March 2012

## GAHCHO KUÉ PROJECT

# 2011 Water Quality and Sediment Quality Supplemental Monitoring Report

**Submitted to:**
De Beers Canada Inc.

REPORT

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**Distribution:**

1 copy to De Beers Canada Inc.

1 copy to Golder Associates Ltd.

Golder Associates

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# 1.0 INTRODUCTION AND OBJECTIVES

De Beers Canada Inc. (De Beers) is proposing to develop the Gahcho Kué Project (Project), a diamond mine in the Northwest Territories (NWT). The Project is located in the North Slave region of the NWT at Kennedy Lake, approximately 140 kilometres (km) northeast of Łutselk'e and 280 km northeast of Yellowknife.

Baseline studies have been conducted to support the Environmental Impact Assessment (EIS) for the Project and the Environmental Impact Review (EIR) Process. These data were reported in the December 2010 EIS (De Beers 2010). Baseline data reported in the 2010 EIS are sufficient to support the environmental assessment within the EIS. However, De Beers is committed to ongoing data collection in advance of regulatory approval of and the permitting process for the Project. As such, supplemental baseline data have been collected in 2011, and will continue to be collected and reported annually, until such time that these activities are no longer required prior to Project construction or evolve into future monitoring programs associated with an approved Project.

The purpose of collecting and reporting the supplemental baseline data for the Project is to support a consistent and transparent baseline program. In general, the goals of the supplemental data collection are to:

- reduce uncertainty and increase the level of confidence in impact predictions;
- broaden the baseline areas of investigation; and
- contribute to long-term future monitoring and adaptive management of the Project.

The focus of the 2011 supplemental data collection reported herein is water and sediment quality. The purpose of this report is to provide baseline information collected in 2011 on water and sediment quality for lakes and streams in the Project area, as well as to provide background spring freshet information on two lakes within the area for the Project. This report supplements the data presented in Annex I Water Quality Baseline of the EIS.

The 2011 water quality and sediment quality monitoring can be categorized into two specific programs:

- the 2011 Spring Freshet Program; and
- the 2011 Baseline Program.

The 2011 spring freshet program is unique and provides an indication of the natural range of some key water quality parameters in the transitional period between winter and spring.

## 1.1 Spring Freshet Program

The objective of the 2011 Spring Freshet Program was to improve the understanding of the natural variability of turbidity/total suspended solids (TSS) and metal concentrations in elevated flows during the spring freshet period. These data are useful for comparisons to the loading of TSS and metals to lakes due to proposed mining operations.

To collect data relevant to freshet conditions, two specific lakes were monitored that were in close proximity to the proposed Project: Area 8 of Kennady Lake and Lake I1. In situ monitoring of turbidity throughout the freshet period, including water temperature, pH, specific conductivity, and dissolved oxygen (DO) was conducted in the

lakes between May and July 2011. Twelve lake outlets were also sampled for turbidity, TSS, major ions and total metal parameters during peak/elevated flow conditions.

## 1.2 2011 Baseline Program

The objective of the 2011 baseline program was to collect water column profile data and water and sediment quality data to supplement existing baseline information within the Kennady Lake Study Area (KLSA) and Local Study Area (LSA). The 2011 baseline program was designed in such a way that all necessary sampling locations including reference lakes were appropriate for the proposed mine plan. The proposed mine plan as described in the 2010 EIS (see Section 3; De Beers 2010) has made Lake N16 unsuitable as a reference lake and therefore data collection from new reference lakes were required. In addition, discharge of B, D water to Lake N11 requires a more rigorous baseline dataset for the N watershed for both under-ice and open-water seasons.

The mine plan includes the diversion of water from Kennady Lake into the N watershed through the B, D and E lakes during operations. Selected lakes in the E and F watersheds were included in the 2011 baseline monitoring program. Supplemental baseline water and sediment quality data were collected from other watersheds flowing into Kennedy Lake, in the main basin of Kennedy Lake, and the adjacent N watershed. Updated water quality data were also collected in a subset of lakes downstream of Kennady Lake (i.e., selected LM watershed lakes, Lake 410 and Kirk Lake). Finally, two prospective reference lakes (Lake X6 and East Lake) were sampled to evaluate their suitability as reference lakes for the Project, and to establish baseline conditions.

The 2011 Baseline Program included collection of field water quality profile data in under-ice (April) and open-water (July) conditions; and collection of water and sediment samples for laboratory analyses for a variety parameters including physical parameters, nutrients, major ions, metals and organics, consistent with the previous programs. Chlorophyll *a* was included in the baseline water quality parameter set for this program.

# 2.0 STUDY AREA AND SAMPLING LOCATIONS

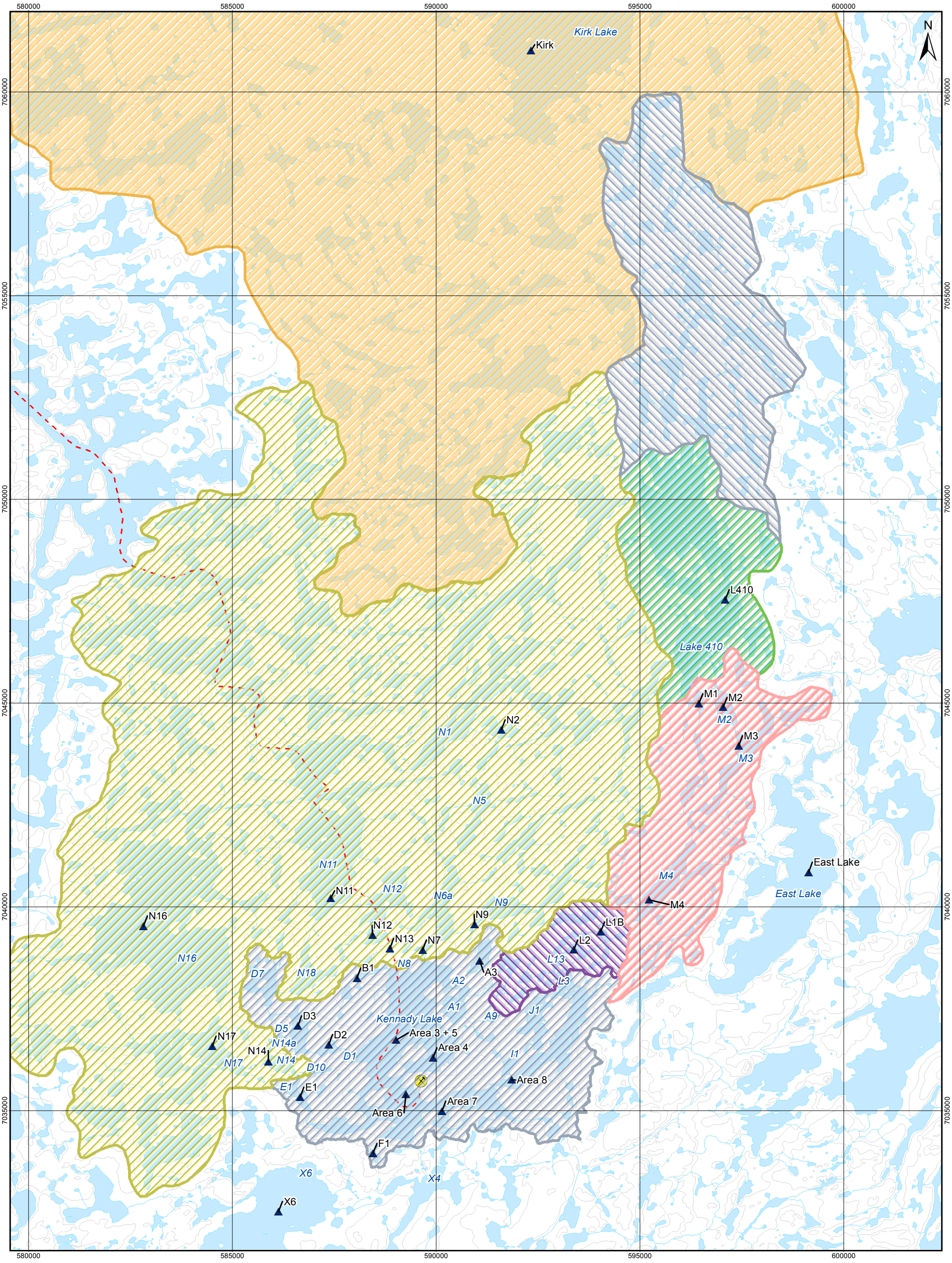
The 2011 sampling programs were conducted within the Kennady Lake Study Area (KLSA) and the Local Study Area (LSA) as defined for the Project. The KLSA comprises 8.15 square kilometre ($km^2$) in lake area, which is divided into eight main areas of Kennady Lake (Area 1 to Area 8) and includes the sub-watersheds A, B, D, E, F, G, J1 and I. The LSA is a 739 square kilometre ($km^2$) area that includes the watersheds of lakes and streams that may be affected by the Project. The 2011 baseline sampling locations are shown in Figure 2-1 for winter sampling and Figure 2-2 for freshet and open-water sampling. Details of sampling locations as well as range of parameters for the freshet, water and sediment programs during the study period are listed in Table 2-1.

For the freshet program, two automated YSI 6600 data sands were deployed in Area 8 of Kennady Lake and Lake I1 within the LSA to collect hourly freshet data from May to July 2011. Water samples were also collected opportunistically during the deployment and recovery of the YSIs and analysed for a subset of water quality parameters (including turbidity and TSS) to compare and calibrate the hourly monitored data. Water samples were also collected at 11 lake outlets within the LSA as a part of the freshet program in June (Figure 2-2 and Table 2-1) and analysed for conventional parameters, major ions, nutrients and metals.

For the baseline program, field water quality profiles were measured and water quality samples were collected during under-ice (April) and open-water (July/August) conditions, whereas sediment quality samples were collected during open-water (July/August) conditions (Figure 2-1, Figure 2-2 and Table 2-1). The sampling locations are divided into three groups:

- Kennady Lake Study Areas;
- Downstream Lakes of Kennady Lake; and
- Reference Lakes.

The Kennady Lake Study Area included the five main basins of Kennady Lake (i.e., Areas 3 and 5, Area 4, Area 6, Area 7 and Area 8), its outlet stream (Stream K5), and eight small sub-watersheds draining into Kennady Lake (i.e., A, B, D, E, F, G, J1 and I sub-watersheds). The Downstream Lakes included 11 lakes in the N watershed (i.e., Lakes N1, N2, N6, N7, N9, N11, N12, N13, N14, N16, and N17), Lakes L1b and L2 in the L watershed, two lakes in the M watershed (i.e., Lakes M3 and M4), Lake 410 and its inflows and outlet stream, and Kirk Lake. Reference Lakes included Lake X6 and East Lake. Sediment quality samples were collected at a subset of these locations, including the five main Areas of Kennady Lake, ten lakes in the N watershed, two lakes in the M watershed, Lake L410, Kirk Lake and two reference lakes (Table 2-1).




**LEGEND**

- Water Quality Sample Location
- Gahcho Kué Project
- Winter Access Road
- Watercourse
- Contour (10m interval)
- Waterbody

**Watershed Boundary**

- Kennady Lake Watershed
- L Watershed
- M Watershed
- N Watershed
- Lake 410 Watershed
- P Watershed
- Kirk Lake Watershed

NOTES

Base data source: National Topographic Base Data (NTDB) 1:50,000

# GAHCHO KUÉ PROJECT

## Surface Water Quality Sampling Locations during April 2011

| | | |
|---|---|---|
| PROJECTION: UTM Zone 12 | DATUM: NAD83 | |
| Scale: 1:90,000 (1 0.5 0 1 Kilometres) | | DE BEERS CANADA |
| FILE No: B2011-SWQ-001-GIS | | DATE: February 29, 2012 |
| JOB NO: 11-1365-0001 | REVISION NO: 1 | **Figure 2-1** |
| OFFICE: GOLD-CAL | DRAWN: SK / CHECK: JF | |

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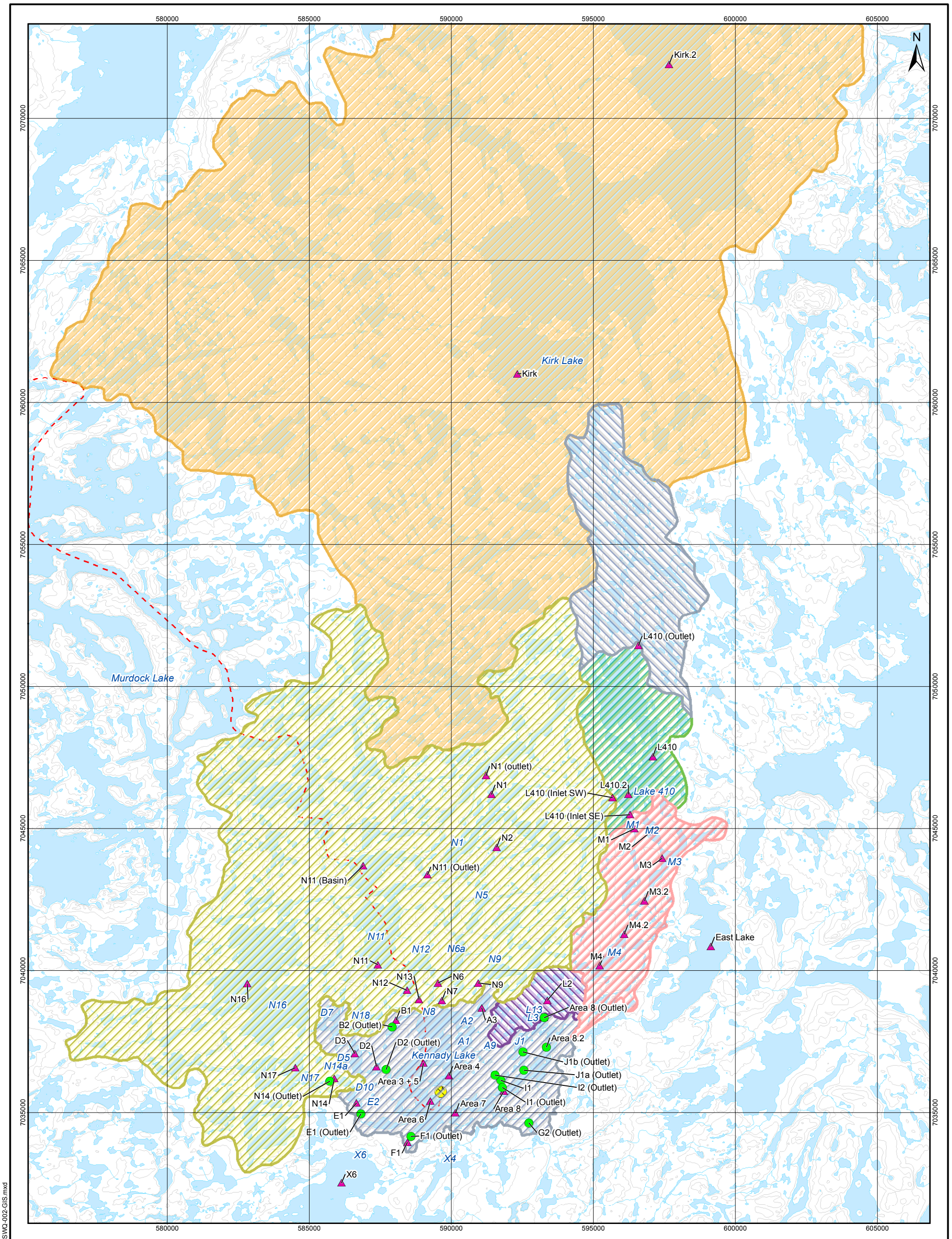


**LEGEND**

- Gahcho Kué Project
- Winter Access Road
- Watercourse
- Waterbody
- Contour (10m interval)
- Freshet Field Program Location
- Water and Sediment Sample Location

**Watershed Boundary**

- Kennady Lake Watershed
- L Watershed
- M Watershed
- N Watershed
- Lake 410 Watershed
- P Watershed
- Kirk Lake Watershed

NOTES

Base data source: National Topographic Base Data (NTDB) 1:50,000

# GAHCHO KUÉ PROJECT

## Freshet, Surface Water and Sediment Quality Sampling Locations during May to August 2011

| | | |
|---|---|---|
| PROJECTION: UTM Zone 12 | DATUM: NAD83 | |
| Scale: 1:125,000 (1 0.5 0 1 Kilometres) | | DE BEERS CANADA |
| FILE No: B2011-SWQ-002-GIS | | DATE: February 29, 2012 |
| JOB NO: 11-1365-0001 | REVISION NO: 1 | |
| OFFICE: GOLD-CAL | DRAWN: SK / CHECK: JF | **Figure 2-2** |

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**Table 2-1 Sampling Details of the 2011 Baseline Study Program**

| Sampling Location | UTM (NAD 83) | | Under-Ice | Open-Water | | |
|---|---|---|---|---|---|---|
| | Easting | Northing | (April 2011) | (May and July/August 2011) | | |
| **Kennady Lakes Areas** | | | | | | |
| A3 | 591071 | 7038680 | w[(a)] | w[(a)] | c[(a)] | s[(a)] |
| B1 | 588056 | 7038254 | w | w | c | - |
| B2 (Outlet) | 587923 | 7038013 | - | f | - | - |
| D2 | 587364 | 7036619 | w | w | c | s |
| D2 (Outlet) | 587705 | 7036520 | - | f | - | - |
| D3 | 586606 | 7037077 | w | w | c | s |
| E1 | 586663 | 7035331 | w | w | c | s |
| E1 (Outlet) | 586816 | 7034954 | - | f | - | - |
| F1 | 588454 | 7033953 | w | w | c | - |
| F1 (Outlet) | 588578 | 7034160 | - | f | - | - |
| G2 (Outlet) | 592732 | 7034634 | - | f | - | - |
| J1a (Outlet) | 592555 | 7036496 | - | f | - | - |
| J1b (Outlet) | 592523 | 7037137 | - | f | - | - |
| I1 | 591750 | 7036136 | - | f[(c)] | - | - |
| I1 (Outlet) | 591801 | 7035878 | - | f | - | - |
| I2 (Outlet) | 591542 | 7036317 | - | f | - | - |
| Area 3 + 5 | 589018 | 7036735 | w | w | c | s |
| Area 4 | 589925 | 7036298 | w[(b)] | w[(b)] | c[(b)] | s[(b)] |
| Area 6 | 589260 | 7035403 | w | w | c | s |
| Area 7 | 590144 | 7034987 | w[(a)] | w[(a)] | c[(a)] | s[(a)] |
| Area 8 | 591853 | 7035753 | w[(b)] | w[(b)] | c[(b)] | s[(b)] |
| Area 8.2 | 593349 | 7037299 | - | f[(c)] | - | - |
| Area 8 (Outlet) | 593264 | 7038349 | - | f,w | - | - |
| **Downstream Lakes** | | | | | | |
| M3 | 597425 | 7043953 | w | w | c | s |
| M3.2 | 596802 | 7042457 | - | w | c | s |
| M4 | 595226 | 7040172 | w | w | c | s |
| M4.2 | 596091 | 7041279 | - | w | c | s |
| M1 | 596446 | 7044993 | w | w | - | - |
| M2 | 597040 | 7044901 | w | w | - | - |
| N1 | 591418 | 7046203 | - | w | c | s |
| N1 (outlet) | 591222 | 7046862 | - | w | - | - |
| N2 | 591599 | 7044342 | w | w | c | s |
| N6 | 589533 | 7039563 | - | - | - | s |
| N7 | 589667 | 7038942 | w | w | c | s |
| N9 | 590944 | 7039568 | w | w | c | s |
| N11 | 587413 | 7040208 | w | w | c | s |
| N11 (Basin) | 586901 | 7043701 | - | - | - | - |
| N11 (Outlet) | 589158 | 7043377 | - | w | - | - |
| N12 | 588442 | 7039302 | w | w | c | s |
| N13 | 588863 | 7038977 | w | w | c | s |
| N14 | 585884 | 7036202 | w | w | c | s |
| N16 | 582818 | 7039529 | w | w | c | s |

**Table 2-1 Sampling Details of the 2011 Baseline Study Program (continued)**

| Sampling Location | UTM (NAD 83) | | Under-Ice | Open-Water | | |
|---|---|---|---|---|---|---|
| | Easting | Northing | (April 2011) | (May and July/August 2011) | | |
| N17 | 584508 | 7036583 | w | w | c | - |
| L410 | 597094 | 7047535 | w | w | c | s |
| L410.2 | 596232 | 7046206 | - | w | c | s |
| L410 (Inlet SE) | 596298 | 7045483 | - | w | - | - |
| L410 (Inlet SW) | 595678 | 7046086 | - | w | - | - |
| L410 (Outlet) | 596591 | 7051440 | - | w | - | - |
| L1B | 594038 | 7039392 | w | - | - | - |
| L2 | 593381 | 7038952 | w | w | - | - |
| Kirk | 592327 | 7061012 | w | w | c | s |
| Kirk.2 | 597672 | 7071909 | - | w | c | s |
| **Reference Lakes** | | | | | | |
| X6 | 586134 | 7032524 | w | w | c | s |
| East Lake | 599138 | 7040849 | w | w | c | s |

**Note:** UTM = Universal Transverse Mercator coordinate system; NAD 83 = North American Datum 1983; f = freshet water sample (May to July); w = water quality sample and profile data (April, July/August); c = chlorophyll *a* (July/August 2011); s = sediment sample (July/August 2011); - = not measured.

(a) field split sample also collected.

(b) duplicate sample also collected.

(c) YSI was deployed at the site for continual monitoring from May to July 2011.

# 3.0 METHODS

## 3.1 Spring Freshet Program

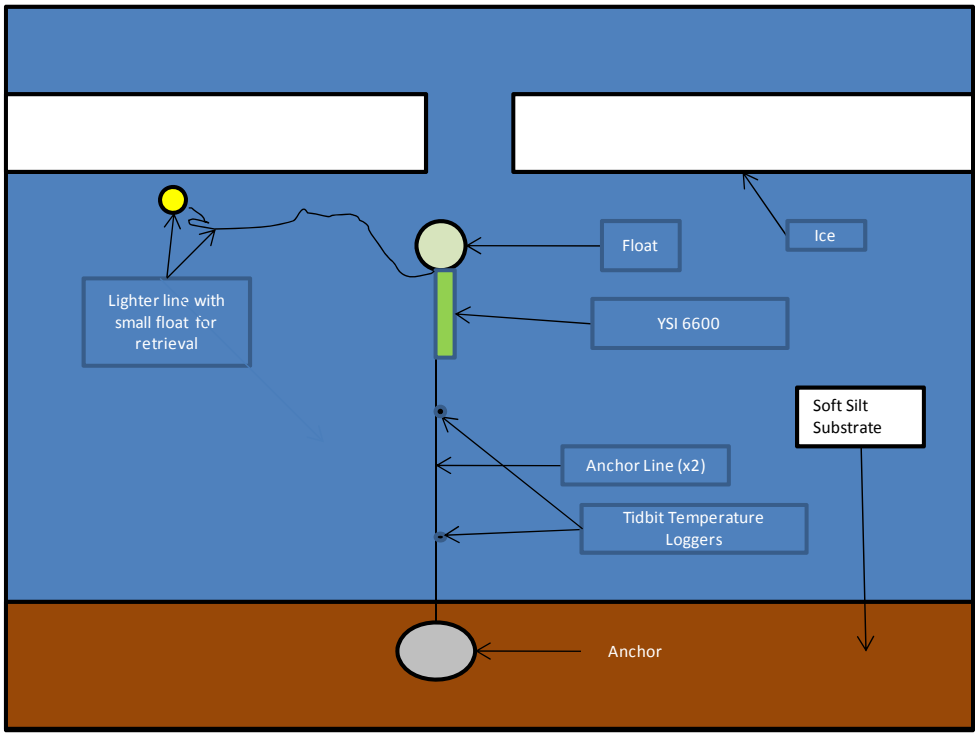
Two YSI 6600s, equipped with turbidity, water temperature, pH, specific conductivity, optical DO, and ORP sensors were calibrated and deployed under the ice at two locations in the Kennady Lake Study Area (i.e., Kennady Lake Area 8 and Lake I1) suspended from a buoy that was anchored to the lakebed sediment (Figure 3-1). The monitoring locations were selected to provide an estimate of changes to turbidity/TSS in freshet flows through the lakes while limiting the potential for damage to the sondes at ice break up. The targeted source of turbidity/TSS was in flows generated from the melting ice and catchment inflows in contrast to the bed sediment.

Both YSIs were calibrated following the standard methods outlined by YSI incorporated (YSI Incorporated 2009). The in situ monitoring programs were set up to collect hourly sensor readings on each sonde. The YSIs were deployed on May 18, 2011 and recovered on July 17, 2011. The YSI deployment site in Lake I1 was located near the middle of the lake that had a depth of approximately 7.0 metres (m). The YSI deployment site in Area 8 had a depth of approximately 4.3 m. Both YSIs were deployed at an approximate depth of 2 m under the ice considering that they would be safe from further extension of ice thickness as well as from rapid currents during the peak freshet.

Water quality samples were collected at both locations when the YSIs were deployed and when they were recovered. The sample collection procedure was similar to baseline program as described in section 3.2.2. The samples were analyzed for turbidity, TSS, pH and conductivity in a certified laboratory to compare results with the YSI readings for Quality Assurance and Quality Control (QA/QC). Tidbit temperature loggers were also attached to the anchor line with the YSI 6600 at each location. The loggers were programmed to record hourly water temperature readings at 3 and 4 m depths at each location. These data provided a measure of the vertical temperature profile in the monitored lakes between May and July 2011.

Water quality grab samples were also collected opportunistically at 11 lake outlets within the LSA to establish the freshet conditions during freshet flows. The samples were analyzed for physical parameters including TSS, major ions and metal parameters.

*Figure 3-1 Conceptual Illustration of the YSI Deployment in Area 8 of Kennady Lake and Lake I1*




## 3.2 2011 Baseline Program

The 2011 Baseline Program included:

- collection of field water quality profile data during under-ice (April) and open-water (July) conditions;
- collection of water samples during under-ice (April) and open-water (July) conditions for laboratory analyses; and
- collection of sediment samples during open-water condition for laboratory analyses.

### 3.2.1 Water Column Profiles

At each sampling location, water column profile measurements were taken before collecting water samples for laboratory analysis. Field water quality measurements were made using a YSI 650 MDS water quality meter and a YSI 600 QS multi-parameter water quality probe, using a 30-m cable. The meter was calibrated at the start of the field program using the methods outlined by the manufacturer (YSI Incorporated 2009). The depth sensor was calibrated at the start of each sampling day.

Temperature (degrees Celsius [°C]), dissolved oxygen (milligrams per litre [mg/L] and percent [%] saturation), specific conductivity (microSiemens per centimetre [µS/cm]) and pH were measured at 1 m depth intervals through the water column at each location. During under-ice conditions, surface readings were taken started just below the ice cover (~0.3 m) and continued until approximately 1 m above the lake bed. During open-water

conditions, surface readings were taken at 0.3 m below the water surface and the final bottom readings taken at approximately 1 m above the bottom.

### 3.2.2 Water Sample Collection and Analysis

The number of samples collected at each location was dependent on the presence of a stratified water column. For example, water samples were collected at mid-depth if there was no notable temperature or DO gradient with depth. A notable gradient in these parameters that would dictate a depth-integrated sampling method was defined as a decrease in water temperature by 2°C or greater from the surface temperature, and a decrease in DO to at least half of the surface measurement. In this case, a surface and a bottom samples in each location were collected.

Both Teflon and PVC Kemmerer samplers were used to collect water at each sampling location, once water column profiling was completed. The PVC Kemmerer sampler was used to sample lake water for analysis of non-metal parameters, whereas the Teflon Kemmerer sampler was used to sample water for analysis of metals. Sample bottles were triple-rinsed with sample water before filling. At lake inlet and outlet locations, where water depth was 0.5 m or less, grab water samples were collected at approximately mid-stream using the individual sample bottles.

Before filling sample bottles for dissolved parameters, sample water was filtered using a GeoPump with silicon tubing and a high capacity in-line filter of 0.45 micrometres (µm) pore size. Samples were preserved as appropriate, using preservatives provided by the analytical laboratory. Nitrile gloves were worn while collecting water samples, rinsing and filling sample bottles, and filtering and preserving samples. Water samples were stored and shipped to the analytical laboratory in coolers containing ice packs.

A different method was used to collect samples for chlorophyll *a* analyses. A PVC Kemmerer was used to collect discrete water samples at 2 m intervals starting at below the water surface to the Secchi depth rounding to the nearest 2 m (i.e., if Secchi depth was 5 metres, the PVC Kemmerer was filled at 0 m, 2 m, 4 m and 6 m). If the Secchi depth was greater than 10 m, the PVC Kemmerer was filled at 2 m intervals to a maximum depth of 10 m. If the Secchi depth extended to lake bottom, discrete water samples were collected at 2 m intervals starting at below the water surface to approximately 1 m above the lake bottom. Equal volumes (i.e. one full Kemmerer at each depth) of the water were combined into a 10 litre (L) bucket to create a composite sample. The composite sample was passed through a 47 mm GF/F Whatman filter using a glass filter flask, filter funnel and hand pump. Sufficient volume was passed through the filter to discolour the filter paper. The filter paper was folded in half and placed in tin foil, which was labelled with date, and site and sample volume used in the filtration.

Quality control (QC) samples were collected as part of the April and July/August field program (Table 2-1). One field blank and one travel blank was collected and submitted for analysis at three-day intervals during the sampling program, for a total of three field blanks and three travel blanks. Three equipment blanks were also collected at the beginning, middle and end of the April and July/August field program to check equipment cleanliness. In addition, two duplicate and two field split water samples were collected during the two sampling programs. The two duplicates were collected at Area 4 and Area 8 of Kennady Lake. The two split samples were collected at Area 7 in Kennady Lake and at Lake A3. QC samples were analyzed for the same parameters as the surface water samples.

Water quality samples were analyzed by Maxxam Analytics Inc. for a standard suite of parameters, including conventional parameters, major ions, nutrients, selected organics, and total and dissolved metals (Table 3-1). The parameter-specific analytical detection limits are given in Appendix A, Table A-1.

**Table 3-1 List of Water Quality Parameters**

| Group | Parameters |
|---|---|
| Field parameters | depth, pH, specific conductivity, water temperature, dissolved oxygen. |
| Conventional parameters | colour, pH, specific conductivity, total dissolved solids (TDS), total dissolved solids-calculated (TDS), total organic carbon (TOC), dissolved organic carbon (DOC), hardness, total hardness (as $CaCO_3$), total alkalinity, turbidity, total suspended solids (TSS). |
| Major ions | bicarbonate, calcium, carbonate, chloride, fluoride, hydroxide, magnesium, potassium, sodium, sulphate, sulphide. |
| Nutrients | nitrate, nitrite, nitrate and nitrite, total ammonia, total Kjeldahl nitrogen, total phosphorus (TP), chlorophyll *a*, chemical oxygen demand (COD). |
| Total and dissolved metals | aluminum, antimony, arsenic, barium, beryllium, total recoverable bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, silicon, silver, strontium, sulphur, thallium, tin, titanium, uranium, vanadium, zinc, zirconium. |
| Organics | naphthenic acids, total phenolics, F1 ($C_6$-$C_{10}$) - BTEX, F1 ($C_6$-$C_{10}$), F2 ($C_{10}$-C16), F3 ($C_{16}$-$C_{34}$), F4 $C_{34}$-$C_{50}$), benzene, toluene, ethylbenzene, m- + p- xylene, o- xylene, xylenes. |

**Note:** F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; BTEX = benzene, toluene, ethylbenzene, xylene; m- = meta; p- = para; o- = ortho.

### 3.2.3 Sediment Sample Collection and Analysis

Sediment samples were collected at 21 locations (Figure 2-2). Samples were collected using an Ekman grab, after collecting water samples. Each sample was a composite sample, consisting of material from the top 5 cm of three individual grabs, mixed in a stainless steel pan before filling sample jars. Samples were stored and shipped to the analytical laboratory in coolers containing ice packs.

Sediment QC samples included a duplicate sample from location Kennady Lake Area 4 and Area 8 and a split sample from Lake A3 and Kennady Lake Area 7. The QC samples were analyzed for the same parameters as lake sediment samples. Sediment samples were analyzed by Maxxam Analytics Inc. for a standard suite of parameters, including particle size distribution, carbon content, nutrients, hydrocarbons and selected total metals (Table 3-2). The parameter specific detection limits for the sediment are given in Appendix A (Table A-2).

**Table 3-2 List of Sediment Quality Parameters**

| Group | Parameters |
|---|---|
| Texture | % sand, % silt, % clay, moisture content. |
| Conventional parameters | total organic carbon, total inorganic carbon, total carbon. |
| Total metals | aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, thallium, titanium, uranium, vanadium, zinc. |
| Organics | total phenolics, F1 ($C_6$-$C_{10}$) - BTEX, F1 ($C_6$-$C_{10}$), F2 ($C_{10}$-C16), F3 ($C_{16}$-$C_{34}$), F4 $C_{34}$-$C_{50}$), benzene, toluene, ethylbenzene, m- + p- xylene, o- xylene, xylenes. |

**Note:** % = percent, F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; BTEX = benzene, toluene, ethylbenzene, xylene; m- = meta; p- = para; o- = ortho.

## 3.3 Data Analysis

The water quality data are presented as median, minimum, maximum, number of data/observations and percent of data exceeded the guidelines. The results were compared to the most recent Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines (CWQG) for the protection of aquatic life (CCME 1999, with updates) and Canadian Drinking Water Quality Guidelines (CDWQ) (Health Canada 2008) as listed in Table 3-3. The latter guidelines were compared for reference only, because Area 8 will be the potable water source during the mine construction and operation.

Field blanks, travel blanks, duplicate and field split samples were compared as a part of the QA/QC program. Concentrations in field blanks and travel blanks were considered notable if they were greater than, or equal to, five times the corresponding Method Detection Limit (MDL). Differences between concentrations measured in duplicate QC water samples were considered notable if the relative percent difference (RPD) value was greater than 20% and concentrations in one or both samples were greater than, or equal to, five times the MDL. The RPD was calculated using the following formula:

RPD = (|difference in concentration between duplicate samples| / mean concentration) x 100

The number of parameters with exceedances of the assessment criteria was compared with the total number of parameters analyzed to evaluate analytical precision. Analytical precision was rated as follows:

- **high**, if less than 10% of the total number of parameters were notably different from one another;
- **moderate**, if 10% to 30% of the total number of parameters were notably different from one another; or
- **low**, if more than 30% of the total number of parameters were notably different from one another.

**Table 3-3 CCME Water Quality Guidelines for the Protection of Freshwater Life (CCME 1999) and Health Canada Drinking Water Quality Guidelines (Health Canada 2008) Used for Comparing Measured Parameters**

| Parameter | Units | Freshwater Aquatic Life | Drinking Water |
|---|---|---|---|
| **Physical Parameters** | | | |
| pH | n/a | 6.5 - 9.0 | 6.5 - 8.5 |
| Dissolved oxygen | mg/L | 6.5 | - |
| Water temperature | °C | - | 15 |
| Color | TCU | - | 15 |
| Total suspended solids | mg/L | 5[(d)] | - |
| **Major Ions** | | | |
| Chloride | mg/L | 120 | 250 |
| Cyanide | µg/L | 5 | 200 |
| Fluoride | mg/L | 0.12 | 1.5 |
| Sulphide | µg/L | - | 50 |
| Sulphate | mg/L | - | 500 |
| Total dissolved solids, calculated | mg/L | - | 500 |
| Sodium | mg/L | - | 200 |
| **Nutrients** | | | |
| Total ammonia [(a)] | mg N/L | 0.02 - 190 | - |
| Nitrate | mg N/L | 2.93 | 10 |
| Nitrite | mg N/L | 0.06 | 3.2 |

**Table 3-3 CCME Water Quality Guidelines for the Protection of Freshwater Life (CCME 1999) and Health Canada Drinking Water Quality Guideline (Health Canada 2008) Used for Comparing Measured Parameters (continued)**

| Parameter | Units | Freshwater Aquatic Life | Drinking Water |
|---|---|---|---|
| **Total Metals** | | | |
| Aluminum [(b)] | µg/L | 5 or 100 | 100 |
| Antimony | µg/L | - | 6 |
| Arsenic | µg/L | 5 | 10 |
| Barium | µg/L | - | 1,000 |
| Boron | µg/L | 1,500 | 5,000 |
| Cadmium [(c)] | µg/L | 0.003 | 5 |
| Chromium | µg/L | 1 | 50 |
| Copper [(c)] | µg/L | 2 | 1,000 |
| Iron | µg/L | 300 | 300 |
| Lead [(c)] | µg/L | 1 | 10 |
| Manganese | µg/L | - | 50 |
| Mercury | µg/L | 0.026 | 1 |
| Molybdenum | µg/L | 73 | - |
| Nickel [(c)] | µg/L | 25 | - |
| Selenium | µg/L | 1 | 10 |
| Silver | µg/L | 0.1 | - |
| Thallium | µg/L | 0.8 | - |
| Uranium | µg/L | 15 | 20 |
| Zinc | µg/L | 30 | 5,000 |
| **Volatile Organics** | | | |
| Benzene | µg/L | 370 | 5 |
| Ethylbenzene | µg/L | 90 | 2.4 |
| Toluene | µg/L | 2 | 24 |
| Xylenes | µg/L | - | 300 |

**Note:** n/a = not applicable; mg/L = milligrams per litre; °C = degrees Celsius; TCU = true color units; µg/L = micrograms per litre; mg N/L = milligrams nitrogen per litre; - = no guideline, CCME = Canadian Council of the Ministers of Environment.

(a) Guideline dependent on water temperature and pH.

(b) Guideline dependent on pH.

(c) Guideline was calculated using a hardness of 6.5 mg/L.

(d) Guideline indicates maximum average increase from background for longer term exposures.

Sediment quality data were compared to the CCME freshwater Interim Sediment Quality Guidelines (ISQG) for the protection of aquatic life (CCME 2002) as presented in Table 3-4. Differences between concentrations measured in duplicate or split sediment QC samples were considered notable if the RPD value was greater than 20% and concentrations in one or both samples were greater than, or equal to, five times the MDL.

**Table 3-4 CCME Interim Sediment Quality Guidelines (CCME 2002) Used for Comparing Measured Parameters**

| Parameter | Units | ISQG | PEL |
|---|---|---|---|
| Arsenic | mg/kg | 5.9 | 17 |
| Cadmium | mg/kg | 0.6 | 3.5 |
| Chromium | mg/kg | 37.3 | 90 |
| Copper | mg/kg | 35.7 | 197 |
| Lead | mg/kg | 35 | 91.3 |
| Mercury | mg/kg | 0.17 | 0.486 |
| Zinc | mg/kg | 123 | 315 |

**Note:** ISQG = interim sediment quality guideline; PEL = probable effects level; mg/kg = milligrams per kilogram

# 4.0 RESULTS

## 4.1 Freshet Monitoring

### 4.1.1 In Situ Water Quality Monitoring

The YSI in situ field monitoring results and laboratory results of grab samples collected during the deployment and retrieval of the YSI 6600s in Kennady Lake Area 8 and Lake I1 are compared in Tables 4-1 and 4-2. The trends of hourly monitored YSI water quality parameters collected between May and July 2011 in the same lakes are depicted in Figure 4-1 and Figure 4-2, respectively (raw data in Appendix A, Table A-3).

#### Turbidity and Total Suspended Solids (TSS)

Laboratory results detected turbidity levels ranging from 0.1 to 0.2 NTU at YSI deployment and from 0.3 to 1.0 NTU at recovery. However, YSI sensors for turbidity were not sensitive enough to reliably measure field turbidity at the lower end of the turbidity scale. (Tables 4-1 and 4-2).

#### Specific Conductivity and pH

Laboratory and in situ YSI monitoring results were generally consistent for conductivity and pH levels at both locations during deployment and recovery of the YSI. The overall results indicated a slightly acidic pH at both locations throughout the freshet period (Tables 4-1 and 4-2).

Hourly monitored data in Kennady Lake Area 8 and Lake I1 indicated that conductivity was higher and pH was lower during under-ice conditions than during the period of the freshet flows (Figures 4-1 and 4-2). The under-ice pH levels in both locations were below the CCME water quality guidelines for the protection of freshwater life. However, with the onset of freshet flows from June 11$^{th}$ (based on water level information from local streams), conductivity and pH stabilized until the end of the study period. The lower under-ice pH values at both monitoring locations during ice-covered conditions are typical of northern lakes. Higher relative respiration activity in winter elevate carbon dioxide concentrations which results in decreased pH. The magnitude of this decrease is depended on the rate of respiration and the buffering capacity of the water. Exclusion of major ions from ice formation in both lakes likely contributed to the higher specific conductivity measured during this period.

#### Temperature and Dissolved Oxygen (DO)

The water temperature in Kennady Lake Area 8 and Lake I1 remained below 5°C until June 15, thereafter increased sharply (around 15°C) within a week (Figures 4-1 and 4-2). In mid-July, temperatures at both locations reached upwards to 20°C. Temperature changes through the water column study period were also obtained from the Tidbit temperature loggers. Tidbit data were not recorded in Lake I1 due to battery failure. However, the temperature data recorded in Kennady Lake Area 8 during the freshet period are presented in Figure 4-3 (Appendix A, Table A-4 for raw data). The results indicate that no notable thermal stratification occurred in Kennady Lake Area 8 except for a slight depth variation in temperature (approximately 1.5°C) during the transitional period. The temperature trends were generally consistent with the YSI recorded data.

During the end of under-ice conditions (in May), DO concentrations in Kennady Lake Area 8 were below the lower CCME water quality guidelines for the protection of freshwater life (i.e., 6.5 mg/L, which is applicable to other stages of life history than early stage). This is likely associated with the winter oxygen depletion rates

under ice due to decomposition of organic matter and respiration of aquatic life; atmospheric mixing and in situ production of oxygen are minimal because of ice-cover at the lake surface. However, DO levels in Lake I1 were over-saturated even during the under-ice conditions, which could suggest that there was some early ice-melt flows through the lake in advance of the freshet.

**Table 4-1 Laboratory and YSI Continual Monitoring Results in Kennady Lake Area 8 and Lake I1 at YSI Deployment during May 2011**

| Parameter | Units | Kennady Lake Area 8 | | | Lake I1 | | |
|---|---|---|---|---|---|---|---|
| | | Lab Results | | YSI Monitoring Results | Lab Results | | YSI Monitoring Results |
| | | Area 8-2A (Surface) | Area 8-3 (Bottom) | Area 8 | Lake I1-3 (Surface) | Lake I1-6 (Bottom) | Lake I1 |
| | | 18-May | 18-May | 18-May | 18-May | 18-May | 18-May |
| Turbidity | NTU | 0.2 | 0.2 | <MDL | 0.2 | 0.1 | <MDL |
| Total suspended solids | mg/L | <1 | <1 | - | <1 | <1 | - |
| Specific conductivity | µS/cm | 17 | 25 | 26 | 14 | 18 | 16 |
| pH | n/a | 6.48 | 6.58 | 5.80 | 6.34 | 6.46 | 6.10 |

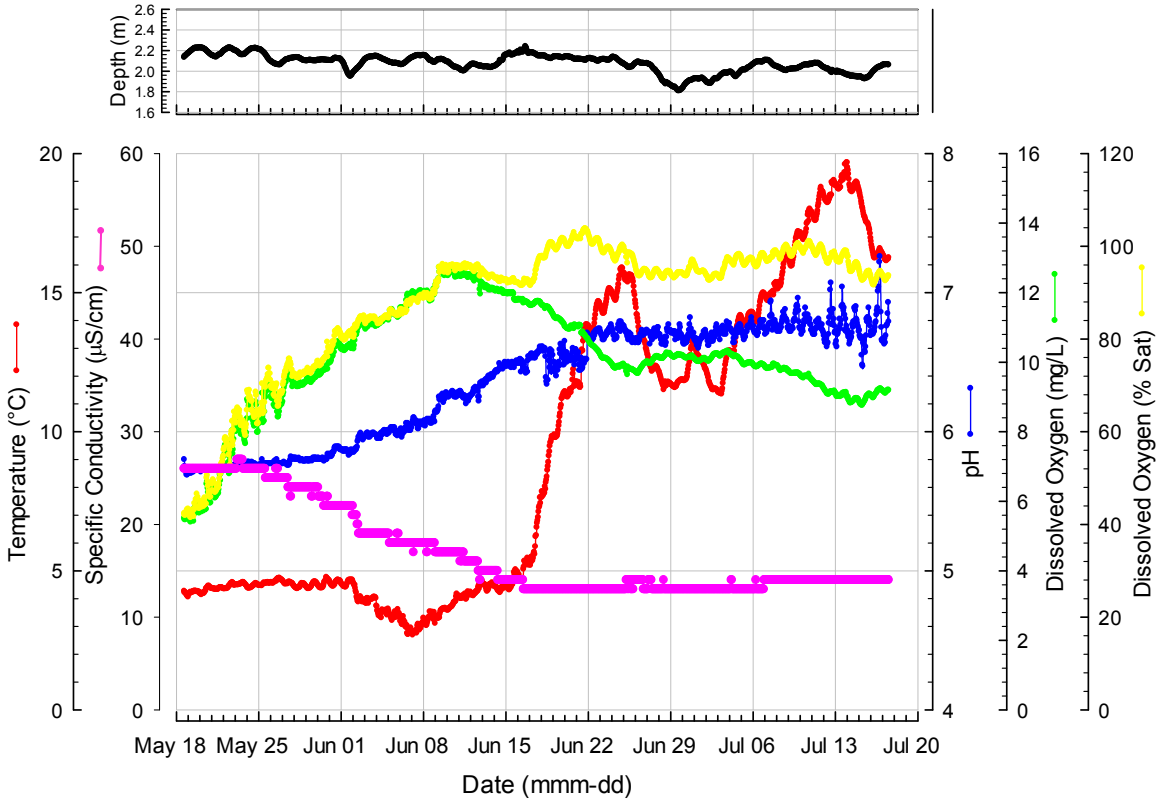
**Note:** NTU = Nephelometric turbidity units; MDL = method detection limit; < = less than; mg/L = milligrams per litre; - = not determined; µS/cm = micro Siemens per centimetre; n/a = not applicable.

**Table 4-2 Laboratory and YSI Continual Monitoring Results in Kennady Lake Area 8 and Lake I1 at YSI Recovery during July 2011**

| Parameter | Units | Kennady Lake Area 8 | | | Lake I1 | | |
|---|---|---|---|---|---|---|---|
| | | Lab Results | | YSI Monitoring Results | Lab Results | | YSI Monitoring Results |
| | | Area 8 (<1 m) (Surface) | Area 8 (Bottom) | Area 8 | I1 (<1 m) (Surface) | I1 (Bottom) | Lake I1 |
| | | 17-July | 17-July | 17-July | 17-July | 17-July | 17-July |
| Turbidity | NTU | 0.5 | 0.3 | <MDL | 1 | 0.4 | <MDL |
| Total suspended solids | mg/L | <1 | <1 | - | <1 | <1 | - |
| Specific conductivity | µS/cm | 14 | 14 | 14 | 11 | 10 | 11 |
| pH | n/a | 7.05 | 6.98 | 6.80 | 6.80 | 6.78 | 6.5 |

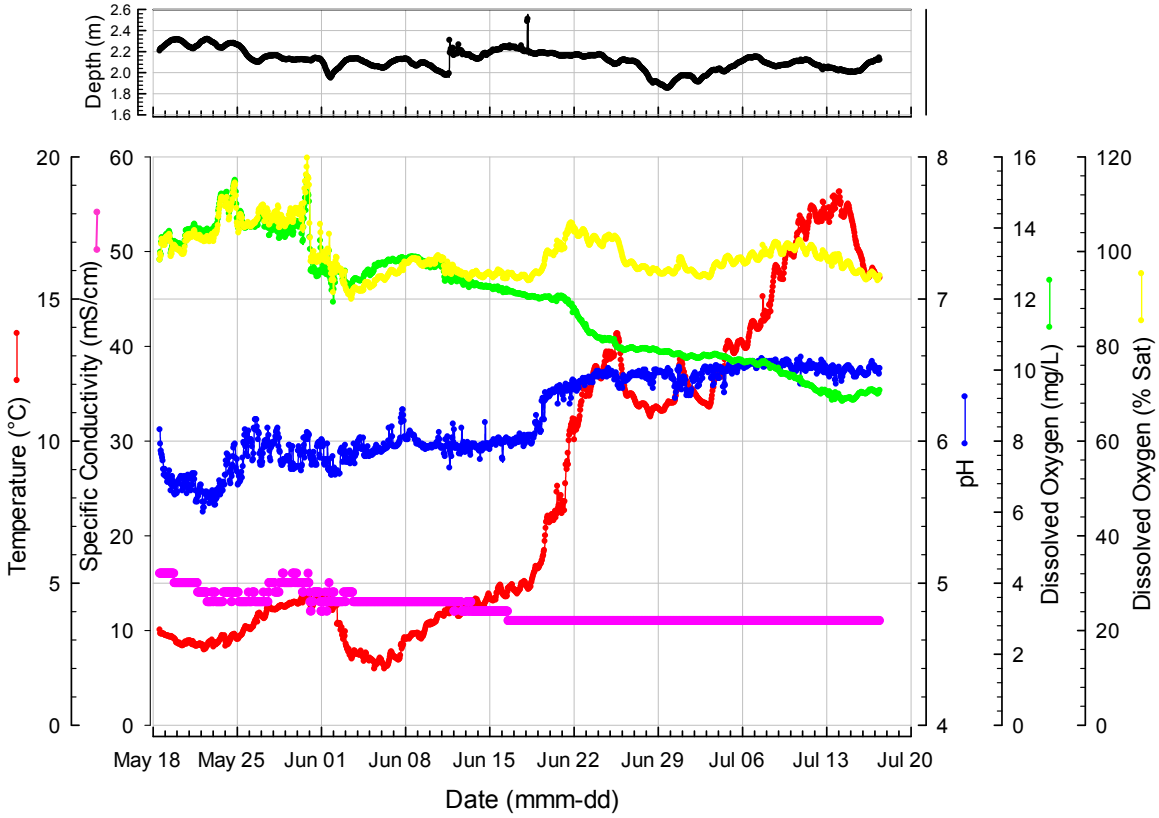
**Note:** NTU = Nephelometric turbidity units; MDL = method detection limit; < = less than; mg/L = milligrams per litre; - = not determined; µS/cm = micro Siemens per centimetre; n/a = not applicable.

*Figure 4-1 Continual Monitoring of Water Quality Trends in Kennady Lake Area 8 during May to July, 2011*



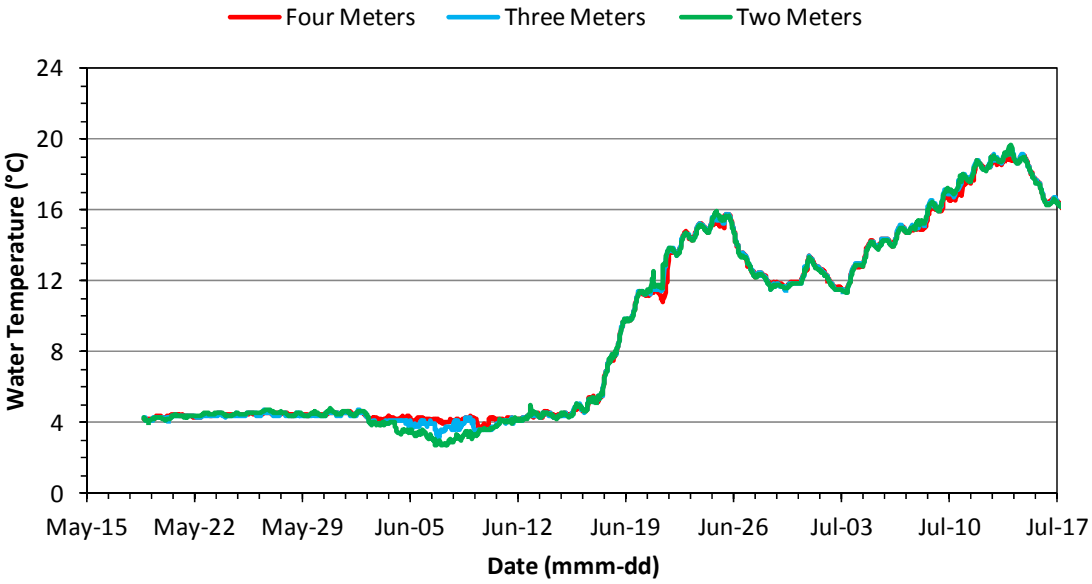

**Note**: m = meters; °C = degrees Celsius; µS/cm = micro Siemens per centimetre; mg/L = milligrams per litre; % Sat = percent saturation; mmm-dd = date where m is month and d is day.

*Figure 4-2 Continual Monitoring of Water Quality Trends in Lake I1 during May to July, 2011*




**Note:** m = meters; °C = degrees Celsius; µS/cm = micro Siemens per centimetre; mg/L = milligrams per litre; % Sat = percent saturation; mmm-dd = Date where m is month and d is day.

*Figure 4-3 Temporal and Vertical Temperature Changes in Kennady Lake Area 8 during May to July 2011*




**Note**: mmm-dd = date where m is month and d is day; °C = degrees Celsius.

### 4.1.2 Lake Outlets during Peak Freshet

Water quality samples were collected opportunistically from the main outlets of 11 lakes within the LSA during peak water levels in June associated with the latter part of the freshet period and tested for conventional parameters, major ions and total metals. The results are summarized in Table 4-3 and raw data presented in Appendix A (Table A-5).

#### Conventional Parameters

The pH levels were in slightly acidic and were lower than CCME water quality guidelines for the protection of aquatic life and drinking water quality guidelines at all sampling locations. Specific conductivity ranged from 10 to 19 µS/cm, with the highest specific conductivity being recorded in Lake J1b. Total alkalinity and hardness ranged from 2.1 to 6 mg/L and 3.4 to 6.2 mg/L, respectively. TSS levels ranged from <1 to 2 mg/L, with the highest value recorded in Lakes I1, I2, N14 and D2.

#### Major Ions and nutrients

The dominant cations were calcium and magnesium, whereas the dominant anion was bicarbonate. Nitrate concentrations ranged from below the detection limit (0.003 mg/L) to 0.004 mg N/L. Nitrite concentrations were below the detection limit (0.003 mg N/L) in all locations. Phosphorus was not analysed in the freshet samples.

#### Metals

Of the 24 total metals measured, 13 were measured below the detection limit in all locations (i.e., antimony, barium, beryllium, boron, cobalt, lead, lithium, molybdenum, selenium, silver, thallium, uranium and vanadium). Total metals concentrations that were higher than the guidelines included aluminum, cadmium, chromium and

iron, of which aluminum and cadmium exceeded the guidelines at all 11 locations; chromium and iron were measured above the guidelines only in two locations (i.e., lakes J1b and E1 for chromium and lakes F1 and B2 for iron). These measured guideline exceedences are consistent with the previous baseline data (see Annex I of the 2010 EIS [De Beers 2010]).

## 4.2 2011 Baseline Water Quality

Water quality parameters during both under-ice and open-water conditions are summarised in Table 4-4 for Kennady Lake Areas, Table 4-5 for Downstream Lakes and Table 4-6 for Reference Lakes. Detailed water quality data are provided in Appendix A: Table A-6 for April field profile data, Table A-7 for July field profile data, Table A-8 for April field and laboratory data and Table A-9 for July field and laboratory data.

### 4.2.1 Kennady Lake Areas

#### Field Data / Conventional Parameters

The conventional water quality parameters in Kennady Lake Areas that were measured above CCME water quality guidelines for the protection of freshwater life or Health Canada drinking water quality guidelines included field-measured pH and DO, and colour; however, laboratory measurements of pH did not exceed the guidelines. Field data for pH are likely more reliable than laboratory data due to hold time requirements as field data are measured immediately. The laboratory analysis of pH exceeded the hold time for all locations.

TSS levels were mostly below the analytical detection limit. Turbidity levels ranged from <0.1 to 0.9 NTU during under-ice conditions and 0.1 to 4.9 NTU during open-water conditions.

Dissolved oxygen profiles in different depths of Kennady Lake Areas in under-ice and open-water conditions are presented in Figure 4-4 and Figure 4-5, respectively. Most locations demonstrated decreasing DO concentrations as the lake depth increased during under-ice conditions. In contrast, atmospheric wind and water column mixing during open-water conditions in the same lakes resulted in homogenous concentrations throughout the water column. The same pattern was observed in these lakes prior to 2011 (De Beers 2010).

Water temperature profiles in different Areas of Kennady Lake are depicted in Figure 4-6 for under-ice condition and Figure 4-7 for open-water condition. Temperatures ranged between 0°C and 4°C during under-ice condition and 12°C and 17°C during open water condition depending on lake depth. A slight temperature gradient was observed at below 8 m depth in Kennady Lake (e.g., Area 6 and Area 8) during open-water conditions. The results are consistent with the previous baseline monitoring programs (Annex I and Addendum II of De Beers 2010).

#### Major Ions and Nutrients

Carbonate, hydroxide and sulphate were below the detection limit at all locations in both the seasons. Calcium, magnesium and sodium were dominant cations, whereas only bicarbonate was the dominant anion. The TP concentrations ranged from <0.001 to 0.013 mg/L (with a median concentration 0.002, n =16) during under-ice and from 0.001 to 0.016 mg/L (with a median concentration 0.004, n = 22) during open-water conditions. Chlorophyll *a* concentrations measured in open-water season ranged from <0.5 to 8.0 µg/L (with a median concentration 1.4 µg/L, n = 20). Both TP and chlorophyll *a* measured in 2011 characterize Kennady Lake as an

oligotrophic Lake (OECD 1982). The results are consistent with the previous baseline monitoring programs (Annex I and Addendum II, and Annex J of De Beers 2010).

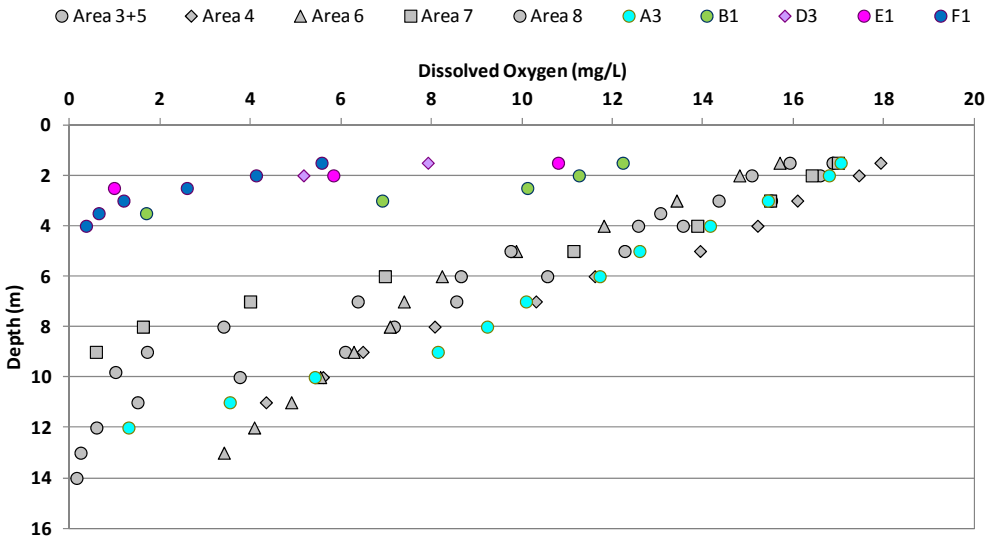
## Metals

Of the 30 total metal parameters measured, three metals were measured below the detection limit during under-ice conditions (i.e., beryllium, chromium and mercury) and six metals were measured below the detection limit during open-water conditions (i.e, bismuth, boron, selenium, silver, sulphur and zirconium). The total metals that were measured above CCME water quality or Health Canada drinking water guidelines included aluminum, cadmium, iron and manganese (Table 4-4). Under-ice data had a greater number of measured metals concentrations above guidelines than open-water data.

## Organics

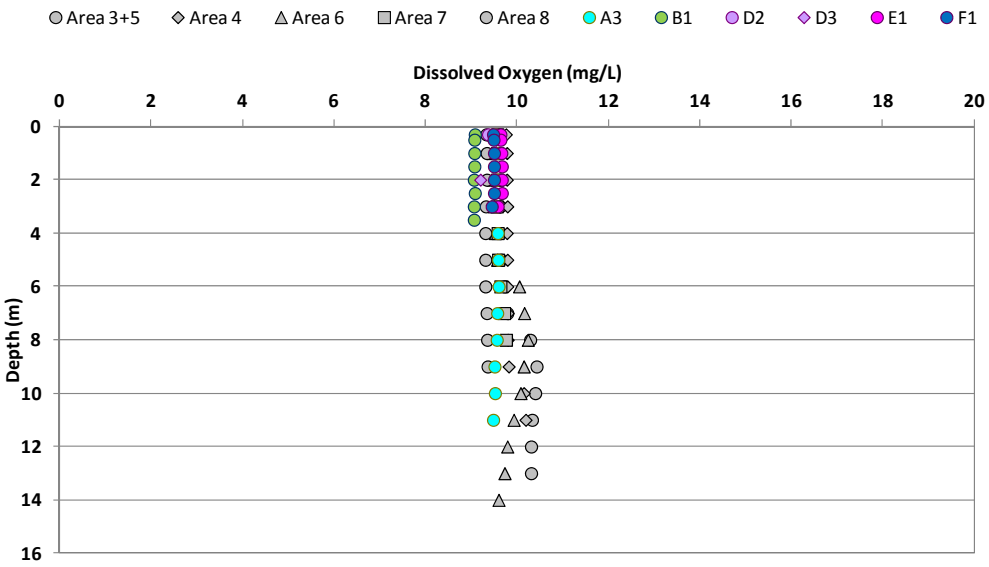
All measured concentrations of organic parameters were below the detection limit during both under-ice and open-water conditions.

*Figure 4-4 Dissolved Oxygen Profile during Under-Ice Conditions in the Kennady Lake Areas*



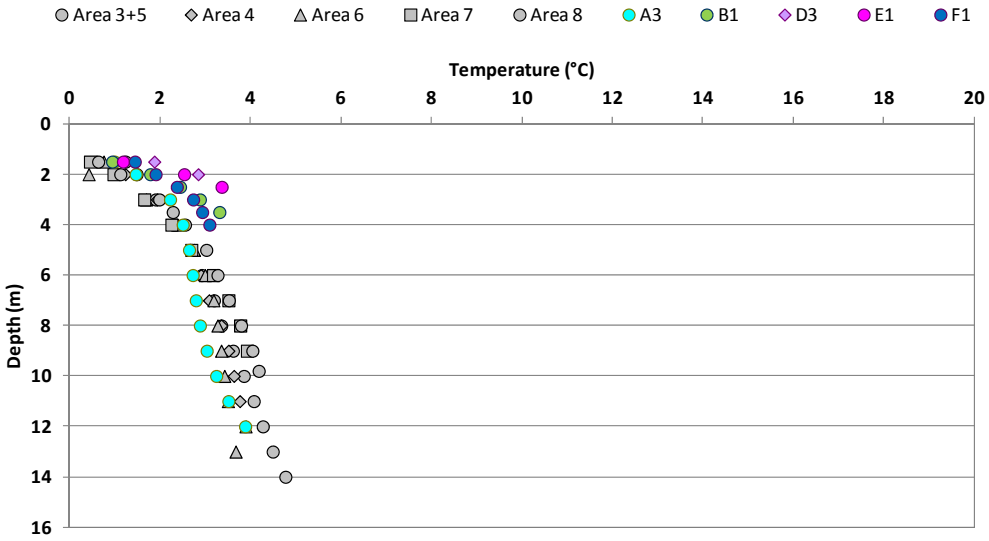

**Note:** m = meters, mg/L = milligrams per litre.

*Figure 4-5 Dissolved Oxygen Profile during Open-Water Conditions in the Kennady Lake Areas*



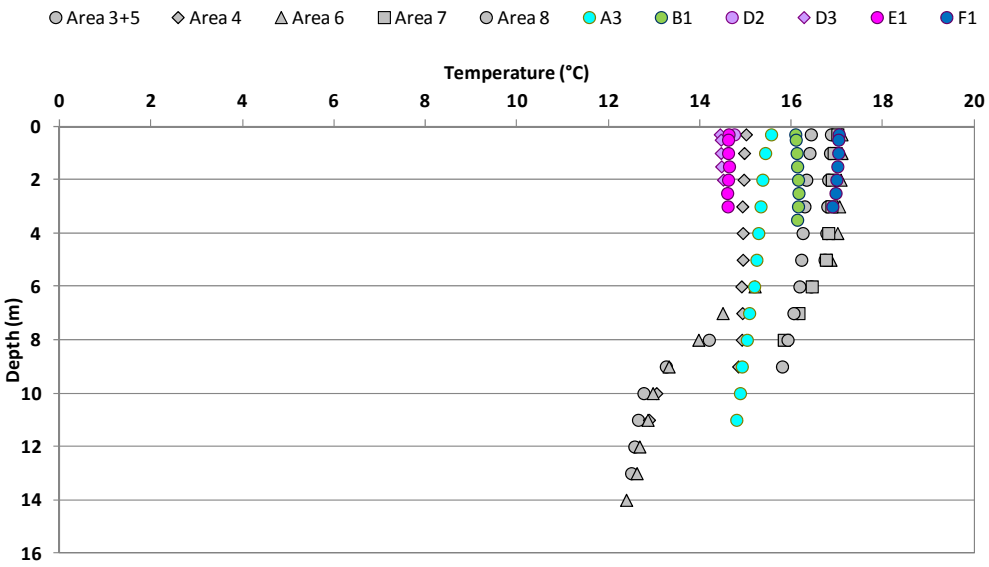

**Note:** m = meters, mg/L = milligrams per litre.

*Figure 4-6 Water Temperature Profile during Under-Ice Conditions in the Kennady Lake Areas*




**Note:** m = meters, ° C = degree Celsius.

*Figure 4-7 Water Temperature Profile during Open-Water Conditions in the Kennady Lake Areas*




**Note:** m = meters, ° C = degree Celsius.

### 4.2.2 Downstream Lakes

#### Field Data / Conventional Parameters

Field measured pH ranged from 5.8 to 6.9, with a large proportion of the pH values being higher than CCME water quality guidelines for the protection of freshwater life and drinking water guidelines during both under-ice and open-water conditions. Field measured DO concentrations during under-ice conditions (range 1.8 to 17.2 mg/L) indicated that DO in the water column could drop below the lower bound CCME guidelines for the protection of freshwater life. Colour was measured above the Health Canada drinking water guidelines (up to 20 TCU) during open-water conditions.

Turbidity ranged from 0.1 to 0.4 NTU during under-ice conditions and from 0.1 to 0.9 NTU during open-water conditions. The TSS concentrations were <1.0 to 2.0 mg/L during under-ice conditions and <1.0 to 3.0 mg/L during open-water conditions. There was very little particulate matter in the water column during freshet or open-water conditions.

DO profiles in downstream lakes in both under-ice and open-water conditions are presented in Figure 4-8 and Figure 4-9. Similar to Kennady Lake Areas, most downstream locations demonstrated reduced DO concentrations in the bottom extent of the water column during under-ice conditions and homogenous saturated DO concentrations during open-water conditions. Temperature profiles also followed the same trends as Kennady Lakes Areas (Figure 4-10 and Figure 4-11).

#### Major Ions and Nutrients

The dominant cations included calcium, potassium and sodium and the dominant anion included only bicarbonate. TP concentrations ranged from <0.001 to 0.01 mg/L in under-ice conditions and 0.002 to

0.009 mg/L in open-water conditions. Chlorophyll *a* in open-water conditions ranged from below the detection limit (<0.5 µg/L) to 3.8 µg/L (median 1.4 µg/L, n = 21).

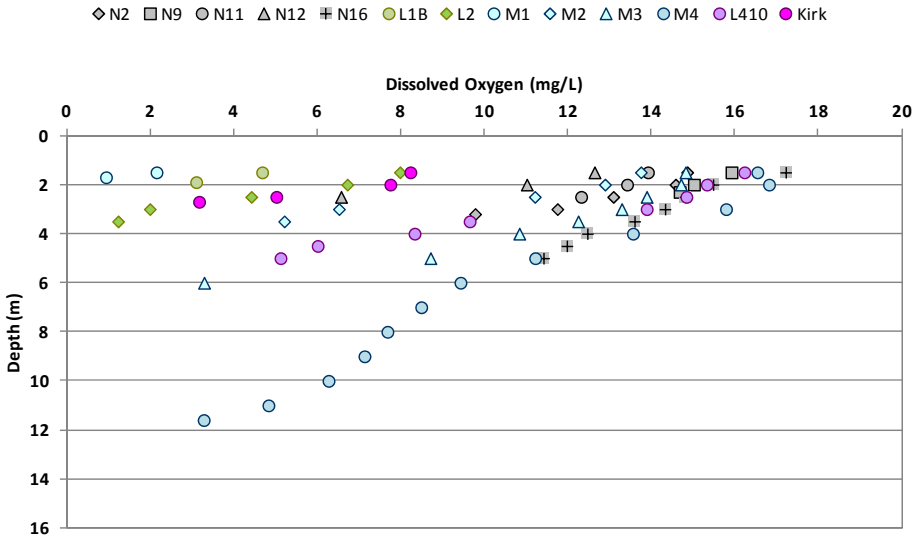
## Metals

Six metal parameters were measured below the detection limit in both under-ice and open-water conditions (i.e., beryllium, selenium, sulphur, titanium, vanadium and zirconium). The total metals that were measured higher than CCME water quality guidelines in both seasons included aluminum and cadmium, whereas copper was measured above guidelines during under-ice conditions. Measured concentrations of manganese and mercury were also higher than Health Canada drinking water guidelines once during under-ice and open-water conditions, respectively (Table 4-5).

## Organics

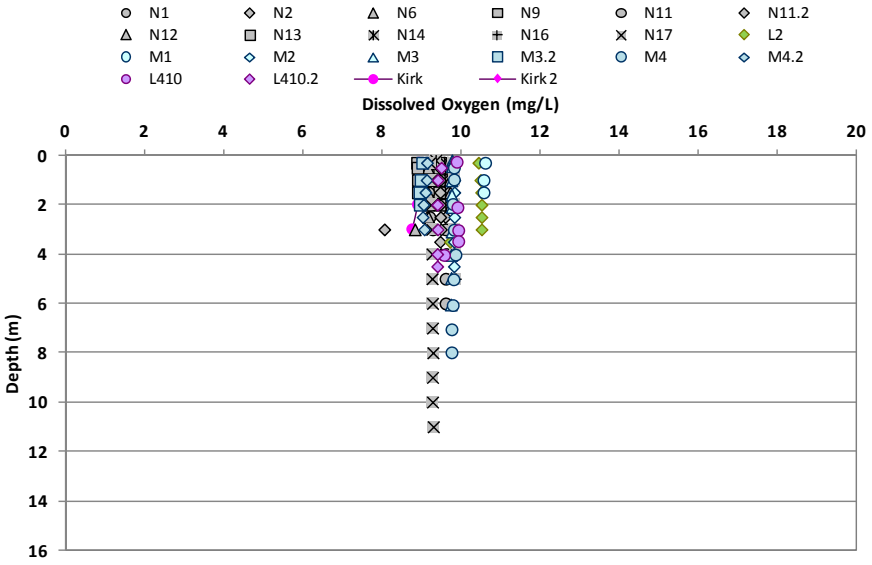
All organic parameters were measured below the analytical detection limits.

*Figure 4-8 Dissolved Oxygen Profile during Under-Ice Conditions in the Downstream Lakes*



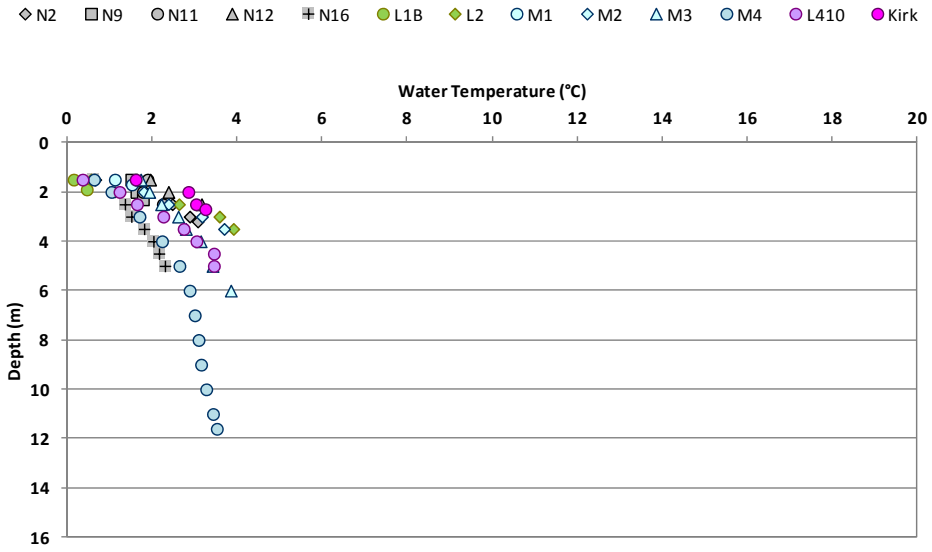

**Note:** m = meters, mg/L = milligrams per litre.

*Figure 4-9 Dissolved Oxygen Profile during Open-Water Conditions in the Downstream Lakes*



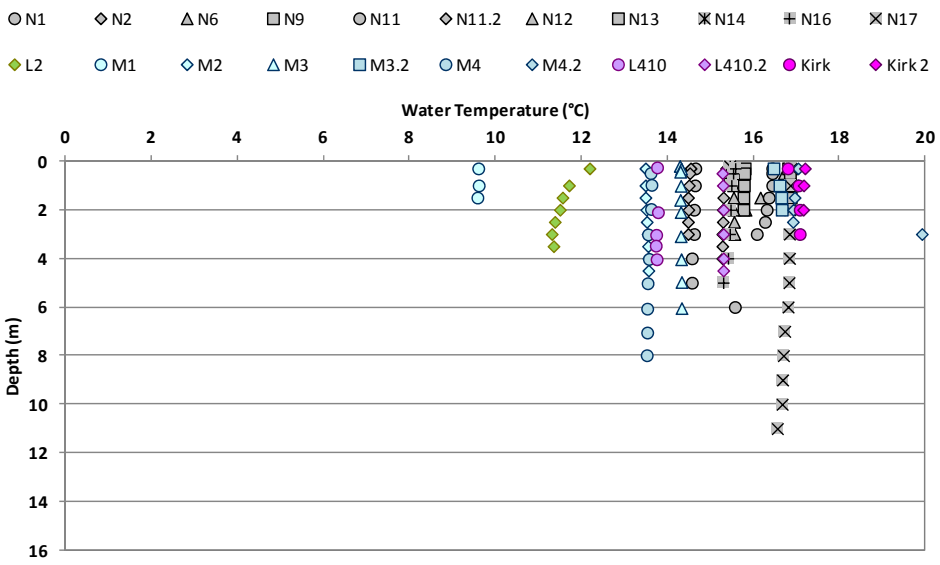

**Note:** m = meters, mg/L = milligrams per litre.

*Figure 4-10 Water Temperature Profile during Under-Ice Conditions in the Downstream Lakes*




**Note:** m = meters, ° C = degree Celsius.

*Figure 4-11 Water Temperature Profile during Open-Water Conditions in the Downstream Lakes*




**Note:** m = meters, ° C = degree Celsius.

### 4.2.3 Reference Lakes

#### Field Data / Conventional Parameters

Among the conventional water quality parameters, both field and laboratory measured pH were below the CCME water quality guidelines for the protection of freshwater life during under-ice conditions. TSS was not detected during both seasonal conditions and turbidity was below the detection limit during under-ice conditions at both locations. Turbidity levels in open-water conditions ranged from 0.2 to 0.3 NTU.

DO profiles in the Reference Lakes were slightly different compared to those measured in the Kennady Lake Areas and the Downstream Lakes. DO concentrations were always above the lower bound CCME water quality guidelines during under-ice conditions. Water column DO concentrations ranged from 8.2 to 16.6 mg/L during under-ice conditions and 9.5 to 9.9 mg/L during open-water conditions (Figure 4-12 and Figure 4-13). The lower limit of DO in under-ice conditions (8.2 mg/L) in the Reference Lakes was much higher than the minimum recorded DO in both Kennady Lake Areas (0.2 mg/L) and the Downstream Lakes (1.8 mg/L).

Water temperature profiles in two reference lakes are shown in Figure 4-14 for under-ice conditions and Figure 4-15 for open-water conditions. In the shallow reference lake, Lake X6, temperature ranged from 1 to 4°C during under-ice conditions and was approximately 16°C throughout the water column during open water conditions. In the relatively deeper East Lake, temperature ranged between 2 to 3°C during under-ice conditions and was approximately 14°C through the water column during open water conditions.

## Major Ions and Nutrients

Carbonate, chloride, fluoride, hydroxide, sulphate and sulphide were measured below the detection limit at all locations during both under-ice and open-water conditions in the two Reference Lakes. Calcium and bicarbonate were the dominant cation and anion, respectively. TP concentrations were very low in the reference lakes, ranging from <0.001 to 0.001 mg/L in under-ice conditions and 0.003 mg/L in open-water conditions. Chlorophyll *a* concentrations in samples collected from the Reference Lakes, measured in open-water season were 0.7 µg/L. The low concentrations for these parameters indicated that the trophic status of the reference lakes was ultra-oligotrophic (OECD 1982).

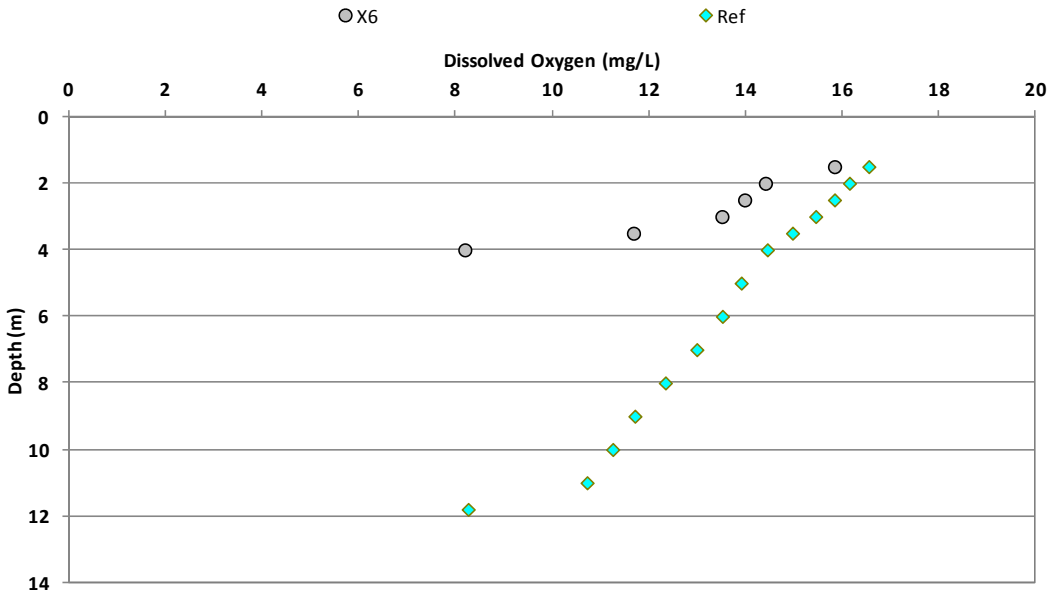
## Metals

Of the 30 total metal parameters measured, 14 were below the detection limit in both under-ice and open-water conditions (i.e., antimony, beryllium, bismuth, chromium, mercury, selenium, silicon, silver, sulphur, thallium, tin, titanium, vanadium and zirconium). Cadmium was measured at concentrations that were higher than the CCME water quality guidelines for the protection of freshwater life during under-ice conditions (Table 4-6).

## Organics

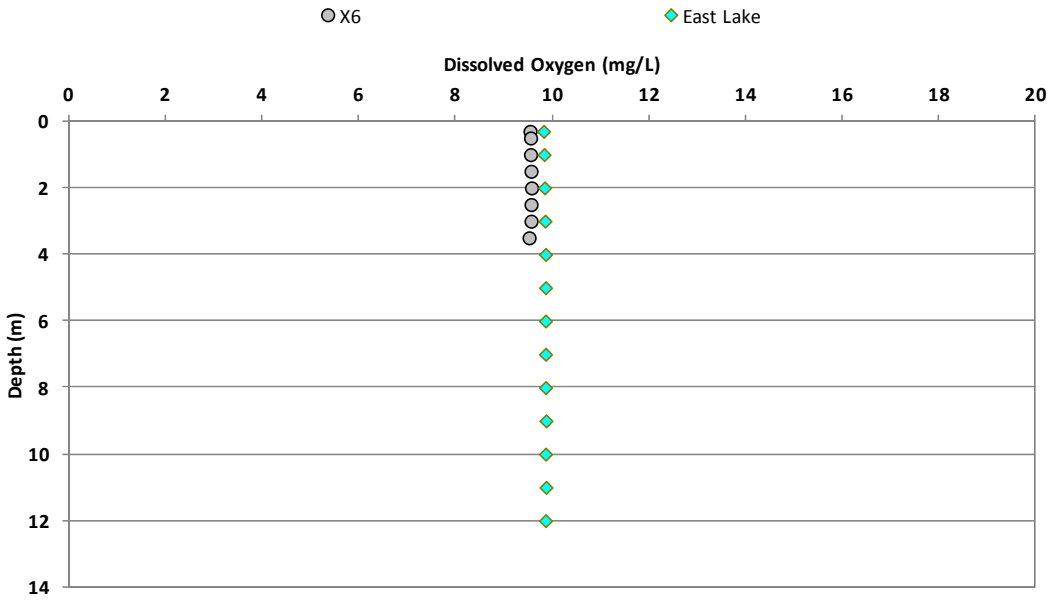
All organic parameters were measured below the detection limit at both reference lakes in both under-ice and open-water conditions.

