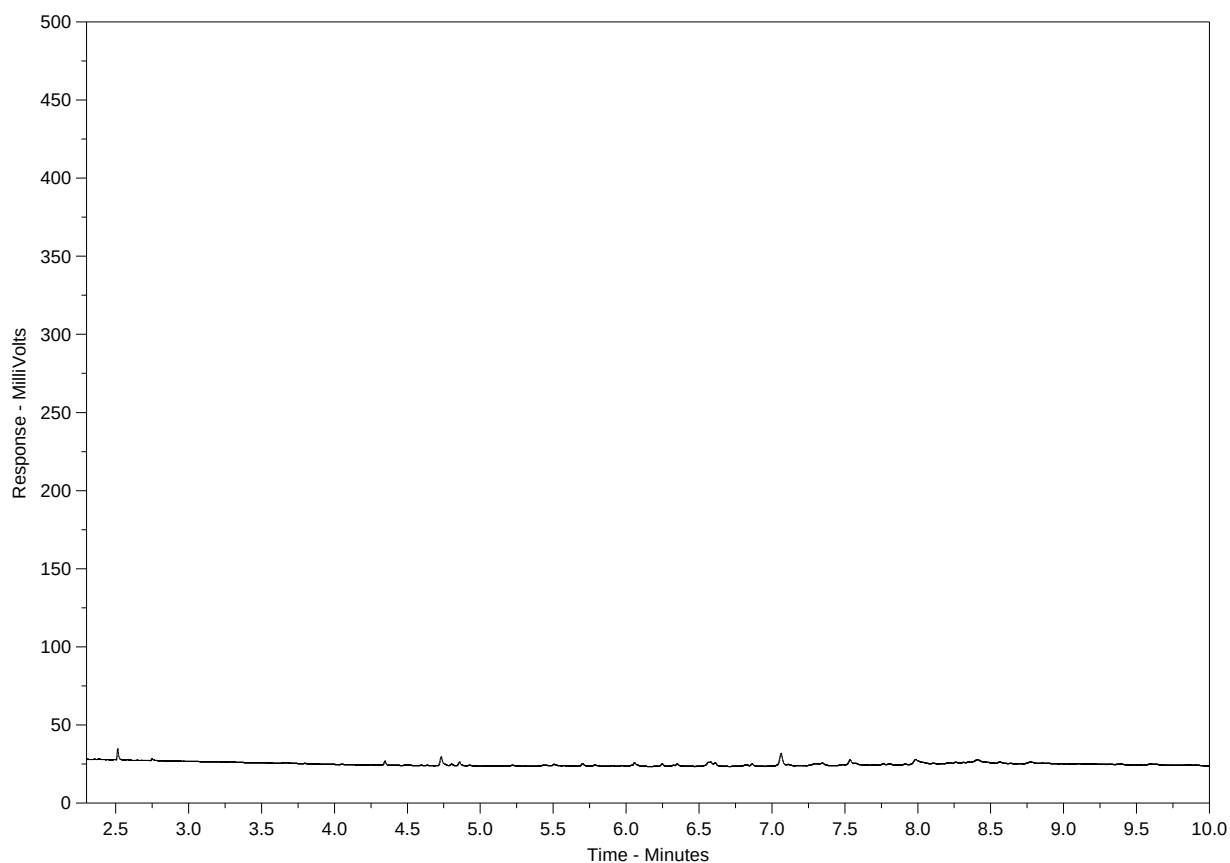
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-13
Client Sample ID: WAL-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Diesel / Jet Fuels →	← Motor Oils / Lube Oils / Grease →

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

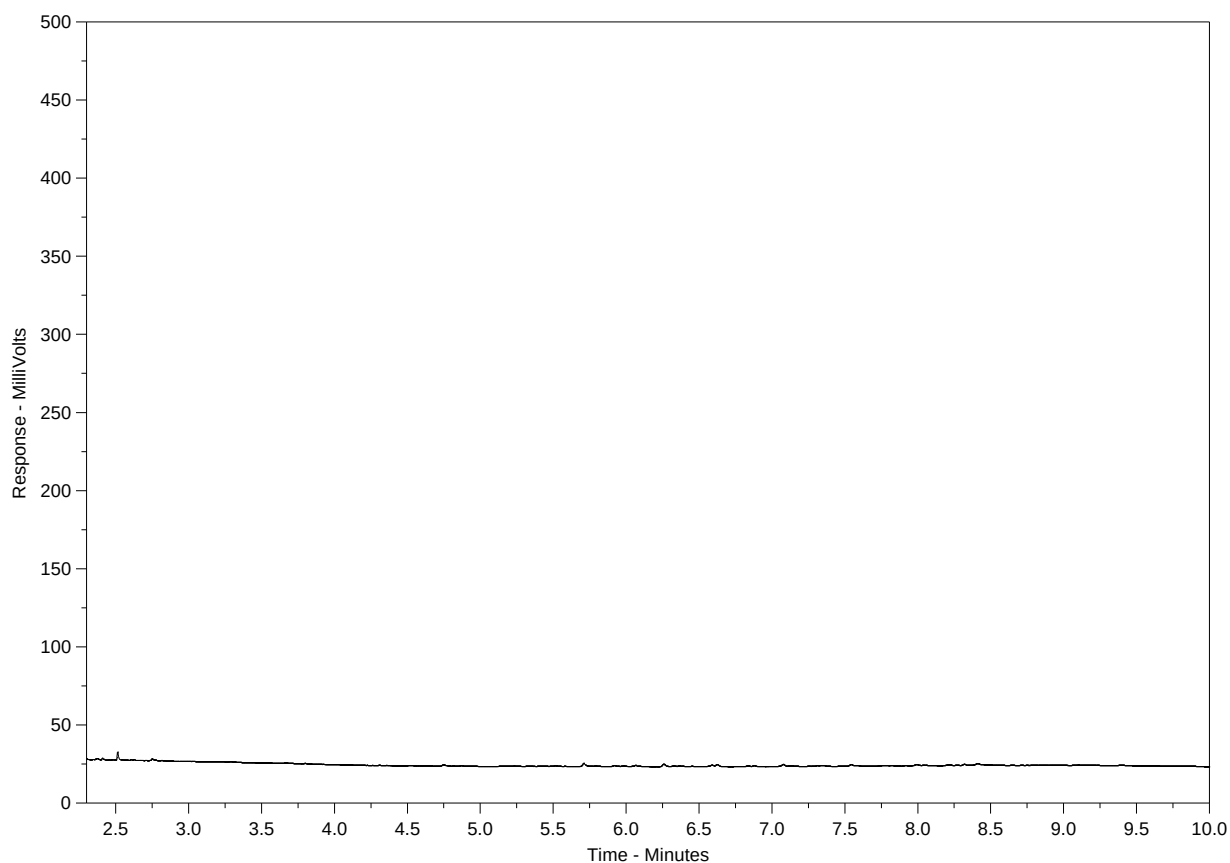
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-16
Client Sample ID: TEFF-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

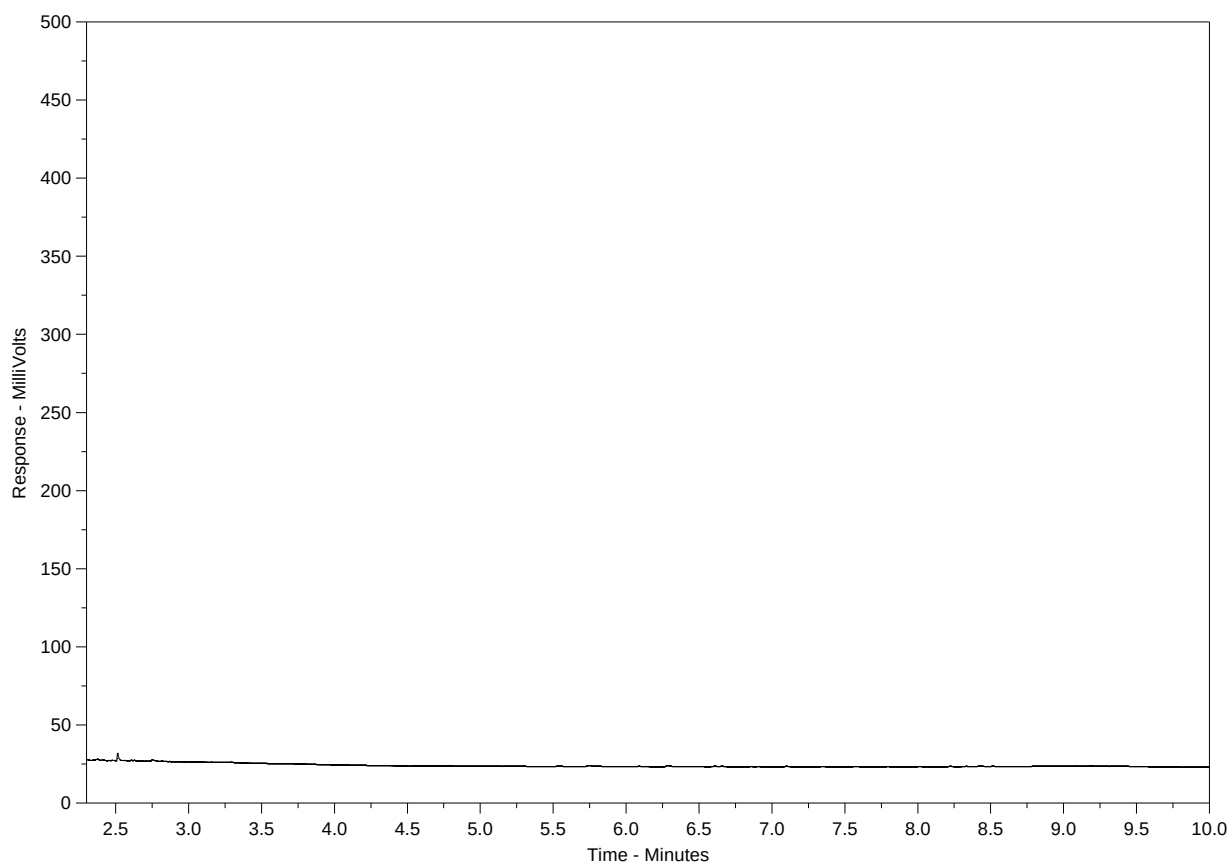
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-17
Client Sample ID: TEFF-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

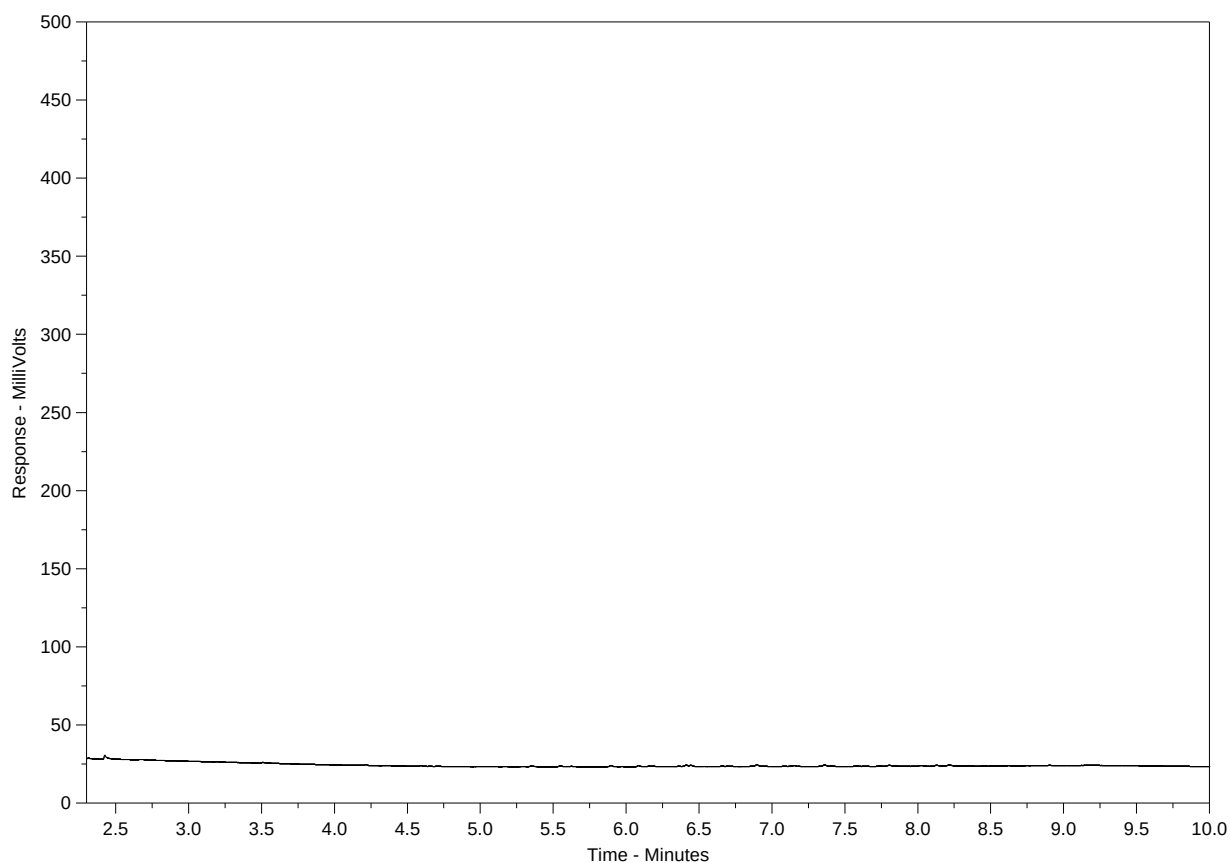
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-18
Client Sample ID: TEFF-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

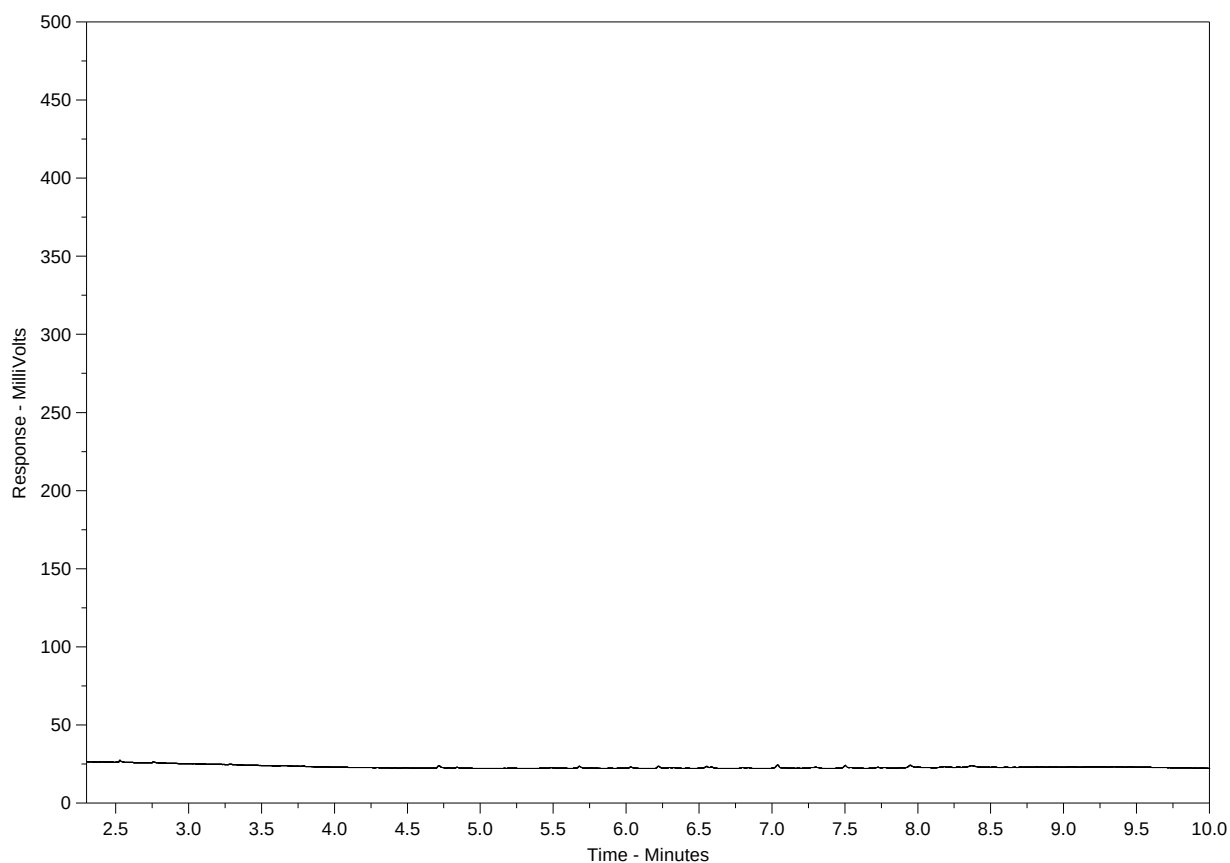
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-21
Client Sample ID: TE-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

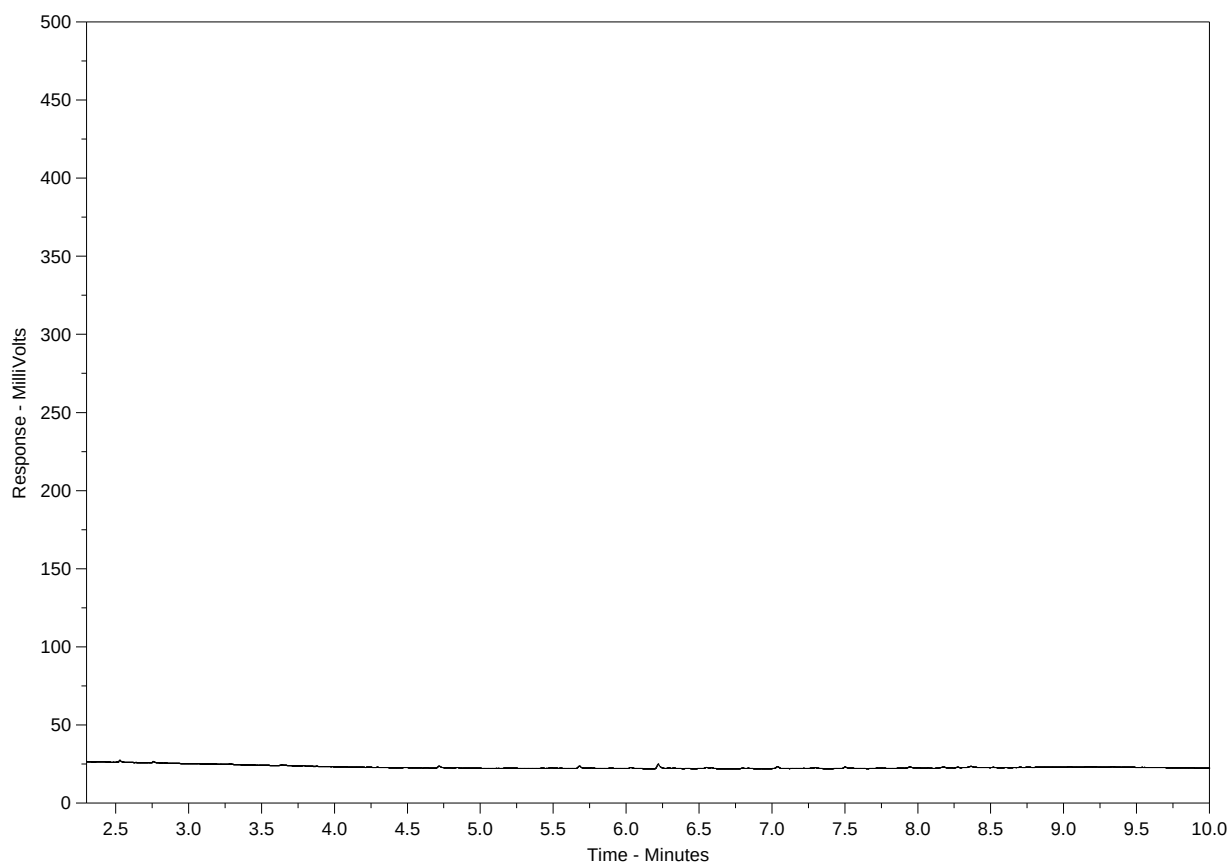
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-22
Client Sample ID: TE-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

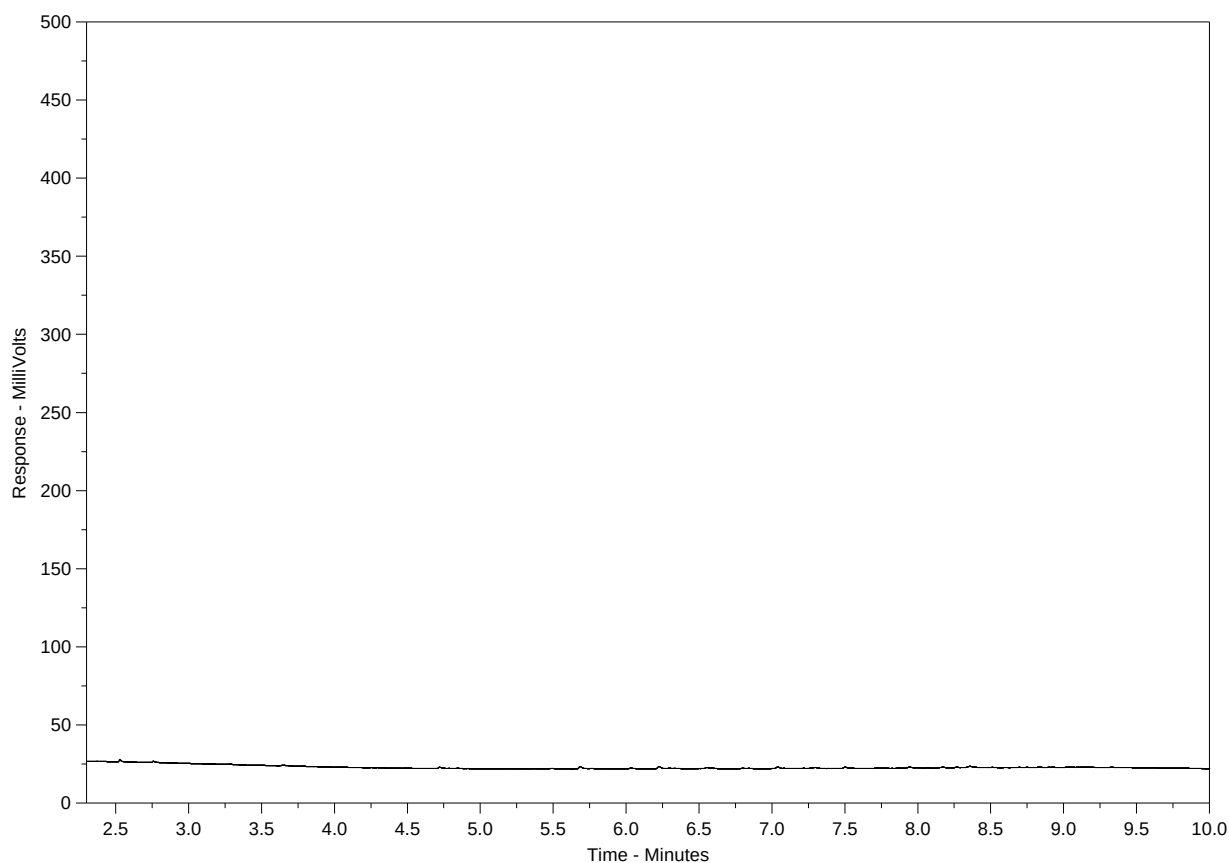
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-23
Client Sample ID: TE-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

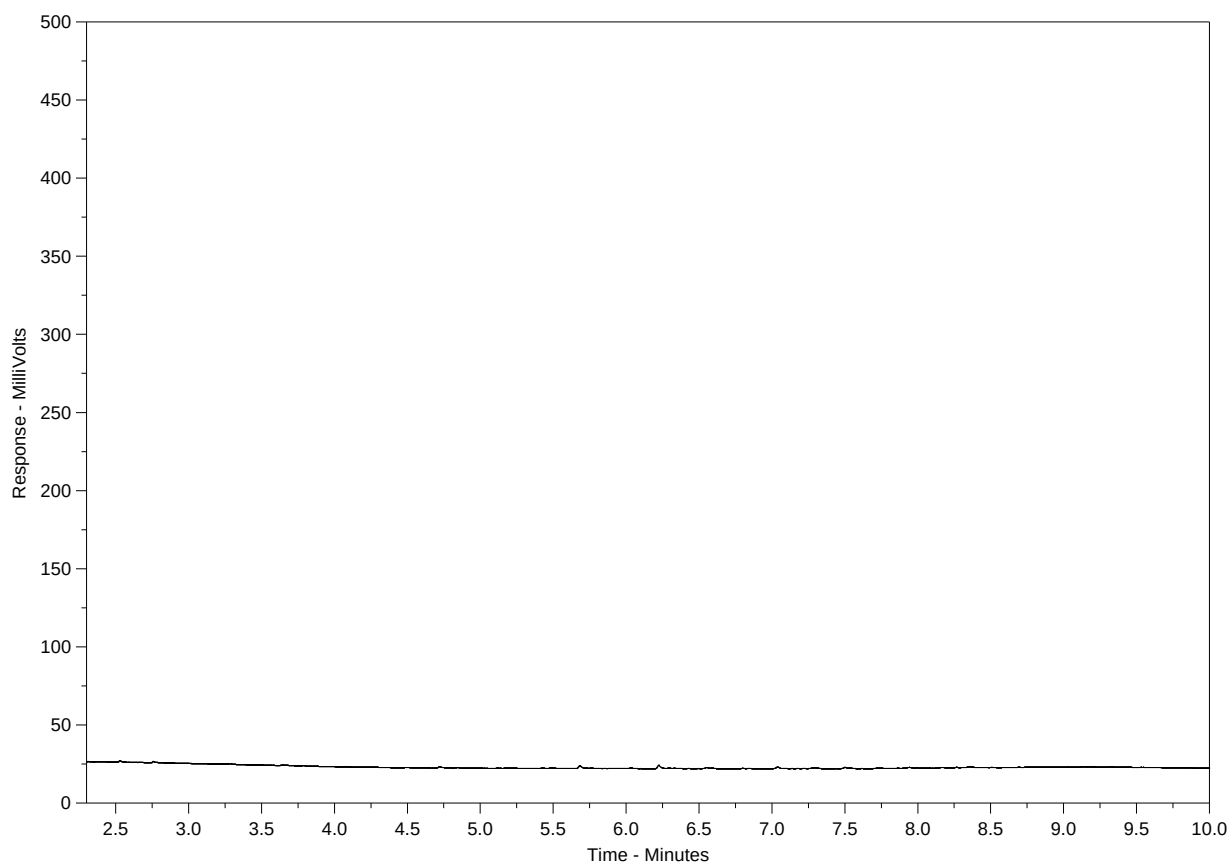
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-26
Client Sample ID: DUP-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

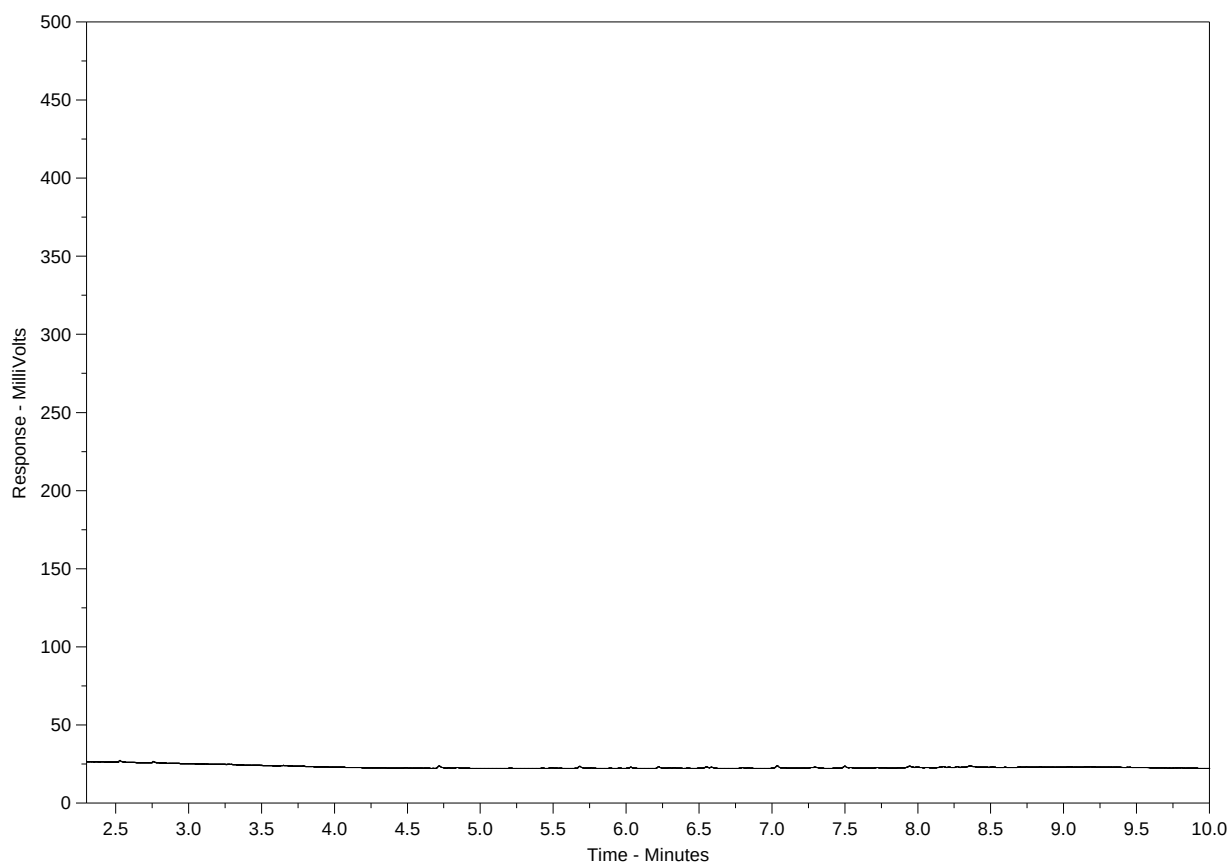
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-27
Client Sample ID: DUP-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