*Figure 4-12 Dissolved Oxygen Profile during Under-Ice Conditions in the Reference Lakes*



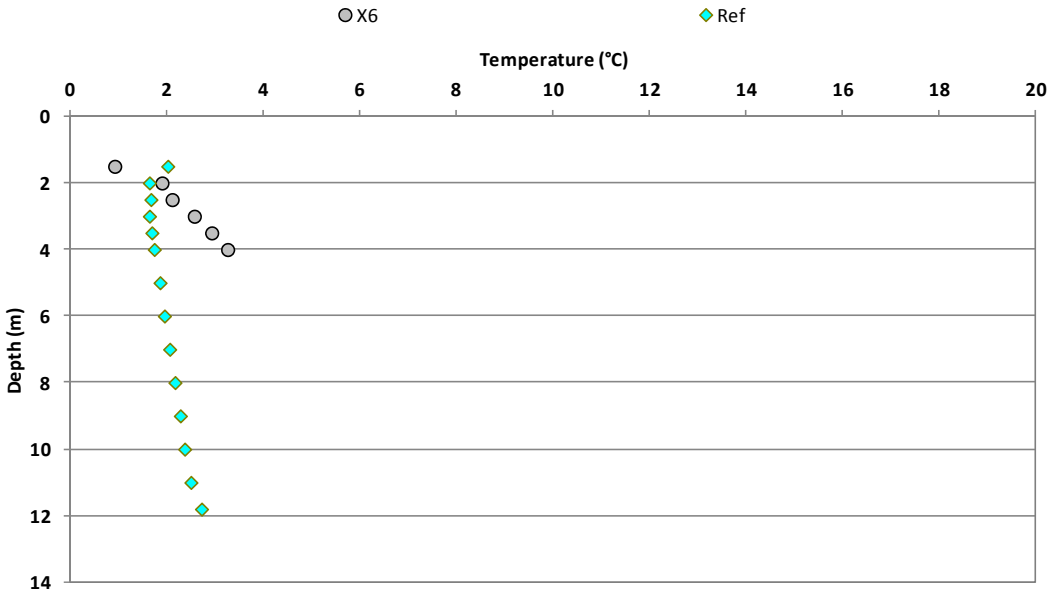

**Note:** m = meters, mg/L = milligrams per litre.

*Figure 4-13 Dissolved Oxygen Profile during Open-Water Conditions in the Reference Lakes*



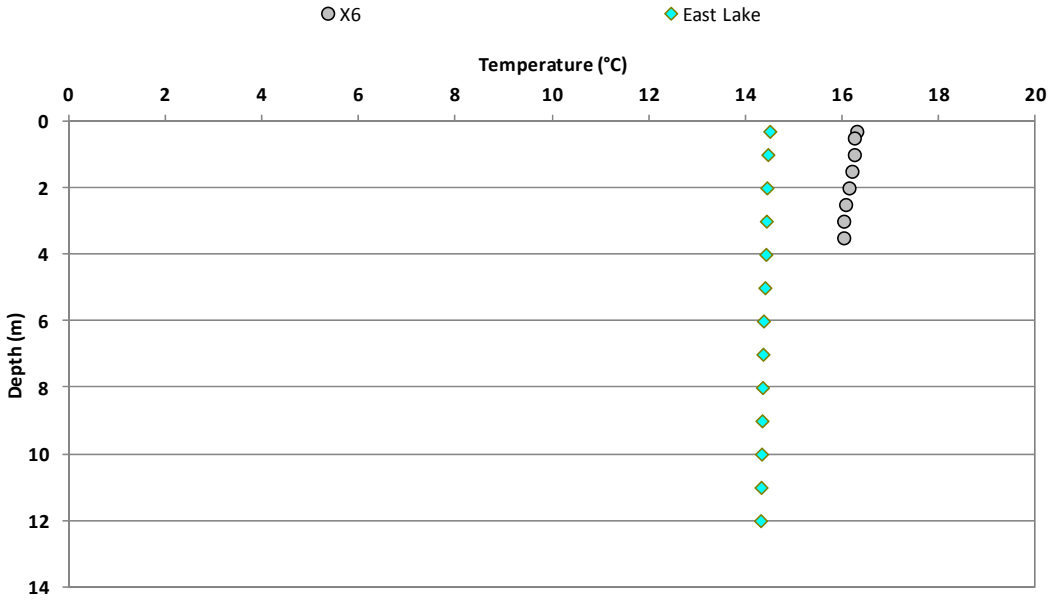

**Note:** m = meters, mg/L = milligrams per litre.

*Figure 4-14 Water Temperature Profile during Under-Ice Conditions in the Reference Lakes*




**Note:** m = meters, ° C = degree Celsius.

*Figure 4-15 Water Temperature Profile during Open-Water Conditions in the Reference Lakes*




**Note:** m = meters, ° C = degree Celsius.

**Table 4-3 Freshet Water Quality Summary for the Lake Outlets during June 2011**

| Parameter | Units | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(a)] |
|---|---|---|---|---|---|---|---|
| **Conventional Parameters** | | | | | | | |
| pH | n/a | 11 | 6.27 | 6.2 | 6.39 | 100 | 100 |
| Conductivity | µS/cm | 11 | 13 | 10 | 19 | - | - |
| Hardness | mg/L | 11 | 4.4 | 3.4 | 6.2 | - | - |
| Total alkalinity | mg/L | 11 | 3.1 | 2.1 | 6 | - | - |
| Total dissolved solids, calculated | mg/L | 11 | <10 | <10 | <10 | - | - |
| Total suspended solids | mg/L | 11 | 1 | <1 | 2 | - | - |
| **Major Ions** | | | | | | | |
| Bicarbonate | mg/L | 11 | 3.8 | 2.5 | 7.4 | - | - |
| Calcium | mg/L | 11 | 1 | 0.8 | 1.5 | - | - |
| Carbonate | mg/L | 11 | <0.5 | <0.5 | <0.5 | - | - |
| Chloride | mg/L | 11 | <1 | <1 | 1 | - | - |
| Hydroxide | mg/L | 11 | <0.5 | <0.5 | <0.5 | - | - |
| Magnesium | mg/L | 11 | 0.4 | 0.3 | 0.6 | - | - |
| Potassium | mg/L | 11 | 0.3 | <0.3 | 0.5 | - | - |
| Sodium | mg/L | 11 | <0.5 | <0.5 | 0.9 | - | - |
| Sulphate | mg/L | 11 | <1 | <1 | <1 | - | - |

**Table 4-3 Freshet Water Quality Summary for the Lake Outlets during June 2011 (continued)**

| Parameter | Units | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines [(a)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines [(a)] |
|---|---|---|---|---|---|---|---|
| **Nutrients** | | | | | | | |
| Nitrate+ Nitrite | mg N/L | 11 | <0.003 | <0.003 | 0.004 | - | - |
| Nitrate | mg N/L | 11 | <0.003 | <0.003 | 0.004 | - | - |
| Nitrite | mg N/L | 11 | <0.003 | <0.003 | <0.003 | - | - |
| **Total Metals** | | | | | | | |
| Aluminum | mg/L | 11 | 0.041 | 0.019 | 0.066 | 100 | - |
| Antimony | mg/L | 11 | <0.0006 | <0.0006 | <0.0006 | - | - |
| Arsenic | mg/L | 11 | 0.0007 | 0.0006 | 0.0008 | - | - |
| Barium | mg/L | 11 | <0.01 | <0.01 | <0.01 | - | - |
| Beryllium | mg/L | 11 | <0.001 | <0.001 | <0.001 | - | - |
| Boron | mg/L | 11 | <0.02 | <0.02 | <0.02 | - | - |
| Cadmium | µg/L | 11 | 0.014 | 0.005 | 0.038 | 100 | - |
| Chromium | mg/L | 11 | 0.001 | <0.001 | 0.002 | 18 | - |
| Cobalt | mg/L | 11 | <0.0003 | <0.0003 | <0.0003 | - | - |
| Copper | mg/L | 11 | 0.0008 | 0.0006 | 0.001 | - | - |
| Iron | mg/L | 11 | 0.23 | 0.07 | 0.97 | 18 | 18 |
| Lead | mg/L | 11 | <0.0002 | <0.0002 | <0.0002 | - | - |
| Lithium | mg/L | 11 | <0.02 | <0.02 | <0.02 | - | - |
| Manganese | mg/L | 11 | 0.006 | <0.004 | 0.009 | - | - |
| Molybdenum | mg/L | 11 | <0.0002 | <0.0002 | <0.0002 | - | - |
| Nickel | mg/L | 11 | 0.0012 | 0.0009 | 0.0025 | - | - |
| Selenium | mg/L | 11 | <0.0002 | <0.0002 | <0.0002 | - | - |
| Silver | mg/L | 11 | <0.0001 | <0.0001 | <0.0001 | - | - |
| Sodium | mg/L | 11 | 0.5 | <0.5 | 0.7 | - | - |
| Strontium | mg/L | 11 | <0.02 | <0.02 | <0.02 | - | - |
| Thallium | mg/L | 11 | <0.0002 | <0.0002 | <0.0002 | - | - |
| Titanium | mg/L | 11 | <0.001 | <0.001 | 0.001 | - | - |
| Uranium | mg/L | 11 | <0.0001 | <0.0001 | <0.0001 | - | - |
| Vanadium | mg/L | 11 | <0.001 | <0.001 | <0.001 | - | - |
| Zinc | mg/L | 11 | <0.003 | <0.003 | 0.006 | - | - |
| **Dissolved Metals** | | | | | | | |
| Iron | mg/L | 11 | 0.07 | <0.06 | 0.6 | - | - |
| Manganese | mg/L | 11 | <0.004 | <0.004 | 0.008 | - | - |

**Note:** n = number of samples; n/a = not applicable; µS/cm = micro Siemens per centimetre; mg/L = milligrams per litre; µg/L = micrograms per litre; % = percent; < = less than; - = no information.

(a) = percent represents only the proportion of total samples which exceeded the guideline values.

**Table 4-4 Water Quality Summary for the Kennady Lake Areas during Under-Ice (April) and Open-Water (July/August) Conditions**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[b] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[b] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[b] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[b] |
| **Field Data[a]** | | | | | | | | | | | | | |
| pH | n/a | 6.2 | 5.7 | 6.7 | 87 | 86 | 86 | 6.6 | 6.3 | 6.8 | 157 | 19 | 19 |
| Specific conductivity | µS/cm | 19 | 13 | 134 | 87 | - | - | 13 | 9 | 16 | 157 | - | - |
| Temperature | °C | 2.9 | 0.4 | 4.8 | 87 | - | - | 14.6 | 12.2 | 17.1 | 157 | - | - |
| Dissolved oxygen | mg/L | 8.2 | 0.2 | 17.9 | 87 | 40 | - | 9.6 | 9.1 | 10.4 | 157 | - | - |
| Dissolved oxygen | % | 61 | 1.2 | 125 | 87 | - | - | 95 | 9.4 | 100 | 157 | - | - |
| **Conventional Parameters** | | | | | | | | | | | | | |
| pH | n/a | 6.7 | 6.5 | 7 | 16 | - | - | 6.9 | 6.6 | 7 | 22 | - | - |
| Specific conductivity | µS/cm | 21 | 17 | 33 | 16 | - | - | 14 | 9 | 16 | 22 | - | - |
| Total hardness | mg/L | 7.6 | 5.5 | 12 | 16 | - | - | 4.6 | 3.1 | 5.8 | 22 | - | - |
| Hardness (as $CaCO_3$) | mg /L | 8 | 5.9 | 13 | 16 | - | - | 4.7 | 3 | 9.1 | 22 | - | - |
| Total alkalinity | mg/L | 6.4 | 5.1 | 11 | 16 | - | - | 3.6 | 2.4 | 5 | 22 | - | - |
| Total dissolved solids | mg/L | 30 | 20 | 48 | 16 | - | - | 18 | <10 | 38 | 22 | - | - |
| Total Dissolved Solids (Calculated) | mg/L | <10 | <10 | 16 | 16 | - | - | <10 | <10 | <10 | 22 | - | - |
| Total suspended solids | mg/L | <1.0 | <1.0 | 6 | 16 | - | - | <1.0 | <1.0 | 9 | 22 | - | - |
| Turbidity | NTU | 0.2 | <0.1 | 0.9 | 16 | - | - | 0.35 | 0.1 | 4.9 | 22 | - | - |
| Total organic carbon | mg/L | 3.7 | 2 | 10 | 16 | - | - | 3.6 | 2.7 | 9.9 | 22 | - | - |
| Dissolved organic carbon | mg/L | 3.7 | 2.1 | 9.3 | 16 | - | - | 3.3 | 2.6 | 8.4 | 22 | - | - |
| Colour | TCU | 2.5 | <2.0 | 30 | 16 | - | 19 | 3 | <2.0 | 22 | 22 | | 14 |
| **Major Ions** | | | | | | | | | | | | | |
| Calcium | mg/L | 1.7 | 1.3 | 2.7 | 16 | - | - | 1 | 0.67 | 1.3 | 22 | - | - |
| Magnesium | mg/L | 0.75 | 0.6 | 1.4 | 16 | - | - | 0.46 | 0.26 | 0.56 | 22 | - | - |
| Potassium | mg/L | 0.6 | 0.4 | 1.1 | 16 | - | - | 0.41 | <0.3 | 0.5 | 22 | - | - |
| Sodium | mg/L | 0.9 | 0.6 | 1.5 | 16 | - | - | 0.57 | 0.39 | 0.73 | 22 | - | - |
| Bicarbonate | mg/L | 7.8 | 6.2 | 14 | 16 | - | - | 4.4 | 2.9 | 6.1 | 22 | - | - |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | 16 | - | - | <0.5 | <0.5 | <0.5 | 22 | - | - |
| Chloride | mg/L | 1 | <1.0 | 3 | 16 | - | - | <1.0 | <1.0 | 1 | 22 | - | - |
| Fluoride | mg/L | 0.05 | <0.05 | 0.07 | 16 | - | - | <0.05 | <0.05 | 0.07 | 22 | - | - |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | 16 | - | - | <0.5 | <0.5 | <0.5 | 22 | - | - |
| Sulphate | mg/L | <1.0 | <1.0 | <1.0 | 16 | - | - | <1.0 | <1.0 | <1.0 | 22 | - | - |
| Sulphide | mg/L | <0.002 | <0.002 | <0.002 | 16 | - | - | <0.002 | <0.002 | 0.02 | 22 | - | - |
| **Nutrients** | | | | | | | | | | | | | |
| Nitrate + Nitrite | mg-N/L | 0.05 | <0.003 | 0.19 | 16 | - | - | <0.003 | <0.003 | 0.014 | 22 | - | - |
| Nitrate | mg-N/L | 0.05 | <0.003 | 0.19 | 16 | - | - | <0.003 | <0.003 | 0.009 | 22 | - | - |
| Nitrite | mg-N/L | <0.003 | <0.003 | <0.003 | 16 | - | - | <0.003 | <0.003 | 0.007 | 22 | - | - |
| Total ammonia | mg-N/L | <0.05 | <0.05 | 0.1 | 16 | - | - | <0.05 | <0.05 | <0.05 | 22 | - | - |
| Total Kjeldahl nitrogen | mg-N/L | 0.29 | 0.18 | 0.61 | 16 | - | - | 0.31 | 0.13 | 0.97 | 22 | - | - |
| Total nitrogen (calculated) | mg-N/L | 0.31 | 0.24 | 0.71 | 16 | - | - | 0.31 | 0.13 | 0.97 | 22 | - | - |
| Total phosphorus | mg/L | 0.002 | <0.001 | 0.013 | 16 | - | - | 0.004 | 0.001 | 0.016 | 22 | - | - |
| Chemical Oxygen Demand | mg/L | 11 | 5 | 30 | 16 | - | - | 9 | <5.0 | 48 | 22 | - | - |
| Chlorophyll *a* | µg/L | - | - | - | 0 | - | - | 1.4 | <0.5 | 8 | 20 | - | - |

**Table 4-4 Water Quality Summary for the Kennady Lake Areas during Under-Ice (April) and Open-Water (July/August) Conditions (continued)**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| **Total Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0049 | 0.0028 | 0.08 | 16 | 31 | - | 0.01 | 0.0045 | 0.095 | 22 | 18 | - |
| Antimony | mg/L | <0.00002 | <0.00002 | 0.00022 | 16 | - | - | 0.00005 | <0.00002 | 0.00041 | 22 | - | - |
| Arsenic | mg/L | 0.00015 | 0.00008 | 0.0007 | 16 | - | - | 0.00014 | 0.00009 | 0.00031 | 22 | - | - |
| Barium | mg/L | 0.0039 | 0.0022 | 0.0064 | 16 | - | - | 0.002 | 0.0017 | 0.0054 | 22 | - | - |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00005 | 16 | - | - | <0.00001 | <0.00001 | 0.00001 | 22 | - | - |
| Bismuth, total recoverable | µg/L | <0.005 | <0.005 | 0.003 | 16 | - | - | <0.005 | <0.005 | <0.005 | 22 | - | - |
| Boron | mg/L | <0.005 | <0.005 | 0.013 | 16 | - | - | <0.05 | <0.005 | <0.05 | 22 | - | - |
| Cadmium | µg/L | 0.007 | <0.005 | 0.085 | 16 | 100 | - | <0.005 | <0.005 | 0.026 | 22 | 100 | - |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0005 | 16 | - | - | <0.0001 | <0.0001 | 0.0002 | 22 | - | - |
| Cobalt | µg/L | 0.14 | <0.005 | 3.2 | 16 | - | - | 0.000033 | 0.000011 | 0.00026 | 22 | - | - |
| Copper | mg/L | 0.00052 | 0.00025 | 0.0017 | 16 | - | - | 0.00053 | 0.00035 | 0.0017 | 22 | - | - |
| Iron | mg/L | 0.025 | 0.004 | 0.62 | 16 | 19 | 19 | 0.041 | 0.008 | 0.44 | 22 | 4 | 4 |
| Lead | µg/L | 0.015 | <0.005 | 0.093 | 16 | - | - | 0.000016 | 0.000007 | 0.00029 | 22 | - | - |
| Lithium | mg/L | 0.0011 | 0.0007 | 0.0042 | 16 | - | - | 0.0008 | <0.0005 | 0.0015 | 22 | - | - |
| Manganese | mg/L | 0.025 | 0.0015 | 0.44 | 16 | - | 31 | 0.0034 | 0.0017 | 0.0074 | 22 | - | - |
| Mercury | mg/L | <0.0006 | <0.0006 | <0.006 | 16 | - | - | <0.0006 | <0.0006 | 0.0034 | 18 | - | - |
| Molybdenum | mg/L | <0.00005 | <0.00005 | 0.0012 | 16 | - | - | <0.00005 | <0.00005 | 0.00026 | 22 | - | - |
| Nickel | mg/L | 0.00035 | 0.0002 | 0.001 | 16 | - | - | 0.00022 | 0.00017 | 0.00086 | 22 | - | - |
| Selenium | mg/L | <0.00004 | <0.00004 | 0.0002 | 16 | - | - | <0.00004 | <0.00004 | <0.00004 | 22 | - | - |
| Silicon | mg/L | 0.3 | 0.1 | 0.7 | 16 | - | - | 0.1 | <0.1 | 0.2 | 22 | - | - |
| Silver | µg/L | <0.005 | <0.005 | 0.03 | 16 | - | - | <0.005 | <0.005 | <0.005 | 22 | - | - |
| Strontium | mg/L | 0.011 | 0.0088 | 0.016 | 16 | - | - | 0.007 | 0.0041 | 0.01 | 22 | - | - |
| Sulphur | mg/L | <10 | <10 | 1290 | 16 | - | - | <10 | <10 | <10 | 22 | - | - |
| Tin | mg/L | 0.00013 | <0.00001 | 0.00065 | 16 | - | - | <0.00001 | <0.00001 | 0.00004 | 22 | - | - |
| Thallium | mg/L | <0.002 | <0.002 | 0.01 | 16 | - | - | <0.002 | <0.002 | 0.000004 | 22 | - | - |
| Titanium | mg/L | <0.0005 | <0.0005 | 0.003 | 16 | - | - | <0.0005 | <0.0005 | 0.0008 | 22 | - | - |
| Uranium | µg/L | 0.005 | <0.002 | 0.04 | 16 | - | - | 0.007 | <0.002 | 0.034 | 22 | - | - |
| Vanadium | µg/L | <0.0002 | <0.0002 | 0.001 | 16 | - | - | <0.0002 | <0.0002 | 0.0003 | 22 | - | - |
| Zinc | mg/L | 0.0012 | 0.0007 | 0.0047 | 16 | - | - | 0.001 | 0.0003 | 0.012 | 22 | - | - |
| Zirconium | mg/L | <0.0001 | <0.0001 | 0.0005 | 16 | - | - | <0.0001 | <0.0001 | <0.0001 | 22 | - | - |
| **Dissolved Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0031 | 0.0023 | 0.065 | 16 | - | - | 0.006 | 0.003 | 0.045 | 22 | - | - |
| Antimony | mg/L | 0.00006 | <0.00002 | 0.00027 | 16 | - | - | 0.00004 | <0.00002 | 0.00069 | 22 | - | - |
| Arsenic | mg/L | 0.00015 | 0.00008 | 0.00028 | 16 | - | - | 0.00015 | 0.0001 | 0.00027 | 22 | - | - |
| Barium | mg/L | 0.0034 | 0.0022 | 0.0064 | 16 | - | - | 0.0018 | 0.0016 | 0.0037 | 22 | - | - |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | 16 | - | - | <0.00001 | <0.00001 | <0.00001 | 22 | - | - |
| Bismuth | µg/L | <0.005 | <0.005 | <0.005 | 16 | - | - | <0.005 | <0.005 | <0.005 | 22 | - | - |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | 16 | - | - | <0.05 | <0.005 | <0.05 | 22 | - | - |
| Cadmium | µg/L | <0.005 | <0.005 | 0.074 | 16 | - | - | 0.005 | <0.005 | 0.025 | 22 | - | - |
| Chromium | mg/L | <0.0001 | <0.0001 | 0.0002 | 16 | - | - | <0.0001 | <0.0001 | 0.0001 | 22 | - | - |
| Cobalt | mg/L | 0.0016 | 0.00034 | 0.0042 | 16 | - | - | 0.000017 | 0.000006 | 0.000082 | 22 | - | - |
| Copper | mg/L | 0.00048 | 0.00024 | 0.0017 | 16 | - | - | 0.00045 | 0.00035 | 0.0012 | 22 | - | - |
| Iron | mg/L | 0.0095 | 0.002 | 0.44 | 16 | - | - | 0.013 | 0.003 | 0.2 | 22 | - | - |

**Table 4-4 Water Quality Summary for the Kennady Lake Areas during Under-Ice (April) and Open-Water (July/August) Conditions (continued)**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| Lead | mg/L | 0.000019 | 0.00001 | 0.000068 | 16 | - | - | 0.000017 | 0.000007 | 0.00016 | 22 | - | - |
| Lithium | mg/L | 0.0012 | 0.0007 | 0.0042 | 16 | - | - | 0.0009 | <0.0005 | 0.0012 | 22 | - | - |
| Manganese | mg/L | 0.024 | 0.0018 | 0.42 | 16 | - | - | 0.00075 | 0.00031 | 0.0039 | 22 | - | - |
| Mercury | µg/L | <0.0006 | <0.0006 | <0.0006 | 16 | - | - | <0.0006 | <0.0006 | <0.0006 | 18 | - | - |
| Molybdenum | mg/L | <0.00005 | <0.00005 | 0.00011 | 16 | - | - | <0.00005 | <0.00005 | 0.00011 | 22 | - | - |
| Nickel | mg/L | 0.00053 | 0.00029 | 0.0013 | 16 | - | - | 0.00023 | 0.00015 | 0.00063 | 22 | - | - |
| Selenium | mg/L | <0.00004 | <0.00004 | 0.00005 | 16 | - | - | <0.00004 | <0.00004 | <0.00004 | 22 | - | - |
| Silicon | mg/L | 0.4 | 0.1 | 0.7 | 16 | - | - | 0.1 | <0.1 | 0.2 | 22 | - | - |
| Silver | µg/L | <0.005 | <0.005 | <0.005 | 16 | - | - | <0.005 | <0.005 | 0.007 | 22 | - | - |
| Strontium | mg/L | 0.011 | 0.0091 | 0.017 | 16 | - | - | 0.0067 | 0.0034 | 0.0078 | 22 | - | - |
| Sulphur | mg/L | - | - | - | 0 | - | - | <10 | <10 | <10 | 22 | - | - |
| Tin | mg/L | 0.00013 | <0.00001 | 0.00062 | 16 | - | - | <0.00001 | <0.00001 | 0.0003 | 22 | - | - |
| Thallium | µg/L | <0.002 | <0.002 | 0.005 | 16 | - | - | <0.002 | <0.002 | 0.002 | 22 | - | - |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | 16 | - | - | <0.0005 | <0.0005 | <0.0005 | 22 | - | - |
| Uranium | µg/L | 0.004 | <0.002 | 0.037 | 16 | - | - | 0.0045 | <0.002 | 0.021 | 22 | - | - |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | 16 | - | - | <0.0002 | <0.0002 | 0.0003 | 22 | - | - |
| Zinc | mg/L | 0.0014 | 0.0007 | 0.0053 | 16 | - | - | 0.0012 | 0.0001 | 0.0055 | 22 | - | - |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | 16 | - | - | <0.0001 | <0.0001 | <0.0001 | 22 | - | - |
| **Organics** | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1.0 | <1.0 | <1.0 | 15 | - | - | <1.0 | <1.0 | <1.0 | 22 | - | - |
| Total phenolics | mg/L | <0.002 | <0.002 | 0.003 | 16 | - | - | <0.002 | <0.002 | 0.003 | 22 | - | - |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | 16 | - | - | <0.1 | <0.1 | <0.1 | 22 | - | - |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | 16 | - | - | <0.1 | <0.1 | <0.1 | 22 | - | - |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | <0.1 | 15 | - | - | <0.1 | <0.1 | <0.1 | 22 | - | - |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | <0.1 | 15 | - | - | <0.1 | <0.1 | <0.1 | 22 | - | - |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | <0.1 | 15 | - | - | <0.1 | <0.1 | <0.1 | 22 | - | - |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | 16 | - | - | <0.0004 | <0.0004 | <0.0004 | 22 | - | - |
| Ethylbenzene | mg/L | <0.0004 | <0.0004 | <0.0004 | 16 | - | - | <0.0004 | <0.0004 | <0.0004 | 22 | - | - |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | 16 | - | - | <0.0004 | <0.0004 | <0.0004 | 22 | - | - |
| o- Xylene | mg/L | <0.0004 | <0.0004 | <0.0004 | 16 | - | - | <0.0004 | <0.0004 | <0.0004 | 22 | - | - |
| m- + p- Xylene | mg/L | <0.0008 | <0.0008 | <0.0008 | 16 | - | - | <0.0008 | <0.0008 | <0.0008 | 22 | - | - |
| Xylene | mg/L | <0.0008 | <0.0008 | <0.0008 | 16 | - | - | <0.0008 | <0.0008 | <0.0008 | 22 | - | - |

**Note:** n = number of samples; °C = degree Celsius; µS/cm = microSiemens per centimetre; mg/L = milligrams per litre; µg/L = micrograms per litre; % = percent; n/a = not applicable; NTU =nephelometric turbidity unit; TCU = true colour unit; - = no information.

(a)= field measurements summarized data from entire profile datasets.

(b) = percent represents only the proportion of total samples which exceeded the guideline values.

F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector not including BTEX; F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector including BTEX; F2($C_{10}$ - $C_{16}$) = hydrocarbons from the beginning of the tenth carbon chromatogram peak to the apex of the sixteenth carbon peak using a gas chromatograph with a flame ionization detector; F3($C_{16}$ - $C_{34}$) = hydrocarbons from the beginning of the sixteenth carbon chromatogram peak to the apex of the thirty forth carbon peak using a gas chromatograph with a flame ionization detector; F4($C_{34}$ - $C_{50}$) = hydrocarbons from the beginning of the thirty forth carbon chromatogram peak to the apex of the fiftieth carbon peak using a gas chromatograph with a flame ionization detector; BTEX = benzene, toluene, ethylbenzene, xylene; o - Xylene = ortho xylene; m- + P- Xylene = meta and para xylene.

**Table 4-5 Water Quality Summary for the Downstream Lakes during Under-Ice (April) and Open-Water (July/August) Conditions**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[b] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[b] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[b] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[b] |
| **Field Data[a]** | | | | | | | | | | | | | |
| pH | n/a | 6.3 | 5.8 | 6.9 | 69 | 86 | 86 | 6.7 | 6.4 | 7.3 | 123 | 10 | 10 |
| Specific conductivity | µS/cm | 20 | 13 | 53 | 69 | - | - | 12 | 9 | 15 | 123 | - | - |
| Temperature | °C | 2.6 | 0.4 | 4.5 | 69 | - | - | 15.6 | 13.5 | 18.3 | 122 | - | - |
| Dissolved oxygen | mg/L | 11.8 | 1.8 | 17.2 | 69 | 22 | - | 9.5 | 8.1 | 9.9 | 123 | - | - |
| Dissolved oxygen | % | 87 | 14 | 120 | 69 | - | - | 95 | 81 | 101 | 123 | - | - |
| **Conventional Parameters** | | | | | | | | | | | | | |
| pH | n/a | 6.9 | 6.7 | 7.0 | 14 | - | - | 6.8 | 6.7 | 7 | 25 | - | - |
| Specific conductivity | µS/cm | 22 | 16 | 35 | 14 | - | - | 12 | 10 | 68 | 25 | - | - |
| Total hardness | mg/L | 8.0 | 5.3 | 14.0 | 14 | - | - | 4.3 | 3 | 5.9 | 25 | - | - |
| Hardness as ($CaCO_3$) | mg/L | 7.9 | 6.3 | 13.0 | 14 | - | - | 4.3 | 3.1 | 6.9 | 25 | - | - |
| Total alkalinity | mg/L | 7.2 | 5.3 | 11.0 | 14 | - | - | 3.4 | <0.5 | 5.7 | 25 | - | - |
| Total dissolved solids | mg/L | 29 | 22 | 36 | 14 | - | - | 20 | <10 | 52 | 25 | - | - |
| Total Dissolved Solids (Calculated) | mg/L | <10 | <10 | 18 | 14 | - | - | <10 | <10 | <10 | 25 | - | - |
| Total suspended solids | mg/L | <1.0 | <1.0 | 2.00 | 14 | - | - | <1.0 | <1.0 | 3 | 25 | - | - |
| Turbidity | NTU | 0.2 | 0.1 | 0.4 | 14 | - | - | 0.5 | 0.1 | 0.9 | 25 | - | - |
| Total organic carbon | mg/L | 4.6 | 2.6 | 6.3 | 14 | - | - | 3.7 | 2.5 | 7.3 | 25 | - | - |
| Dissolved organic carbon | mg/L | 4.6 | 2.3 | 6.4 | 14 | - | - | 3.6 | 2.5 | 7.2 | 25 | - | - |
| Colour | TCU | 4.0 | <2.0 | 7.0 | 14 | - | - | 4 | <2.0 | 20 | 25 | - | 8 |
| **Major Ions** | | | | | | | | | | | | | |
| Calcium | mg/L | 1.9 | 1.2 | 3.1 | 14 | - | - | 0.99 | 0.69 | 1.3 | 25 | - | - |
| Magnesium | mg/L | 0.8 | 0.6 | 1.5 | 14 | - | - | 0.42 | 0.26 | 0.53 | 25 | - | - |
| Potassium | mg/L | 0.65 | 0.50 | 1.20 | 14 | - | - | 0.37 | <0.3 | 0.5 | 25 | - | - |
| Sodium | mg/L | 0.9 | 0.6 | 1.5 | 14 | - | - | 0.5 | 0.35 | 0.64 | 25 | - | - |
| Bicarbonate | mg/L | 8.7 | 6.5 | 14.0 | 14 | - | - | 4.2 | <0.5 | 6.9 | 25 | - | - |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | 14 | - | - | <0.5 | <0.5 | <0.5 | 25 | - | - |
| Chloride | mg/L | 1.0 | <1.0 | 3.0 | 14 | - | - | <1.0 | <1.0 | 1 | 25 | - | - |
| Fluoride | mg/L | 0.05 | <0.05 | 0.08 | 14 | - | - | <0.05 | <0.05 | 0.06 | 25 | - | - |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | 14 | - | - | <0.5 | <0.5 | <0.5 | 25 | - | - |
| Sulphate | mg/L | <1.0 | <1.0 | 2.00 | 14 | - | - | <1.0 | <1.0 | 1 | 25 | - | - |
| Sulphide | mg/L | <0.002 | <0.002 | 0.01 | 14 | - | - | <0.002 | <0.002 | 0.025 | 25 | - | - |
| **Nutrients** | | | | | | | | | | | | | |
| Nitrate + nitrite | mg N/L | 0.01 | <0.003 | 0.08 | 14 | - | - | <0.003 | <0.003 | 0.012 | 25 | - | - |
| Nitrate | mg-N/L | 0.01 | <0.003 | 0.08 | 14 | - | - | <0.003 | <0.003 | 0.011 | 25 | - | - |
| Nitrite | mg-N/L | <0.003 | <0.003 | <0.003 | 14 | - | - | <0.003 | <0.003 | 0.005 | 25 | - | - |
| Total ammonia | mg-N/L | <0.05 | <0.05 | 0.06 | 14 | - | - | <0.05 | <0.05 | 0.06 | 25 | - | - |
| Total Kjeldahl nitrogen | mg-N/L | 0.40 | 0.26 | 0.52 | 14 | - | - | 0.3 | 0.21 | 0.63 | 25 | - | - |
| Total nitrogen (calculated) | mg-N/L | 0.41 | 0.28 | 0.53 | 14 | - | - | 0.31 | 0.21 | 0.63 | 25 | - | - |
| Total phosphorus | mg/L | 0.002 | <0.001 | 0.006 | 14 | - | - | 0.005 | 0.002 | 0.009 | 25 | - | - |
| Chemical Oxygen Demand | mg/L | 13.00 | 5.00 | 20.00 | 14 | - | - | 11 | <5.0 | 34 | 25 | - | - |
| Chlorophyll *a* | µg/L | - | - | - | 0 | - | - | 1.4 | <0.5 | 3.8 | 21 | - | - |

**Table 4-5 Water Quality Summary for the Downstream Lakes during Under-Ice (April) and Open-Water (July/August) Conditions (continued)**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| **Total Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.01 | 0.0038 | 0.01 | 14 | 64 | - | 0.014 | 0.0063 | 0.087 | 25 | 20 | - |
| Antimony | mg/L | 0.000025 | <0.00002 | 0.00008 | 14 | - | - | <0.00002 | <0.00002 | 0.00017 | 25 | - | - |
| Arsenic | mg/L | 0.000175 | 0.00008 | 0.00031 | 14 | - | - | 0.00013 | 0.00007 | 0.00028 | 25 | - | - |
| Barium | mg/L | 0.0038 | 0.0027 | 0.0058 | 14 | - | - | 0.0021 | 0.0016 | 0.0029 | 25 | - | - |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | 14 | - | - | <0.00001 | <0.00001 | <0.00001 | 25 | - | - |
| Bismuth, total recoverable | µg/L | <0.005 | <0.005 | 0.006 | 14 | - | - | <0.005 | <0.005 | 0.000011 | 25 | - | - |
| Boron | mg/L | <0.005 | <0.005 | 0.01 | 14 | - | - | <0.05 | <0.005 | <0.05 | 25 | - | - |
| Cadmium | µg/L | <0.005 | <0.005 | 0.014 | 14 | 36 | - | <0.005 | <0.005 | 0.031 | 25 | 32 | - |
| Chromium | mg/L | <0.0001 | <0.0001 | 0.0002 | 14 | - | - | <0.0001 | <0.0001 | 0.0002 | 25 | - | - |
| Cobalt | µg/L | 0.0245 | 0.012 | 1.78 | 14 | - | - | 0.000038 | 0.000014 | 0.0001 | 25 | - | - |
| Copper | mg/L | 0.00071 | 0.00041 | 0.0014 | 14 | - | - | 0.00058 | 0.00037 | 0.0015 | 25 | - | - |
| Iron | mg/L | 0.02 | 0.01 | 0.34 | 14 | 7 | 7 | 0.049 | 0.009 | 0.23 | 25 | - | - |
| Lead | µg/L | 0.0255 | <0.005 | 0.081 | 14 | - | - | 0.016 | 0.005 | 0.17 | 25 | - | - |
| Lithium | mg/L | 0.0013 | 0.0008 | 0.0026 | 14 | - | - | 0.0009 | 0.0007 | 0.0094 | 25 | - | - |
| Manganese | mg/L | 0.01 | 0.00072 | 0.21 | 14 | - | 7 | 0.0042 | 0.0018 | 0.0091 | 25 | - | - |
| Mercury | µg/L | <0.0006 | <0.0006 | 0.0008 | 14 | - | - | 0.003 | <0.002 | 0.028 | 23 | 4 | - |
| Molybdenum | mg/L | <0.00005 | <0.00005 | 0.00007 | 14 | - | - | <0.00005 | <0.00005 | 0.00011 | 25 | - | - |
| Nickel | mg/L | 0.00037 | 0.00021 | 0.00107 | 14 | - | - | 0.00026 | 0.00017 | 0.00057 | 25 | - | - |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | 14 | - | - | <0.00004 | <0.00004 | <0.00004 | 25 | - | - |
| Silicon | mg/L | 0.30 | <0.1 | 0.50 | 14 | - | - | 0.1 | <0.1 | 0.2 | 25 | - | - |
| Silver | µg/L | <0.005 | <0.005 | <0.005 | 14 | - | - | <0.005 | <0.005 | 0.006 | 25 | - | - |
| Strontium | mg/L | 0.01 | 0.01 | 0.02 | 14 | - | - | 0.0062 | 0.0042 | 0.0074 | 25 | - | - |
| Sulphur | mg/L | <10 | <10 | <10 | 14 | - | - | <10 | <10 | <10 | 25 | - | - |
| Thallium | µg/L | <0.002 | <0.002 | 0.003 | 14 | - | - | <0.002 | <0.002 | 0.004 | 25 | - | - |
| Tin | mg/L | 0.00022 | <0.00001 | 0.00069 | 14 | - | - | <0.00001 | <0.00001 | 0.00003 | 25 | - | - |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | 14 | - | - | <0.0005 | <0.0005 | <0.0005 | 25 | - | - |
| Uranium | µg/L | 0.0085 | 0.003 | 0.018 | 14 | - | - | 0.00001 | 0.000003 | 0.000022 | 25 | - | - |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | 14 | - | - | <0.0002 | <0.0002 | <0.0002 | 25 | - | - |
| Zinc | mg/L | 0.00145 | 0.0007 | 0.0038 | 14 | - | - | 0.0009 | 0.0006 | 0.0057 | 25 | - | - |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | 14 | - | - | <0.0001 | <0.0001 | <0.0001 | 25 | - | - |
| **Dissolved Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0064 | 0.0018 | 0.01 | 14 | - | - | 0.0075 | 0.0026 | 0.073 | 25 | - | - |
| Antimony | mg/L | 0.00007 | 0.00004 | 0.00013 | 14 | - | - | <0.00002 | <0.00002 | 0.00023 | 25 | - | - |
| Arsenic | mg/L | 0.00015 | 0.00006 | 0.00027 | 14 | - | - | 0.00011 | 0.00006 | 0.00024 | 25 | - | - |
| Barium | mg/L | 0.0038 | 0.0028 | 0.0057 | 14 | - | - | 0.002 | 0.0015 | 0.0026 | 25 | - | - |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | 14 | - | - | <0.00001 | <0.00001 | <0.00001 | 25 | - | - |
| Bismuth | µg/L | <0.005 | <0.005 | <0.005 | 14 | - | - | <0.005 | <0.005 | <0.005 | 25 | - | - |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | 14 | - | - | <0.05 | <0.005 | <0.05 | 25 | - | - |
| Cadmium | µg/L | 0.007 | <0.005 | 0.019 | 14 | - | - | <0.005 | <0.005 | 0.000045 | 25 | - | - |
| Chromium | mg/L | <0.0001 | <0.0001 | 0.0002 | 14 | - | - | <0.0001 | <0.0001 | 0.0001 | 25 | - | - |
| Cobalt | mg/L | 0.0013 | 0.00026 | 0.0035 | 14 | - | - | 0.000024 | 0.000006 | 0.000089 | 25 | - | - |
| Copper | mg/L | 0.00072 | 0.00036 | 0.0013 | 14 | - | - | 0.00056 | 0.00031 | 0.0017 | 25 | - | - |
| Iron | mg/L | 0.011 | 0.003 | 0.023 | 14 | - | - | 0.014 | 0.003 | 0.17 | 25 | - | - |

**Table 4-5 Water Quality Summary for the Downstream Lakes during Under-Ice (April) and Open-Water (July/August) Conditions (continued)**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| Lead | mg/L | 0.000023 | 0.00001 | 0.000077 | 14 | - | - | 0.000022 | 0.000007 | 0.0001 | 25 | - | - |
| Lithium | mg/L | 0.0014 | 0.0009 | 0.0024 | 14 | - | - | 0.0009 | 0.0006 | 0.0015 | 25 | - | - |
| Manganese | mg/L | 0.0067 | 0.00078 | 0.21 | 14 | - | - | 0.00079 | 0.00027 | 0.012 | 25 | - | - |
| Mercury | µg/L | <0.0006 | <0.0006 | 0.0009 | 14 | - | - | <0.0006 | <0.002 | 0.002 | 23 | - | - |
| Molybdenum | mg/L | <0.00005 | <0.00005 | 0.00006 | 14 | - | - | <0.00005 | <0.00005 | 0.00008 | 25 | - | - |
| Nickel | mg/L | 0.00052 | 0.00024 | 0.002 | 14 | - | - | 0.00029 | 0.00013 | 0.00062 | 25 | - | - |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | 14 | - | - | <0.00004 | <0.00004 | 0.00004 | 25 | - | - |
| Silicon | mg/L | 0.3 | 0.1 | 0.5 | 14 | - | - | 0.1 | <0.1 | 0.2 | 25 | - | - |
| Silver | µg/L | <0.005 | <0.005 | <0.005 | 14 | - | - | <0.005 | <0.005 | 0.01 | 25 | - | - |
| Strontium | mg/L | 0.012 | 0.0095 | 0.018 | 14 | - | - | 0.006 | 0.0036 | 0.0074 | 25 | - | - |
| Sulphur | mg/L | - | - | - | 0 | - | - | <10 | <10 | <10 | 25 | - | - |
| Thallium | µg/L | <0.002 | <0.002 | **0.003** | 14 | - | - | <0.002 | <0.002 | 0.003 | 25 | - | - |
| Tin | mg/L | 0.00021 | 0.00001 | 0.00069 | 14 | - | - | <0.00001 | <0.00001 | 0.00083 | 25 | - | - |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | 14 | - | - | <0.0005 | <0.0005 | 0.0075 | 25 | - | - |
| Uranium | µg/L | 0.01 | <0.002 | 0.018 | 14 | - | - | 0.000007 | <0.002 | 0.000021 | 25 | - | - |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | 14 | - | - | <0.0002 | <0.0002 | 0.0003 | 25 | - | - |
| Zinc | mg/L | 0.0016 | 0.0008 | 0.0043 | 14 | - | - | 0.0025 | 0.0006 | 0.0088 | 25 | - | - |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | 14 | - | - | <0.0001 | <0.0001 | <0.0001 | 25 | - | - |
| **Organics** | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1.0 | <1.0 | <1.0 | 14 | - | - | <1.0 | <1.0 | <1.0 | 25 | - | - |
| Total phenolics | mg/L | <0.002 | <0.002 | <0.002 | 13 | - | - | <0.002 | <0.002 | 0.003 | 25 | - | - |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | 14 | - | - | <0.1 | <0.1 | <0.1 | 25 | - | - |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | 14 | - | - | <0.1 | <0.1 | <0.1 | 25 | - | - |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | <0.1 | 13 | - | - | <0.1 | <0.1 | <0.1 | 25 | - | - |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | <0.1 | 13 | - | - | <0.1 | <0.1 | <0.1 | 25 | - | - |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | <0.1 | 13 | - | - | <0.1 | <0.1 | <0.1 | 25 | - | - |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | 14 | - | - | <0.0004 | <0.0004 | 0.0006 | 25 | - | - |
| Ethylbenzene | mg/L | <0.0004 | <0.0004 | <0.0004 | 14 | - | - | <0.0004 | <0.0004 | <0.0004 | 25 | - | - |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | 14 | - | - | <0.0004 | <0.0004 | <0.0004 | 25 | - | - |
| o- Xylene | mg/L | <0.0004 | <0.0004 | <0.0004 | 14 | - | - | <0.0004 | <0.0004 | <0.0004 | 25 | - | - |
| m- + p- Xylene | mg/L | <0.0008 | <0.0008 | <0.0008 | 14 | - | - | <0.0008 | <0.0008 | <0.0008 | 25 | - | - |
| Xylene | mg/L | <0.0008 | <0.0008 | <0.0008 | 14 | - | - | <0.0008 | <0.0008 | <0.0008 | 25 | - | - |

**Note:** n = number of samples; °C = degree Celsius; µS/cm = microSiemens per centimetre; mg/L = milligrams per litre; µg/L = micrograms per litre; % = percent; n/a = not applicable; NTU =nephelometric turbidity unit; TCU = true colour unit; - = no information.

(a)= field measurements summarized data from entire profile datasets.

(b) = percent represents only the proportion of total samples which exceeded the guideline values.

F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector not including BTEX; F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector including BTEX; F2($C_{10}$ - $C_{16}$) = hydrocarbons from the beginning of the tenth carbon chromatogram peak to the apex of the sixteenth carbon peak using a gas chromatograph with a flame ionization detector; F3($C_{16}$ - $C_{34}$) = hydrocarbons from the beginning of the sixteenth carbon chromatogram peak to the apex of the thirty forth carbon peak using a gas chromatograph with a flame ionization detector; F4($C_{34}$ - $C_{50}$) = hydrocarbons from the beginning of the thirty forth carbon chromatogram peak to the apex of the fiftieth carbon peak using a gas chromatograph with a flame ionization detector; BTEX = benzene, toluene, ethylbenzene, xylene; o - Xylene = ortho xylene; m- + P- Xylene = meta and para xylene.

**Table 4-6 Water Quality Summary for Reference Lakes (Lake X6 and East Lake) during Under-Ice (April) and Open-Water (July/August) Conditions**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| **Field Data[(a)]** | | | | | | | | | | | | | |
| pH | n/a | - | 6.2 | 7.2 | 20 | 5 | - | 6.7 | 6.6 | 6.7 | 21 | - | - |
| Specific conductivity | µS/cm | - | 17 | 23 | 20 | - | - | 14 | 12 | 15 | 21 | - | - |
| Temperature | °C | - | 0.9 | 3.3 | 20 | - | - | 14.4 | 14.3 | 16.3 | 21 | - | - |
| Dissolved oxygen | mg/L | - | 8.2 | 16.6 | 20 | - | - | 9.8 | 9.5 | 9.9 | 21 | - | - |
| Dissolved oxygen | % | - | 61 | 120 | 20 | - | - | 97 | 96 | 97 | 21 | - | - |
| **Conventional Parameters** | | | | | | | | | | | | | |
| pH | n/a | - | 5.69 | 6.93 | 2 | 50 | - | - | 6.9 | 6.9 | 2 | - | - |
| Specific conductivity | µS/cm | - | <1 | 18 | 2 | - | - | - | 13 | 16 | 2 | - | - |
| Total hardness | mg/L | - | <0.5 | 7.3 | 2 | - | - | - | 4.2 | 4.9 | 2 | - | - |
| Hardness (as $CaCO_3$) | mg/L | - | <0.5 | 6.6 | 2 | - | - | - | 6.4 | 6.8 | 2 | - | - |
| Total alkalinity | mg/L | - | 0.7 | 5.9 | 2 | - | - | - | 4 | 4.3 | 2 | - | - |
| Total dissolved solids | mg/L | - | 14 | 22 | 2 | - | - | - | 18 | 20 | 2 | - | - |
| Total Dissolved Solids (Calculated) | mg/L | - | <10 | <10 | 2 | - | - | - | <10 | <10 | 2 | - | - |
| Total suspended solids | mg/L | - | <1 | <1 | 2 | - | - | - | <1.0 | <1.0 | 2 | - | - |
| Turbidity | NTU | - | <0.1 | <0.1 | 2 | - | - | - | 0.2 | 0.3 | 2 | - | - |
| Total organic carbon | mg/L | - | <0.5 | 3.1 | 2 | - | - | - | 2.6 | 3.7 | 2 | - | - |
| Dissolved organic carbon | mg/L | - | <0.5 | 2.9 | 2 | - | - | - | 2.6 | 2.7 | 2 | - | - |
| Colour | TCU | - | <2 | <2 | 2 | | | - | <2.0 | 2 | 2 | - | - |
| **Major Ions** | | | | | | | | | | | | | |
| Calcium | mg/L | - | <0.3 | 1.6 | 2 | | | - | 1.1 | 5.6 | 2 | - | - |
| Magnesium | mg/L | - | <0.2 | 0.8 | 2 | - | - | - | 0.4 | 0.65 | 2 | - | - |
| Potassium | mg/L | - | <0.3 | 0.5 | 2 | - | - | - | 0.33 | 0.41 | 2 | - | - |
| Sodium | mg/L | - | <0.5 | 0.7 | 2 | - | - | - | 0.47 | 0.74 | 2 | - | - |
| Bicarbonate | mg/L | - | 0.8 | 7.3 | 2 | - | - | - | 4.9 | 5.2 | 2 | - | - |
| Carbonate | mg/L | - | <0.5 | <0.5 | 2 | - | - | - | <0.5 | <0.5 | 2 | - | - |
| Chloride | mg/L | - | <1 | <1 | 2 | - | - | - | <1.0 | <1.0 | 2 | - | - |
| Fluoride | mg/L | - | <0.05 | <0.05 | 2 | - | - | - | <0.05 | 0.05 | 2 | - | - |
| Hydroxide | mg/L | - | <0.5 | <0.5 | 2 | - | - | - | <0.5 | <0.5 | 2 | - | - |
| Sulphate | mg/L | - | <1 | <1 | 2 | - | - | - | <1.0 | <1.0 | 2 | - | - |
| Sulphide | mg/L | - | <0.002 | <0.002 | 2 | - | - | - | <0.002 | <0.002 | 2 | - | - |
| **Nutrients** | | | | | | | | | | | | | |
| Nitrate + Nitrite | mg N/L | - | <0.003 | <0.003 | 2 | | | - | <0.003 | 0.003 | 2 | - | - |
| Nitrate | mg N/L | - | <0.003 | <0.003 | 2 | - | - | - | <0.003 | 0.003 | 2 | - | - |
| Nitrite | mg N/L | - | <0.003 | <0.003 | 2 | - | - | - | <0.003 | <0.003 | 2 | - | - |
| Total ammonia | mg N/L | - | <0.05 | <0.05 | 2 | - | - | - | <0.05 | <0.05 | 2 | - | - |
| Total Kjeldahl nitrogen | mg N/L | - | <0.05 | 0.25 | 2 | - | - | - | 0.18 | 0.26 | 2 | - | - |
| Total nitrogen (calculated) | mg N/L | - | <0.05 | <0.05 | 2 | - | - | - | 0.18 | 0.26 | 2 | - | - |
| Total phosphorus | mg/L | - | <0.001 | 0.001 | 2 | - | - | - | 0.003 | 0.003 | 2 | - | - |
| Chemical Oxygen Demand | mg/L | - | <5 | <5 | 2 | - | - | - | 12 | 24 | 2 | - | - |
| Chlorophyll *a* | µg/L | - | - | - | - | - | - | - | 0.7 | 0.7 | 2 | - | - |

**Table 4-6 Water Quality Summary for the Reference Lakes (Lake X6 and East Lake) during Under-Ice (April) and Open-Water (July/August) Conditions (continued)**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| **Total Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | - | 0.002 | 0.0044 | 2 | - | | - | 0.0095 | 0.01 | 2 | - | - |
| Antimony | mg/L | - | <0.00002 | <0.00002 | 2 | - | - | - | <0.00002 | 0.00004 | 2 | - | - |
| Arsenic | mg/L | - | <0.00002 | 0.00012 | 2 | - | - | - | 0.0001 | 0.00014 | 2 | - | - |
| Barium | mg/L | - | 0.00003 | 0.00177 | 2 | - | - | - | 0.0019 | 0.0025 | 2 | - | - |
| Beryllium | mg/L | - | <0.00001 | <0.00001 | 2 | - | - | - | <0.00001 | <0.00001 | 2 | - | - |
| Bismuth, total recoverable | µg/L | - | <0.005 | <0.005 | 2 | - | - | - | <0.005 | <0.005 | 2 | - | - |
| Boron | mg/L | - | <0.005 | 0.005 | 2 | - | - | - | <0.005 | <0.005 | 2 | - | - |
| Cadmium | µg/L | - | <0.005 | 0.009 | 2 | 50 | - | - | <0.005 | <0.005 | 2 | - | - |
| Chromium | mg/L | - | <0.0001 | <0.0001 | 2 | - | - | - | <0.0001 | <0.0001 | 2 | - | - |
| Cobalt | µg/L | - | <0.005 | 0.007 | 2 | - | - | - | 0.014 | 0.017 | 2 | - | - |
| Copper | mg/L | - | 0.0004 | 0.00046 | 2 | - | - | - | 0.00041 | 0.00047 | 2 | - | - |
| Iron | mg/L | - | <0.001 | 0.005 | 2 | | | - | 0.014 | 0.018 | 2 | - | - |
| Lead | µg/L | - | <0.005 | 0.105 | 2 | - | - | - | 0.015 | 0.03 | 2 | - | - |
| Lithium | mg/L | - | <0.0005 | 0.001 | 2 | - | - | - | 0.0008 | 0.0011 | 2 | - | - |
| Manganese | mg/L | - | 0.00006 | 0.00164 | 2 | - | - | - | 0.0024 | 0.0025 | 2 | - | - |
| Mercury | µg/L | - | <0.0006 | <0.0006 | 2 | - | - | - | <0.0006 | <0.0006 | 2 | | - |
| Molybdenum | mg/L | - | <0.00005 | <0.00005 | 2 | - | - | - | 0.00006 | 0.00023 | 2 | - | - |
| Nickel | mg/L | - | 0.00002 | 0.00022 | 2 | - | - | - | 0.0002 | 0.0005 | 2 | - | - |
| Selenium | mg/L | - | <0.00004 | <0.00004 | 2 | - | - | - | <0.00004 | <0.00004 | 2 | - | - |
| Silicon | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| Silver | µg/L | - | <0.005 | <0.005 | 2 | - | - | - | <0.005 | <0.005 | 2 | - | - |
| Strontium | mg/L | - | <0.00005 | 0.00727 | 2 | - | - | - | 0.0065 | 0.0074 | 2 | - | - |
| Sulphur | mg/L | - | <10 | <10 | 2 | - | - | - | <10 | <10 | 2 | - | - |
| Thallium | µg/L | - | <0.002 | <0.002 | 2 | - | - | - | <0.002 | <0.002 | 2 | - | - |
| Tin | mg/L | - | <0.00001 | 0.00003 | 2 | - | - | - | <0.00001 | <0.00001 | 2 | - | - |
| Titanium | mg/L | - | <0.0005 | <0.0005 | 2 | - | - | - | <0.0005 | <0.0005 | 2 | - | - |
| Uranium | µg/L | - | <0.002 | 0.006 | 2 | - | - | - | 0.002 | 0.006 | 2 | - | - |
| Vanadium | mg/L | - | <0.0002 | <0.0002 | 2 | - | - | - | <0.0002 | <0.0002 | 2 | - | - |
| Zinc | mg/L | - | 0.0003 | 0.0007 | 2 | - | - | - | 0.0044 | 0.006 | 2 | - | - |
| Zirconium | mg/L | - | <0.0001 | <0.0001 | 2 | - | - | - | <0.0001 | <0.0001 | 2 | - | - |
| **Dissolved Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | - | 0.0013 | 0.0029 | 2 | - | - | - | 0.0054 | 0.024 | 2 | - | - |
| Antimony | mg/L | - | <0.00002 | 0.00008 | 2 | - | - | - | 0.00005 | 0.00005 | 2 | - | - |
| Arsenic | mg/L | - | <0.00002 | 0.0001 | 2 | - | - | - | 0.00008 | 0.00009 | 2 | - | - |
| Barium | mg/L | - | 0.00004 | 0.00172 | 2 | - | - | - | 0.0021 | 0.0027 | 2 | - | - |
| Beryllium | mg/L | - | <0.00001 | <0.00001 | 2 | - | - | - | <0.00001 | <0.00001 | 2 | - | - |
| Bismuth | µg/L | - | <0.005 | <0.005 | 2 | - | - | - | <0.005 | <0.005 | 2 | - | - |
| Boron | mg/L | - | <0.005 | <0.005 | 2 | - | - | - | <0.005 | <0.005 | 2 | - | - |
| Cadmium | µg/L | - | <0.005 | <0.005 | 2 | - | - | - | <0.005 | 0.008 | 2 | - | - |
| Chromium | mg/L | - | <0.0001 | <0.0001 | 2 | - | - | - | <0.0001 | 0.0001 | 2 | - | - |
| Cobalt | µg/L | - | <0.005 | 1.96 | 2 | - | - | - | 0.012 | 0.022 | 2 | - | - |
| Copper | mg/L | - | <0.00005 | 0.00053 | 2 | - | - | - | 0.00035 | 0.00071 | 2 | - | - |
| Iron | mg/L | - | <0.001 | 0.008 | 2 | - | - | - | 0.008 | 0.012 | 2 | - | - |

**Table 4-6 Water Quality Summary for the Reference Lakes (Lake X6 and East Lake) during Under-Ice (April) and Open-Water (July/August) Conditions (continued)**

| Parameter | Units | Under-Ice | | | | | | Open-Water | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] | Median | Minimum | Maximum | n | Proportion (%) of measured concentrations above/below CCME Guidelines[(b)] | Proportion (%) of measured concentrations above/below Health Canada Guidelines[(b)] |
| Lead | mg/L | - | 0.000035 | 0.000099 | 2 | - | - | - | 0.000011 | 0.00009 | 2 | - | - |
| Lithium | mg/L | - | <0.0005 | 0.0011 | 2 | - | - | - | 0.0008 | 0.0011 | 2 | - | - |
| Manganese | mg/L | - | 0.00006 | 0.00356 | 2 | - | - | - | 0.00043 | 0.0012 | 2 | - | - |
| Mercury | µg/L | - | <0.0006 | <0.0006 | 2 | - | - | - | <0.0006 | <0.0006 | 2 | - | - |
| Molybdenum | mg/L | - | <0.00005 | <0.00005 | 2 | - | - | - | <0.00005 | <0.00005 | 2 | - | - |
| Nickel | mg/L | - | <0.00002 | 0.00046 | 2 | - | - | - | 0.0002 | 0.00055 | 2 | - | - |
| Selenium | mg/L | - | <0.00004 | <0.00004 | 2 | - | - | - | <0.00004 | <0.00004 | 2 | - | - |
| Silicon | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| Silver | µg/L | - | <0.005 | <0.005 | 2 | - | - | - | <0.005 | <0.005 | 2 | - | - |
| Strontium | mg/L | - | <0.00005 | 0.00737 | 2 | - | - | - | 0.0063 | 0.0086 | 2 | - | - |
| Sulphur | mg/L | - | - | - | - | - | - | - | <10 | <10 | 2 | - | - |
| Thallium | µg/L | - | <0.002 | <0.002 | 2 | - | - | - | <0.002 | <0.002 | 2 | - | - |
| Tin | mg/L | - | <0.00001 | 0.00003 | 2 | - | - | - | <0.00001 | 0.00002 | 2 | - | - |
| Titanium | mg/L | - | <0.0005 | <0.0005 | 2 | - | - | - | <0.0005 | <0.0005 | 2 | - | - |
| Uranium | µg/L | - | <0.002 | 0.006 | 2 | - | - | - | 0.002 | 0.009 | 2 | - | - |
| Vanadium | mg/L | - | <0.0002 | <0.0002 | 2 | - | - | - | <0.0002 | 0.0006 | 2 | - | - |
| Zinc | mg/L | - | 0.0001 | 0.0007 | 2 | - | - | - | 0.0015 | 0.023 | 2 | - | - |
| Zirconium | mg/L | - | <0.0001 | <0.0001 | 2 | - | - | - | <0.0001 | <0.0001 | 2 | - | - |
| **Organics** | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | - | <1.0 | <1.0 | 2 | | | - | <1.0 | <1.0 | 2 | - | - |
| Total phenolics | mg/L | - | <0.002 | <0.002 | 2 | - | - | - | <0.002 | <0.002 | 2 | - | - |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| F1 ($C_6$-$C_{10}$) | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| F2 ($C_{10}$-$C_{16}$) | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| F3 ($C_{16}$-$C_{34}$) | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| F4 ($C_{34}$-$C_{50}$) | mg/L | - | <0.1 | <0.1 | 2 | - | - | - | <0.1 | <0.1 | 2 | - | - |
| Benzene | mg/L | - | <0.0004 | <0.0004 | 2 | | | - | <0.0004 | <0.0004 | 2 | - | - |
| Ethylbenzene | mg/L | - | <0.0004 | <0.0004 | 2 | - | - | - | <0.0004 | <0.0004 | 2 | - | - |
| Toluene | mg/L | - | <0.0004 | <0.0004 | 2 | - | - | - | <0.0004 | <0.0004 | 2 | - | - |
| o- Xylene | mg/L | - | <0.0004 | <0.0004 | 2 | - | - | - | <0.0004 | <0.0004 | 2 | - | - |
| m- + p- Xylene | mg/L | - | <0.0008 | <0.0008 | 2 | - | - | - | <0.0008 | <0.0008 | 2 | - | - |
| Xylene | mg/L | - | <0.0008 | <0.0008 | 2 | - | - | - | <0.0008 | <0.0008 | 2 | - | - |

**Note:** n = number of samples; °C = degree Celsius; µS/cm = microSiemens per centimetre; mg/L = milligrams per litre; µg/L = micrograms per litre; % = percent; n/a = not applicable; NTU =nephelometric turbidity unit; TCU = true colour unit; - = no information.

(a)= field measurements summarized data from entire profile datasets.

(b) = percent represents only the proportion of total samples which exceeded the guideline values.

F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector not including BTEX; F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector including BTEX; F2($C_{10}$ - $C_{16}$) = hydrocarbons from the beginning of the tenth carbon chromatogram peak to the apex of the sixteenth carbon peak using a gas chromatograph with a flame ionization detector; F3($C_{16}$ - $C_{34}$) = hydrocarbons from the beginning of the sixteenth carbon chromatogram peak to the apex of the thirty forth carbon peak using a gas chromatograph with a flame ionization detector; F4($C_{34}$ - $C_{50}$) = hydrocarbons from the beginning of the thirty forth carbon chromatogram peak to the apex of the fiftieth carbon peak using a gas chromatograph with a flame ionization detector; BTEX = benzene, toluene, ethylbenzene, xylene; o - Xylene = ortho xylene; m- + P- Xylene = meta and para xylene.

## 4.3 Sediment Quality

Sediment quality data collected for each of the three study areas are summarized in Table 4-7, with the complete data set presented in Appendix A (Table A-10).

### 4.3.1 Kennady Lake Areas

The bottom sediments in Kennady Lake Areas consisted mostly of sand-sized particles, with the send proportion ranging from 55 to 75% followed by silt and clay. Occasional samples also had a high organic content (i.e., (greater than 20%), which is removed prior to calculating the texture percentages. The same samples also had higher general organic concentrations for fraction 3 and fraction 4 compounds, which represent hydrocarbon chains with 16 to 50 carbon atoms. Total carbon content ranged from 8.2 to 37%, with higher values measured in lakes D2 and E1.

Metals concentrations measured above the CCME interim sediment quality guidelines for the protection of freshwater life included arsenic, cadmium, chromium, copper, mercury and zinc (Table 4-7). Chromium and copper had a higher percentage of concentrations measured above CCME interim sediment quality guidelines. The range of metals that exceeded ISQG guidelines were consistent (except mercury) with previous baseline studies (Annex I and Addendum II of De Beers 2010).

### 4.3.2 Downstream Lakes

The lake sediments in the downstream lakes also consisted mainly of sand-sized particles, with the sand proportion ranging from 43 to 97%, followed by silt and clay particles. Total carbon content was highly variable in downstream lake sediments ranging from 0.53 to 35%, with the higher values measured in Lakes N6, N7, N12 and N13. The metals that were measured above the CCME interim sediment quality guidelines for the protection of freshwater life were similar to those listed for the Kennady Lake Areas (Table 4-7). Most of the organic parameters were below the detection limit.

### 4.3.3 Reference Lakes

Sand-sized particles comprised 63 to 80% of the bottom sediments in the two reference lakes. Total carbon content was lower than Kennady Lake Areas, ranging from 6.5 to 14%. The metals that were measured above the CCME interim sediment quality guidelines for the protection of freshwater life were similar to those listed for the Kennady Lake Areas (Table 4-7).

**Table 4-7 Sediment Quality Summary For Kennady Lake Areas, Downstream Lakes and Reference Lakes during July 2011**

| Parameter | Units | Kennady Lake Areas | | | | | Downstream Lakes | | | | | Reference Lakes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] |
| **Texture** | | | | | | | | | | | | | | | | |
| Particle size - % sand | % | 9 | 60 | 55 | 75 | - | 18 | 67.5 | 43 | 97 | - | 2 | - | 63 | 80 | - |
| Particle size - % silt | % | 9 | 32 | 20 | 36 | - | 18 | 23.5 | 3 | 41 | - | 2 | - | 15 | 32 | - |
| Particle size - % clay | % | 9 | 8 | 3 | 17 | - | 18 | 8 | <2 | 16 | - | 2 | - | 5 | 5 | - |
| Moisture content | % | 9 | 91 | 85 | 94 | - | 18 | 91 | 31 | 93 | - | 2 | - | 85 | 91 | - |
| **Conventional Parameters** | | | | | | | | | | | | | | | | |
| Total Organic Carbon | % | 9 | 14 | 8.7 | 38 | - | 18 | 14.5 | 0.5 | 34 | - | 2 | - | 7 | 12 | - |
| Total Inorganic Carbon | % | 9 | <0.02 | <0.02 | 1.6 | - | 18 | 0.04 | <0.02 | 1.7 | - | 2 | - | <0.02 | 1.7 | - |
| Total Carbon | % | 9 | 14 | 8.2 | 37 | - | 18 | 15 | 0.53 | 35 | - | 2 | - | 6.5 | 14 | - |
| **Total Metals** | | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 9 | 13,000 | 6,800 | 18,000 | - | 18 | 9,850 | 2,000 | 20,000 | - | 2 | - | 9,700 | 17,000 | - |
| Antimony | mg/kg | 9 | <1 | <1 | <2 | - | 18 | <1 | <1 | <1 | - | 2 | - | - | - | - |
| Arsenic | mg/kg | 9 | 4 | 3 | 6 | 11 | 18 | 3 | <1 | 6 | 6 | 2 | - | 4 | 12 | 50 |
| Barium | mg/kg | 9 | 77 | 48 | 100 | - | 18 | 68 | 13 | 110 | - | 2 | - | 58 | 120 | - |
| Beryllium | mg/kg | 9 | 0.5 | <0.4 | <0.8 | - | 18 | 0.4 | <0.4 | 0.9 | - | 2 | - | 0.4 | 0.8 | - |
| Boron | mg/kg | 9 | 5 | 2 | 9 | - | 18 | 3.5 | <2 | 7 | - | 2 | - | 3 | 8 | - |
| Cadmium | mg/kg | 9 | 0.4 | 0.2 | 0.8 | 33 | 18 | 0.4 | <0.1 | 0.8 | 6 | 2 | - | 0.3 | 0.6 | - |
| Chromium | mg/kg | 9 | 41 | 20 | 53 | 78 | 18 | 37 | 4 | 170 | 50 | 2 | - | 45 | 63 | 100 |
| Cobalt | mg/kg | 9 | 11 | 5 | 22 | - | 18 | 8 | 2 | 16 | - | 2 | - | 8 | 24 | - |
| Copper | mg/kg | 9 | 60 | 42 | 65 | 100 | 18 | 49 | <5 | 73 | 83 | 2 | - | 40 | 76 | 100 |
| Iron | mg/kg | 9 | 27,000 | 11,000 | 41,000 | - | 18 | 15,500 | 5,200 | 40,000 | | 2 | - | 27,000 | 46,000 | - |
| Lead | mg/kg | 9 | 6 | 3 | 9 | - | 18 | 4 | 1 | 7 | - | 2 | - | 6 | 6 | - |
| Lithium | mg/kg | 9 | 16 | <10 | <20 | - | 18 | 12 | <10 | 33 | - | 2 | - | 11 | 23 | - |
| Manganese | mg/kg | 9 | 320 | 94 | 420 | - | 18 | 165 | 62 | 510 | - | 2 | - | 220 | 2,400 | - |
| Mercury | mg/kg | 9 | 0.09 | <0.05 | 0.2 | 11 | 18 | <0.05 | <0.05 | 0.09 | - | 2 | - | <0.05 | 0.06 | - |
| Molybdenum | mg/kg | 9 | 3.2 | 1 | 5 | - | 18 | 2.4 | <0.4 | 5.4 | - | 2 | - | 3 | 3.6 | - |
| Nickel | mg/kg | 9 | 36 | 26 | 64 | - | 18 | 32.5 | 4 | 93 | - | 2 | - | 42 | 88 | - |
| Selenium | mg/kg | 9 | 0.9 | 0.8 | 1.3 | - | 18 | 0.85 | <0.5 | 1.2 | - | 2 | - | 0.7 | 1 | - |
| Silver | mg/kg | 9 | <1 | <1 | <2 | - | 18 | <1 | <1 | <1 | - | 2 | - | - | - | - |
| Strontium | mg/kg | 9 | 20 | 11 | 39 | - | 18 | 17 | <10 | 36 | - | 2 | - | 13 | 16 | - |
| Thallium | mg/kg | 9 | <0.3 | <0.3 | <0.6 | - | 18 | <0.3 | <0.3 | <0.3 | - | 2 | - | - | - | - |
| Titanium | mg/kg | 9 | 290 | 190 | 370 | - | 18 | 235 | 110 | 960 | - | 2 | - | 230 | 360 | - |
| Uranium | mg/kg | 9 | 3 | 2 | 3 | - | 18 | 3 | <1 | 4 | - | 2 | - | 2 | 4 | - |
| Vanadium | mg/kg | 9 | 37 | 20 | 46 | - | 18 | 29 | 6 | 61 | - | 2 | - | 30 | 51 | - |
| Zinc | mg/kg | 9 | 89 | 52 | 170 | 11 | 18 | 88.5 | 13 | 180 | 22 | 2 | - | 78 | 150 | 100 |

**Table 4-7 Sediment Quality Summary For Kennady Lake Areas, Downstream Lakes And Reference Lakes During July 2011 (continued)**

| Parameter | Units | Kennady Lake Areas | | | | | Downstream Lakes | | | | | Reference Lakes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] | n | Median | Minimum | Maximum | Proportion (%) of measured concentrations above/below CCME Guidelines[(a)] |
| **Organics** | | | | | | | | | | | | | | | | |
| Total Phenolics | mg/kg | 9 | <0.02 | <0.02 | 0.14 | - | 18 | <0.02 | <0.02 | 0.45 | - | 2 | - | - | - | - |
| F1 ($C_6$-$C_{10}$) | mg/kg | 9 | <130 | <78 | <200 | - | 18 | <120 | <12 | 310 | - | 2 | - | <84 | <130 | - |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/kg | 9 | <130 | <78 | <200 | - | 18 | <120 | <12 | 310 | - | 2 | - | <84 | <130 | - |
| F2 ($C_{10}$-$C_{16}$) | mg/kg | 9 | <90 | <10 | <300 | - | 18 | <60 | <10 | <100 | - | 2 | - | <60 | <100 | - |
| F3 ($C_{16}$-$C_{34}$) | mg/kg | 9 | 100 | 10 | <330 | - | 18 | 95 | <10 | 240 | - | 2 | - | <60 | <100 | - |
| F4 ($C_{34}$-$C_{50}$) | mg/kg | 9 | <90 | <10 | <300 | - | 18 | <60 | <10 | <100 | - | 2 | - | <60 | <100 | - |
| Benzene | mg/kg | 9 | 0.065 | <0.04 | 0.69 | - | 18 | <0.05 | <0.005 | 0.63 | - | 2 | - | <0.035 | 0.059 | - |
| Toluene | mg/kg | 9 | <0.22 | 0.14 | <0.34 | - | 18 | <0.115 | <0.01 | <0.3 | - | 2 | - | <0.14 | <0.22 | - |
| Ethylbenzene | mg/kg | 9 | <0.11 | <0.065 | <0.17 | - | 18 | <0.13 | 0.012 | <0.24 | - | 2 | - | 0.12 | 0.24 | - |
| m&p-Xylene | mg/kg | 9 | <0.44 | <0.26 | <0.68 | - | 18 | <0.4 | <0.04 | <0.6 | - | 2 | - | <0.28 | <0.44 | - |
| o-Xylene | mg/kg | 9 | <0.22 | <0.13 | <0.34 | - | 18 | <0.2 | <0.02 | <0.3 | - | 2 | - | 0.16 | 0.27 | - |
| Xylenes | mg/kg | 9 | <0.44 | <0.26 | <0.68 | - | 18 | <0.4 | <0.04 | <0.6 | - | 2 | - | 0.42 | 0.68 | - |

Note: [(a)] = percent represents only the proportion of total samples which exceeded CCME interim sediment quality guidelines and probable effect levels.

% = percent; - = no data; mg/kg = milligrams per kilogram.

F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector not including BTEX; F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector including BTEX; F2($C_{10}$ - $C_{16}$) = hydrocarbons from the beginning of the tenth carbon chromatogram peak to the apex of the sixteenth carbon peak using a gas chromatograph with a flame ionization detector; F3($C_{16}$ - $C_{34}$) = hydrocarbons from the beginning of the sixteenth carbon chromatogram peak to the apex of the thirty forth carbon peak using a gas chromatograph with a flame ionization detector; F4($C_{34}$ - $C_{50}$) = hydrocarbons from the beginning of the thirty forth carbon chromatogram peak to the apex of the fiftieth carbon peak using a gas chromatograph with a flame ionization detector; BTEX = benzene, toluene, ethylbenzene, xylene; o - Xylene = ortho xylene; m- + P- Xylene = meta and para xylene.

# 5.0 QUALITY CONTROL

Quality assurance and quality control (QA/QC) protocols included processes incorporated into sample collection, data analysis and reporting. These procedures are utilized to make sure that the data generated during this monitoring program are of consistent high quality and appropriate to address the objectives of the study. The quality control (QC) results for water quality are provided in Appendix A (Table A-11 for April samples and Table A-12 for July/August samples).

The concentrations of all field blanks, travel blanks and equipment blanks were below five times of the detection limit for conventional parameters, major ions, nutrients and biological parameters, and organics parameters, with only a few exceptions. The chemical oxygen demand and total phosphorus (TP) concentrations from an April field blank and travel blank, respectively, were greater than five times of the detection limit. A hardness value from an equipment blank and two sulphide levels from a field and travel blank in July were also greater than five times of the detection limit.

The concentrations of all field blanks, travel blanks and equipment blanks for most of the metals were below five times of the detection limit with some exceptions. In April, most total and dissolved lead concentrations were greater than five times of the detection limit. Blank samples collected in the July baseline program did not indicate any notable QC results for any metal parameters. However, the equipment blank collected on July 23 had measured metals concentrations that were five times the detection limit for aluminium, antimony, barium, bismuth strontium and zinc. These results were considered in the interpretation of the results.

A number of parameters had RPD values for duplicate and split water samples above the QC assessment criterion of 20%. Approximately 9% of the April parameters and 12% of the July parameters exceeded this criterion. This represents a high level of field sampling and analytical precision, and does not significantly influence the interpretation of the 2011 baseline data.

Sediment quality control results are presented in Appendix A (Table A-13). Two duplicate and split samples were collected as a part of the July field program. Only 5% of the parameters from these samples had a relative percent difference greater than 20% indicating a high level of field sampling and analytical precision.

Dissolved concentrations of metals were generally lower than the total concentrations at all stations in April and July 2011. If results for the dissolved concentrations were greater than five times the detection limits and the dissolved metals concentration was greater than 20% of the equivalent total metal concentration, the data were qualified as having a dissolved to total ratio outside of an acceptable range. The exclusion of dissolved metals from the data analyses did not affect the conclusion of this report because the evaluation of changes and comparison to water quality guidelines were based on total metals concentrations, which were considered valid. Dissolved values that were greater than five times the detection limits, with dissolved metals concentrations greater than 20% of the total concentrations, occurred most frequently for cobalt and nickel in the April samples, and zinc and lead in the July samples. The filtering equipment or a component of the filtering process may have contributed to the higher concentration of these dissolved metals.

# 6.0 CONCLUSION

The 2011 Water Quality and Sediment Quality Baseline was designed to supplement the existing baseline water and sediment quality datasets.

## 6.1 Spring Freshet Program

The in situ freshet monitoring was carried out to understand the water quality changes (with a special emphasis on TSS/turbidity) in the lakes as they transition from under-ice to open-water conditions. Little or no particulate matter was introduced into the water column during the freshet, which is typical of lakes located within an area predominated by igneous rocks and lichens with little or no soil development. TSS in Kennady Lake Area 8 and Lake I1 remained below the detection limit (<1 mg/L) indicating that TSS/turbidity levels within lakes are negligible. However, slightly elevated TSS levels were recorded in freshet flows in the lake outlets (range from <1 to 2 mg/L).

Under-ice pH in both lakes and under-ice DO in Kennady Lake Area 8 were measured below the lower bound CCME water quality guidelines for the protection of freshwater life, but these values increased with the onset of the freshet flows. The pH in freshet flows measured in 11 lake outlets was measured below the CCME water quality guidelines for the protection of aquatic life and Health Canada drinking water guidelines. The total metal parameters in the freshet flows measured above guidelines included aluminum, cadmium, iron and manganese.

## 6.2 2011 Baseline Program

Concentrations of water quality parameters recorded in baseline program were generally consistent with the spring freshet program. Field measured pH and DO were measured at concentrations within the water column that were below the lower bound CCME water quality guideline for the protection of freshwater life and/or Health Canada drinking water quality guidelines in all three sampling locations. TSS concentrations in the Kennady Lake Study Area and Reference Lakes were below the detection limit; however, TSS concentrations measured in the Downstream Lakes ranged from <1.0 to 3.0 mg/L.

Concentrations of major ions were low, and very similar in all waterbodies sampled in previous years (De Beers 2010). Bicarbonate was the major anion and calcium was the major cation at all locations.

The TP concentrations in Kennady Lake Areas, Downstream Lakes and Reference Lakes ranged from <0.001 to 0.016 mg/L, <0.001 to 0.01 mg/L and <0.001 to 0.003 mg/L, respectively. Similarly, chlorophyll *a* concentrations in the three study locations were <0.5 to 8.0 µg/L, <0.5 to 3.8 µg/L and 0.7 µg/L, respectively. Nitrogen fractions were often below the detection limit. Based on the nutrient/trophic status, Kennady Lake and Downstream Lakes could be categorized as oligotrophic lakes, whereas Reference Lakes could be regarded as ultra-oligotrophic (OECD 1982).

Water quality profile data indicate that there were slight water column gradients for DO and temperature during under-ice conditions. DO concentrations commonly fell below the CCME guidelines in the bottom zones of the water column in all sampling locations, except in the two reference lakes. During open water conditions, well-mixed water column DO conditions were evident at all sampling locations.

A number of total and dissolved metals had concentrations below the detection limits at all locations, including beryllium, boron, chromium, selenium, sulphur, and vanadium. However, a number of total metals concentrations

were measured above the CCME water quality guidelines for the protection of freshwater life and/or Health Canada drinking water quality guidelines; these included aluminum, cadmium and iron. The results are consistent with the previous studies (De Beers 2010).

Sediment texture data indicated that sand-sized particles dominated in the surface lakebed sediments in most of the sampling locations. Metals concentrations in lakebed sediments were measured above the CCME interim sediment quality guidelines for the protection of freshwater life for arsenic, cadmium, chromium, copper, mercury and zinc. The results are consistent with the previous baseline programs (Annex I of De Beers 2010).

Finally, the QA/QC assessment indicates a high level of field sampling and analytical precision for the water quality and sediment quality components of the 2011 baseline monitoring program. Therefore, the data generated in both Spring Freshet Program and 2011 Baseline Program were of highly acceptable quality and adequate to address the objectives of this study.

# 7.0 CLOSURE

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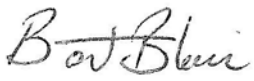

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JF/EA/BB/kl

# 8.0 REFERENCES

CCME (Canadian Council of Ministers of the Environment). 1999, with updates to 2010. Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB.

CCME. 2002. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life: Summary Tables, Updated 2002. In: Canadian Environmental Quality Guidelines (1999). Canadian Council of Ministers of the Environment, Winnipeg, MB.

De Beers (De Beers Canada Inc.). 2010. Environmental Impact Statement for the Gahcho Kué Project. Volumes 1, 2, 3a, 3b, 4, 5, 6a, 6b, 7 and Annexes A through N. Submitted to Mackenzie Valley Environmental Impact Review Board. December 2010.

Health Canada. 2008. Summary of Guidelines for Canadian Drinking Water Quality. Prepared by the Federal-Provincial Subcommittee on Drinking Water of the Federal-Provincial-Territorial Committee on Environmental and Occupational Health.

OECD (Organization for Economic Co-operation and Development). 1982. Eutrophication of Waters, Monitoring, Assessment and Control. Organization for Economic Co-operation and Development, Paris. 154 pp.

YSI incorporated. 2009. 6-Series Multiparameter Water Quality Sondes, User Manual, Revision F. September 2009.

# 9.0 ABBREVIATIONS

| | |
|---|---|
| $CaCO_3$ | calcium carbonate |
| CCME | Canadian Council of Ministers of the Environment |
| CDWQ | Guideline(s) for Canadian Drinking Water Quality |
| COD | chemical oxygen demand |
| CWQG | Canadian Water Quality Guidelines for the Protection of Aquatic Life |
| DO | dissolved oxygen |
| DOC | dissolved organic carbon |
| EIS | Environmental Impact Statement |
| ISQG | Interim Sediment Quality Guidelines |
| KLSA | Kennady Lake Study Area |
| LSA | local study area |
| MDL(s) | method detection limit(s) |
| NTU | nephelometric turbidity unit |
| NWT | Northwest Territories |
| ORP | oxidation/reduction potential |
| Project | Gahcho Kué Project |
| RSA | regional study area |
| TCU | true colour unit |
| TDS | total dissolved solids |
| TOC | total organic carbon |
| TP | total phosphorus |
| TSS | total suspended solids |
| UTM | Universal Transverse Mercator |

## 9.1 Units of Measure

| | |
|---|---|
| % | percent |
| < | less than |
| °C | degrees Celsius |
| cm | centimetre |
| L | litre |
| m | metre |
| mg/kg | milligrams per kilograms |
| mg/L | milligrams per litre |
| mg N/L | milligrams nitrogen per litre |
| n | number of samples |
| NTU | nephelometric turbidity unit |
| TCU | true colour unit |
| µg/L | microgram per litre |
| µg/g | microgram per gram |
| µS/cm | microSiemens per centimetre |

# 10.0 GLOSSARY

| | |
|---|---|
| **Alkalinity** | A measurement (expressed in milligrams per litre of calcium carbonate) of the capacity of water to neutralize acids. The concentration is measured based on the presence of naturally available bicarbonate, carbonate, and hydroxide ions. |
| **Anion** | A negatively charged ion. |
| **Basin** | A large area that is lower in elevation than surrounding areas and contains water. Basins are separated by land or shallow channels. |
| **Bicarbonate** | A negatively charged ion or anion ($HCO_3^-$) that forms carbonic acid salts that increase the buffering capacity of water. |
| **Canadian Water Quality Guideline (CWQG) for the Protection of Aquatic Life** | Guidelines established by the Canadian Council of Ministers of the Environment and used to assess the potential effects of the concentration of different water quality parameters upon aquatic life (i.e., fish, aquatic plants [macrophytes], and benthic invertebrates). |
| **Cation** | A positively charged ion. |
| **Chemical Oxygen Demand (COD)** | The amount of oxygen required to decompose (oxidize) all compounds, both organic and inorganic, in water. |
| **Chlorophyll *a*** | One of the green pigments in plants. It is a photo-sensitive pigment that is essential for the conversion of inorganic carbon (e.g., carbon dioxide) and water into organic carbon (e.g., sugar). The concentration of chlorophyll a in water is an indicator of algal concentration and is frequently used to characterize lake productivity. |
| **Composite Sample** | A sample taken by combining several fractions of water from different depths within the water column of a lake into a common vessel that is used to collect the water sample destined for the laboratory. A composite sample can also be obtained as a combination of samples taken from different parts of a waterbody laterally. |
| **Conductivity** | A measure of the ability of water to carry an electrical current. This measurement is directly related to the amount of positively (cations) and negatively (anions) charged ions in the water and can be correlated with the concentration of total dissolved solids (TDS). |
| **Dissolved Organic Carbon** | All organic carbon that results from the decomposition of organic matter (such as sugars and acids) that leaches from soils and becomes dissolved within the water. High DOC concentrations change the water colour from clear to “tea-coloured’. |
| **Dissolved Oxygen** | The amount of free oxygen dissolved in water, usually expressed in milligrams per litre (mg/L), parts per million (ppm), or percent of saturation (%). Adequate concentrations of DO are necessary for fish and other aquatic organisms. |

| | |
|---|---|
| **Equipment Blank** | Equipment blanks consist of sample bottles filled with de-ionized water at the field, exposed to all aspects of sample collection and analysis, using the same procedures used in the field, including contact with all sampling devices. |
| **Field Blank** | A solution of de-ionized water provided by the laboratory that is used to detect sample contamination during the collection, shipping, and analysis of samples. |
| **Freshet** | A sudden overflow of a stream resulting from a heavy rain or a thaw |
| **Guideline for Canadian Drinking Water Quality (CDWQ)** | Health Canada guidelines used to assess the suitability of water for human consumption. |
| **Hardness** | A characteristic of water caused by the presence of positively charged ions (cations) such as calcium, magnesium, iron, and manganese. This parameter is measured in mg/L of calcium carbonate. |
| **Ion** | An atom or molecule with a net electric charge due to the loss or gain of one or more electrons. |
| **Method Detection Limit** | The minimum concentration of a substance that can be measured and reported with a 99% confidence. |
| **Nitrate + Nitrite** | The sum of the concentrations of nitrate and nitrite. |
| **Oligotrophic Lake** | Waterbodies that are nutrient poor and contain little aquatic plant or animal life. |
| **Open Water Conditions** | The period of time when the surface of a waterbody is completely free of ice. |
| **Oxidation/Reduction Potential (ORP)** | Is a measure of the tendency of a chemical species to acquire electrons and thereby be reduced. |
| **Particulate Load** | The mass of particulates per unit volume of air or water. |
| **pH** | The negative log of the concentration of the hydronium ion. The pH is a measure of the acidity or alkalinity of all materials dissolved in water, expressed on a scale from 0 to 14, where 7 is neutral, values below 7 are acidic, and values over 7 are alkaline. |
| **Phenol** | A class of toxic compounds derived from benzene that can originate naturally in the aquatic environment through the decomposition of organic matter. These compounds can originate artificially through the contamination of the aquatic environment by plastics, herbicides, and disinfectants. They can also be introduced as a by-product in industrial processes. |
| **Quality Assurance / Quality Control Procedures** | A review by field personnel and laboratories of the procedures used in the collection, transport, and analysis of samples. |

| | |
|---|---|
| **Secchi Depth** | A parameter used to determine the clarity of surface waters. The measurement is made with a "Secchi" disk, a black and white disk that is lowered into the water and the depth is recorded at which it is no longer visible. A secchi depth recording of 5 ft indicates that the device was last visible at 5 ft below the surface.<br>High secchi depth readings indicate clearer water that allows sunlight to penetrate to greater depths. Low readings indicate turbid water which can reduce the passage of sunlight to bottom depths. Limited light penetration can be a factor in diminished aquatic plant growth beneath the surface, thus reducing the biological reaeration at lower depths. |
| **Sediment** | Solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope soil characteristics, land usage and quantity and intensity of precipitation. |
| **Sondes** | An instrument probe that automatically transmits information about its surroundings underground, under water, in the atmosphere, etc. |
| **Specific Conductivity** | (See also Conductivity). A conductivity reading normalized to a temperature of 25ºC. This allows valuable comparisons to be made. |
| **Split Samples** | Split samples consist of different parts of the same sample in separate sample bottles and are analysed for the same parameters under different sample codes. |
| **Sub-watershed** | A smaller portion of a watershed containing a drainage area that is connected to the larger portion by a single channel. |
| **Thermal Stratification** | Horizontal layers of differing densities produced in a lake by temperature changes at different depths. |
| **Total Dissolved Solids (TDS)** | The dissolved matter found in water comprised of mineral salts and small amounts of other inorganic and organic substances. |
| **Total Organic Carbon** | A measure of the concentration of organic carbon in water, determined by the oxidation of the organic matter into carbon dioxide ($CO_2$). |
| **Total Phosphorus** | A measurement of particulate and dissolved phosphorus and phosphate molecules in water. |
| **Total Suspended Solids (TSS)** | A measurement of the concentration of particulate matter found in water. |
| **Travel Blank** | Travel blanks consist of sample bottles filled with de-ionized water at the laboratory, remain sealed and accompany the field collected samples through sample collection, handling and shipping and are analysed for the similar parameters as field collected samples. |

| | |
|---|---|
| **Turbidity** | Muddiness created by stirring up sediment or having foreign particles suspended. |
| **Under Ice Conditions** | The period of year when the lakes are partially or completely covered with ice. |
| **Watershed** | The entire catchment area of runoff containing a single outlet. |

# APPENDIX A

## 2011 Freshet, Water and Sediment Data

**Table A-1 Analytical Detection Limit for Water Quality Parameters**

| Parameter | Units | Detection Limit |
|---|---|---|
| **Conventional Parameters** | | |
| Colour | TCU | 2 |
| pH (laboratory) | n/a | - |
| Specific conductivity (laboratory) | µS/cm | 1 |
| Total dissolved solids | mg/L | 10 |
| Total dissolved solids, calculated | mg/L | 10 |
| Total organic carbon | mg/L | 0.5 |
| Dissolved organic carbon | mg/L | 0.5 |
| Hardness | mg/L | 0.5 |
| Hardness | mg-$CaCO_3$/L | 0.5 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | 0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 0.5 |
| Turbidity | NTU | 0.1 |
| Total suspended solids | mg/L | 1 |
| **Major Ions** | | |
| Bicarbonate | mg/L | 0.5 |
| Calcium | mg/L | 0.3 |
| Carbonate | mg/L | 0.5 |
| Chloride | mg/L | 1 |
| Fluoride | mg/L | 0.05 |
| Hydroxide | mg/L | 0.5 |
| Magnesium | mg/L | 0.2 |
| Potassium | mg/L | 0.3 |
| Sodium | mg/L | 0.5 |
| Sulphate | mg/L | 1 |
| Sulphide | mg/L | 0.002 |
| **Nutrients and Biological Measurements** | | |
| Chlorophyll *a* | µg/L | 1 |
| Chemical oxygen demand | mg/L | 5 |
| Nitrate+Nitrite | mg-N/L | 0.003 |
| Nitrate | mg-N/L | 0.003 |
| Nitrite | mg-N/L | 0.003 |
| Total ammonia | mg-N/L | 0.5 |
| Total Kjeldahl nitrogen | mg/L | 0.05 |
| Total phosphorus | mg/L | 0.001 |
| **Total Metals** | | |
| Aluminum | mg/L | 0.0002 - 0.001 |
| Antimony | mg/L | 0.00002 - 0.0001 |
| Arsenic | mg/L | 0.00002 - 0.0001 |
| Barium | mg/L | 0.00002 - 0.0001 |
| Beryllium | mg/L | 0.00001 - 0.00005 |
| Total recoverable bismuth | mg/L | 0.000005 - 0.00003 |
| Boron | mg/L | 0.005 - 0.05 |
| Cadmium | mg/L | 0.000005 - 0.00003 |

**Table A-1 Analytical Detection Limit for Water Quality Parameters (continued)**

| Parameter | Units | Detection Limit |
|---|---|---|
| Chromium | mg/L | 0.0001 - 0.0005 |
| Cobalt | mg/L | 0.000005 - 0.00003 |
| Copper | mg/L | 0.00005 - 0.0003 |
| Iron | mg/L | 0.001 - 0.005 |
| Lead | mg/L | 0.000005 - 0.00003 |
| Lithium | mg/L | 0.0005 - 0.003 |
| Manganese | mg/L | 0.00005 - 0.0003 |
| Mercury | mg/L | 0.000002 |
| Molybdenum | mg/L | 0.00005 - 0.0003 |
| Nickel | mg/L | 0.00002 - 0.0001 |
| Selenium | mg/L | 0.00004 - 0.0002 |
| Silicon | mg/L | 0.1 - 0.5 |
| Silver | mg/L | 0.000005 - 0.00003 |
| Strontium | mg/L | 0.00005 - 0.0003 |
| Sulphur | mg/L | 10 - 50 |
| Tin | mg/L | 0.00001 - 0.00005 |
| Thallium | mg/L | 0.000002 - 0.00001 |
| Titanium | mg/L | 0.0005 - 0.003 |
| Uranium | mg/L | 0.000002 - 0.00001 |
| Vanadium | mg/L | 0.0002 - 0.001 |
| Zirconium | mg/L | 0.0001 - 0.0005 |
| Zinc | mg/L | 0.0001 - 0.0005 |
| **Dissolved Metals** | | |
| Aluminum | mg/L | 0.0002 |
| Antimony | mg/L | 0.00002 |
| Arsenic | mg/L | 0.00002 |
| Barium | mg/L | 0.00002 |
| Beryllium | mg/L | 0.00001 |
| Bismuth | mg/L | 0.000005 |
| Boron | mg/L | 0.05 |
| Cadmium | mg/L | 0.000005 |
| Chromium | mg/L | 0.0001 |
| Cobalt | mg/L | 0.000005 |
| Copper | mg/L | 0.00005 |
| Iron | mg/L | 0.06 |
| Lead | mg/L | 0.000005 |
| Lithium | mg/L | 0.0005 |
| Manganese | mg/L | 0.004 |
| Mercury | mg/L | 0.000002 |
| Molybdenum | mg/L | 0.00005 |
| Nickel | mg/L | 0.00002 |
| Silicon | mg/L | 0.1 |
| Selenium | mg/L | 0.00004 |
| Silver | mg/L | 0.000005 |

**Table A-1 Analytical Detection Limit for Water Quality Parameters (continued)**

| Parameter | Units | Detection Limit |
|---|---|---|
| Strontium | mg/L | 0.00005 |
| Sulphur | mg/L | 10 |
| Tin | mg/L | 0.00001 |
| Thallium | mg/L | 0.000002 |
| Titanium | mg/L | 0.0005 |
| Uranium | mg/L | 0.000002 |
| Vanadium | mg/L | 0.0002 |
| Zinc | mg/L | 0.0001 |
| Zirconium | mg/L | 0.0001 |
| **General Organics** | | |
| Naphthenic acids | mg/L | 1 |
| Total phenolics | mg/L | 0.002 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | 0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | 0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | 0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | 0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | 0.1 |
| **Volatile Organics** | | |
| Benzene | mg/L | 0.0004 |
| Toluene | mg/L | 0.0004 |
| Ethyl benzene | mg/L | 0.0004 |
| Xylene, m-, p- | mg/L | 0.0008 |
| Xylene, o- | mg/L | 0.0004 |
| Xylenes | mg/L | 0.0008 |

**Note:** n/a = not applicable; µS/cm = micro Siemens per centimetre; °C = degrees Celsius; % = percent saturation; mg/L = milligrams per litre; TCU = true color units: mg-$CaCO_3$/L = milligrams calcium carbonate per litre; NTU = Nephelometric turbidity units; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligrams phosphorus per litre.

F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector not including BTEX; F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector including BTEX; F2($C_{10}$ - $C_{16}$) = hydrocarbons from the beginning of the tenth carbon chromatogram peak to the apex of the sixteenth carbon peak using a gas chromatograph with a flame ionization detector; F3($C_{16}$ - $C_{34}$) = hydrocarbons from the beginning of the sixteenth carbon chromatogram peak to the apex of the thirty forth carbon peak using a gas chromatograph with a flame ionization detector; F4($C_{34}$ - $C_{50}$) = hydrocarbons from the beginning of the thirty forth carbon chromatogram peak to the apex of the fiftieth carbon peak using a gas chromatograph with a flame ionization detector; BTEX = benzene, toluene, ethylbenzene, xylene; o - Xylene = ortho xylene; m- + P- Xylene = meta and para xylene.

**Table A-2 Analytical Detection Limit for Sediment Quality Parameters**

| Texture | Units | Detection Limit [(a)] |
|---|---|---|
| Particle size - % sand | % | 2 |
| Particle size - % silt | % | 2 |
| Particle size - % clay | % | 2 |
| moisture content | % | 0.3 |
| **Conventional Parameters** | | |
| Total organic carbon | % | 0.2 |
| Total inorganic carbon | % | 0.02 |
| Total carbon | % | 0.2 |
| **Total Metals** | | |
| Aluminum | mg/kg | 10 (20) |
| Antimony | mg/kg | 1 (2) |
| Arsenic | mg/kg | 1 (2) |
| Barium | mg/kg | 10 (20) |
| Beryllium | mg/kg | 0.4 (0.8) |
| Boron | mg/kg | 2 (4) |
| Cadmium | mg/kg | 0.1 (0.2) |
| Chromium | mg/kg | 1 (2) |
| Cobalt | mg/kg | 1 (2) |
| Copper | mg/kg | 5 (10) |
| Iron | mg/kg | 10 (20) |
| Lead | mg/kg | 1 (2) |
| Lithium | mg/kg | 10 (20) |
| Manganese | mg/kg | 10 (20) |
| Mercury | mg/kg | 0.05 (0.1) |
| Molybdenum | mg/kg | 0.4 (0.8) |
| Nickel | mg/kg | 1 (2) |
| Selenium | mg/kg | 0.5 (1) |
| Silver | mg/kg | 1 (2) |
| Strontium | mg/kg | 10 (20) |
| Thallium | mg/kg | 0.3 (0.6) |
| Titanium | mg/kg | 1 (2) |
| Uranium | mg/kg | 1 (2) |
| Vanadium | mg/kg | 1 (2) |
| Zinc | mg/kg | 10 (20) |
| **Organics** | | |
| Total phenolics | µg/g | 0.02 |
| F1 ($C_6$-$C_{10}$) | µg/g | 12 - 220 |
| F1 ($C_6$-$C_{10}$) - BTEX | µg/g | 12 - 220 |
| F2 ($C_{10}$-$C_{16}$) | µg/g | 10 - 300 |
| F3 ($C_{16}$-$C_{34}$) | µg/g | 10 - 300 |
| F4 ($C_{34}$-$C_{50}$) | µg/g | 10 - 300 |
| Benzene | µg/g | 0.005 - 0.09 |
| Ethylbenzene | µg/g | 0.01 - 0.18 |
| Toluene | µg/g | 0.02 - 0.36 |

**Table A-2 Analytical Detection Limit for Sediment Quality Parameters (continued)**

| Texture | Units | Detection Limit [(a)] |
|---|---|---|
| Xylenes | µg/g | 0.04 - 0.72 |
| m- + p-Xylene | µg/g | 0.04 - 0.72 |
| o- Xylene | µg/g | 0.02 - 0.36 |

**Note:** % = percent; µS/cm = micro Siemens per litre; mg/kg = milligrams per kilogram.

(a) = Value in bracket indicates detection limit for sample collected at site D2; values presented as a range indicate multiple detection limits which varied by sample.

F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector not including BTEX; F1($C_6$ - $C_{10}$) - BTEX = hydrocarbons from the beginning of the six carbon chromatogram peak to the apex of the ten carbon peak using a gas chromatograph with a flame ionization detector including BTEX; F2($C_{10}$ - $C_{16}$) = hydrocarbons from the beginning of the tenth carbon chromatogram peak to the apex of the sixteenth carbon peak using a gas chromatograph with a flame ionization detector; F3($C_{16}$ - $C_{34}$) = hydrocarbons from the beginning of the sixteenth carbon chromatogram peak to the apex of the thirty forth carbon peak using a gas chromatograph with a flame ionization detector; F4($C_{34}$ - $C_{50}$) = hydrocarbons from the beginning of the thirty forth carbon chromatogram peak to the apex of the fiftieth carbon peak using a gas chromatograph with a flame ionization detector; BTEX = benzene, toluene, ethylbenzene, xylene; o - Xylene = ortho xylene; m- + P- Xylene = meta and para xylene.