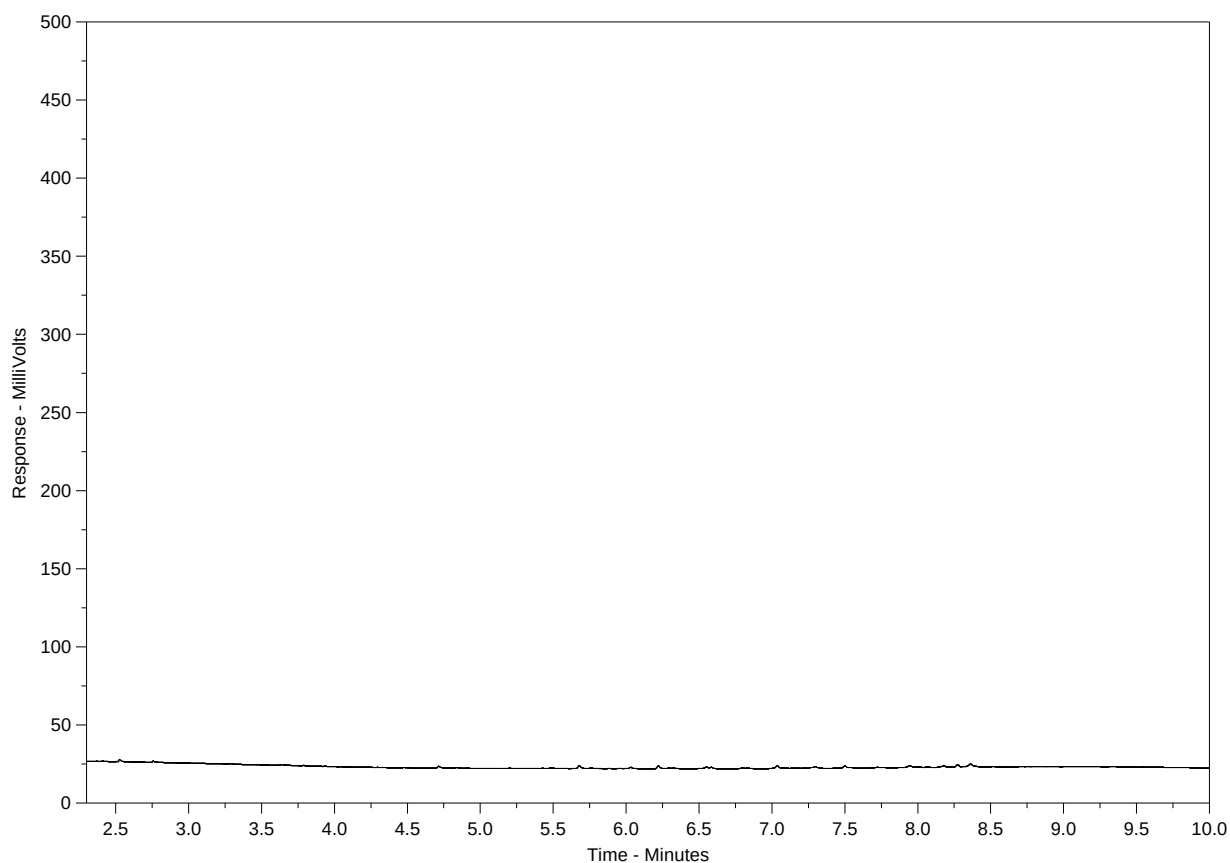
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-30
Client Sample ID: SP-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

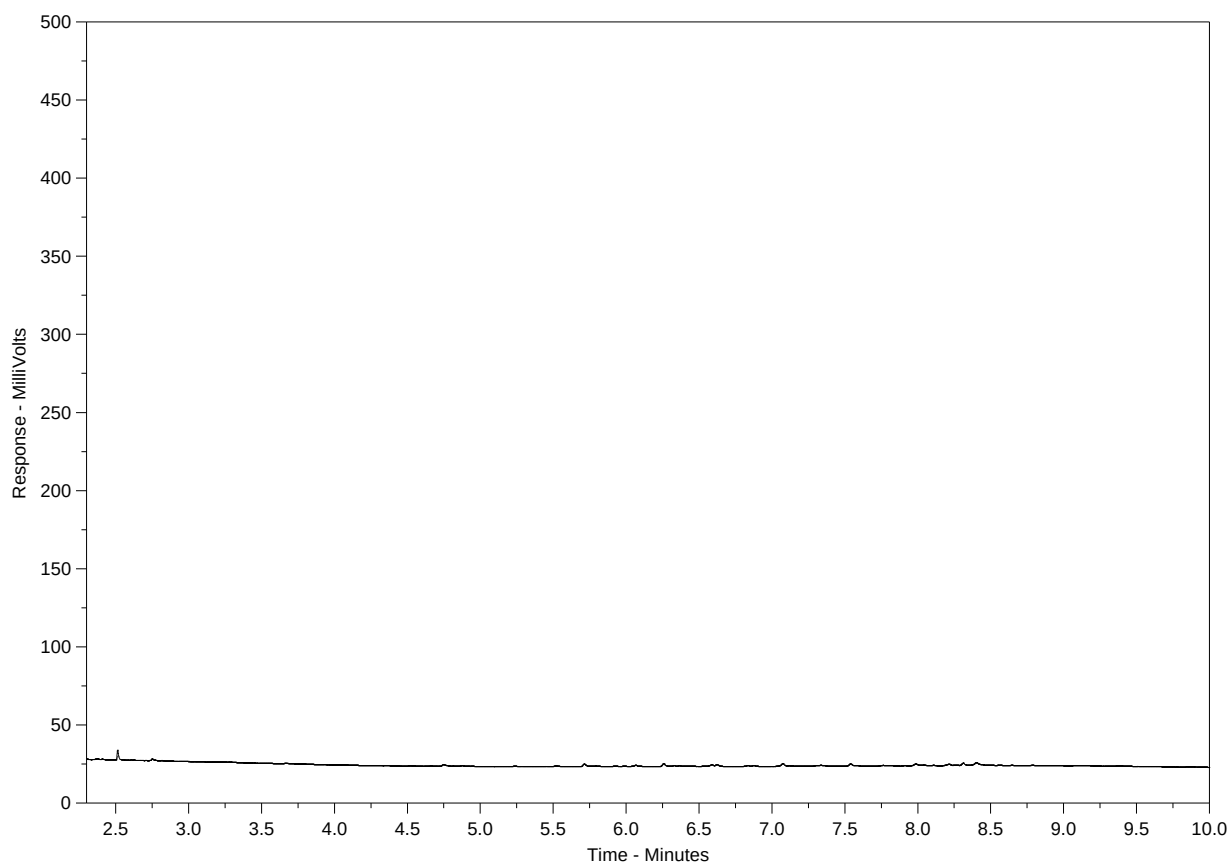
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-31
Client Sample ID: SP-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

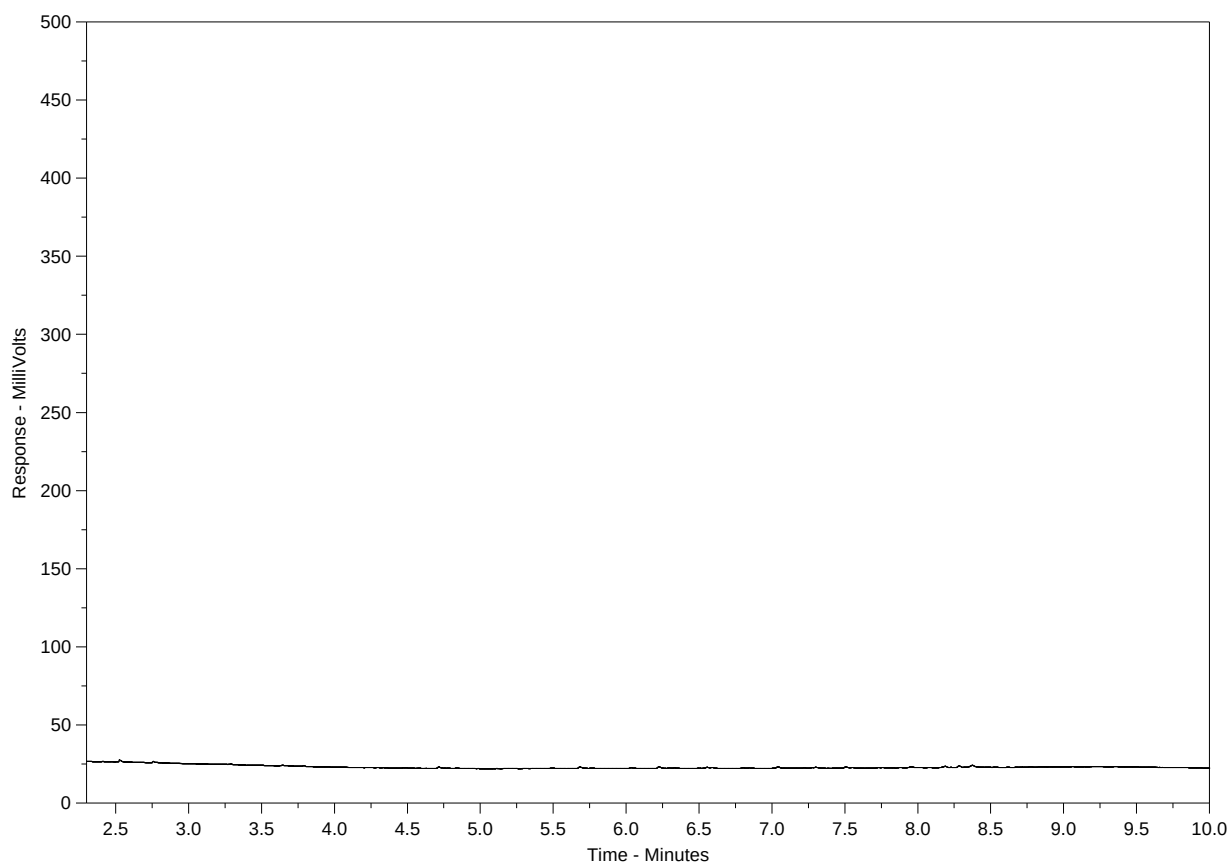
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-32
Client Sample ID: SP-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

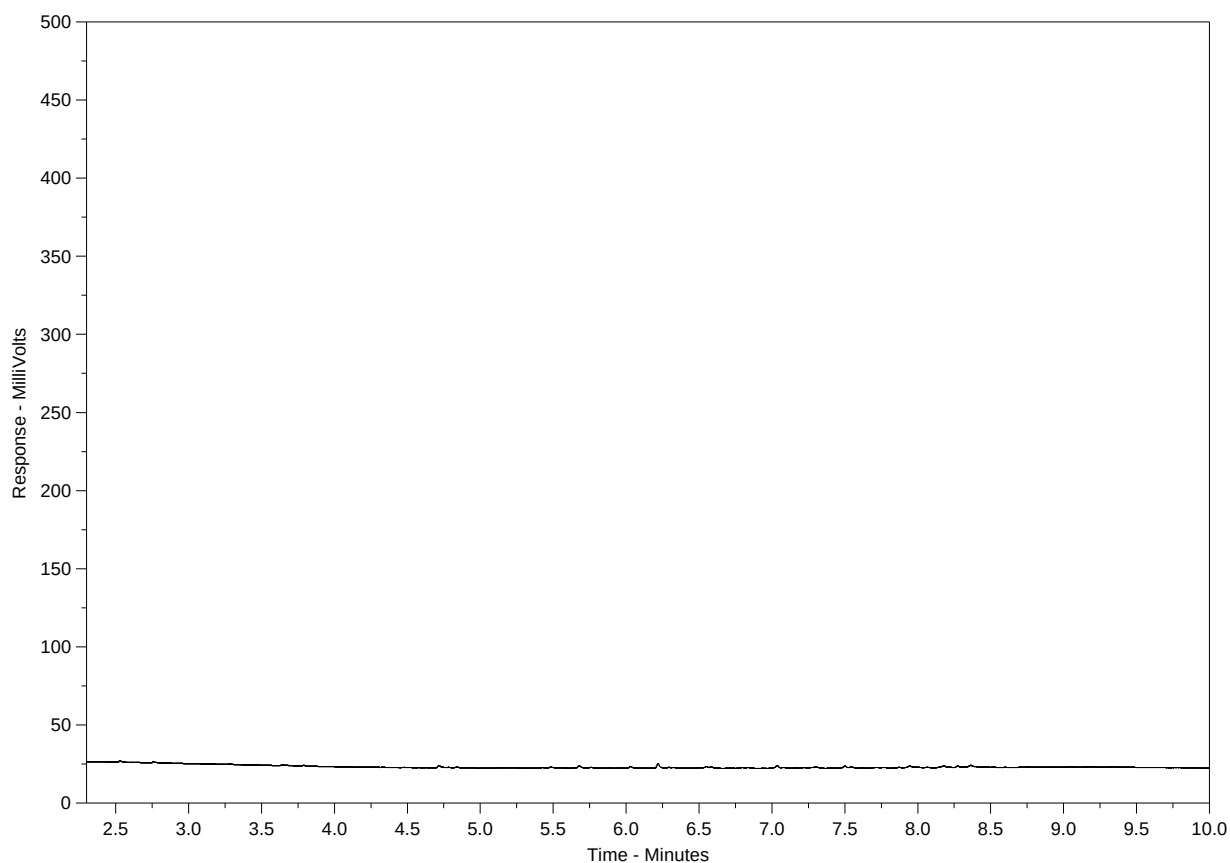
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-35
Client Sample ID: TPN-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

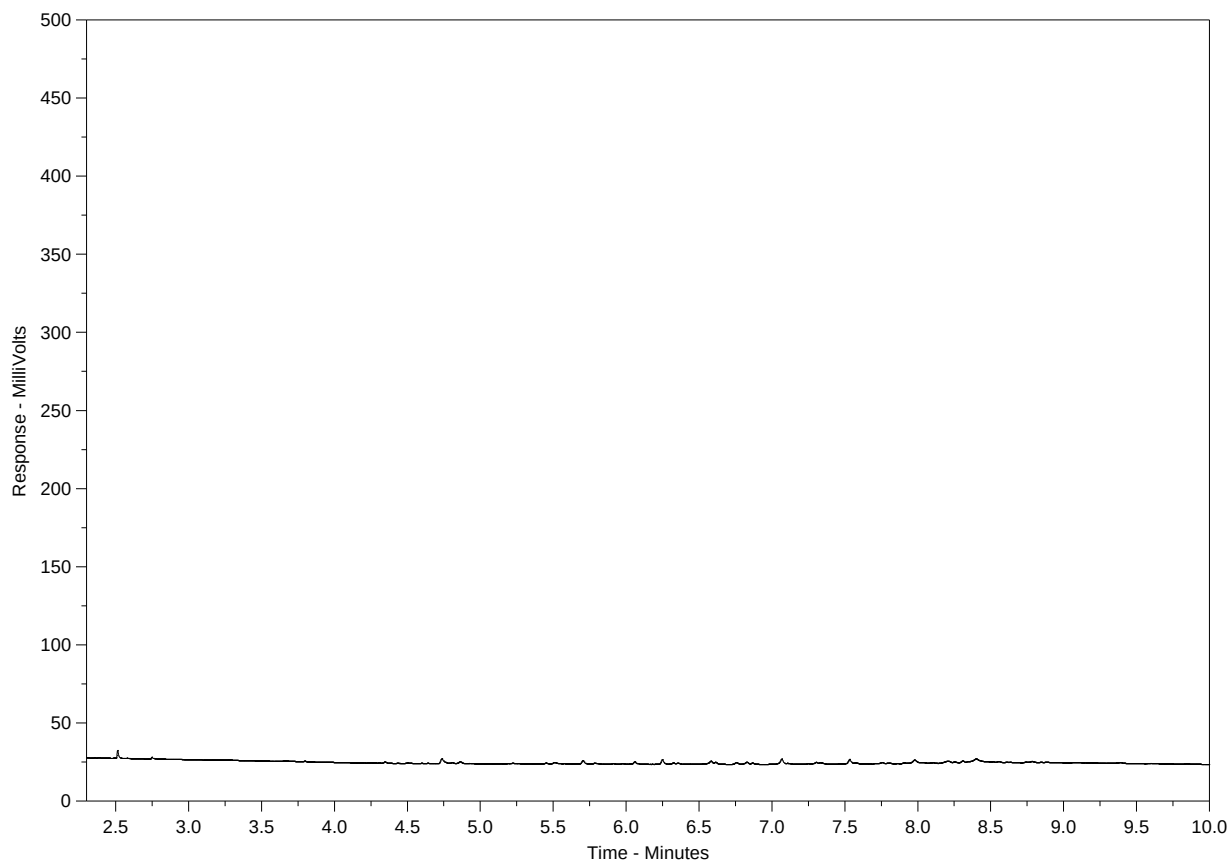
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-36
Client Sample ID: TPN-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

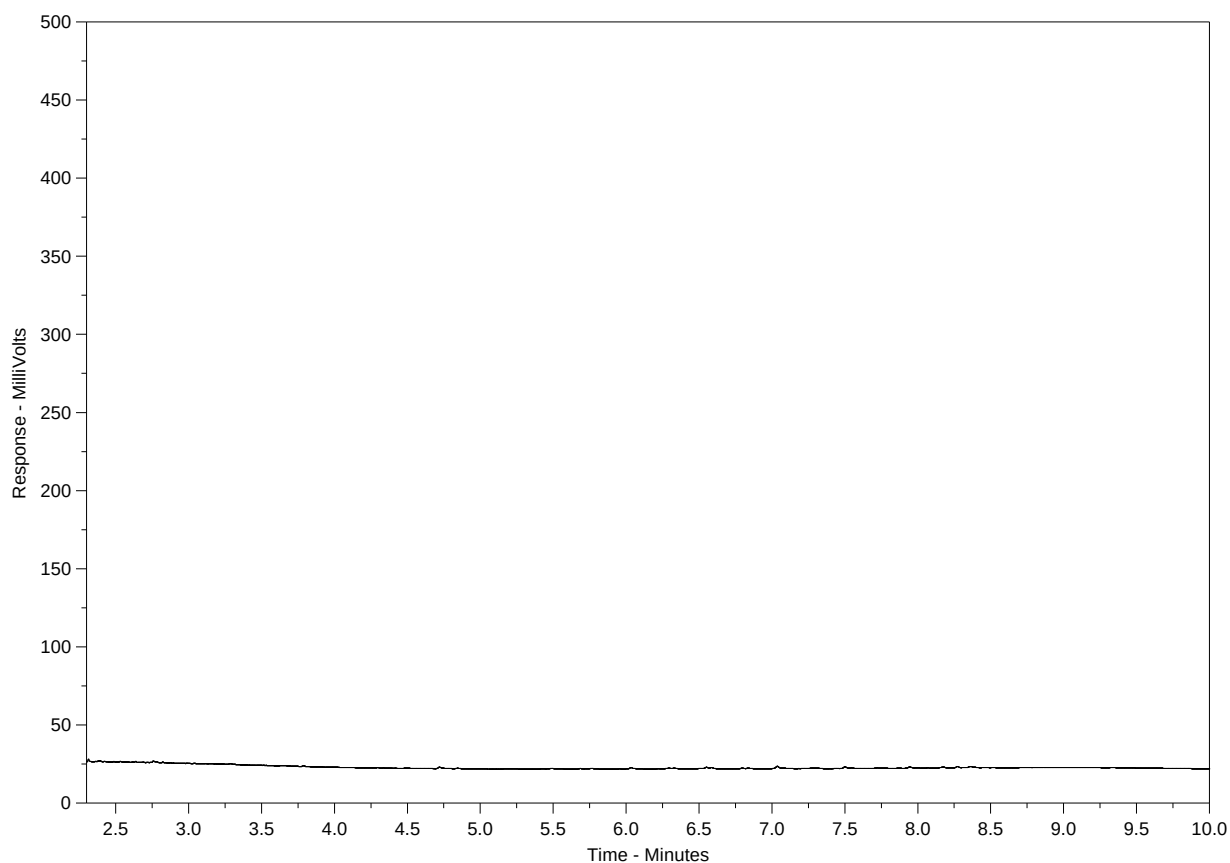
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-37
Client Sample ID: TPN-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

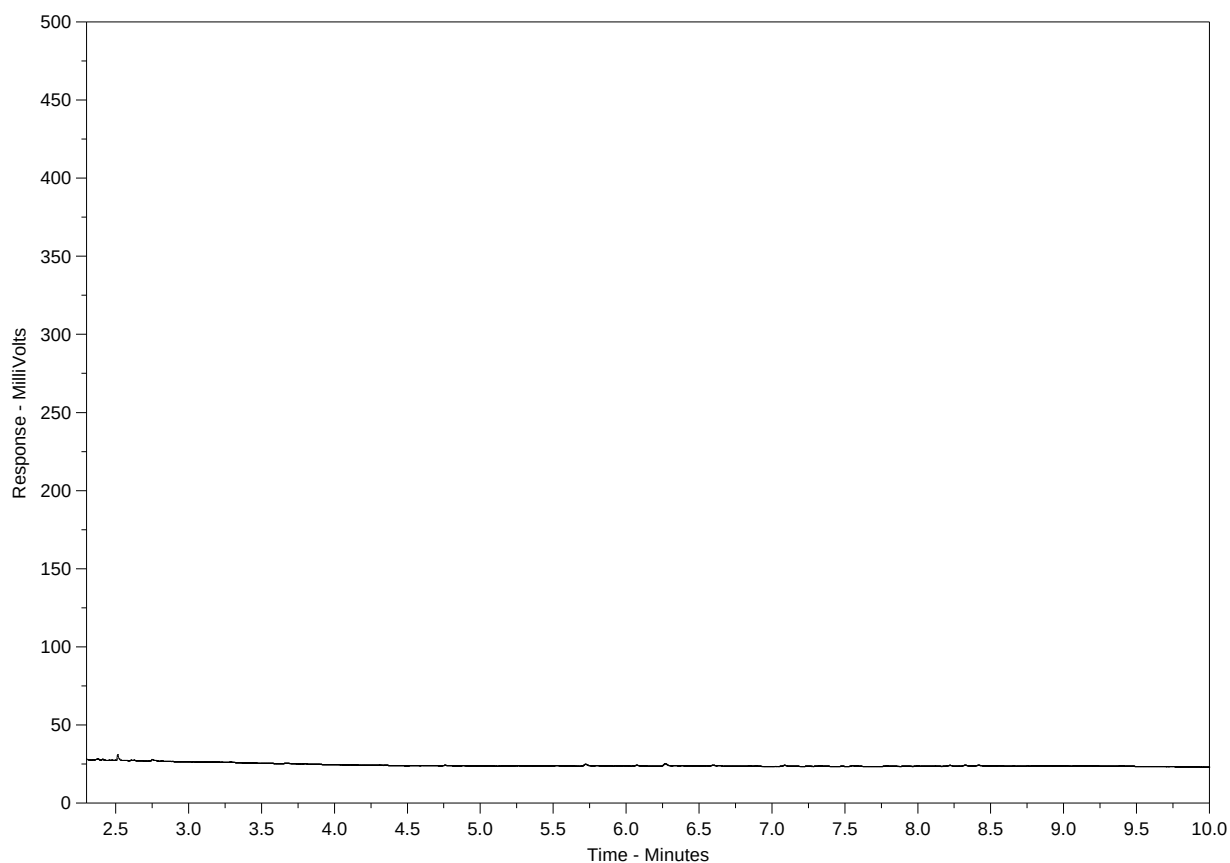
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-38
Client Sample ID: TPN-4



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

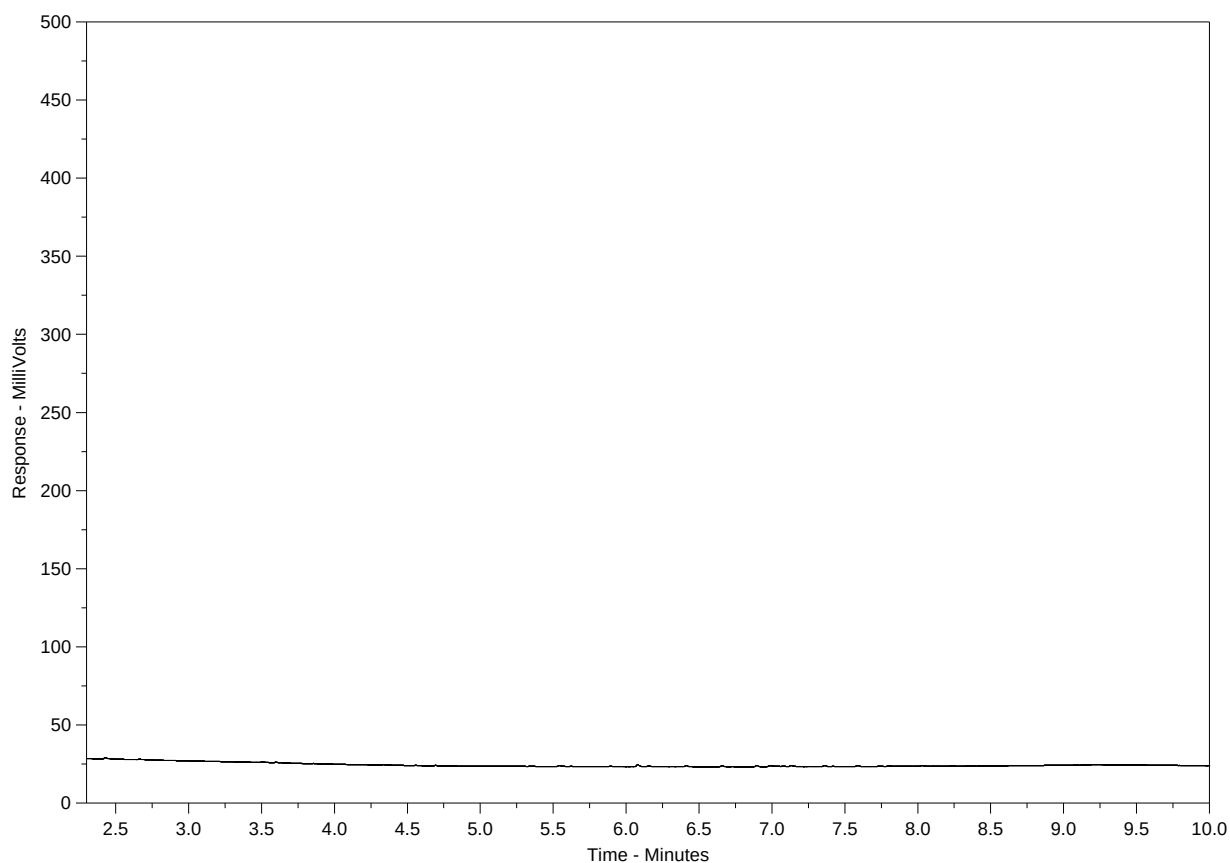
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-39
Client Sample ID: TPN-5



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

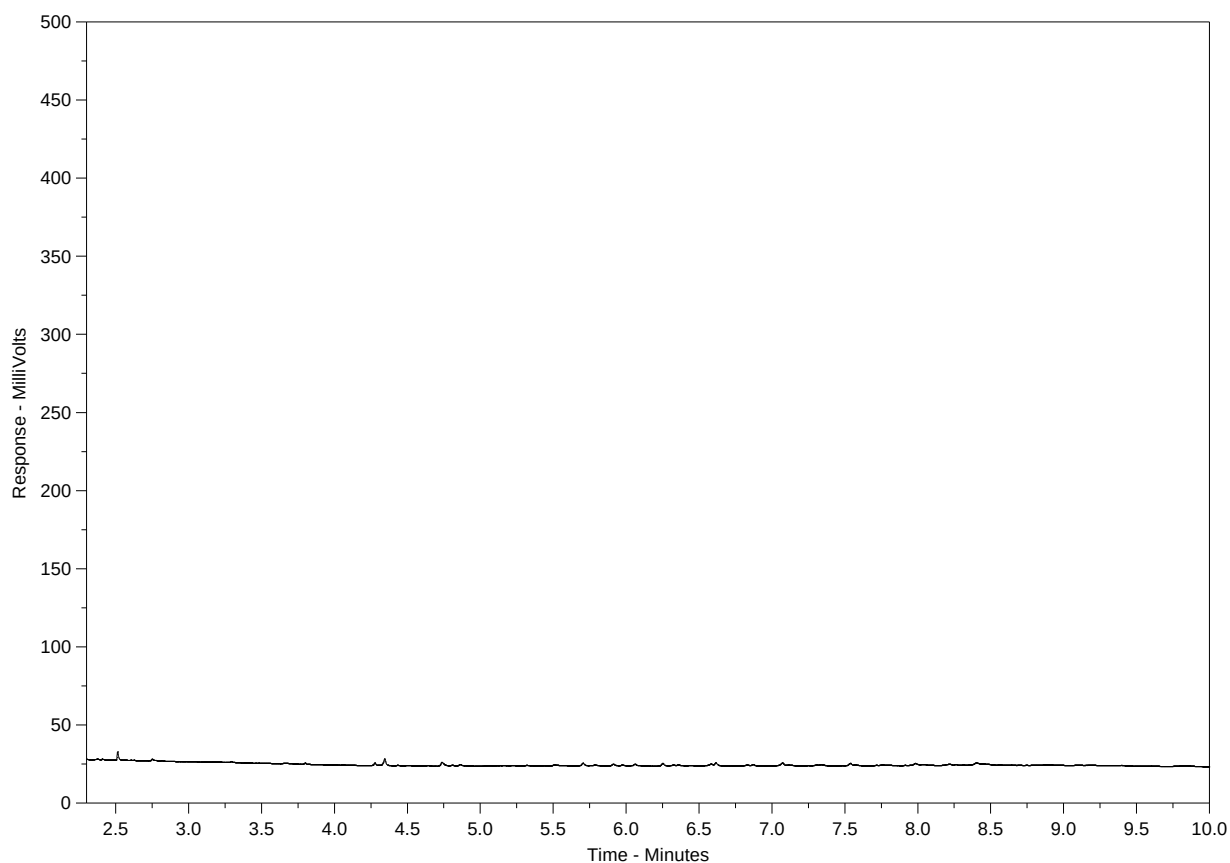
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-40
Client Sample ID: TPE-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

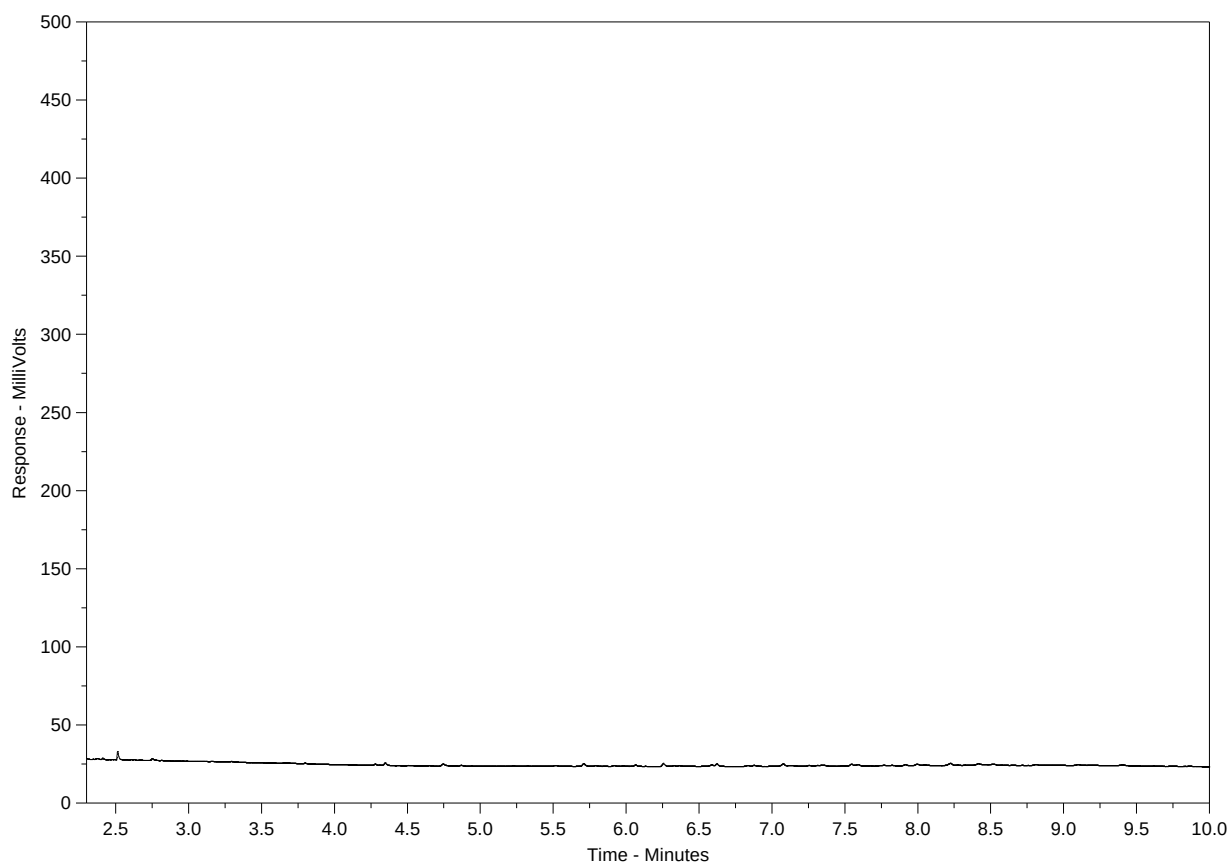
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-41
Client Sample ID: TPE-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