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 18-May-11 | 14:00:53 | 2.2 | 3.4 | 6.1 | 16.00 | 13.1 | 98 | -0.80 | 233 |
| 18-May-11 | 15:00:53 | 2.2 | 3.2 | 6.0 | 16.00 | 13.3 | 100 | -0.80 | 238 |
| 18-May-11 | 16:00:53 | 2.2 | 3.2 | 5.9 | 16.00 | 13.2 | 99 | -0.90 | 241 |
| 18-May-11 | 17:00:52 | 2.2 | 3.2 | 5.9 | 16.00 | 13.6 | 102 | -0.90 | 242 |
| 18-May-11 | 18:00:53 | 2.2 | 3.2 | 5.9 | 16.00 | 13.7 | 103 | -0.90 | 242 |
| 18-May-11 | 19:00:52 | 2.2 | 3.2 | 5.9 | 16.00 | 13.7 | 102 | -0.80 | 243 |
| 18-May-11 | 20:00:53 | 2.2 | 3.2 | 5.9 | 16.00 | 13.6 | 102 | -0.80 | 245 |
| 18-May-11 | 21:00:53 | 2.2 | 3.2 | 5.8 | 16.00 | 13.6 | 102 | -0.80 | 249 |
| 18-May-11 | 22:00:53 | 2.2 | 3.2 | 5.8 | 16.00 | 13.6 | 101 | -0.80 | 251 |
| 18-May-11 | 23:00:53 | 2.3 | 3.2 | 5.8 | 16.00 | 13.6 | 101 | -0.80 | 249 |
| 19-May-11 | 0:00:53 | 2.3 | 3.2 | 5.8 | 16.00 | 13.6 | 101 | -0.80 | 249 |
| 19-May-11 | 1:00:53 | 2.3 | 3.2 | 5.8 | 16.00 | 13.7 | 102 | -0.90 | 251 |
| 19-May-11 | 2:00:53 | 2.3 | 3.2 | 5.8 | 16.00 | 13.8 | 103 | -0.80 | 251 |
| 19-May-11 | 3:00:53 | 2.3 | 3.2 | 5.8 | 16.00 | 13.8 | 103 | -0.80 | 252 |
| 19-May-11 | 4:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.8 | 103 | -0.80 | 255 |
| 19-May-11 | 5:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.8 | 103 | -0.80 | 256 |
| 19-May-11 | 6:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.8 | 103 | -0.90 | 254 |
| 19-May-11 | 7:00:53 | 2.3 | 3.1 | 5.8 | 16.00 | 13.9 | 103 | -0.80 | 251 |
| 19-May-11 | 8:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.9 | 103 | -0.90 | 253 |
| 19-May-11 | 9:00:53 | 2.3 | 3.1 | 5.8 | 16.00 | 13.9 | 104 | -0.70 | 248 |
| 19-May-11 | 10:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.8 | 103 | -0.80 | 251 |
| 19-May-11 | 11:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.7 | 102 | -0.80 | 248 |
| 19-May-11 | 12:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.3 | 99 | -0.80 | 247 |
| 19-May-11 | 13:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.4 | 100 | -0.80 | 243 |
| 19-May-11 | 14:00:52 | 2.3 | 3.1 | 5.7 | 16.00 | 13.4 | 99 | -0.80 | 239 |
| 19-May-11 | 15:00:52 | 2.3 | 3.1 | 5.8 | 16.00 | 13.5 | 100 | -0.80 | 237 |
| 19-May-11 | 16:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.5 | 101 | -0.80 | 238 |
| 19-May-11 | 17:00:53 | 2.3 | 3.1 | 5.7 | 16.00 | 13.6 | 101 | -0.90 | 238 |
| 19-May-11 | 18:00:53 | 2.3 | 3.0 | 5.7 | 16.00 | 13.6 | 101 | -0.80 | 238 |
| 19-May-11 | 19:00:53 | 2.3 | 3.1 | 5.6 | 15.00 | 13.6 | 101 | -0.90 | 239 |
| 19-May-11 | 20:00:53 | 2.3 | 3.0 | 5.6 | 15.00 | 13.6 | 101 | -0.80 | 239 |
| 19-May-11 | 21:00:53 | 2.3 | 3.0 | 5.7 | 15.00 | 13.6 | 101 | -0.80 | 235 |
| 19-May-11 | 22:00:53 | 2.3 | 3.0 | 5.7 | 15.00 | 13.6 | 101 | -0.80 | 234 |
| 19-May-11 | 23:00:53 | 2.3 | 2.9 | 5.6 | 15.00 | 13.6 | 101 | -0.80 | 238 |
| 20-May-11 | 0:00:53 | 2.3 | 2.9 | 5.6 | 15.00 | 13.6 | 101 | -0.80 | 240 |
| 20-May-11 | 1:00:53 | 2.3 | 2.9 | 5.6 | 15.00 | 13.6 | 100 | -0.80 | 240 |
| 20-May-11 | 2:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.6 | 100 | -0.80 | 238 |
| 20-May-11 | 3:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.5 | 100 | -0.80 | 238 |
| 20-May-11 | 4:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.5 | 100 | -0.80 | 238 |
| 20-May-11 | 5:00:54 | 2.3 | 2.9 | 5.7 | 15.00 | 13.6 | 100 | -0.80 | 238 |
| 20-May-11 | 6:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.5 | 100 | -0.80 | 238 |
| 20-May-11 | 7:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.5 | 100 | -0.80 | 238 |
| 20-May-11 | 8:00:53 | 2.3 | 2.8 | 5.8 | 15.00 | 13.5 | 100 | -0.80 | 238 |
| 20-May-11 | 9:00:53 | 2.3 | 2.8 | 5.8 | 15.00 | 13.5 | 100 | -0.90 | 238 |
| 20-May-11 | 10:00:53 | 2.3 | 2.8 | 5.7 | 15.00 | 13.5 | 100 | -0.80 | 242 |
| 20-May-11 | 11:00:53 | 2.3 | 2.8 | 5.7 | 15.00 | 13.5 | 99 | -0.90 | 243 |
| 20-May-11 | 12:00:52 | 2.3 | 2.8 | 5.7 | 15.00 | 13.4 | 99 | -0.80 | 242 |
| 20-May-11 | 13:00:52 | 2.3 | 2.8 | 5.7 | 15.00 | 13.5 | 99 | -0.80 | 241 |
| 20-May-11 | 14:00:53 | 2.3 | 2.8 | 5.7 | 15.00 | 13.5 | 100 | -0.80 | 237 |
| 20-May-11 | 15:00:53 | 2.3 | 2.9 | 5.8 | 15.00 | 13.5 | 100 | -0.80 | 236 |
| 20-May-11 | 16:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.6 | 101 | -0.80 | 238 |
| 20-May-11 | 17:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.8 | 102 | -0.80 | 237 |
| 20-May-11 | 18:00:54 | 2.3 | 2.9 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 236 |
| 20-May-11 | 19:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 237 |
| 20-May-11 | 20:00:53 | 2.3 | 2.9 | 5.6 | 15.00 | 13.8 | 102 | -0.80 | 238 |
| 20-May-11 | 21:00:53 | 2.3 | 2.9 | 5.7 | 15.00 | 13.8 | 102 | -0.80 | 233 |
| 20-May-11 | 22:00:53 | 2.3 | 3.0 | 5.8 | 15.00 | 14.0 | 104 | -0.90 | 232 |
| 20-May-11 | 23:00:53 | 2.2 | 2.9 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 232 |
| 21-May-11 | 0:00:53 | 2.2 | 2.9 | 5.7 | 15.00 | 13.8 | 103 | -0.80 | 237 |
| 21-May-11 | 1:00:53 | 2.2 | 3.0 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 237 |
| 21-May-11 | 2:00:54 | 2.2 | 3.0 | 5.7 | 15.00 | 14.0 | 104 | -0.80 | 240 |
| 21-May-11 | 3:00:53 | 2.2 | 2.9 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 240 |
| 21-May-11 | 4:00:54 | 2.2 | 2.9 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 240 |
| 21-May-11 | 5:00:53 | 2.2 | 2.9 | 5.7 | 15.00 | 13.9 | 103 | -0.80 | 236 |
| 21-May-11 | 6:00:53 | 2.2 | 2.8 | 5.8 | 15.00 | 13.9 | 103 | -0.80 | 236 |
| 21-May-11 | 7:00:53 | 2.2 | 2.9 | 5.8 | 15.00 | 13.9 | 103 | -0.90 | 235 |
| 21-May-11 | 8:00:53 | 2.2 | 2.9 | 5.7 | 15.00 | 14.0 | 104 | -0.80 | 240 |
| 21-May-11 | 9:00:53 | 2.2 | 2.8 | 5.8 | 15.00 | 14.0 | 104 | -0.80 | 237 |
| 21-May-11 | 10:00:53 | 2.2 | 2.9 | 5.8 | 15.00 | 14.1 | 104 | -0.80 | 236 |
| 21-May-11 | 11:00:53 | 2.2 | 2.9 | 5.7 | 15.00 | 14.1 | 104 | -0.80 | 239 |
| 21-May-11 | 12:00:53 | 2.2 | 2.8 | 5.8 | 15.00 | 14.1 | 104 | -0.70 | 237 |
| 21-May-11 | 13:00:54 | 2.2 | 2.8 | 5.7 | 15.00 | 14.0 | 103 | -0.80 | 242 |
| 21-May-11 | 14:00:53 | 2.2 | 2.8 | 5.6 | 15.00 | 13.9 | 103 | -0.80 | 245 |
| 21-May-11 | 15:00:53 | 2.2 | 2.8 | 5.6 | 15.00 | 13.9 | 103 | -0.80 | 244 |
| 21-May-11 | 16:00:54 | 2.3 | 2.8 | 5.6 | 15.00 | 14.0 | 103 | -0.70 | 244 |
| 21-May-11 | 17:00:54 | 2.3 | 2.8 | 5.6 | 15.00 | 14.0 | 103 | -0.80 | 243 |
| 21-May-11 | 18:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 13.9 | 103 | -0.70 | 239 |
| 21-May-11 | 19:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 13.9 | 103 | -0.70 | 241 |
| 21-May-11 | 20:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 13.9 | 103 | -0.80 | 239 |
| 21-May-11 | 21:00:53 | 2.3 | 2.8 | 5.7 | 14.00 | 13.9 | 103 | -0.70 | 237 |
| 21-May-11 | 22:00:54 | 2.3 | 2.9 | 5.7 | 14.00 | 14.0 | 103 | -0.80 | 237 |
| 21-May-11 | 23:00:53 | 2.3 | 2.8 | 5.7 | 14.00 | 13.9 | 103 | -0.80 | 236 |
| 22-May-11 | 0:00:53 | 2.3 | 2.8 | 5.7 | 14.00 | 13.9 | 102 | -0.80 | 235 |
| 22-May-11 | 1:00:53 | 2.3 | 2.8 | 5.7 | 14.00 | 13.9 | 103 | -0.80 | 237 |
| 22-May-11 | 2:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 13.9 | 103 | -0.90 | 238 |
| 22-May-11 | 3:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 13.9 | 102 | -0.90 | 241 |
| 22-May-11 | 4:00:54 | 2.3 | 2.8 | 5.5 | 14.00 | 13.9 | 103 | -0.80 | 245 |
| 22-May-11 | 5:00:53 | 2.3 | 2.8 | 5.5 | 14.00 | 13.9 | 103 | -0.80 | 244 |
| 22-May-11 | 6:00:53 | 2.3 | 2.7 | 5.5 | 14.00 | 13.9 | 102 | -0.80 | 244 |
| 22-May-11 | 7:00:53 | 2.3 | 2.7 | 5.6 | 14.00 | 13.9 | 102 | -0.80 | 239 |
| 22-May-11 | 8:00:54 | 2.3 | 2.7 | 5.6 | 14.00 | 13.9 | 102 | -0.80 | 238 |
| 22-May-11 | 9:00:53 | 2.3 | 2.7 | 5.6 | 14.00 | 13.9 | 102 | -0.90 | 237 |
| 22-May-11 | 10:00:53 | 2.3 | 2.7 | 5.6 | 14.00 | 13.9 | 102 | -0.70 | 236 |
| 22-May-11 | 11:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 13.9 | 102 | -0.50 | 235 |
| 22-May-11 | 12:00:54 | 2.3 | 2.8 | 5.6 | 14.00 | 14.0 | 103 | -0.80 | 233 |
| 22-May-11 | 13:00:53 | 2.3 | 2.8 | 5.6 | 13.00 | 14.0 | 103 | -0.50 | 232 |
| 22-May-11 | 14:00:54 | 2.3 | 2.8 | 5.6 | 13.00 | 13.9 | 103 | -0.70 | 231 |
| 22-May-11 | 15:00:53 | 2.3 | 2.9 | 5.6 | 13.00 | 13.8 | 102 | -0.70 | 230 |
| 22-May-11 | 16:00:54 | 2.3 | 2.9 | 5.6 | 13.00 | 13.8 | 102 | -0.70 | 231 |
| 22-May-11 | 17:00:54 | 2.3 | 2.9 | 5.6 | 13.00 | 13.8 | 102 | -0.90 | 232 |
| 22-May-11 | 18:00:53 | 2.3 | 3.0 | 5.6 | 13.00 | 13.8 | 102 | -0.80 | 228 |
| 22-May-11 | 19:00:54 | 2.3 | 2.9 | 5.6 | 13.00 | 13.8 | 102 | -0.80 | 230 |
| 22-May-11 | 20:00:53 | 2.3 | 2.9 | 5.6 | 13.00 | 13.9 | 103 | -0.80 | 229 |
| 22-May-11 | 21:00:53 | 2.3 | 3.0 | 5.6 | 13.00 | 13.9 | 103 | -0.80 | 230 |
| 22-May-11 | 22:00:53 | 2.3 | 3.0 | 5.6 | 14.00 | 13.9 | 104 | -0.90 | 232 |
| 22-May-11 | 23:00:53 | 2.3 | 2.9 | 5.7 | 14.00 | 13.9 | 103 | -0.80 | 229 |
| 23-May-11 | 0:00:53 | 2.3 | 2.8 | 5.6 | 13.00 | 13.9 | 103 | -0.80 | 234 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 23-May-11 | 1:00:53 | 2.3 | 2.8 | 5.6 | 13.00 | 13.8 | 102 | -0.90 | 229 |
| 23-May-11 | 2:00:54 | 2.3 | 2.8 | 5.6 | 13.00 | 13.9 | 103 | -0.90 | 228 |
| 23-May-11 | 3:00:53 | 2.3 | 2.9 | 5.6 | 14.00 | 14.0 | 104 | -0.90 | 235 |
| 23-May-11 | 4:00:53 | 2.3 | 2.9 | 5.6 | 14.00 | 14.0 | 104 | -0.90 | 236 |
| 23-May-11 | 5:00:53 | 2.3 | 2.8 | 5.6 | 14.00 | 14.0 | 104 | -0.90 | 238 |
| 23-May-11 | 6:00:53 | 2.3 | 2.8 | 5.7 | 13.00 | 14.0 | 104 | -0.80 | 232 |
| 23-May-11 | 7:00:53 | 2.3 | 2.8 | 5.6 | 13.00 | 14.1 | 104 | -0.70 | 237 |
| 23-May-11 | 8:00:53 | 2.3 | 2.9 | 5.6 | 13.00 | 14.1 | 104 | -0.80 | 237 |
| 23-May-11 | 9:00:54 | 2.2 | 2.9 | 5.6 | 13.00 | 14.1 | 105 | -0.80 | 236 |
| 23-May-11 | 10:00:54 | 2.2 | 2.9 | 5.7 | 13.00 | 14.2 | 105 | -0.80 | 234 |
| 23-May-11 | 11:00:53 | 2.2 | 2.9 | 5.7 | 13.00 | 14.5 | 107 | -0.70 | 232 |
| 23-May-11 | 12:00:54 | 2.2 | 3.0 | 5.7 | 13.00 | 14.6 | 108 | -0.70 | 231 |
| 23-May-11 | 13:00:53 | 2.2 | 3.0 | 5.7 | 13.00 | 14.7 | 109 | -0.80 | 228 |
| 23-May-11 | 14:00:54 | 2.2 | 3.0 | 5.7 | 13.00 | 14.8 | 110 | -0.50 | 228 |
| 23-May-11 | 15:00:54 | 2.2 | 3.0 | 5.6 | 13.00 | 14.8 | 110 | -0.50 | 233 |
| 23-May-11 | 16:00:53 | 2.2 | 3.1 | 5.7 | 13.00 | 14.9 | 111 | -0.50 | 230 |
| 23-May-11 | 17:00:53 | 2.2 | 3.1 | 5.6 | 13.00 | 15.0 | 111 | -0.50 | 232 |
| 23-May-11 | 18:00:53 | 2.2 | 3.2 | 5.7 | 13.00 | 14.9 | 111 | -0.70 | 233 |
| 23-May-11 | 19:00:53 | 2.2 | 3.1 | 5.7 | 13.00 | 14.9 | 111 | -0.60 | 232 |
| 23-May-11 | 20:00:53 | 2.2 | 3.1 | 5.7 | 13.00 | 14.9 | 111 | -0.70 | 232 |
| 23-May-11 | 21:00:53 | 2.2 | 3.1 | 5.7 | 14.00 | 14.9 | 111 | -0.90 | 230 |
| 23-May-11 | 22:00:53 | 2.2 | 3.1 | 5.7 | 14.00 | 14.9 | 111 | -0.90 | 230 |
| 23-May-11 | 23:00:54 | 2.2 | 3.2 | 5.7 | 14.00 | 14.9 | 111 | -0.80 | 231 |
| 24-May-11 | 0:00:53 | 2.3 | 3.0 | 5.8 | 14.00 | 14.7 | 110 | -0.80 | 228 |
| 24-May-11 | 1:00:53 | 2.3 | 2.8 | 5.8 | 14.00 | 14.9 | 110 | -0.90 | 230 |
| 24-May-11 | 2:00:53 | 2.3 | 2.9 | 5.9 | 14.00 | 14.9 | 111 | -1.00 | 224 |
| 24-May-11 | 3:00:53 | 2.3 | 3.0 | 5.8 | 14.00 | 15.0 | 111 | -0.90 | 229 |
| 24-May-11 | 4:00:53 | 2.3 | 3.0 | 5.9 | 14.00 | 15.0 | 111 | -1.00 | 225 |
| 24-May-11 | 5:00:53 | 2.3 | 2.9 | 5.9 | 14.00 | 14.8 | 110 | -1.00 | 228 |
| 24-May-11 | 6:00:54 | 2.3 | 2.8 | 5.9 | 14.00 | 14.7 | 109 | -1.00 | 223 |
| 24-May-11 | 7:00:54 | 2.3 | 2.9 | 5.9 | 14.00 | 14.7 | 109 | -0.90 | 224 |
| 24-May-11 | 8:00:53 | 2.3 | 2.9 | 5.9 | 14.00 | 14.4 | 107 | -0.70 | 224 |
| 24-May-11 | 9:00:53 | 2.3 | 2.9 | 5.8 | 14.00 | 14.5 | 107 | -0.80 | 228 |
| 24-May-11 | 10:00:53 | 2.3 | 3.1 | 5.7 | 14.00 | 14.6 | 109 | -0.80 | 232 |
| 24-May-11 | 11:00:53 | 2.3 | 3.0 | 5.7 | 14.00 | 14.6 | 109 | -0.80 | 233 |
| 24-May-11 | 12:00:53 | 2.3 | 3.0 | 5.8 | 14.00 | 14.7 | 110 | -0.90 | 229 |
| 24-May-11 | 13:00:54 | 2.3 | 3.1 | 5.8 | 13.00 | 14.7 | 109 | -0.90 | 230 |
| 24-May-11 | 14:00:54 | 2.3 | 3.2 | 5.8 | 13.00 | 14.8 | 110 | -1.00 | 231 |
| 24-May-11 | 15:00:53 | 2.3 | 3.2 | 5.8 | 14.00 | 14.9 | 111 | -1.00 | 227 |
| 24-May-11 | 16:00:53 | 2.3 | 3.2 | 5.9 | 14.00 | 15.0 | 112 | -0.90 | 224 |
| 24-May-11 | 17:00:53 | 2.3 | 3.2 | 6.0 | 14.00 | 15.2 | 113 | -0.90 | 221 |
| 24-May-11 | 18:00:53 | 2.3 | 3.2 | 6.0 | 14.00 | 15.2 | 114 | -0.80 | 220 |
| 24-May-11 | 19:00:53 | 2.3 | 3.2 | 6.0 | 14.00 | 15.3 | 114 | -0.90 | 220 |
| 24-May-11 | 20:00:54 | 2.3 | 3.2 | 6.0 | 14.00 | 15.3 | 114 | -0.90 | 220 |
| 24-May-11 | 21:00:53 | 2.3 | 3.1 | 5.9 | 14.00 | 15.3 | 114 | -0.70 | 225 |
| 24-May-11 | 22:00:53 | 2.3 | 3.1 | 5.8 | 14.00 | 15.0 | 112 | -0.80 | 228 |
| 24-May-11 | 23:00:53 | 2.3 | 3.1 | 5.8 | 14.00 | 14.7 | 109 | -0.30 | 228 |
| 25-May-11 | 0:00:53 | 2.3 | 3.0 | 5.9 | 14.00 | 14.3 | 106 | -0.90 | 222 |
| 25-May-11 | 1:00:53 | 2.3 | 3.1 | 5.8 | 14.00 | 14.2 | 105 | -0.90 | 226 |
| 25-May-11 | 2:00:53 | 2.3 | 3.0 | 5.7 | 14.00 | 14.1 | 105 | -1.00 | 230 |
| 25-May-11 | 3:00:53 | 2.3 | 3.0 | 5.7 | 14.00 | 14.0 | 104 | -0.90 | 230 |
| 25-May-11 | 4:00:53 | 2.3 | 3.1 | 5.8 | 13.00 | 14.0 | 104 | -1.00 | 228 |
| 25-May-11 | 5:00:53 | 2.3 | 3.1 | 5.8 | 13.00 | 14.2 | 106 | -1.00 | 227 |
| 25-May-11 | 6:00:53 | 2.3 | 3.1 | 5.7 | 13.00 | 14.4 | 107 | -0.90 | 229 |
| 25-May-11 | 7:00:53 | 2.2 | 3.1 | 5.7 | 13.00 | 14.5 | 108 | -1.00 | 229 |
| 25-May-11 | 8:00:53 | 2.2 | 3.2 | 5.8 | 13.00 | 14.4 | 108 | -0.50 | 228 |
| 25-May-11 | 9:00:53 | 2.2 | 3.2 | 5.8 | 13.00 | 14.3 | 107 | -0.50 | 227 |
| 25-May-11 | 10:00:53 | 2.2 | 3.2 | 5.7 | 13.00 | 14.3 | 107 | -0.70 | 230 |
| 25-May-11 | 11:00:54 | 2.2 | 3.2 | 5.9 | 13.00 | 14.2 | 106 | -0.90 | 223 |
| 25-May-11 | 12:00:53 | 2.2 | 3.3 | 5.8 | 13.00 | 14.1 | 106 | -1.00 | 229 |
| 25-May-11 | 13:00:53 | 2.2 | 3.3 | 6.0 | 13.00 | 14.1 | 105 | -1.00 | 221 |
| 25-May-11 | 14:00:53 | 2.2 | 3.4 | 6.0 | 13.00 | 14.0 | 105 | -0.90 | 224 |
| 25-May-11 | 15:00:53 | 2.2 | 3.4 | 6.0 | 13.00 | 14.0 | 105 | -1.00 | 220 |
| 25-May-11 | 16:00:53 | 2.2 | 3.4 | 6.1 | 13.00 | 14.0 | 105 | -1.00 | 220 |
| 25-May-11 | 17:00:53 | 2.2 | 3.5 | 6.0 | 13.00 | 14.0 | 105 | -1.00 | 226 |
| 25-May-11 | 18:00:53 | 2.2 | 3.4 | 5.9 | 13.00 | 14.0 | 105 | -1.00 | 229 |
| 25-May-11 | 19:00:53 | 2.2 | 3.4 | 6.1 | 13.00 | 14.0 | 105 | -0.80 | 222 |
| 25-May-11 | 20:00:53 | 2.2 | 3.4 | 6.1 | 13.00 | 14.0 | 105 | -0.90 | 220 |
| 25-May-11 | 21:00:53 | 2.2 | 3.4 | 6.0 | 13.00 | 14.1 | 106 | -1.00 | 223 |
| 25-May-11 | 22:00:53 | 2.2 | 3.4 | 5.9 | 13.00 | 14.1 | 106 | -1.00 | 226 |
| 25-May-11 | 23:00:53 | 2.1 | 3.4 | 6.1 | 14.00 | 14.0 | 105 | -0.90 | 220 |
| 26-May-11 | 0:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.1 | 106 | -0.80 | 221 |
| 26-May-11 | 1:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.0 | 105 | -0.90 | 221 |
| 26-May-11 | 2:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.1 | 106 | -1.00 | 221 |
| 26-May-11 | 3:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.1 | 106 | -0.90 | 221 |
| 26-May-11 | 4:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.0 | 105 | -1.00 | 221 |
| 26-May-11 | 5:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.1 | 106 | -1.00 | 222 |
| 26-May-11 | 6:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 14.1 | 106 | -0.80 | 222 |
| 26-May-11 | 7:00:53 | 2.1 | 3.5 | 5.9 | 14.00 | 14.0 | 106 | -1.00 | 228 |
| 26-May-11 | 8:00:53 | 2.1 | 3.5 | 5.9 | 14.00 | 14.0 | 106 | -0.90 | 228 |
| 26-May-11 | 9:00:53 | 2.1 | 3.5 | 5.9 | 14.00 | 14.1 | 106 | -1.00 | 229 |
| 26-May-11 | 10:00:54 | 2.1 | 3.6 | 6.1 | 14.00 | 14.1 | 106 | -1.00 | 222 |
| 26-May-11 | 11:00:53 | 2.1 | 3.6 | 6.1 | 14.00 | 14.1 | 106 | -0.90 | 223 |
| 26-May-11 | 12:00:53 | 2.1 | 3.6 | 6.2 | 13.00 | 14.0 | 106 | -0.90 | 222 |
| 26-May-11 | 13:00:53 | 2.1 | 3.7 | 6.2 | 13.00 | 14.0 | 106 | -1.00 | 224 |
| 26-May-11 | 14:00:53 | 2.1 | 3.7 | 6.2 | 13.00 | 14.1 | 106 | -1.00 | 224 |
| 26-May-11 | 15:00:53 | 2.1 | 3.7 | 6.2 | 13.00 | 14.1 | 107 | -0.90 | 226 |
| 26-May-11 | 16:00:53 | 2.1 | 3.8 | 6.1 | 13.00 | 14.1 | 107 | -1.00 | 229 |
| 26-May-11 | 17:00:53 | 2.1 | 3.6 | 6.1 | 13.00 | 14.1 | 107 | -1.00 | 231 |
| 26-May-11 | 18:00:53 | 2.1 | 3.9 | 6.0 | 13.00 | 14.1 | 107 | -0.80 | 231 |
| 26-May-11 | 19:00:53 | 2.1 | 3.9 | 6.1 | 13.00 | 14.2 | 108 | -1.00 | 225 |
| 26-May-11 | 20:00:53 | 2.1 | 3.9 | 6.1 | 13.00 | 14.3 | 109 | -1.00 | 225 |
| 26-May-11 | 21:00:53 | 2.1 | 3.9 | 5.9 | 13.00 | 14.3 | 109 | -1.00 | 231 |
| 26-May-11 | 22:00:53 | 2.1 | 3.9 | 5.9 | 13.00 | 14.3 | 109 | -1.00 | 232 |
| 26-May-11 | 23:00:53 | 2.1 | 3.9 | 5.8 | 13.00 | 14.3 | 108 | -0.80 | 233 |
| 27-May-11 | 0:00:53 | 2.1 | 3.8 | 5.9 | 13.00 | 14.4 | 109 | -1.00 | 229 |
| 27-May-11 | 1:00:53 | 2.1 | 3.8 | 5.9 | 13.00 | 14.4 | 110 | -0.90 | 232 |
| 27-May-11 | 2:00:53 | 2.1 | 3.8 | 5.8 | 13.00 | 14.4 | 110 | -0.90 | 233 |
| 27-May-11 | 3:00:53 | 2.1 | 3.8 | 5.9 | 13.00 | 14.4 | 109 | -0.50 | 234 |
| 27-May-11 | 4:00:53 | 2.1 | 3.8 | 5.9 | 13.00 | 14.5 | 110 | -0.90 | 234 |
| 27-May-11 | 5:00:53 | 2.1 | 3.8 | 6.0 | 14.00 | 14.5 | 110 | -0.70 | 234 |
| 27-May-11 | 6:00:53 | 2.1 | 3.8 | 6.0 | 13.00 | 14.2 | 108 | -1.00 | 238 |
| 27-May-11 | 7:00:53 | 2.1 | 3.8 | 6.0 | 13.00 | 14.0 | 106 | -1.00 | 236 |
| 27-May-11 | 8:00:53 | 2.1 | 3.8 | 6.0 | 13.00 | 14.2 | 107 | -1.00 | 236 |
| 27-May-11 | 9:00:54 | 2.1 | 3.8 | 6.0 | 13.00 | 14.0 | 106 | -0.80 | 235 |
| 27-May-11 | 10:00:53 | 2.1 | 3.9 | 6.0 | 13.00 | 14.2 | 108 | -1.00 | 237 |
| 27-May-11 | 11:00:53 | 2.1 | 4.0 | 6.0 | 13.00 | 14.3 | 109 | -1.00 | 237 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 27-May-11 | 12:00:54 | 2.1 | 4.1 | 6.0 | 13.00 | 14.3 | 109 | -1.00 | 233 |
| 27-May-11 | 13:00:53 | 2.1 | 4.2 | 6.1 | 13.00 | 14.1 | 108 | -1.00 | 228 |
| 27-May-11 | 14:00:53 | 2.2 | 4.2 | 6.0 | 13.00 | 14.1 | 108 | -1.00 | 234 |
| 27-May-11 | 15:00:53 | 2.2 | 4.2 | 6.0 | 14.00 | 14.0 | 107 | -0.90 | 230 |
| 27-May-11 | 16:00:53 | 2.2 | 4.2 | 6.0 | 15.00 | 13.8 | 106 | -1.00 | 234 |
| 27-May-11 | 17:00:53 | 2.2 | 4.2 | 5.9 | 15.00 | 13.8 | 106 | -0.90 | 239 |
| 27-May-11 | 18:00:53 | 2.2 | 4.1 | 5.9 | 15.00 | 14.0 | 107 | -0.90 | 241 |
| 27-May-11 | 19:00:53 | 2.2 | 4.1 | 5.9 | 15.00 | 14.0 | 107 | -0.50 | 245 |
| 27-May-11 | 20:00:53 | 2.2 | 4.1 | 6.0 | 15.00 | 14.1 | 107 | -1.00 | 244 |
| 27-May-11 | 21:00:53 | 2.2 | 4.1 | 6.0 | 15.00 | 14.0 | 107 | -1.00 | 243 |
| 27-May-11 | 22:00:53 | 2.2 | 4.1 | 6.0 | 15.00 | 13.9 | 106 | -1.00 | 241 |
| 27-May-11 | 23:00:53 | 2.2 | 4.1 | 6.0 | 15.00 | 14.0 | 107 | -1.00 | 241 |
| 28-May-11 | 0:00:53 | 2.2 | 4.1 | 6.0 | 15.00 | 14.1 | 108 | -0.90 | 241 |
| 28-May-11 | 1:00:53 | 2.2 | 4.1 | 6.0 | 15.00 | 14.1 | 108 | -0.80 | 240 |
| 28-May-11 | 2:00:54 | 2.2 | 4.1 | 6.0 | 15.00 | 14.1 | 108 | -1.00 | 239 |
| 28-May-11 | 3:00:54 | 2.2 | 4.1 | 6.0 | 15.00 | 14.2 | 108 | -1.00 | 238 |
| 28-May-11 | 4:00:53 | 2.2 | 4.1 | 6.0 | 14.00 | 14.1 | 108 | -0.90 | 240 |
| 28-May-11 | 5:00:53 | 2.2 | 4.1 | 6.0 | 14.00 | 14.2 | 108 | -1.00 | 239 |
| 28-May-11 | 6:00:53 | 2.2 | 4.1 | 6.1 | 14.00 | 14.2 | 108 | -1.00 | 238 |
| 28-May-11 | 7:00:53 | 2.2 | 4.1 | 6.1 | 14.00 | 14.0 | 107 | -0.90 | 238 |
| 28-May-11 | 8:00:53 | 2.2 | 4.1 | 6.1 | 14.00 | 13.9 | 106 | -0.80 | 237 |
| 28-May-11 | 9:00:53 | 2.2 | 4.1 | 6.1 | 14.00 | 14.1 | 108 | -0.40 | 235 |
| 28-May-11 | 10:00:53 | 2.2 | 4.1 | 6.1 | 14.00 | 14.3 | 110 | -0.70 | 234 |
| 28-May-11 | 11:00:53 | 2.2 | 4.2 | 6.0 | 14.00 | 14.3 | 109 | -1.00 | 240 |
| 28-May-11 | 12:00:54 | 2.2 | 4.2 | 6.0 | 14.00 | 13.7 | 105 | -0.80 | 235 |
| 28-May-11 | 13:00:53 | 2.1 | 4.1 | 5.9 | 15.00 | 13.8 | 106 | -0.90 | 240 |
| 28-May-11 | 14:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.7 | 105 | -1.00 | 240 |
| 28-May-11 | 15:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.9 | 106 | -1.00 | 244 |
| 28-May-11 | 16:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 14.0 | 108 | -1.00 | 245 |
| 28-May-11 | 17:00:53 | 2.1 | 4.2 | 5.8 | 15.00 | 14.0 | 108 | -1.00 | 246 |
| 28-May-11 | 18:00:54 | 2.1 | 4.2 | 5.8 | 15.00 | 13.9 | 107 | -0.90 | 247 |
| 28-May-11 | 19:00:54 | 2.1 | 4.2 | 5.8 | 16.00 | 13.9 | 107 | -0.80 | 248 |
| 28-May-11 | 20:00:53 | 2.1 | 4.2 | 5.8 | 16.00 | 13.9 | 106 | -1.00 | 251 |
| 28-May-11 | 21:00:53 | 2.1 | 4.2 | 5.9 | 16.00 | 13.9 | 107 | -1.00 | 251 |
| 28-May-11 | 22:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.9 | 106 | -1.00 | 254 |
| 28-May-11 | 23:00:54 | 2.1 | 4.2 | 5.9 | 15.00 | 13.8 | 105 | -0.90 | 255 |
| 29-May-11 | 0:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.7 | 105 | -0.80 | 255 |
| 29-May-11 | 1:00:54 | 2.1 | 4.2 | 5.9 | 15.00 | 13.8 | 106 | -1.00 | 254 |
| 29-May-11 | 2:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.8 | 106 | -1.00 | 256 |
| 29-May-11 | 3:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.9 | 106 | -0.80 | 255 |
| 29-May-11 | 4:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.8 | 106 | -1.00 | 255 |
| 29-May-11 | 5:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.8 | 106 | -1.00 | 255 |
| 29-May-11 | 6:00:53 | 2.1 | 4.2 | 5.9 | 15.00 | 13.9 | 106 | -0.40 | 255 |
| 29-May-11 | 7:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 13.9 | 107 | -0.70 | 254 |
| 29-May-11 | 8:00:53 | 2.1 | 4.3 | 6.0 | 15.00 | 14.0 | 108 | -0.70 | 248 |
| 29-May-11 | 9:00:53 | 2.1 | 4.3 | 6.0 | 15.00 | 14.0 | 108 | -0.50 | 246 |
| 29-May-11 | 10:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 14.1 | 108 | -1.00 | 251 |
| 29-May-11 | 11:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.2 | 109 | -0.90 | 252 |
| 29-May-11 | 12:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.0 | 108 | -0.80 | 251 |
| 29-May-11 | 13:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 14.0 | 107 | -0.80 | 244 |
| 29-May-11 | 14:00:53 | 2.1 | 4.3 | 6.0 | 15.00 | 13.8 | 106 | -1.00 | 242 |
| 29-May-11 | 15:00:53 | 2.1 | 4.3 | 6.0 | 16.00 | 13.8 | 106 | -0.90 | 244 |
| 29-May-11 | 16:00:53 | 2.1 | 4.3 | 5.8 | 16.00 | 13.8 | 106 | -1.00 | 252 |
| 29-May-11 | 17:00:53 | 2.1 | 4.3 | 5.8 | 16.00 | 13.9 | 107 | -1.00 | 253 |
| 29-May-11 | 18:00:53 | 2.1 | 4.3 | 5.8 | 16.00 | 14.0 | 108 | -0.80 | 253 |
| 29-May-11 | 19:00:53 | 2.1 | 4.3 | 5.8 | 16.00 | 14.1 | 108 | -0.70 | 252 |
| 29-May-11 | 20:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.2 | 109 | -0.90 | 251 |
| 29-May-11 | 21:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.2 | 109 | -0.80 | 254 |
| 29-May-11 | 22:00:53 | 2.1 | 4.3 | 5.8 | 16.00 | 14.2 | 109 | -0.70 | 256 |
| 29-May-11 | 23:00:53 | 2.1 | 4.3 | 5.8 | 16.00 | 14.1 | 109 | -0.90 | 256 |
| 30-May-11 | 0:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.2 | 109 | -0.90 | 255 |
| 30-May-11 | 1:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.1 | 109 | -0.90 | 257 |
| 30-May-11 | 2:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 14.1 | 109 | -0.80 | 253 |
| 30-May-11 | 3:00:53 | 2.1 | 4.3 | 6.0 | 15.00 | 14.0 | 108 | -1.00 | 250 |
| 30-May-11 | 4:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 14.1 | 108 | -0.80 | 249 |
| 30-May-11 | 5:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 14.1 | 109 | -0.80 | 247 |
| 30-May-11 | 6:00:53 | 2.1 | 4.3 | 5.9 | 15.00 | 14.1 | 109 | -1.00 | 250 |
| 30-May-11 | 7:00:54 | 2.1 | 4.4 | 5.8 | 15.00 | 14.2 | 109 | -0.80 | 252 |
| 30-May-11 | 8:00:53 | 2.1 | 4.3 | 5.8 | 15.00 | 14.0 | 108 | -0.70 | 251 |
| 30-May-11 | 9:00:53 | 2.1 | 4.4 | 5.8 | 15.00 | 13.8 | 107 | -0.50 | 253 |
| 30-May-11 | 10:00:53 | 2.1 | 4.5 | 5.8 | 15.00 | 14.2 | 110 | -1.00 | 254 |
| 30-May-11 | 11:00:53 | 2.1 | 4.3 | 5.9 | 14.00 | 13.6 | 105 | -1.00 | 247 |
| 30-May-11 | 12:00:53 | 2.1 | 4.4 | 5.9 | 14.00 | 13.7 | 105 | -1.00 | 245 |
| 30-May-11 | 13:00:54 | 2.1 | 4.5 | 6.0 | 14.00 | 14.0 | 108 | -1.00 | 238 |
| 30-May-11 | 14:00:53 | 2.1 | 4.5 | 6.0 | 15.00 | 14.3 | 110 | -1.00 | 237 |
| 30-May-11 | 15:00:53 | 2.1 | 4.5 | 5.9 | 15.00 | 14.6 | 113 | -1.00 | 243 |
| 30-May-11 | 16:00:53 | 2.1 | 4.5 | 5.9 | 15.00 | 14.8 | 115 | -0.90 | 242 |
| 30-May-11 | 17:00:53 | 2.1 | 4.6 | 6.0 | 15.00 | 14.5 | 112 | -1.00 | 237 |
| 30-May-11 | 18:00:54 | 2.1 | 4.5 | 6.0 | 15.00 | 15.0 | 116 | -0.80 | 237 |
| 30-May-11 | 19:00:53 | 2.1 | 4.5 | 6.0 | 15.00 | 15.2 | 118 | -0.80 | 238 |
| 30-May-11 | 20:00:53 | 2.1 | 4.6 | 6.1 | 15.00 | 15.4 | 120 | -0.80 | 237 |
| 30-May-11 | 21:00:53 | 2.1 | 4.4 | 6.0 | 15.00 | 14.7 | 114 | -0.70 | 240 |
| 30-May-11 | 22:00:53 | 2.1 | 4.5 | 6.0 | 16.00 | 14.9 | 116 | -0.70 | 240 |
| 30-May-11 | 23:00:53 | 2.1 | 4.5 | 6.1 | 15.00 | 14.9 | 115 | -0.70 | 240 |
| 31-May-11 | 0:00:53 | 2.1 | 4.5 | 6.0 | 15.00 | 14.7 | 114 | -0.80 | 241 |
| 31-May-11 | 1:00:53 | 2.1 | 4.4 | 5.9 | 14.00 | 13.7 | 106 | -0.40 | 248 |
| 31-May-11 | 2:00:54 | 2.1 | 4.3 | 5.9 | 13.00 | 13.4 | 103 | -0.80 | 249 |
| 31-May-11 | 3:00:53 | 2.1 | 4.1 | 5.9 | 12.00 | 12.8 | 98 | -0.90 | 250 |
| 31-May-11 | 4:00:53 | 2.1 | 4.3 | 5.9 | 12.00 | 12.8 | 99 | -0.90 | 252 |
| 31-May-11 | 5:00:53 | 2.1 | 4.3 | 5.8 | 13.00 | 12.8 | 98 | -1.00 | 254 |
| 31-May-11 | 6:00:53 | 2.1 | 4.2 | 5.9 | 13.00 | 12.8 | 98 | -1.00 | 257 |
| 31-May-11 | 7:00:53 | 2.1 | 4.2 | 5.9 | 13.00 | 12.8 | 98 | -1.00 | 255 |
| 31-May-11 | 8:00:53 | 2.1 | 4.2 | 5.9 | 13.00 | 12.8 | 99 | -1.00 | 254 |
| 31-May-11 | 9:00:54 | 2.1 | 4.3 | 5.9 | 14.00 | 13.0 | 100 | -0.90 | 250 |
| 31-May-11 | 10:00:53 | 2.1 | 4.4 | 5.9 | 14.00 | 12.9 | 99 | -0.90 | 254 |
| 31-May-11 | 11:00:54 | 2.1 | 4.3 | 5.8 | 14.00 | 12.8 | 99 | -1.00 | 256 |
| 31-May-11 | 12:00:53 | 2.1 | 4.4 | 5.8 | 14.00 | 12.7 | 98 | -1.00 | 256 |
| 31-May-11 | 13:00:53 | 2.1 | 4.5 | 5.8 | 14.00 | 12.7 | 98 | -1.00 | 256 |
| 31-May-11 | 14:00:54 | 2.1 | 4.5 | 5.8 | 14.00 | 12.7 | 98 | -1.00 | 255 |
| 31-May-11 | 15:00:53 | 2.1 | 4.5 | 5.8 | 14.00 | 12.6 | 98 | -1.10 | 255 |
| 31-May-11 | 16:00:53 | 2.1 | 4.6 | 6.0 | 14.00 | 12.7 | 98 | -1.00 | 248 |
| 31-May-11 | 17:00:53 | 2.1 | 4.5 | 6.0 | 14.00 | 12.7 | 98 | -1.00 | 248 |
| 31-May-11 | 18:00:54 | 2.1 | 4.6 | 6.0 | 14.00 | 12.6 | 98 | -1.00 | 249 |
| 31-May-11 | 19:00:53 | 2.1 | 4.6 | 6.0 | 14.00 | 12.8 | 99 | -1.00 | 247 |
| 31-May-11 | 20:00:53 | 2.1 | 4.6 | 6.0 | 14.00 | 12.7 | 99 | -1.00 | 249 |
| 31-May-11 | 21:00:53 | 2.1 | 4.4 | 5.9 | 14.00 | 12.7 | 98 | -1.00 | 255 |
| 31-May-11 | 22:00:53 | 2.1 | 4.6 | 5.9 | 13.00 | 13.6 | 106 | -1.00 | 254 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 31-May-11 | 23:00:53 | 2.1 | 4.5 | 6.0 | 13.00 | 13.4 | 104 | -1.00 | 246 |
| 1-Jun-11 | 0:00:53 | 2.1 | 4.5 | 6.0 | 12.00 | 12.8 | 99 | -1.00 | 244 |
| 1-Jun-11 | 1:00:53 | 2.1 | 4.4 | 6.0 | 12.00 | 12.8 | 99 | -1.00 | 243 |
| 1-Jun-11 | 2:00:53 | 2.1 | 4.4 | 6.0 | 12.00 | 12.8 | 99 | -1.00 | 243 |
| 1-Jun-11 | 3:00:53 | 2.1 | 4.4 | 6.0 | 12.00 | 12.7 | 98 | -1.00 | 243 |
| 1-Jun-11 | 4:00:53 | 2.1 | 4.4 | 6.0 | 12.00 | 12.8 | 98 | -1.00 | 246 |
| 1-Jun-11 | 5:00:53 | 2.1 | 4.5 | 5.9 | 13.00 | 12.8 | 99 | -0.90 | 252 |
| 1-Jun-11 | 6:00:53 | 2.1 | 4.4 | 5.8 | 13.00 | 13.0 | 100 | -1.00 | 255 |
| 1-Jun-11 | 7:00:54 | 2.1 | 4.5 | 5.8 | 13.00 | 12.8 | 99 | -1.00 | 256 |
| 1-Jun-11 | 8:00:53 | 2.1 | 4.4 | 5.9 | 14.00 | 12.8 | 99 | -1.00 | 255 |
| 1-Jun-11 | 9:00:53 | 2.0 | 4.3 | 5.9 | 13.00 | 12.8 | 98 | -1.00 | 255 |
| 1-Jun-11 | 10:00:53 | 2.0 | 4.4 | 5.9 | 13.00 | 12.7 | 98 | -0.90 | 254 |
| 1-Jun-11 | 11:00:53 | 2.0 | 4.4 | 5.9 | 12.00 | 12.7 | 98 | -1.00 | 251 |
| 1-Jun-11 | 12:00:53 | 2.0 | 4.5 | 6.0 | 12.00 | 12.7 | 98 | -1.00 | 240 |
| 1-Jun-11 | 13:00:54 | 2.0 | 4.6 | 5.9 | 13.00 | 13.0 | 101 | -1.00 | 247 |
| 1-Jun-11 | 14:00:53 | 2.0 | 4.7 | 5.8 | 14.00 | 12.9 | 100 | -0.90 | 249 |
| 1-Jun-11 | 15:00:53 | 2.0 | 4.7 | 5.8 | 13.00 | 12.9 | 100 | -1.00 | 248 |
| 1-Jun-11 | 16:00:53 | 2.0 | 4.7 | 5.8 | 15.00 | 13.4 | 104 | -1.00 | 250 |
| 1-Jun-11 | 17:00:53 | 2.0 | 4.4 | 5.9 | 13.00 | 12.6 | 97 | -1.00 | 243 |
| 1-Jun-11 | 18:00:54 | 2.0 | 4.3 | 5.8 | 13.00 | 12.6 | 97 | -1.00 | 247 |
| 1-Jun-11 | 19:00:53 | 1.9 | 4.3 | 5.8 | 13.00 | 12.5 | 96 | -0.90 | 249 |
| 1-Jun-11 | 20:00:53 | 2.0 | 4.2 | 5.8 | 13.00 | 12.4 | 95 | -1.00 | 251 |
| 1-Jun-11 | 21:00:53 | 2.0 | 4.2 | 5.8 | 14.00 | 12.2 | 94 | -0.90 | 247 |
| 1-Jun-11 | 22:00:53 | 2.0 | 4.3 | 5.8 | 13.00 | 12.6 | 97 | -0.70 | 248 |
| 1-Jun-11 | 23:00:53 | 2.0 | 4.0 | 5.9 | 13.00 | 12.3 | 94 | -1.00 | 244 |
| 2-Jun-11 | 0:00:53 | 2.0 | 4.2 | 5.8 | 14.00 | 11.9 | 91 | -1.00 | 260 |
| 2-Jun-11 | 1:00:53 | 2.0 | 4.1 | 5.8 | 14.00 | 12.3 | 94 | -0.90 | 266 |
| 2-Jun-11 | 2:00:53 | 2.0 | 4.3 | 5.8 | 14.00 | 12.5 | 97 | -0.80 | 262 |
| 2-Jun-11 | 3:00:53 | 2.0 | 4.3 | 5.8 | 13.00 | 12.5 | 96 | -0.90 | 262 |
| 2-Jun-11 | 4:00:53 | 2.0 | 4.2 | 5.8 | 13.00 | 12.5 | 96 | -1.00 | 258 |
| 2-Jun-11 | 5:00:53 | 2.0 | 4.3 | 5.8 | 13.00 | 12.8 | 98 | -1.00 | 256 |
| 2-Jun-11 | 6:00:53 | 2.0 | 4.2 | 5.8 | 13.00 | 12.9 | 99 | -0.90 | 255 |
| 2-Jun-11 | 7:00:54 | 2.0 | 4.2 | 5.8 | 13.00 | 12.9 | 99 | -0.80 | 255 |
| 2-Jun-11 | 8:00:53 | 2.0 | 3.6 | 5.8 | 13.00 | 12.9 | 97 | -0.90 | 254 |
| 2-Jun-11 | 9:00:53 | 2.0 | 3.6 | 5.8 | 13.00 | 12.8 | 96 | -0.80 | 253 |
| 2-Jun-11 | 10:00:53 | 2.0 | 3.6 | 5.8 | 13.00 | 12.8 | 97 | -0.80 | 253 |
| 2-Jun-11 | 11:00:53 | 2.0 | 3.5 | 5.8 | 13.00 | 12.8 | 96 | -0.80 | 252 |
| 2-Jun-11 | 12:00:53 | 2.0 | 3.6 | 5.8 | 13.00 | 12.8 | 96 | -0.90 | 251 |
| 2-Jun-11 | 13:00:54 | 2.0 | 3.6 | 5.8 | 13.00 | 12.7 | 96 | -0.80 | 252 |
| 2-Jun-11 | 14:00:53 | 2.1 | 3.5 | 5.9 | 13.00 | 12.8 | 96 | -0.80 | 243 |
| 2-Jun-11 | 15:00:53 | 2.1 | 3.3 | 5.9 | 13.00 | 12.8 | 96 | -0.70 | 243 |
| 2-Jun-11 | 16:00:53 | 2.1 | 3.4 | 5.9 | 13.00 | 12.8 | 96 | -0.80 | 242 |
| 2-Jun-11 | 17:00:53 | 2.1 | 3.4 | 6.0 | 13.00 | 12.8 | 96 | -0.80 | 242 |
| 2-Jun-11 | 18:00:54 | 2.1 | 3.2 | 5.9 | 13.00 | 12.7 | 95 | -0.80 | 242 |
| 2-Jun-11 | 19:00:53 | 2.1 | 3.2 | 5.9 | 13.00 | 12.6 | 94 | -0.80 | 247 |
| 2-Jun-11 | 20:00:53 | 2.1 | 3.0 | 5.9 | 13.00 | 12.6 | 93 | -0.80 | 244 |
| 2-Jun-11 | 21:00:53 | 2.1 | 3.1 | 5.9 | 14.00 | 12.5 | 93 | -0.80 | 241 |
| 2-Jun-11 | 22:00:53 | 2.1 | 3.1 | 5.9 | 14.00 | 12.5 | 93 | -0.90 | 243 |
| 2-Jun-11 | 23:00:53 | 2.1 | 3.1 | 5.9 | 14.00 | 12.5 | 93 | -0.90 | 245 |
| 3-Jun-11 | 0:00:53 | 2.1 | 3.3 | 6.0 | 13.00 | 12.8 | 96 | -0.80 | 240 |
| 3-Jun-11 | 1:00:53 | 2.1 | 2.9 | 5.9 | 13.00 | 12.5 | 92 | -0.90 | 248 |
| 3-Jun-11 | 2:00:53 | 2.1 | 2.8 | 5.9 | 14.00 | 12.4 | 92 | -0.80 | 244 |
| 3-Jun-11 | 3:00:53 | 2.1 | 2.8 | 5.9 | 14.00 | 12.4 | 92 | -0.80 | 247 |
| 3-Jun-11 | 4:00:53 | 2.1 | 2.7 | 5.9 | 14.00 | 12.4 | 91 | -0.80 | 247 |
| 3-Jun-11 | 5:00:53 | 2.1 | 2.7 | 5.9 | 14.00 | 12.4 | 91 | -0.80 | 248 |
| 3-Jun-11 | 6:00:53 | 2.1 | 2.6 | 5.9 | 14.00 | 12.4 | 91 | -0.80 | 249 |
| 3-Jun-11 | 7:00:54 | 2.1 | 2.7 | 5.9 | 14.00 | 12.4 | 91 | -0.80 | 244 |
| 3-Jun-11 | 8:00:53 | 2.1 | 2.6 | 5.9 | 14.00 | 12.4 | 91 | -0.80 | 245 |
| 3-Jun-11 | 9:00:53 | 2.1 | 2.5 | 5.9 | 14.00 | 12.4 | 91 | -0.70 | 244 |
| 3-Jun-11 | 10:00:53 | 2.1 | 2.5 | 5.8 | 14.00 | 12.4 | 91 | -0.70 | 248 |
| 3-Jun-11 | 11:00:53 | 2.1 | 2.5 | 5.9 | 14.00 | 12.4 | 90 | -0.70 | 246 |
| 3-Jun-11 | 12:00:53 | 2.1 | 2.4 | 5.9 | 14.00 | 12.3 | 90 | -0.70 | 247 |
| 3-Jun-11 | 13:00:54 | 2.1 | 2.3 | 5.9 | 14.00 | 12.4 | 90 | -0.50 | 246 |
| 3-Jun-11 | 14:00:53 | 2.1 | 2.4 | 5.9 | 14.00 | 12.4 | 91 | -0.70 | 245 |
| 3-Jun-11 | 15:00:53 | 2.1 | 2.4 | 5.9 | 14.00 | 12.5 | 91 | -0.80 | 244 |
| 3-Jun-11 | 16:00:53 | 2.1 | 2.6 | 5.9 | 13.00 | 12.5 | 92 | -0.80 | 245 |
| 3-Jun-11 | 17:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.70 | 239 |
| 3-Jun-11 | 18:00:54 | 2.1 | 2.6 | 5.9 | 13.00 | 12.5 | 92 | -0.70 | 244 |
| 3-Jun-11 | 19:00:53 | 2.1 | 2.6 | 5.8 | 13.00 | 12.6 | 92 | -0.80 | 246 |
| 3-Jun-11 | 20:00:53 | 2.1 | 2.6 | 5.9 | 13.00 | 12.6 | 92 | -0.80 | 243 |
| 3-Jun-11 | 21:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.6 | 92 | -0.80 | 243 |
| 3-Jun-11 | 22:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.6 | 92 | -0.70 | 243 |
| 3-Jun-11 | 23:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.6 | 92 | -0.70 | 240 |
| 4-Jun-11 | 0:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.5 | 92 | -0.80 | 242 |
| 4-Jun-11 | 1:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 240 |
| 4-Jun-11 | 2:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 240 |
| 4-Jun-11 | 3:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 240 |
| 4-Jun-11 | 4:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 240 |
| 4-Jun-11 | 5:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 241 |
| 4-Jun-11 | 6:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 241 |
| 4-Jun-11 | 7:00:54 | 2.1 | 2.6 | 6.0 | 13.00 | 12.5 | 92 | -0.50 | 241 |
| 4-Jun-11 | 8:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.50 | 246 |
| 4-Jun-11 | 9:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.5 | 92 | -0.70 | 247 |
| 4-Jun-11 | 10:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.80 | 247 |
| 4-Jun-11 | 11:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 12.5 | 92 | -0.70 | 247 |
| 4-Jun-11 | 12:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 12.6 | 92 | -0.80 | 244 |
| 4-Jun-11 | 13:00:54 | 2.1 | 2.3 | 5.9 | 13.00 | 12.6 | 92 | -0.80 | 250 |
| 4-Jun-11 | 14:00:53 | 2.1 | 2.4 | 5.9 | 13.00 | 12.7 | 93 | -0.50 | 249 |
| 4-Jun-11 | 15:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.7 | 93 | -0.40 | 247 |
| 4-Jun-11 | 16:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.7 | 93 | -0.40 | 245 |
| 4-Jun-11 | 17:00:53 | 2.1 | 2.5 | 5.9 | 13.00 | 12.7 | 93 | -0.50 | 244 |
| 4-Jun-11 | 18:00:54 | 2.1 | 2.5 | 5.9 | 13.00 | 12.7 | 93 | -0.70 | 243 |
| 4-Jun-11 | 19:00:53 | 2.1 | 2.4 | 5.9 | 13.00 | 12.7 | 93 | -0.80 | 240 |
| 4-Jun-11 | 20:00:53 | 2.1 | 2.4 | 5.9 | 13.00 | 12.7 | 93 | -0.80 | 240 |
| 4-Jun-11 | 21:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 12.8 | 93 | -0.80 | 240 |
| 4-Jun-11 | 22:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.8 | 93 | -0.80 | 243 |
| 4-Jun-11 | 23:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.8 | 93 | -0.80 | 244 |
| 5-Jun-11 | 0:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.8 | 93 | -0.80 | 245 |
| 5-Jun-11 | 1:00:53 | 2.1 | 2.4 | 5.9 | 13.00 | 12.7 | 93 | -0.70 | 244 |
| 5-Jun-11 | 2:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.7 | 92 | -0.80 | 245 |
| 5-Jun-11 | 3:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.7 | 92 | -0.80 | 245 |
| 5-Jun-11 | 4:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.7 | 93 | -0.80 | 246 |
| 5-Jun-11 | 5:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.7 | 93 | -0.80 | 246 |
| 5-Jun-11 | 6:00:53 | 2.1 | 2.3 | 5.9 | 13.00 | 12.7 | 93 | -0.80 | 247 |
| 5-Jun-11 | 7:00:54 | 2.1 | 2.3 | 5.9 | 13.00 | 12.7 | 93 | -0.80 | 247 |
| 5-Jun-11 | 8:00:53 | 2.1 | 2.2 | 5.9 | 13.00 | 12.8 | 93 | -0.60 | 248 |
| 5-Jun-11 | 9:00:53 | 2.1 | 2.2 | 5.9 | 13.00 | 12.8 | 93 | -0.50 | 248 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 5-Jun-11 | 10:00:53 | 2.1 | 2.0 | 5.9 | 13.00 | 12.9 | 93 | -0.20 | 248 |
| 5-Jun-11 | 11:00:53 | 2.1 | 2.1 | 5.9 | 13.00 | 13.0 | 94 | -0.50 | 247 |
| 5-Jun-11 | 12:00:53 | 2.1 | 2.1 | 6.0 | 13.00 | 12.9 | 94 | -0.50 | 244 |
| 5-Jun-11 | 13:00:54 | 2.1 | 2.1 | 5.9 | 13.00 | 12.9 | 94 | -0.70 | 243 |
| 5-Jun-11 | 14:00:53 | 2.1 | 2.2 | 6.0 | 13.00 | 12.9 | 94 | -0.70 | 239 |
| 5-Jun-11 | 15:00:53 | 2.1 | 2.2 | 5.9 | 13.00 | 12.9 | 94 | -0.70 | 241 |
| 5-Jun-11 | 16:00:53 | 2.1 | 2.2 | 5.9 | 13.00 | 13.0 | 94 | -0.70 | 240 |
| 5-Jun-11 | 17:00:53 | 2.1 | 2.2 | 5.9 | 13.00 | 13.0 | 94 | -0.70 | 240 |
| 5-Jun-11 | 18:00:54 | 2.1 | 2.2 | 5.9 | 13.00 | 13.0 | 95 | -0.80 | 240 |
| 5-Jun-11 | 19:00:53 | 2.1 | 2.2 | 5.9 | 13.00 | 13.0 | 95 | -0.80 | 241 |
| 5-Jun-11 | 20:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.0 | 95 | -0.70 | 239 |
| 5-Jun-11 | 21:00:53 | 2.0 | 2.4 | 5.9 | 13.00 | 12.9 | 95 | -0.80 | 240 |
| 5-Jun-11 | 22:00:53 | 2.0 | 2.3 | 5.9 | 13.00 | 13.0 | 95 | -0.70 | 241 |
| 5-Jun-11 | 23:00:53 | 2.0 | 2.2 | 5.9 | 13.00 | 13.0 | 94 | -0.80 | 241 |
| 6-Jun-11 | 0:00:53 | 2.0 | 2.3 | 5.9 | 13.00 | 13.0 | 95 | -0.80 | 242 |
| 6-Jun-11 | 1:00:53 | 2.0 | 2.2 | 5.9 | 13.00 | 13.0 | 95 | -0.70 | 242 |
| 6-Jun-11 | 2:00:53 | 2.0 | 2.2 | 5.9 | 13.00 | 13.0 | 95 | -0.70 | 243 |
| 6-Jun-11 | 3:00:53 | 2.0 | 2.2 | 5.9 | 13.00 | 13.0 | 94 | -0.80 | 243 |
| 6-Jun-11 | 4:00:53 | 2.0 | 2.1 | 5.9 | 13.00 | 13.0 | 94 | -0.70 | 243 |
| 6-Jun-11 | 5:00:53 | 2.0 | 2.1 | 6.0 | 13.00 | 13.0 | 94 | -0.60 | 242 |
| 6-Jun-11 | 6:00:53 | 2.0 | 2.0 | 5.9 | 13.00 | 13.0 | 94 | -0.70 | 245 |
| 6-Jun-11 | 7:00:54 | 2.0 | 2.1 | 5.9 | 13.00 | 12.9 | 94 | -0.80 | 245 |
| 6-Jun-11 | 8:00:53 | 2.0 | 2.1 | 6.0 | 13.00 | 13.0 | 94 | -0.70 | 244 |
| 6-Jun-11 | 9:00:53 | 2.1 | 2.1 | 6.0 | 13.00 | 13.0 | 94 | -0.70 | 245 |
| 6-Jun-11 | 10:00:53 | 2.1 | 2.1 | 6.0 | 13.00 | 13.0 | 94 | -0.50 | 244 |
| 6-Jun-11 | 11:00:53 | 2.1 | 2.1 | 6.0 | 13.00 | 13.0 | 94 | -0.70 | 245 |
| 6-Jun-11 | 12:00:53 | 2.1 | 2.1 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 244 |
| 6-Jun-11 | 13:00:54 | 2.1 | 2.1 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 243 |
| 6-Jun-11 | 14:00:53 | 2.1 | 2.1 | 6.0 | 13.00 | 13.1 | 95 | -0.80 | 241 |
| 6-Jun-11 | 15:00:53 | 2.1 | 2.2 | 6.1 | 13.00 | 13.1 | 95 | -0.80 | 235 |
| 6-Jun-11 | 16:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 242 |
| 6-Jun-11 | 17:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 96 | -0.60 | 242 |
| 6-Jun-11 | 18:00:54 | 2.1 | 2.5 | 6.0 | 13.00 | 13.1 | 96 | -0.70 | 242 |
| 6-Jun-11 | 19:00:53 | 2.1 | 2.6 | 6.0 | 13.00 | 13.1 | 96 | -0.80 | 242 |
| 6-Jun-11 | 20:00:53 | 2.1 | 2.6 | 6.0 | 13.00 | 13.1 | 96 | -0.70 | 239 |
| 6-Jun-11 | 21:00:53 | 2.1 | 2.6 | 6.1 | 13.00 | 13.1 | 96 | -0.80 | 236 |
| 6-Jun-11 | 22:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 13.1 | 96 | -0.80 | 241 |
| 6-Jun-11 | 23:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 96 | -0.80 | 245 |
| 7-Jun-11 | 0:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 13.1 | 96 | -0.70 | 245 |
| 7-Jun-11 | 1:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 96 | -0.80 | 245 |
| 7-Jun-11 | 2:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 96 | -0.60 | 246 |
| 7-Jun-11 | 3:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 95 | -0.80 | 246 |
| 7-Jun-11 | 4:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 247 |
| 7-Jun-11 | 5:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.0 | 95 | -0.70 | 247 |
| 7-Jun-11 | 6:00:53 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 247 |
| 7-Jun-11 | 7:00:54 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 247 |
| 7-Jun-11 | 8:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 95 | -0.70 | 247 |
| 7-Jun-11 | 9:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 95 | -0.80 | 247 |
| 7-Jun-11 | 10:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 95 | -0.40 | 247 |
| 7-Jun-11 | 11:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 95 | -0.80 | 247 |
| 7-Jun-11 | 12:00:53 | 2.1 | 2.3 | 6.0 | 13.00 | 13.1 | 96 | -0.70 | 247 |
| 7-Jun-11 | 13:00:54 | 2.1 | 2.4 | 6.0 | 13.00 | 13.1 | 96 | -0.70 | 246 |
| 7-Jun-11 | 14:00:53 | 2.1 | 2.5 | 6.0 | 13.00 | 13.1 | 96 | -0.80 | 245 |
| 7-Jun-11 | 15:00:53 | 2.1 | 2.8 | 6.2 | 13.00 | 13.0 | 96 | -0.80 | 237 |
| 7-Jun-11 | 16:00:53 | 2.1 | 2.9 | 6.1 | 13.00 | 13.0 | 96 | -0.80 | 238 |
| 7-Jun-11 | 17:00:53 | 2.1 | 2.7 | 6.2 | 13.00 | 13.2 | 97 | -0.80 | 239 |
| 7-Jun-11 | 18:00:54 | 2.1 | 2.7 | 6.2 | 13.00 | 13.2 | 97 | -0.80 | 240 |
| 7-Jun-11 | 19:00:53 | 2.1 | 2.8 | 6.2 | 13.00 | 13.1 | 96 | -0.80 | 242 |
| 7-Jun-11 | 20:00:53 | 2.1 | 2.8 | 6.2 | 13.00 | 13.0 | 96 | -0.90 | 245 |
| 7-Jun-11 | 21:00:53 | 2.1 | 3.0 | 6.1 | 13.00 | 13.0 | 97 | -0.80 | 248 |
| 7-Jun-11 | 22:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.90 | 253 |
| 7-Jun-11 | 23:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 97 | -0.80 | 253 |
| 8-Jun-11 | 0:00:53 | 2.1 | 3.0 | 6.0 | 13.00 | 13.1 | 98 | -0.70 | 253 |
| 8-Jun-11 | 1:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.90 | 253 |
| 8-Jun-11 | 2:00:53 | 2.1 | 3.0 | 6.0 | 13.00 | 13.1 | 98 | -0.80 | 253 |
| 8-Jun-11 | 3:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.90 | 253 |
| 8-Jun-11 | 4:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.90 | 254 |
| 8-Jun-11 | 5:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 97 | -0.90 | 254 |
| 8-Jun-11 | 6:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.70 | 260 |
| 8-Jun-11 | 7:00:54 | 2.1 | 3.1 | 6.1 | 13.00 | 13.1 | 98 | -0.60 | 260 |
| 8-Jun-11 | 8:00:53 | 2.1 | 3.0 | 6.1 | 13.00 | 13.2 | 98 | -0.60 | 263 |
| 8-Jun-11 | 9:00:53 | 2.1 | 3.1 | 6.1 | 13.00 | 13.2 | 98 | -0.80 | 262 |
| 8-Jun-11 | 10:00:53 | 2.1 | 3.1 | 6.1 | 13.00 | 13.2 | 98 | -0.80 | 263 |
| 8-Jun-11 | 11:00:53 | 2.1 | 3.1 | 6.1 | 13.00 | 13.2 | 98 | -0.70 | 263 |
| 8-Jun-11 | 12:00:53 | 2.1 | 3.1 | 6.1 | 13.00 | 13.2 | 98 | -0.80 | 263 |
| 8-Jun-11 | 13:00:54 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.90 | 263 |
| 8-Jun-11 | 14:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.90 | 264 |
| 8-Jun-11 | 15:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.80 | 263 |
| 8-Jun-11 | 16:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.90 | 263 |
| 8-Jun-11 | 17:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.90 | 263 |
| 8-Jun-11 | 18:00:54 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.80 | 262 |
| 8-Jun-11 | 19:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.90 | 263 |
| 8-Jun-11 | 20:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 99 | -0.80 | 261 |
| 8-Jun-11 | 21:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.80 | 260 |
| 8-Jun-11 | 22:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.1 | 98 | -0.80 | 260 |
| 8-Jun-11 | 23:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.1 | 98 | -0.70 | 258 |
| 9-Jun-11 | 0:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.80 | 258 |
| 9-Jun-11 | 1:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.80 | 257 |
| 9-Jun-11 | 2:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.2 | 98 | -0.80 | 256 |
| 9-Jun-11 | 3:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.70 | 257 |
| 9-Jun-11 | 4:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 97 | -0.80 | 256 |
| 9-Jun-11 | 5:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.70 | 256 |
| 9-Jun-11 | 6:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.1 | 98 | -0.60 | 255 |
| 9-Jun-11 | 7:00:54 | 2.1 | 3.1 | 6.0 | 13.00 | 13.0 | 97 | -0.80 | 255 |
| 9-Jun-11 | 8:00:53 | 2.1 | 3.0 | 6.0 | 13.00 | 13.1 | 97 | -0.80 | 255 |
| 9-Jun-11 | 9:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.0 | 97 | -0.90 | 253 |
| 9-Jun-11 | 10:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.0 | 97 | -0.70 | 253 |
| 9-Jun-11 | 11:00:53 | 2.1 | 3.1 | 6.0 | 13.00 | 13.0 | 97 | -0.70 | 254 |
| 9-Jun-11 | 12:00:53 | 2.1 | 3.2 | 6.0 | 13.00 | 13.0 | 97 | -0.70 | 254 |
| 9-Jun-11 | 13:00:54 | 2.1 | 3.2 | 6.0 | 13.00 | 13.0 | 97 | -0.80 | 253 |
| 9-Jun-11 | 14:00:53 | 2.1 | 3.3 | 6.0 | 13.00 | 13.1 | 98 | -0.80 | 252 |
| 9-Jun-11 | 15:00:53 | 2.1 | 3.3 | 6.0 | 13.00 | 13.0 | 97 | -0.90 | 252 |
| 9-Jun-11 | 16:00:53 | 2.1 | 3.4 | 5.9 | 13.00 | 13.0 | 97 | -0.80 | 252 |
| 9-Jun-11 | 17:00:53 | 2.1 | 3.5 | 6.0 | 13.00 | 13.0 | 97 | -1.00 | 251 |
| 9-Jun-11 | 18:00:54 | 2.1 | 3.5 | 6.0 | 13.00 | 12.9 | 97 | -1.00 | 251 |
| 9-Jun-11 | 19:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 12.9 | 98 | -0.90 | 251 |
| 9-Jun-11 | 20:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 252 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 9-Jun-11 | 21:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 252 |
| 9-Jun-11 | 22:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 252 |
| 9-Jun-11 | 23:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 253 |
| 10-Jun-11 | 0:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.90 | 253 |
| 10-Jun-11 | 1:00:53 | 2.1 | 3.5 | 6.0 | 13.00 | 12.9 | 97 | -0.80 | 253 |
| 10-Jun-11 | 2:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 12.9 | 97 | -0.80 | 253 |
| 10-Jun-11 | 3:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 12.9 | 98 | -0.80 | 253 |
| 10-Jun-11 | 4:00:53 | 2.1 | 3.5 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 254 |
| 10-Jun-11 | 5:00:53 | 2.1 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.90 | 255 |
| 10-Jun-11 | 6:00:53 | 2.0 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 255 |
| 10-Jun-11 | 7:00:54 | 2.0 | 3.6 | 6.0 | 13.00 | 13.0 | 98 | -0.80 | 255 |
| 10-Jun-11 | 8:00:53 | 2.0 | 3.6 | 6.0 | 13.00 | 12.9 | 97 | -0.90 | 255 |
| 10-Jun-11 | 9:00:53 | 2.0 | 3.6 | 6.0 | 13.00 | 12.9 | 98 | -0.90 | 255 |
| 10-Jun-11 | 10:00:53 | 2.0 | 3.6 | 6.0 | 13.00 | 12.9 | 97 | -0.80 | 255 |
| 10-Jun-11 | 11:00:53 | 2.0 | 3.6 | 6.0 | 13.00 | 12.9 | 98 | -0.80 | 256 |
| 10-Jun-11 | 12:00:53 | 2.0 | 3.7 | 6.0 | 13.00 | 12.9 | 97 | -0.80 | 255 |
| 10-Jun-11 | 13:00:54 | 2.0 | 3.6 | 6.0 | 13.00 | 13.0 | 99 | -0.80 | 255 |
| 10-Jun-11 | 14:00:53 | 2.0 | 3.7 | 6.0 | 13.00 | 13.0 | 98 | -1.00 | 254 |
| 10-Jun-11 | 15:00:53 | 2.0 | 3.7 | 6.0 | 13.00 | 13.0 | 99 | -0.90 | 254 |
| 10-Jun-11 | 16:00:53 | 2.0 | 3.8 | 6.0 | 13.00 | 13.0 | 99 | -1.00 | 253 |
| 10-Jun-11 | 17:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -0.90 | 253 |
| 10-Jun-11 | 18:00:54 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -0.80 | 252 |
| 10-Jun-11 | 19:00:53 | 2.0 | 3.9 | 6.1 | 13.00 | 13.0 | 99 | -0.80 | 250 |
| 10-Jun-11 | 20:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -1.00 | 253 |
| 10-Jun-11 | 21:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -0.80 | 255 |
| 10-Jun-11 | 22:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 12.9 | 98 | -0.90 | 255 |
| 10-Jun-11 | 23:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 12.9 | 98 | -0.70 | 256 |
| 11-Jun-11 | 0:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 12.9 | 98 | -0.90 | 256 |
| 11-Jun-11 | 1:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -0.80 | 256 |
| 11-Jun-11 | 2:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -0.90 | 256 |
| 11-Jun-11 | 3:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 12.9 | 98 | -0.90 | 256 |
| 11-Jun-11 | 4:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 13.0 | 99 | -0.90 | 257 |
| 11-Jun-11 | 5:00:53 | 2.0 | 3.8 | 5.9 | 13.00 | 12.8 | 97 | -0.70 | 257 |
| 11-Jun-11 | 6:00:53 | 2.0 | 3.9 | 5.9 | 13.00 | 12.6 | 96 | -0.90 | 257 |
| 11-Jun-11 | 7:00:54 | 2.0 | 4.0 | 5.9 | 13.00 | 12.5 | 95 | -0.90 | 257 |
| 11-Jun-11 | 8:00:53 | 2.0 | 4.0 | 6.0 | 13.00 | 12.5 | 95 | -1.00 | 251 |
| 11-Jun-11 | 9:00:53 | 2.0 | 4.0 | 6.0 | 13.00 | 12.6 | 96 | -0.30 | 254 |
| 11-Jun-11 | 10:00:53 | 2.0 | 4.0 | 6.0 | 13.00 | 12.7 | 97 | -1.00 | 255 |
| 11-Jun-11 | 11:00:53 | 2.0 | 4.0 | 6.0 | 13.00 | 12.6 | 96 | -0.90 | 255 |
| 11-Jun-11 | 12:00:53 | 2.0 | 3.9 | 6.0 | 13.00 | 12.8 | 98 | -0.90 | 253 |
| 11-Jun-11 | 13:00:54 | 2.0 | 4.1 | 6.0 | 13.00 | 12.7 | 97 | -0.80 | 255 |
| 11-Jun-11 | 14:00:53 | 2.0 | 4.0 | 6.0 | 13.00 | 12.6 | 96 | -1.00 | 257 |
| 11-Jun-11 | 15:00:53 | 2.0 | 4.0 | 6.0 | 13.00 | 12.7 | 97 | -1.00 | 257 |
| 11-Jun-11 | 16:00:53 | 2.3 | 3.9 | 5.8 | 13.00 | 12.6 | 96 | -0.80 | 263 |
| 11-Jun-11 | 17:00:53 | 2.2 | 3.9 | 5.9 | 13.00 | 12.5 | 95 | -0.90 | 255 |
| 11-Jun-11 | 18:00:54 | 2.2 | 4.0 | 5.9 | 13.00 | 12.5 | 95 | -0.90 | 255 |
| 11-Jun-11 | 19:00:53 | 2.2 | 4.1 | 6.0 | 13.00 | 12.6 | 97 | -0.90 | 253 |
| 11-Jun-11 | 20:00:53 | 2.2 | 4.0 | 5.9 | 13.00 | 12.5 | 95 | -1.00 | 255 |
| 11-Jun-11 | 21:00:53 | 2.2 | 4.2 | 6.0 | 13.00 | 12.7 | 97 | -0.80 | 248 |
| 11-Jun-11 | 22:00:53 | 2.2 | 4.2 | 6.0 | 13.00 | 12.6 | 97 | -0.90 | 250 |
| 11-Jun-11 | 23:00:53 | 2.2 | 4.2 | 6.1 | 13.00 | 12.7 | 97 | -0.80 | 245 |
| 12-Jun-11 | 0:00:53 | 2.2 | 4.2 | 6.0 | 13.00 | 12.6 | 97 | -0.80 | 252 |
| 12-Jun-11 | 1:00:53 | 2.2 | 4.2 | 6.1 | 12.00 | 12.5 | 96 | -1.00 | 247 |
| 12-Jun-11 | 2:00:53 | 2.2 | 4.2 | 6.0 | 12.00 | 12.6 | 96 | -1.00 | 254 |
| 12-Jun-11 | 3:00:53 | 2.2 | 4.2 | 6.0 | 12.00 | 12.5 | 96 | -1.00 | 254 |
| 12-Jun-11 | 4:00:53 | 2.2 | 4.2 | 6.0 | 13.00 | 12.5 | 96 | -0.90 | 256 |
| 12-Jun-11 | 5:00:53 | 2.2 | 4.1 | 6.0 | 13.00 | 12.5 | 96 | -0.80 | 256 |
| 12-Jun-11 | 6:00:53 | 2.2 | 4.1 | 6.0 | 13.00 | 12.5 | 96 | -0.90 | 260 |
| 12-Jun-11 | 7:00:54 | 2.2 | 4.1 | 6.0 | 13.00 | 12.5 | 96 | -0.90 | 263 |
| 12-Jun-11 | 8:00:53 | 2.2 | 4.1 | 6.0 | 13.00 | 12.5 | 96 | -0.90 | 262 |
| 12-Jun-11 | 9:00:53 | 2.2 | 3.8 | 6.0 | 13.00 | 12.6 | 96 | -0.90 | 259 |
| 12-Jun-11 | 10:00:53 | 2.3 | 3.9 | 6.0 | 13.00 | 12.6 | 96 | -0.80 | 258 |
| 12-Jun-11 | 11:00:53 | 2.2 | 3.9 | 5.9 | 13.00 | 12.5 | 95 | -0.80 | 258 |
| 12-Jun-11 | 12:00:53 | 2.2 | 3.8 | 6.0 | 13.00 | 12.5 | 95 | -1.00 | 255 |
| 12-Jun-11 | 13:00:54 | 2.2 | 3.9 | 5.9 | 13.00 | 12.5 | 95 | -0.80 | 253 |
| 12-Jun-11 | 14:00:53 | 2.2 | 4.0 | 5.9 | 13.00 | 12.5 | 96 | -0.80 | 250 |
| 12-Jun-11 | 15:00:53 | 2.2 | 3.9 | 5.9 | 13.00 | 12.6 | 96 | -0.90 | 251 |
| 12-Jun-11 | 16:00:53 | 2.2 | 3.9 | 6.1 | 12.00 | 12.5 | 95 | -0.80 | 239 |
| 12-Jun-11 | 17:00:53 | 2.2 | 4.0 | 6.0 | 12.00 | 12.5 | 95 | -1.00 | 247 |
| 12-Jun-11 | 18:00:54 | 2.2 | 4.0 | 6.0 | 12.00 | 12.5 | 95 | -0.90 | 250 |
| 12-Jun-11 | 19:00:53 | 2.2 | 4.1 | 5.9 | 12.00 | 12.5 | 95 | -0.90 | 250 |
| 12-Jun-11 | 20:00:53 | 2.2 | 4.2 | 6.0 | 12.00 | 12.4 | 95 | -0.90 | 246 |
| 12-Jun-11 | 21:00:53 | 2.2 | 4.1 | 6.0 | 12.00 | 12.5 | 95 | -0.80 | 247 |
| 12-Jun-11 | 22:00:53 | 2.2 | 4.2 | 5.9 | 12.00 | 12.4 | 95 | -0.90 | 249 |
| 12-Jun-11 | 23:00:53 | 2.2 | 4.1 | 5.9 | 12.00 | 12.4 | 95 | -0.80 | 250 |
| 13-Jun-11 | 0:00:54 | 2.2 | 4.2 | 5.9 | 12.00 | 12.4 | 95 | -0.80 | 249 |
| 13-Jun-11 | 1:00:54 | 2.2 | 4.2 | 6.0 | 12.00 | 12.4 | 95 | -0.70 | 248 |
| 13-Jun-11 | 2:00:54 | 2.2 | 4.1 | 6.0 | 12.00 | 12.4 | 95 | -1.00 | 249 |
| 13-Jun-11 | 3:00:54 | 2.2 | 4.1 | 6.0 | 13.00 | 12.4 | 95 | -0.80 | 250 |
| 13-Jun-11 | 4:00:54 | 2.2 | 4.1 | 6.0 | 13.00 | 12.4 | 95 | -0.80 | 249 |
| 13-Jun-11 | 5:00:54 | 2.2 | 4.0 | 6.0 | 13.00 | 12.4 | 94 | -0.80 | 251 |
| 13-Jun-11 | 6:00:54 | 2.2 | 4.0 | 5.9 | 12.00 | 12.4 | 94 | -0.80 | 253 |
| 13-Jun-11 | 7:00:54 | 2.2 | 4.1 | 5.9 | 12.00 | 12.3 | 94 | -0.90 | 253 |
| 13-Jun-11 | 8:00:54 | 2.2 | 4.1 | 5.9 | 12.00 | 12.4 | 95 | -0.80 | 253 |
| 13-Jun-11 | 9:00:54 | 2.2 | 4.1 | 5.9 | 12.00 | 12.4 | 95 | -0.90 | 254 |
| 13-Jun-11 | 10:00:54 | 2.2 | 4.1 | 5.9 | 13.00 | 12.4 | 95 | -0.90 | 255 |
| 13-Jun-11 | 11:00:53 | 2.2 | 4.1 | 6.0 | 13.00 | 12.4 | 95 | -0.80 | 251 |
| 13-Jun-11 | 12:00:54 | 2.1 | 4.1 | 6.0 | 12.00 | 12.4 | 95 | -0.80 | 252 |
| 13-Jun-11 | 13:00:54 | 2.1 | 4.1 | 6.0 | 12.00 | 12.5 | 95 | -0.80 | 250 |
| 13-Jun-11 | 14:00:53 | 2.2 | 4.2 | 6.0 | 12.00 | 12.5 | 96 | -0.80 | 250 |
| 13-Jun-11 | 15:00:53 | 2.1 | 4.2 | 6.0 | 12.00 | 12.4 | 95 | -0.90 | 248 |
| 13-Jun-11 | 16:00:54 | 2.1 | 4.3 | 6.0 | 12.00 | 12.4 | 95 | -1.00 | 241 |
| 13-Jun-11 | 17:00:54 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 96 | -0.90 | 238 |
| 13-Jun-11 | 18:00:54 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 95 | -1.00 | 238 |
| 13-Jun-11 | 19:00:54 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 95 | -0.90 | 236 |
| 13-Jun-11 | 20:00:53 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 96 | -1.00 | 238 |
| 13-Jun-11 | 21:00:54 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 96 | -0.90 | 239 |
| 13-Jun-11 | 22:00:54 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 96 | -0.90 | 241 |
| 13-Jun-11 | 23:00:53 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 96 | -0.80 | 238 |
| 14-Jun-11 | 0:00:54 | 2.1 | 4.4 | 6.0 | 12.00 | 12.4 | 95 | -0.90 | 232 |
| 14-Jun-11 | 1:00:54 | 2.1 | 4.3 | 6.0 | 12.00 | 12.4 | 95 | -1.00 | 231 |
| 14-Jun-11 | 2:00:54 | 2.1 | 4.3 | 6.0 | 12.00 | 12.4 | 95 | -0.80 | 233 |
| 14-Jun-11 | 3:00:54 | 2.1 | 4.2 | 5.9 | 12.00 | 12.4 | 95 | -1.00 | 237 |
| 14-Jun-11 | 4:00:54 | 2.1 | 4.2 | 5.9 | 12.00 | 12.4 | 95 | -1.00 | 240 |
| 14-Jun-11 | 5:00:54 | 2.1 | 4.2 | 5.9 | 12.00 | 12.4 | 95 | -0.90 | 246 |
| 14-Jun-11 | 6:00:54 | 2.1 | 4.2 | 6.0 | 12.00 | 12.4 | 95 | -0.80 | 241 |
| 14-Jun-11 | 7:00:54 | 2.1 | 4.2 | 6.0 | 12.00 | 12.3 | 95 | -0.80 | 244 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 14-Jun-11 | 8:00:54 | 2.2 | 4.2 | 6.0 | 12.00 | 12.4 | 95 | -0.80 | 244 |
| 14-Jun-11 | 9:00:54 | 2.2 | 4.1 | 5.9 | 12.00 | 12.4 | 95 | -0.90 | 245 |
| 14-Jun-11 | 10:00:54 | 2.2 | 4.1 | 5.9 | 12.00 | 12.4 | 94 | -0.90 | 243 |
| 14-Jun-11 | 11:00:54 | 2.2 | 4.1 | 6.0 | 12.00 | 12.3 | 94 | -0.80 | 241 |
| 14-Jun-11 | 12:00:54 | 2.2 | 4.2 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 240 |
| 14-Jun-11 | 13:00:53 | 2.2 | 4.2 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 239 |
| 14-Jun-11 | 14:00:54 | 2.2 | 4.2 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 237 |
| 14-Jun-11 | 15:00:54 | 2.2 | 4.3 | 6.1 | 12.00 | 12.3 | 95 | -0.90 | 228 |
| 14-Jun-11 | 16:00:54 | 2.2 | 4.3 | 6.0 | 12.00 | 12.4 | 95 | -0.90 | 238 |
| 14-Jun-11 | 17:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 236 |
| 14-Jun-11 | 18:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.4 | 95 | -0.90 | 236 |
| 14-Jun-11 | 19:00:53 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 242 |
| 14-Jun-11 | 20:00:53 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 237 |
| 14-Jun-11 | 21:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 241 |
| 14-Jun-11 | 22:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.3 | 96 | -1.00 | 240 |
| 14-Jun-11 | 23:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 243 |
| 15-Jun-11 | 0:00:54 | 2.2 | 4.5 | 5.9 | 12.00 | 12.3 | 95 | -1.00 | 245 |
| 15-Jun-11 | 1:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 244 |
| 15-Jun-11 | 2:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 245 |
| 15-Jun-11 | 3:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 247 |
| 15-Jun-11 | 4:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 247 |
| 15-Jun-11 | 5:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -0.80 | 248 |
| 15-Jun-11 | 6:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 250 |
| 15-Jun-11 | 7:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 94 | -1.00 | 250 |
| 15-Jun-11 | 8:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 251 |
| 15-Jun-11 | 9:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 258 |
| 15-Jun-11 | 10:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 255 |
| 15-Jun-11 | 11:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -0.80 | 255 |
| 15-Jun-11 | 12:00:54 | 2.2 | 4.4 | 6.0 | 12.00 | 12.3 | 95 | -0.80 | 256 |
| 15-Jun-11 | 13:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 255 |
| 15-Jun-11 | 14:00:54 | 2.2 | 4.7 | 6.0 | 12.00 | 12.3 | 95 | -0.90 | 254 |
| 15-Jun-11 | 15:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.3 | 96 | -0.80 | 252 |
| 15-Jun-11 | 16:00:54 | 2.2 | 4.7 | 6.0 | 12.00 | 12.3 | 96 | -1.00 | 257 |
| 15-Jun-11 | 17:00:54 | 2.2 | 4.8 | 6.0 | 12.00 | 12.3 | 96 | -0.90 | 262 |
| 15-Jun-11 | 18:00:53 | 2.2 | 4.9 | 6.0 | 12.00 | 12.3 | 96 | -0.80 | 258 |
| 15-Jun-11 | 19:00:54 | 2.2 | 4.8 | 6.0 | 12.00 | 12.2 | 95 | -1.00 | 256 |
| 15-Jun-11 | 20:00:54 | 2.2 | 4.9 | 6.0 | 12.00 | 12.2 | 96 | -1.00 | 258 |
| 15-Jun-11 | 21:00:53 | 2.2 | 4.9 | 6.0 | 12.00 | 12.3 | 96 | -1.00 | 269 |
| 15-Jun-11 | 22:00:54 | 2.2 | 4.9 | 6.0 | 12.00 | 12.2 | 96 | -1.00 | 270 |
| 15-Jun-11 | 23:00:54 | 2.2 | 4.8 | 6.0 | 12.00 | 12.3 | 96 | -1.00 | 257 |
| 16-Jun-11 | 0:00:54 | 2.2 | 4.8 | 6.0 | 12.00 | 12.3 | 96 | -0.90 | 257 |
| 16-Jun-11 | 1:00:54 | 2.2 | 4.7 | 5.9 | 12.00 | 12.3 | 95 | -1.00 | 259 |
| 16-Jun-11 | 2:00:54 | 2.2 | 4.7 | 5.9 | 12.00 | 12.3 | 95 | -0.90 | 258 |
| 16-Jun-11 | 3:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.2 | 94 | -1.00 | 252 |
| 16-Jun-11 | 4:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.2 | 95 | -1.00 | 254 |
| 16-Jun-11 | 5:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.2 | 95 | -0.80 | 255 |
| 16-Jun-11 | 6:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.2 | 95 | -0.90 | 255 |
| 16-Jun-11 | 7:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.2 | 94 | -1.10 | 255 |
| 16-Jun-11 | 8:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.2 | 95 | -0.80 | 256 |
| 16-Jun-11 | 9:00:54 | 2.2 | 4.6 | 6.0 | 12.00 | 12.2 | 94 | -0.80 | 259 |
| 16-Jun-11 | 10:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.3 | 95 | -1.00 | 252 |
| 16-Jun-11 | 11:00:54 | 2.2 | 4.5 | 6.0 | 12.00 | 12.2 | 94 | -0.90 | 253 |
| 16-Jun-11 | 12:00:54 | 2.2 | 4.7 | 6.0 | 12.00 | 12.2 | 95 | -1.00 | 252 |
| 16-Jun-11 | 13:00:54 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 254 |
| 16-Jun-11 | 14:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -0.90 | 254 |
| 16-Jun-11 | 15:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -0.90 | 252 |
| 16-Jun-11 | 16:00:53 | 2.3 | 4.9 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 253 |
| 16-Jun-11 | 17:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 251 |
| 16-Jun-11 | 18:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.2 | 95 | -0.80 | 253 |
| 16-Jun-11 | 19:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 253 |
| 16-Jun-11 | 20:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.2 | 95 | -0.90 | 253 |
| 16-Jun-11 | 21:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.2 | 95 | -0.90 | 252 |
| 16-Jun-11 | 22:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -0.90 | 250 |
| 16-Jun-11 | 23:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 250 |
| 17-Jun-11 | 0:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 251 |
| 17-Jun-11 | 1:00:54 | 2.2 | 4.7 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 251 |
| 17-Jun-11 | 2:00:54 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -1.00 | 251 |
| 17-Jun-11 | 3:00:54 | 2.2 | 4.8 | 6.0 | 11.00 | 12.2 | 95 | -0.90 | 254 |
| 17-Jun-11 | 4:00:54 | 2.2 | 4.7 | 6.0 | 11.00 | 12.1 | 94 | -0.90 | 253 |
| 17-Jun-11 | 5:00:54 | 2.2 | 4.7 | 6.0 | 11.00 | 12.2 | 94 | -1.00 | 252 |
| 17-Jun-11 | 6:00:54 | 2.2 | 4.7 | 6.0 | 11.00 | 12.1 | 94 | -0.90 | 254 |
| 17-Jun-11 | 7:00:54 | 2.2 | 4.6 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 254 |
| 17-Jun-11 | 8:00:54 | 2.2 | 4.7 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 254 |
| 17-Jun-11 | 9:00:54 | 2.2 | 4.7 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 252 |
| 17-Jun-11 | 10:00:53 | 2.2 | 4.7 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 253 |
| 17-Jun-11 | 11:00:53 | 2.2 | 4.7 | 6.0 | 11.00 | 12.1 | 95 | -0.80 | 251 |
| 17-Jun-11 | 12:00:53 | 2.2 | 4.8 | 6.1 | 11.00 | 12.1 | 94 | -1.00 | 255 |
| 17-Jun-11 | 13:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 252 |
| 17-Jun-11 | 14:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.1 | 95 | -0.90 | 251 |
| 17-Jun-11 | 15:00:54 | 2.3 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -0.70 | 251 |
| 17-Jun-11 | 16:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 251 |
| 17-Jun-11 | 17:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 252 |
| 17-Jun-11 | 18:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 252 |
| 17-Jun-11 | 19:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -0.90 | 251 |
| 17-Jun-11 | 20:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 254 |
| 17-Jun-11 | 21:00:54 | 2.2 | 5.1 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 250 |
| 17-Jun-11 | 22:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 252 |
| 17-Jun-11 | 23:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 253 |
| 18-Jun-11 | 0:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 251 |
| 18-Jun-11 | 1:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 252 |
| 18-Jun-11 | 2:00:54 | 2.2 | 4.9 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 253 |
| 18-Jun-11 | 3:00:54 | 2.5 | 4.9 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 255 |
| 18-Jun-11 | 4:00:53 | 2.5 | 4.8 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 253 |
| 18-Jun-11 | 5:00:53 | 2.2 | 4.8 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 254 |
| 18-Jun-11 | 6:00:54 | 2.2 | 4.8 | 6.0 | 11.00 | 12.1 | 94 | -0.90 | 257 |
| 18-Jun-11 | 7:00:54 | 2.2 | 4.8 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 256 |
| 18-Jun-11 | 8:00:54 | 2.2 | 4.8 | 6.0 | 11.00 | 12.0 | 94 | -0.90 | 254 |
| 18-Jun-11 | 9:00:53 | 2.2 | 4.9 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 255 |
| 18-Jun-11 | 10:00:53 | 2.2 | 4.9 | 6.0 | 11.00 | 12.0 | 94 | -0.90 | 255 |
| 18-Jun-11 | 11:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 94 | -1.00 | 257 |
| 18-Jun-11 | 12:00:54 | 2.2 | 5.0 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 256 |
| 18-Jun-11 | 13:00:53 | 2.2 | 5.1 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 255 |
| 18-Jun-11 | 14:00:53 | 2.2 | 5.2 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 253 |
| 18-Jun-11 | 15:00:53 | 2.2 | 5.3 | 6.0 | 11.00 | 12.1 | 95 | -0.90 | 251 |
| 18-Jun-11 | 16:00:54 | 2.2 | 5.3 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 252 |
| 18-Jun-11 | 17:00:53 | 2.2 | 5.4 | 6.0 | 11.00 | 12.1 | 95 | -1.00 | 251 |
| 18-Jun-11 | 18:00:53 | 2.2 | 5.4 | 6.1 | 11.00 | 12.1 | 95 | -1.00 | 250 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 18-Jun-11 | 19:00:53 | 2.2 | 5.5 | 6.1 | 11.00 | 12.0 | 95 | -1.00 | 246 |
| 18-Jun-11 | 20:00:54 | 2.2 | 5.6 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 247 |
| 18-Jun-11 | 21:00:54 | 2.2 | 5.6 | 6.2 | 11.00 | 12.0 | 96 | -1.00 | 243 |
| 18-Jun-11 | 22:00:53 | 2.2 | 5.6 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 247 |
| 18-Jun-11 | 23:00:53 | 2.2 | 5.5 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 250 |
| 19-Jun-11 | 0:00:53 | 2.2 | 5.5 | 6.1 | 11.00 | 12.0 | 95 | -1.00 | 264 |
| 19-Jun-11 | 1:00:54 | 2.2 | 5.5 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 252 |
| 19-Jun-11 | 2:00:54 | 2.2 | 5.5 | 6.1 | 11.00 | 12.0 | 95 | -1.00 | 251 |
| 19-Jun-11 | 3:00:53 | 2.2 | 5.6 | 6.1 | 11.00 | 12.0 | 95 | -1.10 | 251 |
| 19-Jun-11 | 4:00:53 | 2.2 | 5.6 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 251 |
| 19-Jun-11 | 5:00:53 | 2.2 | 5.7 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 254 |
| 19-Jun-11 | 6:00:53 | 2.2 | 5.7 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 253 |
| 19-Jun-11 | 7:00:53 | 2.2 | 5.7 | 6.1 | 11.00 | 12.0 | 96 | -1.00 | 254 |
| 19-Jun-11 | 8:00:53 | 2.2 | 5.8 | 6.3 | 11.00 | 12.0 | 96 | -0.90 | 243 |
| 19-Jun-11 | 9:00:53 | 2.2 | 5.8 | 6.2 | 11.00 | 12.0 | 96 | -1.00 | 250 |
| 19-Jun-11 | 10:00:53 | 2.2 | 5.9 | 6.3 | 11.00 | 12.0 | 96 | -1.00 | 243 |
| 19-Jun-11 | 11:00:53 | 2.2 | 6.0 | 6.3 | 11.00 | 12.0 | 97 | -1.00 | 243 |
| 19-Jun-11 | 12:00:54 | 2.2 | 6.1 | 6.3 | 11.00 | 12.0 | 97 | -1.10 | 244 |
| 19-Jun-11 | 13:00:53 | 2.2 | 6.2 | 6.2 | 11.00 | 12.0 | 97 | -1.00 | 251 |
| 19-Jun-11 | 14:00:53 | 2.2 | 6.5 | 6.3 | 11.00 | 12.1 | 98 | -1.00 | 245 |
| 19-Jun-11 | 15:00:53 | 2.2 | 6.7 | 6.3 | 11.00 | 12.1 | 99 | -1.10 | 240 |
| 19-Jun-11 | 16:00:53 | 2.2 | 6.9 | 6.3 | 11.00 | 12.0 | 99 | -1.10 | 242 |
| 19-Jun-11 | 17:00:53 | 2.2 | 7.1 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 241 |
| 19-Jun-11 | 18:00:53 | 2.2 | 7.2 | 6.3 | 11.00 | 12.1 | 100 | -1.10 | 240 |
| 19-Jun-11 | 19:00:53 | 2.2 | 7.3 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 240 |
| 19-Jun-11 | 20:00:53 | 2.2 | 7.4 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 239 |
| 19-Jun-11 | 21:00:53 | 2.2 | 7.2 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 240 |
| 19-Jun-11 | 22:00:53 | 2.2 | 7.2 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 240 |
| 19-Jun-11 | 23:00:53 | 2.2 | 7.1 | 6.3 | 11.00 | 12.1 | 100 | -1.10 | 242 |
| 20-Jun-11 | 0:00:53 | 2.2 | 7.3 | 6.4 | 11.00 | 12.0 | 100 | -1.10 | 240 |
| 20-Jun-11 | 1:00:53 | 2.2 | 7.2 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 243 |
| 20-Jun-11 | 2:00:53 | 2.2 | 7.2 | 6.3 | 11.00 | 12.0 | 99 | -1.00 | 244 |
| 20-Jun-11 | 3:00:53 | 2.2 | 7.4 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 245 |
| 20-Jun-11 | 4:00:53 | 2.2 | 7.4 | 6.4 | 11.00 | 12.0 | 100 | -1.10 | 244 |
| 20-Jun-11 | 5:00:53 | 2.2 | 7.4 | 6.4 | 11.00 | 12.0 | 100 | -0.80 | 245 |
| 20-Jun-11 | 6:00:53 | 2.2 | 7.4 | 6.4 | 11.00 | 12.0 | 100 | -1.20 | 247 |
| 20-Jun-11 | 7:00:53 | 2.2 | 7.3 | 6.4 | 11.00 | 12.0 | 99 | -1.20 | 246 |
| 20-Jun-11 | 8:00:53 | 2.2 | 7.2 | 6.3 | 11.00 | 12.0 | 99 | -0.90 | 248 |
| 20-Jun-11 | 9:00:53 | 2.2 | 7.3 | 6.3 | 11.00 | 12.0 | 100 | -1.10 | 248 |
| 20-Jun-11 | 10:00:53 | 2.2 | 7.4 | 6.4 | 11.00 | 12.0 | 100 | -1.20 | 246 |
| 20-Jun-11 | 11:00:54 | 2.2 | 7.5 | 6.4 | 11.00 | 12.0 | 100 | -1.10 | 247 |
| 20-Jun-11 | 12:00:53 | 2.2 | 7.3 | 6.4 | 11.00 | 12.0 | 100 | -1.10 | 248 |
| 20-Jun-11 | 13:00:53 | 2.2 | 7.5 | 6.4 | 11.00 | 12.0 | 100 | -1.10 | 248 |
| 20-Jun-11 | 14:00:53 | 2.2 | 8.2 | 6.4 | 11.00 | 11.9 | 101 | -1.30 | 247 |
| 20-Jun-11 | 15:00:53 | 2.2 | 8.4 | 6.4 | 11.00 | 12.0 | 102 | -1.30 | 246 |
| 20-Jun-11 | 16:00:53 | 2.2 | 7.5 | 6.3 | 11.00 | 12.1 | 101 | -1.00 | 255 |
| 20-Jun-11 | 17:00:53 | 2.2 | 7.6 | 6.4 | 11.00 | 12.1 | 101 | -1.10 | 248 |
| 20-Jun-11 | 18:00:53 | 2.2 | 7.7 | 6.4 | 11.00 | 12.0 | 101 | -1.00 | 256 |
| 20-Jun-11 | 19:00:53 | 2.2 | 7.5 | 6.4 | 11.00 | 12.0 | 100 | -1.10 | 265 |
| 20-Jun-11 | 20:00:53 | 2.2 | 7.6 | 6.4 | 11.00 | 12.1 | 101 | -1.10 | 255 |
| 20-Jun-11 | 21:00:53 | 2.2 | 8.0 | 6.4 | 11.00 | 12.1 | 102 | -1.00 | 250 |
| 20-Jun-11 | 22:00:53 | 2.2 | 8.1 | 6.4 | 11.00 | 12.0 | 102 | -1.00 | 249 |
| 20-Jun-11 | 23:00:53 | 2.2 | 7.6 | 6.3 | 11.00 | 12.1 | 101 | -0.80 | 251 |
| 21-Jun-11 | 0:00:53 | 2.2 | 7.5 | 6.4 | 11.00 | 12.0 | 100 | -1.20 | 251 |
| 21-Jun-11 | 1:00:53 | 2.2 | 7.5 | 6.4 | 11.00 | 12.1 | 101 | -1.30 | 252 |
| 21-Jun-11 | 2:00:53 | 2.2 | 7.8 | 6.3 | 11.00 | 12.1 | 101 | -1.00 | 254 |
| 21-Jun-11 | 3:00:53 | 2.2 | 7.9 | 6.4 | 11.00 | 12.0 | 101 | -1.00 | 251 |
| 21-Jun-11 | 4:00:53 | 2.2 | 7.8 | 6.3 | 11.00 | 12.0 | 101 | -1.20 | 259 |
| 21-Jun-11 | 5:00:53 | 2.2 | 7.6 | 6.4 | 11.00 | 12.0 | 101 | -1.20 | 258 |
| 21-Jun-11 | 6:00:53 | 2.2 | 7.9 | 6.4 | 11.00 | 12.0 | 101 | -1.20 | 255 |
| 21-Jun-11 | 7:00:53 | 2.2 | 8.5 | 6.4 | 11.00 | 12.0 | 103 | -0.90 | 254 |
| 21-Jun-11 | 8:00:52 | 2.2 | 9.2 | 6.4 | 11.00 | 11.9 | 104 | -1.30 | 251 |
| 21-Jun-11 | 9:00:52 | 2.2 | 9.2 | 6.4 | 11.00 | 11.9 | 104 | -1.30 | 253 |
| 21-Jun-11 | 10:00:52 | 2.2 | 9.0 | 6.4 | 11.00 | 12.0 | 104 | -1.30 | 254 |
| 21-Jun-11 | 11:00:52 | 2.2 | 9.3 | 6.4 | 11.00 | 12.0 | 104 | -1.30 | 253 |
| 21-Jun-11 | 12:00:52 | 2.2 | 9.6 | 6.4 | 11.00 | 11.9 | 105 | -1.30 | 255 |
| 21-Jun-11 | 13:00:53 | 2.2 | 9.2 | 6.4 | 11.00 | 12.0 | 104 | -1.20 | 253 |
| 21-Jun-11 | 14:00:52 | 2.2 | 10.0 | 6.4 | 11.00 | 11.9 | 105 | -1.20 | 252 |
| 21-Jun-11 | 15:00:53 | 2.2 | 10.2 | 6.4 | 11.00 | 11.8 | 105 | -1.50 | 250 |
| 21-Jun-11 | 16:00:53 | 2.2 | 10.4 | 6.3 | 11.00 | 11.8 | 106 | -1.40 | 258 |
| 21-Jun-11 | 17:00:52 | 2.2 | 10.3 | 6.4 | 11.00 | 11.8 | 106 | -1.40 | 252 |
| 21-Jun-11 | 18:00:52 | 2.2 | 10.5 | 6.4 | 11.00 | 11.8 | 106 | -1.40 | 250 |
| 21-Jun-11 | 19:00:53 | 2.2 | 10.6 | 6.3 | 11.00 | 11.8 | 106 | -1.30 | 254 |
| 21-Jun-11 | 20:00:53 | 2.2 | 10.3 | 6.4 | 11.00 | 11.9 | 106 | -1.20 | 252 |
| 21-Jun-11 | 21:00:52 | 2.2 | 10.7 | 6.4 | 11.00 | 11.8 | 106 | -1.40 | 250 |
| 21-Jun-11 | 22:00:52 | 2.2 | 10.8 | 6.4 | 11.00 | 11.6 | 105 | -1.40 | 248 |
| 21-Jun-11 | 23:00:53 | 2.2 | 10.5 | 6.4 | 11.00 | 11.8 | 105 | -1.50 | 250 |
| 22-Jun-11 | 0:00:53 | 2.2 | 10.3 | 6.4 | 11.00 | 11.7 | 104 | -1.50 | 251 |
| 22-Jun-11 | 1:00:52 | 2.2 | 10.0 | 6.4 | 11.00 | 11.7 | 104 | -1.50 | 248 |
| 22-Jun-11 | 2:00:53 | 2.2 | 10.8 | 6.4 | 11.00 | 11.6 | 105 | -1.50 | 250 |
| 22-Jun-11 | 3:00:53 | 2.2 | 10.5 | 6.4 | 11.00 | 11.7 | 105 | -1.50 | 251 |
| 22-Jun-11 | 4:00:53 | 2.2 | 10.5 | 6.4 | 11.00 | 11.6 | 104 | -1.40 | 253 |
| 22-Jun-11 | 5:00:53 | 2.2 | 10.4 | 6.4 | 11.00 | 11.6 | 104 | -1.50 | 253 |
| 22-Jun-11 | 6:00:53 | 2.2 | 10.5 | 6.4 | 11.00 | 11.6 | 104 | -1.50 | 253 |
| 22-Jun-11 | 7:00:52 | 2.2 | 10.6 | 6.4 | 11.00 | 11.6 | 104 | -1.40 | 252 |
| 22-Jun-11 | 8:00:53 | 2.2 | 10.5 | 6.4 | 11.00 | 11.5 | 103 | -1.50 | 252 |
| 22-Jun-11 | 9:00:52 | 2.2 | 10.6 | 6.4 | 11.00 | 11.5 | 103 | -1.50 | 251 |
| 22-Jun-11 | 10:00:53 | 2.2 | 10.7 | 6.4 | 11.00 | 11.5 | 103 | -1.60 | 252 |
| 22-Jun-11 | 11:00:53 | 2.2 | 10.8 | 6.4 | 11.00 | 11.5 | 103 | -1.50 | 250 |
| 22-Jun-11 | 12:00:52 | 2.2 | 10.9 | 6.4 | 11.00 | 11.4 | 103 | -1.40 | 249 |
| 22-Jun-11 | 13:00:52 | 2.2 | 11.1 | 6.4 | 11.00 | 11.4 | 104 | -1.40 | 249 |
| 22-Jun-11 | 14:00:52 | 2.2 | 11.2 | 6.4 | 11.00 | 11.4 | 104 | -1.50 | 248 |
| 22-Jun-11 | 15:00:53 | 2.2 | 11.4 | 6.4 | 11.00 | 11.4 | 104 | -1.60 | 249 |
| 22-Jun-11 | 16:00:52 | 2.2 | 11.4 | 6.4 | 11.00 | 11.4 | 104 | -1.50 | 248 |
| 22-Jun-11 | 17:00:52 | 2.2 | 11.6 | 6.4 | 11.00 | 11.3 | 104 | -1.60 | 248 |
| 22-Jun-11 | 18:00:52 | 2.1 | 11.8 | 6.4 | 11.00 | 11.3 | 105 | -1.60 | 247 |
| 22-Jun-11 | 19:00:52 | 2.1 | 12.0 | 6.4 | 11.00 | 11.3 | 105 | -1.50 | 248 |
| 22-Jun-11 | 20:00:52 | 2.1 | 12.0 | 6.4 | 11.00 | 11.3 | 105 | -1.60 | 248 |
| 22-Jun-11 | 21:00:52 | 2.1 | 12.1 | 6.4 | 11.00 | 11.2 | 104 | -1.60 | 247 |
| 22-Jun-11 | 22:00:52 | 2.1 | 11.9 | 6.4 | 11.00 | 11.3 | 104 | -1.60 | 249 |
| 22-Jun-11 | 23:00:52 | 2.1 | 12.1 | 6.4 | 11.00 | 11.2 | 104 | -1.50 | 246 |
| 23-Jun-11 | 0:00:52 | 2.2 | 11.6 | 6.4 | 11.00 | 11.3 | 104 | -1.50 | 247 |
| 23-Jun-11 | 1:00:52 | 2.2 | 11.8 | 6.4 | 11.00 | 11.2 | 104 | -1.60 | 247 |
| 23-Jun-11 | 2:00:52 | 2.2 | 11.9 | 6.4 | 11.00 | 11.1 | 103 | -1.60 | 248 |
| 23-Jun-11 | 3:00:52 | 2.2 | 11.8 | 6.4 | 11.00 | 11.1 | 102 | -1.60 | 248 |
| 23-Jun-11 | 4:00:52 | 2.2 | 11.6 | 6.4 | 11.00 | 11.1 | 102 | -1.60 | 247 |
| 23-Jun-11 | 5:00:52 | 2.2 | 11.6 | 6.4 | 11.00 | 11.1 | 102 | -1.50 | 247 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 23-Jun-11 | 6:00:52 | 2.2 | 11.7 | 6.5 | 11.00 | 11.1 | 102 | -1.50 | 249 |
| 23-Jun-11 | 7:00:52 | 2.2 | 11.6 | 6.4 | 11.00 | 11.0 | 101 | -1.50 | 248 |
| 23-Jun-11 | 8:00:52 | 2.2 | 11.6 | 6.4 | 11.00 | 11.0 | 101 | -1.40 | 247 |
| 23-Jun-11 | 9:00:53 | 2.2 | 11.7 | 6.4 | 11.00 | 11.0 | 102 | -1.60 | 247 |
| 23-Jun-11 | 10:00:52 | 2.2 | 11.8 | 6.4 | 11.00 | 11.0 | 102 | -1.60 | 246 |
| 23-Jun-11 | 11:00:52 | 2.2 | 11.9 | 6.4 | 11.00 | 11.0 | 102 | -1.60 | 247 |
| 23-Jun-11 | 12:00:52 | 2.2 | 12.0 | 6.4 | 11.00 | 11.0 | 103 | -1.60 | 247 |
| 23-Jun-11 | 13:00:52 | 2.2 | 12.1 | 6.5 | 11.00 | 11.0 | 103 | -1.60 | 245 |
| 23-Jun-11 | 14:00:52 | 2.2 | 12.3 | 6.4 | 11.00 | 11.0 | 103 | -1.60 | 248 |
| 23-Jun-11 | 15:00:52 | 2.2 | 12.4 | 6.5 | 11.00 | 11.0 | 103 | -1.60 | 245 |
| 23-Jun-11 | 16:00:52 | 2.2 | 12.4 | 6.5 | 11.00 | 11.0 | 103 | -1.60 | 244 |
| 23-Jun-11 | 17:00:52 | 2.2 | 12.5 | 6.5 | 11.00 | 11.0 | 103 | -1.70 | 244 |
| 23-Jun-11 | 18:00:52 | 2.2 | 12.6 | 6.5 | 11.00 | 11.0 | 103 | -1.60 | 244 |
| 23-Jun-11 | 19:00:52 | 2.2 | 12.6 | 6.5 | 11.00 | 11.0 | 103 | -1.60 | 245 |
| 23-Jun-11 | 20:00:52 | 2.2 | 12.6 | 6.5 | 11.00 | 10.9 | 103 | -1.60 | 244 |
| 23-Jun-11 | 21:00:52 | 2.2 | 12.6 | 6.5 | 11.00 | 10.9 | 103 | -1.60 | 244 |
| 23-Jun-11 | 22:00:52 | 2.2 | 12.6 | 6.5 | 11.00 | 10.9 | 103 | -1.70 | 243 |
| 23-Jun-11 | 23:00:52 | 2.2 | 12.5 | 6.5 | 11.00 | 10.9 | 102 | -1.60 | 244 |
| 24-Jun-11 | 0:00:53 | 2.2 | 12.5 | 6.5 | 11.00 | 10.9 | 102 | -1.60 | 245 |
| 24-Jun-11 | 1:00:52 | 2.2 | 12.4 | 6.5 | 11.00 | 10.9 | 102 | -1.80 | 243 |
| 24-Jun-11 | 2:00:53 | 2.2 | 12.4 | 6.5 | 11.00 | 10.9 | 102 | -1.70 | 244 |
| 24-Jun-11 | 3:00:52 | 2.2 | 12.3 | 6.5 | 11.00 | 10.9 | 102 | -1.80 | 244 |
| 24-Jun-11 | 4:00:52 | 2.2 | 12.2 | 6.5 | 11.00 | 10.9 | 102 | -1.60 | 246 |
| 24-Jun-11 | 5:00:52 | 2.2 | 12.2 | 6.5 | 11.00 | 10.9 | 101 | -1.70 | 246 |
| 24-Jun-11 | 6:00:52 | 2.2 | 12.2 | 6.5 | 11.00 | 10.9 | 101 | -1.60 | 245 |
| 24-Jun-11 | 7:00:52 | 2.2 | 12.2 | 6.5 | 11.00 | 10.9 | 101 | -1.60 | 245 |
| 24-Jun-11 | 8:00:52 | 2.2 | 12.2 | 6.5 | 11.00 | 10.9 | 101 | -1.50 | 247 |
| 24-Jun-11 | 9:00:52 | 2.2 | 12.3 | 6.5 | 11.00 | 10.8 | 101 | -1.60 | 246 |
| 24-Jun-11 | 10:00:52 | 2.2 | 12.3 | 6.5 | 11.00 | 10.8 | 101 | -1.50 | 247 |
| 24-Jun-11 | 11:00:52 | 2.2 | 12.5 | 6.5 | 11.00 | 10.8 | 101 | -1.60 | 245 |
| 24-Jun-11 | 12:00:52 | 2.1 | 12.6 | 6.5 | 11.00 | 10.8 | 102 | -1.70 | 245 |
| 24-Jun-11 | 13:00:52 | 2.1 | 12.7 | 6.5 | 11.00 | 10.9 | 102 | -1.70 | 246 |
| 24-Jun-11 | 14:00:52 | 2.1 | 12.8 | 6.5 | 11.00 | 10.9 | 103 | -1.60 | 246 |
| 24-Jun-11 | 15:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.9 | 103 | -1.80 | 245 |
| 24-Jun-11 | 16:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.8 | 103 | -1.80 | 245 |
| 24-Jun-11 | 17:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.8 | 103 | -1.60 | 244 |
| 24-Jun-11 | 18:00:52 | 2.1 | 12.8 | 6.5 | 11.00 | 10.8 | 102 | -1.70 | 247 |
| 24-Jun-11 | 19:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.8 | 103 | -1.80 | 244 |
| 24-Jun-11 | 20:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.9 | 103 | -1.70 | 244 |
| 24-Jun-11 | 21:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.9 | 103 | -1.60 | 244 |
| 24-Jun-11 | 22:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.9 | 103 | -1.80 | 245 |
| 24-Jun-11 | 23:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.9 | 103 | -1.80 | 246 |
| 25-Jun-11 | 0:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.8 | 103 | -1.80 | 244 |
| 25-Jun-11 | 1:00:52 | 2.1 | 12.9 | 6.5 | 11.00 | 10.9 | 103 | -1.80 | 246 |
| 25-Jun-11 | 2:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.9 | 103 | -1.70 | 244 |
| 25-Jun-11 | 3:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.8 | 103 | -1.70 | 246 |
| 25-Jun-11 | 4:00:52 | 2.1 | 12.9 | 6.5 | 11.00 | 10.8 | 103 | -1.60 | 244 |
| 25-Jun-11 | 5:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.8 | 103 | -1.70 | 260 |
| 25-Jun-11 | 6:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.8 | 103 | -1.50 | 249 |
| 25-Jun-11 | 7:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.8 | 103 | -1.70 | 245 |
| 25-Jun-11 | 8:00:52 | 2.1 | 13.0 | 6.5 | 11.00 | 10.8 | 103 | -1.60 | 247 |
| 25-Jun-11 | 9:00:52 | 2.1 | 13.0 | 6.4 | 11.00 | 10.9 | 103 | -1.50 | 248 |
| 25-Jun-11 | 10:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.8 | 103 | -1.80 | 248 |
| 25-Jun-11 | 11:00:52 | 2.1 | 13.4 | 6.5 | 11.00 | 10.7 | 103 | -1.70 | 248 |
| 25-Jun-11 | 12:00:52 | 2.1 | 13.6 | 6.5 | 11.00 | 10.7 | 103 | -1.60 | 245 |
| 25-Jun-11 | 13:00:52 | 2.1 | 13.8 | 6.5 | 11.00 | 10.7 | 103 | -1.70 | 246 |
| 25-Jun-11 | 14:00:52 | 2.1 | 13.8 | 6.5 | 11.00 | 10.6 | 103 | -1.80 | 247 |
| 25-Jun-11 | 15:00:52 | 2.1 | 13.8 | 6.4 | 11.00 | 10.6 | 103 | -1.70 | 246 |
| 25-Jun-11 | 16:00:52 | 2.1 | 13.7 | 6.4 | 11.00 | 10.6 | 102 | -1.80 | 249 |
| 25-Jun-11 | 17:00:52 | 2.1 | 13.6 | 6.4 | 11.00 | 10.6 | 102 | -1.80 | 247 |
| 25-Jun-11 | 18:00:52 | 2.1 | 13.6 | 6.4 | 11.00 | 10.6 | 102 | -1.80 | 247 |
| 25-Jun-11 | 19:00:52 | 2.1 | 13.5 | 6.4 | 11.00 | 10.6 | 102 | -1.80 | 248 |
| 25-Jun-11 | 20:00:52 | 2.1 | 13.3 | 6.4 | 11.00 | 10.6 | 101 | -1.80 | 246 |
| 25-Jun-11 | 21:00:52 | 2.1 | 13.1 | 6.4 | 11.00 | 10.6 | 101 | -1.80 | 245 |
| 25-Jun-11 | 22:00:52 | 2.1 | 12.9 | 6.4 | 11.00 | 10.6 | 100 | -1.70 | 246 |
| 25-Jun-11 | 23:00:52 | 2.1 | 12.7 | 6.4 | 11.00 | 10.6 | 100 | -1.70 | 245 |
| 26-Jun-11 | 0:00:52 | 2.1 | 12.5 | 6.4 | 11.00 | 10.6 | 100 | -1.70 | 247 |
| 26-Jun-11 | 1:00:52 | 2.1 | 12.4 | 6.4 | 11.00 | 10.6 | 99 | -1.70 | 247 |
| 26-Jun-11 | 2:00:52 | 2.1 | 12.3 | 6.4 | 11.00 | 10.6 | 99 | -1.80 | 244 |
| 26-Jun-11 | 3:00:53 | 2.1 | 12.2 | 6.5 | 11.00 | 10.6 | 98 | -1.70 | 242 |
| 26-Jun-11 | 4:00:52 | 2.1 | 12.1 | 6.5 | 11.00 | 10.5 | 98 | -1.70 | 244 |
| 26-Jun-11 | 5:00:52 | 2.1 | 11.9 | 6.4 | 11.00 | 10.6 | 98 | -1.30 | 245 |
| 26-Jun-11 | 6:00:53 | 2.1 | 11.8 | 6.4 | 11.00 | 10.6 | 98 | -1.70 | 246 |
| 26-Jun-11 | 7:00:52 | 2.1 | 11.8 | 6.4 | 11.00 | 10.6 | 97 | -1.70 | 247 |
| 26-Jun-11 | 8:00:52 | 2.1 | 11.7 | 6.4 | 11.00 | 10.6 | 97 | -1.50 | 247 |
| 26-Jun-11 | 9:00:52 | 2.1 | 11.6 | 6.4 | 11.00 | 10.6 | 97 | -1.60 | 247 |
| 26-Jun-11 | 10:00:52 | 2.1 | 11.6 | 6.4 | 11.00 | 10.6 | 97 | -1.60 | 247 |
| 26-Jun-11 | 11:00:52 | 2.1 | 11.6 | 6.4 | 11.00 | 10.6 | 97 | -1.70 | 247 |
| 26-Jun-11 | 12:00:52 | 2.1 | 11.6 | 6.4 | 11.00 | 10.6 | 97 | -1.60 | 248 |
| 26-Jun-11 | 13:00:52 | 2.1 | 11.6 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 247 |
| 26-Jun-11 | 14:00:52 | 2.1 | 11.6 | 6.4 | 11.00 | 10.6 | 97 | -1.60 | 247 |
| 26-Jun-11 | 15:00:52 | 2.1 | 11.7 | 6.5 | 11.00 | 10.6 | 98 | -1.60 | 247 |
| 26-Jun-11 | 16:00:52 | 2.1 | 11.7 | 6.5 | 11.00 | 10.6 | 98 | -1.60 | 247 |
| 26-Jun-11 | 17:00:52 | 2.1 | 11.7 | 6.5 | 11.00 | 10.6 | 98 | -1.60 | 248 |
| 26-Jun-11 | 18:00:52 | 2.1 | 11.7 | 6.5 | 11.00 | 10.6 | 98 | -1.60 | 247 |
| 26-Jun-11 | 19:00:52 | 2.1 | 11.7 | 6.5 | 11.00 | 10.6 | 98 | -1.60 | 248 |
| 26-Jun-11 | 20:00:52 | 2.1 | 11.6 | 6.5 | 11.00 | 10.6 | 98 | -1.70 | 248 |
| 26-Jun-11 | 21:00:52 | 2.1 | 11.6 | 6.5 | 11.00 | 10.6 | 98 | -1.70 | 248 |
| 26-Jun-11 | 22:00:52 | 2.1 | 11.6 | 6.5 | 11.00 | 10.6 | 98 | -1.60 | 249 |
| 26-Jun-11 | 23:00:52 | 2.1 | 11.6 | 6.5 | 11.00 | 10.6 | 97 | -1.70 | 248 |
| 27-Jun-11 | 0:00:52 | 2.1 | 11.5 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 249 |
| 27-Jun-11 | 1:00:52 | 2.1 | 11.5 | 6.5 | 11.00 | 10.6 | 97 | -1.50 | 249 |
| 27-Jun-11 | 2:00:52 | 2.1 | 11.4 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 249 |
| 27-Jun-11 | 3:00:52 | 2.1 | 11.4 | 6.5 | 11.00 | 10.6 | 97 | -1.70 | 250 |
| 27-Jun-11 | 4:00:53 | 2.1 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 250 |
| 27-Jun-11 | 5:00:52 | 2.1 | 11.3 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 249 |
| 27-Jun-11 | 6:00:52 | 2.1 | 11.3 | 6.5 | 11.00 | 10.6 | 96 | -1.70 | 250 |
| 27-Jun-11 | 7:00:52 | 2.1 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 249 |
| 27-Jun-11 | 8:00:52 | 2.1 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 254 |
| 27-Jun-11 | 9:00:53 | 2.1 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 252 |
| 27-Jun-11 | 10:00:52 | 2.1 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 249 |
| 27-Jun-11 | 11:00:52 | 2.1 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 253 |
| 27-Jun-11 | 12:00:52 | 2.1 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.70 | 250 |
| 27-Jun-11 | 13:00:53 | 2.1 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 250 |
| 27-Jun-11 | 14:00:52 | 2.1 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 252 |
| 27-Jun-11 | 15:00:53 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 252 |
| 27-Jun-11 | 16:00:53 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 252 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 27-Jun-11 | 17:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 250 |
| 27-Jun-11 | 18:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 250 |
| 27-Jun-11 | 19:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 254 |
| 27-Jun-11 | 20:00:53 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 252 |
| 27-Jun-11 | 21:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 253 |
| 27-Jun-11 | 22:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.50 | 251 |
| 27-Jun-11 | 23:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.6 | 97 | -1.60 | 250 |
| 28-Jun-11 | 0:00:53 | 2.0 | 11.2 | 6.4 | 11.00 | 10.6 | 97 | -1.60 | 253 |
| 28-Jun-11 | 1:00:52 | 2.0 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 251 |
| 28-Jun-11 | 2:00:53 | 2.0 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 252 |
| 28-Jun-11 | 3:00:53 | 2.0 | 11.1 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 253 |
| 28-Jun-11 | 4:00:53 | 2.0 | 11.1 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 252 |
| 28-Jun-11 | 5:00:52 | 2.0 | 11.0 | 6.4 | 11.00 | 10.6 | 96 | -1.50 | 254 |
| 28-Jun-11 | 6:00:53 | 1.9 | 11.0 | 6.4 | 11.00 | 10.6 | 96 | -1.60 | 254 |
| 28-Jun-11 | 7:00:52 | 1.9 | 10.9 | 6.4 | 11.00 | 10.5 | 95 | -1.60 | 254 |
| 28-Jun-11 | 8:00:53 | 1.9 | 10.9 | 6.4 | 11.00 | 10.6 | 95 | -1.60 | 254 |
| 28-Jun-11 | 9:00:53 | 1.9 | 10.9 | 6.4 | 11.00 | 10.5 | 95 | -1.60 | 257 |
| 28-Jun-11 | 10:00:53 | 1.9 | 10.9 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 253 |
| 28-Jun-11 | 11:00:52 | 1.9 | 11.0 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 253 |
| 28-Jun-11 | 12:00:53 | 1.9 | 11.0 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 253 |
| 28-Jun-11 | 13:00:52 | 1.9 | 11.1 | 6.4 | 11.00 | 10.6 | 96 | -1.60 | 255 |
| 28-Jun-11 | 14:00:52 | 1.9 | 11.1 | 6.4 | 11.00 | 10.6 | 96 | -1.60 | 258 |
| 28-Jun-11 | 15:00:52 | 1.9 | 11.2 | 6.4 | 11.00 | 10.6 | 96 | -1.60 | 255 |
| 28-Jun-11 | 16:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 253 |
| 28-Jun-11 | 17:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 250 |
| 28-Jun-11 | 18:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 252 |
| 28-Jun-11 | 19:00:53 | 1.9 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 251 |
| 28-Jun-11 | 20:00:53 | 1.9 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 250 |
| 28-Jun-11 | 21:00:53 | 1.9 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.60 | 251 |
| 28-Jun-11 | 22:00:52 | 1.9 | 11.2 | 6.5 | 11.00 | 10.6 | 96 | -1.50 | 252 |
| 28-Jun-11 | 23:00:53 | 1.9 | 11.2 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 253 |
| 29-Jun-11 | 0:00:52 | 1.9 | 11.2 | 6.5 | 11.00 | 10.5 | 96 | -1.50 | 254 |
| 29-Jun-11 | 1:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 96 | -1.70 | 250 |
| 29-Jun-11 | 2:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 252 |
| 29-Jun-11 | 3:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 250 |
| 29-Jun-11 | 4:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.50 | 251 |
| 29-Jun-11 | 5:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 251 |
| 29-Jun-11 | 6:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.70 | 253 |
| 29-Jun-11 | 7:00:52 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 252 |
| 29-Jun-11 | 8:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 254 |
| 29-Jun-11 | 9:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.70 | 256 |
| 29-Jun-11 | 10:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 265 |
| 29-Jun-11 | 11:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.50 | 254 |
| 29-Jun-11 | 12:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 255 |
| 29-Jun-11 | 13:00:53 | 1.9 | 11.1 | 6.5 | 11.00 | 10.5 | 95 | -1.60 | 255 |
| 29-Jun-11 | 14:00:52 | 1.9 | 11.2 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 254 |
| 29-Jun-11 | 15:00:52 | 1.9 | 11.2 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 258 |
| 29-Jun-11 | 16:00:52 | 1.9 | 11.2 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 256 |
| 29-Jun-11 | 17:00:53 | 1.9 | 11.2 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 253 |
| 29-Jun-11 | 18:00:53 | 1.9 | 11.3 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 254 |
| 29-Jun-11 | 19:00:52 | 1.9 | 11.3 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 254 |
| 29-Jun-11 | 20:00:52 | 1.9 | 11.3 | 6.5 | 11.00 | 10.5 | 96 | -1.50 | 253 |
| 29-Jun-11 | 21:00:52 | 1.9 | 11.4 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 254 |
| 29-Jun-11 | 22:00:53 | 1.9 | 11.3 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 254 |
| 29-Jun-11 | 23:00:52 | 1.9 | 11.4 | 6.5 | 11.00 | 10.5 | 96 | -1.70 | 254 |
| 30-Jun-11 | 0:00:52 | 1.9 | 11.4 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 254 |
| 30-Jun-11 | 1:00:53 | 1.9 | 11.4 | 6.5 | 11.00 | 10.5 | 96 | -1.70 | 254 |
| 30-Jun-11 | 2:00:52 | 1.9 | 11.3 | 6.5 | 11.00 | 10.5 | 96 | -1.60 | 255 |
| 30-Jun-11 | 3:00:52 | 1.9 | 11.4 | 6.4 | 11.00 | 10.5 | 96 | -1.60 | 256 |
| 30-Jun-11 | 4:00:52 | 1.9 | 11.4 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 255 |
| 30-Jun-11 | 5:00:52 | 1.9 | 11.3 | 6.4 | 11.00 | 10.4 | 95 | -1.60 | 256 |
| 30-Jun-11 | 6:00:52 | 1.9 | 11.3 | 6.4 | 11.00 | 10.4 | 95 | -1.60 | 256 |
| 30-Jun-11 | 7:00:52 | 1.9 | 11.4 | 6.4 | 11.00 | 10.4 | 95 | -1.60 | 256 |
| 30-Jun-11 | 8:00:52 | 1.9 | 11.4 | 6.4 | 11.00 | 10.4 | 95 | -1.70 | 256 |
| 30-Jun-11 | 9:00:53 | 1.9 | 11.4 | 6.4 | 11.00 | 10.4 | 95 | -1.60 | 258 |
| 30-Jun-11 | 10:00:52 | 1.9 | 11.4 | 6.3 | 11.00 | 10.4 | 96 | -1.60 | 262 |
| 30-Jun-11 | 11:00:52 | 1.9 | 11.6 | 6.4 | 11.00 | 10.4 | 96 | -1.60 | 255 |
| 30-Jun-11 | 12:00:53 | 1.9 | 11.6 | 6.3 | 11.00 | 10.4 | 96 | -1.60 | 257 |
| 30-Jun-11 | 13:00:52 | 1.9 | 11.7 | 6.4 | 11.00 | 10.4 | 96 | -1.60 | 254 |
| 30-Jun-11 | 14:00:53 | 1.9 | 11.9 | 6.4 | 11.00 | 10.4 | 97 | -1.70 | 253 |
| 30-Jun-11 | 15:00:53 | 1.9 | 12.0 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 246 |
| 30-Jun-11 | 16:00:52 | 1.9 | 11.8 | 6.4 | 11.00 | 10.4 | 96 | -1.70 | 252 |
| 30-Jun-11 | 17:00:52 | 1.9 | 11.9 | 6.5 | 11.00 | 10.5 | 97 | -1.60 | 246 |
| 30-Jun-11 | 18:00:52 | 2.0 | 12.4 | 6.5 | 11.00 | 10.5 | 98 | -1.70 | 244 |
| 30-Jun-11 | 19:00:52 | 2.0 | 12.7 | 6.5 | 11.00 | 10.5 | 99 | -1.80 | 246 |
| 30-Jun-11 | 20:00:53 | 2.0 | 12.9 | 6.4 | 11.00 | 10.4 | 99 | -1.80 | 251 |
| 30-Jun-11 | 21:00:53 | 2.0 | 12.7 | 6.4 | 11.00 | 10.4 | 99 | -1.80 | 251 |
| 30-Jun-11 | 22:00:52 | 2.0 | 12.9 | 6.4 | 11.00 | 10.4 | 99 | -1.80 | 251 |
| 30-Jun-11 | 23:00:52 | 2.0 | 12.9 | 6.4 | 11.00 | 10.4 | 98 | -1.70 | 253 |
| 1-Jul-11 | 0:00:52 | 2.0 | 12.8 | 6.4 | 11.00 | 10.4 | 98 | -1.80 | 250 |
| 1-Jul-11 | 1:00:52 | 2.0 | 12.7 | 6.4 | 11.00 | 10.4 | 98 | -1.80 | 250 |
| 1-Jul-11 | 2:00:52 | 2.0 | 12.5 | 6.5 | 11.00 | 10.4 | 98 | -1.70 | 249 |
| 1-Jul-11 | 3:00:52 | 2.0 | 12.4 | 6.4 | 11.00 | 10.4 | 97 | -1.80 | 249 |
| 1-Jul-11 | 4:00:53 | 2.0 | 12.4 | 6.5 | 11.00 | 10.4 | 97 | -1.80 | 248 |
| 1-Jul-11 | 5:00:52 | 2.0 | 12.2 | 6.4 | 11.00 | 10.4 | 97 | -1.70 | 252 |
| 1-Jul-11 | 6:00:53 | 2.0 | 12.3 | 6.4 | 11.00 | 10.4 | 97 | -1.60 | 250 |
| 1-Jul-11 | 7:00:52 | 2.0 | 12.3 | 6.4 | 11.00 | 10.3 | 96 | -1.70 | 250 |
| 1-Jul-11 | 8:00:52 | 2.0 | 12.1 | 6.4 | 11.00 | 10.3 | 96 | -1.80 | 254 |
| 1-Jul-11 | 9:00:53 | 2.0 | 12.1 | 6.3 | 11.00 | 10.3 | 96 | -1.70 | 257 |
| 1-Jul-11 | 10:00:52 | 2.0 | 12.1 | 6.3 | 11.00 | 10.3 | 96 | -1.70 | 255 |
| 1-Jul-11 | 11:00:52 | 2.0 | 12.0 | 6.3 | 11.00 | 10.3 | 96 | -1.80 | 255 |
| 1-Jul-11 | 12:00:52 | 2.0 | 12.0 | 6.4 | 11.00 | 10.3 | 96 | -1.60 | 253 |
| 1-Jul-11 | 13:00:52 | 2.0 | 11.9 | 6.3 | 11.00 | 10.4 | 96 | -1.70 | 255 |
| 1-Jul-11 | 14:00:52 | 2.0 | 11.9 | 6.3 | 11.00 | 10.4 | 96 | -1.80 | 254 |
| 1-Jul-11 | 15:00:53 | 2.0 | 11.9 | 6.4 | 11.00 | 10.4 | 96 | -1.70 | 252 |
| 1-Jul-11 | 16:00:53 | 2.0 | 11.9 | 6.3 | 11.00 | 10.4 | 96 | -1.70 | 252 |
| 1-Jul-11 | 17:00:52 | 2.0 | 11.9 | 6.3 | 11.00 | 10.4 | 96 | -1.60 | 252 |
| 1-Jul-11 | 18:00:52 | 2.0 | 11.8 | 6.3 | 11.00 | 10.4 | 96 | -1.70 | 251 |
| 1-Jul-11 | 19:00:53 | 2.0 | 11.8 | 6.4 | 11.00 | 10.4 | 96 | -1.70 | 249 |
| 1-Jul-11 | 20:00:52 | 2.0 | 11.8 | 6.4 | 11.00 | 10.4 | 96 | -1.60 | 244 |
| 1-Jul-11 | 21:00:53 | 2.0 | 11.8 | 6.4 | 11.00 | 10.4 | 96 | -1.70 | 245 |
| 1-Jul-11 | 22:00:52 | 2.0 | 11.8 | 6.4 | 11.00 | 10.4 | 96 | -1.70 | 247 |
| 1-Jul-11 | 23:00:52 | 1.9 | 11.8 | 6.5 | 11.00 | 10.4 | 96 | -1.60 | 245 |
| 2-Jul-11 | 0:00:52 | 1.9 | 11.7 | 6.4 | 11.00 | 10.4 | 96 | -1.70 | 249 |
| 2-Jul-11 | 1:00:52 | 1.9 | 11.7 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 244 |
| 2-Jul-11 | 2:00:52 | 1.9 | 11.7 | 6.5 | 11.00 | 10.4 | 95 | -1.80 | 245 |
| 2-Jul-11 | 3:00:52 | 1.9 | 11.6 | 6.5 | 11.00 | 10.3 | 95 | -1.70 | 245 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 2-Jul-11 | 4:00:53 | 1.9 | 11.6 | 6.5 | 11.00 | 10.3 | 95 | -1.60 | 247 |
| 2-Jul-11 | 5:00:52 | 1.9 | 11.6 | 6.5 | 11.00 | 10.3 | 95 | -1.60 | 247 |
| 2-Jul-11 | 6:00:53 | 1.9 | 11.6 | 6.5 | 11.00 | 10.3 | 95 | -1.60 | 248 |
| 2-Jul-11 | 7:00:52 | 1.9 | 11.5 | 6.4 | 11.00 | 10.3 | 95 | -1.60 | 252 |
| 2-Jul-11 | 8:00:52 | 1.9 | 11.5 | 6.4 | 11.00 | 10.3 | 95 | -1.70 | 252 |
| 2-Jul-11 | 9:00:53 | 1.9 | 11.5 | 6.4 | 11.00 | 10.3 | 95 | -1.70 | 252 |
| 2-Jul-11 | 10:00:52 | 1.9 | 11.5 | 6.4 | 11.00 | 10.3 | 95 | -1.70 | 254 |
| 2-Jul-11 | 11:00:52 | 1.9 | 11.4 | 6.4 | 11.00 | 10.3 | 95 | -1.60 | 250 |
| 2-Jul-11 | 12:00:52 | 1.9 | 11.4 | 6.4 | 11.00 | 10.3 | 95 | -1.60 | 252 |
| 2-Jul-11 | 13:00:52 | 1.9 | 11.4 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 249 |
| 2-Jul-11 | 14:00:52 | 1.9 | 11.4 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 249 |
| 2-Jul-11 | 15:00:53 | 1.9 | 11.4 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 250 |
| 2-Jul-11 | 16:00:53 | 1.9 | 11.4 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 250 |
| 2-Jul-11 | 17:00:52 | 1.9 | 11.4 | 6.4 | 11.00 | 10.4 | 95 | -1.50 | 252 |
| 2-Jul-11 | 18:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 250 |
| 2-Jul-11 | 19:00:53 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 250 |
| 2-Jul-11 | 20:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 250 |
| 2-Jul-11 | 21:00:53 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 250 |
| 2-Jul-11 | 22:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 250 |
| 2-Jul-11 | 23:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 251 |
| 3-Jul-11 | 0:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 257 |
| 3-Jul-11 | 1:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 250 |
| 3-Jul-11 | 2:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 255 |
| 3-Jul-11 | 3:00:52 | 2.0 | 11.2 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 252 |
| 3-Jul-11 | 4:00:53 | 2.0 | 11.2 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 252 |
| 3-Jul-11 | 5:00:52 | 2.0 | 11.2 | 6.5 | 11.00 | 10.4 | 94 | -1.60 | 252 |
| 3-Jul-11 | 6:00:53 | 2.0 | 11.2 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 253 |
| 3-Jul-11 | 7:00:52 | 2.0 | 11.2 | 6.5 | 11.00 | 10.4 | 94 | -1.60 | 255 |
| 3-Jul-11 | 8:00:52 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 254 |
| 3-Jul-11 | 9:00:53 | 2.0 | 11.3 | 6.5 | 11.00 | 10.4 | 95 | -1.60 | 253 |
| 3-Jul-11 | 10:00:52 | 2.0 | 11.4 | 6.4 | 11.00 | 10.4 | 95 | -1.60 | 258 |
| 3-Jul-11 | 11:00:52 | 2.0 | 11.5 | 6.5 | 11.00 | 10.4 | 95 | -1.70 | 256 |
| 3-Jul-11 | 12:00:52 | 2.0 | 11.6 | 6.5 | 11.00 | 10.4 | 96 | -1.70 | 252 |
| 3-Jul-11 | 13:00:52 | 2.0 | 11.8 | 6.5 | 11.00 | 10.4 | 96 | -1.80 | 251 |
| 3-Jul-11 | 14:00:52 | 2.0 | 11.9 | 6.4 | 11.00 | 10.4 | 96 | -1.80 | 256 |
| 3-Jul-11 | 15:00:53 | 2.0 | 11.9 | 6.5 | 11.00 | 10.4 | 96 | -1.80 | 252 |
| 3-Jul-11 | 16:00:53 | 2.0 | 12.1 | 6.4 | 11.00 | 10.4 | 97 | -1.70 | 257 |
| 3-Jul-11 | 17:00:52 | 2.0 | 12.1 | 6.5 | 11.00 | 10.4 | 97 | -1.80 | 251 |
| 3-Jul-11 | 18:00:52 | 2.0 | 12.2 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 251 |
| 3-Jul-11 | 19:00:53 | 2.0 | 12.3 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 251 |
| 3-Jul-11 | 20:00:52 | 2.0 | 12.3 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 251 |
| 3-Jul-11 | 21:00:53 | 2.0 | 12.4 | 6.5 | 11.00 | 10.4 | 98 | -1.80 | 253 |
| 3-Jul-11 | 22:00:52 | 2.0 | 12.4 | 6.5 | 11.00 | 10.4 | 98 | -1.70 | 250 |
| 3-Jul-11 | 23:00:52 | 2.0 | 12.3 | 6.5 | 11.00 | 10.4 | 97 | -1.80 | 254 |
| 4-Jul-11 | 0:00:52 | 2.0 | 12.4 | 6.4 | 11.00 | 10.4 | 97 | -1.60 | 255 |
| 4-Jul-11 | 1:00:52 | 2.0 | 12.4 | 6.4 | 11.00 | 10.4 | 97 | -1.80 | 254 |
| 4-Jul-11 | 2:00:52 | 2.0 | 12.4 | 6.4 | 11.00 | 10.4 | 97 | -1.60 | 253 |
| 4-Jul-11 | 3:00:52 | 2.0 | 12.2 | 6.5 | 11.00 | 10.4 | 97 | -1.80 | 249 |
| 4-Jul-11 | 4:00:53 | 2.0 | 12.3 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 249 |
| 4-Jul-11 | 5:00:52 | 2.0 | 12.4 | 6.5 | 11.00 | 10.4 | 97 | -1.60 | 250 |
| 4-Jul-11 | 6:00:53 | 2.0 | 12.2 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 251 |
| 4-Jul-11 | 7:00:52 | 2.0 | 12.3 | 6.5 | 11.00 | 10.4 | 97 | -1.60 | 251 |
| 4-Jul-11 | 8:00:52 | 2.0 | 12.4 | 6.5 | 11.00 | 10.4 | 97 | -1.60 | 254 |
| 4-Jul-11 | 9:00:53 | 2.0 | 12.3 | 6.5 | 11.00 | 10.4 | 97 | -1.70 | 254 |
| 4-Jul-11 | 10:00:52 | 2.0 | 12.4 | 6.4 | 11.00 | 10.4 | 97 | -1.80 | 261 |
| 4-Jul-11 | 11:00:52 | 2.0 | 12.5 | 6.5 | 11.00 | 10.4 | 97 | -1.80 | 254 |
| 4-Jul-11 | 12:00:52 | 2.0 | 12.6 | 6.3 | 11.00 | 10.4 | 98 | -1.70 | 261 |
| 4-Jul-11 | 13:00:52 | 2.0 | 12.9 | 6.4 | 11.00 | 10.4 | 98 | -1.80 | 257 |
| 4-Jul-11 | 14:00:52 | 2.0 | 13.0 | 6.4 | 11.00 | 10.4 | 98 | -1.80 | 256 |
| 4-Jul-11 | 15:00:53 | 2.0 | 13.2 | 6.5 | 11.00 | 10.4 | 99 | -1.80 | 251 |
| 4-Jul-11 | 16:00:53 | 2.0 | 13.3 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 252 |
| 4-Jul-11 | 17:00:52 | 2.0 | 13.3 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 252 |
| 4-Jul-11 | 18:00:52 | 2.0 | 13.4 | 6.5 | 11.00 | 10.3 | 99 | -1.70 | 253 |
| 4-Jul-11 | 19:00:53 | 2.0 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 253 |
| 4-Jul-11 | 20:00:52 | 2.0 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 253 |
| 4-Jul-11 | 21:00:53 | 2.0 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 253 |
| 4-Jul-11 | 22:00:52 | 2.0 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 251 |
| 4-Jul-11 | 23:00:52 | 2.0 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.70 | 253 |
| 5-Jul-11 | 0:00:52 | 2.0 | 13.4 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 255 |
| 5-Jul-11 | 1:00:52 | 2.0 | 13.4 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 254 |
| 5-Jul-11 | 2:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 253 |
| 5-Jul-11 | 3:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 254 |
| 5-Jul-11 | 4:00:53 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 256 |
| 5-Jul-11 | 5:00:52 | 2.1 | 13.2 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 256 |
| 5-Jul-11 | 6:00:53 | 2.1 | 13.1 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 255 |
| 5-Jul-11 | 7:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 255 |
| 5-Jul-11 | 8:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 255 |
| 5-Jul-11 | 9:00:53 | 2.1 | 13.1 | 6.5 | 11.00 | 10.3 | 97 | -1.80 | 255 |
| 5-Jul-11 | 10:00:52 | 2.1 | 13.1 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 255 |
| 5-Jul-11 | 11:00:52 | 2.1 | 13.2 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 256 |
| 5-Jul-11 | 12:00:52 | 2.1 | 13.2 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 255 |
| 5-Jul-11 | 13:00:52 | 2.1 | 13.2 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 257 |
| 5-Jul-11 | 14:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 258 |
| 5-Jul-11 | 15:00:53 | 2.1 | 13.4 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 257 |
| 5-Jul-11 | 16:00:53 | 2.1 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 255 |
| 5-Jul-11 | 17:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 257 |
| 5-Jul-11 | 18:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 256 |
| 5-Jul-11 | 19:00:53 | 2.1 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 256 |
| 5-Jul-11 | 20:00:52 | 2.1 | 13.5 | 6.6 | 11.00 | 10.3 | 99 | -1.80 | 255 |
| 5-Jul-11 | 21:00:53 | 2.1 | 13.5 | 6.6 | 11.00 | 10.3 | 98 | -1.80 | 254 |
| 5-Jul-11 | 22:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.3 | 99 | -1.80 | 258 |
| 5-Jul-11 | 23:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.2 | 98 | -1.90 | 255 |
| 6-Jul-11 | 0:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.3 | 98 | -1.80 | 255 |
| 6-Jul-11 | 1:00:52 | 2.1 | 13.4 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 259 |
| 6-Jul-11 | 2:00:52 | 2.1 | 13.4 | 6.5 | 11.00 | 10.2 | 98 | -1.90 | 254 |
| 6-Jul-11 | 3:00:52 | 2.1 | 13.4 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 255 |
| 6-Jul-11 | 4:00:53 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 259 |
| 6-Jul-11 | 5:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 255 |
| 6-Jul-11 | 6:00:53 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 263 |
| 6-Jul-11 | 7:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 258 |
| 6-Jul-11 | 8:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 97 | -1.80 | 258 |
| 6-Jul-11 | 9:00:53 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 258 |
| 6-Jul-11 | 10:00:52 | 2.1 | 13.3 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 256 |
| 6-Jul-11 | 11:00:52 | 2.1 | 13.4 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 258 |
| 6-Jul-11 | 12:00:52 | 2.1 | 13.5 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 257 |
| 6-Jul-11 | 13:00:52 | 2.1 | 13.6 | 6.5 | 11.00 | 10.2 | 98 | -1.80 | 258 |
| 6-Jul-11 | 14:00:52 | 2.1 | 13.7 | 6.5 | 11.00 | 10.2 | 99 | -1.90 | 258 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 6-Jul-11 | 15:00:53 | 2.1 | 13.8 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 259 |
| 6-Jul-11 | 16:00:53 | 2.1 | 13.9 | 6.6 | 11.00 | 10.2 | 99 | -1.80 | 258 |
| 6-Jul-11 | 17:00:52 | 2.1 | 14.0 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 257 |
| 6-Jul-11 | 18:00:52 | 2.1 | 14.1 | 6.6 | 11.00 | 10.2 | 99 | -1.90 | 257 |
| 6-Jul-11 | 19:00:53 | 2.1 | 14.1 | 6.5 | 11.00 | 10.2 | 100 | -1.80 | 257 |
| 6-Jul-11 | 20:00:52 | 2.1 | 14.2 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 260 |
| 6-Jul-11 | 21:00:53 | 2.1 | 14.2 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 256 |
| 6-Jul-11 | 22:00:52 | 2.1 | 14.2 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 256 |
| 6-Jul-11 | 23:00:52 | 2.1 | 14.1 | 6.5 | 11.00 | 10.2 | 99 | -1.90 | 257 |
| 7-Jul-11 | 0:00:52 | 2.1 | 14.2 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 258 |
| 7-Jul-11 | 1:00:52 | 2.1 | 14.1 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 257 |
| 7-Jul-11 | 2:00:52 | 2.1 | 14.1 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 256 |
| 7-Jul-11 | 3:00:52 | 2.1 | 14.0 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 260 |
| 7-Jul-11 | 4:00:53 | 2.1 | 14.0 | 6.5 | 11.00 | 10.2 | 99 | -1.90 | 261 |
| 7-Jul-11 | 5:00:52 | 2.1 | 14.0 | 6.5 | 11.00 | 10.1 | 98 | -1.90 | 265 |
| 7-Jul-11 | 6:00:53 | 2.1 | 13.9 | 6.5 | 11.00 | 10.2 | 98 | -1.90 | 257 |
| 7-Jul-11 | 7:00:52 | 2.1 | 13.9 | 6.5 | 11.00 | 10.2 | 98 | -1.90 | 256 |
| 7-Jul-11 | 8:00:52 | 2.1 | 14.0 | 6.6 | 11.00 | 10.1 | 98 | -1.80 | 261 |
| 7-Jul-11 | 9:00:53 | 2.1 | 13.9 | 6.5 | 11.00 | 10.1 | 98 | -1.80 | 260 |
| 7-Jul-11 | 10:00:52 | 2.1 | 14.0 | 6.6 | 11.00 | 10.1 | 98 | -1.90 | 260 |
| 7-Jul-11 | 11:00:52 | 2.1 | 14.1 | 6.6 | 11.00 | 10.2 | 99 | -1.80 | 260 |
| 7-Jul-11 | 12:00:52 | 2.1 | 14.0 | 6.6 | 11.00 | 10.2 | 99 | -1.80 | 266 |
| 7-Jul-11 | 13:00:52 | 2.1 | 14.1 | 6.6 | 11.00 | 10.2 | 99 | -0.80 | 263 |
| 7-Jul-11 | 14:00:52 | 2.1 | 14.2 | 6.6 | 11.00 | 10.2 | 99 | -1.90 | 268 |
| 7-Jul-11 | 15:00:53 | 2.1 | 14.2 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 263 |
| 7-Jul-11 | 16:00:53 | 2.1 | 14.2 | 6.5 | 11.00 | 10.2 | 100 | -1.80 | 258 |
| 7-Jul-11 | 17:00:52 | 2.1 | 15.1 | 6.6 | 11.00 | 10.2 | 101 | -1.90 | 259 |
| 7-Jul-11 | 18:00:52 | 2.1 | 14.4 | 6.5 | 11.00 | 10.2 | 100 | -1.80 | 259 |
| 7-Jul-11 | 19:00:53 | 2.1 | 14.4 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 258 |
| 7-Jul-11 | 20:00:52 | 2.1 | 14.2 | 6.5 | 11.00 | 10.2 | 99 | -1.70 | 261 |
| 7-Jul-11 | 21:00:53 | 2.1 | 14.6 | 6.6 | 11.00 | 10.2 | 101 | -1.80 | 258 |
| 7-Jul-11 | 22:00:52 | 2.1 | 14.5 | 6.6 | 11.00 | 10.2 | 100 | -1.90 | 258 |
| 7-Jul-11 | 23:00:52 | 2.1 | 14.3 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 261 |
| 8-Jul-11 | 0:00:52 | 2.1 | 14.5 | 6.6 | 11.00 | 10.2 | 100 | -1.90 | 260 |
| 8-Jul-11 | 1:00:52 | 2.1 | 14.5 | 6.6 | 11.00 | 10.2 | 100 | -1.80 | 262 |
| 8-Jul-11 | 2:00:52 | 2.1 | 14.4 | 6.5 | 11.00 | 10.2 | 99 | -1.90 | 272 |
| 8-Jul-11 | 3:00:52 | 2.1 | 14.4 | 6.5 | 11.00 | 10.2 | 99 | -1.80 | 262 |
| 8-Jul-11 | 4:00:53 | 2.1 | 14.5 | 6.6 | 11.00 | 10.2 | 99 | -1.80 | 257 |
| 8-Jul-11 | 5:00:52 | 2.1 | 14.5 | 6.5 | 11.00 | 10.2 | 100 | -1.80 | 261 |
| 8-Jul-11 | 6:00:53 | 2.1 | 14.8 | 6.6 | 11.00 | 10.1 | 100 | -1.80 | 264 |
| 8-Jul-11 | 7:00:52 | 2.1 | 14.8 | 6.6 | 11.00 | 10.1 | 100 | -1.90 | 256 |
| 8-Jul-11 | 8:00:52 | 2.1 | 14.8 | 6.6 | 11.00 | 10.0 | 99 | -1.80 | 260 |
| 8-Jul-11 | 9:00:53 | 2.1 | 14.6 | 6.6 | 11.00 | 10.1 | 99 | -1.90 | 257 |
| 8-Jul-11 | 10:00:52 | 2.1 | 14.9 | 6.6 | 11.00 | 10.1 | 100 | -1.90 | 261 |
| 8-Jul-11 | 11:00:52 | 2.1 | 15.1 | 6.6 | 11.00 | 10.1 | 100 | -1.80 | 257 |
| 8-Jul-11 | 12:00:52 | 2.1 | 15.3 | 6.5 | 11.00 | 10.1 | 101 | -1.90 | 258 |
| 8-Jul-11 | 13:00:52 | 2.1 | 15.4 | 6.6 | 11.00 | 10.1 | 101 | -1.90 | 257 |
| 8-Jul-11 | 14:00:52 | 2.1 | 15.6 | 6.6 | 11.00 | 10.1 | 101 | -1.90 | 257 |
| 8-Jul-11 | 15:00:53 | 2.1 | 15.8 | 6.6 | 11.00 | 10.1 | 101 | -1.90 | 257 |
| 8-Jul-11 | 16:00:53 | 2.1 | 15.9 | 6.6 | 11.00 | 10.1 | 102 | -1.90 | 258 |
| 8-Jul-11 | 17:00:52 | 2.1 | 16.0 | 6.6 | 11.00 | 10.1 | 102 | -1.90 | 257 |
| 8-Jul-11 | 18:00:52 | 2.1 | 16.1 | 6.6 | 11.00 | 10.0 | 102 | -1.90 | 257 |
| 8-Jul-11 | 19:00:53 | 2.1 | 16.2 | 6.6 | 11.00 | 10.0 | 102 | -1.80 | 255 |
| 8-Jul-11 | 20:00:52 | 2.1 | 16.1 | 6.6 | 11.00 | 10.0 | 102 | -1.90 | 256 |
| 8-Jul-11 | 21:00:53 | 2.1 | 16.1 | 6.5 | 11.00 | 10.0 | 102 | -1.90 | 256 |
| 8-Jul-11 | 22:00:52 | 2.1 | 16.1 | 6.5 | 11.00 | 10.0 | 102 | -1.90 | 258 |
| 8-Jul-11 | 23:00:52 | 2.1 | 16.0 | 6.5 | 11.00 | 10.0 | 102 | -1.80 | 256 |
| 9-Jul-11 | 0:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 10.1 | 102 | -1.90 | 257 |
| 9-Jul-11 | 1:00:52 | 2.1 | 16.0 | 6.5 | 11.00 | 10.0 | 101 | -1.80 | 257 |
| 9-Jul-11 | 2:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 10.0 | 101 | -1.90 | 259 |
| 9-Jul-11 | 3:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.9 | 100 | -1.90 | 261 |
| 9-Jul-11 | 4:00:53 | 2.1 | 15.7 | 6.5 | 11.00 | 10.0 | 100 | -1.90 | 260 |
| 9-Jul-11 | 5:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.9 | 100 | -1.90 | 258 |
| 9-Jul-11 | 6:00:53 | 2.1 | 15.7 | 6.5 | 11.00 | 9.9 | 99 | -1.80 | 261 |
| 9-Jul-11 | 7:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.9 | 100 | -1.80 | 270 |
| 9-Jul-11 | 8:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.9 | 100 | -1.80 | 256 |
| 9-Jul-11 | 9:00:53 | 2.1 | 15.7 | 6.6 | 11.00 | 9.9 | 100 | -1.90 | 257 |
| 9-Jul-11 | 10:00:52 | 2.1 | 15.7 | 6.6 | 11.00 | 9.9 | 99 | -1.90 | 255 |
| 9-Jul-11 | 11:00:52 | 2.1 | 15.9 | 6.6 | 11.00 | 9.9 | 100 | -1.80 | 256 |
| 9-Jul-11 | 12:00:52 | 2.1 | 16.1 | 6.5 | 11.00 | 9.9 | 100 | -1.90 | 257 |
| 9-Jul-11 | 13:00:52 | 2.1 | 16.2 | 6.5 | 11.00 | 9.9 | 101 | -1.90 | 256 |
| 9-Jul-11 | 14:00:52 | 2.1 | 16.4 | 6.6 | 11.00 | 9.9 | 101 | -1.90 | 256 |
| 9-Jul-11 | 15:00:53 | 2.1 | 16.5 | 6.6 | 11.00 | 9.9 | 101 | -1.90 | 255 |
| 9-Jul-11 | 16:00:53 | 2.1 | 16.6 | 6.6 | 11.00 | 9.9 | 101 | -1.90 | 255 |
| 9-Jul-11 | 17:00:52 | 2.1 | 16.8 | 6.6 | 11.00 | 9.9 | 101 | -1.80 | 255 |
| 9-Jul-11 | 18:00:52 | 2.1 | 16.9 | 6.6 | 11.00 | 9.9 | 102 | -2.00 | 254 |
| 9-Jul-11 | 19:00:53 | 2.1 | 16.6 | 6.6 | 11.00 | 9.9 | 101 | -1.90 | 259 |
| 9-Jul-11 | 20:00:52 | 2.1 | 16.8 | 6.6 | 11.00 | 9.9 | 102 | -1.90 | 258 |
| 9-Jul-11 | 21:00:53 | 2.1 | 16.9 | 6.6 | 11.00 | 9.8 | 102 | -2.00 | 254 |
| 9-Jul-11 | 22:00:52 | 2.1 | 16.7 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 262 |
| 9-Jul-11 | 23:00:52 | 2.1 | 16.7 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 265 |
| 10-Jul-11 | 0:00:52 | 2.1 | 16.7 | 6.5 | 11.00 | 9.9 | 101 | -1.90 | 259 |
| 10-Jul-11 | 1:00:52 | 2.1 | 16.6 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 255 |
| 10-Jul-11 | 2:00:52 | 2.1 | 16.5 | 6.5 | 11.00 | 9.9 | 101 | -1.90 | 258 |
| 10-Jul-11 | 3:00:52 | 2.1 | 16.7 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 256 |
| 10-Jul-11 | 4:00:53 | 2.1 | 16.7 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 259 |
| 10-Jul-11 | 5:00:52 | 2.1 | 16.6 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 259 |
| 10-Jul-11 | 6:00:53 | 2.1 | 16.5 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 257 |
| 10-Jul-11 | 7:00:52 | 2.1 | 16.5 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 276 |
| 10-Jul-11 | 8:00:52 | 2.1 | 16.6 | 6.5 | 11.00 | 9.8 | 100 | -1.90 | 256 |
| 10-Jul-11 | 9:00:53 | 2.1 | 16.7 | 6.5 | 11.00 | 9.8 | 100 | -1.90 | 256 |
| 10-Jul-11 | 10:00:52 | 2.1 | 16.8 | 6.5 | 11.00 | 9.8 | 101 | -1.80 | 257 |
| 10-Jul-11 | 11:00:52 | 2.1 | 16.9 | 6.5 | 11.00 | 9.8 | 101 | -1.80 | 257 |
| 10-Jul-11 | 12:00:52 | 2.1 | 17.0 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 259 |
| 10-Jul-11 | 13:00:52 | 2.1 | 17.2 | 6.5 | 11.00 | 9.8 | 101 | -1.90 | 255 |
| 10-Jul-11 | 14:00:52 | 2.1 | 17.3 | 6.6 | 11.00 | 9.7 | 101 | -1.90 | 256 |
| 10-Jul-11 | 15:00:53 | 2.1 | 17.3 | 6.6 | 11.00 | 9.7 | 101 | -1.90 | 254 |
| 10-Jul-11 | 16:00:53 | 2.1 | 17.7 | 6.6 | 11.00 | 9.7 | 102 | -1.90 | 253 |
| 10-Jul-11 | 17:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.7 | 102 | -1.90 | 254 |
| 10-Jul-11 | 18:00:52 | 2.1 | 17.8 | 6.5 | 11.00 | 9.7 | 102 | -2.00 | 257 |
| 10-Jul-11 | 19:00:53 | 2.1 | 17.9 | 6.6 | 11.00 | 9.7 | 102 | -1.90 | 254 |
| 10-Jul-11 | 20:00:52 | 2.1 | 17.4 | 6.4 | 11.00 | 9.8 | 102 | -1.90 | 263 |
| 10-Jul-11 | 21:00:53 | 2.1 | 17.7 | 6.6 | 11.00 | 9.7 | 102 | -1.90 | 253 |
| 10-Jul-11 | 22:00:52 | 2.1 | 17.8 | 6.5 | 11.00 | 9.7 | 102 | -1.90 | 261 |
| 10-Jul-11 | 23:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.7 | 101 | -2.00 | 255 |
| 11-Jul-11 | 0:00:52 | 2.1 | 17.6 | 6.5 | 11.00 | 9.7 | 101 | -1.90 | 254 |
| 11-Jul-11 | 1:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.6 | 101 | -1.90 | 256 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 11-Jul-11 | 2:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.6 | 101 | -1.90 | 253 |
| 11-Jul-11 | 3:00:52 | 2.1 | 17.6 | 6.5 | 11.00 | 9.6 | 101 | -2.00 | 255 |
| 11-Jul-11 | 4:00:53 | 2.1 | 17.5 | 6.5 | 11.00 | 9.6 | 100 | -1.90 | 255 |
| 11-Jul-11 | 5:00:52 | 2.1 | 17.4 | 6.5 | 11.00 | 9.6 | 100 | -1.90 | 256 |
| 11-Jul-11 | 6:00:53 | 2.1 | 17.3 | 6.5 | 11.00 | 9.6 | 100 | -2.00 | 257 |
| 11-Jul-11 | 7:00:52 | 2.1 | 17.1 | 6.5 | 11.00 | 9.6 | 100 | -1.90 | 258 |
| 11-Jul-11 | 8:00:52 | 2.1 | 17.2 | 6.5 | 11.00 | 9.6 | 99 | -1.90 | 260 |
| 11-Jul-11 | 9:00:53 | 2.1 | 17.3 | 6.5 | 11.00 | 9.6 | 100 | -1.90 | 256 |
| 11-Jul-11 | 10:00:52 | 2.1 | 17.4 | 6.5 | 11.00 | 9.6 | 100 | -2.00 | 258 |
| 11-Jul-11 | 11:00:52 | 2.1 | 17.5 | 6.5 | 11.00 | 9.6 | 100 | -2.00 | 258 |
| 11-Jul-11 | 12:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.6 | 100 | -1.90 | 257 |
| 11-Jul-11 | 13:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.6 | 101 | -2.00 | 258 |
| 11-Jul-11 | 14:00:52 | 2.1 | 17.9 | 6.5 | 11.00 | 9.6 | 101 | -2.00 | 258 |
| 11-Jul-11 | 15:00:53 | 2.1 | 17.9 | 6.6 | 11.00 | 9.6 | 101 | -1.90 | 255 |
| 11-Jul-11 | 16:00:53 | 2.1 | 18.1 | 6.5 | 11.00 | 9.5 | 101 | -2.00 | 256 |
| 11-Jul-11 | 17:00:52 | 2.1 | 18.2 | 6.5 | 11.00 | 9.5 | 101 | -1.90 | 257 |
| 11-Jul-11 | 18:00:52 | 2.1 | 18.3 | 6.5 | 11.00 | 9.5 | 101 | -2.00 | 257 |
| 11-Jul-11 | 19:00:53 | 2.1 | 18.2 | 6.5 | 11.00 | 9.6 | 101 | -2.10 | 258 |
| 11-Jul-11 | 20:00:52 | 2.1 | 18.2 | 6.5 | 11.00 | 9.5 | 101 | -2.00 | 256 |
| 11-Jul-11 | 21:00:53 | 2.1 | 18.2 | 6.5 | 11.00 | 9.5 | 101 | -1.90 | 256 |
| 11-Jul-11 | 22:00:52 | 2.1 | 18.2 | 6.5 | 11.00 | 9.5 | 101 | -1.90 | 256 |
| 11-Jul-11 | 23:00:52 | 2.1 | 18.2 | 6.5 | 11.00 | 9.5 | 101 | -2.00 | 257 |
| 12-Jul-11 | 0:00:52 | 2.1 | 18.1 | 6.5 | 11.00 | 9.5 | 100 | -2.10 | 257 |
| 12-Jul-11 | 1:00:52 | 2.1 | 18.1 | 6.5 | 11.00 | 9.4 | 100 | -1.90 | 257 |
| 12-Jul-11 | 2:00:52 | 2.1 | 18.0 | 6.5 | 11.00 | 9.4 | 100 | -2.10 | 257 |
| 12-Jul-11 | 3:00:52 | 2.1 | 17.9 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 257 |
| 12-Jul-11 | 4:00:53 | 2.1 | 17.8 | 6.5 | 11.00 | 9.4 | 99 | -1.90 | 258 |
| 12-Jul-11 | 5:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.4 | 99 | -1.90 | 260 |
| 12-Jul-11 | 6:00:53 | 2.1 | 17.7 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 261 |
| 12-Jul-11 | 7:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 258 |
| 12-Jul-11 | 8:00:52 | 2.1 | 17.7 | 6.5 | 11.00 | 9.4 | 99 | -1.90 | 260 |
| 12-Jul-11 | 9:00:53 | 2.1 | 17.7 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 260 |
| 12-Jul-11 | 10:00:52 | 2.1 | 17.8 | 6.5 | 11.00 | 9.4 | 99 | -2.10 | 262 |
| 12-Jul-11 | 11:00:52 | 2.1 | 17.9 | 6.5 | 11.00 | 9.4 | 99 | -1.90 | 259 |
| 12-Jul-11 | 12:00:52 | 2.1 | 18.0 | 6.5 | 11.00 | 9.3 | 98 | -1.90 | 264 |
| 12-Jul-11 | 13:00:52 | 2.1 | 18.0 | 6.5 | 11.00 | 9.3 | 98 | -1.90 | 262 |
| 12-Jul-11 | 14:00:52 | 2.0 | 18.1 | 6.6 | 11.00 | 9.4 | 99 | -1.90 | 254 |
| 12-Jul-11 | 15:00:53 | 2.0 | 17.7 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 257 |
| 12-Jul-11 | 16:00:53 | 2.0 | 18.0 | 6.5 | 11.00 | 9.4 | 99 | -1.90 | 263 |
| 12-Jul-11 | 17:00:52 | 2.0 | 18.4 | 6.5 | 11.00 | 9.4 | 100 | -2.00 | 257 |
| 12-Jul-11 | 18:00:52 | 2.1 | 18.4 | 6.6 | 11.00 | 9.4 | 100 | -2.00 | 258 |
| 12-Jul-11 | 19:00:53 | 2.1 | 18.2 | 6.5 | 11.00 | 9.4 | 100 | -2.00 | 261 |
| 12-Jul-11 | 20:00:52 | 2.1 | 18.1 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 260 |
| 12-Jul-11 | 21:00:53 | 2.0 | 18.0 | 6.5 | 11.00 | 9.4 | 100 | -2.00 | 261 |
| 12-Jul-11 | 22:00:52 | 2.0 | 18.2 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 259 |
| 12-Jul-11 | 23:00:52 | 2.0 | 17.8 | 6.5 | 11.00 | 9.4 | 99 | -1.90 | 261 |
| 13-Jul-11 | 0:00:51 | 2.0 | 17.9 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 260 |
| 13-Jul-11 | 1:00:51 | 2.0 | 18.0 | 6.5 | 11.00 | 9.3 | 99 | -2.10 | 259 |
| 13-Jul-11 | 2:00:51 | 2.0 | 17.9 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 262 |
| 13-Jul-11 | 3:00:51 | 2.0 | 17.9 | 6.5 | 11.00 | 9.3 | 98 | -2.10 | 265 |
| 13-Jul-11 | 4:00:51 | 2.1 | 17.9 | 6.5 | 11.00 | 9.4 | 99 | -2.00 | 262 |
| 13-Jul-11 | 5:00:51 | 2.0 | 18.2 | 6.5 | 11.00 | 9.3 | 98 | -2.00 | 264 |
| 13-Jul-11 | 6:00:51 | 2.0 | 17.7 | 6.5 | 11.00 | 9.4 | 98 | -1.90 | 264 |
| 13-Jul-11 | 7:00:52 | 2.0 | 17.9 | 6.5 | 11.00 | 9.3 | 98 | -2.10 | 263 |
| 13-Jul-11 | 8:00:52 | 2.0 | 18.0 | 6.5 | 11.00 | 9.3 | 98 | -1.90 | 269 |
| 13-Jul-11 | 9:00:52 | 2.0 | 18.1 | 6.5 | 11.00 | 9.3 | 98 | -2.00 | 263 |
| 13-Jul-11 | 10:00:52 | 2.0 | 17.9 | 6.5 | 11.00 | 9.3 | 98 | -2.00 | 266 |
| 13-Jul-11 | 11:00:51 | 2.0 | 18.1 | 6.5 | 11.00 | 9.1 | 97 | -1.90 | 266 |
| 13-Jul-11 | 12:00:51 | 2.0 | 18.1 | 6.5 | 11.00 | 9.3 | 98 | -1.90 | 266 |
| 13-Jul-11 | 13:00:51 | 2.0 | 18.6 | 6.5 | 11.00 | 9.3 | 99 | -2.00 | 262 |
| 13-Jul-11 | 14:00:51 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -2.10 | 269 |
| 13-Jul-11 | 15:00:51 | 2.0 | 18.6 | 6.5 | 11.00 | 9.3 | 99 | -1.90 | 262 |
| 13-Jul-11 | 16:00:51 | 2.0 | 18.2 | 6.5 | 11.00 | 9.3 | 98 | -2.00 | 263 |
| 13-Jul-11 | 17:00:52 | 2.0 | 18.5 | 6.4 | 11.00 | 9.2 | 98 | -1.90 | 265 |
| 13-Jul-11 | 18:00:51 | 2.0 | 18.2 | 6.4 | 11.00 | 9.4 | 99 | -1.90 | 267 |
| 13-Jul-11 | 19:00:51 | 2.0 | 18.4 | 6.4 | 11.00 | 9.3 | 99 | -1.90 | 269 |
| 13-Jul-11 | 20:00:51 | 2.0 | 18.6 | 6.5 | 11.00 | 9.3 | 99 | -1.90 | 262 |
| 13-Jul-11 | 21:00:51 | 2.0 | 18.4 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 261 |
| 13-Jul-11 | 22:00:51 | 2.0 | 18.5 | 6.5 | 11.00 | 9.3 | 99 | -1.90 | 264 |
| 13-Jul-11 | 23:00:51 | 2.0 | 18.4 | 6.5 | 11.00 | 9.3 | 99 | -2.00 | 263 |
| 14-Jul-11 | 0:00:51 | 2.0 | 18.5 | 6.5 | 11.00 | 9.3 | 99 | -1.90 | 278 |
| 14-Jul-11 | 1:00:51 | 2.0 | 18.8 | 6.5 | 11.00 | 9.3 | 99 | -2.00 | 262 |
| 14-Jul-11 | 2:00:51 | 2.0 | 18.8 | 6.5 | 11.00 | 9.2 | 99 | -2.00 | 264 |
| 14-Jul-11 | 3:00:51 | 2.0 | 18.6 | 6.5 | 11.00 | 9.2 | 98 | -2.10 | 265 |
| 14-Jul-11 | 4:00:51 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 266 |
| 14-Jul-11 | 5:00:52 | 2.0 | 18.4 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 265 |
| 14-Jul-11 | 6:00:52 | 2.0 | 17.9 | 6.4 | 11.00 | 9.2 | 97 | -2.00 | 269 |
| 14-Jul-11 | 7:00:52 | 2.0 | 18.1 | 6.5 | 11.00 | 9.1 | 96 | -2.00 | 267 |
| 14-Jul-11 | 8:00:52 | 2.0 | 18.0 | 6.5 | 11.00 | 9.1 | 96 | -2.00 | 268 |
| 14-Jul-11 | 9:00:52 | 2.0 | 18.0 | 6.5 | 11.00 | 9.1 | 96 | -2.00 | 268 |
| 14-Jul-11 | 10:00:52 | 2.0 | 17.9 | 6.5 | 11.00 | 9.2 | 96 | -2.10 | 268 |
| 14-Jul-11 | 11:00:52 | 2.0 | 17.9 | 6.5 | 11.00 | 9.2 | 97 | -1.90 | 268 |
| 14-Jul-11 | 12:00:52 | 2.0 | 17.9 | 6.5 | 11.00 | 9.2 | 97 | -2.00 | 269 |
| 14-Jul-11 | 13:00:51 | 2.0 | 18.0 | 6.5 | 11.00 | 9.2 | 97 | -1.90 | 268 |
| 14-Jul-11 | 14:00:51 | 2.0 | 18.1 | 6.5 | 11.00 | 9.2 | 97 | -2.00 | 268 |
| 14-Jul-11 | 15:00:52 | 2.0 | 18.1 | 6.5 | 11.00 | 9.2 | 97 | -2.00 | 269 |
| 14-Jul-11 | 16:00:51 | 2.0 | 18.2 | 6.5 | 11.00 | 9.2 | 97 | -1.90 | 268 |
| 14-Jul-11 | 17:00:51 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 269 |
| 14-Jul-11 | 18:00:51 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 267 |
| 14-Jul-11 | 19:00:51 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -1.90 | 270 |
| 14-Jul-11 | 20:00:52 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 269 |
| 14-Jul-11 | 21:00:52 | 2.0 | 18.3 | 6.5 | 11.00 | 9.2 | 98 | -2.00 | 270 |
| 14-Jul-11 | 22:00:51 | 2.0 | 18.2 | 6.5 | 11.00 | 9.2 | 98 | -1.90 | 270 |
| 14-Jul-11 | 23:00:52 | 2.0 | 18.1 | 6.5 | 11.00 | 9.2 | 97 | -2.10 | 270 |
| 15-Jul-11 | 0:00:52 | 2.0 | 18.0 | 6.5 | 11.00 | 9.2 | 97 | -2.00 | 271 |
| 15-Jul-11 | 1:00:52 | 2.0 | 17.9 | 6.5 | 11.00 | 9.2 | 97 | -2.00 | 271 |
| 15-Jul-11 | 2:00:51 | 2.0 | 17.8 | 6.5 | 11.00 | 9.2 | 96 | -2.00 | 273 |
| 15-Jul-11 | 3:00:51 | 2.0 | 17.8 | 6.5 | 11.00 | 9.2 | 96 | -2.10 | 271 |
| 15-Jul-11 | 4:00:52 | 2.0 | 17.7 | 6.5 | 11.00 | 9.2 | 96 | -2.00 | 272 |
| 15-Jul-11 | 5:00:51 | 2.0 | 17.6 | 6.5 | 11.00 | 9.2 | 96 | -2.00 | 272 |
| 15-Jul-11 | 6:00:52 | 2.0 | 17.5 | 6.5 | 11.00 | 9.2 | 96 | -1.90 | 273 |
| 15-Jul-11 | 7:00:52 | 2.0 | 17.4 | 6.5 | 11.00 | 9.2 | 96 | -2.10 | 275 |
| 15-Jul-11 | 8:00:52 | 2.0 | 17.3 | 6.5 | 11.00 | 9.2 | 95 | -1.90 | 275 |
| 15-Jul-11 | 9:00:52 | 2.0 | 17.2 | 6.5 | 11.00 | 9.2 | 95 | -1.90 | 274 |
| 15-Jul-11 | 10:00:52 | 2.0 | 17.1 | 6.5 | 11.00 | 9.2 | 95 | -1.90 | 273 |
| 15-Jul-11 | 11:00:52 | 2.0 | 17.0 | 6.5 | 11.00 | 9.2 | 95 | -1.90 | 273 |
| 15-Jul-11 | 12:00:52 | 2.0 | 16.9 | 6.5 | 11.00 | 9.2 | 95 | -2.00 | 272 |

**Table A-3a** Continual Monitoring Data from Lake I1 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 15-Jul-11 | 13:00:52 | 2.0 | 16.9 | 6.5 | 11.00 | 9.3 | 95 | -1.90 | 269 |
| 15-Jul-11 | 14:00:52 | 2.0 | 16.8 | 6.5 | 11.00 | 9.3 | 95 | -1.90 | 268 |
| 15-Jul-11 | 15:00:52 | 2.0 | 16.8 | 6.5 | 11.00 | 9.3 | 96 | -1.90 | 268 |
| 15-Jul-11 | 16:00:52 | 2.0 | 16.7 | 6.5 | 11.00 | 9.3 | 96 | -1.90 | 267 |
| 15-Jul-11 | 17:00:52 | 2.0 | 16.7 | 6.5 | 11.00 | 9.3 | 96 | -1.90 | 269 |
| 15-Jul-11 | 18:00:52 | 2.0 | 16.7 | 6.5 | 11.00 | 9.3 | 96 | -1.90 | 268 |
| 15-Jul-11 | 19:00:52 | 2.0 | 16.6 | 6.5 | 11.00 | 9.3 | 96 | -1.90 | 269 |
| 15-Jul-11 | 20:00:52 | 2.0 | 16.6 | 6.5 | 11.00 | 9.3 | 96 | -1.90 | 268 |
| 15-Jul-11 | 21:00:52 | 2.0 | 16.5 | 6.5 | 11.00 | 9.4 | 96 | -1.90 | 270 |
| 15-Jul-11 | 22:00:52 | 2.0 | 16.5 | 6.5 | 11.00 | 9.4 | 96 | -1.90 | 270 |
| 15-Jul-11 | 23:00:52 | 2.0 | 16.4 | 6.5 | 11.00 | 9.4 | 96 | -1.90 | 270 |
| 16-Jul-11 | 0:00:52 | 2.0 | 16.3 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 271 |
| 16-Jul-11 | 1:00:52 | 2.0 | 16.2 | 6.5 | 11.00 | 9.3 | 95 | -1.90 | 272 |
| 16-Jul-11 | 2:00:52 | 2.0 | 16.1 | 6.5 | 11.00 | 9.3 | 95 | -1.90 | 273 |
| 16-Jul-11 | 3:00:52 | 2.0 | 16.1 | 6.5 | 11.00 | 9.3 | 95 | -1.90 | 273 |
| 16-Jul-11 | 4:00:52 | 2.1 | 16.0 | 6.5 | 11.00 | 9.3 | 95 | -1.90 | 275 |
| 16-Jul-11 | 5:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.3 | 94 | -1.90 | 276 |
| 16-Jul-11 | 6:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.3 | 94 | -1.90 | 276 |
| 16-Jul-11 | 7:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.3 | 94 | -1.90 | 278 |
| 16-Jul-11 | 8:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.3 | 94 | -1.90 | 277 |
| 16-Jul-11 | 9:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.4 | 94 | -1.90 | 278 |
| 16-Jul-11 | 10:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.4 | 94 | -1.90 | 278 |
| 16-Jul-11 | 11:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 94 | -1.80 | 279 |
| 16-Jul-11 | 12:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 279 |
| 16-Jul-11 | 13:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 277 |
| 16-Jul-11 | 14:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 278 |
| 16-Jul-11 | 15:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 283 |
| 16-Jul-11 | 16:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.4 | 95 | -1.80 | 281 |
| 16-Jul-11 | 17:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 277 |
| 16-Jul-11 | 18:00:52 | 2.1 | 16.0 | 6.6 | 11.00 | 9.4 | 95 | -1.80 | 282 |
| 16-Jul-11 | 19:00:52 | 2.1 | 16.0 | 6.6 | 11.00 | 9.4 | 96 | -1.90 | 277 |
| 16-Jul-11 | 20:00:52 | 2.1 | 16.1 | 6.5 | 11.00 | 9.4 | 96 | -1.90 | 278 |
| 16-Jul-11 | 21:00:52 | 2.1 | 16.0 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 278 |
| 16-Jul-11 | 22:00:52 | 2.1 | 16.0 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 280 |
| 16-Jul-11 | 23:00:52 | 2.1 | 16.0 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 281 |
| 17-Jul-11 | 0:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 282 |
| 17-Jul-11 | 1:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.4 | 95 | -1.70 | 284 |
| 17-Jul-11 | 2:00:52 | 2.1 | 15.9 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 286 |
| 17-Jul-11 | 3:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 288 |
| 17-Jul-11 | 4:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 285 |
| 17-Jul-11 | 5:00:52 | 2.1 | 15.8 | 6.5 | 11.00 | 9.4 | 94 | -1.80 | 286 |
| 17-Jul-11 | 6:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.3 | 94 | -1.80 | 286 |
| 17-Jul-11 | 7:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.4 | 94 | -1.90 | 280 |
| 17-Jul-11 | 8:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.3 | 94 | -1.90 | 282 |
| 17-Jul-11 | 9:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 286 |
| 17-Jul-11 | 10:00:52 | 2.1 | 15.7 | 6.5 | 11.00 | 9.4 | 95 | -1.90 | 283 |

**Note:** DD-MMM-YY = the date where D is day, M is month and Y is year; HH:MM:SS = the time where H is hour, M is minute and S is second; m = meters; °C = degrees Celcius; µS/cm = micro Siemens per centimeter; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; mV = milli Volts.