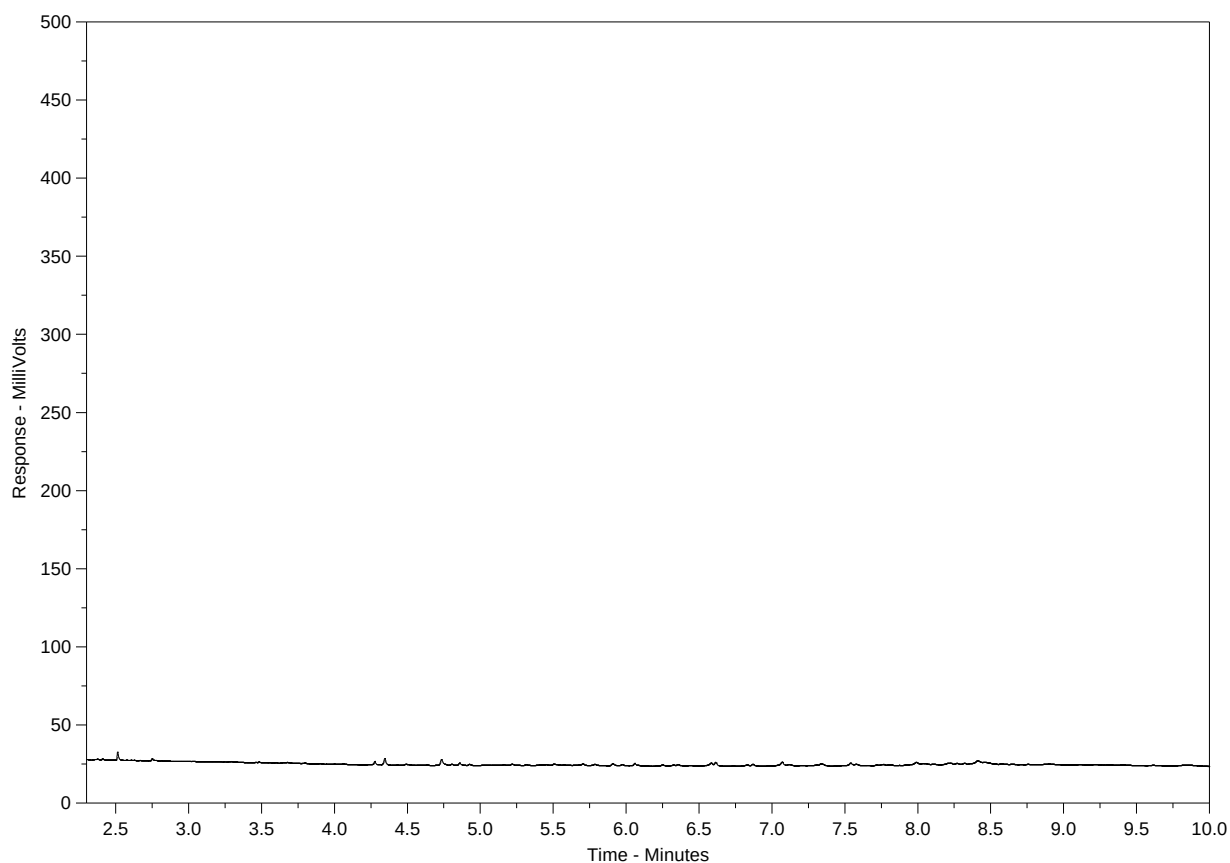
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-42
Client Sample ID: TPE-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

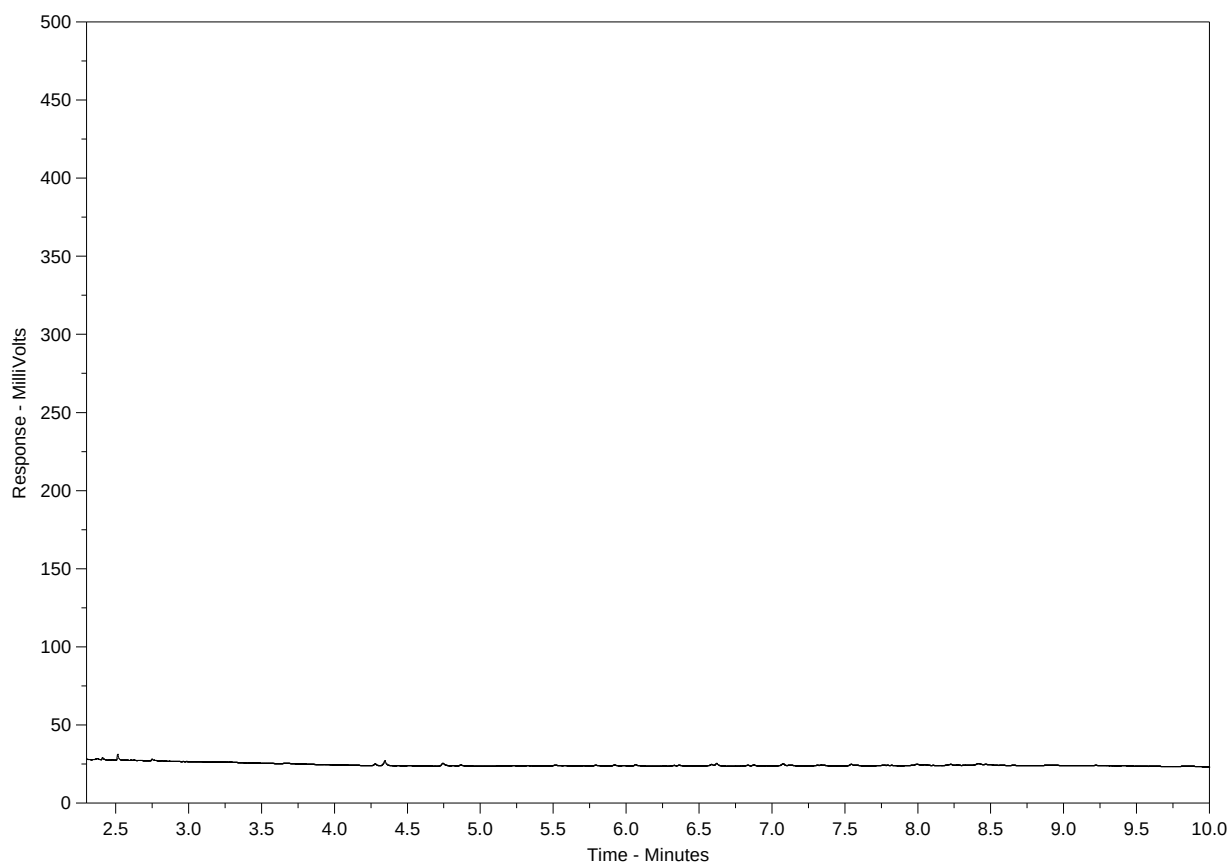
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-45
Client Sample ID: DUP-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

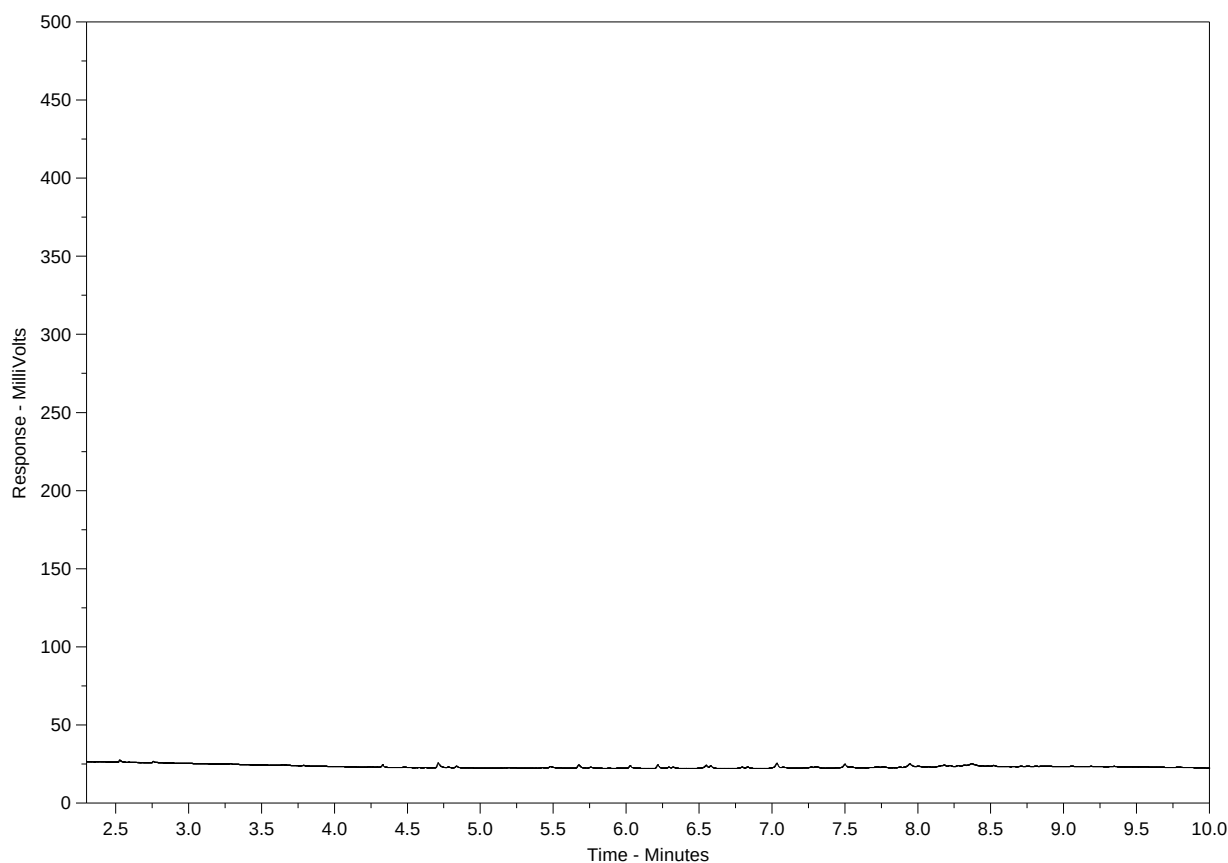
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-47
Client Sample ID: TPS-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Diesel / Jet Fuels →	← Motor Oils / Lube Oils / Grease →

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

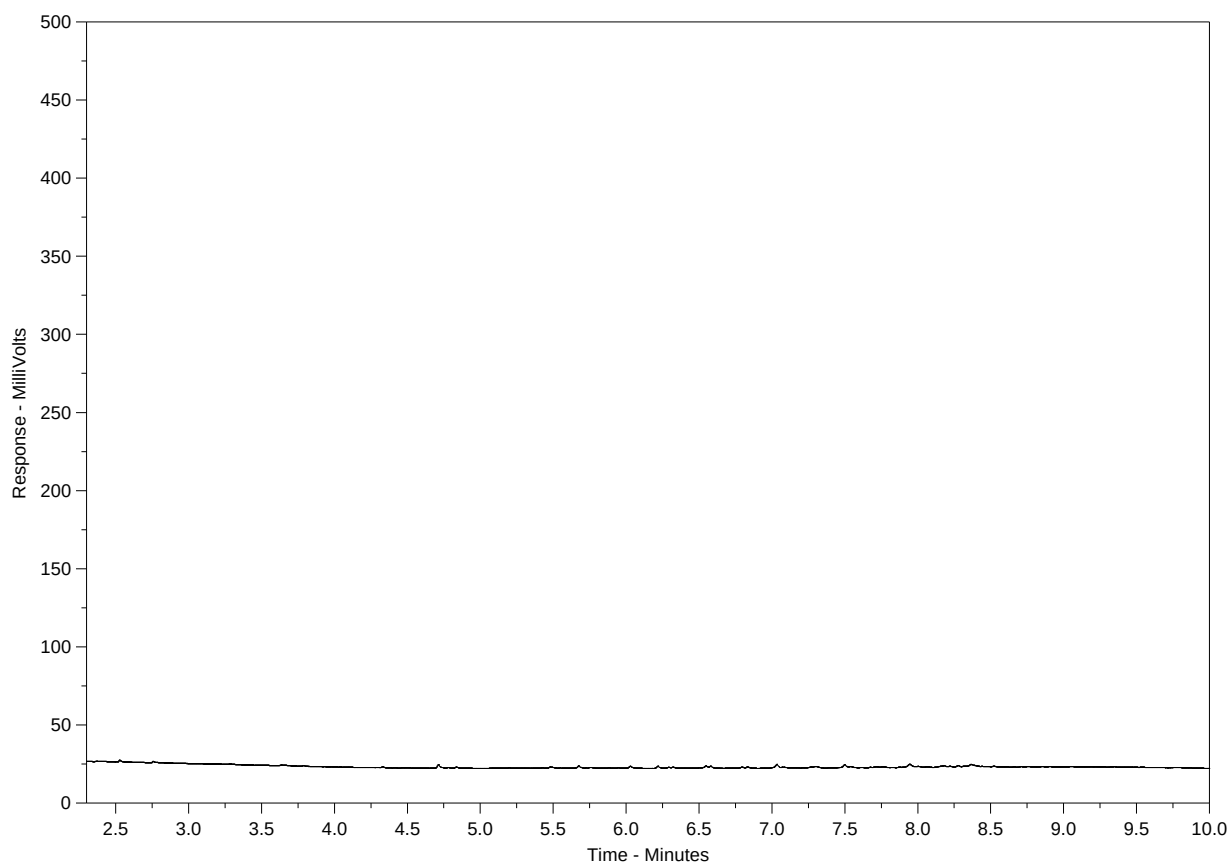
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-48
Client Sample ID: TPS-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

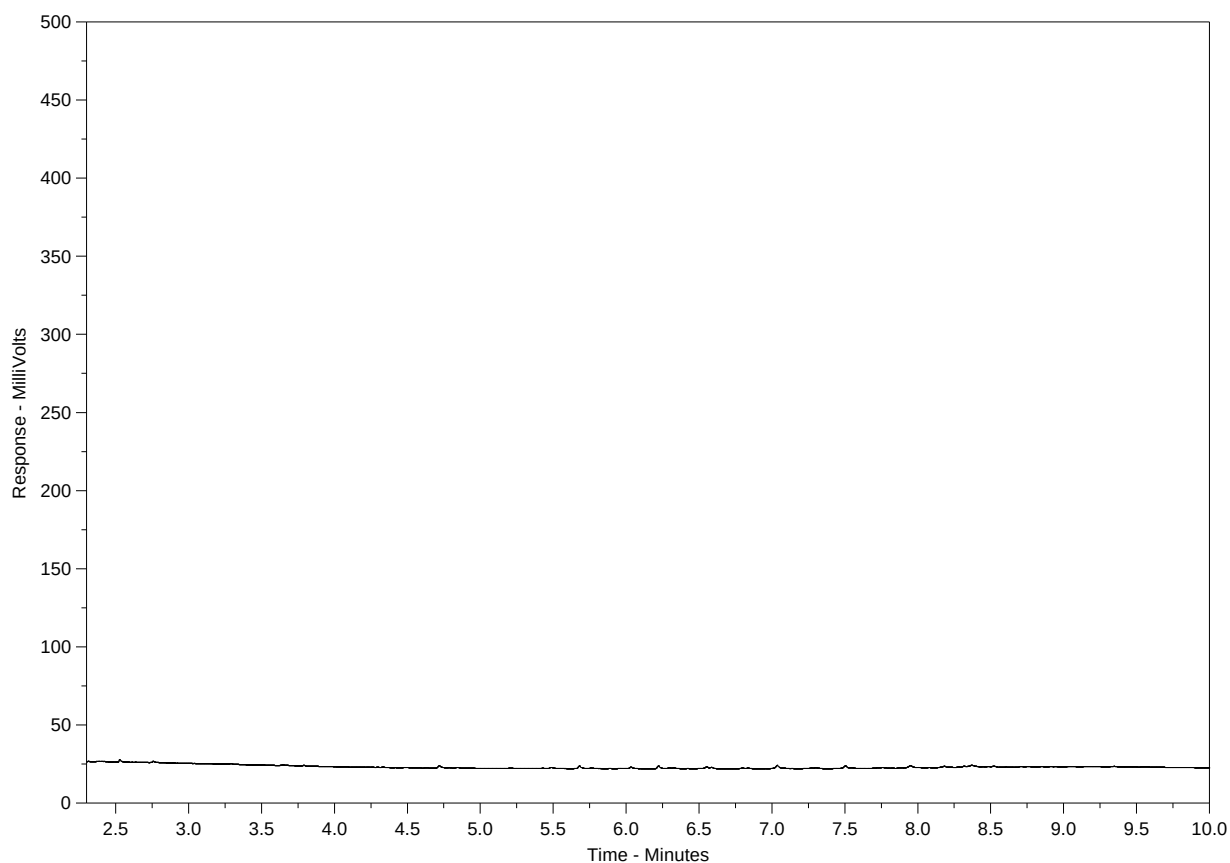
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-49
Client Sample ID: TPS-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

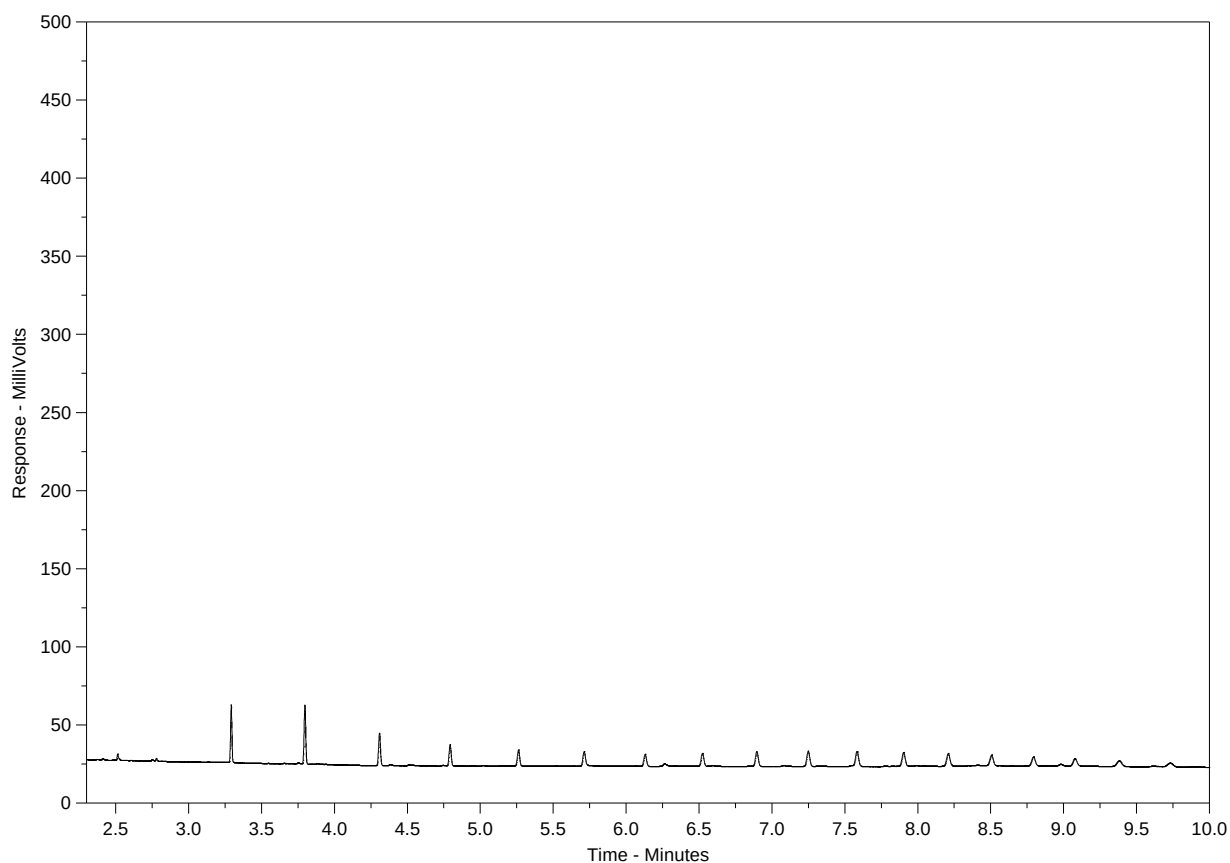
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-52
Client Sample ID: BBD-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

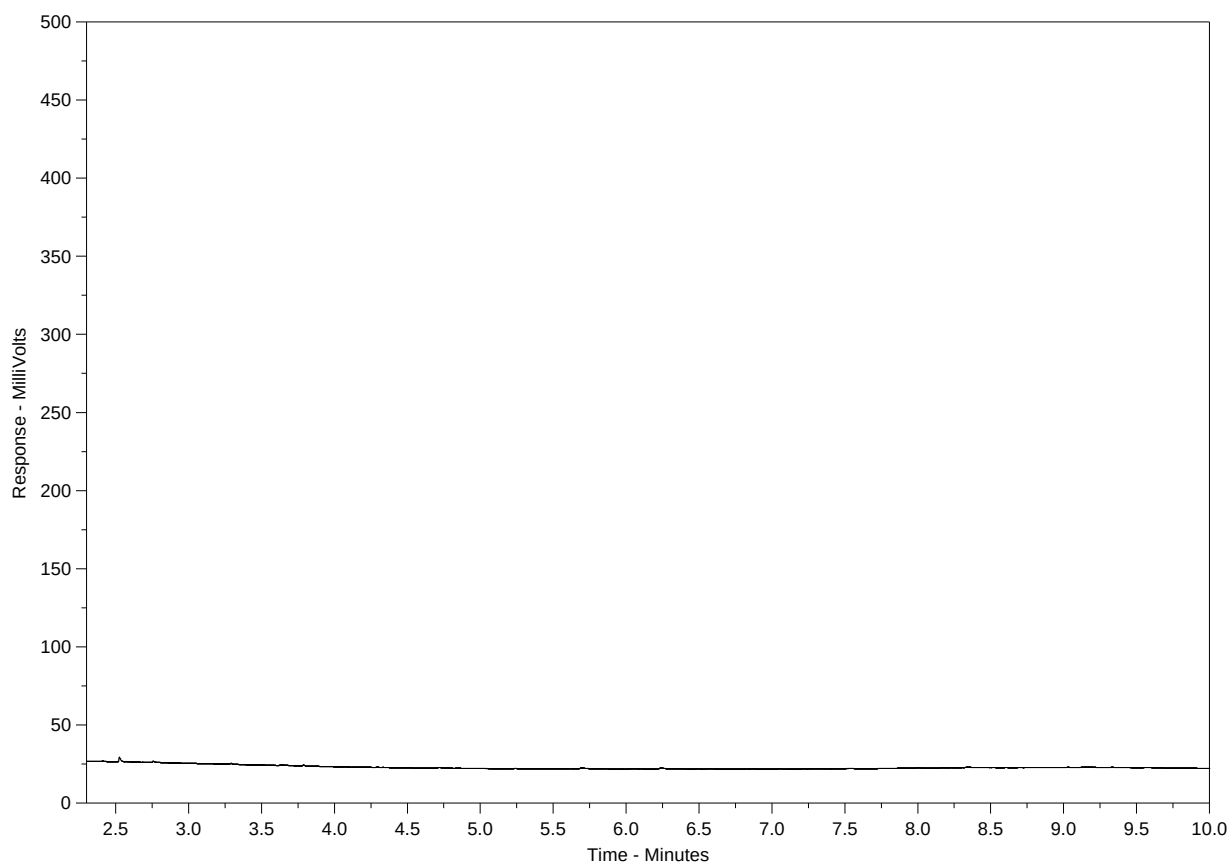
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-53
Client Sample ID: BBD-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

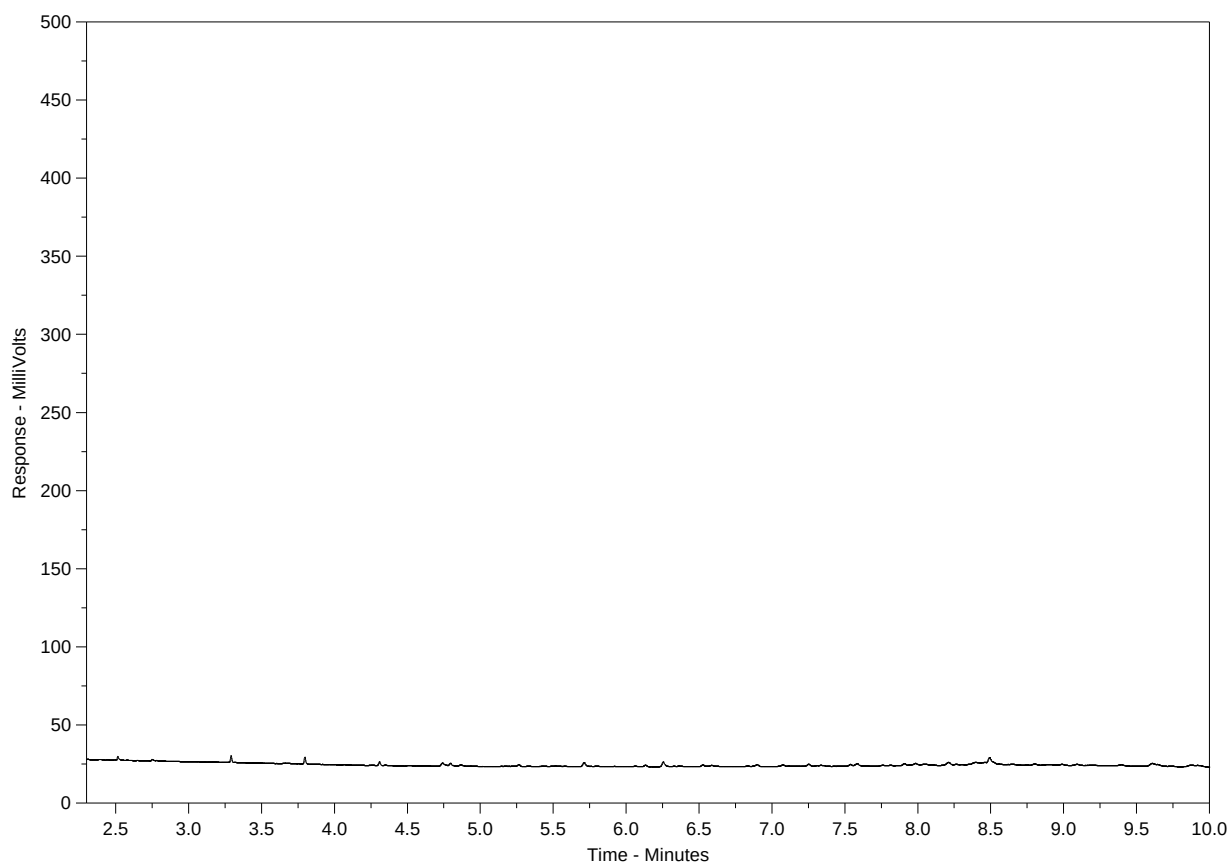
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-54
Client Sample ID: BBD-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

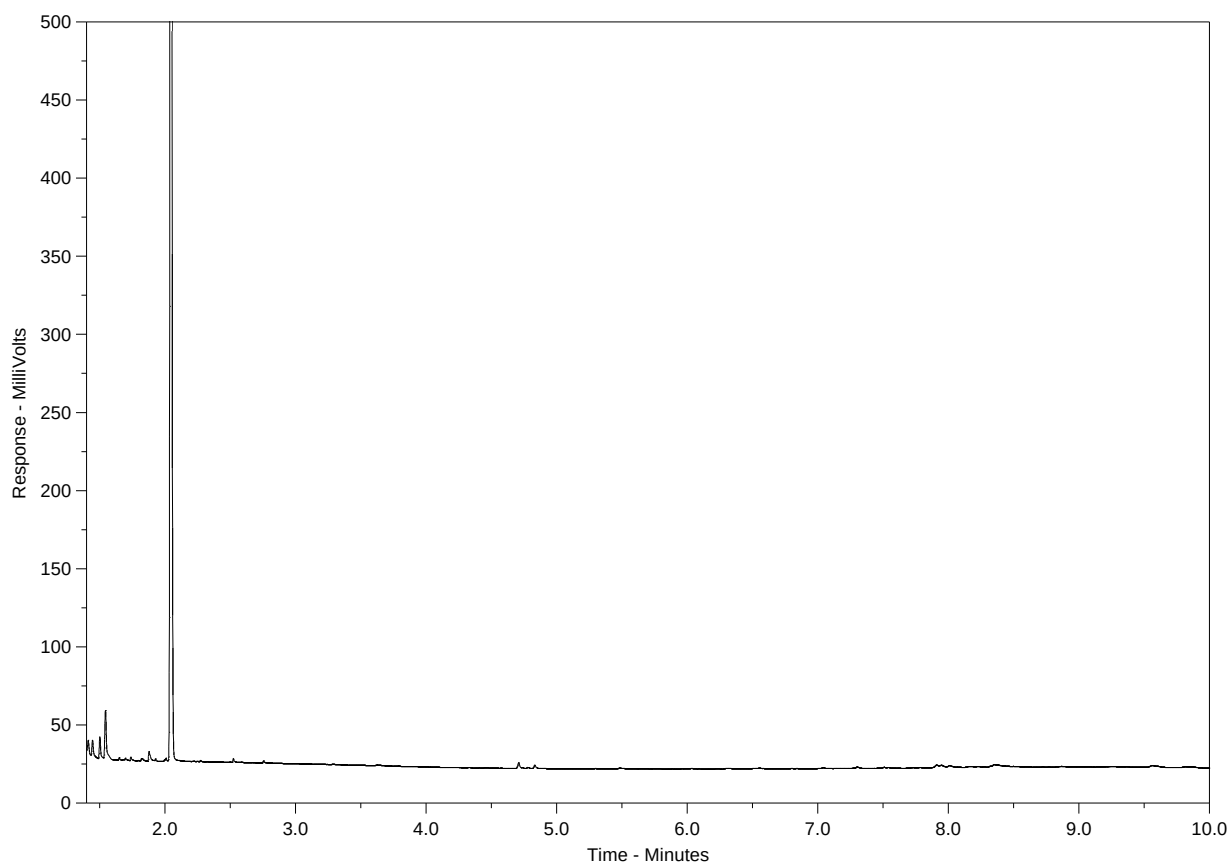
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-57
Client Sample ID: BPJ-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