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 18-May-11 | 16:00:52 | 2.13 | 4.3 | 5.8 | 26.0 | 5.5 | 42.4 | -1.30 | 202 |
| 18-May-11 | 17:00:52 | 2.14 | 4.2 | 5.8 | 26.0 | 5.5 | 42.0 | -1.30 | 184 |
| 18-May-11 | 18:00:52 | 2.15 | 4.2 | 5.7 | 26.0 | 5.5 | 42.0 | -1.30 | 179 |
| 18-May-11 | 19:00:52 | 2.15 | 4.2 | 5.7 | 26.0 | 5.5 | 42.0 | -1.30 | 176 |
| 18-May-11 | 20:00:53 | 2.15 | 4.2 | 5.7 | 26.0 | 5.6 | 42.7 | -1.30 | 175 |
| 18-May-11 | 21:00:52 | 2.16 | 4.2 | 5.7 | 26.0 | 5.6 | 42.6 | -1.30 | 175 |
| 18-May-11 | 22:00:52 | 2.16 | 4.1 | 5.7 | 26.0 | 5.6 | 43.1 | -1.30 | 174 |
| 18-May-11 | 23:00:52 | 2.17 | 4.1 | 5.7 | 26.0 | 5.6 | 43.1 | -1.30 | 173 |
| 19-May-11 | 00:00:53 | 2.17 | 4.1 | 5.7 | 26.0 | 5.7 | 43.3 | -1.30 | 173 |
| 19-May-11 | 01:00:53 | 2.18 | 4.1 | 5.7 | 26.0 | 5.6 | 43.0 | -1.30 | 172 |
| 19-May-11 | 02:00:53 | 2.18 | 4.2 | 5.7 | 26.0 | 5.6 | 42.7 | -1.30 | 171 |
| 19-May-11 | 03:00:53 | 2.18 | 4.2 | 5.7 | 26.0 | 5.5 | 42.0 | -1.30 | 171 |
| 19-May-11 | 04:00:53 | 2.19 | 4.2 | 5.7 | 26.0 | 5.4 | 41.8 | -1.30 | 171 |
| 19-May-11 | 05:00:53 | 2.19 | 4.2 | 5.7 | 26.0 | 5.4 | 41.5 | -1.30 | 170 |
| 19-May-11 | 06:00:53 | 2.19 | 4.2 | 5.7 | 26.0 | 5.5 | 42.4 | -1.30 | 169 |
| 19-May-11 | 07:00:53 | 2.20 | 4.2 | 5.7 | 26.0 | 5.5 | 42.4 | -1.30 | 168 |
| 19-May-11 | 08:00:53 | 2.20 | 4.2 | 5.7 | 26.0 | 5.6 | 43.1 | -1.30 | 168 |
| 19-May-11 | 09:00:53 | 2.21 | 4.2 | 5.7 | 26.0 | 5.6 | 42.9 | -1.30 | 168 |
| 19-May-11 | 10:00:53 | 2.21 | 4.3 | 5.7 | 26.0 | 5.5 | 41.9 | -1.30 | 167 |
| 19-May-11 | 11:00:52 | 2.21 | 4.3 | 5.7 | 26.0 | 5.4 | 41.7 | -1.30 | 167 |
| 19-May-11 | 12:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.6 | 43.0 | -1.30 | 166 |
| 19-May-11 | 13:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.8 | 44.5 | -1.30 | 166 |
| 19-May-11 | 14:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.6 | 43.4 | -1.30 | 166 |
| 19-May-11 | 15:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.7 | 43.7 | -1.30 | 166 |
| 19-May-11 | 16:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.9 | 45.4 | -1.30 | 165 |
| 19-May-11 | 17:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.9 | 45.1 | -1.30 | 165 |
| 19-May-11 | 18:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 6.1 | 46.6 | -1.30 | 165 |
| 19-May-11 | 19:00:53 | 2.22 | 4.3 | 5.7 | 26.0 | 5.9 | 45.5 | -1.30 | 164 |
| 19-May-11 | 20:00:53 | 2.23 | 4.3 | 5.7 | 26.0 | 6.0 | 45.9 | -1.30 | 164 |
| 19-May-11 | 21:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.7 | 43.8 | -1.30 | 163 |
| 19-May-11 | 22:00:53 | 2.23 | 4.2 | 5.7 | 26.0 | 5.7 | 43.5 | -1.30 | 163 |
| 19-May-11 | 23:00:54 | 2.23 | 4.2 | 5.7 | 26.0 | 5.7 | 43.4 | -1.30 | 163 |
| 20-May-11 | 00:00:53 | 2.23 | 4.2 | 5.7 | 26.0 | 5.7 | 43.9 | -1.30 | 163 |
| 20-May-11 | 01:00:53 | 2.23 | 4.2 | 5.7 | 26.0 | 5.8 | 44.1 | -1.40 | 162 |
| 20-May-11 | 02:00:53 | 2.23 | 4.2 | 5.7 | 26.0 | 5.8 | 44.7 | -1.30 | 162 |
| 20-May-11 | 03:00:54 | 2.23 | 4.1 | 5.7 | 26.0 | 5.9 | 44.9 | -1.30 | 162 |
| 20-May-11 | 04:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.7 | 43.7 | -1.30 | 162 |
| 20-May-11 | 05:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.8 | 44.3 | -1.30 | 162 |
| 20-May-11 | 06:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.9 | 45.1 | -1.30 | 162 |
| 20-May-11 | 07:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.8 | 44.6 | -1.40 | 162 |
| 20-May-11 | 08:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.7 | 43.9 | -1.30 | 161 |
| 20-May-11 | 09:00:53 | 2.22 | 4.2 | 5.7 | 26.0 | 5.8 | 44.8 | -1.30 | 161 |
| 20-May-11 | 10:00:53 | 2.21 | 4.2 | 5.7 | 26.0 | 6.0 | 45.7 | -1.30 | 161 |
| 20-May-11 | 11:00:53 | 2.21 | 4.3 | 5.7 | 26.0 | 5.8 | 44.4 | -1.30 | 161 |
| 20-May-11 | 12:00:53 | 2.21 | 4.3 | 5.7 | 26.0 | 5.8 | 44.5 | -1.30 | 161 |
| 20-May-11 | 13:00:53 | 2.20 | 4.4 | 5.7 | 26.0 | 5.8 | 44.4 | -1.20 | 161 |
| 20-May-11 | 14:00:53 | 2.20 | 4.4 | 5.7 | 26.0 | 6.5 | 50.0 | -1.30 | 161 |
| 20-May-11 | 15:00:53 | 2.19 | 4.4 | 5.7 | 26.0 | 6.6 | 50.6 | -1.30 | 162 |
| 20-May-11 | 16:00:53 | 2.19 | 4.4 | 5.7 | 26.0 | 6.4 | 49.2 | -1.40 | 162 |
| 20-May-11 | 17:00:53 | 2.18 | 4.5 | 5.7 | 26.0 | 6.3 | 48.3 | -1.20 | 161 |
| 20-May-11 | 18:00:53 | 2.18 | 4.4 | 5.7 | 26.0 | 6.0 | 46.4 | -1.30 | 161 |
| 20-May-11 | 19:00:53 | 2.17 | 4.5 | 5.7 | 26.0 | 6.1 | 47.0 | -1.30 | 161 |
| 20-May-11 | 20:00:53 | 2.17 | 4.4 | 5.7 | 26.0 | 6.0 | 46.0 | -1.30 | 162 |
| 20-May-11 | 21:00:53 | 2.17 | 4.4 | 5.7 | 26.0 | 5.9 | 45.8 | -1.30 | 161 |
| 20-May-11 | 22:00:53 | 2.16 | 4.4 | 5.7 | 26.0 | 6.0 | 45.9 | -1.30 | 161 |
| 20-May-11 | 23:00:53 | 2.16 | 4.4 | 5.7 | 26.0 | 6.1 | 47.1 | -1.30 | 161 |
| 21-May-11 | 00:00:53 | 2.15 | 4.4 | 5.7 | 26.0 | 6.1 | 47.3 | -1.30 | 161 |
| 21-May-11 | 01:00:53 | 2.15 | 4.4 | 5.7 | 26.0 | 6.3 | 48.8 | -1.30 | 160 |
| 21-May-11 | 02:00:53 | 2.15 | 4.4 | 5.7 | 26.0 | 6.4 | 49.3 | -1.30 | 160 |
| 21-May-11 | 03:00:53 | 2.15 | 4.4 | 5.7 | 26.0 | 6.4 | 49.7 | -1.30 | 160 |
| 21-May-11 | 04:00:53 | 2.15 | 4.4 | 5.7 | 26.0 | 6.4 | 49.4 | -1.30 | 160 |
| 21-May-11 | 05:00:53 | 2.14 | 4.4 | 5.7 | 26.0 | 6.4 | 48.9 | -1.40 | 160 |
| 21-May-11 | 06:00:53 | 2.14 | 4.3 | 5.7 | 26.0 | 6.1 | 47.2 | -1.40 | 160 |
| 21-May-11 | 07:00:53 | 2.14 | 4.3 | 5.7 | 26.0 | 6.1 | 46.9 | -1.30 | 159 |
| 21-May-11 | 08:00:53 | 2.14 | 4.3 | 5.7 | 26.0 | 6.1 | 47.0 | -1.40 | 159 |
| 21-May-11 | 09:00:53 | 2.14 | 4.3 | 5.7 | 26.0 | 6.1 | 47.1 | -1.40 | 159 |
| 21-May-11 | 10:00:53 | 2.14 | 4.3 | 5.7 | 26.0 | 6.1 | 47.3 | -1.30 | 158 |
| 21-May-11 | 11:00:53 | 2.14 | 4.3 | 5.7 | 26.0 | 6.3 | 48.5 | -1.30 | 158 |
| 21-May-11 | 12:00:53 | 2.15 | 4.3 | 5.7 | 26.0 | 6.2 | 48.1 | -1.30 | 158 |
| 21-May-11 | 13:00:53 | 2.15 | 4.3 | 5.7 | 26.0 | 6.2 | 47.7 | -1.40 | 158 |
| 21-May-11 | 14:00:53 | 2.15 | 4.4 | 5.7 | 26.0 | 6.2 | 48.0 | -1.30 | 158 |
| 21-May-11 | 15:00:53 | 2.16 | 4.4 | 5.7 | 26.0 | 6.3 | 48.8 | -1.30 | 158 |
| 21-May-11 | 16:00:53 | 2.16 | 4.4 | 5.7 | 26.0 | 6.5 | 49.9 | -1.40 | 158 |
| 21-May-11 | 17:00:53 | 2.16 | 4.4 | 5.7 | 26.0 | 6.8 | 52.2 | -1.30 | 158 |
| 21-May-11 | 18:00:53 | 2.16 | 4.4 | 5.7 | 26.0 | 6.6 | 50.8 | -1.30 | 158 |
| 21-May-11 | 19:00:54 | 2.16 | 4.4 | 5.7 | 26.0 | 6.8 | 52.3 | -1.30 | 158 |
| 21-May-11 | 20:00:53 | 2.17 | 4.4 | 5.7 | 26.0 | 6.9 | 53.1 | -1.30 | 157 |
| 21-May-11 | 21:00:53 | 2.17 | 4.4 | 5.7 | 26.0 | 6.9 | 52.9 | -1.30 | 157 |
| 21-May-11 | 22:00:53 | 2.18 | 4.4 | 5.7 | 26.0 | 6.9 | 53.5 | -1.30 | 158 |
| 21-May-11 | 23:00:54 | 2.19 | 4.4 | 5.7 | 26.0 | 7.0 | 54.2 | -1.30 | 158 |
| 22-May-11 | 00:00:53 | 2.19 | 4.4 | 5.7 | 26.0 | 7.1 | 54.8 | -1.30 | 157 |
| 22-May-11 | 01:00:54 | 2.20 | 4.4 | 5.7 | 26.0 | 7.3 | 56.1 | -1.30 | 157 |
| 22-May-11 | 02:00:53 | 2.20 | 4.4 | 5.7 | 26.0 | 7.3 | 56.5 | -1.30 | 157 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 22-May-11 | 03:00:54 | 2.20 | 4.4 | 5.8 | 26.0 | 7.6 | 58.3 | -1.30 | 157 |
| 22-May-11 | 04:00:53 | 2.21 | 4.4 | 5.8 | 26.0 | 7.6 | 58.7 | -1.30 | 157 |
| 22-May-11 | 05:00:53 | 2.21 | 4.4 | 5.8 | 26.0 | 7.6 | 58.6 | -1.40 | 157 |
| 22-May-11 | 06:00:53 | 2.21 | 4.4 | 5.7 | 26.0 | 7.5 | 57.7 | -1.30 | 157 |
| 22-May-11 | 07:00:53 | 2.22 | 4.4 | 5.7 | 26.0 | 7.6 | 58.3 | -1.40 | 157 |
| 22-May-11 | 08:00:54 | 2.22 | 4.4 | 5.7 | 26.0 | 7.5 | 58.1 | -1.30 | 156 |
| 22-May-11 | 09:00:54 | 2.22 | 4.4 | 5.7 | 26.0 | 7.4 | 57.2 | -1.30 | 156 |
| 22-May-11 | 10:00:53 | 2.22 | 4.4 | 5.7 | 26.0 | 7.4 | 57.1 | -1.30 | 156 |
| 22-May-11 | 11:00:53 | 2.22 | 4.4 | 5.7 | 26.0 | 7.1 | 55.0 | -1.40 | 156 |
| 22-May-11 | 12:00:53 | 2.23 | 4.5 | 5.7 | 26.0 | 6.8 | 52.4 | -1.30 | 155 |
| 22-May-11 | 13:00:54 | 2.23 | 4.5 | 5.7 | 26.0 | 7.3 | 56.1 | -1.40 | 155 |
| 22-May-11 | 14:00:54 | 2.22 | 4.5 | 5.7 | 26.0 | 6.8 | 52.8 | -1.30 | 155 |
| 22-May-11 | 15:00:53 | 2.22 | 4.5 | 5.7 | 26.0 | 7.5 | 58.4 | -1.30 | 155 |
| 22-May-11 | 16:00:53 | 2.22 | 4.6 | 5.7 | 26.0 | 7.7 | 59.4 | -1.30 | 155 |
| 22-May-11 | 17:00:53 | 2.22 | 4.5 | 5.7 | 26.0 | 7.8 | 60.1 | -1.40 | 156 |
| 22-May-11 | 18:00:53 | 2.22 | 4.6 | 5.8 | 26.0 | 8.0 | 62.2 | -1.30 | 156 |
| 22-May-11 | 19:00:54 | 2.21 | 4.6 | 5.7 | 26.0 | 7.4 | 57.0 | -1.30 | 156 |
| 22-May-11 | 20:00:53 | 2.21 | 4.6 | 5.8 | 26.0 | 7.5 | 57.9 | -1.30 | 154 |
| 22-May-11 | 21:00:53 | 2.21 | 4.5 | 5.7 | 26.0 | 7.8 | 60.2 | -1.30 | 155 |
| 22-May-11 | 22:00:53 | 2.20 | 4.5 | 5.8 | 26.0 | 8.3 | 64.3 | -1.30 | 155 |
| 22-May-11 | 23:00:53 | 2.20 | 4.5 | 5.8 | 26.0 | 8.1 | 62.6 | -1.30 | 155 |
| 23-May-11 | 00:00:53 | 2.20 | 4.5 | 5.8 | 26.0 | 8.2 | 63.3 | -1.40 | 155 |
| 23-May-11 | 01:00:54 | 2.20 | 4.5 | 5.8 | 26.0 | 8.0 | 62.1 | -1.30 | 155 |
| 23-May-11 | 02:00:54 | 2.20 | 4.5 | 5.8 | 26.0 | 8.0 | 61.9 | -1.30 | 155 |
| 23-May-11 | 03:00:53 | 2.19 | 4.5 | 5.8 | 26.0 | 8.2 | 63.2 | -1.30 | 154 |
| 23-May-11 | 04:00:54 | 2.19 | 4.5 | 5.8 | 27.0 | 8.4 | 64.7 | -1.30 | 154 |
| 23-May-11 | 05:00:53 | 2.19 | 4.5 | 5.8 | 27.0 | 8.4 | 65.1 | -1.30 | 154 |
| 23-May-11 | 06:00:53 | 2.18 | 4.5 | 5.8 | 27.0 | 8.4 | 64.8 | -1.30 | 154 |
| 23-May-11 | 07:00:53 | 2.18 | 4.5 | 5.8 | 27.0 | 8.3 | 64.4 | -1.30 | 154 |
| 23-May-11 | 08:00:53 | 2.17 | 4.5 | 5.8 | 27.0 | 8.3 | 64.1 | -1.30 | 154 |
| 23-May-11 | 09:00:54 | 2.17 | 4.5 | 5.8 | 27.0 | 8.4 | 64.6 | -1.30 | 154 |
| 23-May-11 | 10:00:53 | 2.16 | 4.5 | 5.8 | 27.0 | 8.2 | 63.2 | -1.30 | 154 |
| 23-May-11 | 11:00:54 | 2.16 | 4.5 | 5.8 | 27.0 | 8.0 | 62.2 | -1.40 | 154 |
| 23-May-11 | 12:00:53 | 2.16 | 4.5 | 5.8 | 27.0 | 7.9 | 61.3 | -1.40 | 154 |
| 23-May-11 | 13:00:53 | 2.16 | 4.6 | 5.8 | 27.0 | 7.9 | 61.4 | -1.30 | 154 |
| 23-May-11 | 14:00:54 | 2.16 | 4.6 | 5.8 | 27.0 | 7.9 | 61.4 | -1.40 | 153 |
| 23-May-11 | 15:00:54 | 2.16 | 4.6 | 5.8 | 27.0 | 7.9 | 61.3 | -1.40 | 153 |
| 23-May-11 | 16:00:54 | 2.16 | 4.6 | 5.8 | 26.0 | 8.1 | 62.4 | -1.30 | 153 |
| 23-May-11 | 17:00:53 | 2.16 | 4.6 | 5.8 | 26.0 | 8.0 | 62.0 | -1.30 | 153 |
| 23-May-11 | 18:00:54 | 2.16 | 4.6 | 5.8 | 26.0 | 7.9 | 60.9 | -1.30 | 152 |
| 23-May-11 | 19:00:53 | 2.16 | 4.6 | 5.8 | 26.0 | 7.8 | 60.1 | -1.30 | 151 |
| 23-May-11 | 20:00:53 | 2.17 | 4.5 | 5.8 | 26.0 | 7.7 | 59.7 | -1.30 | 153 |
| 23-May-11 | 21:00:53 | 2.17 | 4.5 | 5.8 | 26.0 | 7.7 | 59.2 | -1.30 | 153 |
| 23-May-11 | 22:00:54 | 2.18 | 4.5 | 5.8 | 26.0 | 7.9 | 60.8 | -1.30 | 153 |
| 23-May-11 | 23:00:54 | 2.18 | 4.5 | 5.8 | 26.0 | 8.0 | 61.5 | -1.30 | 151 |
| 24-May-11 | 00:00:54 | 2.18 | 4.4 | 5.8 | 26.0 | 8.4 | 64.6 | -1.30 | 153 |
| 24-May-11 | 01:00:53 | 2.19 | 4.4 | 5.8 | 26.0 | 8.9 | 68.8 | -1.30 | 152 |
| 24-May-11 | 02:00:53 | 2.19 | 4.4 | 5.8 | 26.0 | 8.9 | 68.3 | -1.30 | 153 |
| 24-May-11 | 03:00:54 | 2.20 | 4.4 | 5.8 | 26.0 | 8.9 | 68.5 | -1.40 | 152 |
| 24-May-11 | 04:00:54 | 2.20 | 4.4 | 5.8 | 26.0 | 8.7 | 67.3 | -1.30 | 153 |
| 24-May-11 | 05:00:54 | 2.20 | 4.4 | 5.8 | 26.0 | 8.9 | 69.0 | -1.30 | 152 |
| 24-May-11 | 06:00:53 | 2.21 | 4.4 | 5.8 | 26.0 | 8.8 | 67.6 | -1.30 | 153 |
| 24-May-11 | 07:00:53 | 2.21 | 4.4 | 5.8 | 26.0 | 8.7 | 67.1 | -1.30 | 153 |
| 24-May-11 | 08:00:53 | 2.21 | 4.4 | 5.8 | 26.0 | 8.7 | 66.8 | -1.30 | 151 |
| 24-May-11 | 09:00:53 | 2.22 | 4.4 | 5.8 | 26.0 | 8.6 | 66.5 | -1.30 | 150 |
| 24-May-11 | 10:00:54 | 2.22 | 4.4 | 5.8 | 26.0 | 8.4 | 64.7 | -1.30 | 150 |
| 24-May-11 | 11:00:54 | 2.22 | 4.4 | 5.8 | 26.0 | 8.6 | 66.6 | -1.30 | 151 |
| 24-May-11 | 12:00:54 | 2.22 | 4.4 | 5.8 | 26.0 | 8.3 | 64.4 | -1.30 | 152 |
| 24-May-11 | 13:00:54 | 2.22 | 4.5 | 5.8 | 26.0 | 8.3 | 64.3 | -1.30 | 151 |
| 24-May-11 | 14:00:54 | 2.22 | 4.5 | 5.8 | 26.0 | 8.2 | 63.6 | -1.30 | 151 |
| 24-May-11 | 15:00:53 | 2.22 | 4.5 | 5.8 | 26.0 | 8.2 | 63.0 | -1.30 | 152 |
| 24-May-11 | 16:00:53 | 2.22 | 4.5 | 5.8 | 26.0 | 8.2 | 63.3 | -1.30 | 150 |
| 24-May-11 | 17:00:54 | 2.22 | 4.5 | 5.8 | 26.0 | 8.3 | 63.8 | -1.40 | 149 |
| 24-May-11 | 18:00:54 | 2.22 | 4.6 | 5.8 | 26.0 | 8.9 | 68.6 | -1.30 | 149 |
| 24-May-11 | 19:00:54 | 2.22 | 4.5 | 5.8 | 26.0 | 8.8 | 67.8 | -1.30 | 151 |
| 24-May-11 | 20:00:54 | 2.22 | 4.5 | 5.8 | 26.0 | 8.3 | 64.4 | -1.30 | 151 |
| 24-May-11 | 21:00:54 | 2.22 | 4.5 | 5.7 | 26.0 | 8.0 | 61.7 | -1.30 | 149 |
| 24-May-11 | 22:00:54 | 2.21 | 4.5 | 5.7 | 26.0 | 8.0 | 61.7 | -1.40 | 149 |
| 24-May-11 | 23:00:54 | 2.21 | 4.5 | 5.8 | 26.0 | 8.0 | 61.9 | -1.30 | 149 |
| 25-May-11 | 00:00:53 | 2.21 | 4.5 | 5.8 | 26.0 | 8.2 | 63.7 | -1.40 | 149 |
| 25-May-11 | 01:00:54 | 2.21 | 4.5 | 5.8 | 26.0 | 8.2 | 63.6 | -1.40 | 149 |
| 25-May-11 | 02:00:54 | 2.21 | 4.5 | 5.8 | 26.0 | 8.4 | 64.7 | -1.30 | 149 |
| 25-May-11 | 03:00:54 | 2.21 | 4.5 | 5.8 | 26.0 | 8.4 | 64.6 | -1.30 | 149 |
| 25-May-11 | 04:00:54 | 2.21 | 4.5 | 5.8 | 26.0 | 8.3 | 64.2 | -1.30 | 150 |
| 25-May-11 | 05:00:54 | 2.20 | 4.5 | 5.8 | 26.0 | 8.3 | 64.5 | -1.30 | 151 |
| 25-May-11 | 06:00:54 | 2.20 | 4.5 | 5.8 | 26.0 | 8.6 | 66.2 | -1.30 | 150 |
| 25-May-11 | 07:00:54 | 2.20 | 4.5 | 5.8 | 26.0 | 9.1 | 70.4 | -1.40 | 150 |
| 25-May-11 | 08:00:54 | 2.19 | 4.5 | 5.8 | 26.0 | 8.4 | 65.3 | -1.30 | 151 |
| 25-May-11 | 09:00:54 | 2.19 | 4.5 | 5.8 | 26.0 | 8.3 | 63.9 | -1.30 | 150 |
| 25-May-11 | 10:00:54 | 2.18 | 4.5 | 5.8 | 26.0 | 8.3 | 64.3 | -1.30 | 148 |
| 25-May-11 | 11:00:54 | 2.18 | 4.6 | 5.8 | 26.0 | 8.3 | 64.3 | -1.30 | 148 |
| 25-May-11 | 12:00:54 | 2.17 | 4.5 | 5.8 | 26.0 | 8.6 | 66.3 | -1.30 | 149 |
| 25-May-11 | 13:00:54 | 2.17 | 4.5 | 5.8 | 26.0 | 9.0 | 70.0 | -1.30 | 150 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 25-May-11 | 14:00:54 | 2.16 | 4.6 | 5.8 | 25.0 | 9.0 | 69.5 | -1.30 | 149 |
| 25-May-11 | 15:00:54 | 2.16 | 4.6 | 5.8 | 25.0 | 9.1 | 70.7 | -1.30 | 150 |
| 25-May-11 | 16:00:54 | 2.15 | 4.6 | 5.8 | 25.0 | 9.2 | 71.1 | -1.30 | 150 |
| 25-May-11 | 17:00:54 | 2.14 | 4.6 | 5.8 | 25.0 | 9.2 | 71.2 | -1.30 | 149 |
| 25-May-11 | 18:00:53 | 2.13 | 4.6 | 5.8 | 25.0 | 9.2 | 71.6 | -1.30 | 148 |
| 25-May-11 | 19:00:54 | 2.13 | 4.6 | 5.8 | 25.0 | 9.3 | 72.3 | -1.30 | 148 |
| 25-May-11 | 20:00:54 | 2.12 | 4.6 | 5.8 | 25.0 | 9.5 | 73.7 | -1.30 | 150 |
| 25-May-11 | 21:00:54 | 2.11 | 4.6 | 5.8 | 25.0 | 9.5 | 73.7 | -1.40 | 150 |
| 25-May-11 | 22:00:53 | 2.11 | 4.6 | 5.8 | 25.0 | 9.4 | 72.5 | -1.30 | 150 |
| 25-May-11 | 23:00:53 | 2.10 | 4.6 | 5.8 | 25.0 | 9.4 | 72.5 | -1.40 | 150 |
| 26-May-11 | 00:00:53 | 2.10 | 4.6 | 5.8 | 25.0 | 9.2 | 71.2 | -1.30 | 151 |
| 26-May-11 | 01:00:54 | 2.10 | 4.6 | 5.8 | 25.0 | 9.0 | 69.9 | -1.30 | 149 |
| 26-May-11 | 02:00:54 | 2.09 | 4.6 | 5.8 | 25.0 | 9.0 | 69.4 | -1.30 | 148 |
| 26-May-11 | 03:00:54 | 2.09 | 4.6 | 5.8 | 25.0 | 9.0 | 69.9 | -1.40 | 147 |
| 26-May-11 | 04:00:54 | 2.08 | 4.6 | 5.8 | 25.0 | 9.0 | 69.3 | -1.30 | 148 |
| 26-May-11 | 05:00:54 | 2.08 | 4.6 | 5.8 | 25.0 | 9.0 | 69.6 | -1.30 | 149 |
| 26-May-11 | 06:00:54 | 2.08 | 4.6 | 5.8 | 25.0 | 9.1 | 70.3 | -1.30 | 149 |
| 26-May-11 | 07:00:54 | 2.08 | 4.6 | 5.8 | 25.0 | 8.8 | 68.0 | -1.30 | 150 |
| 26-May-11 | 08:00:54 | 2.07 | 4.6 | 5.8 | 25.0 | 8.9 | 69.0 | -1.30 | 150 |
| 26-May-11 | 09:00:54 | 2.07 | 4.6 | 5.8 | 25.0 | 8.7 | 67.6 | -1.30 | 150 |
| 26-May-11 | 10:00:54 | 2.07 | 4.6 | 5.8 | 25.0 | 9.0 | 69.9 | -1.30 | 150 |
| 26-May-11 | 11:00:54 | 2.07 | 4.6 | 5.8 | 26.0 | 9.0 | 69.7 | -1.30 | 149 |
| 26-May-11 | 12:00:54 | 2.07 | 4.7 | 5.8 | 26.0 | 9.0 | 70.1 | -1.30 | 147 |
| 26-May-11 | 13:00:54 | 2.07 | 4.6 | 5.8 | 26.0 | 9.1 | 70.3 | -1.30 | 147 |
| 26-May-11 | 14:00:54 | 2.06 | 4.7 | 5.8 | 26.0 | 8.6 | 66.6 | -1.30 | 147 |
| 26-May-11 | 15:00:54 | 2.06 | 4.7 | 5.8 | 26.0 | 8.4 | 65.5 | -1.30 | 147 |
| 26-May-11 | 16:00:54 | 2.06 | 4.7 | 5.8 | 25.0 | 8.4 | 65.5 | -1.20 | 148 |
| 26-May-11 | 17:00:54 | 2.06 | 4.7 | 5.8 | 25.0 | 8.5 | 65.9 | -1.30 | 149 |
| 26-May-11 | 18:00:54 | 2.06 | 4.7 | 5.8 | 25.0 | 8.6 | 66.7 | -1.20 | 149 |
| 26-May-11 | 19:00:54 | 2.06 | 4.7 | 5.8 | 25.0 | 8.7 | 67.6 | -1.30 | 148 |
| 26-May-11 | 20:00:54 | 2.06 | 4.7 | 5.8 | 25.0 | 8.8 | 68.4 | -1.30 | 148 |
| 26-May-11 | 21:00:54 | 2.07 | 4.7 | 5.8 | 25.0 | 8.8 | 68.4 | -1.30 | 147 |
| 26-May-11 | 22:00:54 | 2.07 | 4.7 | 5.8 | 25.0 | 8.8 | 68.7 | -1.30 | 146 |
| 26-May-11 | 23:00:54 | 2.07 | 4.7 | 5.8 | 25.0 | 8.8 | 68.2 | -1.30 | 146 |
| 27-May-11 | 00:00:54 | 2.08 | 4.7 | 5.8 | 25.0 | 8.8 | 68.6 | -1.30 | 146 |
| 27-May-11 | 01:00:54 | 2.08 | 4.6 | 5.8 | 25.0 | 8.9 | 68.8 | -1.30 | 148 |
| 27-May-11 | 02:00:54 | 2.09 | 4.6 | 5.8 | 25.0 | 9.0 | 70.1 | -1.30 | 148 |
| 27-May-11 | 03:00:54 | 2.09 | 4.6 | 5.8 | 25.0 | 9.1 | 70.7 | -1.30 | 148 |
| 27-May-11 | 04:00:54 | 2.09 | 4.6 | 5.8 | 25.0 | 9.3 | 71.7 | -1.30 | 148 |
| 27-May-11 | 05:00:54 | 2.10 | 4.5 | 5.8 | 25.0 | 9.3 | 72.2 | -1.30 | 149 |
| 27-May-11 | 06:00:54 | 2.11 | 4.5 | 5.8 | 25.0 | 9.4 | 72.9 | -1.30 | 148 |
| 27-May-11 | 07:00:54 | 2.11 | 4.5 | 5.8 | 25.0 | 9.5 | 73.1 | -1.30 | 147 |
| 27-May-11 | 08:00:54 | 2.11 | 4.6 | 5.8 | 25.0 | 9.4 | 72.9 | -1.30 | 147 |
| 27-May-11 | 09:00:54 | 2.11 | 4.5 | 5.8 | 25.0 | 9.5 | 73.8 | -1.30 | 146 |
| 27-May-11 | 10:00:54 | 2.11 | 4.5 | 5.8 | 25.0 | 9.6 | 73.9 | -1.30 | 148 |
| 27-May-11 | 11:00:54 | 2.11 | 4.5 | 5.8 | 25.0 | 9.6 | 74.5 | -1.30 | 148 |
| 27-May-11 | 12:00:54 | 2.11 | 4.6 | 5.8 | 24.0 | 9.6 | 74.4 | -1.30 | 150 |
| 27-May-11 | 13:00:54 | 2.12 | 4.6 | 5.8 | 24.0 | 9.7 | 75.0 | -1.30 | 149 |
| 27-May-11 | 14:00:54 | 2.12 | 4.6 | 5.8 | 24.0 | 9.8 | 75.7 | -1.30 | 150 |
| 27-May-11 | 15:00:54 | 2.12 | 4.6 | 5.8 | 24.0 | 9.8 | 75.7 | -1.30 | 150 |
| 27-May-11 | 16:00:54 | 2.12 | 4.6 | 5.8 | 24.0 | 9.7 | 75.0 | -1.30 | 149 |
| 27-May-11 | 17:00:54 | 2.12 | 4.6 | 5.8 | 23.0 | 9.7 | 74.9 | -1.30 | 150 |
| 27-May-11 | 18:00:54 | 2.12 | 4.6 | 5.8 | 23.0 | 9.6 | 74.4 | -1.30 | 149 |
| 27-May-11 | 19:00:54 | 2.13 | 4.6 | 5.8 | 24.0 | 9.5 | 73.4 | -1.20 | 148 |
| 27-May-11 | 20:00:54 | 2.13 | 4.6 | 5.8 | 24.0 | 9.5 | 73.3 | -1.40 | 148 |
| 27-May-11 | 21:00:54 | 2.13 | 4.5 | 5.8 | 24.0 | 9.3 | 71.9 | -1.30 | 148 |
| 27-May-11 | 22:00:54 | 2.13 | 4.5 | 5.8 | 24.0 | 9.4 | 72.4 | -1.30 | 148 |
| 27-May-11 | 23:00:54 | 2.13 | 4.5 | 5.8 | 24.0 | 9.3 | 72.2 | -1.30 | 148 |
| 28-May-11 | 00:00:54 | 2.13 | 4.5 | 5.8 | 24.0 | 9.4 | 72.5 | -1.30 | 149 |
| 28-May-11 | 01:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.4 | 72.4 | -1.30 | 150 |
| 28-May-11 | 02:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.4 | 72.4 | -1.30 | 149 |
| 28-May-11 | 03:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 72.1 | -1.30 | 148 |
| 28-May-11 | 04:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.8 | -1.30 | 148 |
| 28-May-11 | 05:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.8 | -1.30 | 149 |
| 28-May-11 | 06:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.6 | -1.30 | 147 |
| 28-May-11 | 07:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.4 | 72.1 | -1.30 | 146 |
| 28-May-11 | 08:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.6 | -1.30 | 146 |
| 28-May-11 | 09:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.8 | -1.30 | 146 |
| 28-May-11 | 10:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.8 | -1.30 | 146 |
| 28-May-11 | 11:00:54 | 2.13 | 4.4 | 5.8 | 24.0 | 9.3 | 71.7 | -1.30 | 146 |
| 28-May-11 | 12:00:54 | 2.12 | 4.4 | 5.8 | 24.0 | 9.3 | 72.0 | -1.30 | 147 |
| 28-May-11 | 13:00:54 | 2.12 | 4.5 | 5.8 | 24.0 | 9.4 | 72.7 | -1.30 | 147 |
| 28-May-11 | 14:00:54 | 2.12 | 4.5 | 5.8 | 24.0 | 9.4 | 72.4 | -1.30 | 148 |
| 28-May-11 | 15:00:54 | 2.12 | 4.5 | 5.8 | 24.0 | 9.3 | 72.2 | -1.30 | 148 |
| 28-May-11 | 16:00:54 | 2.11 | 4.6 | 5.8 | 24.0 | 9.3 | 72.3 | -1.30 | 147 |
| 28-May-11 | 17:00:54 | 2.11 | 4.5 | 5.8 | 24.0 | 9.4 | 72.5 | -1.20 | 147 |
| 28-May-11 | 18:00:54 | 2.11 | 4.5 | 5.8 | 24.0 | 9.3 | 72.3 | -1.20 | 147 |
| 28-May-11 | 19:00:54 | 2.11 | 4.5 | 5.8 | 24.0 | 9.3 | 72.3 | -1.30 | 146 |
| 28-May-11 | 20:00:54 | 2.10 | 4.5 | 5.8 | 24.0 | 9.4 | 72.7 | -1.30 | 146 |
| 28-May-11 | 21:00:54 | 2.10 | 4.5 | 5.8 | 24.0 | 9.4 | 72.9 | -1.30 | 145 |
| 28-May-11 | 22:00:54 | 2.10 | 4.5 | 5.8 | 24.0 | 9.4 | 72.6 | -1.30 | 146 |
| 28-May-11 | 23:00:54 | 2.10 | 4.5 | 5.8 | 24.0 | 9.4 | 72.6 | -1.30 | 145 |
| 29-May-11 | 00:00:54 | 2.10 | 4.5 | 5.8 | 24.0 | 9.4 | 72.8 | -1.30 | 145 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 29-May-11 | 01:00:54 | 2.10 | 4.4 | 5.8 | 24.0 | 9.4 | 72.8 | -1.30 | 145 |
| 29-May-11 | 02:00:54 | 2.10 | 4.4 | 5.8 | 24.0 | 9.5 | 73.0 | -1.40 | 145 |
| 29-May-11 | 03:00:54 | 2.10 | 4.4 | 5.8 | 24.0 | 9.5 | 73.3 | -1.30 | 147 |
| 29-May-11 | 04:00:54 | 2.10 | 4.4 | 5.8 | 24.0 | 9.6 | 73.7 | -1.30 | 146 |
| 29-May-11 | 05:00:54 | 2.10 | 4.4 | 5.8 | 24.0 | 9.5 | 72.9 | -1.30 | 146 |
| 29-May-11 | 06:00:54 | 2.10 | 4.4 | 5.8 | 24.0 | 9.4 | 72.8 | -1.40 | 147 |
| 29-May-11 | 07:00:54 | 2.11 | 4.4 | 5.8 | 24.0 | 9.5 | 73.0 | -1.30 | 148 |
| 29-May-11 | 08:00:54 | 2.11 | 4.4 | 5.8 | 24.0 | 9.4 | 72.8 | -1.30 | 146 |
| 29-May-11 | 09:00:54 | 2.11 | 4.4 | 5.8 | 24.0 | 9.4 | 72.7 | -1.30 | 146 |
| 29-May-11 | 10:00:54 | 2.11 | 4.4 | 5.8 | 24.0 | 9.4 | 72.7 | -1.30 | 147 |
| 29-May-11 | 11:00:54 | 2.11 | 4.4 | 5.8 | 24.0 | 9.4 | 72.6 | -1.30 | 146 |
| 29-May-11 | 12:00:54 | 2.10 | 4.4 | 5.8 | 23.0 | 9.5 | 73.3 | -1.30 | 145 |
| 29-May-11 | 13:00:54 | 2.10 | 4.5 | 5.8 | 23.0 | 9.5 | 73.4 | -1.30 | 145 |
| 29-May-11 | 14:00:54 | 2.10 | 4.5 | 5.8 | 23.0 | 9.5 | 73.5 | -1.20 | 145 |
| 29-May-11 | 15:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.5 | 73.4 | -1.30 | 145 |
| 29-May-11 | 16:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.5 | 73.8 | -1.30 | 146 |
| 29-May-11 | 17:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.6 | 74.0 | -1.30 | 146 |
| 29-May-11 | 18:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.5 | 74.0 | -1.30 | 146 |
| 29-May-11 | 19:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.6 | 74.0 | -1.40 | 146 |
| 29-May-11 | 20:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.6 | 74.1 | -1.30 | 146 |
| 29-May-11 | 21:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.6 | 74.1 | -1.30 | 146 |
| 29-May-11 | 22:00:54 | 2.10 | 4.6 | 5.8 | 24.0 | 9.6 | 74.5 | -1.30 | 146 |
| 29-May-11 | 23:00:54 | 2.10 | 4.5 | 5.8 | 24.0 | 9.6 | 74.5 | -1.30 | 146 |
| 30-May-11 | 00:00:54 | 2.11 | 4.5 | 5.8 | 24.0 | 9.7 | 75.2 | -1.30 | 146 |
| 30-May-11 | 01:00:54 | 2.11 | 4.5 | 5.8 | 24.0 | 9.7 | 75.2 | -1.30 | 146 |
| 30-May-11 | 02:00:54 | 2.11 | 4.5 | 5.8 | 23.0 | 9.7 | 74.6 | -1.40 | 145 |
| 30-May-11 | 03:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.6 | 74.2 | -1.30 | 146 |
| 30-May-11 | 04:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.6 | 74.3 | -1.30 | 145 |
| 30-May-11 | 05:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.6 | 74.2 | -1.30 | 146 |
| 30-May-11 | 06:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.7 | 74.5 | -1.30 | 146 |
| 30-May-11 | 07:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.7 | 74.4 | -1.30 | 146 |
| 30-May-11 | 08:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.7 | 74.7 | -1.30 | 146 |
| 30-May-11 | 09:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.7 | 75.1 | -1.30 | 146 |
| 30-May-11 | 10:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.7 | 75.0 | -1.30 | 146 |
| 30-May-11 | 11:00:54 | 2.11 | 4.4 | 5.8 | 23.0 | 9.8 | 75.4 | -1.20 | 146 |
| 30-May-11 | 12:00:54 | 2.11 | 4.5 | 5.8 | 23.0 | 9.8 | 75.6 | -1.30 | 145 |
| 30-May-11 | 13:00:54 | 2.11 | 4.5 | 5.8 | 22.0 | 9.8 | 75.6 | -1.30 | 146 |
| 30-May-11 | 14:00:54 | 2.11 | 4.6 | 5.8 | 22.0 | 9.8 | 75.6 | -1.30 | 147 |
| 30-May-11 | 15:00:54 | 2.11 | 4.6 | 5.8 | 22.0 | 9.8 | 76.0 | -1.30 | 146 |
| 30-May-11 | 16:00:54 | 2.11 | 4.6 | 5.8 | 22.0 | 9.8 | 76.0 | -1.30 | 146 |
| 30-May-11 | 17:00:54 | 2.11 | 4.7 | 5.8 | 22.0 | 9.8 | 76.1 | -1.40 | 147 |
| 30-May-11 | 18:00:54 | 2.11 | 4.8 | 5.8 | 22.0 | 9.8 | 76.2 | -1.30 | 147 |
| 30-May-11 | 19:00:54 | 2.11 | 4.7 | 5.8 | 23.0 | 9.9 | 77.0 | -1.30 | 147 |
| 30-May-11 | 20:00:54 | 2.11 | 4.7 | 5.8 | 23.0 | 10.2 | 79.3 | -1.30 | 147 |
| 30-May-11 | 21:00:54 | 2.11 | 4.7 | 5.8 | 23.0 | 9.8 | 76.2 | -1.40 | 147 |
| 30-May-11 | 22:00:54 | 2.11 | 4.7 | 5.8 | 22.0 | 10.1 | 78.2 | -1.30 | 147 |
| 30-May-11 | 23:00:54 | 2.11 | 4.7 | 5.8 | 22.0 | 10.0 | 77.9 | -1.30 | 147 |
| 31-May-11 | 00:00:54 | 2.10 | 4.7 | 5.8 | 22.0 | 10.0 | 77.3 | -1.30 | 147 |
| 31-May-11 | 01:00:54 | 2.10 | 4.6 | 5.8 | 22.0 | 10.0 | 77.5 | -1.40 | 147 |
| 31-May-11 | 02:00:54 | 2.10 | 4.6 | 5.8 | 22.0 | 10.0 | 77.6 | -1.30 | 147 |
| 31-May-11 | 03:00:54 | 2.10 | 4.5 | 5.8 | 22.0 | 10.0 | 77.3 | -1.30 | 147 |
| 31-May-11 | 04:00:54 | 2.10 | 4.5 | 5.8 | 22.0 | 10.0 | 77.7 | -1.30 | 147 |
| 31-May-11 | 05:00:54 | 2.10 | 4.5 | 5.8 | 22.0 | 10.2 | 78.5 | -1.30 | 147 |
| 31-May-11 | 06:00:54 | 2.10 | 4.5 | 5.8 | 22.0 | 10.1 | 78.4 | -1.30 | 147 |
| 31-May-11 | 07:00:54 | 2.11 | 4.4 | 5.9 | 22.0 | 10.3 | 79.4 | -1.30 | 146 |
| 31-May-11 | 08:00:54 | 2.11 | 4.5 | 5.9 | 22.0 | 10.2 | 78.7 | -1.30 | 146 |
| 31-May-11 | 09:00:54 | 2.12 | 4.5 | 5.9 | 22.0 | 10.3 | 79.4 | -1.30 | 147 |
| 31-May-11 | 10:00:54 | 2.12 | 4.5 | 5.9 | 22.0 | 10.3 | 79.5 | -1.30 | 146 |
| 31-May-11 | 11:00:54 | 2.12 | 4.5 | 5.9 | 22.0 | 10.4 | 80.7 | -1.30 | 146 |
| 31-May-11 | 12:00:54 | 2.13 | 4.6 | 5.9 | 22.0 | 10.5 | 81.7 | -1.30 | 146 |
| 31-May-11 | 13:00:54 | 2.13 | 4.6 | 5.9 | 22.0 | 10.5 | 81.5 | -1.30 | 148 |
| 31-May-11 | 14:00:54 | 2.13 | 4.6 | 5.9 | 22.0 | 10.4 | 81.0 | -1.30 | 148 |
| 31-May-11 | 15:00:54 | 2.12 | 4.6 | 5.9 | 22.0 | 10.6 | 81.9 | -1.20 | 147 |
| 31-May-11 | 16:00:54 | 2.12 | 4.7 | 5.9 | 22.0 | 10.5 | 81.9 | -1.30 | 147 |
| 31-May-11 | 17:00:54 | 2.12 | 4.7 | 5.9 | 22.0 | 10.5 | 81.8 | -1.30 | 147 |
| 31-May-11 | 18:00:54 | 2.12 | 4.7 | 5.9 | 22.0 | 10.6 | 82.3 | -1.20 | 146 |
| 31-May-11 | 19:00:54 | 2.12 | 4.7 | 5.9 | 22.0 | 10.5 | 81.7 | -1.30 | 147 |
| 31-May-11 | 20:00:54 | 2.12 | 4.7 | 5.9 | 22.0 | 10.5 | 81.8 | -1.30 | 148 |
| 31-May-11 | 21:00:54 | 2.12 | 4.7 | 5.9 | 22.0 | 10.5 | 81.8 | -1.30 | 149 |
| 31-May-11 | 22:00:54 | 2.12 | 4.6 | 5.9 | 22.0 | 10.5 | 81.4 | -1.30 | 149 |
| 31-May-11 | 23:00:54 | 2.12 | 4.6 | 5.9 | 22.0 | 10.5 | 81.2 | -1.30 | 150 |
| 1-Jun-11 | 00:00:53 | 2.11 | 4.6 | 5.9 | 22.0 | 10.4 | 80.4 | -1.30 | 148 |
| 1-Jun-11 | 01:00:53 | 2.10 | 4.5 | 5.9 | 22.0 | 10.4 | 80.8 | -1.30 | 149 |
| 1-Jun-11 | 02:00:53 | 2.10 | 4.5 | 5.9 | 22.0 | 10.4 | 80.1 | -1.30 | 149 |
| 1-Jun-11 | 03:00:53 | 2.09 | 4.5 | 5.9 | 22.0 | 10.4 | 80.7 | -1.30 | 147 |
| 1-Jun-11 | 04:00:53 | 2.09 | 4.5 | 5.9 | 22.0 | 10.4 | 80.3 | -1.30 | 147 |
| 1-Jun-11 | 05:00:53 | 2.08 | 4.4 | 5.9 | 22.0 | 10.4 | 80.2 | -1.30 | 147 |
| 1-Jun-11 | 06:00:53 | 2.07 | 4.4 | 5.9 | 22.0 | 10.3 | 79.8 | -1.30 | 147 |
| 1-Jun-11 | 07:00:54 | 2.06 | 4.4 | 5.9 | 22.0 | 10.3 | 79.7 | -1.30 | 147 |
| 1-Jun-11 | 08:00:53 | 2.04 | 4.4 | 5.9 | 22.0 | 10.4 | 80.0 | -1.30 | 147 |
| 1-Jun-11 | 09:00:53 | 2.03 | 4.4 | 5.9 | 22.0 | 10.4 | 79.9 | -1.30 | 148 |
| 1-Jun-11 | 10:00:53 | 2.02 | 4.5 | 5.9 | 22.0 | 10.4 | 80.1 | -1.30 | 148 |
| 1-Jun-11 | 11:00:53 | 2.01 | 4.4 | 5.9 | 22.0 | 10.4 | 80.4 | -1.30 | 147 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 1-Jun-11 | 12:00:53 | 2.00 | 4.5 | 5.9 | 22.0 | 10.4 | 80.7 | -1.30 | 147 |
| 1-Jun-11 | 13:00:54 | 1.99 | 4.6 | 5.9 | 22.0 | 10.5 | 80.9 | -1.30 | 148 |
| 1-Jun-11 | 14:00:53 | 1.98 | 4.6 | 5.9 | 22.0 | 10.5 | 81.1 | -1.30 | 147 |
| 1-Jun-11 | 15:00:53 | 1.97 | 4.7 | 5.9 | 22.0 | 10.4 | 80.9 | -1.20 | 149 |
| 1-Jun-11 | 16:00:53 | 1.96 | 4.7 | 5.8 | 22.0 | 10.5 | 81.3 | -1.30 | 151 |
| 1-Jun-11 | 17:00:53 | 1.96 | 4.7 | 5.9 | 22.0 | 10.5 | 81.5 | -1.30 | 150 |
| 1-Jun-11 | 18:00:54 | 1.95 | 4.6 | 5.9 | 22.0 | 10.5 | 81.6 | -1.30 | 149 |
| 1-Jun-11 | 19:00:53 | 1.95 | 4.7 | 5.8 | 22.0 | 10.5 | 81.6 | -1.30 | 148 |
| 1-Jun-11 | 20:00:53 | 1.96 | 4.7 | 5.9 | 22.0 | 10.5 | 81.3 | -1.30 | 149 |
| 1-Jun-11 | 21:00:53 | 1.96 | 4.6 | 5.9 | 22.0 | 10.4 | 80.6 | -1.30 | 147 |
| 1-Jun-11 | 22:00:53 | 1.96 | 4.7 | 5.9 | 22.0 | 10.4 | 81.1 | -1.30 | 148 |
| 1-Jun-11 | 23:00:53 | 1.97 | 4.7 | 5.9 | 21.0 | 10.5 | 81.8 | -1.30 | 148 |
| 2-Jun-11 | 00:00:53 | 1.98 | 4.6 | 5.9 | 22.0 | 10.6 | 81.9 | -1.30 | 147 |
| 2-Jun-11 | 01:00:53 | 1.99 | 4.6 | 5.9 | 21.0 | 10.6 | 82.2 | -1.30 | 148 |
| 2-Jun-11 | 02:00:53 | 1.99 | 4.5 | 5.9 | 21.0 | 10.4 | 80.3 | -1.30 | 147 |
| 2-Jun-11 | 03:00:53 | 2.00 | 4.5 | 5.9 | 21.0 | 10.5 | 80.9 | -1.30 | 146 |
| 2-Jun-11 | 04:00:53 | 2.00 | 4.5 | 5.9 | 21.0 | 10.6 | 82.1 | -1.30 | 148 |
| 2-Jun-11 | 05:00:53 | 2.01 | 4.4 | 5.9 | 21.0 | 10.8 | 83.0 | -1.30 | 149 |
| 2-Jun-11 | 06:00:53 | 2.01 | 4.3 | 5.9 | 21.0 | 10.8 | 82.9 | -1.30 | 149 |
| 2-Jun-11 | 07:00:54 | 2.01 | 4.2 | 5.9 | 21.0 | 10.8 | 82.7 | -1.30 | 148 |
| 2-Jun-11 | 08:00:53 | 2.02 | 4.1 | 5.9 | 21.0 | 10.8 | 82.5 | -1.30 | 148 |
| 2-Jun-11 | 09:00:53 | 2.03 | 4.0 | 5.9 | 20.0 | 10.9 | 83.0 | -1.30 | 147 |
| 2-Jun-11 | 10:00:53 | 2.03 | 3.9 | 5.9 | 20.0 | 11.0 | 83.5 | -1.30 | 146 |
| 2-Jun-11 | 11:00:53 | 2.03 | 3.9 | 5.9 | 20.0 | 11.0 | 83.6 | -1.30 | 147 |
| 2-Jun-11 | 12:00:53 | 2.03 | 3.9 | 6.0 | 19.0 | 11.0 | 84.1 | -1.30 | 147 |
| 2-Jun-11 | 13:00:54 | 2.04 | 4.0 | 6.0 | 19.0 | 11.0 | 84.2 | -1.30 | 145 |
| 2-Jun-11 | 14:00:53 | 2.05 | 4.0 | 6.0 | 19.0 | 11.1 | 84.4 | -1.30 | 145 |
| 2-Jun-11 | 15:00:53 | 2.05 | 4.1 | 6.0 | 19.0 | 11.1 | 84.6 | -1.30 | 145 |
| 2-Jun-11 | 16:00:53 | 2.06 | 4.1 | 6.0 | 19.0 | 11.1 | 84.8 | -1.30 | 147 |
| 2-Jun-11 | 17:00:53 | 2.07 | 4.0 | 6.0 | 19.0 | 11.1 | 84.8 | -1.30 | 146 |
| 2-Jun-11 | 18:00:54 | 2.07 | 3.9 | 6.0 | 19.0 | 11.1 | 84.3 | -1.30 | 147 |
| 2-Jun-11 | 19:00:53 | 2.08 | 3.9 | 6.0 | 19.0 | 11.1 | 84.5 | -1.30 | 148 |
| 2-Jun-11 | 20:00:53 | 2.09 | 3.9 | 6.0 | 19.0 | 11.1 | 84.3 | -1.30 | 147 |
| 2-Jun-11 | 21:00:53 | 2.09 | 3.9 | 5.9 | 19.0 | 11.1 | 84.5 | -1.30 | 146 |
| 2-Jun-11 | 22:00:53 | 2.10 | 3.9 | 6.0 | 19.0 | 11.2 | 84.9 | -1.40 | 146 |
| 2-Jun-11 | 23:00:53 | 2.10 | 3.9 | 6.0 | 19.0 | 11.1 | 84.9 | -1.30 | 146 |
| 3-Jun-11 | 00:00:53 | 2.11 | 3.9 | 6.0 | 19.0 | 11.1 | 84.1 | -1.30 | 146 |
| 3-Jun-11 | 01:00:53 | 2.12 | 3.9 | 6.0 | 19.0 | 11.0 | 83.7 | -1.30 | 144 |
| 3-Jun-11 | 02:00:53 | 2.12 | 3.9 | 6.0 | 19.0 | 10.9 | 83.3 | -1.30 | 146 |
| 3-Jun-11 | 03:00:53 | 2.12 | 3.8 | 6.0 | 19.0 | 11.0 | 83.6 | -1.30 | 146 |
| 3-Jun-11 | 04:00:53 | 2.12 | 4.0 | 6.0 | 19.0 | 11.1 | 84.4 | -1.30 | 144 |
| 3-Jun-11 | 05:00:53 | 2.13 | 4.0 | 6.0 | 19.0 | 11.0 | 84.1 | -1.30 | 143 |
| 3-Jun-11 | 06:00:53 | 2.13 | 4.0 | 6.0 | 19.0 | 11.0 | 84.0 | -1.30 | 143 |
| 3-Jun-11 | 07:00:54 | 2.13 | 4.0 | 6.0 | 19.0 | 11.0 | 84.1 | -1.30 | 144 |
| 3-Jun-11 | 08:00:53 | 2.14 | 3.8 | 6.0 | 19.0 | 11.1 | 84.0 | -1.30 | 144 |
| 3-Jun-11 | 09:00:53 | 2.13 | 4.0 | 6.0 | 19.0 | 11.1 | 84.6 | -1.30 | 144 |
| 3-Jun-11 | 10:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.6 | -1.30 | 143 |
| 3-Jun-11 | 11:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.7 | -1.30 | 144 |
| 3-Jun-11 | 12:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.8 | -1.30 | 143 |
| 3-Jun-11 | 13:00:54 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.7 | -1.30 | 144 |
| 3-Jun-11 | 14:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.4 | -1.30 | 143 |
| 3-Jun-11 | 15:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.5 | -1.30 | 143 |
| 3-Jun-11 | 16:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.7 | -1.30 | 143 |
| 3-Jun-11 | 17:00:53 | 2.14 | 4.0 | 6.0 | 19.0 | 11.1 | 84.7 | -1.30 | 143 |
| 3-Jun-11 | 18:00:54 | 2.14 | 4.1 | 6.0 | 19.0 | 11.1 | 84.8 | -1.30 | 143 |
| 3-Jun-11 | 19:00:53 | 2.14 | 4.1 | 6.0 | 19.0 | 11.1 | 84.6 | -1.30 | 143 |
| 3-Jun-11 | 20:00:53 | 2.14 | 4.1 | 6.0 | 19.0 | 11.1 | 84.8 | -1.30 | 144 |
| 3-Jun-11 | 21:00:53 | 2.15 | 4.0 | 6.0 | 19.0 | 11.1 | 84.7 | -1.30 | 144 |
| 3-Jun-11 | 22:00:53 | 2.15 | 4.0 | 6.0 | 19.0 | 11.0 | 84.3 | -1.20 | 144 |
| 3-Jun-11 | 23:00:53 | 2.15 | 4.0 | 6.0 | 19.0 | 11.0 | 84.2 | -1.40 | 143 |
| 4-Jun-11 | 00:00:53 | 2.14 | 3.7 | 6.0 | 19.0 | 11.1 | 84.0 | -1.30 | 144 |
| 4-Jun-11 | 01:00:53 | 2.14 | 3.7 | 6.0 | 19.0 | 11.1 | 84.1 | -1.30 | 144 |
| 4-Jun-11 | 02:00:53 | 2.14 | 3.6 | 6.0 | 19.0 | 11.1 | 83.9 | -1.30 | 144 |
| 4-Jun-11 | 03:00:53 | 2.14 | 3.5 | 6.0 | 19.0 | 11.0 | 83.3 | -1.30 | 144 |
| 4-Jun-11 | 04:00:53 | 2.14 | 3.5 | 6.0 | 19.0 | 11.1 | 83.3 | -1.30 | 144 |
| 4-Jun-11 | 05:00:53 | 2.14 | 3.4 | 6.0 | 19.0 | 11.1 | 83.3 | -1.30 | 144 |
| 4-Jun-11 | 06:00:53 | 2.13 | 3.4 | 6.0 | 19.0 | 11.1 | 83.4 | -1.30 | 143 |
| 4-Jun-11 | 07:00:54 | 2.13 | 3.4 | 6.0 | 19.0 | 11.1 | 83.4 | -1.30 | 143 |
| 4-Jun-11 | 08:00:53 | 2.13 | 3.4 | 6.0 | 19.0 | 11.1 | 83.6 | -1.30 | 144 |
| 4-Jun-11 | 09:00:53 | 2.13 | 3.3 | 6.0 | 19.0 | 11.2 | 83.6 | -1.30 | 144 |
| 4-Jun-11 | 10:00:53 | 2.13 | 3.3 | 6.0 | 19.0 | 11.2 | 84.2 | -1.30 | 144 |
| 4-Jun-11 | 11:00:53 | 2.12 | 3.5 | 6.0 | 19.0 | 11.2 | 84.2 | -1.30 | 143 |
| 4-Jun-11 | 12:00:53 | 2.12 | 3.6 | 6.0 | 19.0 | 11.2 | 84.3 | -1.30 | 143 |
| 4-Jun-11 | 13:00:54 | 2.12 | 3.6 | 6.0 | 19.0 | 11.2 | 84.2 | -1.30 | 143 |
| 4-Jun-11 | 14:00:53 | 2.11 | 3.5 | 6.0 | 19.0 | 11.2 | 84.3 | -1.30 | 144 |
| 4-Jun-11 | 15:00:53 | 2.11 | 3.6 | 6.0 | 19.0 | 11.2 | 84.6 | -1.30 | 143 |
| 4-Jun-11 | 16:00:53 | 2.11 | 3.5 | 6.0 | 19.0 | 11.2 | 84.7 | -1.30 | 142 |
| 4-Jun-11 | 17:00:53 | 2.11 | 3.5 | 6.0 | 19.0 | 11.3 | 84.8 | -1.30 | 143 |
| 4-Jun-11 | 18:00:54 | 2.11 | 3.5 | 6.0 | 19.0 | 11.3 | 84.9 | -1.30 | 144 |
| 4-Jun-11 | 19:00:53 | 2.11 | 3.5 | 6.0 | 19.0 | 11.3 | 85.0 | -1.30 | 143 |
| 4-Jun-11 | 20:00:53 | 2.10 | 3.6 | 6.0 | 19.0 | 11.3 | 85.0 | -1.30 | 143 |
| 4-Jun-11 | 21:00:53 | 2.10 | 3.5 | 6.0 | 19.0 | 11.3 | 84.7 | -1.20 | 143 |
| 4-Jun-11 | 22:00:53 | 2.10 | 3.4 | 6.0 | 19.0 | 11.3 | 84.7 | -1.30 | 144 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 4-Jun-11 | 23:00:53 | 2.10 | 3.6 | 6.0 | 19.0 | 11.3 | 84.9 | -1.30 | 143 |
| 5-Jun-11 | 00:00:53 | 2.09 | 3.6 | 6.0 | 19.0 | 11.2 | 84.9 | -1.30 | 142 |
| 5-Jun-11 | 01:00:53 | 2.09 | 3.6 | 6.0 | 19.0 | 11.2 | 84.5 | -1.30 | 142 |
| 5-Jun-11 | 02:00:53 | 2.09 | 3.5 | 6.0 | 19.0 | 11.3 | 85.0 | -1.30 | 143 |
| 5-Jun-11 | 03:00:53 | 2.09 | 3.4 | 6.0 | 18.0 | 11.4 | 85.4 | -1.10 | 144 |
| 5-Jun-11 | 04:00:53 | 2.08 | 3.4 | 6.0 | 18.0 | 11.5 | 86.3 | -1.30 | 144 |
| 5-Jun-11 | 05:00:53 | 2.08 | 3.4 | 6.0 | 18.0 | 11.5 | 86.2 | -1.30 | 144 |
| 5-Jun-11 | 06:00:53 | 2.08 | 3.3 | 6.0 | 18.0 | 11.5 | 86.3 | -1.30 | 144 |
| 5-Jun-11 | 07:00:54 | 2.08 | 3.3 | 6.0 | 18.0 | 11.5 | 86.2 | -1.30 | 144 |
| 5-Jun-11 | 08:00:53 | 2.08 | 3.2 | 6.0 | 18.0 | 11.5 | 86.1 | -1.30 | 144 |
| 5-Jun-11 | 09:00:53 | 2.08 | 3.3 | 6.0 | 18.0 | 11.5 | 85.8 | -1.30 | 142 |
| 5-Jun-11 | 10:00:53 | 2.08 | 3.4 | 6.0 | 18.0 | 11.4 | 85.6 | -1.30 | 142 |
| 5-Jun-11 | 11:00:53 | 2.07 | 3.4 | 6.0 | 18.0 | 11.4 | 85.6 | -1.30 | 142 |
| 5-Jun-11 | 12:00:53 | 2.08 | 3.3 | 6.0 | 18.0 | 11.4 | 85.4 | -1.30 | 142 |
| 5-Jun-11 | 13:00:54 | 2.08 | 3.3 | 6.0 | 18.0 | 11.4 | 85.4 | -1.30 | 142 |
| 5-Jun-11 | 14:00:53 | 2.08 | 3.5 | 6.0 | 18.0 | 11.4 | 85.6 | -1.20 | 144 |
| 5-Jun-11 | 15:00:53 | 2.08 | 3.5 | 6.0 | 18.0 | 11.4 | 85.5 | -1.30 | 144 |
| 5-Jun-11 | 16:00:53 | 2.08 | 3.4 | 6.0 | 18.0 | 11.4 | 85.5 | -1.30 | 145 |
| 5-Jun-11 | 17:00:53 | 2.08 | 3.3 | 6.0 | 18.0 | 11.4 | 85.1 | -1.30 | 144 |
| 5-Jun-11 | 18:00:54 | 2.08 | 3.4 | 6.0 | 19.0 | 11.4 | 85.2 | -1.30 | 144 |
| 5-Jun-11 | 19:00:53 | 2.07 | 3.4 | 6.0 | 19.0 | 11.3 | 85.0 | -1.30 | 144 |
| 5-Jun-11 | 20:00:53 | 2.07 | 3.6 | 6.0 | 19.0 | 11.3 | 85.2 | -1.30 | 143 |
| 5-Jun-11 | 21:00:53 | 2.07 | 3.4 | 6.0 | 19.0 | 11.4 | 85.3 | -1.30 | 141 |
| 5-Jun-11 | 22:00:53 | 2.07 | 3.5 | 6.0 | 18.0 | 11.3 | 85.4 | -1.30 | 142 |
| 5-Jun-11 | 23:00:53 | 2.07 | 3.4 | 6.0 | 18.0 | 11.3 | 85.1 | -1.30 | 143 |
| 6-Jun-11 | 00:00:53 | 2.07 | 3.4 | 6.0 | 18.0 | 11.5 | 86.0 | -1.30 | 144 |
| 6-Jun-11 | 01:00:53 | 2.07 | 3.2 | 6.0 | 18.0 | 11.6 | 86.4 | -1.30 | 145 |
| 6-Jun-11 | 02:00:53 | 2.06 | 3.2 | 6.0 | 18.0 | 11.5 | 86.1 | -1.30 | 144 |
| 6-Jun-11 | 03:00:53 | 2.06 | 3.2 | 6.0 | 18.0 | 11.6 | 86.4 | -1.30 | 143 |
| 6-Jun-11 | 04:00:53 | 2.06 | 3.1 | 6.0 | 18.0 | 11.5 | 85.8 | -1.30 | 143 |
| 6-Jun-11 | 05:00:53 | 2.07 | 3.1 | 6.0 | 18.0 | 11.5 | 85.4 | -1.30 | 142 |
| 6-Jun-11 | 06:00:53 | 2.07 | 3.2 | 6.0 | 18.0 | 11.5 | 86.0 | -1.30 | 143 |
| 6-Jun-11 | 07:00:54 | 2.07 | 3.4 | 6.0 | 18.0 | 11.5 | 85.9 | -1.30 | 141 |
| 6-Jun-11 | 08:00:53 | 2.07 | 3.2 | 6.0 | 18.0 | 11.5 | 86.1 | -1.10 | 142 |
| 6-Jun-11 | 09:00:53 | 2.07 | 3.1 | 6.0 | 18.0 | 11.6 | 86.3 | -1.30 | 145 |
| 6-Jun-11 | 10:00:53 | 2.08 | 3.2 | 6.0 | 18.0 | 11.6 | 86.2 | -1.30 | 144 |
| 6-Jun-11 | 11:00:53 | 2.08 | 3.0 | 6.0 | 18.0 | 11.6 | 86.1 | -1.40 | 147 |
| 6-Jun-11 | 12:00:53 | 2.08 | 3.1 | 6.0 | 18.0 | 11.5 | 85.7 | -1.30 | 143 |
| 6-Jun-11 | 13:00:54 | 2.09 | 3.0 | 6.1 | 18.0 | 11.8 | 87.4 | -1.30 | 143 |
| 6-Jun-11 | 14:00:53 | 2.09 | 3.0 | 6.0 | 18.0 | 11.6 | 86.1 | -1.30 | 144 |
| 6-Jun-11 | 15:00:53 | 2.10 | 2.8 | 6.0 | 18.0 | 11.9 | 87.9 | -1.30 | 146 |
| 6-Jun-11 | 16:00:53 | 2.10 | 2.7 | 6.1 | 18.0 | 12.0 | 88.2 | -1.30 | 144 |
| 6-Jun-11 | 17:00:53 | 2.11 | 2.7 | 6.1 | 18.0 | 11.9 | 87.8 | -1.30 | 144 |
| 6-Jun-11 | 18:00:54 | 2.11 | 2.9 | 6.0 | 18.0 | 11.9 | 87.8 | -1.30 | 145 |
| 6-Jun-11 | 19:00:53 | 2.11 | 2.9 | 6.0 | 18.0 | 11.8 | 87.6 | -1.30 | 145 |
| 6-Jun-11 | 20:00:53 | 2.12 | 2.8 | 6.0 | 18.0 | 11.9 | 87.8 | -1.30 | 145 |
| 6-Jun-11 | 21:00:53 | 2.12 | 2.9 | 6.0 | 18.0 | 11.8 | 87.4 | -1.30 | 145 |
| 6-Jun-11 | 22:00:53 | 2.12 | 3.0 | 6.0 | 18.0 | 11.8 | 87.8 | -1.30 | 146 |
| 6-Jun-11 | 23:00:53 | 2.13 | 2.8 | 6.0 | 18.0 | 12.0 | 88.5 | -1.30 | 146 |
| 7-Jun-11 | 00:00:53 | 2.13 | 2.8 | 6.0 | 18.0 | 11.9 | 88.2 | -1.30 | 144 |
| 7-Jun-11 | 01:00:53 | 2.13 | 2.7 | 6.1 | 18.0 | 12.0 | 88.3 | -1.30 | 143 |
| 7-Jun-11 | 02:00:53 | 2.13 | 2.7 | 6.1 | 18.0 | 12.0 | 88.7 | -1.30 | 144 |
| 7-Jun-11 | 03:00:53 | 2.14 | 2.7 | 6.1 | 18.0 | 12.0 | 88.6 | -1.30 | 143 |
| 7-Jun-11 | 04:00:53 | 2.14 | 2.8 | 6.1 | 17.0 | 12.0 | 88.6 | -1.30 | 142 |
| 7-Jun-11 | 05:00:53 | 2.14 | 2.8 | 6.1 | 18.0 | 12.0 | 88.5 | -1.30 | 143 |
| 7-Jun-11 | 06:00:53 | 2.14 | 2.8 | 6.1 | 18.0 | 12.0 | 88.6 | -1.30 | 143 |
| 7-Jun-11 | 07:00:54 | 2.15 | 2.8 | 6.1 | 18.0 | 12.0 | 88.4 | -1.30 | 143 |
| 7-Jun-11 | 08:00:53 | 2.15 | 2.9 | 6.1 | 18.0 | 12.0 | 88.5 | -1.30 | 143 |
| 7-Jun-11 | 09:00:53 | 2.15 | 2.8 | 6.1 | 18.0 | 11.9 | 88.4 | -1.30 | 144 |
| 7-Jun-11 | 10:00:53 | 2.15 | 2.8 | 6.1 | 18.0 | 12.0 | 88.4 | -1.30 | 145 |
| 7-Jun-11 | 11:00:53 | 2.15 | 2.9 | 6.1 | 18.0 | 11.9 | 88.3 | -1.30 | 144 |
| 7-Jun-11 | 12:00:53 | 2.15 | 3.0 | 6.1 | 18.0 | 11.9 | 88.2 | -1.30 | 143 |
| 7-Jun-11 | 13:00:54 | 2.15 | 3.1 | 6.0 | 18.0 | 11.8 | 87.9 | -1.20 | 144 |
| 7-Jun-11 | 14:00:53 | 2.15 | 3.1 | 6.0 | 18.0 | 11.9 | 88.4 | -1.30 | 144 |
| 7-Jun-11 | 15:00:53 | 2.15 | 2.9 | 6.1 | 18.0 | 12.0 | 88.8 | -1.30 | 144 |
| 7-Jun-11 | 16:00:53 | 2.15 | 2.9 | 6.1 | 18.0 | 12.0 | 89.2 | -1.30 | 144 |
| 7-Jun-11 | 17:00:53 | 2.15 | 2.9 | 6.1 | 18.0 | 12.0 | 89.2 | -1.30 | 144 |
| 7-Jun-11 | 18:00:54 | 2.15 | 3.0 | 6.1 | 18.0 | 12.0 | 89.1 | -1.30 | 144 |
| 7-Jun-11 | 19:00:53 | 2.15 | 2.9 | 6.1 | 18.0 | 12.1 | 89.4 | -1.30 | 144 |
| 7-Jun-11 | 20:00:53 | 2.15 | 3.0 | 6.1 | 18.0 | 12.0 | 89.3 | -1.30 | 145 |
| 7-Jun-11 | 21:00:53 | 2.15 | 3.1 | 6.1 | 18.0 | 12.0 | 89.2 | -1.20 | 143 |
| 7-Jun-11 | 22:00:53 | 2.15 | 3.1 | 6.1 | 18.0 | 12.0 | 89.1 | -1.30 | 144 |
| 7-Jun-11 | 23:00:53 | 2.15 | 3.1 | 6.1 | 18.0 | 11.9 | 88.9 | -1.30 | 143 |
| 8-Jun-11 | 00:00:53 | 2.15 | 3.3 | 6.1 | 18.0 | 11.9 | 88.8 | -1.30 | 143 |
| 8-Jun-11 | 01:00:53 | 2.15 | 3.2 | 6.1 | 18.0 | 12.0 | 89.4 | -1.30 | 144 |
| 8-Jun-11 | 02:00:53 | 2.15 | 3.2 | 6.1 | 18.0 | 12.0 | 89.8 | -1.30 | 144 |
| 8-Jun-11 | 03:00:53 | 2.15 | 3.3 | 6.1 | 18.0 | 12.0 | 89.5 | -1.30 | 143 |
| 8-Jun-11 | 04:00:53 | 2.15 | 3.1 | 6.0 | 18.0 | 12.0 | 89.2 | -1.30 | 143 |
| 8-Jun-11 | 05:00:53 | 2.15 | 3.1 | 6.1 | 18.0 | 11.9 | 89.0 | -1.30 | 143 |
| 8-Jun-11 | 06:00:53 | 2.14 | 3.0 | 6.1 | 18.0 | 12.0 | 89.4 | -1.30 | 143 |
| 8-Jun-11 | 07:00:54 | 2.14 | 3.1 | 6.1 | 17.0 | 12.0 | 89.5 | -1.30 | 143 |
| 8-Jun-11 | 08:00:53 | 2.13 | 3.1 | 6.1 | 17.0 | 12.0 | 89.8 | -1.30 | 144 |
| 8-Jun-11 | 09:00:53 | 2.13 | 3.2 | 6.1 | 18.0 | 12.0 | 89.5 | -1.40 | 145 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 8-Jun-11 | 10:00:53 | 2.12 | 3.3 | 6.1 | 18.0 | 11.9 | 89.1 | -1.30 | 144 |
| 8-Jun-11 | 11:00:53 | 2.12 | 3.3 | 6.1 | 18.0 | 11.8 | 88.7 | -1.40 | 143 |
| 8-Jun-11 | 12:00:53 | 2.11 | 3.3 | 6.1 | 18.0 | 11.9 | 89.4 | -1.30 | 142 |
| 8-Jun-11 | 13:00:54 | 2.10 | 3.5 | 6.1 | 18.0 | 11.8 | 88.6 | -1.30 | 142 |
| 8-Jun-11 | 14:00:53 | 2.11 | 3.4 | 6.1 | 18.0 | 11.8 | 88.5 | -1.40 | 142 |
| 8-Jun-11 | 15:00:53 | 2.11 | 3.3 | 6.1 | 18.0 | 11.9 | 89.3 | -1.30 | 142 |
| 8-Jun-11 | 16:00:53 | 2.11 | 3.5 | 6.1 | 18.0 | 11.8 | 89.0 | -1.30 | 142 |
| 8-Jun-11 | 17:00:53 | 2.10 | 3.5 | 6.1 | 18.0 | 11.8 | 88.8 | -1.30 | 142 |
| 8-Jun-11 | 18:00:54 | 2.09 | 3.3 | 6.1 | 18.0 | 11.9 | 89.5 | -1.30 | 141 |
| 8-Jun-11 | 19:00:53 | 2.09 | 3.3 | 6.1 | 18.0 | 12.0 | 89.8 | -1.30 | 142 |
| 8-Jun-11 | 20:00:53 | 2.09 | 3.3 | 6.1 | 18.0 | 12.0 | 89.9 | -1.40 | 143 |
| 8-Jun-11 | 21:00:53 | 2.09 | 3.2 | 6.1 | 18.0 | 12.1 | 90.5 | -1.30 | 143 |
| 8-Jun-11 | 22:00:53 | 2.09 | 3.5 | 6.1 | 18.0 | 11.9 | 89.9 | -1.30 | 142 |
| 8-Jun-11 | 23:00:53 | 2.09 | 3.3 | 6.1 | 18.0 | 12.0 | 89.7 | -1.40 | 144 |
| 9-Jun-11 | 00:00:53 | 2.09 | 3.1 | 6.1 | 17.0 | 12.1 | 90.3 | -1.40 | 144 |
| 9-Jun-11 | 01:00:53 | 2.09 | 3.3 | 6.2 | 17.0 | 12.2 | 91.5 | -1.30 | 142 |
| 9-Jun-11 | 02:00:53 | 2.10 | 3.4 | 6.1 | 17.0 | 12.3 | 92.4 | -1.30 | 142 |
| 9-Jun-11 | 03:00:53 | 2.10 | 3.4 | 6.1 | 17.0 | 12.2 | 91.3 | -1.30 | 143 |
| 9-Jun-11 | 04:00:53 | 2.10 | 3.4 | 6.1 | 17.0 | 12.3 | 92.1 | -1.30 | 143 |
| 9-Jun-11 | 05:00:53 | 2.11 | 3.3 | 6.2 | 17.0 | 12.3 | 92.3 | -1.30 | 144 |
| 9-Jun-11 | 06:00:53 | 2.11 | 3.3 | 6.2 | 17.0 | 12.3 | 92.3 | -1.30 | 143 |
| 9-Jun-11 | 07:00:54 | 2.11 | 3.3 | 6.2 | 17.0 | 12.4 | 93.0 | -1.30 | 141 |
| 9-Jun-11 | 08:00:53 | 2.11 | 3.4 | 6.3 | 17.0 | 12.7 | 95.5 | -1.40 | 142 |
| 9-Jun-11 | 09:00:53 | 2.11 | 3.3 | 6.2 | 17.0 | 12.6 | 94.3 | -1.30 | 142 |
| 9-Jun-11 | 10:00:53 | 2.11 | 3.5 | 6.2 | 17.0 | 12.6 | 94.9 | -1.30 | 142 |
| 9-Jun-11 | 11:00:53 | 2.11 | 3.5 | 6.2 | 17.0 | 12.6 | 94.9 | -1.30 | 141 |
| 9-Jun-11 | 12:00:53 | 2.12 | 3.6 | 6.3 | 17.0 | 12.6 | 95.0 | -1.40 | 141 |
| 9-Jun-11 | 13:00:54 | 2.12 | 3.6 | 6.3 | 17.0 | 12.6 | 95.4 | -1.30 | 141 |
| 9-Jun-11 | 14:00:53 | 2.11 | 3.6 | 6.2 | 17.0 | 12.6 | 95.3 | -1.30 | 141 |
| 9-Jun-11 | 15:00:53 | 2.11 | 3.6 | 6.3 | 17.0 | 12.7 | 96.1 | -1.30 | 141 |
| 9-Jun-11 | 16:00:53 | 2.11 | 3.6 | 6.2 | 17.0 | 12.5 | 94.8 | -1.30 | 141 |
| 9-Jun-11 | 17:00:53 | 2.11 | 3.6 | 6.2 | 17.0 | 12.5 | 94.6 | -1.30 | 141 |
| 9-Jun-11 | 18:00:54 | 2.11 | 3.6 | 6.3 | 17.0 | 12.5 | 94.7 | -1.30 | 140 |
| 9-Jun-11 | 19:00:53 | 2.11 | 3.6 | 6.2 | 17.0 | 12.5 | 94.4 | -1.40 | 140 |
| 9-Jun-11 | 20:00:53 | 2.10 | 3.7 | 6.3 | 17.0 | 12.6 | 95.2 | -1.30 | 142 |
| 9-Jun-11 | 21:00:53 | 2.10 | 3.6 | 6.3 | 17.0 | 12.7 | 95.8 | -1.30 | 142 |
| 9-Jun-11 | 22:00:53 | 2.10 | 3.6 | 6.3 | 17.0 | 12.7 | 95.9 | -1.30 | 142 |
| 9-Jun-11 | 23:00:53 | 2.09 | 3.6 | 6.3 | 17.0 | 12.6 | 95.5 | -1.30 | 141 |
| 10-Jun-11 | 00:00:53 | 2.09 | 3.6 | 6.3 | 17.0 | 12.6 | 95.0 | -1.30 | 140 |
| 10-Jun-11 | 01:00:53 | 2.09 | 3.6 | 6.3 | 17.0 | 12.5 | 94.5 | -1.30 | 139 |
| 10-Jun-11 | 02:00:53 | 2.09 | 3.6 | 6.3 | 17.0 | 12.5 | 94.2 | -1.40 | 139 |
| 10-Jun-11 | 03:00:53 | 2.09 | 3.6 | 6.3 | 17.0 | 12.5 | 94.4 | -1.30 | 139 |
| 10-Jun-11 | 04:00:53 | 2.09 | 3.6 | 6.3 | 17.0 | 12.5 | 94.6 | -1.40 | 139 |
| 10-Jun-11 | 05:00:53 | 2.08 | 3.7 | 6.3 | 17.0 | 12.6 | 95.6 | -1.30 | 139 |
| 10-Jun-11 | 06:00:53 | 2.07 | 3.7 | 6.3 | 17.0 | 12.7 | 95.8 | -1.30 | 139 |
| 10-Jun-11 | 07:00:54 | 2.07 | 3.7 | 6.3 | 17.0 | 12.7 | 95.7 | -1.30 | 139 |
| 10-Jun-11 | 08:00:53 | 2.07 | 3.7 | 6.3 | 17.0 | 12.7 | 95.9 | -1.30 | 139 |
| 10-Jun-11 | 09:00:53 | 2.06 | 3.7 | 6.3 | 17.0 | 12.7 | 95.9 | -1.40 | 140 |
| 10-Jun-11 | 10:00:53 | 2.06 | 3.7 | 6.3 | 17.0 | 12.7 | 95.9 | -1.40 | 141 |
| 10-Jun-11 | 11:00:53 | 2.05 | 3.8 | 6.3 | 17.0 | 12.7 | 95.9 | -1.30 | 141 |
| 10-Jun-11 | 12:00:53 | 2.05 | 3.8 | 6.3 | 17.0 | 12.7 | 96.0 | -1.40 | 141 |
| 10-Jun-11 | 13:00:54 | 2.05 | 3.8 | 6.3 | 17.0 | 12.6 | 95.7 | -1.30 | 141 |
| 10-Jun-11 | 14:00:53 | 2.04 | 3.9 | 6.3 | 17.0 | 12.5 | 95.4 | -1.30 | 142 |
| 10-Jun-11 | 15:00:53 | 2.04 | 3.9 | 6.3 | 17.0 | 12.6 | 95.8 | -1.30 | 142 |
| 10-Jun-11 | 16:00:53 | 2.04 | 3.9 | 6.3 | 17.0 | 12.5 | 95.3 | -1.30 | 140 |
| 10-Jun-11 | 17:00:53 | 2.04 | 3.9 | 6.3 | 17.0 | 12.4 | 94.7 | -1.30 | 140 |
| 10-Jun-11 | 18:00:54 | 2.04 | 3.9 | 6.3 | 17.0 | 12.5 | 95.0 | -1.40 | 141 |
| 10-Jun-11 | 19:00:53 | 2.04 | 4.1 | 6.3 | 17.0 | 12.5 | 95.8 | -1.30 | 141 |
| 10-Jun-11 | 20:00:53 | 2.03 | 4.2 | 6.3 | 17.0 | 12.5 | 95.9 | -1.30 | 141 |
| 10-Jun-11 | 21:00:53 | 2.03 | 4.1 | 6.3 | 17.0 | 12.5 | 95.3 | -1.30 | 140 |
| 10-Jun-11 | 22:00:53 | 2.03 | 4.1 | 6.3 | 17.0 | 12.5 | 95.6 | -1.30 | 140 |
| 10-Jun-11 | 23:00:53 | 2.03 | 4.1 | 6.3 | 17.0 | 12.5 | 95.7 | -1.30 | 140 |
| 11-Jun-11 | 00:00:53 | 2.03 | 4.1 | 6.3 | 17.0 | 12.5 | 95.8 | -1.30 | 140 |
| 11-Jun-11 | 01:00:53 | 2.02 | 4.1 | 6.3 | 17.0 | 12.5 | 95.6 | -1.40 | 140 |
| 11-Jun-11 | 02:00:53 | 2.02 | 4.0 | 6.3 | 17.0 | 12.5 | 95.3 | -1.30 | 140 |
| 11-Jun-11 | 03:00:53 | 2.02 | 4.0 | 6.3 | 16.0 | 12.5 | 95.3 | -1.40 | 140 |
| 11-Jun-11 | 04:00:53 | 2.01 | 4.0 | 6.3 | 17.0 | 12.5 | 95.1 | -1.40 | 140 |
| 11-Jun-11 | 05:00:53 | 2.01 | 4.0 | 6.3 | 16.0 | 12.5 | 95.2 | -1.30 | 140 |
| 11-Jun-11 | 06:00:53 | 2.01 | 4.0 | 6.3 | 16.0 | 12.5 | 95.2 | -1.30 | 140 |
| 11-Jun-11 | 07:00:54 | 2.01 | 4.1 | 6.3 | 16.0 | 12.5 | 95.5 | -1.30 | 140 |
| 11-Jun-11 | 08:00:53 | 2.00 | 4.1 | 6.3 | 17.0 | 12.5 | 95.6 | -1.30 | 141 |
| 11-Jun-11 | 09:00:53 | 2.00 | 4.1 | 6.3 | 17.0 | 12.6 | 96.0 | -1.40 | 141 |
| 11-Jun-11 | 10:00:53 | 2.00 | 4.0 | 6.2 | 17.0 | 12.5 | 95.4 | -1.30 | 141 |
| 11-Jun-11 | 11:00:53 | 2.00 | 4.1 | 6.3 | 16.0 | 12.5 | 95.8 | -1.30 | 143 |
| 11-Jun-11 | 12:00:53 | 2.01 | 4.2 | 6.3 | 16.0 | 12.5 | 96.1 | -1.30 | 146 |
| 11-Jun-11 | 13:00:54 | 2.01 | 4.2 | 6.3 | 16.0 | 12.6 | 96.3 | -1.40 | 147 |
| 11-Jun-11 | 14:00:53 | 2.01 | 4.1 | 6.2 | 16.0 | 12.5 | 95.7 | -1.30 | 148 |
| 11-Jun-11 | 15:00:53 | 2.02 | 4.0 | 6.2 | 16.0 | 12.5 | 95.2 | -1.40 | 148 |
| 11-Jun-11 | 16:00:53 | 2.02 | 4.0 | 6.2 | 16.0 | 12.5 | 95.4 | -1.30 | 147 |
| 11-Jun-11 | 17:00:53 | 2.03 | 4.1 | 6.2 | 16.0 | 12.5 | 95.6 | -1.30 | 147 |
| 11-Jun-11 | 18:00:54 | 2.03 | 4.2 | 6.3 | 16.0 | 12.5 | 96.1 | -1.40 | 146 |
| 11-Jun-11 | 19:00:53 | 2.04 | 4.3 | 6.3 | 16.0 | 12.4 | 95.5 | -1.00 | 147 |
| 11-Jun-11 | 20:00:53 | 2.04 | 4.1 | 6.2 | 16.0 | 12.5 | 95.6 | -1.30 | 147 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 11-Jun-11 | 21:00:53 | 2.04 | 4.1 | 6.2 | 16.0 | 12.5 | 95.9 | -1.30 | 147 |
| 11-Jun-11 | 22:00:53 | 2.05 | 4.1 | 6.2 | 16.0 | 12.5 | 95.7 | -1.30 | 146 |
| 11-Jun-11 | 23:00:53 | 2.05 | 4.1 | 6.3 | 16.0 | 12.5 | 95.9 | -1.30 | 145 |
| 12-Jun-11 | 00:00:53 | 2.06 | 4.2 | 6.3 | 16.0 | 12.5 | 95.8 | -1.30 | 145 |
| 12-Jun-11 | 01:00:53 | 2.06 | 4.2 | 6.3 | 16.0 | 12.5 | 95.6 | -1.30 | 145 |
| 12-Jun-11 | 02:00:53 | 2.06 | 4.2 | 6.3 | 16.0 | 12.5 | 95.5 | -1.30 | 145 |
| 12-Jun-11 | 03:00:53 | 2.07 | 4.1 | 6.3 | 16.0 | 12.4 | 95.1 | -1.30 | 145 |
| 12-Jun-11 | 04:00:53 | 2.07 | 4.2 | 6.3 | 16.0 | 12.4 | 95.4 | -1.30 | 145 |
| 12-Jun-11 | 05:00:53 | 2.07 | 4.1 | 6.3 | 16.0 | 12.4 | 95.1 | -1.30 | 145 |
| 12-Jun-11 | 06:00:53 | 2.07 | 4.1 | 6.3 | 16.0 | 12.4 | 95.0 | -1.40 | 144 |
| 12-Jun-11 | 07:00:54 | 2.07 | 4.1 | 6.3 | 16.0 | 12.4 | 94.7 | -1.40 | 143 |
| 12-Jun-11 | 08:00:53 | 2.07 | 4.2 | 6.3 | 16.0 | 12.3 | 94.5 | -1.40 | 144 |
| 12-Jun-11 | 09:00:53 | 2.07 | 4.2 | 6.3 | 16.0 | 12.4 | 94.8 | -1.30 | 144 |
| 12-Jun-11 | 10:00:53 | 2.07 | 4.2 | 6.3 | 16.0 | 12.4 | 95.1 | -1.30 | 144 |
| 12-Jun-11 | 11:00:53 | 2.06 | 4.2 | 6.3 | 16.0 | 12.5 | 95.7 | -1.30 | 145 |
| 12-Jun-11 | 12:00:53 | 2.06 | 4.3 | 6.3 | 16.0 | 12.5 | 95.8 | -1.30 | 145 |
| 12-Jun-11 | 13:00:54 | 2.06 | 4.2 | 6.3 | 16.0 | 12.5 | 95.9 | -1.30 | 145 |
| 12-Jun-11 | 14:00:53 | 2.06 | 4.3 | 6.3 | 16.0 | 12.5 | 95.9 | -1.30 | 146 |
| 12-Jun-11 | 15:00:53 | 2.06 | 4.3 | 6.3 | 16.0 | 12.5 | 96.0 | -1.40 | 144 |
| 12-Jun-11 | 16:00:53 | 2.05 | 4.4 | 6.3 | 15.0 | 12.4 | 95.7 | -1.30 | 146 |
| 12-Jun-11 | 17:00:53 | 2.05 | 4.5 | 6.2 | 15.0 | 12.4 | 95.5 | -1.30 | 147 |
| 12-Jun-11 | 18:00:54 | 2.05 | 4.4 | 6.3 | 15.0 | 12.3 | 95.1 | -1.30 | 143 |
| 12-Jun-11 | 19:00:53 | 2.05 | 4.5 | 6.3 | 14.0 | 12.1 | 93.6 | -1.30 | 142 |
| 12-Jun-11 | 20:00:53 | 2.05 | 5.0 | 6.4 | 14.0 | 12.0 | 93.6 | -1.30 | 142 |
| 12-Jun-11 | 21:00:53 | 2.05 | 4.5 | 6.3 | 15.0 | 12.2 | 94.3 | -1.40 | 141 |
| 12-Jun-11 | 22:00:53 | 2.05 | 4.5 | 6.3 | 15.0 | 12.3 | 94.7 | -1.30 | 139 |
| 12-Jun-11 | 23:00:53 | 2.05 | 4.5 | 6.3 | 15.0 | 12.3 | 95.2 | -1.30 | 139 |
| 13-Jun-11 | 00:00:54 | 2.04 | 4.7 | 6.4 | 15.0 | 12.2 | 94.8 | -1.30 | 139 |
| 13-Jun-11 | 01:00:54 | 2.04 | 4.6 | 6.3 | 15.0 | 12.3 | 94.9 | -1.40 | 139 |
| 13-Jun-11 | 02:00:54 | 2.04 | 4.5 | 6.3 | 15.0 | 12.2 | 94.6 | -1.40 | 139 |
| 13-Jun-11 | 03:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.2 | 94.5 | -1.40 | 139 |
| 13-Jun-11 | 04:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.2 | 94.5 | -1.30 | 138 |
| 13-Jun-11 | 05:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.2 | 94.2 | -1.30 | 139 |
| 13-Jun-11 | 06:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.8 | -1.40 | 138 |
| 13-Jun-11 | 07:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.2 | 94.1 | -1.40 | 138 |
| 13-Jun-11 | 08:00:54 | 2.05 | 4.4 | 6.4 | 15.0 | 12.2 | 94.1 | -1.40 | 138 |
| 13-Jun-11 | 09:00:54 | 2.04 | 4.3 | 6.4 | 15.0 | 12.2 | 93.5 | -1.30 | 137 |
| 13-Jun-11 | 10:00:54 | 2.04 | 4.3 | 6.4 | 15.0 | 12.2 | 93.5 | -1.40 | 137 |
| 13-Jun-11 | 11:00:54 | 2.04 | 4.3 | 6.4 | 15.0 | 12.2 | 93.5 | -1.40 | 138 |
| 13-Jun-11 | 12:00:54 | 2.04 | 4.3 | 6.4 | 15.0 | 12.2 | 93.6 | -1.30 | 138 |
| 13-Jun-11 | 13:00:54 | 2.04 | 4.4 | 6.4 | 15.0 | 12.1 | 93.0 | -1.30 | 137 |
| 13-Jun-11 | 14:00:54 | 2.04 | 4.4 | 6.4 | 15.0 | 12.1 | 93.6 | -1.30 | 138 |
| 13-Jun-11 | 15:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.4 | -1.30 | 138 |
| 13-Jun-11 | 16:00:54 | 2.03 | 4.5 | 6.4 | 15.0 | 12.1 | 93.6 | -1.30 | 138 |
| 13-Jun-11 | 17:00:54 | 2.03 | 4.5 | 6.4 | 15.0 | 12.1 | 93.4 | -1.40 | 138 |
| 13-Jun-11 | 18:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.8 | -1.50 | 137 |
| 13-Jun-11 | 19:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.7 | -1.40 | 137 |
| 13-Jun-11 | 20:00:54 | 2.04 | 4.6 | 6.4 | 15.0 | 12.1 | 93.7 | -1.40 | 136 |
| 13-Jun-11 | 21:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.8 | -1.40 | 136 |
| 13-Jun-11 | 22:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.7 | -1.30 | 138 |
| 13-Jun-11 | 23:00:54 | 2.04 | 4.5 | 6.4 | 15.0 | 12.1 | 93.5 | -1.40 | 137 |
| 14-Jun-11 | 00:00:54 | 2.05 | 4.4 | 6.4 | 15.0 | 12.1 | 93.4 | -1.50 | 138 |
| 14-Jun-11 | 01:00:54 | 2.05 | 4.5 | 6.4 | 15.0 | 12.1 | 93.2 | -1.40 | 138 |
| 14-Jun-11 | 02:00:54 | 2.05 | 4.5 | 6.4 | 15.0 | 12.1 | 93.2 | -1.40 | 139 |
| 14-Jun-11 | 03:00:54 | 2.05 | 4.5 | 6.4 | 15.0 | 12.0 | 93.1 | -1.30 | 138 |
| 14-Jun-11 | 04:00:54 | 2.05 | 4.4 | 6.4 | 15.0 | 12.0 | 93.0 | -1.40 | 137 |
| 14-Jun-11 | 05:00:54 | 2.06 | 4.4 | 6.4 | 15.0 | 12.1 | 93.0 | -1.40 | 138 |
| 14-Jun-11 | 06:00:54 | 2.06 | 4.4 | 6.4 | 15.0 | 12.1 | 93.2 | -1.30 | 138 |
| 14-Jun-11 | 07:00:54 | 2.07 | 4.4 | 6.4 | 15.0 | 12.1 | 93.2 | -1.40 | 139 |
| 14-Jun-11 | 08:00:54 | 2.07 | 4.3 | 6.4 | 14.0 | 12.1 | 92.7 | -1.40 | 138 |
| 14-Jun-11 | 09:00:55 | 2.07 | 4.3 | 6.4 | 14.0 | 12.1 | 92.6 | -1.30 | 138 |
| 14-Jun-11 | 10:00:54 | 2.08 | 4.3 | 6.5 | 14.0 | 12.0 | 92.5 | -1.30 | 139 |
| 14-Jun-11 | 11:00:54 | 2.08 | 4.3 | 6.5 | 14.0 | 12.0 | 92.4 | -1.30 | 137 |
| 14-Jun-11 | 12:00:54 | 2.11 | 4.2 | 6.5 | 14.0 | 12.0 | 92.4 | -1.30 | 138 |
| 14-Jun-11 | 13:00:54 | 2.10 | 4.3 | 6.5 | 14.0 | 12.0 | 92.4 | -1.30 | 138 |
| 14-Jun-11 | 14:00:55 | 2.10 | 4.3 | 6.5 | 14.0 | 12.1 | 92.9 | -1.30 | 138 |
| 14-Jun-11 | 15:00:54 | 2.10 | 4.4 | 6.5 | 14.0 | 12.1 | 93.2 | -1.30 | 138 |
| 14-Jun-11 | 16:00:54 | 2.10 | 4.4 | 6.5 | 14.0 | 12.1 | 93.0 | -1.40 | 138 |
| 14-Jun-11 | 17:00:54 | 2.10 | 4.4 | 6.5 | 14.0 | 12.1 | 93.0 | -1.40 | 138 |
| 14-Jun-11 | 18:00:54 | 2.11 | 4.3 | 6.5 | 14.0 | 12.1 | 92.9 | -1.30 | 139 |
| 14-Jun-11 | 19:00:54 | 2.12 | 4.5 | 6.5 | 14.0 | 12.0 | 92.6 | -1.40 | 137 |
| 14-Jun-11 | 20:00:54 | 2.14 | 4.5 | 6.5 | 14.0 | 12.0 | 92.5 | -1.40 | 134 |
| 14-Jun-11 | 21:00:54 | 2.15 | 4.5 | 6.5 | 14.0 | 12.0 | 92.8 | -1.30 | 133 |
| 14-Jun-11 | 22:00:54 | 2.15 | 4.5 | 6.5 | 14.0 | 12.0 | 92.8 | -1.40 | 132 |
| 14-Jun-11 | 23:00:54 | 2.16 | 4.5 | 6.5 | 14.0 | 12.0 | 92.8 | -1.30 | 132 |
| 15-Jun-11 | 00:00:54 | 2.16 | 4.5 | 6.5 | 14.0 | 12.0 | 92.6 | -1.40 | 134 |
| 15-Jun-11 | 01:00:54 | 2.16 | 4.5 | 6.5 | 14.0 | 12.0 | 92.8 | -1.30 | 133 |
| 15-Jun-11 | 02:00:54 | 2.16 | 4.5 | 6.5 | 14.0 | 12.0 | 92.6 | -1.40 | 132 |
| 15-Jun-11 | 03:00:54 | 2.16 | 4.5 | 6.5 | 14.0 | 12.0 | 92.6 | -1.30 | 133 |
| 15-Jun-11 | 04:00:54 | 2.17 | 4.4 | 6.5 | 14.0 | 12.0 | 92.1 | -1.30 | 132 |
| 15-Jun-11 | 05:00:54 | 2.17 | 4.4 | 6.5 | 14.0 | 12.0 | 92.5 | -1.30 | 131 |
| 15-Jun-11 | 06:00:54 | 2.17 | 4.3 | 6.5 | 14.0 | 12.0 | 92.3 | -1.40 | 132 |
| 15-Jun-11 | 07:00:55 | 2.17 | 4.3 | 6.5 | 14.0 | 12.0 | 92.4 | -1.40 | 132 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 15-Jun-11 | 08:00:54 | 2.18 | 4.3 | 6.5 | 14.0 | 12.0 | 92.3 | -1.30 | 132 |
| 15-Jun-11 | 09:00:54 | 2.17 | 4.4 | 6.5 | 14.0 | 12.0 | 92.3 | -1.30 | 133 |
| 15-Jun-11 | 10:00:54 | 2.16 | 4.4 | 6.5 | 14.0 | 12.0 | 92.2 | -1.30 | 132 |
| 15-Jun-11 | 11:00:54 | 2.16 | 4.4 | 6.5 | 14.0 | 12.0 | 92.4 | -1.40 | 133 |
| 15-Jun-11 | 12:00:54 | 2.15 | 4.5 | 6.5 | 14.0 | 12.0 | 92.8 | -1.30 | 133 |
| 15-Jun-11 | 13:00:54 | 2.16 | 4.5 | 6.5 | 14.0 | 12.0 | 92.7 | -1.30 | 131 |
| 15-Jun-11 | 14:00:54 | 2.17 | 4.5 | 6.5 | 14.0 | 12.0 | 92.8 | -1.40 | 131 |
| 15-Jun-11 | 15:00:54 | 2.16 | 4.6 | 6.5 | 14.0 | 12.0 | 93.0 | -1.30 | 132 |
| 15-Jun-11 | 16:00:54 | 2.16 | 4.8 | 6.5 | 14.0 | 12.0 | 93.1 | -1.40 | 132 |
| 15-Jun-11 | 17:00:54 | 2.17 | 4.9 | 6.5 | 14.0 | 11.8 | 92.4 | -1.40 | 134 |
| 15-Jun-11 | 18:00:54 | 2.17 | 5.0 | 6.5 | 14.0 | 11.8 | 92.2 | -1.40 | 133 |
| 15-Jun-11 | 19:00:54 | 2.17 | 5.0 | 6.5 | 14.0 | 11.8 | 92.5 | -1.40 | 133 |
| 15-Jun-11 | 20:00:54 | 2.17 | 5.0 | 6.5 | 14.0 | 11.8 | 92.3 | -1.30 | 132 |
| 15-Jun-11 | 21:00:54 | 2.18 | 5.0 | 6.5 | 14.0 | 11.8 | 92.3 | -1.40 | 132 |
| 15-Jun-11 | 22:00:54 | 2.18 | 4.9 | 6.5 | 14.0 | 11.8 | 92.1 | -1.40 | 132 |
| 15-Jun-11 | 23:00:54 | 2.18 | 5.0 | 6.5 | 14.0 | 11.8 | 92.2 | -1.40 | 132 |
| 16-Jun-11 | 00:00:54 | 2.19 | 4.9 | 6.5 | 14.0 | 11.8 | 92.2 | -1.30 | 134 |
| 16-Jun-11 | 01:00:55 | 2.19 | 4.9 | 6.5 | 14.0 | 11.8 | 92.1 | -1.30 | 133 |
| 16-Jun-11 | 02:00:54 | 2.17 | 4.8 | 6.5 | 14.0 | 11.8 | 92.0 | -1.50 | 131 |
| 16-Jun-11 | 03:00:54 | 2.18 | 4.9 | 6.5 | 14.0 | 11.8 | 92.0 | -1.40 | 131 |
| 16-Jun-11 | 04:00:54 | 2.19 | 4.8 | 6.5 | 14.0 | 11.8 | 91.9 | -1.40 | 131 |
| 16-Jun-11 | 05:00:54 | 2.18 | 4.7 | 6.5 | 14.0 | 11.8 | 91.6 | -1.50 | 129 |
| 16-Jun-11 | 06:00:54 | 2.21 | 4.7 | 6.5 | 14.0 | 11.8 | 91.6 | -1.30 | 129 |
| 16-Jun-11 | 07:00:54 | 2.19 | 4.6 | 6.4 | 14.0 | 11.8 | 91.6 | -1.40 | 134 |
| 16-Jun-11 | 08:00:54 | 2.19 | 4.6 | 6.5 | 14.0 | 11.8 | 91.5 | -1.30 | 130 |
| 16-Jun-11 | 09:00:54 | 2.19 | 4.6 | 6.5 | 14.0 | 11.8 | 91.6 | -1.30 | 130 |
| 16-Jun-11 | 10:00:54 | 2.19 | 4.7 | 6.5 | 14.0 | 11.8 | 91.6 | -1.40 | 130 |
| 16-Jun-11 | 11:00:54 | 2.18 | 4.7 | 6.4 | 14.0 | 11.8 | 91.8 | -1.40 | 133 |
| 16-Jun-11 | 12:00:54 | 2.20 | 5.1 | 6.5 | 13.0 | 11.7 | 91.8 | -1.40 | 132 |
| 16-Jun-11 | 13:00:54 | 2.20 | 5.1 | 6.5 | 13.0 | 11.7 | 92.3 | -1.40 | 131 |
| 16-Jun-11 | 14:00:54 | 2.22 | 5.4 | 6.5 | 13.0 | 11.8 | 92.9 | -1.40 | 131 |
| 16-Jun-11 | 15:00:54 | 2.19 | 5.3 | 6.4 | 13.0 | 11.7 | 92.8 | -1.40 | 133 |
| 16-Jun-11 | 16:00:54 | 2.24 | 5.2 | 6.4 | 13.0 | 11.7 | 92.5 | -1.40 | 134 |
| 16-Jun-11 | 17:00:54 | 2.21 | 5.2 | 6.4 | 13.0 | 11.7 | 92.4 | -1.40 | 134 |
| 16-Jun-11 | 18:00:54 | 2.23 | 5.3 | 6.5 | 13.0 | 11.7 | 92.7 | -1.50 | 133 |
| 16-Jun-11 | 19:00:54 | 2.21 | 5.4 | 6.4 | 13.0 | 11.7 | 92.7 | -1.40 | 134 |
| 16-Jun-11 | 20:00:54 | 2.19 | 5.5 | 6.4 | 13.0 | 11.7 | 92.8 | -1.30 | 135 |
| 16-Jun-11 | 21:00:54 | 2.19 | 5.4 | 6.5 | 13.0 | 11.7 | 92.7 | -1.40 | 131 |
| 16-Jun-11 | 22:00:54 | 2.17 | 5.2 | 6.5 | 13.0 | 11.7 | 92.1 | -1.40 | 129 |
| 16-Jun-11 | 23:00:54 | 2.17 | 5.3 | 6.5 | 13.0 | 11.7 | 92.1 | -1.40 | 130 |
| 17-Jun-11 | 00:00:54 | 2.18 | 5.2 | 6.5 | 13.0 | 11.7 | 91.8 | -1.40 | 129 |