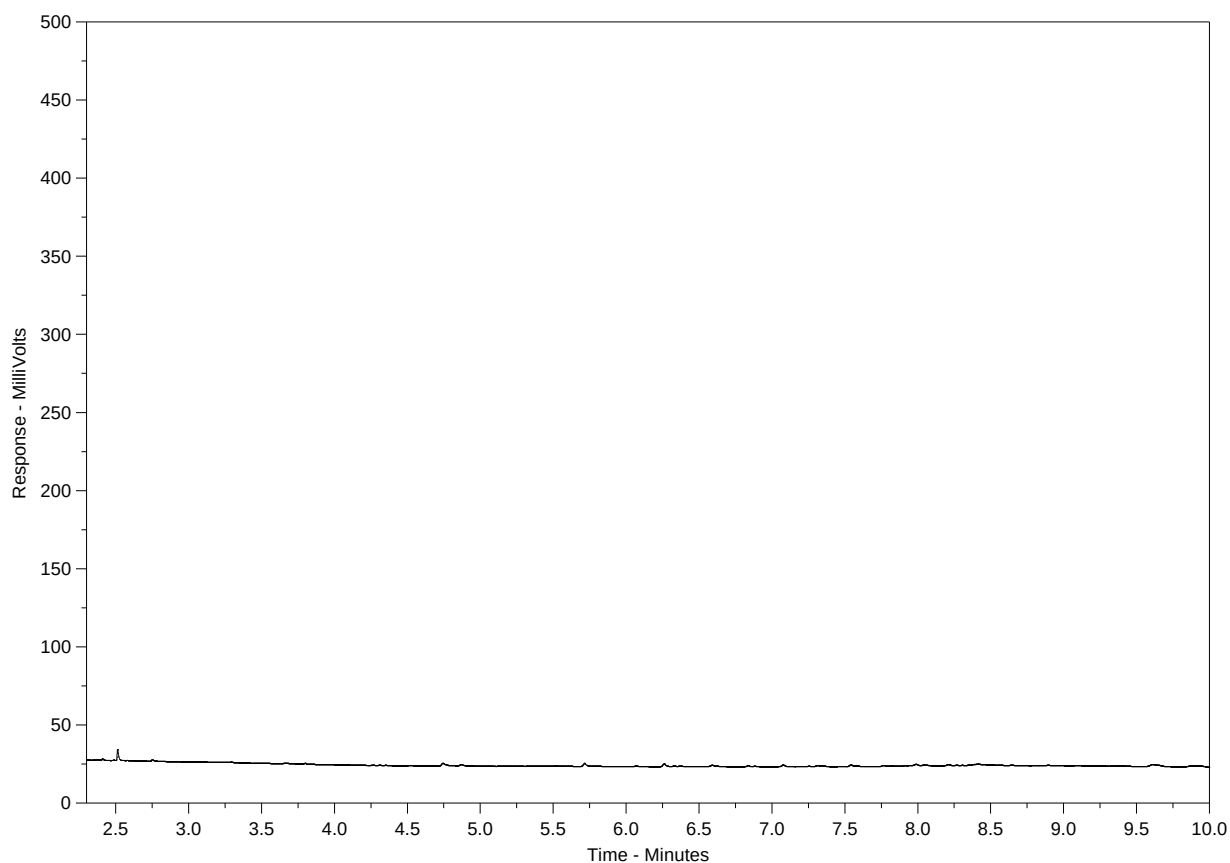
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-58
Client Sample ID: BPJ-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

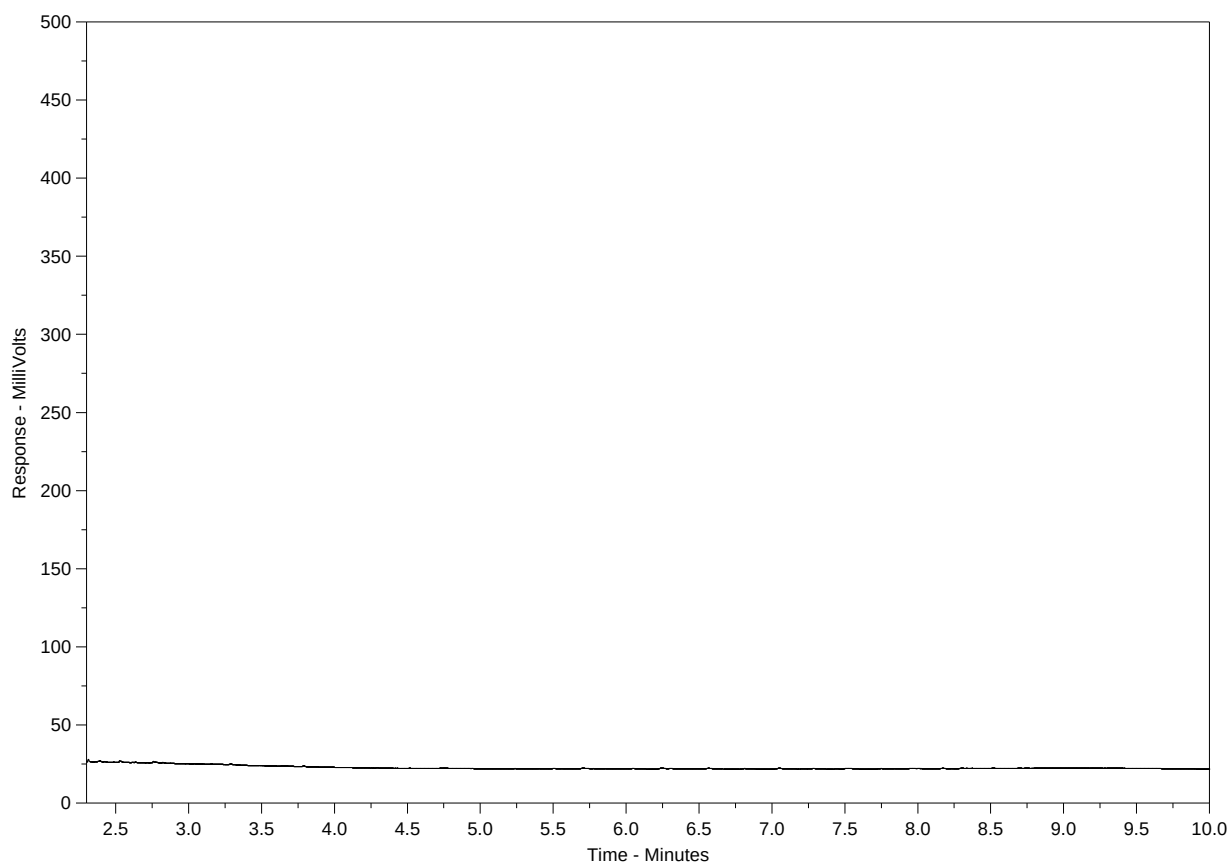
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-59
Client Sample ID: BPJ-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

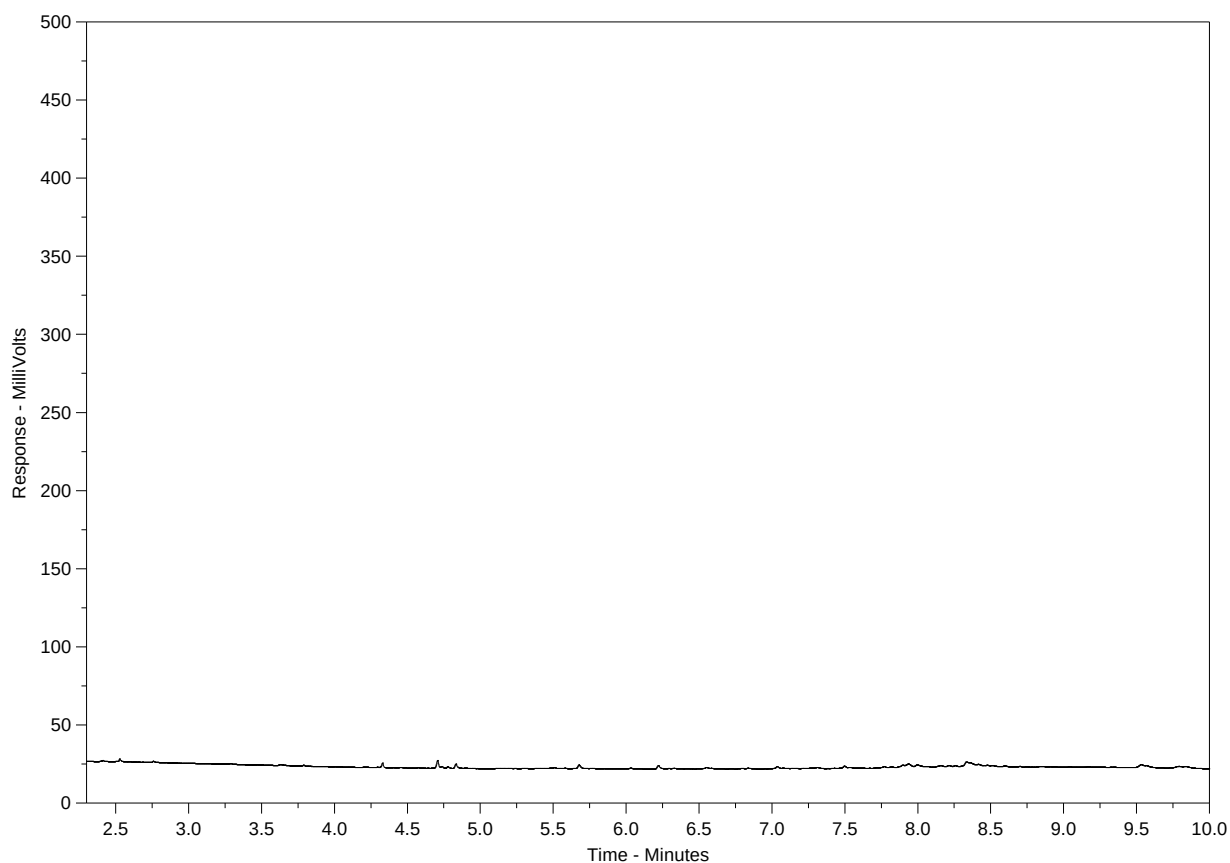
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-62
Client Sample ID: BAP-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

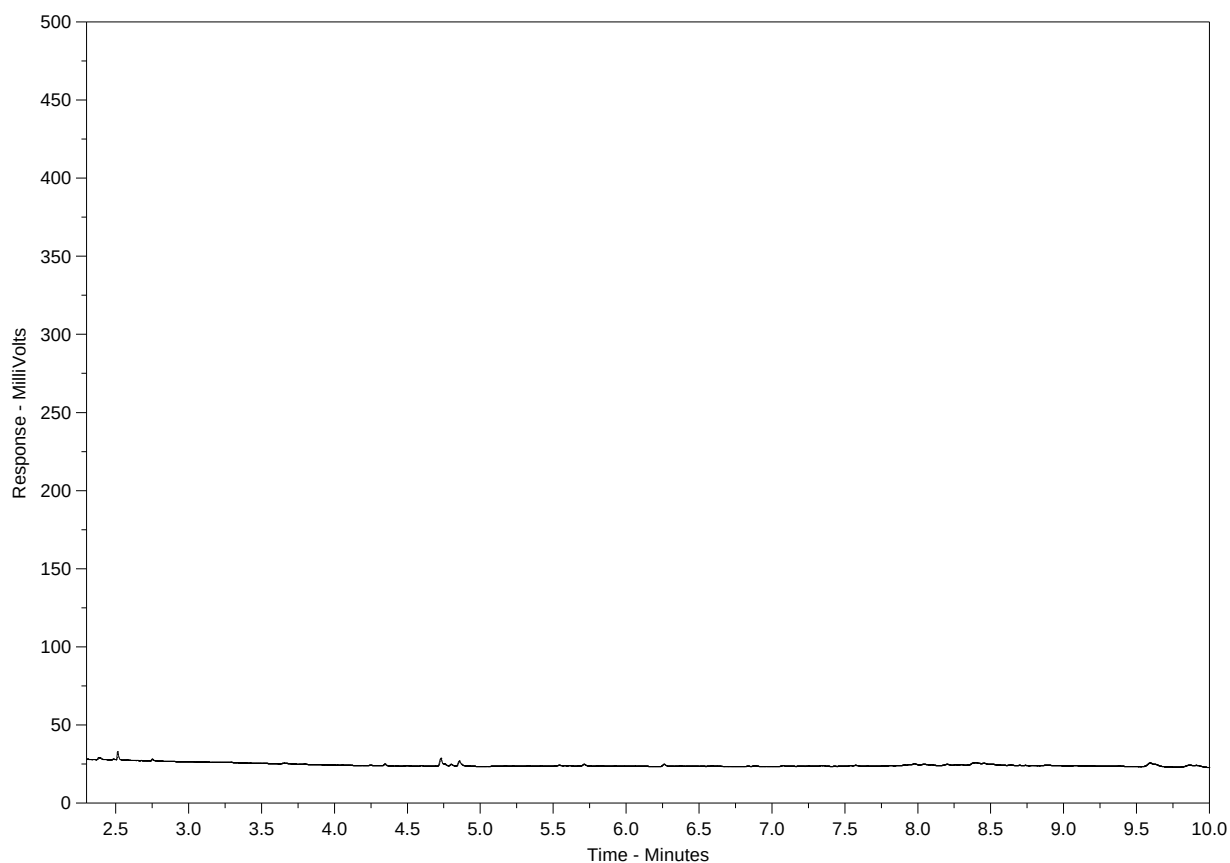
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-63
Client Sample ID: BAP-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

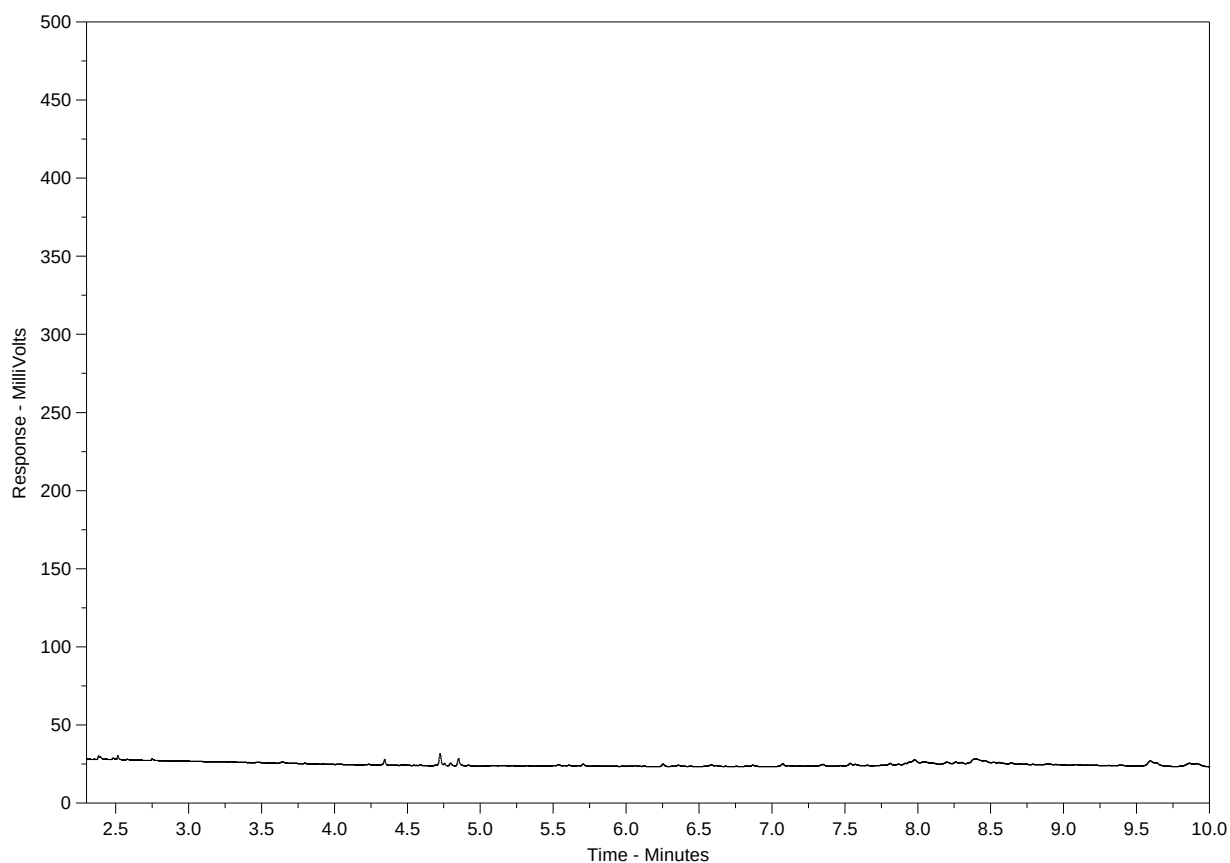
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-64
Client Sample ID: BAP-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

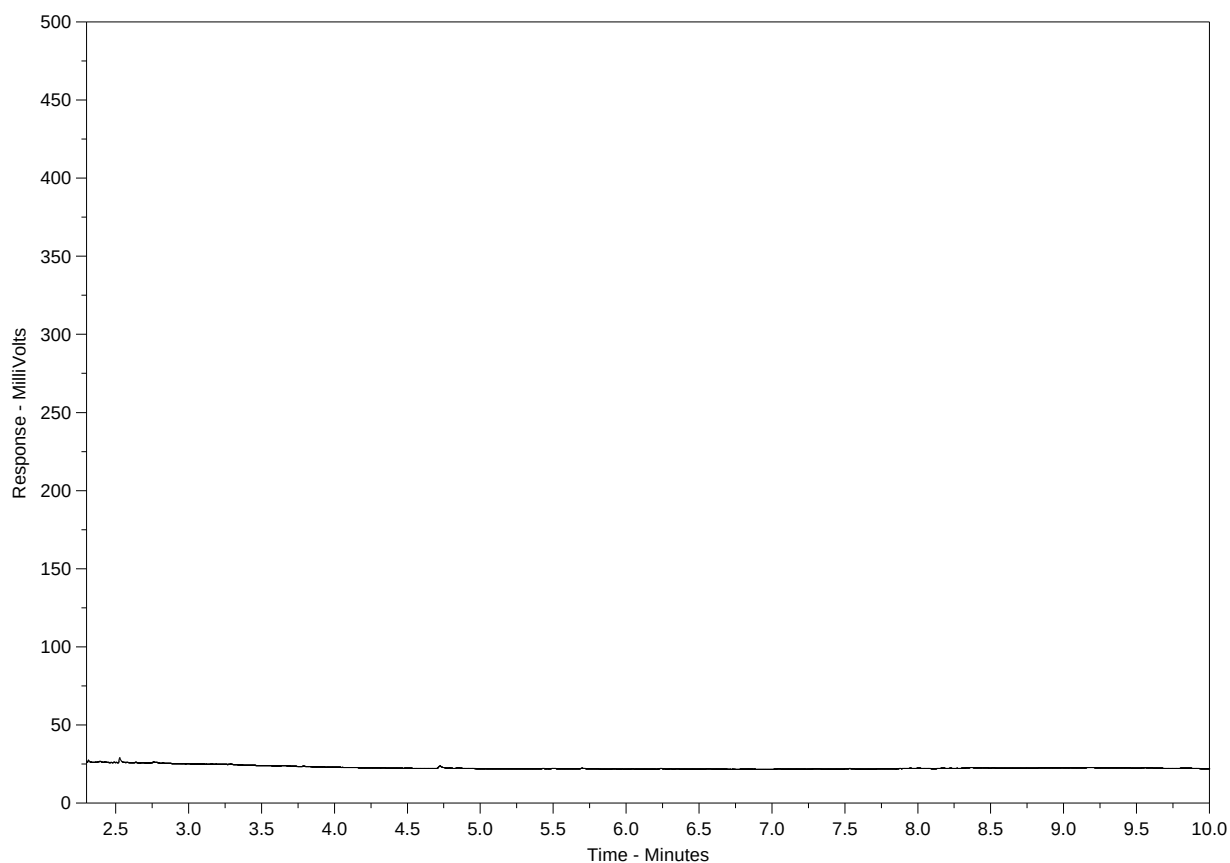
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-67
Client Sample ID: BES-1



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

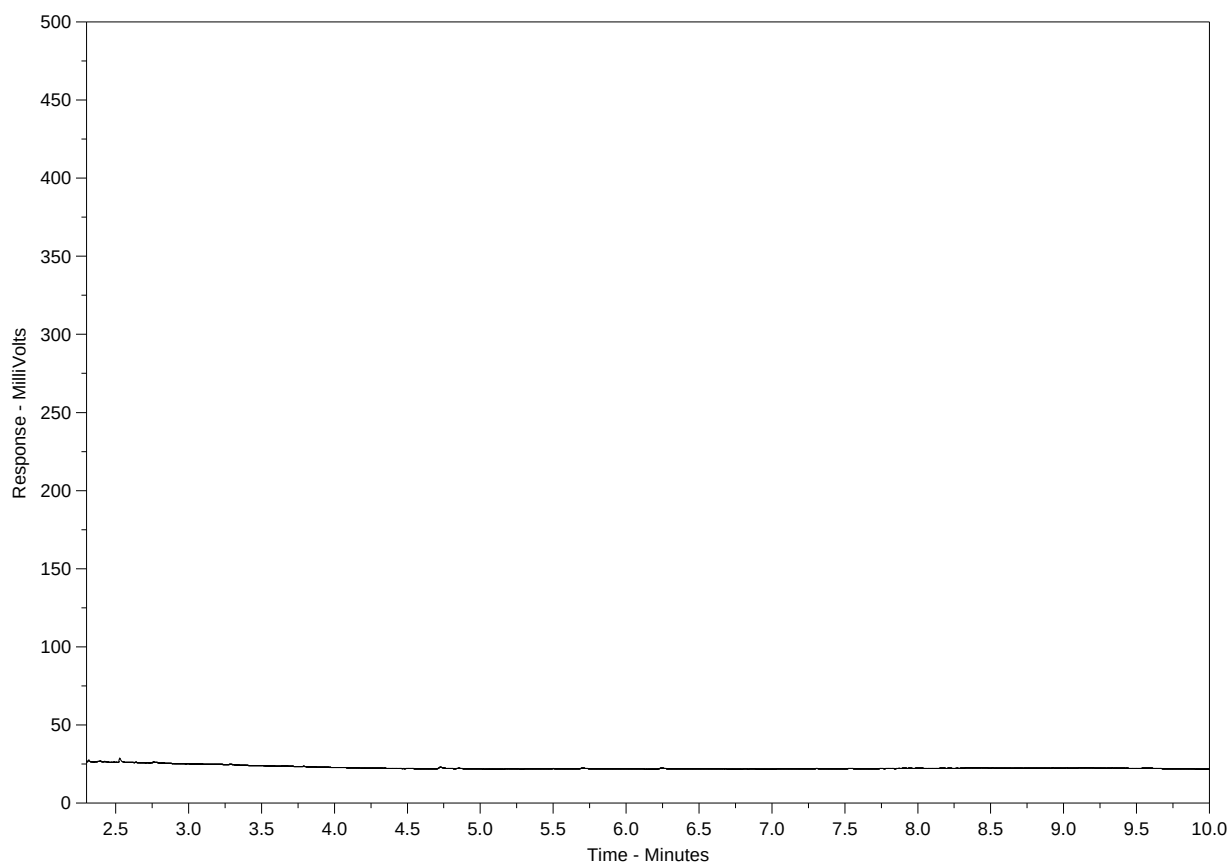
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-68
Client Sample ID: BES-2



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline → ← Diesel / Jet Fuels → ← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

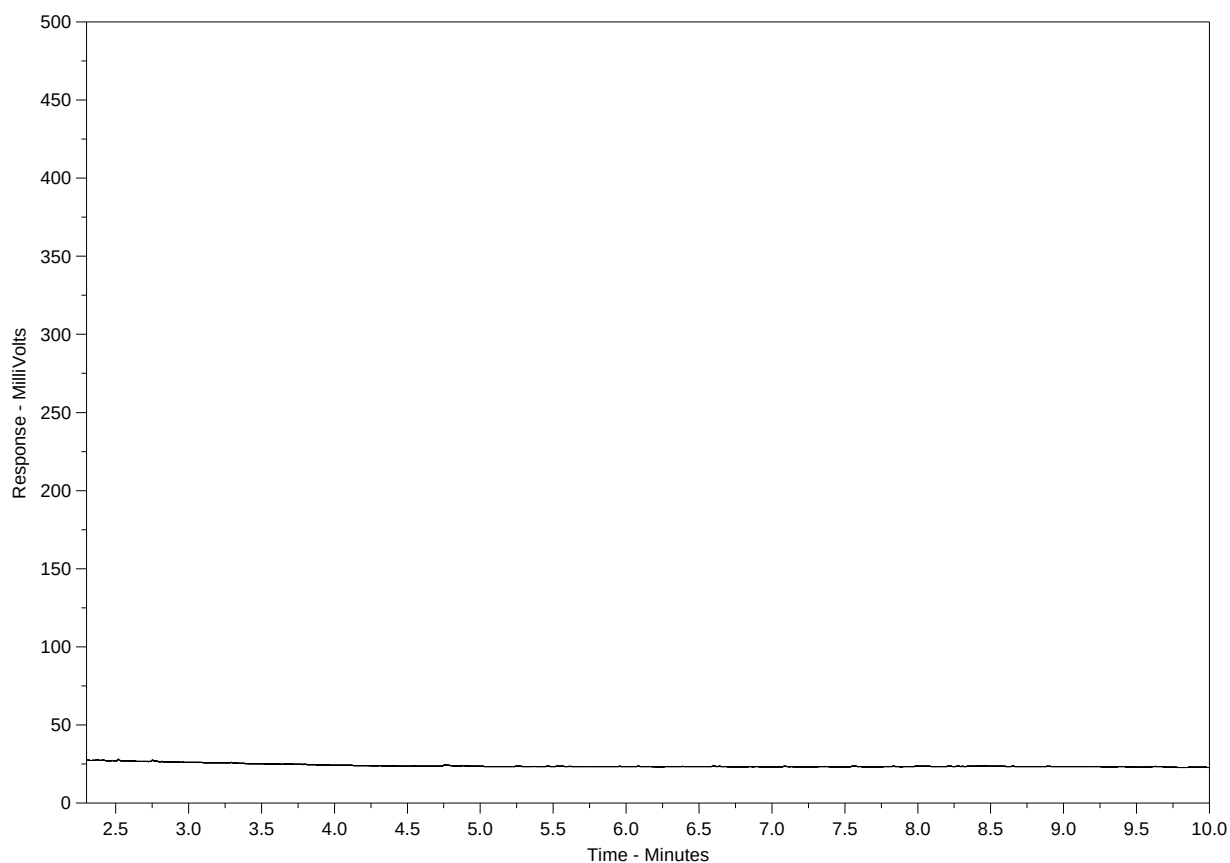
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-69
Client Sample ID: BES-3



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

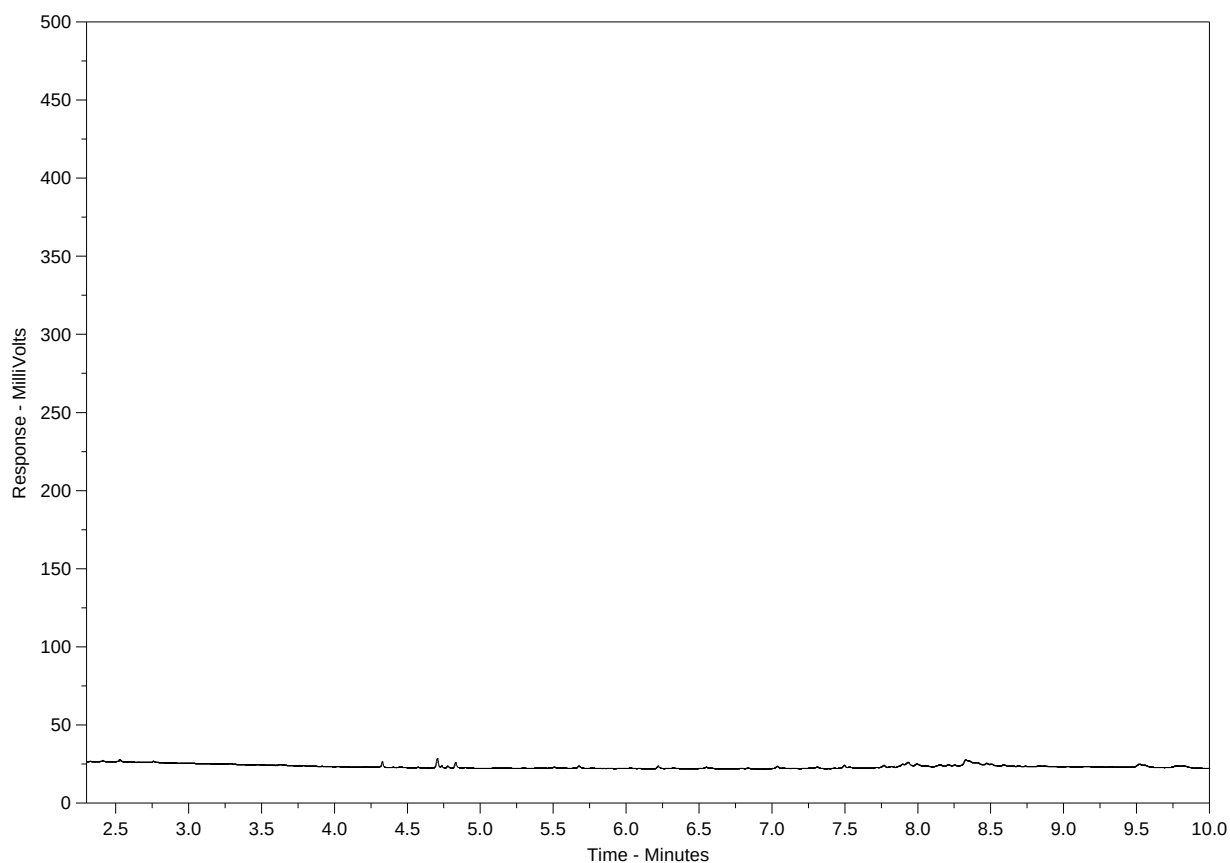
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

Hydrocarbon Distribution Report



ALS Sample ID: L1054122-72
Client Sample ID: DUP-4



nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →		
← Diesel / Jet Fuels →		
← Motor Oils / Lube Oils / Grease →		

The EPH Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample. For further interpretation, a current library of reference products is available on www.alsglobal.com or upon request.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and three n-alkane hydrocarbon marker compounds. Retention times may vary between samples by as much as 0.5 minutes.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the response scale at the left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.



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Report to				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)											
Company: Azimuth Consulting Group				☐ Standard ☐ Other ☒ PDF ☒ Excel ☐ Digital ☐ Fax				☒ Regular (Standard Turnaround Times - Business Days) ☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT ☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT ☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT											
Contact: Maggie McConnell / Gary Mann				Email 1: mmcconnell@azimuthgroup.ca															
Address: #218 - 2902 West Broadway				Email 2: gmann@azimuthgroup.ca															
Vancouver, BC				Email 3:															
Phone: 604-730-1220 Fax: 604-739-8511																			
Invoice To Same as Report? ☒ Yes ☐ No Hardcopy of Invoice with Report? ☒ Yes ☐ No				Client / Project Information				Analysis Request											
				Job #: Meadowbank Mine CREMP				Please indicate below Filtered, Preserved or both (F, P, F/P)											
				PO / AFE:															
				LSD:															
				Quote #: Q29231															
Lab Work Order # L1054122 (lab use only)				ALS Contact: Brent Mack		Sampler: MM, MF, TT													
Sample #	Sample Identification (This description will appear on the report)			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-CCME+FULL - VA	MOISTURE & pH- VA	C-TOT-ORG-LECO - SK	PSA-PIPET+GRAVEL - SK	LEPH/HEP/PAH-Low - VA	OGG-TUMB-SG - VA					Number of Containers		
1	PDL-1			13-Aug-11		Sediment	X	X	X	X	X	X						2	
2	PDL-2			13-Aug-11		Sediment	X	X	X	X	X	X						2	
3	PDL-3			13-Aug-11		Sediment	X	X	X	X	X	X						2	
4	PDL-4			13-Aug-11		Sediment	X	X	X	X	X	X						2	
5	PDL-5			13-Aug-11		Sediment	X	X	X	X	X	X						2	
6	INUG-1			14-Aug-11		Sediment	X	X	X	X	X	X						2	
7	INUG-2			14-Aug-11		Sediment	X	X	X	X	X	X						2	
8	INUG-3			14-Aug-11		Sediment	X	X	X	X	X	X						2	
9	INUG-4			14-Aug-11		Sediment	X	X	X	X	X	X						2	
10	INUG-5			14-Aug-11		Sediment	X	X	X	X	X	X						2	
11	WAL-1			14-Aug-11		Sediment	X	X	X	X	X	X						2	
12	WAL-2			14-Aug-11		Sediment	X	X	X	X	X	X						2	
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																			
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab. Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																			
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)											
Released by: Maggie McConnell		Date (dd-mmm-yy): 28-Aug-11	Time (hh-mm):	Received by: RYAN		Date: SEPT 6	Time: 9:40	Temperature: 18 °C		Verified by:		Date:	Time:	Observations: Yes / No ? If Yes add SIF					



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Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)																	
Company: Azimuth Consulting Group		☐ Standard ☐ Other		☒ Regular (Standard Turnaround Times - Business Days)																	
Contact: Maggie McConnell / Gary Mann		☒ PDF ☒ Excel ☐ Digital ☐ Fax		☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT																	
Address: #218 - 2902 West Broadway		Email 1: mmccconnell@azimuthgroup.ca		☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT																	
Vancouver, BC		Email 2: gmann@azimuthgroup.ca		☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT																	
Phone: 604-730-1220 Fax: 604-739-8511		Email 3:		Analysis Request																	
Invoice To Same as Report? ☒ Yes ☐ No		Client / Project Information		Please indicate below Filtered, Preserved or both (F, P, F/P)																	
Hardcopy of Invoice with Report? ☒ Yes ☐ No		Job #: Meadowbank Mine CREMP																			
Company:		PO / AFE:																			
Contact:		LSD:																			
Address:		Quote #: Q29231																			
Phone:																					
Fax:																					
Lab Work Order # (lab use only)		ALS Contact: Brent Mack		Sampler: MM, MF, TT																	
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	MET-CCME+FULL - VA	MOISTURE & pH- VA	C-TOT-ORG-LECO - SK	PSA-PIPET+GRAVEL - SK	LEPH/HEP/PAH-LOW - VA	OGG-TUMB-SG - VA											Number of Containers
25	TE-5	16-Aug-11		Sediment			X	X													1
26	DUP-1	--		Sediment	X	X	X	X	X	X											2
27	DUP-2	--		Sediment	X	X	X	X	X	X											2
28	SWIPE-1	--		**Other	X																1
29	SWIPE-2	--		**Other	X																1
30	SP-1	17-Aug-11		Sediment	X	X	X	X	X	X											2
31	SP-2	17-Aug-11		Sediment	X	X	X	X	X	X											2
32	SP-3	17-Aug-11		Sediment	X	X	X	X	X	X											2
33	SP-4	17-Aug-11		Sediment			X	X													1
34	SP-5	17-Aug-11		Sediment			X	X													1
35	TPN-1	19-Aug-11		Sediment	X	X	X	X	X	X											2
36	TPN-2	19-Aug-11		Sediment	X	X	X	X	X	X											2
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																					
**Sample type "Other" represents a filter.																					
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																					
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																					
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																					
SHIPMENT/RELEASE (client use)						SHIPMENT/RECEPTION (lab use only)						SHIPMENT/VERIFICATION (lab use only)									
Released by: Maggie McConnell	Date (dd-mm-yy) 28-Aug-11	Time (hh:mm)	Received by: RYAN	Date: 9-10	Time: 20:16	Temperature: 18 °C	Verified by:	Date:	Time:	Observations: Yes / No ?	If Yes add SIF										



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Report To						Report Format / Distribution							Service Requested (Rush for routine analysis subject to availability)															
Company: Azimuth Consulting Group						☐ Standard ☐ Other							☒ Regular (Standard Turnaround Times - Business Days)															
Contact: Maggie McConnell / Gary Mann						☒ PDF ☒ Excel ☐ Digital ☐ Fax							☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT															
Address: #218 - 2902 West Broadway Vancouver, BC						Email 1: mmcconnell@azimuthgroup.ca Email 2: gmann@azimuthgroup.ca Email 3:							☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT ☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT															
Phone: 604-730-1220 Fax: 604-739-8511													Analysis Request															
Invoice To Same as Report ? ☒ Yes ☐ No						Client / Project Information							Please indicate below Filtered, Preserved or both (F, P, F/P)															
Hardcopy of Invoice with Report? ☒ Yes ☐ No						Job #: Meadowbank Mine CREMP																						
Company:						PO / AFE:																						
Contact:						LSD:																						
Address:																												
Phone: Fax:						Quote #: Q29231																						
Lab Work Order # (lab use only)						ALS Contact: Brent Mack							Sampler: MM, MF, TT															
Sample #		Sample Identification (This description will appear on the report)				Date (dd-mm-yy)		Time (hh:mm)		Sample Type		MET-COME-FULL - VA	MOISTURE & pH- VA	C-TOT-ORG-LECO - SK	PSA-PIPET+GRAVEL - SK	LEPH/HEP/IPAH-Low - VA	OGG-TUMB-SG - VA							Number of Containers				
49		TPS-3				22-Aug-11				Sediment		X	X	X	X	X	X						2					
50		TPS-4				22-Aug-11				Sediment				X	X								1					
51		TPS-5				22-Aug-11				Sediment				X	X								1					
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																												
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab. Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																												
SHIPMENT RELEASE (client use)						SHIPMENT RECEPTION (lab use only)						SHIPMENT VERIFICATION (lab use only)																
Released by: Maggie McConnell		Date (dd-mm-yy) 28-Aug-11	Time (hh-mm)			Received by: [Signature]		Date: SEP 6	Time: 9:10	Temperature: 18 °C	Verified by:		Date:		Time:		Observations: Yes / No? If Yes add SIF											



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Report To			Report Format / Distribution			Service Requested (Rush for routine analysis subject to availability)															
Company: Azimuth Consulting Group			☐ Standard ☐ Other			☒ Regular (Standard Turnaround Times - Business Days)															
Contact: Maggie McConnell / Gary Mann			☒ PDF ☒ Excel ☐ Digital ☐ Fax			☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT															
Address: #218 - 2902 West Broadway			Email 1: mmccconnell@azimuthgroup.ca			☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT															
Vancouver, BC			Email 2: gmann@azimuthgroup.ca			☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT															
Phone: 604-730-1220 Fax: 604-739-8511			Email 3:			Analysis Request															
Invoice To Same as Report? ☒ Yes ☐ No			Client / Project Information			Please indicate below Filtered, Preserved or both (F, P, F/P)															
Hardcopy of Invoice with Report? ☒ Yes ☐ No			Job #: Meadowbank Mine CREMP (BL)																		
Company:			PO / AFE:																		
Contact:			LSD:																		
Address:			Quote #: Q29231																		
Phone:																					
Fax:																					
Lab Work Order # (lab use only)			ALS Contact: Brent Mack			Sampler: MM, MF, TT													Number of Containers		
Sample #			Sample Identification (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type	MET-CCME-FULL - VA	MOISTURE & pH- VA	C-TOT-ORG-LECO - SK	PSA-PIPET-GRAVEL - SK	LEPH/HEPH/PAH-LOW - VA	OGG-TUMB-SG - VA								
52			BBD-1		20-Aug-11		Sediment	X	X	X	X	X	X								
53			BBD-2		20-Aug-11		Sediment	X	X	X	X	X	X								
54			BBD-3		20-Aug-11		Sediment	X	X	X	X	X	X								
55			BBD-4		20-Aug-11		Sediment			X	X										
56			BBD-5		20-Aug-11		Sediment			X	X										
57			BPJ-1		20-Aug-11		Sediment	X	X	X	X	X	X								
58			BPJ-2		20-Aug-11		Sediment	X	X	X	X	X	X								
59			BPJ-3		20-Aug-11		Sediment	X	X	X	X	X	X								
60			BPJ-4		20-Aug-11		Sediment			X	X										
61			BPJ-5		20-Aug-11		Sediment			X	X										
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																					
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																					
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																					
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																					
SHIPMENT RELEASE (client use)						SHIPMENT RECEPTION (lab use only)						SHIPMENT VERIFICATION (lab use only)									
Released by: Maggie McConnell		Date (dd-mm-yy) 28-Aug-11		Time (hh-mm)		Received by: R. Mann		Date: 28-Aug-11		Time: 9:10		Temperature: 18 °C		Verified by:		Date:		Time:		Observations: Yes / No ? If Yes add SIF	

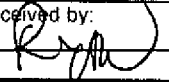
Chain of Custody / Analytical Request Form

COC # _____

Canada Toll-Free: 1-800-668-9878

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Page 7 of 7

		Report Format / Distribution ☐ Standard ☐ Other ☒ PDF ☒ Excel ☐ Digital ☐ Fax		Service Requested (Rush for routine analysis subject to availability) ☒ Regular (Standard Turnaround Times - Business Days) ☐ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT ☐ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT ☐ Same Day or Weekend Emergency - Contact ALS to Confirm TAT													
Company: Azimuth Consulting Group		Email 1: mmccconnell@azimuthgroup.ca		Analysis Request Please indicate below Filtered, Preserved or both (F, P, F/P)													
Contact: Maggie McConnell / Gary Mann		Email 2: gmann@azimuthgroup.ca															
Address: #218 - 2902 West Broadway		Email 3:															
Vancouver, BC																	
Phone: 604-730-1220 Fax: 604-739-8511		Client / Project Information		MET-CCME+FULL - VA MOISTURE & pH - VA C-TOT-ORG-LECO - SK PSA-PIPET+GRAVEL - SK LEPH/HEPH/PAH-LOW - VA OGG-TUMB-SG - VA													
Invoice To Same as Report? ☒ Yes ☐ No		Job #: Meadowbank Mine CREMP (BL)															
Hardcopy of Invoice with Report? ☒ Yes ☐ No		PO / AFE:															
Company:		LSD:															
Contact:		Quote #: Q29231		Number of Containers													
Address:																	
Phone:																	
Fax:																	
Lab Work Order # (lab use only)		ALS Contact: Brent Mack		Sampler: MM, MF, TT													
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type													
62	BAP-1	21-Aug-11		Sediment	X	X	X	X	X	X							2
63	BAP-2	21-Aug-11		Sediment	X	X	X	X	X	X							2
64	BAP-3	21-Aug-11		Sediment	X	X	X	X	X	X							2
65	BAP-4	21-Aug-11		Sediment			X	X									1
66	BAP-5	21-Aug-11		Sediment			X	X									1
67	BES-1	21-Aug-11		Sediment	X	X	X	X	X	X							2
68	BES-2	21-Aug-11		Sediment	X	X	X	X	X	X							2
69	BES-3	21-Aug-11		Sediment	X	X	X	X	X	X							2
70	BES-4	21-Aug-11		Sediment			X	X									1
71	BES-5	21-Aug-11		Sediment			X	X									1
72	DUP-4	--		Sediment	X	X	X	X	X	X							2
73	SWIPE-4	--		**Other	X												1
Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details																	
**Sample type "Other" represents a filter.																	
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab. Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																	
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)									
Released by: Maggie McConnell	Date (dd-mmm-yy): 28-Aug-11	Time (hh-mm):	Received by: 	Date: 28-Aug-11	Time: 16:10	Temperature: 18 °C	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF							



Agnico-Eagle - Meadowbank Division
ATTN: RYAN VANENGEN
Meadowbank Division
PO Box 540
Baker Lake NU X0X 0A0

Date Received: 26-SEP-11
Report Date: 13-OCT-11 13:46 (MT)
Version: FINAL

Client Phone: 867-793-4610

Certificate of Analysis

Lab Work Order #: L1063345
Project P.O. #: NOT SUBMITTED
Job Reference: AGNICO-EAGLE - MEADOWBANK DIVISION
C of C Numbers:
Legal Site Desc:

Paul Nicolas
Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-1 TEFF-20-S							
Sampled By: CLIENT on 13-SEP-11 @ 16:22							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	0.50		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	2.1		1.0	mg/L		29-SEP-11	R2260861
Fluoride	0.051		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	4.85		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)	4.85		0.20	mg/L		30-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	0.0024		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.238		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	1.65		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.078		0.050	mg/L	07-OCT-11	07-OCT-11	R2267307
Total Dissolved Solids	8.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.015		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.5		1.0	mg/L		28-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.34		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0109		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00200		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.23		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00040		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.493		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00136		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.345		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-1 TEFF-20-S							
Sampled By: CLIENT on 13-SEP-11 @ 16:22							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.159		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.515		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00676		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00045		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00190		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.16		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00021		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.477		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00037		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.306		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00077		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.118		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.488		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00731		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-1	TEFF-20-S							
Sampled By: CLIENT on 13-SEP-11 @ 16:22								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.25		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a		0.14		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		5.5		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)		6.8		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)		<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)		<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity		14.0		0.40	umhos/cm		27-SEP-11	R2258465
pH								
pH		6.97		0.10	pH units		26-SEP-11	R2258410
L1063345-2	TEFF-19-S							
Sampled By: CLIENT on 13-SEP-11 @ 16:54								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)		<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride		0.49		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon		2.4		1.0	mg/L		30-SEP-11	R2262077
Fluoride		0.052		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)		5.39		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)		5.39		0.20	mg/L		30-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N		<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N		<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total		<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)		0.286		0.0050	mg/L		08-OCT-11	R2267390
Sulfate		1.73		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen		0.051		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids		10.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total		0.022		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon		2.5		1.0	mg/L		30-SEP-11	R2262077
Total Suspended Solids		<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity		0.43		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0169		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total		0.00219		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-2 TEFF-19-S							
Sampled By: CLIENT on 13-SEP-11 @ 16:54							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.48		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00042		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	0.000311		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.564		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00169		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.374		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00077		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.182		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.521		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00772		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00070		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0023		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00194		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.30		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00025		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.519		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-2	TEFF-19-S							
Sampled By: CLIENT on 13-SEP-11 @ 16:54								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved		0.00042		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved		0.322		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved		0.00073		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved		0.137		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved		0.493		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved		0.00809		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.27		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a		0.17		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		6.1		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)		7.5		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)		<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)		<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity		14.8		0.40	umhos/cm		27-SEP-11	R2258465
pH								
pH		7.03		0.10	pH units		26-SEP-11	R2258410
L1063345-3	TE-40-S							
Sampled By: CLIENT on 13-SEP-11 @ 10:42								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)		<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride		0.50		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon		2.2		1.0	mg/L		29-SEP-11	R2260861
Fluoride		0.059		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)		6.56		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)		6.56		0.20	mg/L		30-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N		<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N		<0.0010</						

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-3 TE-40-S							
Sampled By: CLIENT on 13-SEP-11 @ 10:42							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	0.0036		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.405		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	1.84		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.072		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	10.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.029		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.2		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.52		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0239		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00222		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.79		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00055		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.637		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00201		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.387		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.257		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.520		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00898		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00102		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-3 TE-40-S Sampled By: CLIENT on 13-SEP-11 @ 10:42 Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0028		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00199		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.62		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.609		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00042		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.347		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00069		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.195		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.506		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00931		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.37		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a	0.25		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	7.3		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	8.9		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	17.0		0.40	umhos/cm		27-SEP-11	R2258465
pH							
pH	7.07		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-4	TE-41-S							
Sampled By:	CLIENT on 13-SEP-11 @ 11:16							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)		<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride		0.50		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon		2.2		1.0	mg/L		29-SEP-11	R2260861
Fluoride		0.062		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)		7.54		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)		7.54		0.20	mg/L		30-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N		<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N		<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total		0.0063		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total		<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)		0.460		0.0050	mg/L		08-OCT-11	R2267390
Sulfate		2.01		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen		0.079		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids		14.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total		0.083		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon		2.2		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids		<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity		1.20		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0812		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total		0.00272		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total		<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total		2.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total		0.00066		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total		<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total		0.000127		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total		<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total		0.729		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total		0.00282		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total		<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total		<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total		0.415		0.020				

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-4 TE-41-S Sampled By: CLIENT on 13-SEP-11 @ 11:16 Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.378		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.538		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0103		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00296		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	0.00014		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0081		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00208		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.89		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.685		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00056		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.364		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00071		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.234		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.508		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0108		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	0.00027		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-4 TE-41-S								
Sampled By: CLIENT on 13-SEP-11 @ 11:16								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.43		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a		0.24		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		8.3		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)		10.1		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)		<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)		<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity		21.3		0.40	umhos/cm		26-SEP-11	R2258410
pH								
pH		7.15		0.10	pH units		26-SEP-11	R2258410
L1063345-5 SP-41-S								
Sampled By: CLIENT on 14-SEP-11 @ 09:00								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)		<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride		0.50		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon		1.7		1.0	mg/L		03-OCT-11	R2262791
Fluoride		0.060		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)		9.58		0.20	mg/L		30-SEP-11	
Hardness (as CaCO3)		9.58		0.30	mg/L		30-SEP-11	
Nitrate-N		<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N		<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N		<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total		<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)		0.454		0.0050	mg/L		08-OCT-11	R2267390
Sulfate		2.35		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen		0.076		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids		14.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total		0.034		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon		1.8		1.0	mg/L		03-OCT-11	R2262791
Total Suspended Solids		<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity		0.47		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0186		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total		0.00031		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total		0.00247		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-5 SP-41-S								
Sampled By: CLIENT on 14-SEP-11 @ 09:00								
Matrix: WATER								
Total Metals by ICP-MS								
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total		<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total		2.82		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total		0.00080		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total		<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total		<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total		<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total		0.882		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total		0.00265		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total		<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total		<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total		0.446		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total		0.00072		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total		<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total		0.285		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total		<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total		0.558		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total		0.0128		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total		<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total		<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total		0.00061		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total		<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total		<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total		<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total		<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS								
Aluminum (Al)-Dissolved		0.0031		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved		0.00029		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved		0.00229		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved		<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved		<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved		2.49		0.050	mg/L	26-SEP-11	29-SEP-11	R2

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-6 SP-40-S							
Sampled By: CLIENT on 14-SEP-11 @ 09:41							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	0.0055		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.380		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	2.34		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.073		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	14.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.031		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.5		1.0	mg/L		30-SEP-11	R2262077
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.39		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0161		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	0.00035		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00242		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.50		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00075		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.817		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00233		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.438		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00072		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.227		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.551		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0118		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00053		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-6 SP-40-S							
Sampled By: CLIENT on 14-SEP-11 @ 09:41							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0031		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	0.00033		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00234		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.40		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00055		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.802		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00057		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00015		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.404		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00068		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.191		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.535		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0125		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.61		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a	0.21		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	9.8		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	11.9		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	24.7		0.40	umhos/cm		26-SEP-11	R2258410
pH							
pH	7.25		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-7 BPJ-19-S							
Sampled By: CLIENT on 20-SEP-11 @ 16:37							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	2.35		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	3.6		1.0	mg/L		30-SEP-11	R2262077
Fluoride	0.050		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	10.4		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)	10.4		0.20	mg/L		30-SEP-11	
Nitrate-N	0.0130		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	0.0083		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.278		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	0.76		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.128		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	16.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.022		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	3.5		1.0	mg/L		30-SEP-11	R2262077
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.36		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0165		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.0195		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.53		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00038		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	1.14		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00248		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.420		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-7 BPJ-19-S Sampled By: CLIENT on 20-SEP-11 @ 16:37 Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.172		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	1.12		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0180		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00029		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0047		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.0191		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.37		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00030		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	1.10		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00037		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.397		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00077		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.142		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	1.11		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0191		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-7 BPJ-19-S								
Sampled By: CLIENT on 20-SEP-11 @ 16:37								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.10		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a		0.42		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.4		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)		12.7		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)		<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)		<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity		29.0		0.40	umhos/cm		26-SEP-11	R2258410
pH								
pH		7.30		0.10	pH units		26-SEP-11	R2258410
L1063345-8 BPJ-20-S								
Sampled By: CLIENT on 20-SEP-11 @ 14:55								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)		<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride		2.30		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon		3.5		1.0	mg/L		29-SEP-11	R2260861
Fluoride		0.051		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)		10.1		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)		10.1		0.20	mg/L		30-SEP-11	
Nitrate-N		0.0128		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N		<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N		<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total		<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total		0.0076		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)		0.276		0.0050	mg/L		08-OCT-11	R2267390
Sulfate		0.75		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen		0.137		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids		18.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total		0.026		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon		3.5		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids		<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity		0.32		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0170		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total		0.0203		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-8 BPJ-20-S							
Sampled By: CLIENT on 20-SEP-11 @ 14:55							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.62		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00045		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	0.000106		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	1.20		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00256		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.440		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00081		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.176		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	1.12		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0190		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00072		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0044		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.0186		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.30		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00026		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	1.07		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-8	BPJ-20-S							
Sampled By:	CLIENT on 20-SEP-11 @ 14:55							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved	0.00031		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104	
Potassium (K)-Dissolved	0.381		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Rubidium (Rb)-Dissolved	0.00074		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Silicon (Si)-Dissolved	0.140		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104	
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Sodium (Na)-Dissolved	1.03		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Strontium (Sr)-Dissolved	0.0186		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104	
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	1.12		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448	
Phaeophytin a	0.40		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448	
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	10.5		1.0	mg/L		26-SEP-11	R2258410	
Bicarbonate (HCO3)	12.8		2.0	mg/L		26-SEP-11	R2258410	
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410	
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410	
Conductivity								
Conductivity	28.8		0.40	umhos/cm		26-SEP-11	R2258410	
pH								
pH	7.29		0.10	pH units		26-SEP-11	R2258410	
L1063345-9	BBD-20-S							
Sampled By:	CLIENT on 19-SEP-11 @ 10:48							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373	
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176	
Chloride	2.84		0.20	mg/L		27-SEP-11	R2260176	
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514	
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881	
Dissolved Organic Carbon	3.1		1.0	mg/L		03-OCT-11	R2262791	
Fluoride	0.050		0.020	mg/L		27-SEP-11	R2260176	
Hardness (as CaCO3)	10.5		0.30	mg/L		30-SEP-11		
Hardness (as CaCO3)	10.5		0.20	mg/L		30-SEP-11		
Nitrate-N	0.0147		0.0050	mg/L		27-SEP-11	R2260176	
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11		
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-9 BBD-20-S							
Sampled By: CLIENT on 19-SEP-11 @ 10:48							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	0.0069		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.277		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	0.86		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.140		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	18.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.021		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	3.3		1.0	mg/L		03-OCT-11	R2262791
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.33		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0159		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.0193		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.56		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00041		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	0.000207		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	1.18		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00240		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.437		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00078		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.179		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	1.36		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0186		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00035		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-9 BBD-20-S							
Sampled By: CLIENT on 19-SEP-11 @ 10:48							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0047		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.0192		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.36		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00028		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	1.12		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00039		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.401		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00079		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.144		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	1.35		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0198		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	1.19		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
Phaeophytin a	0.45		0.10	ug/L	03-OCT-11	03-OCT-11	R2262448
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.5		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	12.8		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	31.2		0.40	umhos/cm		26-SEP-11	R2258410
pH							
pH	7.28		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-10 BBD-19-S							
Sampled By: CLIENT on 19-SEP-11 @ 09:50							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	1.69		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	3.6		1.0	mg/L		30-SEP-11	R2262077
Fluoride	0.049		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	10.2		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)	10.2		0.20	mg/L		30-SEP-11	
Nitrate-N	0.0156		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	0.0096		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.269		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	0.68		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.136		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	16.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.019		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	3.7		1.0	mg/L		30-SEP-11	R2262077
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.35		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0138		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.0195		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.55		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00041		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	0.000122		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	1.11		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00232		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.417		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00078		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-10 BBD-19-S Sampled By: CLIENT on 19-SEP-11 @ 09:50 Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.165		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.750		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0181		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00031		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0047		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.0187		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.33		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00045		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	1.07		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00063		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.387		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00075		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.138		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.721		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0181		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-11 SEP-EB-2							
Sampled By: CLIENT on 21-SEP-11 @ 13:16							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	04-OCT-11	R2262821
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	04-OCT-11	R2262821
Calcium (Ca)-Total	<0.10		0.10	mg/L	29-SEP-11	04-OCT-11	R2262821
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	04-OCT-11	R2262821
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Copper (Cu)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	04-OCT-11	R2262821
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	04-OCT-11	R2262821
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	04-OCT-11	R2262821
Magnesium (Mg)-Total	<0.010		0.010	mg/L	29-SEP-11	04-OCT-11	R2262821
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	29-SEP-11	04-OCT-11	R2262821
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	04-OCT-11	R2262821
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	04-OCT-11	R2262821
Potassium (K)-Total	<0.020		0.020	mg/L	29-SEP-11	04-OCT-11	R2262821
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	04-OCT-11	R2262821
Silicon (Si)-Total	<0.050		0.050	mg/L	29-SEP-11	04-OCT-11	R2262821
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Sodium (Na)-Total	<0.030		0.030	mg/L	29-SEP-11	04-OCT-11	R2262821
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	04-OCT-11	R2262821
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	04-OCT-11	R2262821
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	04-OCT-11	R2262821
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	04-OCT-11	R2262821
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	04-OCT-11	R2262821
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	26-SEP-11	04-OCT-11	R2262821
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	04-OCT-11	R2262821
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	04-OCT-11	R2262821
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	04-OCT-11	R2262821

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-11	SEP-EB-2							
Sampled By:	CLIENT on 21-SEP-11 @ 13:16							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Molybdenum (Mo)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	26-SEP-11	04-OCT-11	R2262821
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	26-SEP-11	04-OCT-11	R2262821
Potassium (K)-Dissolved	<0.020			0.020	mg/L	26-SEP-11	04-OCT-11	R2262821
Rubidium (Rb)-Dissolved	<0.00020			0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	26-SEP-11	04-OCT-11	R2262821
Silicon (Si)-Dissolved	<0.050			0.050	mg/L	26-SEP-11	04-OCT-11	R2262821
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Sodium (Na)-Dissolved	<0.020			0.020	mg/L	26-SEP-11	04-OCT-11	R2262821
Strontium (Sr)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Tin (Sn)-Dissolved	<0.00020			0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	26-SEP-11	04-OCT-11	R2262821
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	2.2			1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	2.7			2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60			0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40			0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity	1.12			0.40	umhos/cm		27-SEP-11	R2258465
pH								
pH	6.27			0.10	pH units		26-SEP-11	R2258410
L1063345-12	SEP-EB-1							
Sampled By:	CLIENT on 13-SEP-11 @ 13:51							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010			0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10			0.10	mg/L		27-SEP-11	R2260176
Chloride	<0.20			0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		09-OCT-11	R2266130
Mercury (Hg)-Dissolved	<0.000010			0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	1.2			1.0	mg/L		30-SEP-11	R2262077
Fluoride	<0.020			0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	<0.20			0.20	mg/L		04-OCT-11	
Hardness (as CaCO3)	<0.30			0.30	mg/L		04-OCT-11	
Nitrate-N	<0.0050			0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070			0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010			0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	<0.0020			0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010			0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010			0.0010	mg/L		29-SEP-11	R2263699