| 17-Jun-11 | 01:00:54 | 2.18 | 5.2 | 6.5 | 13.0 | 11.7 | 91.8 | -1.30 | 129 |
| 17-Jun-11 | 02:00:54 | 2.18 | 5.2 | 6.5 | 13.0 | 11.6 | 91.5 | -1.40 | 129 |
| 17-Jun-11 | 03:00:54 | 2.18 | 5.3 | 6.6 | 13.0 | 11.6 | 91.7 | -1.40 | 128 |
| 17-Jun-11 | 04:00:53 | 2.18 | 5.5 | 6.6 | 13.0 | 11.6 | 92.2 | -1.40 | 128 |
| 17-Jun-11 | 05:00:53 | 2.18 | 5.5 | 6.5 | 13.0 | 11.7 | 92.5 | -1.40 | 130 |
| 17-Jun-11 | 06:00:53 | 2.18 | 5.5 | 6.6 | 13.0 | 11.6 | 92.3 | -1.40 | 128 |
| 17-Jun-11 | 07:00:54 | 2.18 | 5.4 | 6.5 | 13.0 | 11.7 | 92.2 | -1.40 | 128 |
| 17-Jun-11 | 08:00:54 | 2.18 | 5.5 | 6.6 | 13.0 | 11.7 | 92.3 | -1.30 | 128 |
| 17-Jun-11 | 09:00:54 | 2.17 | 5.6 | 6.5 | 13.0 | 11.7 | 92.8 | -1.30 | 129 |
| 17-Jun-11 | 10:00:54 | 2.17 | 5.7 | 6.5 | 13.0 | 11.7 | 93.0 | -1.30 | 129 |
| 17-Jun-11 | 11:00:54 | 2.17 | 5.6 | 6.5 | 13.0 | 11.7 | 93.0 | -1.40 | 129 |
| 17-Jun-11 | 12:00:54 | 2.17 | 5.9 | 6.5 | 13.0 | 11.7 | 93.9 | -1.40 | 130 |
| 17-Jun-11 | 13:00:54 | 2.17 | 6.2 | 6.6 | 13.0 | 11.7 | 94.8 | -1.40 | 129 |
| 17-Jun-11 | 14:00:54 | 2.16 | 6.3 | 6.6 | 13.0 | 11.7 | 95.0 | -1.30 | 129 |
| 17-Jun-11 | 15:00:54 | 2.16 | 6.6 | 6.6 | 13.0 | 11.7 | 95.7 | -1.40 | 130 |
| 17-Jun-11 | 16:00:54 | 2.15 | 6.7 | 6.6 | 13.0 | 11.7 | 96.0 | -1.40 | 129 |
| 17-Jun-11 | 17:00:54 | 2.15 | 6.8 | 6.6 | 13.0 | 11.8 | 96.3 | -1.40 | 130 |
| 17-Jun-11 | 18:00:54 | 2.15 | 6.9 | 6.6 | 13.0 | 11.8 | 96.6 | -1.40 | 129 |
| 17-Jun-11 | 19:00:53 | 2.15 | 7.1 | 6.6 | 13.0 | 11.7 | 97.1 | -1.50 | 130 |
| 17-Jun-11 | 20:00:53 | 2.15 | 7.3 | 6.6 | 13.0 | 11.7 | 97.4 | -1.50 | 129 |
| 17-Jun-11 | 21:00:53 | 2.15 | 7.3 | 6.6 | 13.0 | 11.7 | 97.5 | -1.40 | 128 |
| 17-Jun-11 | 22:00:53 | 2.15 | 7.6 | 6.6 | 13.0 | 11.7 | 97.8 | -1.40 | 127 |
| 17-Jun-11 | 23:00:53 | 2.15 | 7.4 | 6.6 | 13.0 | 11.7 | 97.6 | -1.40 | 130 |
| 18-Jun-11 | 00:00:54 | 2.15 | 7.7 | 6.6 | 13.0 | 11.7 | 97.8 | -1.40 | 127 |
| 18-Jun-11 | 01:00:53 | 2.15 | 7.6 | 6.6 | 13.0 | 11.7 | 97.6 | -1.50 | 128 |
| 18-Jun-11 | 02:00:53 | 2.15 | 7.9 | 6.6 | 13.0 | 11.6 | 97.9 | -1.40 | 127 |
| 18-Jun-11 | 03:00:53 | 2.15 | 7.8 | 6.6 | 13.0 | 11.6 | 97.7 | -1.40 | 126 |
| 18-Jun-11 | 04:00:53 | 2.15 | 7.7 | 6.6 | 13.0 | 11.6 | 97.4 | -1.40 | 127 |
| 18-Jun-11 | 05:00:54 | 2.15 | 7.7 | 6.6 | 13.0 | 11.6 | 97.5 | -1.40 | 126 |
| 18-Jun-11 | 06:00:54 | 2.15 | 7.8 | 6.6 | 13.0 | 11.6 | 97.5 | -1.40 | 125 |
| 18-Jun-11 | 07:00:53 | 2.15 | 7.8 | 6.6 | 13.0 | 11.6 | 97.5 | -1.50 | 126 |
| 18-Jun-11 | 08:00:53 | 2.15 | 8.0 | 6.6 | 13.0 | 11.5 | 97.5 | -1.40 | 127 |
| 18-Jun-11 | 09:00:53 | 2.14 | 7.9 | 6.5 | 13.0 | 11.6 | 97.7 | -1.50 | 130 |
| 18-Jun-11 | 10:00:53 | 2.14 | 8.2 | 6.4 | 13.0 | 11.6 | 98.1 | -1.50 | 137 |
| 18-Jun-11 | 11:00:53 | 2.14 | 8.3 | 6.4 | 13.0 | 11.6 | 98.5 | -1.30 | 139 |
| 18-Jun-11 | 12:00:53 | 2.13 | 8.4 | 6.3 | 13.0 | 11.6 | 98.8 | -1.40 | 139 |
| 18-Jun-11 | 13:00:53 | 2.13 | 8.6 | 6.4 | 13.0 | 11.6 | 99.2 | -1.40 | 137 |
| 18-Jun-11 | 14:00:53 | 2.13 | 8.8 | 6.4 | 13.0 | 11.6 | 99.5 | -1.50 | 137 |
| 18-Jun-11 | 15:00:53 | 2.13 | 8.9 | 6.6 | 13.0 | 11.6 | 100.0 | -1.50 | 126 |
| 18-Jun-11 | 16:00:53 | 2.13 | 9.1 | 6.5 | 13.0 | 11.6 | 100.2 | -1.50 | 130 |
| 18-Jun-11 | 17:00:53 | 2.13 | 9.3 | 6.5 | 13.0 | 11.5 | 100.5 | -1.40 | 133 |
| 18-Jun-11 | 18:00:53 | 2.12 | 9.5 | 6.6 | 13.0 | 11.5 | 100.7 | -1.40 | 128 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 18-Jun-11 | 19:00:53 | 2.12 | 9.6 | 6.6 | 13.0 | 11.5 | 100.8 | -1.50 | 127 |
| 18-Jun-11 | 20:00:53 | 2.12 | 9.6 | 6.5 | 13.0 | 11.5 | 100.8 | -1.50 | 135 |
| 18-Jun-11 | 21:00:53 | 2.12 | 9.7 | 6.4 | 13.0 | 11.5 | 100.8 | -1.50 | 137 |
| 18-Jun-11 | 22:00:53 | 2.13 | 9.8 | 6.6 | 13.0 | 11.4 | 100.7 | -1.50 | 130 |
| 18-Jun-11 | 23:00:53 | 2.13 | 9.8 | 6.6 | 13.0 | 11.4 | 100.6 | -1.40 | 131 |
| 19-Jun-11 | 00:00:53 | 2.13 | 9.8 | 6.6 | 13.0 | 11.4 | 100.5 | -1.50 | 129 |
| 19-Jun-11 | 01:00:53 | 2.13 | 9.8 | 6.5 | 13.0 | 11.4 | 100.1 | -1.50 | 132 |
| 19-Jun-11 | 02:00:53 | 2.14 | 9.8 | 6.4 | 13.0 | 11.3 | 99.8 | -1.40 | 136 |
| 19-Jun-11 | 03:00:53 | 2.14 | 9.9 | 6.5 | 13.0 | 11.3 | 99.7 | -1.40 | 133 |
| 19-Jun-11 | 04:00:53 | 2.14 | 9.8 | 6.4 | 13.0 | 11.3 | 99.6 | -1.50 | 137 |
| 19-Jun-11 | 05:00:53 | 2.14 | 9.9 | 6.5 | 13.0 | 11.3 | 99.5 | -1.40 | 136 |
| 19-Jun-11 | 06:00:53 | 2.14 | 9.8 | 6.5 | 13.0 | 11.3 | 99.3 | -1.50 | 135 |
| 19-Jun-11 | 07:00:53 | 2.14 | 9.8 | 6.4 | 13.0 | 11.2 | 99.2 | -1.20 | 139 |
| 19-Jun-11 | 08:00:53 | 2.14 | 9.8 | 6.5 | 13.0 | 11.3 | 99.4 | -1.40 | 136 |
| 19-Jun-11 | 09:00:53 | 2.14 | 9.9 | 6.5 | 13.0 | 11.3 | 99.5 | -1.50 | 137 |
| 19-Jun-11 | 10:00:53 | 2.14 | 9.9 | 6.4 | 13.0 | 11.3 | 99.7 | -1.50 | 138 |
| 19-Jun-11 | 11:00:53 | 2.14 | 10.1 | 6.5 | 13.0 | 11.3 | 99.9 | -1.50 | 139 |
| 19-Jun-11 | 12:00:53 | 2.14 | 10.2 | 6.5 | 13.0 | 11.3 | 100.2 | -1.50 | 140 |
| 19-Jun-11 | 13:00:53 | 2.14 | 10.3 | 6.5 | 13.0 | 11.2 | 100.4 | -1.40 | 143 |
| 19-Jun-11 | 14:00:52 | 2.14 | 10.5 | 6.6 | 13.0 | 11.2 | 100.6 | -1.40 | 135 |
| 19-Jun-11 | 15:00:53 | 2.14 | 10.7 | 6.6 | 13.0 | 11.2 | 101.0 | -1.40 | 135 |
| 19-Jun-11 | 16:00:52 | 2.14 | 10.9 | 6.6 | 13.0 | 11.2 | 101.3 | -1.40 | 134 |
| 19-Jun-11 | 17:00:53 | 2.13 | 11.0 | 6.6 | 13.0 | 11.2 | 101.5 | -1.50 | 137 |
| 19-Jun-11 | 18:00:53 | 2.13 | 11.2 | 6.6 | 13.0 | 11.2 | 101.6 | -1.50 | 135 |
| 19-Jun-11 | 19:00:53 | 2.13 | 11.2 | 6.6 | 13.0 | 11.2 | 101.7 | -1.50 | 135 |
| 19-Jun-11 | 20:00:53 | 2.13 | 11.3 | 6.5 | 13.0 | 11.1 | 101.7 | -1.40 | 136 |
| 19-Jun-11 | 21:00:53 | 2.13 | 11.3 | 6.5 | 13.0 | 11.1 | 101.6 | -1.20 | 135 |
| 19-Jun-11 | 22:00:53 | 2.13 | 11.4 | 6.6 | 13.0 | 11.1 | 101.6 | -1.50 | 129 |
| 19-Jun-11 | 23:00:53 | 2.13 | 11.4 | 6.5 | 13.0 | 11.1 | 101.5 | -1.50 | 134 |
| 20-Jun-11 | 00:00:52 | 2.14 | 11.4 | 6.7 | 13.0 | 11.0 | 101.1 | -1.50 | 126 |
| 20-Jun-11 | 01:00:53 | 2.14 | 11.4 | 6.5 | 13.0 | 11.0 | 100.9 | -1.50 | 134 |
| 20-Jun-11 | 02:00:52 | 2.14 | 11.4 | 6.5 | 13.0 | 11.0 | 100.7 | -1.40 | 133 |
| 20-Jun-11 | 03:00:52 | 2.14 | 11.3 | 6.5 | 13.0 | 11.0 | 100.4 | -1.50 | 133 |
| 20-Jun-11 | 04:00:52 | 2.14 | 11.3 | 6.6 | 13.0 | 11.0 | 100.1 | -1.50 | 130 |
| 20-Jun-11 | 05:00:53 | 2.14 | 11.3 | 6.5 | 13.0 | 11.0 | 100.0 | -1.50 | 133 |
| 20-Jun-11 | 06:00:53 | 2.14 | 11.2 | 6.5 | 13.0 | 11.0 | 100.0 | -1.50 | 132 |
| 20-Jun-11 | 07:00:53 | 2.14 | 11.3 | 6.6 | 13.0 | 11.0 | 100.0 | -1.50 | 131 |
| 20-Jun-11 | 08:00:52 | 2.14 | 11.3 | 6.5 | 13.0 | 10.9 | 99.9 | -1.50 | 132 |
| 20-Jun-11 | 09:00:52 | 2.14 | 11.4 | 6.5 | 13.0 | 11.0 | 100.2 | -1.50 | 131 |
| 20-Jun-11 | 10:00:52 | 2.14 | 11.5 | 6.5 | 13.0 | 11.0 | 100.3 | -1.50 | 131 |
| 20-Jun-11 | 11:00:52 | 2.13 | 11.5 | 6.5 | 13.0 | 11.0 | 100.5 | -1.20 | 131 |
| 20-Jun-11 | 12:00:52 | 2.13 | 11.4 | 6.5 | 13.0 | 11.0 | 100.6 | -1.50 | 134 |
| 20-Jun-11 | 13:00:52 | 2.13 | 11.4 | 6.5 | 13.0 | 11.0 | 101.1 | -1.50 | 133 |
| 20-Jun-11 | 14:00:52 | 2.13 | 11.5 | 6.5 | 13.0 | 11.0 | 101.2 | -1.50 | 133 |
| 20-Jun-11 | 15:00:52 | 2.13 | 11.6 | 6.5 | 13.0 | 11.0 | 101.4 | -1.50 | 134 |
| 20-Jun-11 | 16:00:52 | 2.13 | 11.9 | 6.6 | 13.0 | 11.0 | 102.0 | -1.50 | 131 |
| 20-Jun-11 | 17:00:52 | 2.12 | 12.1 | 6.6 | 13.0 | 11.0 | 102.2 | -1.50 | 130 |
| 20-Jun-11 | 18:00:52 | 2.12 | 12.2 | 6.6 | 13.0 | 11.0 | 102.5 | -1.40 | 131 |
| 20-Jun-11 | 19:00:52 | 2.12 | 12.6 | 6.6 | 13.0 | 11.0 | 103.0 | -1.40 | 132 |
| 20-Jun-11 | 20:00:52 | 2.12 | 11.7 | 6.5 | 13.0 | 11.1 | 102.0 | -1.40 | 136 |
| 20-Jun-11 | 21:00:52 | 2.12 | 11.7 | 6.5 | 13.0 | 11.1 | 101.9 | -1.50 | 134 |
| 20-Jun-11 | 22:00:53 | 2.12 | 11.8 | 6.6 | 13.0 | 11.1 | 102.1 | -1.30 | 130 |
| 20-Jun-11 | 23:00:53 | 2.11 | 11.8 | 6.6 | 13.0 | 11.1 | 102.1 | -1.40 | 130 |
| 21-Jun-11 | 00:00:53 | 2.12 | 11.8 | 6.6 | 13.0 | 11.0 | 101.8 | -1.50 | 132 |
| 21-Jun-11 | 01:00:53 | 2.12 | 11.8 | 6.6 | 13.0 | 11.0 | 101.9 | -1.40 | 135 |
| 21-Jun-11 | 02:00:52 | 2.12 | 11.7 | 6.5 | 13.0 | 11.0 | 101.7 | -1.50 | 132 |
| 21-Jun-11 | 03:00:53 | 2.12 | 11.7 | 6.6 | 13.0 | 11.0 | 101.6 | -1.50 | 131 |
| 21-Jun-11 | 04:00:53 | 2.12 | 11.8 | 6.6 | 13.0 | 11.0 | 101.6 | -1.40 | 134 |
| 21-Jun-11 | 05:00:52 | 2.12 | 11.7 | 6.5 | 13.0 | 11.0 | 101.6 | -1.40 | 140 |
| 21-Jun-11 | 06:00:53 | 2.12 | 11.6 | 6.4 | 13.0 | 11.1 | 101.7 | -1.40 | 142 |
| 21-Jun-11 | 07:00:53 | 2.12 | 11.6 | 6.5 | 13.0 | 11.1 | 101.6 | -1.50 | 136 |
| 21-Jun-11 | 08:00:52 | 2.12 | 11.7 | 6.5 | 13.0 | 11.1 | 101.8 | -1.50 | 139 |
| 21-Jun-11 | 09:00:53 | 2.12 | 11.6 | 6.4 | 13.0 | 11.0 | 101.6 | -1.40 | 142 |
| 21-Jun-11 | 10:00:52 | 2.11 | 12.9 | 6.5 | 13.0 | 10.8 | 102.6 | -1.40 | 139 |
| 21-Jun-11 | 11:00:52 | 2.11 | 12.9 | 6.5 | 13.0 | 10.8 | 102.6 | -1.50 | 145 |
| 21-Jun-11 | 12:00:52 | 2.11 | 12.9 | 6.5 | 13.0 | 10.8 | 102.7 | -1.50 | 146 |
| 21-Jun-11 | 13:00:52 | 2.11 | 12.9 | 6.5 | 13.0 | 10.9 | 102.9 | -1.50 | 146 |
| 21-Jun-11 | 14:00:52 | 2.11 | 13.3 | 6.5 | 13.0 | 10.8 | 103.3 | -1.40 | 144 |
| 21-Jun-11 | 15:00:52 | 2.11 | 13.4 | 6.5 | 13.0 | 10.8 | 103.5 | -1.50 | 144 |
| 21-Jun-11 | 16:00:52 | 2.11 | 13.6 | 6.5 | 13.0 | 10.8 | 103.7 | -1.50 | 146 |
| 21-Jun-11 | 17:00:52 | 2.11 | 13.7 | 6.5 | 13.0 | 10.8 | 103.8 | -1.50 | 138 |
| 21-Jun-11 | 18:00:52 | 2.11 | 13.7 | 6.5 | 13.0 | 10.8 | 103.8 | -1.50 | 135 |
| 21-Jun-11 | 19:00:52 | 2.10 | 13.8 | 6.5 | 13.0 | 10.7 | 103.7 | -1.40 | 133 |
| 21-Jun-11 | 20:00:52 | 2.11 | 13.9 | 6.5 | 13.0 | 10.7 | 103.6 | -1.40 | 134 |
| 21-Jun-11 | 21:00:52 | 2.11 | 13.9 | 6.5 | 13.0 | 10.7 | 103.5 | -1.40 | 134 |
| 21-Jun-11 | 22:00:52 | 2.12 | 13.8 | 6.7 | 13.0 | 10.7 | 103.2 | -1.50 | 124 |
| 21-Jun-11 | 23:00:52 | 2.12 | 13.8 | 6.7 | 13.0 | 10.7 | 103.2 | -1.50 | 124 |
| 22-Jun-11 | 00:00:52 | 2.12 | 13.8 | 6.7 | 13.0 | 10.7 | 102.8 | -1.50 | 124 |
| 22-Jun-11 | 01:00:52 | 2.12 | 13.8 | 6.7 | 13.0 | 10.6 | 102.5 | -1.50 | 124 |
| 22-Jun-11 | 02:00:52 | 2.12 | 13.8 | 6.7 | 13.0 | 10.6 | 102.2 | -1.50 | 124 |
| 22-Jun-11 | 03:00:52 | 2.12 | 13.7 | 6.7 | 13.0 | 10.6 | 101.8 | -1.50 | 123 |
| 22-Jun-11 | 04:00:52 | 2.13 | 13.6 | 6.7 | 13.0 | 10.5 | 101.3 | -1.40 | 125 |
| 22-Jun-11 | 05:00:52 | 2.12 | 13.6 | 6.7 | 13.0 | 10.5 | 101.1 | -1.50 | 125 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 22-Jun-11 | 06:00:52 | 2.12 | 13.5 | 6.7 | 13.0 | 10.5 | 100.8 | -1.50 | 127 |
| 22-Jun-11 | 07:00:52 | 2.12 | 13.5 | 6.7 | 13.0 | 10.5 | 100.5 | -1.50 | 127 |
| 22-Jun-11 | 08:00:52 | 2.12 | 13.4 | 6.7 | 13.0 | 10.5 | 100.5 | -1.50 | 127 |
| 22-Jun-11 | 09:00:52 | 2.12 | 13.5 | 6.7 | 13.0 | 10.5 | 100.5 | -1.50 | 127 |
| 22-Jun-11 | 10:00:52 | 2.12 | 13.5 | 6.7 | 13.0 | 10.5 | 100.5 | -1.50 | 126 |
| 22-Jun-11 | 11:00:52 | 2.12 | 13.6 | 6.7 | 13.0 | 10.5 | 100.6 | -1.50 | 127 |
| 22-Jun-11 | 12:00:52 | 2.12 | 13.8 | 6.7 | 13.0 | 10.4 | 100.8 | -1.50 | 125 |
| 22-Jun-11 | 13:00:52 | 2.11 | 13.9 | 6.7 | 13.0 | 10.4 | 101.0 | -1.50 | 127 |
| 22-Jun-11 | 14:00:52 | 2.11 | 14.1 | 6.7 | 13.0 | 10.4 | 101.1 | -1.50 | 131 |
| 22-Jun-11 | 15:00:52 | 2.11 | 14.2 | 6.7 | 13.0 | 10.4 | 101.4 | -1.40 | 133 |
| 22-Jun-11 | 16:00:52 | 2.10 | 14.4 | 6.7 | 13.0 | 10.4 | 101.5 | -1.50 | 134 |
| 22-Jun-11 | 17:00:52 | 2.10 | 14.5 | 6.7 | 13.0 | 10.4 | 101.6 | -1.50 | 133 |
| 22-Jun-11 | 18:00:52 | 2.10 | 14.6 | 6.7 | 13.0 | 10.4 | 101.7 | -1.40 | 134 |
| 22-Jun-11 | 19:00:52 | 2.10 | 14.6 | 6.7 | 13.0 | 10.3 | 101.7 | -1.50 | 135 |
| 22-Jun-11 | 20:00:52 | 2.10 | 14.7 | 6.7 | 13.0 | 10.3 | 101.7 | -1.50 | 135 |
| 22-Jun-11 | 21:00:52 | 2.10 | 14.7 | 6.7 | 13.0 | 10.3 | 101.4 | -1.50 | 134 |
| 22-Jun-11 | 22:00:52 | 2.10 | 14.7 | 6.7 | 13.0 | 10.3 | 101.3 | -1.40 | 133 |
| 22-Jun-11 | 23:00:52 | 2.10 | 14.6 | 6.7 | 13.0 | 10.3 | 101.0 | -1.50 | 132 |
| 23-Jun-11 | 00:00:52 | 2.11 | 14.6 | 6.7 | 13.0 | 10.2 | 100.7 | -1.50 | 134 |
| 23-Jun-11 | 01:00:52 | 2.11 | 14.6 | 6.7 | 13.0 | 10.2 | 100.2 | -1.20 | 133 |
| 23-Jun-11 | 02:00:52 | 2.11 | 14.5 | 6.7 | 13.0 | 10.2 | 99.9 | -1.50 | 133 |
| 23-Jun-11 | 03:00:52 | 2.11 | 14.4 | 6.7 | 13.0 | 10.2 | 99.5 | -1.40 | 134 |
| 23-Jun-11 | 04:00:52 | 2.11 | 14.4 | 6.7 | 13.0 | 10.1 | 99.1 | -1.50 | 133 |
| 23-Jun-11 | 05:00:52 | 2.11 | 14.3 | 6.7 | 13.0 | 10.1 | 99.0 | -1.50 | 133 |
| 23-Jun-11 | 06:00:52 | 2.12 | 14.3 | 6.7 | 13.0 | 10.1 | 98.6 | -1.50 | 135 |
| 23-Jun-11 | 07:00:52 | 2.12 | 14.3 | 6.7 | 13.0 | 10.1 | 98.6 | -1.40 | 134 |
| 23-Jun-11 | 08:00:52 | 2.12 | 14.3 | 6.7 | 13.0 | 10.1 | 98.6 | -1.50 | 127 |
| 23-Jun-11 | 09:00:52 | 2.12 | 14.3 | 6.7 | 13.0 | 10.1 | 98.8 | -1.50 | 125 |
| 23-Jun-11 | 10:00:52 | 2.12 | 14.4 | 6.7 | 13.0 | 10.1 | 98.9 | -1.50 | 125 |
| 23-Jun-11 | 11:00:52 | 2.11 | 14.5 | 6.7 | 13.0 | 10.1 | 99.1 | -1.50 | 124 |
| 23-Jun-11 | 12:00:52 | 2.11 | 14.6 | 6.7 | 13.0 | 10.1 | 99.2 | -1.50 | 123 |
| 23-Jun-11 | 13:00:52 | 2.11 | 14.7 | 6.7 | 13.0 | 10.1 | 99.4 | -1.40 | 123 |
| 23-Jun-11 | 14:00:52 | 2.11 | 14.8 | 6.7 | 13.0 | 10.1 | 99.6 | -1.50 | 123 |
| 23-Jun-11 | 15:00:52 | 2.11 | 14.9 | 6.7 | 13.0 | 10.1 | 99.7 | -1.40 | 124 |
| 23-Jun-11 | 16:00:52 | 2.11 | 15.0 | 6.7 | 13.0 | 10.1 | 99.8 | -1.50 | 125 |
| 23-Jun-11 | 17:00:52 | 2.11 | 15.0 | 6.7 | 13.0 | 10.1 | 99.8 | -1.40 | 125 |
| 23-Jun-11 | 18:00:52 | 2.11 | 15.1 | 6.7 | 13.0 | 10.0 | 99.9 | -1.50 | 123 |
| 23-Jun-11 | 19:00:52 | 2.11 | 15.2 | 6.7 | 13.0 | 10.0 | 99.8 | -1.50 | 122 |
| 23-Jun-11 | 20:00:52 | 2.11 | 15.1 | 6.7 | 13.0 | 10.0 | 99.6 | -1.50 | 122 |
| 23-Jun-11 | 21:00:52 | 2.11 | 15.1 | 6.8 | 13.0 | 10.0 | 99.5 | -1.50 | 122 |
| 23-Jun-11 | 22:00:52 | 2.12 | 15.1 | 6.8 | 13.0 | 10.0 | 99.2 | -1.50 | 123 |
| 23-Jun-11 | 23:00:52 | 2.12 | 15.1 | 6.8 | 13.0 | 10.0 | 99.0 | -1.50 | 119 |
| 24-Jun-11 | 00:00:52 | 2.13 | 15.0 | 6.8 | 13.0 | 9.9 | 98.6 | -1.40 | 120 |
| 24-Jun-11 | 01:00:52 | 2.13 | 15.0 | 6.7 | 13.0 | 9.9 | 98.4 | -1.40 | 121 |
| 24-Jun-11 | 02:00:52 | 2.14 | 15.0 | 6.7 | 13.0 | 9.9 | 98.2 | -1.30 | 121 |
| 24-Jun-11 | 03:00:52 | 2.14 | 14.9 | 6.7 | 13.0 | 9.9 | 97.7 | -1.50 | 122 |
| 24-Jun-11 | 04:00:52 | 2.13 | 14.9 | 6.7 | 13.0 | 9.9 | 97.4 | -1.50 | 122 |
| 24-Jun-11 | 05:00:52 | 2.13 | 14.8 | 6.7 | 13.0 | 9.9 | 97.3 | -1.50 | 126 |
| 24-Jun-11 | 06:00:52 | 2.13 | 14.8 | 6.7 | 13.0 | 9.8 | 97.0 | -1.40 | 124 |
| 24-Jun-11 | 07:00:52 | 2.13 | 14.7 | 6.7 | 13.0 | 9.8 | 96.8 | -1.50 | 123 |
| 24-Jun-11 | 08:00:52 | 2.13 | 14.7 | 6.7 | 13.0 | 9.8 | 96.8 | -1.50 | 123 |
| 24-Jun-11 | 09:00:52 | 2.13 | 14.8 | 6.7 | 13.0 | 9.8 | 97.0 | -1.50 | 122 |
| 24-Jun-11 | 10:00:52 | 2.12 | 14.8 | 6.7 | 13.0 | 9.9 | 97.4 | -1.30 | 124 |
| 24-Jun-11 | 11:00:52 | 2.12 | 15.0 | 6.7 | 13.0 | 9.9 | 97.8 | -1.50 | 124 |
| 24-Jun-11 | 12:00:52 | 2.11 | 15.1 | 6.7 | 13.0 | 9.9 | 97.9 | -1.50 | 123 |
| 24-Jun-11 | 13:00:52 | 2.11 | 15.2 | 6.7 | 13.0 | 9.9 | 98.4 | -1.50 | 123 |
| 24-Jun-11 | 14:00:52 | 2.10 | 15.3 | 6.8 | 13.0 | 9.9 | 98.5 | -1.50 | 122 |
| 24-Jun-11 | 15:00:52 | 2.10 | 15.5 | 6.8 | 13.0 | 9.9 | 98.7 | -1.50 | 126 |
| 24-Jun-11 | 16:00:52 | 2.10 | 15.6 | 6.8 | 13.0 | 9.9 | 98.9 | -1.50 | 127 |
| 24-Jun-11 | 17:00:52 | 2.09 | 15.6 | 6.8 | 13.0 | 9.9 | 99.4 | -1.40 | 129 |
| 24-Jun-11 | 18:00:52 | 2.09 | 15.8 | 6.7 | 13.0 | 9.9 | 99.7 | -1.50 | 130 |
| 24-Jun-11 | 19:00:52 | 2.09 | 15.9 | 6.8 | 13.0 | 9.9 | 99.9 | -1.40 | 127 |
| 24-Jun-11 | 20:00:52 | 2.08 | 15.8 | 6.8 | 13.0 | 9.9 | 100.0 | -1.40 | 131 |
| 24-Jun-11 | 21:00:52 | 2.08 | 15.9 | 6.8 | 13.0 | 9.9 | 100.2 | -1.50 | 131 |
| 24-Jun-11 | 22:00:52 | 2.08 | 15.9 | 6.8 | 13.0 | 9.9 | 100.3 | -1.40 | 129 |
| 24-Jun-11 | 23:00:52 | 2.08 | 15.6 | 6.7 | 13.0 | 9.9 | 99.7 | -1.50 | 130 |
| 25-Jun-11 | 00:00:52 | 2.07 | 15.6 | 6.8 | 13.0 | 9.9 | 100.0 | -1.30 | 128 |
| 25-Jun-11 | 01:00:52 | 2.07 | 15.7 | 6.8 | 13.0 | 9.9 | 99.8 | -1.40 | 127 |
| 25-Jun-11 | 02:00:52 | 2.07 | 15.7 | 6.7 | 13.0 | 9.9 | 99.1 | -1.50 | 124 |
| 25-Jun-11 | 03:00:52 | 2.06 | 15.5 | 6.7 | 13.0 | 9.9 | 99.0 | -1.50 | 124 |
| 25-Jun-11 | 04:00:52 | 2.06 | 15.5 | 6.7 | 13.0 | 9.9 | 98.9 | -1.50 | 125 |
| 25-Jun-11 | 05:00:52 | 2.06 | 15.6 | 6.7 | 13.0 | 9.8 | 98.7 | -1.40 | 125 |
| 25-Jun-11 | 06:00:52 | 2.05 | 15.6 | 6.7 | 14.0 | 9.7 | 97.6 | -1.50 | 125 |
| 25-Jun-11 | 07:00:52 | 2.05 | 15.6 | 6.7 | 14.0 | 9.7 | 97.5 | -1.50 | 124 |
| 25-Jun-11 | 08:00:52 | 2.04 | 15.4 | 6.7 | 14.0 | 9.6 | 96.4 | -1.50 | 122 |
| 25-Jun-11 | 09:00:52 | 2.04 | 15.4 | 6.7 | 13.0 | 9.9 | 98.6 | -1.50 | 122 |
| 25-Jun-11 | 10:00:52 | 2.04 | 15.6 | 6.7 | 14.0 | 9.8 | 98.4 | -1.50 | 123 |
| 25-Jun-11 | 11:00:52 | 2.03 | 15.6 | 6.7 | 13.0 | 9.8 | 98.1 | -1.50 | 123 |
| 25-Jun-11 | 12:00:52 | 2.03 | 15.7 | 6.7 | 14.0 | 9.8 | 98.6 | -1.50 | 121 |
| 25-Jun-11 | 13:00:52 | 2.04 | 15.6 | 6.7 | 14.0 | 9.8 | 98.5 | -1.50 | 124 |
| 25-Jun-11 | 14:00:52 | 2.04 | 15.6 | 6.7 | 14.0 | 9.8 | 98.4 | -1.50 | 123 |
| 25-Jun-11 | 15:00:52 | 2.04 | 15.6 | 6.7 | 13.0 | 9.8 | 98.3 | -1.50 | 122 |
| 25-Jun-11 | 16:00:52 | 2.04 | 15.6 | 6.7 | 13.0 | 9.8 | 98.4 | -1.50 | 123 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 25-Jun-11 | 17:00:52 | 2.04 | 15.6 | 6.7 | 13.0 | 9.8 | 98.3 | -1.50 | 124 |
| 25-Jun-11 | 18:00:52 | 2.04 | 15.5 | 6.6 | 14.0 | 9.8 | 98.2 | -1.50 | 125 |
| 25-Jun-11 | 19:00:52 | 2.05 | 15.5 | 6.7 | 13.0 | 9.8 | 98.0 | -1.50 | 124 |
| 25-Jun-11 | 20:00:52 | 2.05 | 15.4 | 6.7 | 13.0 | 9.8 | 97.6 | -1.30 | 122 |
| 25-Jun-11 | 21:00:52 | 2.06 | 15.2 | 6.7 | 14.0 | 9.8 | 97.1 | -1.40 | 122 |
| 25-Jun-11 | 22:00:52 | 2.06 | 15.0 | 6.7 | 14.0 | 9.8 | 96.8 | -1.50 | 123 |
| 25-Jun-11 | 23:00:52 | 2.07 | 14.9 | 6.7 | 14.0 | 9.7 | 96.4 | -1.50 | 123 |
| 26-Jun-11 | 00:00:52 | 2.07 | 14.7 | 6.6 | 14.0 | 9.7 | 95.9 | -1.50 | 124 |
| 26-Jun-11 | 01:00:52 | 2.08 | 14.6 | 6.6 | 14.0 | 9.7 | 95.5 | -1.50 | 124 |
| 26-Jun-11 | 02:00:52 | 2.08 | 14.5 | 6.7 | 14.0 | 9.7 | 95.0 | -1.50 | 121 |
| 26-Jun-11 | 03:00:52 | 2.08 | 14.2 | 6.7 | 14.0 | 9.7 | 94.6 | -1.30 | 121 |
| 26-Jun-11 | 04:00:52 | 2.09 | 14.2 | 6.7 | 14.0 | 9.7 | 94.3 | -1.50 | 121 |
| 26-Jun-11 | 05:00:52 | 2.09 | 14.1 | 6.7 | 14.0 | 9.7 | 94.0 | -1.50 | 121 |
| 26-Jun-11 | 06:00:52 | 2.09 | 13.9 | 6.6 | 14.0 | 9.7 | 93.7 | -1.40 | 121 |
| 26-Jun-11 | 07:00:52 | 2.09 | 13.8 | 6.6 | 14.0 | 9.7 | 93.7 | -1.40 | 121 |
| 26-Jun-11 | 08:00:53 | 2.09 | 13.6 | 6.7 | 14.0 | 9.7 | 93.6 | -1.50 | 121 |
| 26-Jun-11 | 09:00:53 | 2.08 | 13.5 | 6.7 | 14.0 | 9.8 | 93.6 | -1.50 | 120 |
| 26-Jun-11 | 10:00:52 | 2.08 | 13.4 | 6.7 | 14.0 | 9.8 | 93.7 | -1.40 | 119 |
| 26-Jun-11 | 11:00:53 | 2.08 | 13.4 | 6.7 | 14.0 | 9.8 | 93.8 | -1.40 | 118 |
| 26-Jun-11 | 12:00:52 | 2.08 | 13.4 | 6.7 | 14.0 | 9.8 | 94.0 | -1.40 | 119 |
| 26-Jun-11 | 13:00:53 | 2.08 | 13.4 | 6.7 | 14.0 | 9.9 | 94.3 | -1.50 | 119 |
| 26-Jun-11 | 14:00:52 | 2.08 | 13.4 | 6.7 | 14.0 | 9.9 | 94.5 | -1.50 | 119 |
| 26-Jun-11 | 15:00:52 | 2.08 | 13.4 | 6.7 | 14.0 | 9.9 | 94.7 | -1.40 | 120 |
| 26-Jun-11 | 16:00:52 | 2.08 | 13.4 | 6.7 | 14.0 | 9.9 | 94.8 | -1.40 | 126 |
| 26-Jun-11 | 17:00:53 | 2.08 | 13.3 | 6.7 | 13.0 | 9.9 | 94.9 | -1.40 | 125 |
| 26-Jun-11 | 18:00:52 | 2.07 | 13.3 | 6.7 | 13.0 | 10.0 | 95.0 | -1.30 | 125 |
| 26-Jun-11 | 19:00:53 | 2.07 | 13.3 | 6.7 | 13.0 | 10.0 | 95.0 | -1.50 | 126 |
| 26-Jun-11 | 20:00:52 | 2.07 | 13.2 | 6.7 | 13.0 | 10.0 | 95.0 | -1.40 | 124 |
| 26-Jun-11 | 21:00:52 | 2.07 | 13.2 | 6.7 | 13.0 | 10.0 | 94.9 | -1.40 | 126 |
| 26-Jun-11 | 22:00:53 | 2.07 | 13.0 | 6.7 | 13.0 | 10.0 | 94.9 | -1.50 | 125 |
| 26-Jun-11 | 23:00:52 | 2.08 | 13.0 | 6.7 | 13.0 | 10.0 | 94.8 | -1.40 | 125 |
| 27-Jun-11 | 00:00:53 | 2.08 | 12.9 | 6.7 | 13.0 | 10.0 | 94.5 | -1.40 | 124 |
| 27-Jun-11 | 01:00:52 | 2.07 | 12.8 | 6.7 | 13.0 | 10.0 | 94.6 | -1.50 | 126 |
| 27-Jun-11 | 02:00:53 | 2.07 | 12.7 | 6.7 | 13.0 | 10.0 | 94.1 | -1.50 | 127 |
| 27-Jun-11 | 03:00:53 | 2.07 | 12.6 | 6.7 | 14.0 | 10.0 | 94.0 | -1.50 | 128 |
| 27-Jun-11 | 04:00:53 | 2.07 | 12.6 | 6.7 | 14.0 | 10.0 | 93.6 | -1.40 | 126 |
| 27-Jun-11 | 05:00:53 | 2.06 | 12.5 | 6.7 | 14.0 | 10.0 | 93.4 | -1.40 | 125 |
| 27-Jun-11 | 06:00:53 | 2.06 | 12.4 | 6.6 | 14.0 | 10.0 | 93.3 | -1.50 | 130 |
| 27-Jun-11 | 07:00:53 | 2.06 | 12.4 | 6.7 | 14.0 | 10.0 | 93.2 | -1.40 | 125 |
| 27-Jun-11 | 08:00:52 | 2.06 | 12.3 | 6.7 | 14.0 | 10.0 | 93.2 | -1.50 | 127 |
| 27-Jun-11 | 09:00:53 | 2.05 | 12.3 | 6.7 | 14.0 | 10.0 | 93.2 | -1.40 | 125 |
| 27-Jun-11 | 10:00:53 | 2.05 | 12.2 | 6.7 | 13.0 | 10.0 | 93.3 | -1.40 | 122 |
| 27-Jun-11 | 11:00:53 | 2.04 | 12.2 | 6.7 | 13.0 | 10.0 | 93.5 | -1.40 | 122 |
| 27-Jun-11 | 12:00:53 | 2.03 | 12.2 | 6.7 | 13.0 | 10.1 | 93.7 | -1.40 | 119 |
| 27-Jun-11 | 13:00:53 | 2.03 | 12.3 | 6.7 | 13.0 | 10.1 | 94.0 | -1.40 | 120 |
| 27-Jun-11 | 14:00:53 | 2.02 | 12.3 | 6.7 | 13.0 | 10.1 | 94.3 | -1.30 | 122 |
| 27-Jun-11 | 15:00:53 | 2.02 | 12.4 | 6.7 | 13.0 | 10.1 | 94.5 | -1.40 | 119 |
| 27-Jun-11 | 16:00:53 | 2.01 | 12.4 | 6.7 | 13.0 | 10.1 | 94.7 | -1.50 | 120 |
| 27-Jun-11 | 17:00:52 | 2.01 | 12.3 | 6.7 | 13.0 | 10.2 | 94.9 | -1.40 | 122 |
| 27-Jun-11 | 18:00:53 | 2.01 | 12.4 | 6.7 | 13.0 | 10.1 | 94.9 | -1.30 | 120 |
| 27-Jun-11 | 19:00:52 | 2.00 | 12.3 | 6.7 | 13.0 | 10.2 | 94.9 | -1.40 | 119 |
| 27-Jun-11 | 20:00:53 | 1.99 | 12.3 | 6.7 | 13.0 | 10.2 | 95.0 | -1.40 | 120 |
| 27-Jun-11 | 21:00:53 | 1.99 | 12.3 | 6.7 | 13.0 | 10.2 | 94.9 | -1.30 | 119 |
| 27-Jun-11 | 22:00:52 | 1.98 | 12.3 | 6.8 | 13.0 | 10.2 | 94.7 | -1.40 | 119 |
| 27-Jun-11 | 23:00:53 | 1.98 | 12.2 | 6.8 | 13.0 | 10.2 | 94.7 | -1.10 | 119 |
| 28-Jun-11 | 00:00:53 | 1.97 | 12.2 | 6.7 | 13.0 | 10.1 | 94.5 | -1.30 | 121 |
| 28-Jun-11 | 01:00:53 | 1.96 | 12.2 | 6.7 | 13.0 | 10.1 | 94.2 | -1.50 | 121 |
| 28-Jun-11 | 02:00:53 | 1.95 | 12.1 | 6.7 | 13.0 | 10.1 | 94.0 | -1.50 | 120 |
| 28-Jun-11 | 03:00:53 | 1.95 | 12.0 | 6.7 | 13.0 | 10.1 | 93.9 | -1.40 | 121 |
| 28-Jun-11 | 04:00:53 | 1.94 | 12.0 | 6.7 | 13.0 | 10.1 | 93.7 | -1.40 | 121 |
| 28-Jun-11 | 05:00:53 | 1.93 | 11.9 | 6.7 | 13.0 | 10.1 | 93.5 | -1.40 | 121 |
| 28-Jun-11 | 06:00:53 | 1.92 | 11.8 | 6.6 | 13.0 | 10.1 | 93.4 | -1.40 | 122 |
| 28-Jun-11 | 07:00:53 | 1.91 | 11.8 | 6.7 | 13.0 | 10.1 | 93.2 | -1.40 | 122 |
| 28-Jun-11 | 08:00:53 | 1.90 | 11.7 | 6.6 | 13.0 | 10.1 | 93.1 | -1.50 | 122 |
| 28-Jun-11 | 09:00:53 | 1.90 | 11.7 | 6.6 | 13.0 | 10.1 | 93.1 | -1.50 | 122 |
| 28-Jun-11 | 10:00:53 | 1.90 | 11.5 | 6.7 | 14.0 | 10.1 | 93.1 | -1.50 | 121 |
| 28-Jun-11 | 11:00:53 | 1.90 | 11.6 | 6.7 | 13.0 | 10.2 | 93.3 | -1.40 | 121 |
| 28-Jun-11 | 12:00:53 | 1.89 | 11.6 | 6.7 | 13.0 | 10.2 | 93.4 | -1.50 | 121 |
| 28-Jun-11 | 13:00:53 | 1.88 | 11.8 | 6.7 | 13.0 | 10.2 | 94.1 | -1.30 | 121 |
| 28-Jun-11 | 14:00:53 | 1.88 | 11.8 | 6.6 | 13.0 | 10.2 | 94.1 | -1.40 | 124 |
| 28-Jun-11 | 15:00:53 | 1.89 | 11.7 | 6.6 | 13.0 | 10.2 | 94.2 | -1.30 | 123 |
| 28-Jun-11 | 16:00:52 | 1.89 | 11.7 | 6.7 | 13.0 | 10.3 | 94.5 | -1.40 | 121 |
| 28-Jun-11 | 17:00:53 | 1.89 | 11.7 | 6.7 | 13.0 | 10.2 | 94.4 | -1.40 | 119 |
| 28-Jun-11 | 18:00:53 | 1.88 | 11.8 | 6.7 | 13.0 | 10.2 | 94.5 | -1.40 | 121 |
| 28-Jun-11 | 19:00:53 | 1.88 | 11.8 | 6.7 | 13.0 | 10.3 | 94.7 | -1.40 | 120 |
| 28-Jun-11 | 20:00:53 | 1.88 | 11.8 | 6.8 | 13.0 | 10.2 | 94.5 | -1.40 | 118 |
| 28-Jun-11 | 21:00:53 | 1.87 | 11.8 | 6.7 | 13.0 | 10.2 | 94.5 | -1.30 | 119 |
| 28-Jun-11 | 22:00:53 | 1.87 | 11.8 | 6.7 | 13.0 | 10.3 | 94.6 | -1.50 | 120 |
| 28-Jun-11 | 23:00:53 | 1.87 | 11.7 | 6.7 | 13.0 | 10.2 | 94.5 | -1.40 | 122 |
| 29-Jun-11 | 00:00:53 | 1.87 | 11.7 | 6.7 | 13.0 | 10.2 | 94.2 | -1.40 | 117 |
| 29-Jun-11 | 01:00:53 | 1.86 | 11.7 | 6.7 | 13.0 | 10.2 | 94.0 | -1.40 | 119 |
| 29-Jun-11 | 02:00:53 | 1.86 | 11.7 | 6.7 | 13.0 | 10.2 | 93.8 | -1.40 | 119 |
| 29-Jun-11 | 03:00:53 | 1.86 | 11.7 | 6.7 | 13.0 | 10.2 | 93.7 | -1.30 | 118 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 29-Jun-11 | 04:00:53 | 1.85 | 11.6 | 6.7 | 13.0 | 10.2 | 93.5 | -1.30 | 118 |
| 29-Jun-11 | 05:00:53 | 1.85 | 11.6 | 6.7 | 13.0 | 10.2 | 93.5 | -1.30 | 118 |
| 29-Jun-11 | 06:00:53 | 1.85 | 11.6 | 6.7 | 13.0 | 10.2 | 93.4 | -1.30 | 118 |
| 29-Jun-11 | 07:00:53 | 1.85 | 11.6 | 6.7 | 13.0 | 10.1 | 93.1 | -1.40 | 118 |
| 29-Jun-11 | 08:00:53 | 1.84 | 11.6 | 6.7 | 13.0 | 10.2 | 93.3 | -1.40 | 118 |
| 29-Jun-11 | 09:00:53 | 1.85 | 11.6 | 6.7 | 13.0 | 10.2 | 93.3 | -1.40 | 118 |
| 29-Jun-11 | 10:00:53 | 1.84 | 11.6 | 6.7 | 13.0 | 10.2 | 93.6 | -1.40 | 121 |
| 29-Jun-11 | 11:00:53 | 1.83 | 11.6 | 6.7 | 13.0 | 10.2 | 93.5 | -1.40 | 120 |
| 29-Jun-11 | 12:00:53 | 1.83 | 11.6 | 6.7 | 13.0 | 10.2 | 93.6 | -1.30 | 120 |
| 29-Jun-11 | 13:00:53 | 1.82 | 11.7 | 6.7 | 13.0 | 10.2 | 93.9 | -1.40 | 120 |
| 29-Jun-11 | 14:00:53 | 1.82 | 11.7 | 6.7 | 13.0 | 10.2 | 94.1 | -1.40 | 120 |
| 29-Jun-11 | 15:00:53 | 1.81 | 11.8 | 6.7 | 13.0 | 10.2 | 94.3 | -1.40 | 122 |
| 29-Jun-11 | 16:00:53 | 1.81 | 11.8 | 6.7 | 13.0 | 10.2 | 94.4 | -1.30 | 121 |
| 29-Jun-11 | 17:00:53 | 1.81 | 11.8 | 6.7 | 13.0 | 10.2 | 94.3 | -1.40 | 121 |
| 29-Jun-11 | 18:00:52 | 1.81 | 11.8 | 6.7 | 13.0 | 10.2 | 94.2 | -1.50 | 122 |
| 29-Jun-11 | 19:00:53 | 1.81 | 11.8 | 6.8 | 13.0 | 10.2 | 94.3 | -1.30 | 118 |
| 29-Jun-11 | 20:00:53 | 1.81 | 11.9 | 6.8 | 13.0 | 10.2 | 94.4 | -1.30 | 121 |
| 29-Jun-11 | 21:00:53 | 1.82 | 11.9 | 6.7 | 13.0 | 10.2 | 94.3 | -1.40 | 125 |
| 29-Jun-11 | 22:00:52 | 1.82 | 11.9 | 6.7 | 13.0 | 10.2 | 94.3 | -1.40 | 125 |
| 29-Jun-11 | 23:00:53 | 1.83 | 11.9 | 6.7 | 13.0 | 10.2 | 94.3 | -1.30 | 127 |
| 30-Jun-11 | 00:00:53 | 1.83 | 11.9 | 6.7 | 13.0 | 10.2 | 94.2 | -1.30 | 126 |
| 30-Jun-11 | 01:00:53 | 1.83 | 11.9 | 6.7 | 13.0 | 10.2 | 94.1 | -1.30 | 125 |
| 30-Jun-11 | 02:00:53 | 1.84 | 11.9 | 6.6 | 13.0 | 10.2 | 94.1 | -1.40 | 128 |
| 30-Jun-11 | 03:00:53 | 1.85 | 11.9 | 6.6 | 13.0 | 10.2 | 94.0 | -1.40 | 128 |
| 30-Jun-11 | 04:00:53 | 1.86 | 11.8 | 6.7 | 13.0 | 10.1 | 93.7 | -1.40 | 125 |
| 30-Jun-11 | 05:00:53 | 1.87 | 11.9 | 6.6 | 13.0 | 10.1 | 93.7 | -1.40 | 126 |
| 30-Jun-11 | 06:00:53 | 1.87 | 11.9 | 6.6 | 13.0 | 10.1 | 93.7 | -1.40 | 125 |
| 30-Jun-11 | 07:00:53 | 1.87 | 11.9 | 6.6 | 13.0 | 10.1 | 93.6 | -1.40 | 126 |
| 30-Jun-11 | 08:00:53 | 1.88 | 11.9 | 6.6 | 13.0 | 10.1 | 93.7 | -1.40 | 125 |
| 30-Jun-11 | 09:00:53 | 1.89 | 11.9 | 6.6 | 13.0 | 10.1 | 93.7 | -1.30 | 124 |
| 30-Jun-11 | 10:00:53 | 1.89 | 12.0 | 6.7 | 13.0 | 10.1 | 93.9 | -1.30 | 124 |
| 30-Jun-11 | 11:00:53 | 1.89 | 12.1 | 6.7 | 13.0 | 10.1 | 94.2 | -1.40 | 123 |
| 30-Jun-11 | 12:00:53 | 1.90 | 12.2 | 6.7 | 13.0 | 10.1 | 94.6 | -1.40 | 123 |
| 30-Jun-11 | 13:00:53 | 1.90 | 12.4 | 6.7 | 13.0 | 10.1 | 94.9 | -1.30 | 124 |
| 30-Jun-11 | 14:00:52 | 1.91 | 12.6 | 6.7 | 13.0 | 10.1 | 95.4 | -1.30 | 123 |
| 30-Jun-11 | 15:00:53 | 1.91 | 12.5 | 6.8 | 13.0 | 10.1 | 95.1 | -1.40 | 122 |
| 30-Jun-11 | 16:00:53 | 1.91 | 12.7 | 6.8 | 13.0 | 10.1 | 95.6 | -1.40 | 120 |
| 30-Jun-11 | 17:00:53 | 1.91 | 12.6 | 6.7 | 13.0 | 10.2 | 95.6 | -1.30 | 122 |
| 30-Jun-11 | 18:00:52 | 1.91 | 13.0 | 6.7 | 13.0 | 10.2 | 96.4 | -1.40 | 117 |
| 30-Jun-11 | 19:00:53 | 1.91 | 13.1 | 6.7 | 13.0 | 10.2 | 96.7 | -1.40 | 119 |
| 30-Jun-11 | 20:00:52 | 1.91 | 13.2 | 6.7 | 13.0 | 10.2 | 97.1 | -1.50 | 119 |
| 30-Jun-11 | 21:00:52 | 1.92 | 13.3 | 6.7 | 13.0 | 10.2 | 97.0 | -1.50 | 118 |
| 30-Jun-11 | 22:00:53 | 1.92 | 13.3 | 6.7 | 13.0 | 10.2 | 96.9 | -1.40 | 119 |
| 30-Jun-11 | 23:00:52 | 1.92 | 13.2 | 6.7 | 13.0 | 10.1 | 96.5 | -1.40 | 117 |
| 1-Jul-11 | 00:00:52 | 1.92 | 13.2 | 6.7 | 13.0 | 10.1 | 96.3 | -1.40 | 118 |
| 1-Jul-11 | 01:00:52 | 1.93 | 13.2 | 6.7 | 13.0 | 10.1 | 96.1 | -1.40 | 119 |
| 1-Jul-11 | 02:00:52 | 1.93 | 13.1 | 6.7 | 13.0 | 10.1 | 95.9 | -1.40 | 118 |
| 1-Jul-11 | 03:00:52 | 1.93 | 13.0 | 6.7 | 13.0 | 10.1 | 95.6 | -1.40 | 119 |
| 1-Jul-11 | 04:00:53 | 1.93 | 13.0 | 6.7 | 13.0 | 10.0 | 95.2 | -1.50 | 118 |
| 1-Jul-11 | 05:00:52 | 1.93 | 12.9 | 6.6 | 13.0 | 10.0 | 95.0 | -1.40 | 119 |
| 1-Jul-11 | 06:00:53 | 1.93 | 12.8 | 6.6 | 13.0 | 10.0 | 94.7 | -1.30 | 120 |
| 1-Jul-11 | 07:00:52 | 1.93 | 12.7 | 6.6 | 13.0 | 10.0 | 94.5 | -1.40 | 119 |
| 1-Jul-11 | 08:00:52 | 1.93 | 12.8 | 6.6 | 13.0 | 10.0 | 94.5 | -1.50 | 119 |
| 1-Jul-11 | 09:00:53 | 1.92 | 12.7 | 6.6 | 13.0 | 10.0 | 94.5 | -1.40 | 120 |
| 1-Jul-11 | 10:00:52 | 1.92 | 12.7 | 6.6 | 13.0 | 10.0 | 94.4 | -1.40 | 120 |
| 1-Jul-11 | 11:00:52 | 1.93 | 12.7 | 6.6 | 13.0 | 10.0 | 94.4 | -1.40 | 119 |
| 1-Jul-11 | 12:00:52 | 1.93 | 12.6 | 6.7 | 13.0 | 10.0 | 94.4 | -1.40 | 118 |
| 1-Jul-11 | 13:00:52 | 1.93 | 12.6 | 6.7 | 13.0 | 10.0 | 94.5 | -1.50 | 118 |
| 1-Jul-11 | 14:00:52 | 1.93 | 12.6 | 6.7 | 13.0 | 10.1 | 94.5 | -1.50 | 118 |
| 1-Jul-11 | 15:00:53 | 1.93 | 12.6 | 6.7 | 13.0 | 10.1 | 94.5 | -1.50 | 118 |
| 1-Jul-11 | 16:00:53 | 1.93 | 12.5 | 6.7 | 13.0 | 10.1 | 94.6 | -1.40 | 119 |
| 1-Jul-11 | 17:00:52 | 1.93 | 12.5 | 6.7 | 13.0 | 10.1 | 94.6 | -1.40 | 118 |
| 1-Jul-11 | 18:00:52 | 1.93 | 12.5 | 6.7 | 13.0 | 10.1 | 94.7 | -1.40 | 118 |
| 1-Jul-11 | 19:00:53 | 1.92 | 12.5 | 6.7 | 13.0 | 10.1 | 94.7 | -1.40 | 118 |
| 1-Jul-11 | 20:00:52 | 1.92 | 12.4 | 6.7 | 13.0 | 10.1 | 94.6 | -1.40 | 116 |
| 1-Jul-11 | 21:00:53 | 1.92 | 12.4 | 6.7 | 13.0 | 10.1 | 94.5 | -1.40 | 117 |
| 1-Jul-11 | 22:00:52 | 1.91 | 12.3 | 6.7 | 13.0 | 10.1 | 94.4 | -1.40 | 116 |
| 1-Jul-11 | 23:00:52 | 1.91 | 12.3 | 6.7 | 13.0 | 10.1 | 94.2 | -1.40 | 115 |
| 2-Jul-11 | 00:00:52 | 1.90 | 12.3 | 6.7 | 13.0 | 10.1 | 94.0 | -1.40 | 116 |
| 2-Jul-11 | 01:00:52 | 1.90 | 12.2 | 6.7 | 13.0 | 10.1 | 93.7 | -1.40 | 117 |
| 2-Jul-11 | 02:00:52 | 1.89 | 12.2 | 6.7 | 13.0 | 10.1 | 93.7 | -1.40 | 117 |
| 2-Jul-11 | 03:00:52 | 1.89 | 12.1 | 6.7 | 13.0 | 10.1 | 93.5 | -1.50 | 116 |
| 2-Jul-11 | 04:00:53 | 1.89 | 12.0 | 6.7 | 13.0 | 10.1 | 93.3 | -1.40 | 118 |
| 2-Jul-11 | 05:00:52 | 1.89 | 12.0 | 6.6 | 13.0 | 10.0 | 92.8 | -1.40 | 119 |
| 2-Jul-11 | 06:00:53 | 1.88 | 11.8 | 6.6 | 13.0 | 10.0 | 92.7 | -1.40 | 118 |
| 2-Jul-11 | 07:00:52 | 1.88 | 11.8 | 6.6 | 13.0 | 10.0 | 92.7 | -1.30 | 117 |
| 2-Jul-11 | 08:00:52 | 1.88 | 11.7 | 6.7 | 13.0 | 10.1 | 92.7 | -1.30 | 116 |
| 2-Jul-11 | 09:00:53 | 1.88 | 11.7 | 6.7 | 13.0 | 10.1 | 92.8 | -1.40 | 116 |
| 2-Jul-11 | 10:00:52 | 1.88 | 11.6 | 6.7 | 13.0 | 10.1 | 92.9 | -1.40 | 118 |
| 2-Jul-11 | 11:00:52 | 1.88 | 11.6 | 6.7 | 13.0 | 10.1 | 92.9 | -1.30 | 118 |
| 2-Jul-11 | 12:00:52 | 1.89 | 11.6 | 6.7 | 13.0 | 10.1 | 93.0 | -1.40 | 118 |
| 2-Jul-11 | 13:00:52 | 1.90 | 11.5 | 6.7 | 13.0 | 10.1 | 93.1 | -1.20 | 123 |
| 2-Jul-11 | 14:00:52 | 1.91 | 11.5 | 6.7 | 13.0 | 10.2 | 93.3 | -1.40 | 122 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 2-Jul-11 | 15:00:53 | 1.91 | 11.5 | 6.7 | 13.0 | 10.2 | 93.5 | -1.30 | 124 |
| 2-Jul-11 | 16:00:53 | 1.92 | 11.5 | 6.7 | 13.0 | 10.2 | 93.7 | -1.40 | 123 |
| 2-Jul-11 | 17:00:52 | 1.92 | 11.5 | 6.7 | 13.0 | 10.2 | 93.8 | -1.50 | 123 |
| 2-Jul-11 | 18:00:52 | 1.93 | 11.5 | 6.7 | 13.0 | 10.2 | 93.9 | -1.40 | 123 |
| 2-Jul-11 | 19:00:53 | 1.93 | 11.5 | 6.7 | 13.0 | 10.2 | 93.9 | -1.40 | 123 |
| 2-Jul-11 | 20:00:52 | 1.93 | 11.5 | 6.7 | 13.0 | 10.2 | 93.9 | -1.50 | 121 |
| 2-Jul-11 | 21:00:53 | 1.93 | 11.5 | 6.8 | 13.0 | 10.2 | 94.0 | -1.30 | 120 |
| 2-Jul-11 | 22:00:52 | 1.93 | 11.5 | 6.8 | 13.0 | 10.2 | 93.9 | -1.30 | 119 |
| 2-Jul-11 | 23:00:52 | 1.92 | 11.5 | 6.7 | 13.0 | 10.2 | 93.9 | -1.30 | 120 |
| 3-Jul-11 | 00:00:52 | 1.93 | 11.5 | 6.7 | 13.0 | 10.2 | 93.8 | -1.40 | 121 |
| 3-Jul-11 | 01:00:52 | 1.93 | 11.4 | 6.7 | 13.0 | 10.2 | 93.7 | -1.40 | 120 |
| 3-Jul-11 | 02:00:52 | 1.94 | 11.4 | 6.7 | 13.0 | 10.2 | 93.6 | -1.50 | 121 |
| 3-Jul-11 | 03:00:52 | 1.94 | 11.4 | 6.7 | 13.0 | 10.2 | 93.4 | -1.30 | 120 |
| 3-Jul-11 | 04:00:53 | 1.95 | 11.4 | 6.7 | 13.0 | 10.2 | 93.1 | -1.40 | 120 |
| 3-Jul-11 | 05:00:52 | 1.95 | 11.4 | 6.7 | 13.0 | 10.2 | 93.0 | -1.30 | 122 |
| 3-Jul-11 | 06:00:53 | 1.96 | 11.4 | 6.7 | 13.0 | 10.2 | 93.1 | -1.40 | 119 |
| 3-Jul-11 | 07:00:52 | 1.96 | 11.4 | 6.7 | 13.0 | 10.2 | 93.1 | -1.30 | 119 |
| 3-Jul-11 | 08:00:52 | 1.96 | 11.4 | 6.7 | 13.0 | 10.2 | 93.2 | -1.30 | 120 |
| 3-Jul-11 | 09:00:53 | 1.97 | 11.5 | 6.8 | 13.0 | 10.2 | 93.7 | -1.50 | 121 |
| 3-Jul-11 | 10:00:52 | 1.97 | 11.6 | 6.7 | 13.0 | 10.2 | 94.1 | -1.40 | 122 |
| 3-Jul-11 | 11:00:52 | 1.98 | 11.7 | 6.8 | 13.0 | 10.3 | 94.6 | -1.40 | 121 |
| 3-Jul-11 | 12:00:52 | 1.98 | 11.9 | 6.8 | 13.0 | 10.3 | 95.0 | -1.40 | 121 |
| 3-Jul-11 | 13:00:52 | 1.98 | 12.0 | 6.7 | 13.0 | 10.3 | 95.1 | -1.40 | 124 |
| 3-Jul-11 | 14:00:52 | 1.98 | 12.1 | 6.7 | 13.0 | 10.3 | 95.4 | -1.50 | 122 |
| 3-Jul-11 | 15:00:53 | 1.98 | 12.2 | 6.7 | 13.0 | 10.3 | 95.8 | -1.50 | 119 |
| 3-Jul-11 | 16:00:53 | 1.98 | 12.4 | 6.7 | 13.0 | 10.3 | 96.3 | -1.40 | 119 |
| 3-Jul-11 | 17:00:52 | 1.98 | 12.5 | 6.7 | 13.0 | 10.3 | 96.6 | -1.40 | 120 |
| 3-Jul-11 | 18:00:52 | 1.98 | 12.6 | 6.7 | 13.0 | 10.3 | 96.7 | -1.30 | 118 |
| 3-Jul-11 | 19:00:53 | 1.98 | 12.8 | 6.8 | 13.0 | 10.3 | 97.2 | -1.50 | 115 |
| 3-Jul-11 | 20:00:52 | 1.98 | 12.8 | 6.8 | 13.0 | 10.3 | 97.5 | -1.50 | 116 |
| 3-Jul-11 | 21:00:53 | 1.98 | 12.9 | 6.8 | 13.0 | 10.3 | 97.5 | -1.50 | 117 |
| 3-Jul-11 | 22:00:52 | 1.99 | 12.9 | 6.8 | 13.0 | 10.3 | 97.4 | -1.50 | 115 |
| 3-Jul-11 | 23:00:52 | 1.99 | 12.9 | 6.8 | 13.0 | 10.3 | 97.4 | -1.40 | 116 |
| 4-Jul-11 | 00:00:52 | 1.99 | 12.9 | 6.8 | 13.0 | 10.3 | 97.3 | -1.50 | 115 |
| 4-Jul-11 | 01:00:52 | 1.99 | 12.9 | 6.7 | 13.0 | 10.2 | 96.8 | -1.50 | 114 |
| 4-Jul-11 | 02:00:52 | 1.99 | 12.9 | 6.7 | 13.0 | 10.2 | 96.9 | -1.30 | 118 |
| 4-Jul-11 | 03:00:52 | 1.99 | 12.9 | 6.7 | 13.0 | 10.2 | 96.7 | -1.50 | 116 |
| 4-Jul-11 | 04:00:53 | 1.99 | 12.9 | 6.7 | 14.0 | 10.2 | 96.7 | -1.50 | 116 |
| 4-Jul-11 | 05:00:52 | 1.99 | 12.9 | 6.7 | 14.0 | 10.2 | 96.4 | -1.50 | 117 |
| 4-Jul-11 | 06:00:53 | 1.98 | 12.9 | 6.7 | 13.0 | 10.2 | 96.7 | -1.50 | 117 |
| 4-Jul-11 | 07:00:52 | 1.98 | 12.9 | 6.7 | 13.0 | 10.2 | 96.5 | -1.40 | 118 |
| 4-Jul-11 | 08:00:52 | 1.97 | 12.8 | 6.6 | 13.0 | 10.2 | 96.1 | -1.40 | 121 |
| 4-Jul-11 | 09:00:53 | 1.96 | 12.8 | 6.7 | 13.0 | 10.1 | 95.9 | -1.50 | 118 |
| 4-Jul-11 | 10:00:52 | 1.96 | 12.9 | 6.6 | 13.0 | 10.2 | 96.3 | -1.50 | 120 |
| 4-Jul-11 | 11:00:52 | 1.95 | 13.1 | 6.7 | 13.0 | 10.2 | 96.8 | -1.40 | 118 |
| 4-Jul-11 | 12:00:52 | 1.95 | 13.2 | 6.7 | 13.0 | 10.2 | 97.1 | -1.40 | 119 |
| 4-Jul-11 | 13:00:52 | 1.95 | 13.4 | 6.7 | 13.0 | 10.2 | 97.4 | -1.50 | 120 |
| 4-Jul-11 | 14:00:52 | 1.95 | 13.6 | 6.7 | 13.0 | 10.2 | 97.6 | -1.50 | 118 |
| 4-Jul-11 | 15:00:53 | 1.95 | 13.7 | 6.7 | 13.0 | 10.2 | 97.9 | -1.50 | 117 |
| 4-Jul-11 | 16:00:53 | 1.96 | 13.8 | 6.7 | 13.0 | 10.2 | 98.1 | -1.50 | 115 |
| 4-Jul-11 | 17:00:52 | 1.96 | 13.8 | 6.8 | 13.0 | 10.1 | 98.0 | -1.40 | 117 |
| 4-Jul-11 | 18:00:52 | 1.97 | 14.0 | 6.7 | 13.0 | 10.1 | 98.2 | -1.50 | 118 |
| 4-Jul-11 | 19:00:53 | 1.97 | 14.0 | 6.8 | 13.0 | 10.1 | 98.2 | -1.50 | 115 |
| 4-Jul-11 | 20:00:52 | 1.98 | 14.1 | 6.7 | 13.0 | 10.1 | 98.3 | -1.50 | 117 |
| 4-Jul-11 | 21:00:53 | 1.98 | 14.1 | 6.8 | 13.0 | 10.1 | 98.1 | -1.50 | 114 |
| 4-Jul-11 | 22:00:52 | 1.99 | 14.2 | 6.8 | 13.0 | 10.1 | 98.1 | -1.40 | 114 |
| 4-Jul-11 | 23:00:52 | 2.00 | 14.2 | 6.8 | 13.0 | 10.1 | 97.9 | -1.50 | 113 |
| 5-Jul-11 | 00:00:52 | 2.00 | 14.1 | 6.7 | 13.0 | 10.0 | 97.7 | -1.50 | 114 |
| 5-Jul-11 | 01:00:52 | 2.01 | 14.1 | 6.7 | 13.0 | 10.0 | 97.3 | -1.50 | 115 |
| 5-Jul-11 | 02:00:52 | 2.01 | 14.1 | 6.7 | 13.0 | 10.0 | 96.9 | -1.40 | 115 |
| 5-Jul-11 | 03:00:52 | 2.01 | 14.0 | 6.7 | 13.0 | 10.0 | 96.7 | -1.40 | 114 |
| 5-Jul-11 | 04:00:53 | 2.01 | 14.0 | 6.7 | 13.0 | 9.9 | 96.3 | -1.40 | 115 |
| 5-Jul-11 | 05:00:52 | 2.01 | 13.9 | 6.7 | 13.0 | 9.9 | 96.1 | -1.40 | 115 |
| 5-Jul-11 | 06:00:53 | 2.01 | 13.9 | 6.7 | 13.0 | 9.9 | 95.9 | -1.50 | 116 |
| 5-Jul-11 | 07:00:52 | 2.01 | 13.8 | 6.7 | 13.0 | 9.9 | 95.9 | -1.50 | 114 |
| 5-Jul-11 | 08:00:52 | 2.01 | 13.8 | 6.7 | 13.0 | 9.9 | 96.0 | -1.40 | 115 |
| 5-Jul-11 | 09:00:53 | 2.01 | 13.8 | 6.7 | 13.0 | 9.9 | 96.1 | -1.50 | 116 |
| 5-Jul-11 | 10:00:52 | 2.01 | 13.9 | 6.7 | 13.0 | 9.9 | 96.3 | -1.50 | 115 |
| 5-Jul-11 | 11:00:52 | 2.02 | 13.9 | 6.7 | 13.0 | 9.9 | 96.3 | -1.50 | 115 |
| 5-Jul-11 | 12:00:52 | 2.03 | 14.0 | 6.7 | 13.0 | 10.0 | 96.6 | -1.50 | 115 |
| 5-Jul-11 | 13:00:52 | 2.03 | 14.0 | 6.8 | 13.0 | 10.0 | 96.7 | -1.40 | 114 |
| 5-Jul-11 | 14:00:52 | 2.03 | 14.1 | 6.8 | 13.0 | 10.0 | 97.0 | -1.50 | 114 |
| 5-Jul-11 | 15:00:53 | 2.03 | 14.2 | 6.8 | 13.0 | 10.0 | 97.2 | -1.40 | 115 |
| 5-Jul-11 | 16:00:53 | 2.04 | 14.2 | 6.8 | 13.0 | 10.0 | 97.2 | -1.50 | 115 |
| 5-Jul-11 | 17:00:52 | 2.04 | 14.3 | 6.8 | 13.0 | 10.0 | 97.3 | -1.50 | 115 |
| 5-Jul-11 | 18:00:52 | 2.04 | 14.3 | 6.8 | 13.0 | 10.0 | 97.4 | -1.30 | 116 |
| 5-Jul-11 | 19:00:53 | 2.04 | 14.3 | 6.8 | 13.0 | 10.0 | 97.5 | -1.30 | 117 |
| 5-Jul-11 | 20:00:52 | 2.05 | 14.3 | 6.8 | 13.0 | 10.0 | 97.4 | -1.50 | 116 |
| 5-Jul-11 | 21:00:53 | 2.05 | 14.3 | 6.8 | 13.0 | 10.0 | 97.3 | -1.40 | 116 |
| 5-Jul-11 | 22:00:52 | 2.06 | 14.3 | 6.8 | 13.0 | 10.0 | 97.4 | -1.50 | 116 |
| 5-Jul-11 | 23:00:52 | 2.06 | 14.3 | 6.8 | 13.0 | 10.0 | 97.3 | -1.40 | 117 |
| 6-Jul-11 | 00:00:52 | 2.06 | 14.3 | 6.8 | 13.0 | 9.9 | 97.0 | -1.50 | 117 |
| 6-Jul-11 | 01:00:52 | 2.07 | 14.2 | 6.8 | 13.0 | 9.9 | 96.8 | -1.40 | 117 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 6-Jul-11 | 02:00:52 | 2.07 | 14.1 | 6.7 | 13.0 | 9.9 | 96.3 | -1.40 | 116 |
| 6-Jul-11 | 03:00:52 | 2.08 | 14.1 | 6.7 | 13.0 | 9.9 | 96.1 | -1.50 | 117 |
| 6-Jul-11 | 04:00:53 | 2.08 | 14.1 | 6.7 | 13.0 | 9.9 | 95.9 | -1.50 | 117 |
| 6-Jul-11 | 05:00:52 | 2.08 | 14.0 | 6.7 | 13.0 | 9.9 | 95.8 | -1.30 | 116 |
| 6-Jul-11 | 06:00:53 | 2.09 | 14.0 | 6.7 | 14.0 | 9.9 | 95.6 | -1.40 | 117 |
| 6-Jul-11 | 07:00:52 | 2.09 | 13.9 | 6.7 | 13.0 | 9.9 | 95.5 | -1.40 | 117 |
| 6-Jul-11 | 08:00:52 | 2.09 | 14.0 | 6.7 | 13.0 | 9.9 | 95.6 | -1.50 | 119 |
| 6-Jul-11 | 09:00:53 | 2.09 | 14.0 | 6.7 | 13.0 | 9.9 | 95.8 | -1.40 | 119 |
| 6-Jul-11 | 10:00:52 | 2.09 | 14.1 | 6.7 | 13.0 | 9.9 | 95.9 | -1.50 | 119 |
| 6-Jul-11 | 11:00:52 | 2.09 | 14.1 | 6.7 | 13.0 | 9.9 | 96.2 | -1.50 | 120 |
| 6-Jul-11 | 12:00:52 | 2.09 | 14.3 | 6.7 | 13.0 | 9.9 | 96.6 | -1.50 | 119 |
| 6-Jul-11 | 13:00:52 | 2.09 | 14.4 | 6.8 | 13.0 | 9.9 | 97.0 | -1.50 | 118 |
| 6-Jul-11 | 14:00:52 | 2.09 | 14.5 | 6.8 | 13.0 | 9.9 | 97.3 | -1.50 | 119 |
| 6-Jul-11 | 15:00:53 | 2.09 | 14.7 | 6.8 | 13.0 | 9.9 | 97.8 | -1.50 | 117 |
| 6-Jul-11 | 16:00:53 | 2.09 | 14.7 | 6.8 | 13.0 | 9.9 | 97.9 | -1.30 | 118 |
| 6-Jul-11 | 17:00:52 | 2.09 | 14.8 | 6.8 | 13.0 | 10.0 | 98.3 | -1.50 | 116 |
| 6-Jul-11 | 18:00:52 | 2.09 | 14.9 | 6.8 | 13.0 | 10.0 | 98.4 | -1.40 | 114 |
| 6-Jul-11 | 19:00:53 | 2.09 | 14.9 | 6.8 | 13.0 | 9.9 | 98.4 | -1.50 | 114 |
| 6-Jul-11 | 20:00:52 | 2.09 | 15.0 | 6.8 | 13.0 | 9.9 | 98.5 | -1.50 | 115 |
| 6-Jul-11 | 21:00:53 | 2.09 | 15.0 | 6.8 | 13.0 | 9.9 | 98.5 | -1.50 | 113 |
| 6-Jul-11 | 22:00:52 | 2.10 | 15.0 | 6.8 | 13.0 | 9.9 | 98.2 | -1.50 | 112 |
| 6-Jul-11 | 23:00:52 | 2.10 | 15.0 | 6.7 | 14.0 | 9.9 | 98.1 | -1.50 | 112 |
| 7-Jul-11 | 00:00:52 | 2.11 | 14.9 | 6.8 | 14.0 | 9.9 | 98.0 | -1.50 | 111 |
| 7-Jul-11 | 01:00:52 | 2.11 | 14.9 | 6.7 | 14.0 | 9.9 | 97.5 | -1.50 | 113 |
| 7-Jul-11 | 02:00:52 | 2.11 | 14.9 | 6.7 | 14.0 | 9.8 | 97.3 | -1.50 | 111 |
| 7-Jul-11 | 03:00:52 | 2.11 | 14.8 | 6.7 | 14.0 | 9.8 | 97.1 | -1.40 | 112 |
| 7-Jul-11 | 04:00:53 | 2.11 | 14.8 | 6.7 | 14.0 | 9.8 | 97.0 | -1.50 | 114 |
| 7-Jul-11 | 05:00:52 | 2.11 | 14.7 | 6.7 | 14.0 | 9.8 | 96.7 | -1.60 | 112 |
| 7-Jul-11 | 06:00:53 | 2.11 | 14.7 | 6.7 | 14.0 | 9.8 | 96.9 | -1.50 | 112 |
| 7-Jul-11 | 07:00:52 | 2.11 | 14.7 | 6.7 | 14.0 | 9.8 | 96.8 | -1.50 | 111 |
| 7-Jul-11 | 08:00:52 | 2.10 | 14.8 | 6.8 | 14.0 | 9.8 | 97.0 | -1.50 | 111 |
| 7-Jul-11 | 09:00:53 | 2.10 | 14.7 | 6.8 | 14.0 | 9.8 | 96.9 | -1.60 | 111 |
| 7-Jul-11 | 10:00:52 | 2.10 | 14.8 | 6.8 | 14.0 | 9.8 | 97.0 | -1.50 | 113 |
| 7-Jul-11 | 11:00:52 | 2.09 | 15.0 | 6.8 | 14.0 | 9.8 | 97.3 | -1.30 | 111 |
| 7-Jul-11 | 12:00:52 | 2.09 | 15.0 | 6.9 | 14.0 | 9.8 | 97.4 | -1.50 | 110 |
| 7-Jul-11 | 13:00:52 | 2.08 | 15.0 | 6.9 | 14.0 | 9.8 | 97.5 | -1.50 | 110 |
| 7-Jul-11 | 14:00:52 | 2.08 | 15.0 | 6.8 | 14.0 | 9.8 | 97.6 | -1.50 | 110 |
| 7-Jul-11 | 15:00:53 | 2.07 | 15.0 | 6.8 | 14.0 | 9.9 | 97.8 | -1.50 | 110 |
| 7-Jul-11 | 16:00:53 | 2.07 | 15.0 | 6.7 | 14.0 | 9.9 | 97.6 | -1.40 | 112 |
| 7-Jul-11 | 17:00:52 | 2.06 | 15.1 | 6.8 | 14.0 | 9.9 | 98.7 | -1.40 | 112 |
| 7-Jul-11 | 18:00:52 | 2.06 | 14.9 | 6.8 | 14.0 | 9.9 | 98.0 | -1.40 | 111 |
| 7-Jul-11 | 19:00:53 | 2.05 | 15.0 | 6.8 | 14.0 | 10.0 | 98.7 | -1.50 | 112 |
| 7-Jul-11 | 20:00:52 | 2.05 | 15.3 | 6.8 | 14.0 | 9.9 | 99.0 | -1.40 | 113 |
| 7-Jul-11 | 21:00:53 | 2.05 | 15.3 | 6.8 | 14.0 | 9.9 | 98.9 | -1.50 | 110 |
| 7-Jul-11 | 22:00:52 | 2.05 | 15.2 | 6.8 | 14.0 | 9.9 | 98.8 | -1.50 | 111 |
| 7-Jul-11 | 23:00:52 | 2.05 | 15.4 | 6.8 | 14.0 | 9.9 | 99.1 | -1.50 | 111 |
| 8-Jul-11 | 00:00:52 | 2.05 | 15.2 | 6.8 | 14.0 | 9.9 | 98.7 | -1.40 | 112 |
| 8-Jul-11 | 01:00:52 | 2.04 | 15.3 | 6.8 | 14.0 | 9.9 | 98.6 | -1.50 | 111 |
| 8-Jul-11 | 02:00:52 | 2.04 | 15.1 | 6.7 | 14.0 | 9.9 | 98.5 | -1.30 | 113 |
| 8-Jul-11 | 03:00:52 | 2.04 | 15.1 | 6.8 | 14.0 | 9.9 | 98.1 | -1.20 | 110 |
| 8-Jul-11 | 04:00:53 | 2.04 | 15.4 | 6.7 | 14.0 | 9.8 | 98.4 | -1.40 | 111 |
| 8-Jul-11 | 05:00:52 | 2.04 | 15.3 | 6.8 | 14.0 | 9.8 | 98.0 | -1.60 | 113 |
| 8-Jul-11 | 06:00:53 | 2.03 | 15.2 | 6.8 | 14.0 | 9.8 | 98.0 | -1.40 | 112 |
| 8-Jul-11 | 07:00:52 | 2.03 | 15.2 | 6.7 | 14.0 | 9.8 | 97.4 | -1.50 | 114 |
| 8-Jul-11 | 08:00:52 | 2.03 | 15.2 | 6.7 | 14.0 | 9.8 | 97.1 | -1.50 | 114 |
| 8-Jul-11 | 09:00:53 | 2.03 | 15.3 | 6.8 | 14.0 | 9.8 | 97.4 | -1.50 | 114 |
| 8-Jul-11 | 10:00:52 | 2.03 | 15.4 | 6.8 | 14.0 | 9.8 | 97.7 | -1.50 | 115 |
| 8-Jul-11 | 11:00:52 | 2.02 | 15.5 | 6.8 | 14.0 | 9.8 | 98.0 | -1.50 | 115 |
| 8-Jul-11 | 12:00:52 | 2.02 | 15.6 | 6.8 | 14.0 | 9.8 | 98.4 | -1.40 | 116 |
| 8-Jul-11 | 13:00:52 | 2.02 | 15.7 | 6.8 | 14.0 | 9.8 | 98.5 | -1.50 | 117 |
| 8-Jul-11 | 14:00:52 | 2.01 | 15.9 | 6.9 | 14.0 | 9.8 | 99.0 | -1.60 | 117 |
| 8-Jul-11 | 15:00:53 | 2.01 | 16.0 | 6.8 | 14.0 | 9.8 | 99.5 | -1.50 | 118 |
| 8-Jul-11 | 16:00:53 | 2.01 | 16.1 | 6.8 | 14.0 | 9.8 | 99.7 | -1.50 | 120 |
| 8-Jul-11 | 17:00:52 | 2.01 | 16.3 | 6.8 | 14.0 | 9.8 | 99.9 | -1.50 | 120 |
| 8-Jul-11 | 18:00:52 | 2.01 | 16.4 | 6.9 | 14.0 | 9.8 | 99.9 | -1.50 | 116 |
| 8-Jul-11 | 19:00:53 | 2.01 | 16.4 | 6.8 | 14.0 | 9.8 | 100.2 | -1.50 | 118 |
| 8-Jul-11 | 20:00:52 | 2.00 | 16.4 | 6.8 | 14.0 | 9.8 | 100.3 | -1.50 | 118 |
| 8-Jul-11 | 21:00:53 | 2.01 | 16.4 | 6.8 | 14.0 | 9.8 | 100.1 | -1.50 | 118 |
| 8-Jul-11 | 22:00:52 | 2.01 | 16.4 | 6.8 | 14.0 | 9.8 | 99.9 | -1.50 | 117 |
| 8-Jul-11 | 23:00:52 | 2.01 | 16.4 | 6.8 | 14.0 | 9.7 | 99.4 | -1.50 | 115 |
| 9-Jul-11 | 00:00:52 | 2.02 | 16.3 | 6.7 | 14.0 | 9.8 | 99.5 | -1.50 | 115 |
| 9-Jul-11 | 01:00:52 | 2.02 | 16.3 | 6.7 | 14.0 | 9.8 | 99.4 | -1.50 | 117 |
| 9-Jul-11 | 02:00:52 | 2.02 | 16.2 | 6.8 | 14.0 | 9.7 | 98.9 | -1.50 | 116 |
| 9-Jul-11 | 03:00:52 | 2.02 | 16.1 | 6.7 | 14.0 | 9.7 | 98.5 | -1.50 | 118 |
| 9-Jul-11 | 04:00:53 | 2.02 | 16.1 | 6.7 | 14.0 | 9.7 | 98.3 | -1.50 | 117 |
| 9-Jul-11 | 05:00:52 | 2.02 | 16.0 | 6.7 | 14.0 | 9.7 | 97.9 | -1.50 | 117 |
| 9-Jul-11 | 06:00:53 | 2.02 | 16.0 | 6.7 | 14.0 | 9.7 | 97.9 | -1.50 | 118 |
| 9-Jul-11 | 07:00:52 | 2.02 | 16.0 | 6.8 | 14.0 | 9.7 | 97.9 | -1.50 | 118 |
| 9-Jul-11 | 08:00:52 | 2.02 | 16.0 | 6.8 | 14.0 | 9.7 | 97.9 | -1.50 | 119 |
| 9-Jul-11 | 09:00:53 | 2.02 | 16.1 | 6.8 | 14.0 | 9.7 | 98.1 | -1.50 | 119 |
| 9-Jul-11 | 10:00:52 | 2.02 | 16.2 | 6.7 | 14.0 | 9.7 | 98.4 | -1.50 | 119 |
| 9-Jul-11 | 11:00:52 | 2.02 | 16.3 | 6.8 | 14.0 | 9.7 | 98.6 | -1.50 | 118 |
| 9-Jul-11 | 12:00:52 | 2.02 | 16.4 | 6.8 | 14.0 | 9.7 | 98.9 | -1.40 | 118 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 9-Jul-11 | 13:00:52 | 2.02 | 16.6 | 6.8 | 14.0 | 9.7 | 99.2 | -1.40 | 118 |
| 9-Jul-11 | 14:00:52 | 2.02 | 16.7 | 6.8 | 14.0 | 9.7 | 99.5 | -1.50 | 118 |
| 9-Jul-11 | 15:00:53 | 2.02 | 16.8 | 6.9 | 14.0 | 9.7 | 99.6 | -1.50 | 114 |
| 9-Jul-11 | 16:00:53 | 2.02 | 17.0 | 6.9 | 14.0 | 9.7 | 100.2 | -1.50 | 115 |
| 9-Jul-11 | 17:00:52 | 2.02 | 17.0 | 6.9 | 14.0 | 9.7 | 100.1 | -1.50 | 113 |
| 9-Jul-11 | 18:00:52 | 2.03 | 17.1 | 6.9 | 14.0 | 9.7 | 100.3 | -1.50 | 114 |
| 9-Jul-11 | 19:00:53 | 2.03 | 17.1 | 6.9 | 14.0 | 9.7 | 100.6 | -1.50 | 116 |
| 9-Jul-11 | 20:00:52 | 2.03 | 17.2 | 7.0 | 14.0 | 9.7 | 100.6 | -1.10 | 113 |
| 9-Jul-11 | 21:00:53 | 2.03 | 17.2 | 6.9 | 14.0 | 9.7 | 100.4 | -1.50 | 113 |
| 9-Jul-11 | 22:00:52 | 2.03 | 17.0 | 6.8 | 14.0 | 9.7 | 100.0 | -1.50 | 114 |
| 9-Jul-11 | 23:00:52 | 2.04 | 17.0 | 6.8 | 14.0 | 9.6 | 99.7 | -1.50 | 117 |
| 10-Jul-11 | 00:00:52 | 2.04 | 17.1 | 6.7 | 14.0 | 9.7 | 100.1 | -1.40 | 116 |
| 10-Jul-11 | 01:00:52 | 2.04 | 17.2 | 6.8 | 14.0 | 9.6 | 99.8 | -1.50 | 113 |
| 10-Jul-11 | 02:00:52 | 2.04 | 17.1 | 6.7 | 14.0 | 9.6 | 99.4 | -1.60 | 115 |
| 10-Jul-11 | 03:00:52 | 2.05 | 17.1 | 6.7 | 14.0 | 9.6 | 99.2 | -1.60 | 117 |
| 10-Jul-11 | 04:00:53 | 2.05 | 17.1 | 6.8 | 14.0 | 9.6 | 99.2 | -0.30 | 113 |
| 10-Jul-11 | 05:00:52 | 2.05 | 17.0 | 6.7 | 14.0 | 9.6 | 98.9 | -1.50 | 114 |
| 10-Jul-11 | 06:00:53 | 2.05 | 16.9 | 6.7 | 14.0 | 9.6 | 98.7 | -1.50 | 115 |
| 10-Jul-11 | 07:00:52 | 2.06 | 16.9 | 6.8 | 14.0 | 9.5 | 98.5 | -1.50 | 115 |
| 10-Jul-11 | 08:00:52 | 2.06 | 17.0 | 6.8 | 14.0 | 9.6 | 99.0 | -1.50 | 114 |
| 10-Jul-11 | 09:00:53 | 2.06 | 17.0 | 6.8 | 14.0 | 9.6 | 99.3 | -1.50 | 117 |
| 10-Jul-11 | 10:00:52 | 2.06 | 17.1 | 6.8 | 14.0 | 9.6 | 99.3 | -1.50 | 114 |
| 10-Jul-11 | 11:00:52 | 2.06 | 17.1 | 6.9 | 14.0 | 9.6 | 99.5 | -1.50 | 114 |
| 10-Jul-11 | 12:00:52 | 2.06 | 17.2 | 6.8 | 14.0 | 9.6 | 99.6 | -1.50 | 118 |
| 10-Jul-11 | 13:00:52 | 2.06 | 17.3 | 6.8 | 14.0 | 9.6 | 99.9 | -1.50 | 117 |
| 10-Jul-11 | 14:00:52 | 2.06 | 17.5 | 6.8 | 14.0 | 9.6 | 100.0 | -1.50 | 116 |
| 10-Jul-11 | 15:00:53 | 2.06 | 17.5 | 6.8 | 14.0 | 9.6 | 100.3 | -1.50 | 119 |
| 10-Jul-11 | 16:00:53 | 2.06 | 17.8 | 6.8 | 14.0 | 9.6 | 100.8 | -1.50 | 118 |
| 10-Jul-11 | 17:00:52 | 2.06 | 17.9 | 6.8 | 14.0 | 9.6 | 100.9 | -1.50 | 117 |
| 10-Jul-11 | 18:00:52 | 2.06 | 17.6 | 6.8 | 14.0 | 9.7 | 101.1 | -1.50 | 116 |
| 10-Jul-11 | 19:00:53 | 2.06 | 18.0 | 6.8 | 14.0 | 9.6 | 101.0 | -1.60 | 116 |
| 10-Jul-11 | 20:00:52 | 2.06 | 18.0 | 6.8 | 14.0 | 9.6 | 101.0 | -1.50 | 116 |
| 10-Jul-11 | 21:00:53 | 2.07 | 17.9 | 6.8 | 14.0 | 9.6 | 100.8 | -1.60 | 116 |
| 10-Jul-11 | 22:00:52 | 2.06 | 17.9 | 6.8 | 14.0 | 9.5 | 100.3 | -1.50 | 115 |
| 10-Jul-11 | 23:00:52 | 2.06 | 17.9 | 6.7 | 14.0 | 9.5 | 100.3 | -1.50 | 113 |
| 11-Jul-11 | 00:00:52 | 2.07 | 17.9 | 6.7 | 14.0 | 9.5 | 100.0 | -1.50 | 114 |
| 11-Jul-11 | 01:00:52 | 2.07 | 17.9 | 6.7 | 14.0 | 9.5 | 99.7 | -1.30 | 116 |
| 11-Jul-11 | 02:00:52 | 2.07 | 17.8 | 6.7 | 14.0 | 9.5 | 99.6 | -1.50 | 116 |
| 11-Jul-11 | 03:00:52 | 2.07 | 17.8 | 6.7 | 14.0 | 9.5 | 99.4 | -1.50 | 115 |
| 11-Jul-11 | 04:00:53 | 2.07 | 17.7 | 6.7 | 14.0 | 9.4 | 99.0 | -1.50 | 114 |
| 11-Jul-11 | 05:00:52 | 2.07 | 17.7 | 6.7 | 14.0 | 9.4 | 98.6 | -1.50 | 113 |
| 11-Jul-11 | 06:00:53 | 2.08 | 17.6 | 6.7 | 14.0 | 9.4 | 98.5 | -1.50 | 112 |
| 11-Jul-11 | 07:00:52 | 2.08 | 17.6 | 6.7 | 14.0 | 9.4 | 98.5 | -1.50 | 112 |
| 11-Jul-11 | 08:00:52 | 2.07 | 17.6 | 6.7 | 14.0 | 9.4 | 98.1 | -1.50 | 113 |
| 11-Jul-11 | 09:00:53 | 2.08 | 17.6 | 6.8 | 14.0 | 9.4 | 98.0 | -0.70 | 116 |
| 11-Jul-11 | 10:00:52 | 2.08 | 17.7 | 6.8 | 14.0 | 9.4 | 98.4 | -1.50 | 119 |
| 11-Jul-11 | 11:00:52 | 2.08 | 17.8 | 6.8 | 14.0 | 9.4 | 98.4 | -1.50 | 118 |
| 11-Jul-11 | 12:00:52 | 2.08 | 17.9 | 6.8 | 14.0 | 9.4 | 98.7 | -1.50 | 117 |
| 11-Jul-11 | 13:00:52 | 2.08 | 18.1 | 6.8 | 14.0 | 9.4 | 99.1 | -1.50 | 117 |
| 11-Jul-11 | 14:00:52 | 2.08 | 18.2 | 6.8 | 14.0 | 9.4 | 99.5 | -1.60 | 118 |
| 11-Jul-11 | 15:00:53 | 2.07 | 18.3 | 6.8 | 14.0 | 9.4 | 99.6 | -1.50 | 118 |
| 11-Jul-11 | 16:00:53 | 2.07 | 18.5 | 6.8 | 14.0 | 9.4 | 99.9 | -1.50 | 119 |
| 11-Jul-11 | 17:00:52 | 2.07 | 18.6 | 6.8 | 14.0 | 9.4 | 100.0 | -1.50 | 120 |
| 11-Jul-11 | 18:00:52 | 2.06 | 18.7 | 6.8 | 14.0 | 9.4 | 100.3 | -1.50 | 119 |
| 11-Jul-11 | 19:00:53 | 2.06 | 18.8 | 6.7 | 14.0 | 9.3 | 100.3 | -1.50 | 118 |
| 11-Jul-11 | 20:00:52 | 2.05 | 18.7 | 6.7 | 14.0 | 9.3 | 100.0 | -1.60 | 119 |
| 11-Jul-11 | 21:00:53 | 2.05 | 18.6 | 6.8 | 14.0 | 9.3 | 99.7 | -1.50 | 119 |
| 11-Jul-11 | 22:00:52 | 2.04 | 18.6 | 6.7 | 14.0 | 9.3 | 99.7 | -1.50 | 117 |
| 11-Jul-11 | 23:00:52 | 2.04 | 18.6 | 6.7 | 14.0 | 9.3 | 99.2 | -1.50 | 116 |
| 12-Jul-11 | 00:00:52 | 2.04 | 18.5 | 6.7 | 14.0 | 9.3 | 98.8 | -1.50 | 117 |
| 12-Jul-11 | 01:00:52 | 2.04 | 18.5 | 6.7 | 14.0 | 9.2 | 98.5 | -1.50 | 115 |
| 12-Jul-11 | 02:00:52 | 2.03 | 18.4 | 6.7 | 14.0 | 9.2 | 98.2 | -1.50 | 117 |
| 12-Jul-11 | 03:00:52 | 2.03 | 18.4 | 6.6 | 14.0 | 9.2 | 97.7 | -1.50 | 116 |
| 12-Jul-11 | 04:00:53 | 2.03 | 18.3 | 6.7 | 14.0 | 9.2 | 97.5 | -1.50 | 112 |
| 12-Jul-11 | 05:00:52 | 2.02 | 18.3 | 6.7 | 14.0 | 9.2 | 97.2 | -1.50 | 112 |
| 12-Jul-11 | 06:00:53 | 2.02 | 18.3 | 6.6 | 14.0 | 9.1 | 97.0 | -1.50 | 111 |
| 12-Jul-11 | 07:00:52 | 2.02 | 18.3 | 6.6 | 14.0 | 9.1 | 96.5 | -1.50 | 111 |
| 12-Jul-11 | 08:00:52 | 2.02 | 18.2 | 6.6 | 14.0 | 9.1 | 96.6 | -1.50 | 112 |
| 12-Jul-11 | 09:00:53 | 2.02 | 18.2 | 6.6 | 14.0 | 9.1 | 96.3 | -1.50 | 112 |
| 12-Jul-11 | 10:00:52 | 2.02 | 18.3 | 6.7 | 14.0 | 9.1 | 96.3 | -1.50 | 118 |
| 12-Jul-11 | 11:00:52 | 2.01 | 18.3 | 6.8 | 14.0 | 9.1 | 96.6 | -1.50 | 110 |
| 12-Jul-11 | 12:00:52 | 2.01 | 18.4 | 6.8 | 14.0 | 9.1 | 96.8 | -1.40 | 112 |
| 12-Jul-11 | 13:00:52 | 2.01 | 18.5 | 6.9 | 14.0 | 9.1 | 97.2 | -1.60 | 111 |
| 12-Jul-11 | 14:00:52 | 2.00 | 18.4 | 7.0 | 14.0 | 9.2 | 97.5 | -1.50 | 110 |
| 12-Jul-11 | 15:00:53 | 1.99 | 18.5 | 7.1 | 14.0 | 9.1 | 97.5 | -1.50 | 110 |
| 12-Jul-11 | 16:00:53 | 1.99 | 18.5 | 6.9 | 14.0 | 9.2 | 97.6 | -1.40 | 114 |
| 12-Jul-11 | 17:00:52 | 1.99 | 19.0 | 6.8 | 14.0 | 9.1 | 98.5 | -1.50 | 115 |
| 12-Jul-11 | 18:00:52 | 2.01 | 18.9 | 6.8 | 14.0 | 9.1 | 98.2 | -1.60 | 115 |
| 12-Jul-11 | 19:00:53 | 2.00 | 18.9 | 6.8 | 14.0 | 9.1 | 98.2 | -1.50 | 114 |
| 12-Jul-11 | 20:00:52 | 2.00 | 19.0 | 6.9 | 14.0 | 9.1 | 98.3 | -1.50 | 112 |
| 12-Jul-11 | 21:00:53 | 2.00 | 19.0 | 6.8 | 14.0 | 9.1 | 98.6 | -1.50 | 113 |
| 12-Jul-11 | 22:00:52 | 2.00 | 19.0 | 6.8 | 14.0 | 9.2 | 98.8 | -1.50 | 112 |
| 12-Jul-11 | 23:00:52 | 2.00 | 18.9 | 6.7 | 14.0 | 9.1 | 98.0 | -1.50 | 114 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 13-Jul-11 | 00:00:52 | 1.99 | 18.9 | 6.7 | 14.0 | 9.1 | 98.2 | -1.50 | 112 |
| 13-Jul-11 | 01:00:52 | 1.99 | 18.9 | 6.6 | 14.0 | 9.1 | 97.8 | -1.50 | 111 |
| 13-Jul-11 | 02:00:52 | 1.99 | 18.9 | 6.7 | 14.0 | 9.0 | 97.2 | -1.50 | 112 |
| 13-Jul-11 | 03:00:51 | 1.99 | 18.9 | 6.6 | 14.0 | 9.0 | 96.8 | -1.50 | 114 |
| 13-Jul-11 | 04:00:51 | 2.00 | 18.8 | 6.7 | 14.0 | 9.1 | 97.2 | -1.50 | 114 |
| 13-Jul-11 | 05:00:51 | 1.99 | 18.8 | 6.7 | 14.0 | 9.0 | 97.0 | -1.50 | 118 |
| 13-Jul-11 | 06:00:52 | 1.99 | 18.7 | 6.7 | 14.0 | 9.0 | 96.6 | -1.50 | 112 |
| 13-Jul-11 | 07:00:52 | 1.99 | 18.7 | 6.7 | 14.0 | 9.0 | 96.6 | -1.50 | 111 |
| 13-Jul-11 | 08:00:51 | 1.99 | 18.7 | 6.8 | 14.0 | 9.0 | 96.6 | -1.50 | 114 |
| 13-Jul-11 | 09:00:51 | 1.99 | 18.8 | 6.8 | 14.0 | 9.0 | 97.0 | -1.50 | 112 |
| 13-Jul-11 | 10:00:51 | 1.99 | 18.8 | 6.7 | 14.0 | 9.0 | 96.6 | -1.50 | 110 |
| 13-Jul-11 | 11:00:52 | 1.99 | 18.8 | 6.8 | 14.0 | 9.0 | 96.9 | -1.50 | 115 |
| 13-Jul-11 | 12:00:52 | 1.99 | 19.0 | 6.8 | 14.0 | 9.1 | 97.6 | -1.50 | 115 |
| 13-Jul-11 | 13:00:52 | 1.99 | 19.2 | 6.9 | 14.0 | 9.0 | 97.6 | -1.50 | 113 |
| 13-Jul-11 | 14:00:52 | 1.98 | 19.2 | 7.0 | 14.0 | 9.0 | 97.9 | -1.50 | 109 |
| 13-Jul-11 | 15:00:52 | 1.98 | 19.1 | 6.9 | 14.0 | 9.1 | 98.3 | -1.50 | 112 |
| 13-Jul-11 | 16:00:52 | 1.98 | 19.1 | 6.9 | 14.0 | 9.1 | 98.2 | -1.50 | 113 |
| 13-Jul-11 | 17:00:51 | 1.98 | 19.2 | 6.9 | 14.0 | 9.1 | 98.7 | -1.50 | 112 |
| 13-Jul-11 | 18:00:51 | 1.98 | 19.2 | 6.9 | 14.0 | 9.1 | 98.5 | -1.50 | 113 |
| 13-Jul-11 | 19:00:52 | 1.97 | 19.3 | 6.8 | 14.0 | 9.1 | 98.9 | -1.50 | 112 |
| 13-Jul-11 | 20:00:52 | 1.97 | 19.6 | 6.7 | 14.0 | 9.1 | 99.1 | -1.50 | 114 |
| 13-Jul-11 | 21:00:51 | 1.97 | 19.3 | 6.8 | 14.0 | 9.1 | 98.9 | -1.50 | 107 |
| 13-Jul-11 | 22:00:51 | 1.97 | 19.2 | 6.7 | 14.0 | 9.1 | 98.7 | -1.50 | 108 |
| 13-Jul-11 | 23:00:52 | 1.97 | 19.7 | 6.8 | 14.0 | 9.1 | 99.0 | -1.50 | 106 |
| 14-Jul-11 | 00:00:51 | 1.96 | 19.7 | 6.7 | 14.0 | 9.0 | 98.4 | -1.50 | 107 |
| 14-Jul-11 | 01:00:52 | 1.96 | 19.5 | 6.7 | 14.0 | 9.0 | 97.7 | -1.50 | 109 |
| 14-Jul-11 | 02:00:52 | 1.96 | 19.4 | 6.7 | 14.0 | 9.0 | 97.8 | -1.50 | 111 |
| 14-Jul-11 | 03:00:51 | 1.96 | 19.3 | 6.7 | 14.0 | 8.9 | 96.6 | -1.50 | 114 |
| 14-Jul-11 | 04:00:51 | 1.96 | 19.1 | 6.7 | 14.0 | 8.9 | 96.0 | -1.50 | 115 |
| 14-Jul-11 | 05:00:52 | 1.96 | 18.9 | 6.6 | 14.0 | 8.9 | 95.4 | -1.50 | 118 |
| 14-Jul-11 | 06:00:52 | 1.96 | 18.8 | 6.7 | 14.0 | 8.8 | 94.7 | -1.50 | 117 |
| 14-Jul-11 | 07:00:51 | 1.95 | 18.7 | 6.7 | 14.0 | 8.8 | 94.5 | -1.50 | 117 |
| 14-Jul-11 | 08:00:51 | 1.95 | 18.7 | 6.7 | 14.0 | 8.8 | 94.5 | -1.60 | 119 |
| 14-Jul-11 | 09:00:51 | 1.95 | 18.6 | 6.7 | 14.0 | 8.8 | 94.6 | -1.50 | 118 |
| 14-Jul-11 | 10:00:52 | 1.95 | 18.6 | 6.7 | 14.0 | 8.9 | 94.7 | -1.50 | 118 |
| 14-Jul-11 | 11:00:52 | 1.95 | 18.7 | 6.8 | 14.0 | 8.9 | 94.7 | -1.50 | 113 |
| 14-Jul-11 | 12:00:52 | 1.95 | 18.7 | 6.8 | 14.0 | 8.9 | 95.0 | -1.50 | 113 |
| 14-Jul-11 | 13:00:51 | 1.95 | 18.7 | 6.8 | 14.0 | 8.9 | 95.2 | -1.50 | 116 |
| 14-Jul-11 | 14:00:51 | 1.95 | 18.7 | 6.8 | 14.0 | 8.9 | 95.4 | -1.50 | 117 |
| 14-Jul-11 | 15:00:51 | 1.95 | 18.9 | 6.9 | 14.0 | 8.9 | 95.8 | -1.50 | 112 |
| 14-Jul-11 | 16:00:52 | 1.95 | 18.9 | 6.9 | 14.0 | 8.9 | 96.3 | -1.50 | 115 |
| 14-Jul-11 | 17:00:51 | 1.95 | 18.9 | 6.9 | 14.0 | 8.9 | 96.3 | -1.50 | 113 |
| 14-Jul-11 | 18:00:52 | 1.95 | 19.0 | 6.9 | 14.0 | 9.0 | 96.5 | -1.50 | 113 |
| 14-Jul-11 | 19:00:52 | 1.95 | 19.0 | 6.8 | 14.0 | 9.0 | 96.5 | -1.50 | 114 |
| 14-Jul-11 | 20:00:52 | 1.94 | 19.0 | 6.8 | 14.0 | 8.9 | 96.3 | -1.50 | 114 |
| 14-Jul-11 | 21:00:52 | 1.94 | 18.9 | 6.8 | 14.0 | 9.0 | 96.3 | -1.40 | 113 |
| 14-Jul-11 | 22:00:52 | 1.94 | 18.8 | 6.8 | 14.0 | 8.9 | 96.1 | -1.40 | 113 |
| 14-Jul-11 | 23:00:52 | 1.94 | 18.8 | 6.8 | 14.0 | 8.9 | 95.7 | -1.50 | 113 |
| 15-Jul-11 | 00:00:52 | 1.94 | 18.7 | 6.7 | 14.0 | 8.9 | 95.3 | -1.40 | 114 |
| 15-Jul-11 | 01:00:51 | 1.95 | 18.6 | 6.7 | 14.0 | 8.9 | 94.8 | -1.50 | 112 |
| 15-Jul-11 | 02:00:52 | 1.94 | 18.6 | 6.7 | 14.0 | 8.8 | 94.3 | -1.40 | 110 |
| 15-Jul-11 | 03:00:52 | 1.95 | 18.5 | 6.7 | 14.0 | 8.8 | 93.8 | -1.50 | 111 |
| 15-Jul-11 | 04:00:52 | 1.95 | 18.4 | 6.7 | 14.0 | 8.8 | 93.5 | -1.50 | 111 |
| 15-Jul-11 | 05:00:52 | 1.94 | 18.3 | 6.7 | 14.0 | 8.8 | 93.2 | -1.50 | 109 |
| 15-Jul-11 | 06:00:52 | 1.94 | 18.2 | 6.6 | 14.0 | 8.8 | 92.9 | -1.50 | 119 |
| 15-Jul-11 | 07:00:52 | 1.94 | 18.1 | 6.5 | 14.0 | 8.8 | 92.6 | -1.50 | 124 |
| 15-Jul-11 | 08:00:52 | 1.93 | 18.0 | 6.5 | 14.0 | 8.8 | 92.9 | -1.50 | 126 |
| 15-Jul-11 | 09:00:52 | 1.93 | 17.9 | 6.6 | 14.0 | 8.8 | 92.8 | -1.50 | 117 |
| 15-Jul-11 | 10:00:52 | 1.93 | 17.8 | 6.6 | 14.0 | 8.8 | 92.9 | -1.40 | 118 |
| 15-Jul-11 | 11:00:52 | 1.92 | 17.7 | 6.7 | 14.0 | 8.9 | 93.0 | -1.50 | 116 |
| 15-Jul-11 | 12:00:52 | 1.93 | 17.7 | 6.6 | 14.0 | 8.9 | 93.2 | -1.50 | 122 |
| 15-Jul-11 | 13:00:52 | 1.93 | 17.7 | 6.6 | 14.0 | 8.9 | 93.4 | -1.40 | 125 |
| 15-Jul-11 | 14:00:52 | 1.93 | 17.6 | 6.6 | 14.0 | 8.9 | 93.6 | -1.50 | 124 |
| 15-Jul-11 | 15:00:52 | 1.93 | 17.5 | 6.7 | 14.0 | 9.0 | 93.9 | -1.50 | 121 |
| 15-Jul-11 | 16:00:52 | 1.94 | 17.5 | 6.8 | 14.0 | 9.0 | 94.2 | -1.40 | 117 |
| 15-Jul-11 | 17:00:52 | 1.93 | 17.5 | 6.8 | 14.0 | 9.0 | 94.4 | -1.50 | 117 |
| 15-Jul-11 | 18:00:52 | 1.94 | 17.5 | 6.8 | 14.0 | 9.0 | 94.6 | -1.50 | 117 |
| 15-Jul-11 | 19:00:52 | 1.94 | 17.5 | 6.8 | 14.0 | 9.1 | 94.6 | -1.40 | 116 |
| 15-Jul-11 | 20:00:52 | 1.95 | 17.4 | 6.9 | 14.0 | 9.1 | 94.6 | -1.50 | 116 |
| 15-Jul-11 | 21:00:52 | 1.95 | 17.3 | 6.8 | 14.0 | 9.1 | 94.7 | -1.40 | 117 |
| 15-Jul-11 | 22:00:52 | 1.95 | 17.3 | 6.8 | 14.0 | 9.1 | 94.3 | -1.50 | 114 |
| 15-Jul-11 | 23:00:52 | 1.96 | 17.1 | 6.8 | 14.0 | 9.1 | 94.0 | -1.50 | 114 |
| 16-Jul-11 | 00:00:52 | 1.96 | 17.0 | 6.7 | 14.0 | 9.1 | 93.7 | -1.30 | 119 |
| 16-Jul-11 | 01:00:52 | 1.97 | 16.8 | 6.7 | 14.0 | 9.0 | 93.2 | -1.50 | 116 |
| 16-Jul-11 | 02:00:52 | 1.97 | 16.7 | 6.7 | 14.0 | 9.0 | 92.8 | -1.40 | 117 |
| 16-Jul-11 | 03:00:52 | 1.98 | 16.6 | 6.7 | 14.0 | 9.0 | 92.4 | -1.20 | 115 |
| 16-Jul-11 | 04:00:53 | 1.99 | 16.5 | 6.7 | 14.0 | 9.0 | 92.0 | -1.50 | 116 |
| 16-Jul-11 | 05:00:52 | 1.99 | 16.5 | 6.7 | 14.0 | 9.0 | 91.7 | -1.50 | 116 |
| 16-Jul-11 | 06:00:52 | 2.00 | 16.4 | 6.7 | 14.0 | 9.0 | 91.6 | -1.40 | 114 |
| 16-Jul-11 | 07:00:52 | 2.00 | 16.3 | 6.7 | 14.0 | 9.0 | 91.7 | -1.40 | 114 |
| 16-Jul-11 | 08:00:52 | 2.01 | 16.2 | 6.7 | 14.0 | 9.0 | 92.0 | -1.50 | 116 |
| 16-Jul-11 | 09:00:52 | 2.01 | 16.3 | 6.8 | 14.0 | 9.1 | 92.3 | -1.40 | 116 |
| 16-Jul-11 | 10:00:52 | 2.01 | 16.3 | 6.8 | 14.0 | 9.1 | 92.5 | -1.40 | 115 |