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-12 SEP-EB-1							
Sampled By: CLIENT on 13-SEP-11 @ 13:51							
Matrix: WATER							
Silica, Reactive (as SiO2)	<0.0050	DLMB	0.0050	mg/L	10-OCT-11	08-OCT-11	R2267390
Sulfate	<0.50		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L		11-OCT-11	R2267355
Total Dissolved Solids	<5.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	<0.020		0.020	mg/L		07-OCT-11	R2265593
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	1.3		1.0	mg/L		30-SEP-11	R2262077
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.36		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	29-SEP-11	04-OCT-11	R2262821
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Barium (Ba)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	04-OCT-11	R2262821
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	04-OCT-11	R2262821
Calcium (Ca)-Total	<0.10		0.10	mg/L	29-SEP-11	04-OCT-11	R2262821
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	04-OCT-11	R2262821
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Copper (Cu)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	04-OCT-11	R2262821
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	04-OCT-11	R2262821
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	04-OCT-11	R2262821
Magnesium (Mg)-Total	<0.010		0.010	mg/L	29-SEP-11	04-OCT-11	R2262821
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	29-SEP-11	04-OCT-11	R2262821
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	04-OCT-11	R2262821
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	04-OCT-11	R2262821
Potassium (K)-Total	<0.020		0.020	mg/L	29-SEP-11	04-OCT-11	R2262821
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	04-OCT-11	R2262821
Silicon (Si)-Total	<0.050		0.050	mg/L	29-SEP-11	04-OCT-11	R2262821
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Sodium (Na)-Total	<0.030		0.030	mg/L	29-SEP-11	04-OCT-11	R2262821
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	04-OCT-11	R2262821
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	04-OCT-11	R2262821
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	04-OCT-11	R2262821
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	04-OCT-11	R2262821
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	04-OCT-11	R2262821
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-12	SEP-EB-1							
Sampled By: CLIENT on 13-SEP-11 @ 13:51								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Barium (Ba)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Beryllium (Be)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Bismuth (Bi)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Boron (B)-Dissolved		<0.010		0.010	mg/L	26-SEP-11	04-OCT-11	R2262821
Cadmium (Cd)-Dissolved		<0.000010		0.000010	mg/L	26-SEP-11	04-OCT-11	R2262821
Calcium (Ca)-Dissolved		<0.050		0.050	mg/L	26-SEP-11	04-OCT-11	R2262821
Cesium (Cs)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Chromium (Cr)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Cobalt (Co)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Copper (Cu)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Iron (Fe)-Dissolved		<0.10		0.10	mg/L	26-SEP-11	04-OCT-11	R2262821
Lead (Pb)-Dissolved		<0.000090		0.000090	mg/L	26-SEP-11	04-OCT-11	R2262821
Lithium (Li)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Magnesium (Mg)-Dissolved		<0.010		0.010	mg/L	26-SEP-11	04-OCT-11	R2262821
Manganese (Mn)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	26-SEP-11	04-OCT-11	R2262821
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	26-SEP-11	04-OCT-11	R2262821
Potassium (K)-Dissolved		<0.020		0.020	mg/L	26-SEP-11	04-OCT-11	R2262821
Rubidium (Rb)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	26-SEP-11	04-OCT-11	R2262821
Silicon (Si)-Dissolved		<0.050		0.050	mg/L	26-SEP-11	04-OCT-11	R2262821
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Sodium (Na)-Dissolved		<0.020		0.020	mg/L	26-SEP-11	04-OCT-11	R2262821
Strontium (Sr)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	04-OCT-11	R2262821
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	04-OCT-11	R2262821
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	04-OCT-11	R2262821
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	26-SEP-11	04-OCT-11	R2262821
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		2.2		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)		2.7		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)		<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)		<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity		1.13		0.40	umhos/cm		27-SEP-11	R2258465
pH								
pH		6.26		0.10	pH units		26	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-13 WAL-19-S							
Sampled By: CLIENT on 14-SEP-11 @ 12:10							
Matrix: WATER							
Chloride	0.46		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	3.0		1.0	mg/L		29-SEP-11	R2260861
Fluoride	0.043		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	11.4		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)	11.4		0.20	mg/L		30-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	0.0025		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.881		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	2.30		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.092		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	18.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.024		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.9		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.33		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0085		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	0.00025		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00165		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	3.21		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00093		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.939		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00188		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.362		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00057		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.438		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.479		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-13 WAL-19-S Sampled By: CLIENT on 14-SEP-11 @ 12:10 Matrix: WATER							
Total Metals by ICP-MS							
Strontium (Sr)-Total	0.0157		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00030		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0027		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	0.00023		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00164		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	3.05		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00080		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.910		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00042		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00011		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.352		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00057		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.421		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.464		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0167		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-14 WAL-20-S Sampled By: CLIENT on 14-SEP-11 @ 13:39 Matrix: WATER							
Total Metals by ICP-MS							
Calcium (Ca)-Total	3.30		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00092		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.953		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00155		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.356		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00053		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.429		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.467		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0167		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0022		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	0.00025		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00169		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	3.20		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00080		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.948		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00032		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00011		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-15 TPN-41-S							
Sampled By: CLIENT on 18-SEP-11 @ 14:34							
Matrix: WATER							
Silica, Reactive (as SiO2)	0.145		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	3.08		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.071		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	14.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.014		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	1.7		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.36		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0117		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00280		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.70		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00065		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.690		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00461		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.409		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.098		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.816		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00785		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00027		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0035		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-15 TPN-41-S Sampled By: CLIENT on 18-SEP-11 @ 14:34 Matrix: WATER							
Dissolved Metals by ICP-MS							
Barium (Ba)-Dissolved	0.00276		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.59		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00032		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.660		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00262		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00017		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.386		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00056		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.077		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.784		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00814		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.50		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
Phaeophytin a	0.24		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.7		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	8.1		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	21.3		0.40	umhos/cm		26-SEP-11	R2258410
pH							
pH	7.12		0.10	pH units		26-SEP-11	R2258410
L1063345-16 TPN-40-S Sampled By: CLIENT on 18-SEP-11 @ 15:11 Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-16 TPN-40-S							
Sampled By: CLIENT on 18-SEP-11 @ 15:11							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	0.53		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	1.7		1.0	mg/L		29-SEP-11	R2260861
Fluoride	0.058		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	6.59		0.30	mg/L		30-SEP-11	
Hardness (as CaCO3)	6.59		0.20	mg/L		30-SEP-11	
Nitrate-N	0.0287		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	0.0040		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.140		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	3.00		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.070		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	12.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.013		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	1.7		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.30		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0106		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00260		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.60		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00053		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.635		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00431		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.383		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-16 TPN-40-S							
Sampled By: CLIENT on 18-SEP-11 @ 15:11							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.097		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.765		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00755		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00023		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0032		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00276		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.56		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00029		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.654		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00255		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00017		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.381		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00057		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.072		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.762		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00820		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-17 TPS-31-S Sampled By: CLIENT on 18-SEP-11 @ 13:02 Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.56		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00046		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.650		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00388		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.395		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.113		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.758		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00733		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00024		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0031		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00264		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.46		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.614		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-18 TPS-32-S							
Sampled By: CLIENT on 18-SEP-11 @ 13:51							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.160		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	2.78		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.066		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	12.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.016		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.3		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.32		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0101		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00268		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.58		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00041		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.640		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00397		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.392		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.105		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.755		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00752		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00026		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-18 TPS-32-S							
Sampled By: CLIENT on 18-SEP-11 @ 13:51							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0031		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00263		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.51		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00031		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.633		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00193		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.389		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00056		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.087		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.768		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00762		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.57		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
Phaeophytin a	0.27		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.4		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	7.8		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	20.1		0.40	umhos/cm		26-SEP-11	R2258410
pH							
pH	7.12		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-19 TPE-41-S							
Sampled By: CLIENT on 16-SEP-11 @ 11:13							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	0.50		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	1.3		1.0	mg/L		29-SEP-11	R2260861
Fluoride	0.066		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	7.59		0.20	mg/L		30-SEP-11	
Hardness (as CaCO3)	7.59		0.30	mg/L		30-SEP-11	
Nitrate-N	0.0098		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	0.0031		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	0.0029		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.142		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	2.30		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.062		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	14.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.021		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	1.7		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.44		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0186		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	0.00061		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00252		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.87		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00049		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	0.00309		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.704		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00153		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	0.00023		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.448		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00071		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-19 TPE-41-S							
Sampled By: CLIENT on 16-SEP-11 @ 11:13							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.105		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.611		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00845		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00059		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0039		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	0.00065		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00255		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.86		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00038		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.715		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00047		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00022		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.442		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00071		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.077		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.618		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00925		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-19	TPE-41-S							
Sampled By: CLIENT on 16-SEP-11 @ 11:13								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104	
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	0.55		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743	
Phaeophytin a	0.19		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743	
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	8.1		1.0	mg/L		26-SEP-11	R2258410	
Bicarbonate (HCO3)	9.9		2.0	mg/L		26-SEP-11	R2258410	
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410	
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410	
Conductivity								
Conductivity	21.7		0.40	umhos/cm		26-SEP-11	R2258410	
pH								
pH	7.22		0.10	pH units		26-SEP-11	R2258410	
L1063345-20	TPE-40-S							
Sampled By: CLIENT on 16-SEP-11 @ 10:03								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373	
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176	
Chloride	0.51		0.20	mg/L		27-SEP-11	R2260176	
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514	
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881	
Dissolved Organic Carbon	1.7		1.0	mg/L		29-SEP-11	R2260861	
Fluoride	0.066		0.020	mg/L		27-SEP-11	R2260176	
Hardness (as CaCO3)	7.26		0.20	mg/L		30-SEP-11		
Hardness (as CaCO3)	7.26		0.30	mg/L		30-SEP-11		
Nitrate-N	0.0099		0.0050	mg/L		27-SEP-11	R2260176	
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11		
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176	
Phosphorus (P)-Total	0.0031		0.0020	mg/L		05-OCT-11	R2264596	
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267	
Phosphorus (P)-Total Reactive	0.0010		0.0010	mg/L		29-SEP-11	R2263699	
Silica, Reactive (as SiO2)	0.146		0.0050	mg/L		08-OCT-11	R2267390	
Sulfate	2.36		0.50	mg/L		27-SEP-11	R2260176	
Total Kjeldahl Nitrogen	0.064		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355	
Total Dissolved Solids	14.0		5.0	mg/L		07-OCT-11	R2265854	
Iron (Fe)-Total	0.019		0.010	mg/L		05-OCT-11	R2263903	
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881	
Total Organic Carbon	1.7		1.0	mg/L		29-SEP-11	R2260861	
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854	
Turbidity	0.41		0.10	NTU		28-SEP-11	R2260702	
Total Metals by ICP-MS								
Aluminum (Al)-Total	0.0160		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002	
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002	
Arsenic (As)-Total	0.00050		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002	
Barium (Ba)-Total	0.00258		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002	
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-20 TPE-40-S							
Sampled By: CLIENT on 16-SEP-11 @ 10:03							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.89		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00051		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.710		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00168		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	0.00021		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.450		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00070		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.133		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.639		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00839		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00050		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	0.0090		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0037		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	0.00054		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00252		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.75		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.699		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-20	TPE-40-S							
Sampled By:	CLIENT on 16-SEP-11 @ 10:03							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved	0.00063		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Molybdenum (Mo)-Dissolved	0.00021		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104	
Potassium (K)-Dissolved	0.445		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Rubidium (Rb)-Dissolved	0.00066		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Silicon (Si)-Dissolved	0.078		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104	
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Sodium (Na)-Dissolved	0.627		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Strontium (Sr)-Dissolved	0.00825		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104	
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104	
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104	
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	0.42		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743	
Phaeophytin a	0.19		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743	
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	7.9		1.0	mg/L		26-SEP-11	R2258410	
Bicarbonate (HCO3)	9.6		2.0	mg/L		26-SEP-11	R2258410	
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410	
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410	
Conductivity								
Conductivity	21.5		0.40	umhos/cm		26-SEP-11	R2258410	
pH								
pH	7.24		0.10	pH units		26-SEP-11	R2258410	
L1063345-21	PDL-19-S							
Sampled By:	CLIENT on 15-SEP-11 @ 16:06							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373	
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176	
Chloride	0.55		0.20	mg/L		27-SEP-11	R2260176	
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514	
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881	
Dissolved Organic Carbon	2.3		1.0	mg/L		29-SEP-11	R2260861	
Fluoride	0.035		0.020	mg/L		27-SEP-11	R2260176	
Hardness (as CaCO3)	7.71		0.30	mg/L		30-SEP-11		
Hardness (as CaCO3)	7.71		0.20	mg/L		30-SEP-11		
Nitrate-N	<0.0050		0.0050	mg/L		27-SEP-11	R2260176	
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11		
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-21 PDL-19-S							
Sampled By: CLIENT on 15-SEP-11 @ 16:06							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	<0.0020		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.312		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	1.48		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.066		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	12.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	<0.010		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.4		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.21		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0058		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00184		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.94		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00056		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.673		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00120		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.302		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00038		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.146		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.443		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00790		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-21 PDL-19-S							
Sampled By: CLIENT on 15-SEP-11 @ 16:06							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00189		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.94		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	0.000207		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.696		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00024		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.312		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00038		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.141		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.458		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00800		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.61		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
Phaeophytin a	0.28		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.5		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	10.4		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	20.6		0.40	umhos/cm		26-SEP-11	R2258410
pH							
pH	7.27		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-22 PDL-20-S							
Sampled By: CLIENT on 15-SEP-11 @ 15:32							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	0.55		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	2.2		1.0	mg/L		29-SEP-11	R2260861
Fluoride	0.036		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	7.61		0.20	mg/L		30-SEP-11	
Hardness (as CaCO3)	7.61		0.30	mg/L		30-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total	0.0058		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.285		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	1.49		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.092		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	14.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.010		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	2.4		1.0	mg/L		29-SEP-11	R2260861
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.26		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0064		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00194		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.04		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00049		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.698		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00131		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.315		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00041		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-22 PDL-20-S							
Sampled By: CLIENT on 15-SEP-11 @ 15:32							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.158		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.456		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00816		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0024		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00187		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	1.92		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00043		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.688		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00028		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.313		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00038		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.142		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.450		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00813		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-23 INUG-29-S							
Sampled By: CLIENT on 15-SEP-11 @ 14:00							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.02		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00048		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.624		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00179		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.349		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00050		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.175		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.495		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00565		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00033		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0030		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00165		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	0.939		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00069		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.590		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-23	INUG-29-S						
Sampled By:	CLIENT on 15-SEP-11 @ 14:00						
Matrix:	WATER						
Dissolved Metals by ICP-MS							
Manganese (Mn)-Dissolved	0.00024		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.322		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00043		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.135		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.477		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00518		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.51		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
Phaeophytin a	0.23		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.2		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	7.5		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	13.6		0.40	umhos/cm		27-SEP-11	R2258465
pH							
pH	7.07		0.10	pH units		26-SEP-11	R2258410
L1063345-24	INUG-28-S						
Sampled By:	CLIENT on 15-SEP-11 @ 08:00						
Matrix:	WATER						
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	0.62		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	1.9		1.0	mg/L		03-OCT-11	R2262791
Fluoride	0.057		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	4.93		0.20	mg/L		30-SEP-11	
Hardness (as CaCO3)	4.93		0.30	mg/L		30-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-24 INUG-28-S							
Sampled By: CLIENT on 15-SEP-11 @ 08:00							
Matrix: WATER							
Phosphorus (P)-Total	0.0075		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.293		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	0.80		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.080		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	8.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.017		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		07-OCT-11	R2265605
Total Organic Carbon	1.9		1.0	mg/L		03-OCT-11	R2262791
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.38		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0109		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00166		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	1.02		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00049		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	0.601		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00164		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.331		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00049		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.166		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.482		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.00560		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00053		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-24 INUG-28-S							
Sampled By: CLIENT on 15-SEP-11 @ 08:00							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0055		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00175		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	0.974		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00037		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.608		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00031		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.340		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00047		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.143		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.498		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.00553		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.40		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
Phaeophytin a	0.22		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.2		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)	7.5		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)	<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity							
Conductivity	13.4		0.40	umhos/cm		27-SEP-11	R2258465
pH							
pH	7.08		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-25 CREMP-SEP-DUP1							
Sampled By: CLIENT on 14-SEP-11 @ 13:02							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		05-OCT-11	R2264373
Bromide (Br)	<0.10		0.10	mg/L		27-SEP-11	R2260176
Chloride	0.51		0.20	mg/L		27-SEP-11	R2260176
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-OCT-11	R2264514
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Dissolved Organic Carbon	1.7		1.0	mg/L		03-OCT-11	R2262791
Fluoride	0.060		0.020	mg/L		27-SEP-11	R2260176
Hardness (as CaCO3)	9.66		0.20	mg/L		30-SEP-11	
Hardness (as CaCO3)	9.66		0.30	mg/L		30-SEP-11	
Nitrate-N	<0.0050		0.0050	mg/L		27-SEP-11	R2260176
Nitrate and Nitrite as N	<0.070		0.070	mg/L		26-SEP-11	
Nitrite-N	<0.0010		0.0010	mg/L		27-SEP-11	R2260176
Phosphorus (P)-Total	0.0030		0.0020	mg/L		05-OCT-11	R2264596
Phosphorus (P)-Total	<0.010		0.010	mg/L		27-SEP-11	R2259267
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		29-SEP-11	R2263699
Silica, Reactive (as SiO2)	0.462		0.0050	mg/L		08-OCT-11	R2267390
Sulfate	2.36		0.50	mg/L		27-SEP-11	R2260176
Total Kjeldahl Nitrogen	0.062		0.050	mg/L	10-OCT-11	11-OCT-11	R2267355
Total Dissolved Solids	16.0		5.0	mg/L		07-OCT-11	R2265854
Iron (Fe)-Total	0.033		0.010	mg/L		05-OCT-11	R2263903
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		06-OCT-11	R2264881
Total Organic Carbon	1.8		1.0	mg/L		03-OCT-11	R2262791
Total Suspended Solids	<2.0		2.0	mg/L		07-OCT-11	R2265854
Turbidity	0.46		0.10	NTU		28-SEP-11	R2260702
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0225		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Arsenic (As)-Total	0.00028		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Barium (Ba)-Total	0.00252		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	3.02		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00070		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	<0.000090		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	1.08		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00279		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.487		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00077		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-25 CREMP-SEP-DUP1							
Sampled By: CLIENT on 14-SEP-11 @ 13:02							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.319		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	0.651		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0134		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00056		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0030		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	0.00029		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.00239		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.47		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00053		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	0.847		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Manganese (Mn)-Dissolved	0.00050		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved	0.464		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved	0.00059		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved	0.218		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved	0.536		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved	0.0113		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-26 CREMP-SEP-DUP2							
Sampled By: CLIENT on 20-SEP-11 @ 10:03							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Boron (B)-Total	<0.010		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	29-SEP-11	29-SEP-11	R2261002
Calcium (Ca)-Total	2.83		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Copper (Cu)-Total	0.00035		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Iron (Fe)-Total	<0.10		0.10	mg/L	29-SEP-11	29-SEP-11	R2261002
Lead (Pb)-Total	0.000995		0.000090	mg/L	29-SEP-11	29-SEP-11	R2261002
Lithium (Li)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Magnesium (Mg)-Total	1.42		0.010	mg/L	29-SEP-11	29-SEP-11	R2261002
Manganese (Mn)-Total	0.00273		0.00030	mg/L	29-SEP-11	29-SEP-11	R2261002
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	29-SEP-11	29-SEP-11	R2261002
Phosphorus (P)-Total	<0.20		0.20	mg/L	29-SEP-11	29-SEP-11	R2261002
Potassium (K)-Total	0.472		0.020	mg/L	29-SEP-11	29-SEP-11	R2261002
Rubidium (Rb)-Total	0.00082		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Selenium (Se)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Silicon (Si)-Total	0.197		0.050	mg/L	29-SEP-11	29-SEP-11	R2261002
Silver (Ag)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Sodium (Na)-Total	1.44		0.030	mg/L	29-SEP-11	29-SEP-11	R2261002
Strontium (Sr)-Total	0.0191		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Thorium (Th)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Tin (Sn)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Titanium (Ti)-Total	0.00030		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Tungsten (W)-Total	<0.0010		0.0010	mg/L	29-SEP-11	29-SEP-11	R2261002
Uranium (U)-Total	<0.00010		0.00010	mg/L	29-SEP-11	29-SEP-11	R2261002
Vanadium (V)-Total	<0.00020		0.00020	mg/L	29-SEP-11	29-SEP-11	R2261002
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	29-SEP-11	29-SEP-11	R2261002
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	29-SEP-11	29-SEP-11	R2261002
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0044		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Barium (Ba)-Dissolved	0.0187		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Boron (B)-Dissolved	<0.010		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	26-SEP-11	29-SEP-11	R2261104
Calcium (Ca)-Dissolved	2.29		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Copper (Cu)-Dissolved	0.00024		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	26-SEP-11	29-SEP-11	R2261104
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Magnesium (Mg)-Dissolved	1.10		0.010	mg/L	26-SEP-11	29-SEP-11	R2261104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1063345-26 CREMP-SEP-DUP2								
Sampled By: CLIENT on 20-SEP-11 @ 10:03								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved		0.00031		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Molybdenum (Mo)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	26-SEP-11	29-SEP-11	R2261104
Potassium (K)-Dissolved		0.384		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Rubidium (Rb)-Dissolved		0.00069		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	26-SEP-11	29-SEP-11	R2261104
Silicon (Si)-Dissolved		0.140		0.050	mg/L	26-SEP-11	29-SEP-11	R2261104
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Sodium (Na)-Dissolved		0.943		0.020	mg/L	26-SEP-11	29-SEP-11	R2261104
Strontium (Sr)-Dissolved		0.0171		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	26-SEP-11	29-SEP-11	R2261104
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	26-SEP-11	29-SEP-11	R2261104
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	26-SEP-11	29-SEP-11	R2261104
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		1.08		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
Phaeophytin a		0.45		0.10	ug/L	04-OCT-11	05-OCT-11	R2263743
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.5		1.0	mg/L		26-SEP-11	R2258410
Bicarbonate (HCO3)		12.8		2.0	mg/L		26-SEP-11	R2258410
Carbonate (CO3)		<0.60		0.60	mg/L		26-SEP-11	R2258410
Hydroxide (OH)		<0.40		0.40	mg/L		26-SEP-11	R2258410
Conductivity								
Conductivity		29.3		0.40	umhos/cm		26-SEP-11	R2258410
pH								
pH		7.35		0.10	pH units		26-SEP-11	R2258410

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLMB	Detection Limit increased due to background in Method Blank.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CHL,PHEO-FLUORO-WP	Water	Chlorophyll a, Pheophytin by fluorometry	EPA 445.0
Chlorophyll a is filtered from the sample and extracted with 90% (v/v) acetone. The sample is analyzed fluorometrically. The extract is then acidified, converting chlorophyll a to pheophytin a. The sample is analyzed fluorometrically again after acidification. The chlorophyll a concentration is determined from the decrease upon acidification.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-DIS-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-D-L-ICP-ED	Water	Diss. Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL
Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
NH3-L-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourimetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SIO2-L-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2
This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 LR
The residue retained by a prepared 1.5 um Whatman 934-AH glass microfibre filter dried at 105 degrees C. A method detection limit of 2 mg/L can be			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
achieved when 500 mL of sample is used.			
TKN-F-VA	Water	TKN in Water by Fluorescence	APHA 4500-NORG D.
This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

- mg/kg - milligrams per kilogram based on dry weight of sample*
- mg/kg ww*t - milligrams per kilogram based on wet weight of sample
- mg/kg lwt* - milligrams per kilogram based on lipid-adjusted weight
- mg/L* - unit of concentration based on volume, parts per million.
- <* - Less than.
- D.L.* - The reporting limit.
- N/A* - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



L1063345

Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)											
Company: Agnico-Eagle Mining Ltd.				☐ Standard ☐ Other ☒ PDF ☐ Excel ☐ Digital ☐ Fax				☒ Regular (Default) ☐ Priority (Specify Date Required - - -) Surcharges apply ☐ Emergency (1 Business Day) - 100% Surcharge ☐ For Emergency < 1 Day, ASAP or Weekend - Contact ALS											
Contact: Ryan Vanengen				Email 1: rvanengen@agnico-eagle.com															
Address: Meadowbank Division - PO Box 540				Email 2: jeffery.prahl@agnico-eagle.com															
Baker Lake, NU X0X 0A0																			
Phone: 867)793-4610x 6759 Fax:																			
Invoice To				Client / Project Information				Analysis Request											
Same as Report? ☐ Yes ☐ No				Job #:				Please indicate below Filtered, Preserved or both (F, P, F/P)											
Company: Agnico-Eagle Mining Ltd.				PO / AFE:															
Contact: Accounts Payable - Meadowbank Division				LSD:															
Address: 20 ROUTE 395				Quote #: Q21514															
Cadillac, QC J0Y 1C0				ALS Contact:															
Phone: Fax:				Sampler:															
Lab Work Order # (lab use only)																			
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	C.I.F. Br.N2.N3.S04	TOC / DOC	Metals (Tot & Dis)	TKN(Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va), TDS	Chlorophyll A	p-Total & Ortho	Number of Containers			
1	TEFF-20-S	13-Sep-11	16:22	Water	X	X	X	X	X	X	X	X	X	X	X	7			
2	TEFF-19-S	13-Sep-11	16:54	Water	X	X	X	X	X	X	X	X	X	X	X	7			
3	TE-40-S	13-Sep-11	10:42	Water	X	X	X	X	X	X	X	X	X	X	X	7			
4	TE-41-S	13-Sep-11	11:16	Water	X	X	X	X	X	X	X	X	X	X	X	7			
5	SP-41-S	14-Sep-11	9:00	Water	X	X	X	X	X	X	X	X	X	X	X	7			
6	SP-40-S	14-Sep-11	9:41	Water	X	X	X	X	X	X	X	X	X	X	X	7			
7	BPJ-19-S	20-Sep-11	16:37	Water	X	X	X	X	X	X	X	X	X	X	X	7			
8	BPJ-20-S	20-Sep-11	14:55	Water	X	X	X	X	X	X	X	X	X	X	X	7			
9	BBD-20-S	19-Sep-11	10:48	Water	X	X	X	X	X	X	X	X	X	X	X	7			
10	BBD-19-S	19-Sep-11	9:50	Water	X	X	X	X	X	X	X	X	X	X	X	7			
11	SEP-EB-2	21-Sep-11	13:16	Water	X	X	X	X	X	X	X	X	X	X	X	7			
12	SEP-EB-1	13-Sep-11	13:51	Water	X	X	X	X	X	X	X	X	X	X	X	7			
Special Instructions / Regulations / Hazardous Details																			
Please use "low range anion analyse". For Chloro, 500ml have been use																			
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																			
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																			
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																			
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)											
Released by:	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF									
			BL	Sept 26/11	10:00	°C													



L1063345

Environmental Division

Report To			Report Format / Distribution		
Company: Agnico-Eagle Mining Ltd.			☐ Standard ☐ Other		
Contact: Ryan Vanengen			☒ PDF ☐ Excel		
Address: Meadowbank Division - PO Box 540			Email 1: rVanengen@agnico-eagle.com		
Baker Lake, NU X0X 0A0			Email 2: jeffery.pratt@agnico-eagle.com		
Phone: 867)793-4610x 6759 Fax:					
Invoice To Same as Report? ☐ Yes ☐ No			Client / Project Information		
Company: Agnico-Eagle Mining Ltd.			Job #:		
Contact: Accounts Payable - Meadowbank Division			PO / AFE:		
Address: 20 ROUTE 395			LSD:		
Cadillac, QC J0Y 1C0			Quote #: Q21514		
Phone: Fax:			ALS Contact:		
Lab Work Order # (lab use only)			Sampler:		
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
13	WAL-19-S	14-Sep-11	12:10	Water	
14	WAL-20-S	14-Sep-11	13:39	Water	
15	TPN-41-S	18-Sep-11	14:34	Water	
16	TPN-40-S	18-Sep-11	15:11	Water	
17	TPS-31-S	18-Sep-11	13:02	Water	
18	TPS-32-S	18-Sep-11	13:51	Water	
19	TPE-41-S	16-Sep-11	11:13	Water	
20	TPE-40-S	16-Sep-11	10:03	Water	
21	PDL-19-S	15-Sep-11	16:06	Water	
22	PDL-20-S	15-Sep-11	15:32	Water	
23	INUG-29-S	15-Sep-11	14:00	Water	
24	INUG-28-S	15-Sep-11	8:00	Water	
Special Instructions / Regulation					
Please use "low range anion analyse". For Chloro, 500ml have been use					
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.					
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.					
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.					
SHIPMENT RELEASE (client use)			SHIPMENT VERIFICATION (lab use only)		
Released by:	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:
			BL	Sept 21/11	10:00
			Temperature:	Verified by:	Observations:
			°C		Yes / No ? If Yes add SIF

Service Requested (Rush for routine analysis subject to availability)											
☒ Regular (Default)											
☐ Priority (Specify Date Required -- --) Surcharges apply											
☐ Emergency (1 Business Day) - 100% Surcharge											
☐ For Emergency < 1 Day, ASAP or Weekend - Contact ALS											
Analysis Request											
Please indicate below Filtered, Preserved or both (F, P, F/P)											
CLF, Br, N2, N3, SO4	TOC / DOC	Metals (Tot & Dis)	TKN(Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va), TDS	Chlorophyll A	P-Total & Ortho	Number of Containers
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7
X	X	X	X	X	X	X	X	X	X	X	7



**uest Form
9878**

41063345 COC #

Page 3 of 3

Environmental Division		(ALS)		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)										
Report To		Company: Agnico-Eagle Mining Ltd.		☐ Standard ☐ Other ☒ PDF ☐ Excel		☒ Regular (Default) ☐ Priority (Specify Date Required → → →) Surcharges apply ☐ Emergency (1 Business Day) - 100% Surcharge ☐ For Emergency < 1 Day, ASAP or Weekend - Contact ALS										
Contact: Ryan Vanengen		Address: Meadowbank Division - PO Box 540 Baker Lake, NU X0X 0A0		Email 1: rvanengen@agnico-eagle.com Email 2: jeffery.pratt@agnico-eagle.com												
Phone: 867)793-4610x 6759 Fax:		Invoice To Same as Report? ☐ Yes ☐ No		Client / Project Information		Analysis Request										
Company: Agnico-Eagle Mining Ltd.		Accounts Payable - Meadowbank Division		Job #:		Please indicate below Filtered, Preserved or both (F, P, F/P)										
Address: 20 ROUTE 395		Cadillac, QC J0Y 1C0		PO / AFE:												
Phone: Fax:		Quote #: Q21514		LSD:												
Lab Work Order # (lab use only)		ALS Contact:		Sample:												
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	C.I.F. Br. N2 N3 SO4	TOC / DOC	Metals (Tot & Dis)	TKN(Va) NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va) TDS	Chlorophyll A	P-Tot & Ortho	Number of Containers
25	CREMP-SEP-DUP-1	14-Sep-11	13:02	Water	X	X	X	X	X	X	X	X	X	X	X	7
26	CREMP-SEP-DUP-2	20-Sep-11	10:03	Water	X	X	X	X	X	X	X	X	X	X	X	7
Special Instructions / Regulations / Hazardous Details																
Please use "low range anion analyse". For Chloro, 500ml have been use																
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)								
Released by:	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF						
			BC	Sept 26/11	10:00	°C										

GENF 18.02 Front



Agnico-Eagle - Meadowbank Division
ATTN: RYAN VANENGEN
MEADOWBANK DIV.
P.O. BOX 540
BAKER LAKE NU X0X 0A0

Date Received: 29-NOV-11
Report Date: 13-DEC-11 13:24 (MT)
Version: FINAL

Client Phone: 867-793-4610

Certificate of Analysis

Lab Work Order #: L1089661
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:

Paul Nicolas
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-1 TPN-42-S							
Sampled By: CLIENT on 21-NOV-11 @ 15:05							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.58		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.1		1.0	mg/L		05-DEC-11	R2297199
Fluoride	0.056		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	7.24		0.20	mg/L		02-DEC-11	
Hardness (as CaCO3)	7.24		0.30	mg/L		02-DEC-11	
Nitrate-N	0.0366		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	0.0039		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)	0.135		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	3.19		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.094		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	14.0		5.0	mg/L		29-NOV-11	R2294743
Iron (Fe)-Total	<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.3		1.0	mg/L		05-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.72		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0358		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00289		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	1.82		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00042		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.703		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00306		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.438		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00059		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-1 TPN-42-S							
Sampled By: CLIENT on 21-NOV-11 @ 15:05							
Matrix: WATER							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.082		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.822		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00813		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00277		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	1.74		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00034		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.701		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00187		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00018		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.429		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00056		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.062		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.835		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00793		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-1 TPN-42-S Sampled By: CLIENT on 21-NOV-11 @ 15:05 Matrix: WATER Dissolved Metals by ICP-MS Vanadium (V)-Dissolved Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved Chlorophyll a, Pheophytin by fluorometry Chlorophyll a Pheophytin a pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH	<0.00020 <0.0020 <0.00040 0.67 0.32 6.5 8.0 <0.60 <0.40 25 6.88		0.00020 0.0020 0.00040 0.10 0.10 1.0 2.0 0.60 0.40 20 0.10	mg/L mg/L mg/L ug/L ug/L mg/L mg/L mg/L mg/L umhos/cm pH units	29-NOV-11 29-NOV-11 29-NOV-11 06-DEC-11 06-DEC-11 29-NOV-11 29-NOV-11	01-DEC-11 01-DEC-11 01-DEC-11 07-DEC-11 07-DEC-11 29-NOV-11 29-NOV-11 29-NOV-11 29-NOV-11 29-NOV-11 29-NOV-11 29-NOV-11	R2295765 R2295765 R2295765 R2298481 R2298481 R2294628 R2294628 R2294628 R2294628 R2294628 R2294628 R2294628
L1089661-2 TPN-43-S Sampled By: CLIENT on 21-NOV-11 @ 14:10 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Mercury (Hg)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Hardness (as CaCO3) Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Silica, Reactive (as SiO2) Sulfate Total Kjeldahl Nitrogen Total Dissolved Solids Iron (Fe)-Total Mercury (Hg)-Total Total Organic Carbon Total Suspended Solids Turbidity Total Metals by ICP-MS Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total	<0.010 <0.10 0.60 <0.010 <0.000010 2.1 0.056 7.32 7.32 0.0378 <0.070 <0.0010 0.0038 <0.010 <0.0010 <0.010 0.131 3.22 0.102 16.0 <0.010 <0.000010 2.3 <1.0 0.58 0.0191 <0.00020 <0.00020		0.010 0.10 0.20 0.010 0.000010 1.0 0.020 0.30 0.20 0.0050 0.070 0.0010 0.0020 0.010 0.0010 0.010 0.0050 0.50 0.050 5.0 0.010 0.000010 1.0 1.0 0.10 0.0050 0.00020 0.00020	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	01-DEC-11	30-NOV-11 29-NOV-11 29-NOV-11 07-DEC-11 30-NOV-11 05-DEC-11 29-NOV-11 02-DEC-11 02-DEC-11 29-NOV-11 29-NOV-11 29-NOV-11 07-DEC-11 30-NOV-11 07-DEC-11 30-NOV-11 30-NOV-11 29-NOV-11 01-DEC-11 29-NOV-11 08-DEC-11 30-NOV-11 05-DEC-11 30-NOV-11 29-NOV-11 01-DEC-11 01-DEC-11 01-DEC-11	R2295397 R2295259 R2295259 R2298179 R2294993 R2297199 R2295259 R2295259 R2295259 R2295259 R2295259 R2295259 R2298415 R2294582 R2298412 R2294663 R2294883 R2295259 R2295624 R2294743 R2298832 R2294993 R2297199 R2295174 R2294340 R2295750 R2295750 R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-2 TPN-43-S							
Sampled By: CLIENT on 21-NOV-11 @ 14:10							
Matrix: WATER							
Total Metals by ICP-MS							
Barium (Ba)-Total	0.00295		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	1.91		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00043		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.722		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00328		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.461		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00059		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.080		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.833		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00851		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00024		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0022		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00274		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	1.73		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00036		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-2 TPN-43-S							
Sampled By: CLIENT on 21-NOV-11 @ 14:10							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.728		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00187		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00016		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.420		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00057		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.064		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.850		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00777		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.44		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.33		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.6		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	8.0		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							
Conductivity	25		20	umhos/cm		29-NOV-11	R2294628
pH							
pH	6.93		0.10	pH units		29-NOV-11	R2294628
L1089661-3 TPE-42-S							
Sampled By: CLIENT on 22-NOV-11 @ 11:16							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.54		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.2		1.0	mg/L		05-DEC-11	R2297199
Fluoride	0.064		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	8.04		0.20	mg/L		02-DEC-11	
Hardness (as CaCO3)	8.04		0.30	mg/L		02-DEC-11	
Nitrate-N	0.0169		0.0050	mg/L		29-NOV-11	R2295259

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-3 TPE-42-S							
Sampled By: CLIENT on 22-NOV-11 @ 11:16							
Matrix: WATER							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	0.0044		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Phosphorus (P)-Total Reactive	0.0010		0.0010	mg/L		07-DEC-11	R2298412
Silica, Reactive (as SiO2)	0.140		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	2.66		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.109		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	16.0		5.0	mg/L		29-NOV-11	R2294743
Iron (Fe)-Total	<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.2		1.0	mg/L		05-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.74		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0278		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	0.00041		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00274		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	2.12		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00045		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.774		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00137		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	0.00021		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.503		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00069		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.086		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.734		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00905		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00031		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-3 TPE-42-S							
Sampled By: CLIENT on 22-NOV-11 @ 11:16							
Matrix: WATER							
Total Metals by ICP-MS							
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	0.00044		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00267		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	1.97		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00039		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.757		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00040		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00018		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.454		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00067		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.064		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.738		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00865		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.48		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.32		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	7.7		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	9.3		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-3 TPE-42-S Sampled By: CLIENT on 22-NOV-11 @ 11:16 Matrix: WATER							
Conductivity Conductivity	25		20	umhos/cm		29-NOV-11	R2294628
pH pH	7.00		0.10	pH units		29-NOV-11	R2294628
L1089661-4 TPE-43-S Sampled By: CLIENT on 22-NOV-11 @ 12:14 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.54		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.3		1.0	mg/L		07-DEC-11	R2298413
Fluoride	0.065		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	8.18		0.30	mg/L		02-DEC-11	
Hardness (as CaCO3)	8.18		0.20	mg/L		02-DEC-11	
Nitrate-N	0.0173		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total	0.0040		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Silica, Reactive (as SiO2)	0.145		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	2.58		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.082		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	16.0		5.0	mg/L		29-NOV-11	R2294743
Iron (Fe)-Total	0.012		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.2		1.0	mg/L		07-DEC-11	R2298413
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.68		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0209		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	0.00053		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00271		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	2.03		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00048		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	0.00379		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-4 TPE-43-S							
Sampled By: CLIENT on 22-NOV-11 @ 12:14							
Matrix: WATER							
Total Metals by ICP-MS							
Magnesium (Mg)-Total	0.719		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00114		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.468		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00064		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.086		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.640		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00876		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00037		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0023		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	0.00061		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00258		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	2.00		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.774		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00023		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00021		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.470		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00066		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.069		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.711		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00860		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-4 TPE-43-S							
Sampled By: CLIENT on 22-NOV-11 @ 12:14							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.35		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.29		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	7.9		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	9.6		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							
Conductivity	26		20	umhos/cm		29-NOV-11	R2294628
pH							
pH	7.02		0.10	pH units		29-NOV-11	R2294628
L1089661-5 SP-42-S							
Sampled By: CLIENT on 23-NOV-11 @ 10:50							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.55		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.2		1.0	mg/L		07-DEC-11	R2298413
Fluoride	0.059		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	10.5		0.20	mg/L		02-DEC-11	
Hardness (as CaCO3)	10.5		0.30	mg/L		02-DEC-11	
Nitrate-N	0.0062		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	0.0046		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)	0.529		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	2.74		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.092		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	18.0		5.0	mg/L		29-NOV-11	R2294743
Iron (Fe)-Total	0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-5 SP-42-S							
Sampled By: CLIENT on 23-NOV-11 @ 10:50							
Matrix: WATER							
Total Organic Carbon	2.2		1.0	mg/L		07-DEC-11	R2298413
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.74		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0374		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	0.00025		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00243		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	2.98		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00066		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.894		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00136		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.442		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00064		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.258		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.587		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.0127		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00023		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0068		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	0.00028		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00239		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	2.71		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-5 SP-42-S Sampled By: CLIENT on 23-NOV-11 @ 10:50 Matrix: WATER							
Dissolved Metals by ICP-MS							
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00063		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.912		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00136		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.433		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00063		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.244		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.583		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.0123		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	0.00022		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.52		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.29		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.1		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	12.4		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							
Conductivity	30		20	umhos/cm		29-NOV-11	R2294628
pH							
pH	7.14		0.10	pH units		29-NOV-11	R2294628
L1089661-6 SP-43-S Sampled By: CLIENT on 23-NOV-11 @ 10:34 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	0.018		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.54		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-6 SP-43-S							
Sampled By: CLIENT on 23-NOV-11 @ 10:34							
Matrix: WATER							
Dissolved Organic Carbon	2.1		1.0	mg/L		05-DEC-11	R2297199
Fluoride	0.063		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	10.6		0.20	mg/L		02-DEC-11	
Hardness (as CaCO3)	10.6		0.30	mg/L		02-DEC-11	
Nitrate-N	0.0052		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total	0.0045		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Silica, Reactive (as SiO2)	0.503		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	2.72		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.107		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	18.0		5.0	mg/L		29-NOV-11	R2294743
Iron (Fe)-Total	0.017		0.010	mg/L		09-DEC-11	R2299724
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.3		1.0	mg/L		05-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.93		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0134		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	0.00025		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00238		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	0.000015		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	2.94		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00066		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.894		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00142		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.453		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00065		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.248		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.582		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.0131		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-6 SP-43-S							
Sampled By: CLIENT on 23-NOV-11 @ 10:34							
Matrix: WATER							
Total Metals by ICP-MS							
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00032		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	0.00027		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00231		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	2.74		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00058		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.913		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00015		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.438		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00062		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.227		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.596		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.0122		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.34		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.26		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-6	SP-43-S Sampled By: CLIENT on 23-NOV-11 @ 10:34 Matrix: WATER Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH							
		10.1		1.0	mg/L		29-NOV-11	R2294628
		12.4		2.0	mg/L		29-NOV-11	R2294628
		<0.60		0.60	mg/L		29-NOV-11	R2294628
		<0.40		0.40	mg/L		29-NOV-11	R2294628
		30		20	umhos/cm		29-NOV-11	R2294628
		7.20		0.10	pH units		29-NOV-11	R2294628
L1089661-7	TE-42-S Sampled By: CLIENT on 24-NOV-11 @ 11:00 Matrix: WATER Miscellaneous Parameters Ammonia as N Bromide (Br) Chloride Iron (Fe)-Dissolved Mercury (Hg)-Dissolved Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Hardness (as CaCO3) Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Silica, Reactive (as SiO2) Sulfate Total Kjeldahl Nitrogen Total Dissolved Solids Iron (Fe)-Total Mercury (Hg)-Total Total Organic Carbon Total Suspended Solids Turbidity Total Metals by ICP-MS Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total Barium (Ba)-Total Beryllium (Be)-Total Bismuth (Bi)-Total Boron (B)-Total Cadmium (Cd)-Total Calcium (Ca)-Total Cesium (Cs)-Total Chromium (Cr)-Total							
		<0.010		0.010	mg/L		30-NOV-11	R2295397
		<0.10		0.10	mg/L		29-NOV-11	R2295259
		0.54		0.20	mg/L		29-NOV-11	R2295259
		<0.010		0.010	mg/L		07-DEC-11	R2298179
		<0.000010		0.000010	mg/L		30-NOV-11	R2294993
		2.0		1.0	mg/L		05-DEC-11	R2297199
		0.060		0.020	mg/L		29-NOV-11	R2295259
		9.33		0.20	mg/L		02-DEC-11	
		9.33		0.30	mg/L		02-DEC-11	
		<0.0050		0.0050	mg/L		29-NOV-11	R2295259
		<0.070		0.070	mg/L		29-NOV-11	
		<0.0010		0.0010	mg/L		29-NOV-11	R2295259
		0.0042		0.0020	mg/L		07-DEC-11	R2298415
		<0.010		0.010	mg/L		30-NOV-11	R2294582
		<0.0010		0.0010	mg/L		07-DEC-11	R2298412
		<0.010		0.010	mg/L		30-NOV-11	R2294663
		0.534		0.0050	mg/L		30-NOV-11	R2294883
		2.46		0.50	mg/L		29-NOV-11	R2295259
		0.088		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
		16.0		5.0	mg/L		30-NOV-11	R2295481
		0.013		0.010	mg/L		08-DEC-11	R2298832
		<0.000010		0.000010	mg/L		30-NOV-11	R2294993
		2.2		1.0	mg/L		05-DEC-11	R2297199
		<1.0		1.0	mg/L		30-NOV-11	R2295174
		0.55		0.10	NTU		29-NOV-11	R2294340
		0.0204		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
		0.00238		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
		2.54		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
		<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-7 TE-42-S							
Sampled By: CLIENT on 24-NOV-11 @ 11:00							
Matrix: WATER							
Total Metals by ICP-MS							
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00056		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	0.000289		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.828		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00122		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.452		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00069		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.262		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.582		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.0116		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00045		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00218		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	2.40		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.813		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00016		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.416		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00061		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-7 TE-42-S							
Sampled By: CLIENT on 24-NOV-11 @ 11:00							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.233		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.583		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.0108		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.53		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.32		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	9.2		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	11.2		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							
Conductivity	27		20	umhos/cm		29-NOV-11	R2294628
pH							
pH	7.18		0.10	pH units		29-NOV-11	R2294628
L1089661-8 TE-43-S							
Sampled By: CLIENT on 24-NOV-11 @ 11:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.56		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.2		1.0	mg/L		05-DEC-11	R2297199
Fluoride	0.061		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	9.59		0.20	mg/L		02-DEC-11	
Hardness (as CaCO3)	9.59		0.30	mg/L		02-DEC-11	
Nitrate-N	0.0062		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total	0.0040		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)	0.566		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	2.65		0.50	mg/L		29-NOV-11	R2295259

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-8 TE-43-S							
Sampled By: CLIENT on 24-NOV-11 @ 11:30							
Matrix: WATER							
Total Kjeldahl Nitrogen	0.095		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	16.0		5.0	mg/L		30-NOV-11	R2295481
Iron (Fe)-Total	0.012		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.2		1.0	mg/L		05-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.58		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0414		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00251		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	2.74		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00065		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.881		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00120		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.461		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00070		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.293		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.606		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.0125		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00038		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00226		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-8 TE-43-S Sampled By: CLIENT on 24-NOV-11 @ 11:30 Matrix: WATER							
Dissolved Metals by ICP-MS							
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	2.44		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00055		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.850		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00017		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00012		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.414		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00062		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.239		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.587		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.0113		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.61		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.39		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	9.6		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	11.7		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							
Conductivity	29		20	umhos/cm		29-NOV-11	R2294628
pH							
pH	7.18		0.10	pH units		29-NOV-11	R2294628
L1089661-9 INUG-30-S Sampled By: CLIENT on 25-NOV-11 @ 11:48 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-9 INUG-30-S							
Sampled By: CLIENT on 25-NOV-11 @ 11:48							
Matrix: WATER							
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.65		0.20	mg/L		29-NOV-11	R2295259
Conductivity	14.8		0.40	umhos/cm		30-NOV-11	R2295824
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.4		1.0	mg/L		05-DEC-11	R2297199
Fluoride	0.054		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	5.26		0.30	mg/L		02-DEC-11	
Hardness (as CaCO3)	5.26		0.20	mg/L		02-DEC-11	
Nitrate-N	<0.0050		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	0.0042		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)	0.371		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	0.84		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.106		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	10.0		5.0	mg/L		30-NOV-11	R2295481
Iron (Fe)-Total	<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.4		1.0	mg/L		05-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.69		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0187		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00181		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	0.94		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00033		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	0.000148		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.542		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00108		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.292		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00046		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-9 INUG-30-S							
Sampled By: CLIENT on 25-NOV-11 @ 11:48							
Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.170		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.433		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00529		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0035		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00177		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	1.04		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.646		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00011		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.355		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00047		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.168		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.528		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00553		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-9 INUG-30-S Sampled By: CLIENT on 25-NOV-11 @ 11:48 Matrix: WATER							
Dissolved Metals by ICP-MS							
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.60		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.37		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.2		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	7.6		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
pH							
pH	6.98		0.10	pH units		29-NOV-11	R2294628
L1089661-10 INUG-31-S Sampled By: CLIENT on 25-NOV-11 @ 12:18 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.64		0.20	mg/L		29-NOV-11	R2295259
Conductivity	15.1		0.40	umhos/cm		30-NOV-11	R2295824
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.4		1.0	mg/L		07-DEC-11	R2298413
Fluoride	0.056		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	4.94		0.30	mg/L		02-DEC-11	
Hardness (as CaCO3)	4.94		0.20	mg/L		02-DEC-11	
Nitrate-N	<0.0050		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	0.0140		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Silica, Reactive (as SiO2)	0.353		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	0.83		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.102		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	10.0		5.0	mg/L		30-NOV-11	R2295481
Iron (Fe)-Total	<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.5		1.0	mg/L		07-DEC-11	R2298413
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.84		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0339		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00179		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-10 INUG-31-S							
Sampled By: CLIENT on 25-NOV-11 @ 12:18							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	0.94		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00029		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.546		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00106		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.303		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00042		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.174		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.435		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00524		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	0.00022		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0031		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00164		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	0.984		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00033		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.602		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-10 INUG-31-S							
Sampled By: CLIENT on 25-NOV-11 @ 12:18							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.333		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00045		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.151		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.487		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00560		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.80		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.46		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.1		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	7.5		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
pH							
pH	6.98		0.10	pH units		29-NOV-11	R2294628
L1089661-11 CREMP NOV. DUP-1							
Sampled By: CLIENT on 21-NOV-11 @ 14:10							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	0.56		0.20	mg/L		29-NOV-11	R2295259
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	2.2		1.0	mg/L		05-DEC-11	R2297199
Fluoride	0.055		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	7.06		0.30	mg/L		02-DEC-11	
Hardness (as CaCO3)	7.06		0.20	mg/L		02-DEC-11	
Nitrate-N	0.0366		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total	0.0047		0.0020	mg/L		07-DEC-11	R2298415

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-11 CREMP NOV. DUP-1							
Sampled By: CLIENT on 21-NOV-11 @ 14:10							
Matrix: WATER							
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)	0.131		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	3.17		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	0.087		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	14.0		5.0	mg/L		29-NOV-11	R2294743
Iron (Fe)-Total	<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	2.2		1.0	mg/L		05-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.53		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0224		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00280		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	1.54		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00035		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.596		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	0.00274		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.368		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	0.00053		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.068		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.690		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00778		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-11 CREMP NOV. DUP-1							
Sampled By: CLIENT on 21-NOV-11 @ 14:10							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0021		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00268		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	1.70		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	0.00037		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	0.685		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	0.00180		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	0.00016		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	0.422		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	0.00055		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	0.062		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.809		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00782		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.57		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
Phaeophytin a	0.37		0.10	ug/L	06-DEC-11	07-DEC-11	R2298481
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	6.7		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	8.2		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
Conductivity							
Conductivity	25		20	umhos/cm		29-NOV-11	R2294628
pH							
pH	7.04		0.10	pH units		29-NOV-11	R2294628

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-12 CREMP NOV. EB							
Sampled By: CLIENT on 24-NOV-11 @ 16:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)	<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride	<0.20		0.20	mg/L		29-NOV-11	R2295259
Conductivity	1.74		0.40	umhos/cm		30-NOV-11	R2295824
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon	<1.0		1.0	mg/L		06-DEC-11	R2297199
Fluoride	<0.020		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)	<0.30		0.30	mg/L		02-DEC-11	
Hardness (as CaCO3)	0.28		0.20	mg/L		02-DEC-11	
Nitrate-N	<0.0050		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N	<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N	<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total	0.011		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)	0.0159		0.0050	mg/L		30-NOV-11	R2294883
Sulfate	<0.50		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids	<5.0		5.0	mg/L		30-NOV-11	R2295481
Iron (Fe)-Total	<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon	1.2		1.0	mg/L		06-DEC-11	R2297199
Total Suspended Solids	<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity	0.95		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0133		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total	0.00025		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cadmium (Cd)-Total	0.000049		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	0.16		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	0.00021		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	0.000139		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	0.024		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	0.024		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-12 CREMP NOV. EB							
Sampled By: CLIENT on 24-NOV-11 @ 16:30							
Matrix: WATER							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	0.129		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	0.037		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00033		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	0.00021		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	0.000013		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	0.113		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	<0.020		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	0.027		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	0.00015		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-12 CREMP NOV. EB								
Sampled By: CLIENT on 24-NOV-11 @ 16:30								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		2.1		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)		2.6		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)		<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)		<0.40		0.40	mg/L		29-NOV-11	R2294628
pH								
pH		6.26		0.10	pH units		29-NOV-11	R2294628
L1089661-13 TRAVELING BLANK								
Sampled By: CLIENT on 25-NOV-11								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		30-NOV-11	R2295397
Bromide (Br)		<0.10		0.10	mg/L		29-NOV-11	R2295259
Chloride		<0.20		0.20	mg/L		29-NOV-11	R2295259
Conductivity		0.78		0.40	umhos/cm		30-NOV-11	R2295824
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		07-DEC-11	R2298179
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Dissolved Organic Carbon		1.1		1.0	mg/L		08-DEC-11	R2299984
Fluoride		<0.020		0.020	mg/L		29-NOV-11	R2295259
Hardness (as CaCO3)		<0.20		0.20	mg/L		02-DEC-11	
Hardness (as CaCO3)		<0.30		0.30	mg/L		02-DEC-11	
Nitrate-N		<0.0050		0.0050	mg/L		29-NOV-11	R2295259
Nitrate and Nitrite as N		<0.070		0.070	mg/L		29-NOV-11	
Nitrite-N		<0.0010		0.0010	mg/L		29-NOV-11	R2295259
Phosphorus (P)-Total		<0.010		0.010	mg/L		30-NOV-11	R2294582
Phosphorus (P)-Total		<0.0020		0.0020	mg/L		07-DEC-11	R2298415
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		07-DEC-11	R2298412
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		30-NOV-11	R2294663
Silica, Reactive (as SiO2)		<0.0050		0.0050	mg/L		30-NOV-11	R2294883
Sulfate		<0.50		0.50	mg/L		29-NOV-11	R2295259
Total Kjeldahl Nitrogen		<0.050		0.050	mg/L	01-DEC-11	01-DEC-11	R2295624
Total Dissolved Solids		<5.0		5.0	mg/L		30-NOV-11	R2295481
Iron (Fe)-Total		<0.010		0.010	mg/L		08-DEC-11	R2298832
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		30-NOV-11	R2294993
Total Organic Carbon		1.3		1.0	mg/L		08-DEC-11	R2299984
Total Suspended Solids		<1.0		1.0	mg/L		30-NOV-11	R2295174
Turbidity		0.60		0.10	NTU		29-NOV-11	R2294340
Total Metals by ICP-MS								
Aluminum (Al)-Total		<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Arsenic (As)-Total		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Barium (Ba)-Total		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Boron (B)-Total		<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-13 TRAVELING BLANK							
Sampled By: CLIENT on 25-NOV-11							
Matrix: WATER							
Total Metals by ICP-MS							
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-NOV-11	01-DEC-11	R2295750
Calcium (Ca)-Total	0.25		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Copper (Cu)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Iron (Fe)-Total	<0.10		0.10	mg/L	30-NOV-11	01-DEC-11	R2295750
Lead (Pb)-Total	0.000091		0.000090	mg/L	30-NOV-11	01-DEC-11	R2295750
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Magnesium (Mg)-Total	<0.010		0.010	mg/L	30-NOV-11	01-DEC-11	R2295750
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	30-NOV-11	01-DEC-11	R2295750
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-NOV-11	01-DEC-11	R2295750
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-NOV-11	01-DEC-11	R2295750
Potassium (K)-Total	<0.020		0.020	mg/L	30-NOV-11	01-DEC-11	R2295750
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Silicon (Si)-Total	<0.050		0.050	mg/L	30-NOV-11	01-DEC-11	R2295750
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Sodium (Na)-Total	<0.030		0.030	mg/L	30-NOV-11	01-DEC-11	R2295750
Strontium (Sr)-Total	0.00016		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-NOV-11	01-DEC-11	R2295750
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-NOV-11	01-DEC-11	R2295750
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-NOV-11	01-DEC-11	R2295750
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-NOV-11	01-DEC-11	R2295750
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-NOV-11	01-DEC-11	R2295750
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	29-NOV-11	01-DEC-11	R2295765
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-NOV-11	01-DEC-11	R2295765
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	29-NOV-11	01-DEC-11	R2295765
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1089661-13 TRAVELING BLANK							
Sampled By: CLIENT on 25-NOV-11							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	29-NOV-11	01-DEC-11	R2295765
Potassium (K)-Dissolved	<0.020		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	29-NOV-11	01-DEC-11	R2295765
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	29-NOV-11	01-DEC-11	R2295765
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	29-NOV-11	01-DEC-11	R2295765
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	29-NOV-11	01-DEC-11	R2295765
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	29-NOV-11	01-DEC-11	R2295765
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	29-NOV-11	01-DEC-11	R2295765
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	1.6		1.0	mg/L		29-NOV-11	R2294628
Bicarbonate (HCO3)	<2.0		2.0	mg/L		29-NOV-11	R2294628
Carbonate (CO3)	<0.60		0.60	mg/L		29-NOV-11	R2294628
Hydroxide (OH)	<0.40		0.40	mg/L		29-NOV-11	R2294628
pH							
pH	5.86		0.10	pH units		29-NOV-11	R2294628

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.			
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.			
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CHL,PHEO-FLUORO-WP	Water	Chlorophyll a, Pheophytin by fluorometry	EPA 445.0
Chlorophyll a is filtered from the sample and extracted with 90% (v/v) acetone. The sample is analyzed fluorometrically. The extract is then acidified, converting chlorophyll a to pheophytin a. The sample is analyzed fluorometrically again after acidification. The chlorophyll a concentration is determined from the decrease upon acidification.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-L-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-DIS-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-D-L-ICP-ED	Water	Diss. Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL
Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SIO2-L-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2
This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
TKN-F-VA	Water	TKN in Water by Fluorescence	APHA 4500-NORG D.
This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.			
TSS-LOW-VA	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 Gravimetric
This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)											
Company: Agnico-Eagle Mining Ltd.				☐ Standard ☐ Other ☒ PDF ☐ Excel ☐ Digital ☐ Fax				☒ Regular (Default) ☐ Priority (Specify Date Required → →) Surcharges apply ☐ Emergency (1 Business Day) - 100% Surcharge ☐ For Emergency < 1 Day, ASAP or Weekend - Contact ALS											
Contact: Ryan Vanengen				Email 1: rvanengen@agnico-eagle.com															
Address: Meadowbank Division - PO Box 540				Email 2: jeffrey.pratt@agnico-eagle.com															
Baker Lake, NU X0X 0A0																			
Phone: 867/793-4610x 6759 Fax:																			
Invoice To Same as Report ? ☐ Yes ☐ No				Client / Project Information				Analysis Request											
Company: Agnico-Eagle Mining Ltd.				Job #:				Please indicate below Filtered, Preserved or both (F, P, F/P)											
Contact: Accounts Payable - Meadowbank Division				PO / AFE:															
Address: 20 ROUTE 395				LSD:															
Cadillac, QC J0Y 1C0				Quote #: Q21514															
Phone: Fax:				ALS Contact:															
Lab Work Order # (lab use only)				Sampler:															
Sample #	Sample Identification (This description will appear on the report)			Date (dd-mm-yy)	Time (hh:mm)	Sample Type	Cl, F, Br, N2, N3, SO4	TOC / DOC	Metals (Tot & Dis)	TKN(Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS(Va), TDS	Chlorophyll A	P-Total & Ortho	Number of Containers	
	TPN-42-S			21-Nov-11	15:05	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TPN-43-S			21-Nov-11	14:10	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TPE-42-S			22-Nov-11	11:16	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TPE-43-S			22-Nov-11	12:14	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	SP-42-S			23-Nov-11	10:50	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	SP-43-S			23-Nov-11	10:34	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TE-42-S			24-Nov-11	11:00	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TE-43-S			24-Nov-11	11:30	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	INUG-30-S			25-Nov-11	11:48	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	INUG-31-S			25-Nov-11	12:18	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	CREMP Nov. DUP-1			21-Nov-11	14:10	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	CREMP Nov. EB			24-Nov-11	16:30	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	Traveling blank			25-Nov-11	--	Water	X	X	X	X	X	X	X	X	X	X	X	7	
Special Instructions / Regulations / Hazardous Details																			
Please use "low range anion analyse". For Chloro, 500ml have been use																			
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab. Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																			
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)											
Released by:	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:									
Robin Allard	26-Nov-11	17:00		29-Nov-11	9:00	3 °C				Yes / No ? If Yes add SIF									



Agnico-Eagle - Meadowbank Division
ATTN: RYAN VANENGEN
MEADOWBANK DIV.
P.O. BOX 540
BAKER LAKE NU X0X 0A0

Date Received: 28-DEC-11
Report Date: 11-JAN-12 11:33 (MT)
Version: FINAL

Client Phone: 867-793-4610

Certificate of Analysis

Lab Work Order #: L1099364
Project P.O. #: NOT SUBMITTED
Job Reference: ANGICO-EAGLE
C of C Numbers:
Legal Site Desc:

Paul Nicolas
Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-1	TPN-44-S							
Sampled By:	CLIENT on 20-DEC-11 @ 12:30							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)		<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride		0.60		0.20	mg/L		28-DEC-11	R2307387
Conductivity		27		20	umhos/cm		29-DEC-11	R2307201
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon		1.5		1.0	mg/L		03-JAN-12	R2308466
Fluoride		0.064		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)		9.41		0.20	mg/L		06-JAN-12	
Hardness (as CaCO3)		7.19		0.30	mg/L		03-JAN-12	
Nitrate-N		0.0408		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N		<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N		<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total		0.0071		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total		<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total Reactive		0.0013		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)		0.136		0.0050	mg/L		28-DEC-11	R2306887
Sulfate		3.43		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen		0.099		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids		14.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total		<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon		1.6		1.0	mg/L		03-JAN-12	R2308466
Total Suspended Solids		<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity		0.67		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS								
Aluminum (Al)-Total		<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total		0.00359		0.00020	mg/L	30-DEC-11	06-JAN-12	R2309288
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total		<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total		2.35		0.10	mg/L	30-DEC-11	06-JAN-12	R2309288
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total		0.00034		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total		<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total		<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total		<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total		0.706		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total		0.00145		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total		<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total		<0.20		0.20	mg/L	30-DEC		

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-1 TPN-44-S Sampled By: CLIENT on 20-DEC-11 @ 12:30 Matrix: WATER							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.071		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.900		0.030	mg/L	30-DEC-11	06-JAN-12	R2309288
Strontium (Sr)-Total	0.00938		0.00010	mg/L	30-DEC-11	06-JAN-12	R2309288
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00021		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00338		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	2.23		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00037		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.861		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	0.00164		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00019		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.530		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00068		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.080		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	1.00		0.020	mg/L	28-DEC-11	05-JAN-12	R2309288
Strontium (Sr)-Dissolved	0.00986		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-1 TPN-44-S								
Sampled By: CLIENT on 20-DEC-11 @ 12:30								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.38		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Phaeophytin a		0.28		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		7.6		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)		9.2		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)		<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)		<0.40		0.40	mg/L		29-DEC-11	R2307201
pH								
pH		6.87		0.10	pH units		29-DEC-11	R2307201
L1099364-2 TPN-45-S								
Sampled By: CLIENT on 20-DEC-11 @ 11:50								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)		<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride		0.69		0.20	mg/L		28-DEC-11	R2307387
Conductivity		23		20	umhos/cm		29-DEC-11	R2307201
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon		1.0		1.0	mg/L		03-JAN-12	R2308466
Fluoride		0.073		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)		8.71		0.30	mg/L		03-JAN-12	
Hardness (as CaCO3)		7.70		0.20	mg/L		05-JAN-12	
Nitrate-N		0.0441		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N		<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N		<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total		<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total		0.0050		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)		0.174		0.0050	mg/L		28-DEC-11	R2306887
Sulfate		3.97		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen		0.069		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids		14.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total		<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon		1.3		1.0	mg/L		03-JAN-12	R2308466
Total Suspended Solids		<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity		0.19		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0083		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total		0.00292		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-2 TPN-45-S							
Sampled By: CLIENT on 20-DEC-11 @ 11:50							
Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	2.19		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00038		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.789		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00279		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.461		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00059		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.088		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.936		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.00848		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0024		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00276		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	1.87		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00039		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.734		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-2	TPN-45-S							
Sampled By:	CLIENT on 20-DEC-11 @ 11:50							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved	0.00140			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00017			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010			0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10			0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.436			0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00056			0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010			0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.068			0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	0.869			0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	0.00807			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020			0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	0.00032			0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020			0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020			0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010			0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020			0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved	<0.0020			0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved	<0.00040			0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	0.30			0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Phaeophytin a	0.25			0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	6.7			1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)	8.2			2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)	<0.60			0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)	<0.40			0.40	mg/L		29-DEC-11	R2307201
pH								
pH	6.92			0.10	pH units		29-DEC-11	R2307201
L1099364-3	TPE-44-S							
Sampled By:	CLIENT on 23-DEC-11 @ 10:26							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010			0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)	<0.10			0.10	mg/L		28-DEC-11	R2307387
Chloride	0.62			0.20	mg/L		28-DEC-11	R2307387
Conductivity	27			20	umhos/cm		29-DEC-11	R2307201
Iron (Fe)-Dissolved	<0.010			0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved	<0.000010			0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon	1.4			1.0	mg/L		03-JAN-12	R2308466
Fluoride	0.078			0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)	9.67			0.20	mg/L		05-JAN-12	
Hardness (as CaCO3)	9.47			0.30	mg/L		03-JAN-12	
Nitrate-N	0.0217			0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N	<0.070			0.070	mg/L		28-DEC-11	
Nitrite-N	<0.00							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-3 TPE-44-S							
Sampled By: CLIENT on 23-DEC-11 @ 10:26							
Matrix: WATER							
Phosphorus (P)-Total	0.0042		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total Reactive	0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)	0.182		0.0050	mg/L		28-DEC-11	R2306887
Sulfate	3.08		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	0.068		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	18.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	1.5		1.0	mg/L		03-JAN-12	R2308466
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	0.26		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0087		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	0.00045		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	0.00315		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	2.31		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00050		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.899		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00108		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.548		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00076		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.107		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.836		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0100		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	0.00024		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00021		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-3 TPE-44-S							
Sampled By: CLIENT on 23-DEC-11 @ 10:26							
Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00050		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00305		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	2.36		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.917		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	0.00012		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00024		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.541		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00076		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.094		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	0.837		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	0.0103		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.18		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Phaeophytin a	0.18		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	8.8		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)	10.7		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)	<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)	<0.40		0.40	mg/L		29-DEC-11	R2307201
pH							
pH	6.99		0.10	pH units		29-DEC-11	R2307201

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-4 TPE-45-S							
Sampled By: CLIENT on 23-DEC-11 @ 10:56							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)	<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride	0.71		0.20	mg/L		28-DEC-11	R2307387
Conductivity	27		20	umhos/cm		29-DEC-11	R2307201
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon	1.4		1.0	mg/L		03-JAN-12	R2308466
Fluoride	0.088		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)	9.89		0.30	mg/L		03-JAN-12	
Hardness (as CaCO3)	9.84		0.20	mg/L		05-JAN-12	
Nitrate-N	0.0221		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N	<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N	<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total	<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total	0.0050		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)	0.0745		0.0050	mg/L		28-DEC-11	R2306887
Sulfate	3.44		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	0.117		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	16.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	1.4		1.0	mg/L		03-JAN-12	R2308466
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	0.26		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0103		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	0.00063		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	0.00311		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	2.43		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00048		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.927		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00088		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	0.00022		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.570		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00075		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-4 TPE-45-S Sampled By: CLIENT on 23-DEC-11 @ 10:56 Matrix: WATER							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.108		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.848		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0103		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00031		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	0.0115		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0039		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00091		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00305		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	0.000028		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	2.45		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00043		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.903		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	0.00015		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00025		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.545		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00077		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.086		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	0.810		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	0.0104		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-4	TPE-45-S							
Sampled By: CLIENT on 23-DEC-11 @ 10:56								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.26		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Phaeophytin a		0.19		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		9.0		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)		11.0		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)		<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)		<0.40		0.40	mg/L		29-DEC-11	R2307201
pH								
pH		7.03		0.10	pH units		29-DEC-11	R2307201
L1099364-5	SP-44-S							
Sampled By: CLIENT on 23-DEC-11 @ 12:48								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)		<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride		0.63		0.20	mg/L		28-DEC-11	R2307387
Conductivity		27		20	umhos/cm		29-DEC-11	R2307201
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon		1.6		1.0	mg/L		03-JAN-12	R2308466
Fluoride		0.074		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)		10.6		0.20	mg/L		06-JAN-12	
Hardness (as CaCO3)		11.2		0.30	mg/L		03-JAN-12	
Nitrate-N		0.0082		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N		<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N		<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total		<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total		0.0053		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total Reactive		0.0037		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)		0.678		0.0050	mg/L		28-DEC-11	R2306887
Sulfate		3.22		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen		0.095		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids		16.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total		<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon		1.6		1.0	mg/L		03-JAN-12	R2308466
Total Suspended Solids		<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity		0.21		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0133		0.0050	mg/L	30-DEC-11	06-JAN-12	R2309288
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total		0.00026		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total		0.00319		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-5 SP-44-S Sampled By: CLIENT on 23-DEC-11 @ 12:48 Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	2.90		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00066		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.973		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00118		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.466		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00062		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.264		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.650		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0124		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00024		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0077		0.0020	mg/L	28-DEC-11	05-JAN-12	R2309288
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00028		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00226		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	2.72		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00053		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.919		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-5	SP-44-S							
Sampled By:	CLIENT on 23-DEC-11 @ 12:48							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Manganese (Mn)-Dissolved	0.00070		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Molybdenum (Mo)-Dissolved	0.00014		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793	
Potassium (K)-Dissolved	0.431		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Rubidium (Rb)-Dissolved	0.00059		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Silicon (Si)-Dissolved	0.238		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793	
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Sodium (Na)-Dissolved	0.599		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Strontium (Sr)-Dissolved	0.0120		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793	
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	0.40		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579	
Phaeophytin a	0.22		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579	
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	9.8		1.0	mg/L		29-DEC-11	R2307201	
Bicarbonate (HCO3)	12.0		2.0	mg/L		29-DEC-11	R2307201	
Carbonate (CO3)	<0.60		0.60	mg/L		29-DEC-11	R2307201	
Hydroxide (OH)	<0.40		0.40	mg/L		29-DEC-11	R2307201	
pH								
pH	7.10		0.10	pH units		29-DEC-11	R2307201	
L1099364-6	SP-45-S							
Sampled By:	CLIENT on 23-DEC-11 @ 11:41							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.010		0.010	mg/L		05-JAN-12	R2308546	
Bromide (Br)	<0.10		0.10	mg/L		28-DEC-11	R2307387	
Chloride	0.75		0.20	mg/L		28-DEC-11	R2307387	
Conductivity	30		20	umhos/cm		29-DEC-11	R2307201	
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-JAN-12	R2310161	
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		04-JAN-12	R2308660	
Dissolved Organic Carbon	1.8		1.0	mg/L		04-JAN-12	R2308466	
Fluoride	0.083		0.020	mg/L		28-DEC-11	R2307387	
Hardness (as CaCO3)	12.1		0.20	mg/L		05-JAN-12		
Hardness (as CaCO3)	12.3		0.30	mg/L		03-JAN-12		
Nitrate-N	0.0101		0.0050	mg/L		28-DEC-11	R2307387	
Nitrate and Nitrite as N	<0.070		0.070	mg/L		28-DEC-11		
Nitrite-N	<0.0010		0.0010	mg/L		28-DEC-11	R2307387	
Phosphorus (P)-Total	0.0039		0.0020	mg/L		05-JAN-12	R2309066	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-6 SP-45-S							
Sampled By: CLIENT on 23-DEC-11 @ 11:41							
Matrix: WATER							
Phosphorus (P)-Total	<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)	0.578		0.0050	mg/L		28-DEC-11	R2306887
Sulfate	3.87		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	18.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	1.7		1.0	mg/L		04-JAN-12	R2308466
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	0.23		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	0.00029		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	0.00271		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	3.18		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00063		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	1.06		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.508		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00071		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.279		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.704		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0142		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-6 SP-45-S Sampled By: CLIENT on 23-DEC-11 @ 11:41 Matrix: WATER							
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00033		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00261		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	3.18		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00060		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	1.02		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00015		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.487		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00069		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.286		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	0.676		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	0.0137		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry							
Chlorophyll a	0.52		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Phaeophytin a	0.42		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	11.2		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)	13.6		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)	<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)	<0.40		0.40	mg/L		29-DEC-11	R2307201
pH							
pH	7.09		0.10	pH units		29-DEC-11	R2307201

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-7	TE-44-S							
Sampled By:	CLIENT on 17-DEC-11 @ 10:35							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)		<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride		0.73		0.20	mg/L		28-DEC-11	R2307387
Conductivity		26		20	umhos/cm		29-DEC-11	R2307201
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon		1.7		1.0	mg/L		04-JAN-12	R2308466
Fluoride		0.080		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)		10.9		0.30	mg/L		03-JAN-12	
Hardness (as CaCO3)		11.6		0.20	mg/L		05-JAN-12	
Nitrate-N		0.0149		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N		<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N		<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total		0.011		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)		0.502		0.0050	mg/L		28-DEC-11	R2306887
Sulfate		3.58		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen		<0.050		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids		14.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total		<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon		1.8		1.0	mg/L		04-JAN-12	R2308466
Total Suspended Solids		<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity		0.21		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0092		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total		0.00026		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total		0.00258		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total		<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total		2.80		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total		0.00071		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total		<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total		<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total		<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total		0.948		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total		0.00098		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total		<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total		<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total		0.471		0.020	mg/L	30		

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-7 TE-44-S Sampled By: CLIENT on 17-DEC-11 @ 10:35 Matrix: WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	0.291		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.677		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0125		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00028		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00025		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00253		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	3.03		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00059		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.970		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	0.00012		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00013		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.533		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00070		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.283		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	0.690		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	0.0130		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-8 TC-45-S							
Sampled By: CLIENT on 17-DEC-11 @ 11:17							
Matrix: WATER							
Total Metals by ICP-MS							
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	2.53		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00067		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.860		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00093		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.431		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00064		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.262		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.618		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0114		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00024		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00023		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00254		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	2.78		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00055		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.932		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-8 TC-45-S								
Sampled By: CLIENT on 17-DEC-11 @ 11:17								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Molybdenum (Mo)-Dissolved		0.00013		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved		<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved		0.461		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved		0.00070		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved		0.284		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved		0.665		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved		0.0127		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.61		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Phaeophytin a		0.26		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.0		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)		12.2		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)		<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)		<0.40		0.40	mg/L		29-DEC-11	R2307201
pH								
pH		7.08		0.10	pH units		29-DEC-11	R2307201
L1099364-9 INUG-32-S								
Sampled By: CLIENT on 24-DEC-11 @ 12:03								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)		<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride		0.66		0.20	mg/L		28-DEC-11	R2307387
Conductivity		14.5		0.40	umhos/cm		30-DEC-11	R2307578
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon		2.1		1.0	mg/L		04-JAN-12	R2308809
Fluoride		0.059		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)		5.76		0.30	mg/L		03-JAN-12	
Hardness (as CaCO3)		6.00		0.20	mg/L		06-JAN-12	
Nitrate-N		<0.0050		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N		<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N		<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total		0.0048		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total		<0.010		0.010	mg/L		29-DEC-11	R2307061

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-9 INUG-32-S							
Sampled By: CLIENT on 24-DEC-11 @ 12:03							
Matrix: WATER							
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)	0.427		0.0050	mg/L		28-DEC-11	R2306887
Sulfate	0.88		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	8.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	2.2		1.0	mg/L		04-JAN-12	R2308809
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	0.28		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0099		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	0.00191		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	1.17		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00039		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.693		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00103		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.380		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00049		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.196		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.567		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.00597		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0056		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-9	INUG-32-S							
Sampled By:	CLIENT on 24-DEC-11 @ 12:03							
Matrix:	WATER							
Dissolved Metals by ICP-MS								
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Barium (Ba)-Dissolved	0.00180		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Cadmium (Cd)-Dissolved	0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Calcium (Ca)-Dissolved	1.24		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793	
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Copper (Cu)-Dissolved	0.00038		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793	
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793	
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Magnesium (Mg)-Dissolved	0.706		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Manganese (Mn)-Dissolved	0.00021		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793	
Potassium (K)-Dissolved	0.398		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Rubidium (Rb)-Dissolved	0.00050		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Silicon (Si)-Dissolved	0.182		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793	
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Sodium (Na)-Dissolved	0.556		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Strontium (Sr)-Dissolved	0.00631		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793	
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793	
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	28-DEC-11	05-JAN-12	R2309288	
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a	0.31		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579	
Phaeophytin a	0.31		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579	
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	6.0		1.0	mg/L		29-DEC-11	R2307201	
Bicarbonate (HCO3)	7.3		2.0	mg/L		29-DEC-11	R2307201	
Carbonate (CO3)	<0.60		0.60	mg/L		29-DEC-11	R2307201	
Hydroxide (OH)	<0.40		0.40	mg/L		29-DEC-11	R2307201	
pH								
p								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-10 INUG-33-S							
Sampled By: CLIENT on 24-DEC-11 @ 12:53							
Matrix: WATER							
Ammonia as N	<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)	<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride	0.77		0.20	mg/L		28-DEC-11	R2307387
Conductivity	14.5		0.40	umhos/cm		30-DEC-11	R2307578
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon	2.1		1.0	mg/L		04-JAN-12	R2308466
Fluoride	0.067		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)	5.94		0.20	mg/L		05-JAN-12	
Hardness (as CaCO3)	6.03		0.30	mg/L		03-JAN-12	
Nitrate-N	<0.0050		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N	<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N	<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total	0.012		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)	0.446		0.0050	mg/L		28-DEC-11	R2306887
Sulfate	1.03		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	8.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	2.1		1.0	mg/L		04-JAN-12	R2308466
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	0.24		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0119		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	0.00208		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	1.22		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00040		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.724		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00106		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.402		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00051		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.206		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-10 INUG-33-S							
Sampled By: CLIENT on 24-DEC-11 @ 12:53							
Matrix: WATER							
Total Metals by ICP-MS							
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.581		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.00629		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	0.0028		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00175		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	1.24		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00039		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.691		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	0.00011		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	0.384		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	0.00048		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	0.171		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	0.543		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	0.00612		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-11 CREMP DEC. DUP-1							
Sampled By: CLIENT on 17-DEC-11 @ 10:35							
Matrix: WATER							
Total Metals by ICP-MS							
Calcium (Ca)-Total	2.84		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00061		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.966		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	0.00101		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.485		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	0.00072		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	0.299		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	0.693		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.0128		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00030		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	0.00024		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	0.00247		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	2.96		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	0.00057		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	0.960		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	0.00027		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	0.00012		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-11 CREMP DEC. DUP-1								
Sampled By: CLIENT on 17-DEC-11 @ 10:35								
Matrix: WATER								
Dissolved Metals by ICP-MS								
Phosphorus (P)-Dissolved		<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved		0.488		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved		0.00068		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved		<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved		0.271		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved		0.688		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved		0.0127		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved		<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved		<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved		<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved		<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
Chlorophyll a, Pheophytin by fluorometry								
Chlorophyll a		0.52		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
Pheophytin a		0.31		0.10	ug/L	09-JAN-12	10-JAN-12	R2310579
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		9.6		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)		11.7		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)		<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)		<0.40		0.40	mg/L		29-DEC-11	R2307201
pH								
pH		7.00		0.10	pH units		29-DEC-11	R2307201
L1099364-12 CREMP DEC. EB								
Sampled By: CLIENT on 23-DEC-11 @ 14:45								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)		<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride		<0.20		0.20	mg/L		28-DEC-11	R2307387
Conductivity		1.36		0.40	umhos/cm		30-DEC-11	R2307578
Iron (Fe)-Dissolved		<0.010		0.010	mg/L		09-JAN-12	R2310161
Mercury (Hg)-Dissolved		<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon		<1.0		1.0	mg/L		04-JAN-12	R2308809
Fluoride		<0.020		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)		0.42		0.30	mg/L		03-JAN-12	
Hardness (as CaCO3)		<0.20		0.20	mg/L		06-JAN-12	
Nitrate-N		<0.0050		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N		<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N		<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total		<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total		0.0021		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		04	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-12 CREMP DEC. EB							
Sampled By: CLIENT on 23-DEC-11 @ 14:45							
Matrix: WATER							
Sulfate	<0.50		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	<5.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	<1.0		1.0	mg/L		04-JAN-12	R2308809
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	0.19		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0057		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	0.00024		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	0.14		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	0.00063		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	0.000435		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	0.016		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	0.026		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	<0.050		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	<0.030		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	0.00022		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	0.00026		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-12 CREMP DEC. EB Sampled By: CLIENT on 23-DEC-11 @ 14:45 Matrix: WATER							
Dissolved Metals by ICP-MS							
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	28-DEC-11	05-JAN-12	R2309288
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	05-JAN-12	R2309288
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	<0.020		0.020	mg/L	28-DEC-11	05-JAN-12	R2309288
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	28-DEC-11	05-JAN-12	R2309288
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	05-JAN-12	R2309288
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	2.1		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)	2.6		2.0	mg/L		29-DEC-11	R2307201
Carbonate (CO3)	<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)	<0.40		0.40	mg/L		29-DEC-11	R2307201
pH							
pH	6.13		0.10	pH units		29-DEC-11	R2307201
L1099364-13 TRAVELING BLANK Sampled By: CLIENT on 20-DEC-11 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.010		0.010	mg/L		04-JAN-12	R2308546
Bromide (Br)	<0.10		0.10	mg/L		28-DEC-11	R2307387
Chloride	<0.20		0.20	mg/L		28-DEC-11	R2307387
Conductivity	0.87		0.40	umhos/cm		30-DEC-11	R2307578
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-JAN-12	R2310161

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-13 TRAVELING BLANK							
Sampled By: CLIENT on 20-DEC-11							
Matrix: WATER							
Mercury (Hg)-Dissolved	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Dissolved Organic Carbon	<1.0		1.0	mg/L		04-JAN-12	R2308809
Fluoride	<0.020		0.020	mg/L		28-DEC-11	R2307387
Hardness (as CaCO3)	<0.30		0.30	mg/L		05-JAN-12	
Hardness (as CaCO3)	<0.20		0.20	mg/L		05-JAN-12	
Nitrate-N	<0.0050		0.0050	mg/L		28-DEC-11	R2307387
Nitrate and Nitrite as N	<0.070		0.070	mg/L		28-DEC-11	
Nitrite-N	<0.0010		0.0010	mg/L		28-DEC-11	R2307387
Phosphorus (P)-Total	0.0073		0.0020	mg/L		05-JAN-12	R2309066
Phosphorus (P)-Total	<0.010		0.010	mg/L		29-DEC-11	R2307061
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		04-JAN-12	R2308989
Silica, Reactive (as SiO2)	<0.0050		0.0050	mg/L		28-DEC-11	R2306887
Sulfate	<0.50		0.50	mg/L		28-DEC-11	R2307387
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	04-JAN-12	05-JAN-12	R2309083
Total Dissolved Solids	<5.0		5.0	mg/L		29-DEC-11	R2307478
Iron (Fe)-Total	<0.010		0.010	mg/L		06-JAN-12	R2309774
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		04-JAN-12	R2308660
Total Organic Carbon	<1.0		1.0	mg/L		04-JAN-12	R2308809
Total Suspended Solids	<2.0		2.0	mg/L		29-DEC-11	R2307478
Turbidity	<0.10		0.10	NTU		28-DEC-11	R2306900
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Arsenic (As)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Barium (Ba)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Boron (B)-Total	<0.010		0.010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	30-DEC-11	30-DEC-11	R2308103
Calcium (Ca)-Total	<0.10		0.10	mg/L	30-DEC-11	04-JAN-12	R2308801
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Copper (Cu)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Iron (Fe)-Total	<0.10		0.10	mg/L	30-DEC-11	30-DEC-11	R2308103
Lead (Pb)-Total	<0.000090		0.000090	mg/L	30-DEC-11	30-DEC-11	R2308103
Lithium (Li)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Magnesium (Mg)-Total	<0.010		0.010	mg/L	30-DEC-11	04-JAN-12	R2308801
Manganese (Mn)-Total	<0.00030		0.00030	mg/L	30-DEC-11	30-DEC-11	R2308103
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	30-DEC-11	30-DEC-11	R2308103
Phosphorus (P)-Total	<0.20		0.20	mg/L	30-DEC-11	30-DEC-11	R2308103
Potassium (K)-Total	<0.020		0.020	mg/L	30-DEC-11	30-DEC-11	R2308103
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Selenium (Se)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Silicon (Si)-Total	<0.050		0.050	mg/L	30-DEC-11	30-DEC-11	R2308103
Silver (Ag)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Sodium (Na)-Total	<0.030		0.030	mg/L	30-DEC-11	30-DEC-11	R2308103
Strontium (Sr)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-13 TRAVELING BLANK							
Sampled By: CLIENT on 20-DEC-11							
Matrix: WATER							
Total Metals by ICP-MS							
Thorium (Th)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Tin (Sn)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Titanium (Ti)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Tungsten (W)-Total	<0.0010		0.0010	mg/L	30-DEC-11	30-DEC-11	R2308103
Uranium (U)-Total	<0.00010		0.00010	mg/L	30-DEC-11	30-DEC-11	R2308103
Vanadium (V)-Total	<0.00020		0.00020	mg/L	30-DEC-11	30-DEC-11	R2308103
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	30-DEC-11	30-DEC-11	R2308103
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	30-DEC-11	30-DEC-11	R2308103
Dissolved Metals by ICP-MS							
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Antimony (Sb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Arsenic (As)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Barium (Ba)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Beryllium (Be)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Bismuth (Bi)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Boron (B)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Cadmium (Cd)-Dissolved	<0.000010		0.000010	mg/L	28-DEC-11	04-JAN-12	R2308793
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Chromium (Cr)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Cobalt (Co)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Iron (Fe)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	28-DEC-11	04-JAN-12	R2308793
Lithium (Li)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Magnesium (Mg)-Dissolved	<0.010		0.010	mg/L	28-DEC-11	04-JAN-12	R2308793
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Molybdenum (Mo)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Phosphorus (P)-Dissolved	<0.10		0.10	mg/L	28-DEC-11	04-JAN-12	R2308793
Potassium (K)-Dissolved	<0.020		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Selenium (Se)-Dissolved	<0.0010		0.0010	mg/L	28-DEC-11	04-JAN-12	R2308793
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	28-DEC-11	04-JAN-12	R2308793
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Sodium (Na)-Dissolved	<0.020		0.020	mg/L	28-DEC-11	04-JAN-12	R2308793
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Tin (Sn)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Titanium (Ti)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Tungsten (W)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Uranium (U)-Dissolved	<0.00010		0.00010	mg/L	28-DEC-11	04-JAN-12	R2308793
Vanadium (V)-Dissolved	<0.00020		0.00020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zinc (Zn)-Dissolved	<0.0020		0.0020	mg/L	28-DEC-11	04-JAN-12	R2308793
Zirconium (Zr)-Dissolved	<0.00040		0.00040	mg/L	28-DEC-11	04-JAN-12	R2308793
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	1.8		1.0	mg/L		29-DEC-11	R2307201
Bicarbonate (HCO3)	2.1		2.0	mg/L		29-DEC-11	R2307201

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1099364-13	TRAVELING BLANK							
Sampled By:	CLIENT on 20-DEC-11							
Matrix:	WATER							
Alkalinity								
Carbonate (CO3)		<0.60		0.60	mg/L		29-DEC-11	R2307201
Hydroxide (OH)		<0.40		0.40	mg/L		29-DEC-11	R2307201
pH								
pH		5.76		0.10	pH units		29-DEC-11	R2307201

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
SRPF	ROUTINE bottles frozen, others appear unfrozen - Sample received partially frozen

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CHL,PHEO-FLUORO-WP	Water	Chlorophyll a, Pheophytin by fluorometry	EPA 445.0
Chlorophyll a is filtered from the sample and extracted with 90% (v/v) acetone. The sample is analyzed fluorometrically. The extract is then acidified, converting chlorophyll a to pheophytin a. The sample is analyzed fluorometrically again after acidification. The chlorophyll a concentration is determined from the decrease upon acidification.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-L-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-DIS-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-D-L-ICP-ED	Water	Diss. Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL
Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SIO2-L-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2
This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 LR

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
The residue retained by a prepared 1.5 um Whatman 934-AH glass microfibre filter dried at 105 degrees C. A method detection limit of 2 mg/L can be achieved when 500 mL of sample is used.			
TKN-F-VA	Water	TKN in Water by Fluorescence	APHA 4500-NORG D.
This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



L1099364
COC #

Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)											
Company: Agnico-Eagle Mining Ltd.				☐ Standard ☐ Other ☒ PDF ☐ Excel ☐ Digital ☐ Fax				☒ Regular (Default) ☐ Priority (Specify Date Required → → →) Surcharges apply ☐ Emergency (1 Business Day) - 100% Surcharge ☐ For Emergency < 1 Day, ASAP or Weekend - Contact ALS											
Contact: Ryan Vanengen				Email 1: rvanengen@agnico-eagle.com															
Address: Meadowbank Division - PO Box 540 Baker Lake, NU X0X 0A0				Email 2: jeffrey.pratt@agnico-eagle.com															
Phone: 867)793-4610x 6759 Fax:																			
Invoice To Same as Report? ☐ Yes ☐ No				Client / Project Information				Analysis Request											
Company: Agnico-Eagle Mining Ltd.				Job #:				Please indicate below Filtered, Preserved or both (F, P, F/P)											
Contact: Accounts Payable - Meadowbank Division				PO / AFE:															
Address: 20 ROUTE 395				LSD:															
Cadillac, QC J0Y 1C0				Quote #: Q21514															
Phone: Fax:				ALS Contact:				Sampler:											
Lab Work Order # (lab use only)																			
Sample #	Sample Identification (This description will appear on the report)			Date (dd-mm-yy)	Time (hh:mm)	Sample Type	Cl, F, Br, N2, N3, SO4	TOC / DOC	Metals (Tot & Dis)	TKN (Va), NH3	HG (Tot&Dis)-Va	pH, EC, Alkalinity	SiO2	Turbidity	TSS (Va), TDS	Chlorophyll A	P-Total & Ortho	Number of Containers	
	TPN-44-S			20-Dec-11	12:30	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TPN-45-S			20-Dec-11	11:50	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TPE-44-S			23-Dec-11	10:26	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TPE-45-S			23-Dec-11	10:56	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	SP-44-S			23-Dec-11	12:48	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	SP-45-S			23-Dec-11	11:41	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TE-42-S			17-Dec-11	10:35	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	TE-43-S			17-Dec-11	11:17	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	INUG-32-S			24-Dec-11	12:03	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	INUG-33-S			24-Dec-11	12:53	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	CREMP Dec. DUP-1			17-Dec-11	10:35	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	CREMP Dec. EB			23-Dec-11	14:45	Water	X	X	X	X	X	X	X	X	X	X	X	7	
	Traveling blank			20-Dec-11	--	Water	X	X	X	X	X	X	X	X	X	X	X	7	
Special Instructions / Regulations / Hazardous Details																			
Please use "low range anion analyse". For Chloro, 500ml have been use																			
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																			
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.																			
Based on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																			
SHIPMENT RELEASE (client use)				SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)											
Released by:	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:									
Robin Allard	25-Dec-11	8:00		28-Dec-11	10:00	0.5 °C				Yes / No ? If Yes add SIF									

GENF 18.02 Front



* L 1 0 9 9 3 6 4 - C O F C *



L1099364
COC #

Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)																									
Company: Agnico-Eagle Mining Ltd.				☐ Standard ☐ Other ☒ PDF ☐ Excel ☐ Digital ☐ Fax				☒ Regular (Default) ☐ Priority (Specify Date Required → → →) Surcharges apply ☐ Emergency (1 Business Day) - 100% Surcharge ☐ For Emergency < 1 Day, ASAP or Weekend - Contact ALS																									
Contact: Ryan Vanengen				Email 1: rvanengen@agnico-eagle.com																													
Address: Meadowbank Division - PO Box 540				Email 2: jeffrey.pratt@agnico-eagle.com																													
Baker Lake, NU X0X 0A0																																	
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Lab Work Order # (lab use only)																																	
Sample #		Sample Identification (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		C.I.F. Br, N2, N3, SO4		TOC / DOC		Metals (Tot & Dis)		TKN(Va), NH3		HG (Tot&Dis)-Va		pH, EC, Alkalinity		SiO2		Turbidity		TSS(Va), TDS		Chlorophyll A		P- Total & Ortho		Number of Containers	
		TPN-44-S		20-Dec-11		12:30		Water		X		X		X		X		X		X		X		X		X		X		7			
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		TPE-44-S		23-Dec-11		10:26		Water		X		X		X		X		X		X		X		X		X		X		7			
		TPE-45-S		23-Dec-11		10:56		Water		X		X		X		X		X		X		X		X		X		X		7			
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		SP-45-S		23-Dec-11		11:41		Water		X		X		X		X		X		X		X		X		X		X		7			
		TE-42-S		17-Dec-11		10:35		Water		X		X		X		X		X		X		X		X		X		X		7			
		TE-43-S		17-Dec-11		11:17		Water		X		X		X		X		X		X		X		X		X		X		7			
		INUG-32-S		24-Dec-11		12:03		Water		X		X		X		X		X		X		X		X		X		X		7			
		INUG-33-S		24-Dec-11		12:53		Water		X		X		X		X		X		X		X		X		X		X		7			
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SHIPMENT RELEASE (client use)								SHIPMENT RECEPTION (lab use only)								SHIPMENT VERIFICATION (lab use only)																	
Released by:		Date (dd-mm-yy)		Time (hh-mm)		Received by:		Date:		Time:		Temperature:		Verified by:		Date:		Time:		Observations: Yes / No ? If Yes add SIF													
Robin Allard		25-Dec-11		8:00				28-Dec-11		10:00		0.5 °C																					



L1099354

Sample Integrity Form

Date: _____

Client: **Agnico Eagle**

ALS Contact: _____

COC #: _____

Phone #: _____

Work Order #: _____

Please note the following observations that prevent your samples from being processed.

ALS is attempting to contact you for further instructions.

If our attempts fail, please contact us as soon as possible to ensure your analytical needs are met.

Observation

Details

☒	Temperature < freezing point	actual temp (breakdown by cooler):
☐	Temperature ≥ 10 Celsius	actual temp (breakdown by cooler):
☐	Containers broken in transit	details:
☐	Sample integrity compromised	details:
☐	Regulatory non-compliance	details:
☐	No COC with shipment	details:
☐	Discrepancy between COC and label	details:
☐	COC incomplete or unclear	details:
☐	Container incompatible with test	details:
☐	Volume is insufficient for test	details:
☐	Preservation incompatible with test	details:
☐	No preservation	details:
☐	Other observation	details:



Additional Information (list all affected sample portions):

SP-455^{22nd} -DOC **CRUMP DEC BURL^{17th} -DOC**
SP-445^{23rd} -TOC **TPN-45-S^{23rd} TOC**