**Table A-3b** Continual Monitoring Data from Area 8 (May to July 2011)

| Date (DD-MMM-YY) | Time (HH:MM:SS) | Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) | Turbidity (NTU) | Oxidation Reduction Potential (mV) |
|---|---|---|---|---|---|---|---|---|---|
| 16-Jul-11 | 11:00:52 | 2.02 | 16.3 | 6.8 | 14.0 | 9.1 | 92.6 | -1.50 | 114 |
| 16-Jul-11 | 12:00:52 | 2.02 | 16.3 | 6.8 | 14.0 | 9.1 | 92.9 | -1.50 | 113 |
| 16-Jul-11 | 13:00:52 | 2.03 | 16.4 | 6.9 | 14.0 | 9.1 | 93.1 | -1.50 | 112 |
| 16-Jul-11 | 14:00:52 | 2.03 | 16.4 | 6.9 | 14.0 | 9.2 | 93.7 | -1.40 | 111 |
| 16-Jul-11 | 15:00:52 | 2.04 | 16.4 | 7.0 | 14.0 | 9.2 | 93.9 | -1.50 | 117 |
| 16-Jul-11 | 16:00:52 | 2.04 | 16.4 | 7.0 | 14.0 | 9.2 | 94.0 | -1.50 | 113 |
| 16-Jul-11 | 17:00:52 | 2.04 | 16.5 | 7.1 | 14.0 | 9.2 | 94.1 | -1.40 | 115 |
| 16-Jul-11 | 18:00:52 | 2.04 | 16.5 | 7.2 | 14.0 | 9.2 | 94.4 | -1.50 | 108 |
| 16-Jul-11 | 19:00:52 | 2.04 | 16.6 | 7.3 | 14.0 | 9.2 | 94.5 | -1.50 | 114 |
| 16-Jul-11 | 20:00:52 | 2.04 | 16.5 | 7.1 | 14.0 | 9.2 | 94.6 | -1.40 | 110 |
| 16-Jul-11 | 21:00:52 | 2.04 | 16.5 | 6.9 | 14.0 | 9.2 | 94.4 | -1.50 | 112 |
| 16-Jul-11 | 22:00:52 | 2.05 | 16.5 | 6.8 | 14.0 | 9.2 | 94.2 | -1.50 | 116 |
| 16-Jul-11 | 23:00:52 | 2.05 | 16.4 | 6.7 | 14.0 | 9.2 | 93.9 | -1.50 | 114 |
| 17-Jul-11 | 00:00:52 | 2.05 | 16.4 | 6.7 | 14.0 | 9.2 | 93.9 | -1.30 | 114 |
| 17-Jul-11 | 01:00:52 | 2.06 | 16.4 | 6.7 | 14.0 | 9.2 | 93.8 | -1.50 | 111 |
| 17-Jul-11 | 02:00:52 | 2.06 | 16.3 | 6.7 | 14.0 | 9.2 | 93.5 | -1.50 | 111 |
| 17-Jul-11 | 03:00:52 | 2.06 | 16.3 | 6.7 | 14.0 | 9.1 | 93.2 | -1.50 | 112 |
| 17-Jul-11 | 04:00:52 | 2.06 | 16.3 | 6.6 | 14.0 | 9.1 | 92.9 | -1.50 | 114 |
| 17-Jul-11 | 05:00:52 | 2.06 | 16.2 | 6.7 | 14.0 | 9.1 | 92.9 | -1.50 | 113 |
| 17-Jul-11 | 06:00:52 | 2.06 | 16.2 | 6.6 | 14.0 | 9.1 | 92.5 | -1.50 | 119 |
| 17-Jul-11 | 07:00:52 | 2.06 | 16.2 | 6.7 | 14.0 | 9.1 | 92.7 | -1.50 | 115 |
| 17-Jul-11 | 08:00:52 | 2.06 | 16.1 | 6.8 | 14.0 | 9.1 | 92.8 | -1.50 | 113 |
| 17-Jul-11 | 09:00:52 | 2.07 | 16.2 | 6.8 | 14.0 | 9.2 | 93.0 | -1.30 | 114 |
| 17-Jul-11 | 10:00:52 | 2.06 | 16.2 | 6.8 | 14.0 | 9.2 | 93.3 | -1.40 | 113 |
| 17-Jul-11 | 11:00:52 | 2.06 | 16.2 | 6.9 | 14.0 | 9.2 | 93.6 | -1.50 | 114 |
| 17-Jul-11 | 12:00:52 | 2.06 | 16.2 | 6.9 | 14.0 | 9.2 | 93.4 | -1.50 | 110 |
| 17-Jul-11 | 13:00:52 | 2.06 | 16.3 | 6.8 | 14.0 | 9.2 | 93.7 | -1.50 | 114 |

**Note:** DD-MMM-YY = the date where D is day, M is month and Y is year; HH:MM:SS = the time where H is hour, M is minute and S is second; m = meters; °C = degrees Celcius; µS/cm = micro Siemens per centimeter; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; mV = milli Volts.

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 18-May-11 | 14:00 | 2.80 | 2.84 |
| 18-May-11 | 15:00 | 2.37 | 3.00 |
| 18-May-11 | 16:00 | 4.25 | 4.26 |
| 18-May-11 | 17:00 | 4.25 | 4.26 |
| 18-May-11 | 18:00 | 4.25 | 4.26 |
| 18-May-11 | 19:00 | 4.25 | 4.26 |
| 18-May-11 | 20:00 | 4.25 | 4.10 |
| 18-May-11 | 21:00 | 4.25 | 4.10 |
| 18-May-11 | 22:00 | 4.22 | 4.10 |
| 18-May-11 | 23:00 | 4.22 | 4.10 |
| 19-May-11 | 0:00 | 4.25 | 4.10 |
| 19-May-11 | 1:00 | 4.22 | 4.10 |
| 19-May-11 | 2:00 | 4.22 | 4.10 |
| 19-May-11 | 3:00 | 4.22 | 4.10 |
| 19-May-11 | 4:00 | 4.19 | 4.10 |
| 19-May-11 | 5:00 | 4.19 | 4.10 |
| 19-May-11 | 6:00 | 4.19 | 4.10 |
| 19-May-11 | 7:00 | 4.19 | 4.26 |
| 19-May-11 | 8:00 | 4.25 | 4.26 |
| 19-May-11 | 9:00 | 4.25 | 4.26 |
| 19-May-11 | 10:00 | 4.27 | 4.26 |
| 19-May-11 | 11:00 | 4.32 | 4.26 |
| 19-May-11 | 12:00 | 4.32 | 4.26 |
| 19-May-11 | 13:00 | 4.35 | 4.26 |
| 19-May-11 | 14:00 | 4.35 | 4.26 |
| 19-May-11 | 15:00 | 4.35 | 4.26 |
| 19-May-11 | 16:00 | 4.35 | 4.26 |
| 19-May-11 | 17:00 | 4.35 | 4.26 |
| 19-May-11 | 18:00 | 4.35 | 4.26 |
| 19-May-11 | 19:00 | 4.35 | 4.26 |
| 19-May-11 | 20:00 | 4.35 | 4.26 |
| 19-May-11 | 21:00 | 4.32 | 4.26 |
| 19-May-11 | 22:00 | 4.32 | 4.26 |
| 19-May-11 | 23:00 | 4.32 | 4.26 |
| 20-May-11 | 0:00 | 4.32 | 4.26 |
| 20-May-11 | 1:00 | 4.32 | 4.26 |
| 20-May-11 | 2:00 | 4.32 | 4.10 |
| 20-May-11 | 3:00 | 4.30 | 4.10 |
| 20-May-11 | 4:00 | 4.32 | 4.26 |
| 20-May-11 | 5:00 | 4.35 | 4.10 |
| 20-May-11 | 6:00 | 4.35 | 4.26 |
| 20-May-11 | 7:00 | 4.35 | 4.10 |
| 20-May-11 | 8:00 | 4.35 | 4.26 |
| 20-May-11 | 9:00 | 4.30 | 4.26 |
| 20-May-11 | 10:00 | 4.35 | 4.26 |
| 20-May-11 | 11:00 | 4.38 | 4.26 |
| 20-May-11 | 12:00 | 4.38 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 20-May-11 | 13:00 | 4.43 | 4.41 |
| 20-May-11 | 14:00 | 4.43 | 4.41 |
| 20-May-11 | 15:00 | 4.43 | 4.41 |
| 20-May-11 | 16:00 | 4.45 | 4.41 |
| 20-May-11 | 17:00 | 4.45 | 4.41 |
| 20-May-11 | 18:00 | 4.45 | 4.41 |
| 20-May-11 | 19:00 | 4.45 | 4.41 |
| 20-May-11 | 20:00 | 4.43 | 4.41 |
| 20-May-11 | 21:00 | 4.43 | 4.41 |
| 20-May-11 | 22:00 | 4.43 | 4.41 |
| 20-May-11 | 23:00 | 4.40 | 4.41 |
| 21-May-11 | 0:00 | 4.40 | 4.41 |
| 21-May-11 | 1:00 | 4.43 | 4.41 |
| 21-May-11 | 2:00 | 4.40 | 4.41 |
| 21-May-11 | 3:00 | 4.40 | 4.41 |
| 21-May-11 | 4:00 | 4.40 | 4.41 |
| 21-May-11 | 5:00 | 4.43 | 4.41 |
| 21-May-11 | 6:00 | 4.40 | 4.41 |
| 21-May-11 | 7:00 | 4.40 | 4.41 |
| 21-May-11 | 8:00 | 4.38 | 4.41 |
| 21-May-11 | 9:00 | 4.40 | 4.41 |
| 21-May-11 | 10:00 | 4.40 | 4.41 |
| 21-May-11 | 11:00 | 4.40 | 4.41 |
| 21-May-11 | 12:00 | 4.35 | 4.41 |
| 21-May-11 | 13:00 | 4.35 | 4.41 |
| 21-May-11 | 14:00 | 4.38 | 4.41 |
| 21-May-11 | 15:00 | 4.38 | 4.41 |
| 21-May-11 | 16:00 | 4.38 | 4.41 |
| 21-May-11 | 17:00 | 4.38 | 4.41 |
| 21-May-11 | 18:00 | 4.38 | 4.41 |
| 21-May-11 | 19:00 | 4.35 | 4.41 |
| 21-May-11 | 20:00 | 4.35 | 4.41 |
| 21-May-11 | 21:00 | 4.35 | 4.41 |
| 21-May-11 | 22:00 | 4.32 | 4.41 |
| 21-May-11 | 23:00 | 4.30 | 4.41 |
| 22-May-11 | 0:00 | 4.30 | 4.41 |
| 22-May-11 | 1:00 | 4.30 | 4.41 |
| 22-May-11 | 2:00 | 4.30 | 4.26 |
| 22-May-11 | 3:00 | 4.32 | 4.26 |
| 22-May-11 | 4:00 | 4.30 | 4.26 |
| 22-May-11 | 5:00 | 4.30 | 4.26 |
| 22-May-11 | 6:00 | 4.30 | 4.26 |
| 22-May-11 | 7:00 | 4.30 | 4.26 |
| 22-May-11 | 8:00 | 4.30 | 4.26 |
| 22-May-11 | 9:00 | 4.32 | 4.26 |
| 22-May-11 | 10:00 | 4.32 | 4.26 |
| 22-May-11 | 11:00 | 4.38 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 22-May-11 | 12:00 | 4.38 | 4.41 |
| 22-May-11 | 13:00 | 4.38 | 4.41 |
| 22-May-11 | 14:00 | 4.43 | 4.41 |
| 22-May-11 | 15:00 | 4.43 | 4.41 |
| 22-May-11 | 16:00 | 4.43 | 4.41 |
| 22-May-11 | 17:00 | 4.45 | 4.41 |
| 22-May-11 | 18:00 | 4.45 | 4.41 |
| 22-May-11 | 19:00 | 4.45 | 4.41 |
| 22-May-11 | 20:00 | 4.45 | 4.41 |
| 22-May-11 | 21:00 | 4.43 | 4.41 |
| 22-May-11 | 22:00 | 4.43 | 4.41 |
| 22-May-11 | 23:00 | 4.43 | 4.41 |
| 23-May-11 | 0:00 | 4.43 | 4.41 |
| 23-May-11 | 1:00 | 4.40 | 4.41 |
| 23-May-11 | 2:00 | 4.40 | 4.41 |
| 23-May-11 | 3:00 | 4.40 | 4.41 |
| 23-May-11 | 4:00 | 4.43 | 4.41 |
| 23-May-11 | 5:00 | 4.43 | 4.41 |
| 23-May-11 | 6:00 | 4.43 | 4.41 |
| 23-May-11 | 7:00 | 4.45 | 4.41 |
| 23-May-11 | 8:00 | 4.45 | 4.41 |
| 23-May-11 | 9:00 | 4.48 | 4.41 |
| 23-May-11 | 10:00 | 4.51 | 4.41 |
| 23-May-11 | 11:00 | 4.51 | 4.41 |
| 23-May-11 | 12:00 | 4.53 | 4.41 |
| 23-May-11 | 13:00 | 4.53 | 4.57 |
| 23-May-11 | 14:00 | 4.53 | 4.57 |
| 23-May-11 | 15:00 | 4.53 | 4.57 |
| 23-May-11 | 16:00 | 4.53 | 4.57 |
| 23-May-11 | 17:00 | 4.53 | 4.57 |
| 23-May-11 | 18:00 | 4.51 | 4.41 |
| 23-May-11 | 19:00 | 4.51 | 4.41 |
| 23-May-11 | 20:00 | 4.48 | 4.41 |
| 23-May-11 | 21:00 | 4.48 | 4.41 |
| 23-May-11 | 22:00 | 4.45 | 4.41 |
| 23-May-11 | 23:00 | 4.45 | 4.26 |
| 24-May-11 | 0:00 | 4.45 | 4.41 |
| 24-May-11 | 1:00 | 4.45 | 4.41 |
| 24-May-11 | 2:00 | 4.45 | 4.41 |
| 24-May-11 | 3:00 | 4.45 | 4.41 |
| 24-May-11 | 4:00 | 4.45 | 4.41 |
| 24-May-11 | 5:00 | 4.45 | 4.41 |
| 24-May-11 | 6:00 | 4.43 | 4.41 |
| 24-May-11 | 7:00 | 4.43 | 4.41 |
| 24-May-11 | 8:00 | 4.43 | 4.41 |
| 24-May-11 | 9:00 | 4.43 | 4.41 |
| 24-May-11 | 10:00 | 4.45 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 24-May-11 | 11:00 | 4.48 | 4.41 |
| 24-May-11 | 12:00 | 4.48 | 4.41 |
| 24-May-11 | 13:00 | 4.48 | 4.41 |
| 24-May-11 | 14:00 | 4.51 | 4.41 |
| 24-May-11 | 15:00 | 4.51 | 4.41 |
| 24-May-11 | 16:00 | 4.51 | 4.41 |
| 24-May-11 | 17:00 | 4.51 | 4.57 |
| 24-May-11 | 18:00 | 4.51 | 4.41 |
| 24-May-11 | 19:00 | 4.48 | 4.41 |
| 24-May-11 | 20:00 | 4.51 | 4.41 |
| 24-May-11 | 21:00 | 4.48 | 4.41 |
| 24-May-11 | 22:00 | 4.48 | 4.41 |
| 24-May-11 | 23:00 | 4.48 | 4.41 |
| 25-May-11 | 0:00 | 4.48 | 4.41 |
| 25-May-11 | 1:00 | 4.51 | 4.41 |
| 25-May-11 | 2:00 | 4.51 | 4.41 |
| 25-May-11 | 3:00 | 4.51 | 4.41 |
| 25-May-11 | 4:00 | 4.51 | 4.41 |
| 25-May-11 | 5:00 | 4.48 | 4.41 |
| 25-May-11 | 6:00 | 4.48 | 4.41 |
| 25-May-11 | 7:00 | 4.48 | 4.41 |
| 25-May-11 | 8:00 | 4.48 | 4.41 |
| 25-May-11 | 9:00 | 4.51 | 4.57 |
| 25-May-11 | 10:00 | 4.51 | 4.57 |
| 25-May-11 | 11:00 | 4.51 | 4.57 |
| 25-May-11 | 12:00 | 4.53 | 4.57 |
| 25-May-11 | 13:00 | 4.53 | 4.57 |
| 25-May-11 | 14:00 | 4.53 | 4.57 |
| 25-May-11 | 15:00 | 4.56 | 4.57 |
| 25-May-11 | 16:00 | 4.53 | 4.57 |
| 25-May-11 | 17:00 | 4.53 | 4.57 |
| 25-May-11 | 18:00 | 4.56 | 4.57 |
| 25-May-11 | 19:00 | 4.51 | 4.57 |
| 25-May-11 | 20:00 | 4.51 | 4.57 |
| 25-May-11 | 21:00 | 4.51 | 4.57 |
| 25-May-11 | 22:00 | 4.51 | 4.57 |
| 25-May-11 | 23:00 | 4.48 | 4.57 |
| 26-May-11 | 0:00 | 4.48 | 4.57 |
| 26-May-11 | 1:00 | 4.48 | 4.41 |
| 26-May-11 | 2:00 | 4.48 | 4.41 |
| 26-May-11 | 3:00 | 4.48 | 4.41 |
| 26-May-11 | 4:00 | 4.48 | 4.41 |
| 26-May-11 | 5:00 | 4.48 | 4.41 |
| 26-May-11 | 6:00 | 4.48 | 4.41 |
| 26-May-11 | 7:00 | 4.51 | 4.57 |
| 26-May-11 | 8:00 | 4.51 | 4.57 |
| 26-May-11 | 9:00 | 4.53 | 4.57 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 26-May-11 | 10:00 | 4.51 | 4.57 |
| 26-May-11 | 11:00 | 4.53 | 4.57 |
| 26-May-11 | 12:00 | 4.56 | 4.57 |
| 26-May-11 | 13:00 | 4.53 | 4.73 |
| 26-May-11 | 14:00 | 4.56 | 4.57 |
| 26-May-11 | 15:00 | 4.58 | 4.57 |
| 26-May-11 | 16:00 | 4.58 | 4.57 |
| 26-May-11 | 17:00 | 4.58 | 4.57 |
| 26-May-11 | 18:00 | 4.58 | 4.57 |
| 26-May-11 | 19:00 | 4.58 | 4.57 |
| 26-May-11 | 20:00 | 4.56 | 4.57 |
| 26-May-11 | 21:00 | 4.56 | 4.57 |
| 26-May-11 | 22:00 | 4.53 | 4.57 |
| 26-May-11 | 23:00 | 4.53 | 4.57 |
| 27-May-11 | 0:00 | 4.53 | 4.57 |
| 27-May-11 | 1:00 | 4.51 | 4.57 |
| 27-May-11 | 2:00 | 4.51 | 4.41 |
| 27-May-11 | 3:00 | 4.51 | 4.57 |
| 27-May-11 | 4:00 | 4.53 | 4.41 |
| 27-May-11 | 5:00 | 4.53 | 4.41 |
| 27-May-11 | 6:00 | 4.53 | 4.41 |
| 27-May-11 | 7:00 | 4.53 | 4.41 |
| 27-May-11 | 8:00 | 4.53 | 4.41 |
| 27-May-11 | 9:00 | 4.53 | 4.41 |
| 27-May-11 | 10:00 | 4.53 | 4.41 |
| 27-May-11 | 11:00 | 4.53 | 4.41 |
| 27-May-11 | 12:00 | 4.51 | 4.57 |
| 27-May-11 | 13:00 | 4.48 | 4.57 |
| 27-May-11 | 14:00 | 4.58 | 4.57 |
| 27-May-11 | 15:00 | 4.48 | 4.57 |
| 27-May-11 | 16:00 | 4.58 | 4.57 |
| 27-May-11 | 17:00 | 4.58 | 4.57 |
| 27-May-11 | 18:00 | 4.56 | 4.57 |
| 27-May-11 | 19:00 | 4.56 | 4.57 |
| 27-May-11 | 20:00 | 4.56 | 4.57 |
| 27-May-11 | 21:00 | 4.56 | 4.57 |
| 27-May-11 | 22:00 | 4.53 | 4.41 |
| 27-May-11 | 23:00 | 4.53 | 4.41 |
| 28-May-11 | 0:00 | 4.56 | 4.41 |
| 28-May-11 | 1:00 | 4.48 | 4.41 |
| 28-May-11 | 2:00 | 4.48 | 4.41 |
| 28-May-11 | 3:00 | 4.45 | 4.41 |
| 28-May-11 | 4:00 | 4.45 | 4.41 |
| 28-May-11 | 5:00 | 4.43 | 4.41 |
| 28-May-11 | 6:00 | 4.43 | 4.41 |
| 28-May-11 | 7:00 | 4.40 | 4.41 |
| 28-May-11 | 8:00 | 4.43 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 28-May-11 | 9:00 | 4.40 | 4.41 |
| 28-May-11 | 10:00 | 4.43 | 4.41 |
| 28-May-11 | 11:00 | 4.43 | 4.41 |
| 28-May-11 | 12:00 | 4.43 | 4.41 |
| 28-May-11 | 13:00 | 4.45 | 4.41 |
| 28-May-11 | 14:00 | 4.48 | 4.41 |
| 28-May-11 | 15:00 | 4.48 | 4.57 |
| 28-May-11 | 16:00 | 4.48 | 4.57 |
| 28-May-11 | 17:00 | 4.48 | 4.57 |
| 28-May-11 | 18:00 | 4.51 | 4.41 |
| 28-May-11 | 19:00 | 4.51 | 4.57 |
| 28-May-11 | 20:00 | 4.51 | 4.41 |
| 28-May-11 | 21:00 | 4.51 | 4.41 |
| 28-May-11 | 22:00 | 4.48 | 4.41 |
| 28-May-11 | 23:00 | 4.48 | 4.41 |
| 29-May-11 | 0:00 | 4.48 | 4.41 |
| 29-May-11 | 1:00 | 4.48 | 4.41 |
| 29-May-11 | 2:00 | 4.45 | 4.41 |
| 29-May-11 | 3:00 | 4.45 | 4.41 |
| 29-May-11 | 4:00 | 4.45 | 4.41 |
| 29-May-11 | 5:00 | 4.43 | 4.41 |
| 29-May-11 | 6:00 | 4.43 | 4.41 |
| 29-May-11 | 7:00 | 4.43 | 4.41 |
| 29-May-11 | 8:00 | 4.40 | 4.41 |
| 29-May-11 | 9:00 | 4.40 | 4.41 |
| 29-May-11 | 10:00 | 4.40 | 4.41 |
| 29-May-11 | 11:00 | 4.43 | 4.41 |
| 29-May-11 | 12:00 | 4.45 | 4.41 |
| 29-May-11 | 13:00 | 4.45 | 4.41 |
| 29-May-11 | 14:00 | 4.45 | 4.41 |
| 29-May-11 | 15:00 | 4.45 | 4.41 |
| 29-May-11 | 16:00 | 4.45 | 4.57 |
| 29-May-11 | 17:00 | 4.48 | 4.57 |
| 29-May-11 | 18:00 | 4.48 | 4.57 |
| 29-May-11 | 19:00 | 4.48 | 4.41 |
| 29-May-11 | 20:00 | 4.48 | 4.41 |
| 29-May-11 | 21:00 | 4.48 | 4.41 |
| 29-May-11 | 22:00 | 4.45 | 4.41 |
| 29-May-11 | 23:00 | 4.45 | 4.41 |
| 30-May-11 | 0:00 | 4.45 | 4.41 |
| 30-May-11 | 1:00 | 4.45 | 4.41 |
| 30-May-11 | 2:00 | 4.43 | 4.41 |
| 30-May-11 | 3:00 | 4.43 | 4.41 |
| 30-May-11 | 4:00 | 4.43 | 4.41 |
| 30-May-11 | 5:00 | 4.43 | 4.41 |
| 30-May-11 | 6:00 | 4.43 | 4.41 |
| 30-May-11 | 7:00 | 4.43 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 30-May-11 | 8:00 | 4.43 | 4.41 |
| 30-May-11 | 9:00 | 4.43 | 4.41 |
| 30-May-11 | 10:00 | 4.43 | 4.41 |
| 30-May-11 | 11:00 | 4.43 | 4.41 |
| 30-May-11 | 12:00 | 4.45 | 4.41 |
| 30-May-11 | 13:00 | 4.45 | 4.57 |
| 30-May-11 | 14:00 | 4.45 | 4.57 |
| 30-May-11 | 15:00 | 4.51 | 4.57 |
| 30-May-11 | 16:00 | 4.53 | 4.57 |
| 30-May-11 | 17:00 | 4.56 | 4.57 |
| 30-May-11 | 18:00 | 4.56 | 4.57 |
| 30-May-11 | 19:00 | 4.58 | 4.57 |
| 30-May-11 | 20:00 | 4.56 | 4.57 |
| 30-May-11 | 21:00 | 4.56 | 4.57 |
| 30-May-11 | 22:00 | 4.58 | 4.57 |
| 30-May-11 | 23:00 | 4.58 | 4.57 |
| 31-May-11 | 0:00 | 4.58 | 4.57 |
| 31-May-11 | 1:00 | 4.58 | 4.57 |
| 31-May-11 | 2:00 | 4.56 | 4.57 |
| 31-May-11 | 3:00 | 4.53 | 4.57 |
| 31-May-11 | 4:00 | 4.53 | 4.57 |
| 31-May-11 | 5:00 | 4.53 | 4.41 |
| 31-May-11 | 6:00 | 4.53 | 4.41 |
| 31-May-11 | 7:00 | 4.53 | 4.41 |
| 31-May-11 | 8:00 | 4.53 | 4.57 |
| 31-May-11 | 9:00 | 4.51 | 4.41 |
| 31-May-11 | 10:00 | 4.51 | 4.41 |
| 31-May-11 | 11:00 | 4.51 | 4.41 |
| 31-May-11 | 12:00 | 4.53 | 4.57 |
| 31-May-11 | 13:00 | 4.53 | 4.57 |
| 31-May-11 | 14:00 | 4.56 | 4.57 |
| 31-May-11 | 15:00 | 4.56 | 4.57 |
| 31-May-11 | 16:00 | 4.58 | 4.57 |
| 31-May-11 | 17:00 | 4.58 | 4.57 |
| 31-May-11 | 18:00 | 4.58 | 4.57 |
| 31-May-11 | 19:00 | 4.58 | 4.57 |
| 31-May-11 | 20:00 | 4.58 | 4.57 |
| 31-May-11 | 21:00 | 4.58 | 4.57 |
| 31-May-11 | 22:00 | 4.61 | 4.57 |
| 31-May-11 | 23:00 | 4.61 | 4.57 |
| 1-Jun-11 | 0:00 | 4.61 | 4.57 |
| 1-Jun-11 | 1:00 | 4.61 | 4.57 |
| 1-Jun-11 | 2:00 | 4.61 | 4.57 |
| 1-Jun-11 | 3:00 | 4.58 | 4.41 |
| 1-Jun-11 | 4:00 | 4.56 | 4.41 |
| 1-Jun-11 | 5:00 | 4.51 | 4.41 |
| 1-Jun-11 | 6:00 | 4.51 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 1-Jun-11 | 7:00 | 4.48 | 4.41 |
| 1-Jun-11 | 8:00 | 4.45 | 4.41 |
| 1-Jun-11 | 9:00 | 4.48 | 4.41 |
| 1-Jun-11 | 10:00 | 4.51 | 4.41 |
| 1-Jun-11 | 11:00 | 4.51 | 4.41 |
| 1-Jun-11 | 12:00 | 4.53 | 4.57 |
| 1-Jun-11 | 13:00 | 4.56 | 4.57 |
| 1-Jun-11 | 14:00 | 4.56 | 4.57 |
| 1-Jun-11 | 15:00 | 4.58 | 4.73 |
| 1-Jun-11 | 16:00 | 4.61 | 4.73 |
| 1-Jun-11 | 17:00 | 4.64 | 4.57 |
| 1-Jun-11 | 18:00 | 4.64 | 4.57 |
| 1-Jun-11 | 19:00 | 4.61 | 4.57 |
| 1-Jun-11 | 20:00 | 4.61 | 4.57 |
| 1-Jun-11 | 21:00 | 4.64 | 4.57 |
| 1-Jun-11 | 22:00 | 4.56 | 4.57 |
| 1-Jun-11 | 23:00 | 4.56 | 4.57 |
| 2-Jun-11 | 0:00 | 4.45 | 4.57 |
| 2-Jun-11 | 1:00 | 4.48 | 4.57 |
| 2-Jun-11 | 2:00 | 4.48 | 4.57 |
| 2-Jun-11 | 3:00 | 4.35 | 4.41 |
| 2-Jun-11 | 4:00 | 4.32 | 4.26 |
| 2-Jun-11 | 5:00 | 4.32 | 4.26 |
| 2-Jun-11 | 6:00 | 4.32 | 4.26 |
| 2-Jun-11 | 7:00 | 4.27 | 4.26 |
| 2-Jun-11 | 8:00 | 4.19 | 4.10 |
| 2-Jun-11 | 9:00 | 4.14 | 4.10 |
| 2-Jun-11 | 10:00 | 4.19 | 3.94 |
| 2-Jun-11 | 11:00 | 4.22 | 3.94 |
| 2-Jun-11 | 12:00 | 4.25 | 3.94 |
| 2-Jun-11 | 13:00 | 4.30 | 3.94 |
| 2-Jun-11 | 14:00 | 4.19 | 4.10 |
| 2-Jun-11 | 15:00 | 4.27 | 4.10 |
| 2-Jun-11 | 16:00 | 4.27 | 4.10 |
| 2-Jun-11 | 17:00 | 4.32 | 3.94 |
| 2-Jun-11 | 18:00 | 4.32 | 3.94 |
| 2-Jun-11 | 19:00 | 4.19 | 3.94 |
| 2-Jun-11 | 20:00 | 4.01 | 3.94 |
| 2-Jun-11 | 21:00 | 4.04 | 3.94 |
| 2-Jun-11 | 22:00 | 4.17 | 3.94 |
| 2-Jun-11 | 23:00 | 4.17 | 3.94 |
| 3-Jun-11 | 0:00 | 4.09 | 3.94 |
| 3-Jun-11 | 1:00 | 4.19 | 3.94 |
| 3-Jun-11 | 2:00 | 4.09 | 3.94 |
| 3-Jun-11 | 3:00 | 4.01 | 3.94 |
| 3-Jun-11 | 4:00 | 4.09 | 3.94 |
| 3-Jun-11 | 5:00 | 4.09 | 3.94 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 3-Jun-11 | 6:00 | 4.14 | 3.94 |
| 3-Jun-11 | 7:00 | 4.09 | 3.94 |
| 3-Jun-11 | 8:00 | 4.19 | 3.94 |
| 3-Jun-11 | 9:00 | 4.25 | 4.10 |
| 3-Jun-11 | 10:00 | 4.25 | 4.10 |
| 3-Jun-11 | 11:00 | 4.27 | 3.94 |
| 3-Jun-11 | 12:00 | 4.27 | 3.94 |
| 3-Jun-11 | 13:00 | 4.27 | 3.94 |
| 3-Jun-11 | 14:00 | 4.32 | 4.10 |
| 3-Jun-11 | 15:00 | 4.35 | 4.10 |
| 3-Jun-11 | 16:00 | 4.32 | 4.10 |
| 3-Jun-11 | 17:00 | 4.32 | 4.10 |
| 3-Jun-11 | 18:00 | 4.32 | 4.10 |
| 3-Jun-11 | 19:00 | 4.32 | 4.10 |
| 3-Jun-11 | 20:00 | 4.32 | 4.10 |
| 3-Jun-11 | 21:00 | 4.30 | 4.10 |
| 3-Jun-11 | 22:00 | 4.25 | 4.10 |
| 3-Jun-11 | 23:00 | 4.19 | 4.10 |
| 4-Jun-11 | 0:00 | 4.17 | 4.10 |
| 4-Jun-11 | 1:00 | 4.17 | 4.10 |
| 4-Jun-11 | 2:00 | 4.19 | 4.10 |
| 4-Jun-11 | 3:00 | 4.19 | 4.10 |
| 4-Jun-11 | 4:00 | 4.17 | 4.10 |
| 4-Jun-11 | 5:00 | 4.19 | 4.10 |
| 4-Jun-11 | 6:00 | 4.19 | 4.10 |
| 4-Jun-11 | 7:00 | 4.17 | 4.10 |
| 4-Jun-11 | 8:00 | 4.22 | 4.10 |
| 4-Jun-11 | 9:00 | 4.27 | 4.10 |
| 4-Jun-11 | 10:00 | 4.30 | 4.10 |
| 4-Jun-11 | 11:00 | 4.32 | 4.10 |
| 4-Jun-11 | 12:00 | 4.35 | 4.10 |
| 4-Jun-11 | 13:00 | 4.30 | 4.10 |
| 4-Jun-11 | 14:00 | 4.30 | 4.10 |
| 4-Jun-11 | 15:00 | 4.32 | 4.10 |
| 4-Jun-11 | 16:00 | 4.32 | 4.10 |
| 4-Jun-11 | 17:00 | 4.30 | 3.94 |
| 4-Jun-11 | 18:00 | 4.30 | 3.94 |
| 4-Jun-11 | 19:00 | 4.30 | 4.10 |
| 4-Jun-11 | 20:00 | 4.35 | 4.10 |
| 4-Jun-11 | 21:00 | 4.35 | 3.94 |
| 4-Jun-11 | 22:00 | 4.32 | 3.79 |
| 4-Jun-11 | 23:00 | 4.32 | 4.10 |
| 5-Jun-11 | 0:00 | 4.22 | 3.94 |
| 5-Jun-11 | 1:00 | 4.14 | 3.79 |
| 5-Jun-11 | 2:00 | 4.14 | 3.79 |
| 5-Jun-11 | 3:00 | 4.14 | 3.63 |
| 5-Jun-11 | 4:00 | 4.14 | 3.79 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 5-Jun-11 | 5:00 | 4.09 | 3.79 |
| 5-Jun-11 | 6:00 | 4.12 | 3.94 |
| 5-Jun-11 | 7:00 | 4.12 | 3.79 |
| 5-Jun-11 | 8:00 | 4.12 | 3.79 |
| 5-Jun-11 | 9:00 | 4.14 | 3.79 |
| 5-Jun-11 | 10:00 | 4.17 | 3.79 |
| 5-Jun-11 | 11:00 | 4.30 | 3.79 |
| 5-Jun-11 | 12:00 | 4.32 | 3.79 |
| 5-Jun-11 | 13:00 | 4.32 | 3.79 |
| 5-Jun-11 | 14:00 | 4.30 | 3.79 |
| 5-Jun-11 | 15:00 | 4.30 | 3.94 |
| 5-Jun-11 | 16:00 | 4.32 | 4.10 |
| 5-Jun-11 | 17:00 | 4.27 | 4.10 |
| 5-Jun-11 | 18:00 | 4.30 | 3.94 |
| 5-Jun-11 | 19:00 | 4.30 | 3.94 |
| 5-Jun-11 | 20:00 | 4.25 | 4.10 |
| 5-Jun-11 | 21:00 | 4.22 | 4.10 |
| 5-Jun-11 | 22:00 | 4.25 | 3.94 |
| 5-Jun-11 | 23:00 | 4.19 | 3.94 |
| 6-Jun-11 | 0:00 | 4.19 | 3.94 |
| 6-Jun-11 | 1:00 | 4.17 | 3.79 |
| 6-Jun-11 | 2:00 | 4.17 | 3.94 |
| 6-Jun-11 | 3:00 | 4.17 | 3.94 |
| 6-Jun-11 | 4:00 | 4.17 | 3.94 |
| 6-Jun-11 | 5:00 | 4.14 | 3.94 |
| 6-Jun-11 | 6:00 | 4.14 | 3.94 |
| 6-Jun-11 | 7:00 | 4.17 | 4.10 |
| 6-Jun-11 | 8:00 | 4.14 | 3.94 |
| 6-Jun-11 | 9:00 | 4.09 | 3.94 |
| 6-Jun-11 | 10:00 | 4.14 | 3.94 |
| 6-Jun-11 | 11:00 | 4.14 | 3.94 |
| 6-Jun-11 | 12:00 | 4.19 | 3.94 |
| 6-Jun-11 | 13:00 | 4.22 | 3.94 |
| 6-Jun-11 | 14:00 | 4.19 | 3.79 |
| 6-Jun-11 | 15:00 | 4.19 | 3.63 |
| 6-Jun-11 | 16:00 | 4.14 | 3.63 |
| 6-Jun-11 | 17:00 | 4.19 | 3.32 |
| 6-Jun-11 | 18:00 | 4.19 | 3.16 |
| 6-Jun-11 | 19:00 | 4.14 | 3.16 |
| 6-Jun-11 | 20:00 | 4.12 | 3.32 |
| 6-Jun-11 | 21:00 | 4.12 | 3.16 |
| 6-Jun-11 | 22:00 | 4.04 | 3.32 |
| 6-Jun-11 | 23:00 | 4.04 | 3.48 |
| 7-Jun-11 | 0:00 | 4.09 | 3.63 |
| 7-Jun-11 | 1:00 | 4.06 | 3.63 |
| 7-Jun-11 | 2:00 | 3.96 | 3.63 |
| 7-Jun-11 | 3:00 | 3.93 | 3.48 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 7-Jun-11 | 4:00 | 3.99 | 3.63 |
| 7-Jun-11 | 5:00 | 4.04 | 3.48 |
| 7-Jun-11 | 6:00 | 4.06 | 3.63 |
| 7-Jun-11 | 7:00 | 4.06 | 3.63 |
| 7-Jun-11 | 8:00 | 4.04 | 3.79 |
| 7-Jun-11 | 9:00 | 4.06 | 3.79 |
| 7-Jun-11 | 10:00 | 4.06 | 3.79 |
| 7-Jun-11 | 11:00 | 4.06 | 3.79 |
| 7-Jun-11 | 12:00 | 4.06 | 3.79 |
| 7-Jun-11 | 13:00 | 4.12 | 3.79 |
| 7-Jun-11 | 14:00 | 4.17 | 3.79 |
| 7-Jun-11 | 15:00 | 4.09 | 3.79 |
| 7-Jun-11 | 16:00 | 4.04 | 3.63 |
| 7-Jun-11 | 17:00 | 4.12 | 3.63 |
| 7-Jun-11 | 18:00 | 4.12 | 3.63 |
| 7-Jun-11 | 19:00 | 4.09 | 3.79 |
| 7-Jun-11 | 20:00 | 4.09 | 3.94 |
| 7-Jun-11 | 21:00 | 4.14 | 4.10 |
| 7-Jun-11 | 22:00 | 4.14 | 3.63 |
| 7-Jun-11 | 23:00 | 4.17 | 4.10 |
| 8-Jun-11 | 0:00 | 4.19 | 4.10 |
| 8-Jun-11 | 1:00 | 4.19 | 4.10 |
| 8-Jun-11 | 2:00 | 4.12 | 3.79 |
| 8-Jun-11 | 3:00 | 4.09 | 3.63 |
| 8-Jun-11 | 4:00 | 4.12 | 3.79 |
| 8-Jun-11 | 5:00 | 4.09 | 3.63 |
| 8-Jun-11 | 6:00 | 4.04 | 3.79 |
| 8-Jun-11 | 7:00 | 4.04 | 3.94 |
| 8-Jun-11 | 8:00 | 4.12 | 3.79 |
| 8-Jun-11 | 9:00 | 4.17 | 3.94 |
| 8-Jun-11 | 10:00 | 4.25 | 3.94 |
| 8-Jun-11 | 11:00 | 4.25 | 3.94 |
| 8-Jun-11 | 12:00 | 4.25 | 3.94 |
| 8-Jun-11 | 13:00 | 4.25 | 4.10 |
| 8-Jun-11 | 14:00 | 4.27 | 4.26 |
| 8-Jun-11 | 15:00 | 4.25 | 4.10 |
| 8-Jun-11 | 16:00 | 4.25 | 4.10 |
| 8-Jun-11 | 17:00 | 4.25 | 4.10 |
| 8-Jun-11 | 18:00 | 4.27 | 4.10 |
| 8-Jun-11 | 19:00 | 4.30 | 4.26 |
| 8-Jun-11 | 20:00 | 4.30 | 4.26 |
| 8-Jun-11 | 21:00 | 4.30 | 4.26 |
| 8-Jun-11 | 22:00 | 4.35 | 4.10 |
| 8-Jun-11 | 23:00 | 4.30 | 4.10 |
| 9-Jun-11 | 0:00 | 4.27 | 3.94 |
| 9-Jun-11 | 1:00 | 4.27 | 4.10 |
| 9-Jun-11 | 2:00 | 4.32 | 3.94 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 9-Jun-11 | 3:00 | 4.27 | 3.79 |
| 9-Jun-11 | 4:00 | 4.25 | 3.48 |
| 9-Jun-11 | 5:00 | 4.22 | 3.48 |
| 9-Jun-11 | 6:00 | 4.17 | 3.48 |
| 9-Jun-11 | 7:00 | 4.17 | 3.48 |
| 9-Jun-11 | 8:00 | 4.12 | 3.48 |
| 9-Jun-11 | 9:00 | 3.88 | 3.63 |
| 9-Jun-11 | 10:00 | 3.67 | 3.63 |
| 9-Jun-11 | 11:00 | 3.70 | 3.63 |
| 9-Jun-11 | 12:00 | 3.70 | 3.63 |
| 9-Jun-11 | 13:00 | 3.70 | 3.63 |
| 9-Jun-11 | 14:00 | 3.72 | 3.63 |
| 9-Jun-11 | 15:00 | 3.75 | 3.63 |
| 9-Jun-11 | 16:00 | 3.75 | 3.63 |
| 9-Jun-11 | 17:00 | 3.80 | 3.63 |
| 9-Jun-11 | 18:00 | 3.91 | 3.63 |
| 9-Jun-11 | 19:00 | 3.78 | 3.63 |
| 9-Jun-11 | 20:00 | 3.75 | 3.63 |
| 9-Jun-11 | 21:00 | 3.78 | 3.63 |
| 9-Jun-11 | 22:00 | 3.75 | 3.63 |
| 9-Jun-11 | 23:00 | 3.78 | 3.63 |
| 10-Jun-11 | 0:00 | 3.75 | 3.63 |
| 10-Jun-11 | 1:00 | 3.80 | 3.63 |
| 10-Jun-11 | 2:00 | 4.14 | 3.63 |
| 10-Jun-11 | 3:00 | 4.19 | 3.63 |
| 10-Jun-11 | 4:00 | 4.30 | 3.63 |
| 10-Jun-11 | 5:00 | 4.32 | 3.63 |
| 10-Jun-11 | 6:00 | 4.30 | 3.63 |
| 10-Jun-11 | 7:00 | 4.25 | 3.63 |
| 10-Jun-11 | 8:00 | 4.22 | 3.79 |
| 10-Jun-11 | 9:00 | 4.19 | 3.79 |
| 10-Jun-11 | 10:00 | 4.27 | 3.79 |
| 10-Jun-11 | 11:00 | 4.19 | 3.79 |
| 10-Jun-11 | 12:00 | 4.22 | 3.79 |
| 10-Jun-11 | 13:00 | 4.17 | 3.79 |
| 10-Jun-11 | 14:00 | 4.19 | 3.94 |
| 10-Jun-11 | 15:00 | 4.09 | 3.94 |
| 10-Jun-11 | 16:00 | 3.99 | 3.94 |
| 10-Jun-11 | 17:00 | 4.19 | 3.94 |
| 10-Jun-11 | 18:00 | 4.04 | 3.94 |
| 10-Jun-11 | 19:00 | 4.12 | 4.10 |
| 10-Jun-11 | 20:00 | 4.17 | 4.10 |
| 10-Jun-11 | 21:00 | 4.19 | 4.10 |
| 10-Jun-11 | 22:00 | 4.19 | 4.10 |
| 10-Jun-11 | 23:00 | 4.19 | 4.10 |
| 11-Jun-11 | 0:00 | 4.19 | 4.10 |
| 11-Jun-11 | 1:00 | 4.09 | 4.10 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 11-Jun-11 | 2:00 | 4.14 | 4.10 |
| 11-Jun-11 | 3:00 | 4.12 | 4.10 |
| 11-Jun-11 | 4:00 | 4.12 | 3.94 |
| 11-Jun-11 | 5:00 | 4.12 | 4.10 |
| 11-Jun-11 | 6:00 | 4.27 | 4.10 |
| 11-Jun-11 | 7:00 | 4.30 | 4.10 |
| 11-Jun-11 | 8:00 | 4.30 | 4.10 |
| 11-Jun-11 | 9:00 | 4.30 | 4.10 |
| 11-Jun-11 | 10:00 | 4.17 | 4.10 |
| 11-Jun-11 | 11:00 | 4.12 | 4.10 |
| 11-Jun-11 | 12:00 | 4.19 | 4.10 |
| 11-Jun-11 | 13:00 | 4.27 | 4.26 |
| 11-Jun-11 | 14:00 | 4.27 | 4.10 |
| 11-Jun-11 | 15:00 | 4.14 | 4.10 |
| 11-Jun-11 | 16:00 | 4.09 | 3.94 |
| 11-Jun-11 | 17:00 | 4.19 | 4.10 |
| 11-Jun-11 | 18:00 | 4.22 | 4.10 |
| 11-Jun-11 | 19:00 | 4.22 | 4.10 |
| 11-Jun-11 | 20:00 | 4.22 | 4.10 |
| 11-Jun-11 | 21:00 | 4.25 | 4.10 |
| 11-Jun-11 | 22:00 | 4.25 | 4.10 |
| 11-Jun-11 | 23:00 | 4.22 | 4.10 |
| 12-Jun-11 | 0:00 | 4.19 | 4.10 |
| 12-Jun-11 | 1:00 | 4.22 | 4.10 |
| 12-Jun-11 | 2:00 | 4.25 | 4.10 |
| 12-Jun-11 | 3:00 | 4.22 | 4.10 |
| 12-Jun-11 | 4:00 | 4.22 | 4.10 |
| 12-Jun-11 | 5:00 | 4.25 | 4.10 |
| 12-Jun-11 | 6:00 | 4.22 | 4.10 |
| 12-Jun-11 | 7:00 | 4.25 | 4.10 |
| 12-Jun-11 | 8:00 | 4.27 | 4.26 |
| 12-Jun-11 | 9:00 | 4.27 | 4.26 |
| 12-Jun-11 | 10:00 | 4.30 | 4.26 |
| 12-Jun-11 | 11:00 | 4.32 | 4.26 |
| 12-Jun-11 | 12:00 | 4.32 | 4.26 |
| 12-Jun-11 | 13:00 | 4.35 | 4.26 |
| 12-Jun-11 | 14:00 | 4.35 | 4.41 |
| 12-Jun-11 | 15:00 | 4.38 | 4.26 |
| 12-Jun-11 | 16:00 | 4.40 | 4.41 |
| 12-Jun-11 | 17:00 | 4.35 | 4.41 |
| 12-Jun-11 | 18:00 | 4.35 | 4.41 |
| 12-Jun-11 | 19:00 | 4.35 | 4.41 |
| 12-Jun-11 | 20:00 | 4.38 | 4.57 |
| 12-Jun-11 | 21:00 | 4.38 | 4.57 |
| 12-Jun-11 | 22:00 | 4.40 | 4.41 |
| 12-Jun-11 | 23:00 | 4.32 | 4.41 |
| 13-Jun-11 | 0:00 | 4.38 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 13-Jun-11 | 1:00 | 4.40 | 4.41 |
| 13-Jun-11 | 2:00 | 4.40 | 4.41 |
| 13-Jun-11 | 3:00 | 4.38 | 4.41 |
| 13-Jun-11 | 4:00 | 4.38 | 4.41 |
| 13-Jun-11 | 5:00 | 4.43 | 4.57 |
| 13-Jun-11 | 6:00 | 4.56 | 4.41 |
| 13-Jun-11 | 7:00 | 4.56 | 4.41 |
| 13-Jun-11 | 8:00 | 4.35 | 4.41 |
| 13-Jun-11 | 9:00 | 4.27 | 4.26 |
| 13-Jun-11 | 10:00 | 4.30 | 4.26 |
| 13-Jun-11 | 11:00 | 4.30 | 4.26 |
| 13-Jun-11 | 12:00 | 4.35 | 4.26 |
| 13-Jun-11 | 13:00 | 4.32 | 4.41 |
| 13-Jun-11 | 14:00 | 4.43 | 4.41 |
| 13-Jun-11 | 15:00 | 4.51 | 4.57 |
| 13-Jun-11 | 16:00 | 4.48 | 4.57 |
| 13-Jun-11 | 17:00 | 4.64 | 4.57 |
| 13-Jun-11 | 18:00 | 4.61 | 4.57 |
| 13-Jun-11 | 19:00 | 4.48 | 4.57 |
| 13-Jun-11 | 20:00 | 4.48 | 4.57 |
| 13-Jun-11 | 21:00 | 4.56 | 4.57 |
| 13-Jun-11 | 22:00 | 4.61 | 4.57 |
| 13-Jun-11 | 23:00 | 4.48 | 4.41 |
| 14-Jun-11 | 0:00 | 4.53 | 4.41 |
| 14-Jun-11 | 1:00 | 4.51 | 4.41 |
| 14-Jun-11 | 2:00 | 4.56 | 4.57 |
| 14-Jun-11 | 3:00 | 4.56 | 4.41 |
| 14-Jun-11 | 4:00 | 4.51 | 4.41 |
| 14-Jun-11 | 5:00 | 4.45 | 4.41 |
| 14-Jun-11 | 6:00 | 4.40 | 4.41 |
| 14-Jun-11 | 7:00 | 4.45 | 4.41 |
| 14-Jun-11 | 8:00 | 4.32 | 4.26 |
| 14-Jun-11 | 9:00 | 4.35 | 4.26 |
| 14-Jun-11 | 10:00 | 4.35 | 4.26 |
| 14-Jun-11 | 11:00 | 4.40 | 4.26 |
| 14-Jun-11 | 12:00 | 4.32 | 4.26 |
| 14-Jun-11 | 13:00 | 4.40 | 4.26 |
| 14-Jun-11 | 14:00 | 4.45 | 4.41 |
| 14-Jun-11 | 15:00 | 4.51 | 4.41 |
| 14-Jun-11 | 16:00 | 4.51 | 4.41 |
| 14-Jun-11 | 17:00 | 4.48 | 4.41 |
| 14-Jun-11 | 18:00 | 4.43 | 4.41 |
| 14-Jun-11 | 19:00 | 4.45 | 4.41 |
| 14-Jun-11 | 20:00 | 4.45 | 4.41 |
| 14-Jun-11 | 21:00 | 4.48 | 4.41 |
| 14-Jun-11 | 22:00 | 4.51 | 4.41 |
| 14-Jun-11 | 23:00 | 4.53 | 4.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 15-Jun-11 | 0:00 | 4.58 | 4.57 |
| 15-Jun-11 | 1:00 | 4.58 | 4.57 |
| 15-Jun-11 | 2:00 | 4.56 | 4.41 |
| 15-Jun-11 | 3:00 | 4.53 | 4.41 |
| 15-Jun-11 | 4:00 | 4.48 | 4.41 |
| 15-Jun-11 | 5:00 | 4.48 | 4.41 |
| 15-Jun-11 | 6:00 | 4.45 | 4.41 |
| 15-Jun-11 | 7:00 | 4.45 | 4.41 |
| 15-Jun-11 | 8:00 | 4.45 | 4.41 |
| 15-Jun-11 | 9:00 | 4.43 | 4.41 |
| 15-Jun-11 | 10:00 | 4.45 | 4.41 |
| 15-Jun-11 | 11:00 | 4.51 | 4.41 |
| 15-Jun-11 | 12:00 | 4.56 | 4.57 |
| 15-Jun-11 | 13:00 | 4.58 | 4.57 |
| 15-Jun-11 | 14:00 | 4.61 | 4.57 |
| 15-Jun-11 | 15:00 | 4.64 | 4.73 |
| 15-Jun-11 | 16:00 | 4.69 | 4.88 |
| 15-Jun-11 | 17:00 | 4.74 | 4.88 |
| 15-Jun-11 | 18:00 | 4.77 | 4.88 |
| 15-Jun-11 | 19:00 | 4.77 | 5.04 |
| 15-Jun-11 | 20:00 | 4.77 | 5.04 |
| 15-Jun-11 | 21:00 | 4.79 | 4.88 |
| 15-Jun-11 | 22:00 | 4.79 | 4.88 |
| 15-Jun-11 | 23:00 | 4.87 | 4.88 |
| 16-Jun-11 | 0:00 | 4.82 | 5.04 |
| 16-Jun-11 | 1:00 | 4.79 | 4.88 |
| 16-Jun-11 | 2:00 | 4.77 | 4.88 |
| 16-Jun-11 | 3:00 | 4.71 | 4.73 |
| 16-Jun-11 | 4:00 | 4.66 | 4.73 |
| 16-Jun-11 | 5:00 | 4.64 | 4.73 |
| 16-Jun-11 | 6:00 | 4.61 | 4.73 |
| 16-Jun-11 | 7:00 | 4.64 | 4.73 |
| 16-Jun-11 | 8:00 | 4.69 | 4.57 |
| 16-Jun-11 | 9:00 | 4.64 | 4.73 |
| 16-Jun-11 | 10:00 | 4.69 | 4.73 |
| 16-Jun-11 | 11:00 | 4.74 | 4.73 |
| 16-Jun-11 | 12:00 | 4.82 | 5.04 |
| 16-Jun-11 | 13:00 | 5.15 | 5.19 |
| 16-Jun-11 | 14:00 | 5.44 | 5.35 |
| 16-Jun-11 | 15:00 | 5.18 | 5.19 |
| 16-Jun-11 | 16:00 | 5.36 | 5.35 |
| 16-Jun-11 | 17:00 | 5.41 | 5.35 |
| 16-Jun-11 | 18:00 | 5.39 | 5.35 |
| 16-Jun-11 | 19:00 | 5.41 | 5.35 |
| 16-Jun-11 | 20:00 | 5.46 | 5.35 |
| 16-Jun-11 | 21:00 | 5.51 | 5.35 |
| 16-Jun-11 | 22:00 | 5.26 | 5.19 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 16-Jun-11 | 23:00 | 5.26 | 5.19 |
| 17-Jun-11 | 0:00 | 5.26 | 5.19 |
| 17-Jun-11 | 1:00 | 5.28 | 5.19 |
| 17-Jun-11 | 2:00 | 5.26 | 5.19 |
| 17-Jun-11 | 3:00 | 5.23 | 5.19 |
| 17-Jun-11 | 4:00 | 5.23 | 5.35 |
| 17-Jun-11 | 5:00 | 5.18 | 5.51 |
| 17-Jun-11 | 6:00 | 5.39 | 5.51 |
| 17-Jun-11 | 7:00 | 5.44 | 5.35 |
| 17-Jun-11 | 8:00 | 5.54 | 5.51 |
| 17-Jun-11 | 9:00 | 5.39 | 5.51 |
| 17-Jun-11 | 10:00 | 5.54 | 5.51 |
| 17-Jun-11 | 11:00 | 5.49 | 5.51 |
| 17-Jun-11 | 12:00 | 5.92 | 5.97 |
| 17-Jun-11 | 13:00 | 6.18 | 6.28 |
| 17-Jun-11 | 14:00 | 6.38 | 6.44 |
| 17-Jun-11 | 15:00 | 6.61 | 6.59 |
| 17-Jun-11 | 16:00 | 6.79 | 6.75 |
| 17-Jun-11 | 17:00 | 6.89 | 6.91 |
| 17-Jun-11 | 18:00 | 7.02 | 6.91 |
| 17-Jun-11 | 19:00 | 7.17 | 7.22 |
| 17-Jun-11 | 20:00 | 7.34 | 7.37 |
| 17-Jun-11 | 21:00 | 7.42 | 7.37 |
| 17-Jun-11 | 22:00 | 7.42 | 7.52 |
| 17-Jun-11 | 23:00 | 7.47 | 7.52 |
| 18-Jun-11 | 0:00 | 7.47 | 7.68 |
| 18-Jun-11 | 1:00 | 7.47 | 7.68 |
| 18-Jun-11 | 2:00 | 7.49 | 7.83 |
| 18-Jun-11 | 3:00 | 7.49 | 7.68 |
| 18-Jun-11 | 4:00 | 7.52 | 7.68 |
| 18-Jun-11 | 5:00 | 7.57 | 7.68 |
| 18-Jun-11 | 6:00 | 7.77 | 7.83 |
| 18-Jun-11 | 7:00 | 7.82 | 7.83 |
| 18-Jun-11 | 8:00 | 7.77 | 7.83 |
| 18-Jun-11 | 9:00 | 7.92 | 7.83 |
| 18-Jun-11 | 10:00 | 8.07 | 8.14 |
| 18-Jun-11 | 11:00 | 8.30 | 8.29 |
| 18-Jun-11 | 12:00 | 8.47 | 8.45 |
| 18-Jun-11 | 13:00 | 8.59 | 8.61 |
| 18-Jun-11 | 14:00 | 8.82 | 8.76 |
| 18-Jun-11 | 15:00 | 9.02 | 8.91 |
| 18-Jun-11 | 16:00 | 9.21 | 9.22 |
| 18-Jun-11 | 17:00 | 9.34 | 9.38 |
| 18-Jun-11 | 18:00 | 9.41 | 9.38 |
| 18-Jun-11 | 19:00 | 9.61 | 9.68 |
| 18-Jun-11 | 20:00 | 9.68 | 9.68 |
| 18-Jun-11 | 21:00 | 9.76 | 9.68 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 18-Jun-11 | 22:00 | 9.81 | 9.84 |
| 18-Jun-11 | 23:00 | 9.78 | 9.84 |
| 19-Jun-11 | 0:00 | 9.81 | 9.84 |
| 19-Jun-11 | 1:00 | 9.81 | 9.84 |
| 19-Jun-11 | 2:00 | 9.78 | 9.84 |
| 19-Jun-11 | 3:00 | 9.76 | 9.84 |
| 19-Jun-11 | 4:00 | 9.73 | 9.84 |
| 19-Jun-11 | 5:00 | 9.76 | 9.84 |
| 19-Jun-11 | 6:00 | 9.76 | 9.84 |
| 19-Jun-11 | 7:00 | 9.83 | 9.84 |
| 19-Jun-11 | 8:00 | 9.85 | 9.84 |
| 19-Jun-11 | 9:00 | 9.93 | 9.84 |
| 19-Jun-11 | 10:00 | 10.03 | 9.99 |
| 19-Jun-11 | 11:00 | 10.15 | 10.15 |
| 19-Jun-11 | 12:00 | 10.27 | 10.31 |
| 19-Jun-11 | 13:00 | 10.39 | 10.46 |
| 19-Jun-11 | 14:00 | 10.57 | 10.62 |
| 19-Jun-11 | 15:00 | 10.71 | 10.62 |
| 19-Jun-11 | 16:00 | 10.88 | 10.93 |
| 19-Jun-11 | 17:00 | 11.08 | 11.08 |
| 19-Jun-11 | 18:00 | 11.13 | 11.23 |
| 19-Jun-11 | 19:00 | 11.22 | 11.23 |
| 19-Jun-11 | 20:00 | 11.30 | 11.39 |
| 19-Jun-11 | 21:00 | 11.37 | 11.39 |
| 19-Jun-11 | 22:00 | 11.39 | 11.39 |
| 19-Jun-11 | 23:00 | 11.37 | 11.39 |
| 20-Jun-11 | 0:00 | 11.37 | 11.39 |
| 20-Jun-11 | 1:00 | 11.32 | 11.39 |
| 20-Jun-11 | 2:00 | 11.27 | 11.39 |
| 20-Jun-11 | 3:00 | 11.27 | 11.39 |
| 20-Jun-11 | 4:00 | 11.30 | 11.23 |
| 20-Jun-11 | 5:00 | 11.27 | 11.23 |
| 20-Jun-11 | 6:00 | 11.13 | 11.23 |
| 20-Jun-11 | 7:00 | 11.18 | 11.23 |
| 20-Jun-11 | 8:00 | 11.18 | 11.23 |
| 20-Jun-11 | 9:00 | 11.22 | 11.39 |
| 20-Jun-11 | 10:00 | 11.37 | 11.39 |
| 20-Jun-11 | 11:00 | 11.13 | 11.54 |
| 20-Jun-11 | 12:00 | 11.20 | 11.39 |
| 20-Jun-11 | 13:00 | 11.20 | 11.23 |
| 20-Jun-11 | 14:00 | 11.30 | 11.39 |
| 20-Jun-11 | 15:00 | 11.42 | 11.39 |
| 20-Jun-11 | 16:00 | 11.42 | 11.54 |
| 20-Jun-11 | 17:00 | 11.39 | 11.70 |
| 20-Jun-11 | 18:00 | 11.37 | 11.70 |
| 20-Jun-11 | 19:00 | 11.52 | 11.86 |
| 20-Jun-11 | 20:00 | 11.52 | 11.54 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 20-Jun-11 | 21:00 | 11.49 | 11.54 |
| 20-Jun-11 | 22:00 | 11.49 | 11.54 |
| 20-Jun-11 | 23:00 | 11.54 | 11.70 |
| 21-Jun-11 | 0:00 | 11.52 | 11.54 |
| 21-Jun-11 | 1:00 | 11.39 | 11.54 |
| 21-Jun-11 | 2:00 | 11.39 | 11.54 |
| 21-Jun-11 | 3:00 | 11.30 | 11.54 |
| 21-Jun-11 | 4:00 | 11.42 | 11.70 |
| 21-Jun-11 | 5:00 | 11.25 | 11.54 |
| 21-Jun-11 | 6:00 | 11.15 | 11.39 |
| 21-Jun-11 | 7:00 | 11.10 | 11.39 |
| 21-Jun-11 | 8:00 | 11.13 | 11.54 |
| 21-Jun-11 | 9:00 | 10.79 | 11.54 |
| 21-Jun-11 | 10:00 | 10.86 | 11.70 |
| 21-Jun-11 | 11:00 | 11.03 | 12.63 |
| 21-Jun-11 | 12:00 | 11.05 | 12.78 |
| 21-Jun-11 | 13:00 | 11.35 | 12.78 |
| 21-Jun-11 | 14:00 | 11.42 | 13.09 |
| 21-Jun-11 | 15:00 | 11.81 | 13.25 |
| 21-Jun-11 | 16:00 | 11.90 | 13.71 |
| 21-Jun-11 | 17:00 | 12.61 | 13.71 |
| 21-Jun-11 | 18:00 | 13.14 | 13.71 |
| 21-Jun-11 | 19:00 | 13.59 | 13.87 |
| 21-Jun-11 | 20:00 | 13.79 | 13.87 |
| 21-Jun-11 | 21:00 | 13.74 | 13.87 |
| 21-Jun-11 | 22:00 | 13.74 | 13.87 |
| 21-Jun-11 | 23:00 | 13.62 | 13.71 |
| 22-Jun-11 | 0:00 | 13.62 | 13.71 |
| 22-Jun-11 | 1:00 | 13.71 | 13.71 |
| 22-Jun-11 | 2:00 | 13.74 | 13.87 |
| 22-Jun-11 | 3:00 | 13.67 | 13.71 |
| 22-Jun-11 | 4:00 | 13.67 | 13.71 |
| 22-Jun-11 | 5:00 | 13.59 | 13.56 |
| 22-Jun-11 | 6:00 | 13.57 | 13.56 |
| 22-Jun-11 | 7:00 | 13.55 | 13.41 |
| 22-Jun-11 | 8:00 | 13.55 | 13.41 |
| 22-Jun-11 | 9:00 | 13.59 | 13.56 |
| 22-Jun-11 | 10:00 | 13.62 | 13.56 |
| 22-Jun-11 | 11:00 | 13.76 | 13.71 |
| 22-Jun-11 | 12:00 | 13.86 | 13.87 |
| 22-Jun-11 | 13:00 | 13.98 | 14.02 |
| 22-Jun-11 | 14:00 | 14.15 | 14.18 |
| 22-Jun-11 | 15:00 | 14.29 | 14.33 |
| 22-Jun-11 | 16:00 | 14.41 | 14.33 |
| 22-Jun-11 | 17:00 | 14.55 | 14.49 |
| 22-Jun-11 | 18:00 | 14.65 | 14.64 |
| 22-Jun-11 | 19:00 | 14.70 | 14.64 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 22-Jun-11 | 20:00 | 14.75 | 14.64 |
| 22-Jun-11 | 21:00 | 14.77 | 14.64 |
| 22-Jun-11 | 22:00 | 14.75 | 14.64 |
| 22-Jun-11 | 23:00 | 14.75 | 14.64 |
| 23-Jun-11 | 0:00 | 14.70 | 14.64 |
| 23-Jun-11 | 1:00 | 14.55 | 14.64 |
| 23-Jun-11 | 2:00 | 14.55 | 14.49 |
| 23-Jun-11 | 3:00 | 14.41 | 14.49 |
| 23-Jun-11 | 4:00 | 14.43 | 14.33 |
| 23-Jun-11 | 5:00 | 14.41 | 14.33 |
| 23-Jun-11 | 6:00 | 14.29 | 14.33 |
| 23-Jun-11 | 7:00 | 14.29 | 14.33 |
| 23-Jun-11 | 8:00 | 14.34 | 14.33 |
| 23-Jun-11 | 9:00 | 14.39 | 14.33 |
| 23-Jun-11 | 10:00 | 14.48 | 14.33 |
| 23-Jun-11 | 11:00 | 14.60 | 14.49 |
| 23-Jun-11 | 12:00 | 14.70 | 14.64 |
| 23-Jun-11 | 13:00 | 14.77 | 14.81 |
| 23-Jun-11 | 14:00 | 14.89 | 14.81 |
| 23-Jun-11 | 15:00 | 15.01 | 14.96 |
| 23-Jun-11 | 16:00 | 15.10 | 15.12 |
| 23-Jun-11 | 17:00 | 15.18 | 15.12 |
| 23-Jun-11 | 18:00 | 15.22 | 15.28 |
| 23-Jun-11 | 19:00 | 15.27 | 15.28 |
| 23-Jun-11 | 20:00 | 15.27 | 15.28 |
| 23-Jun-11 | 21:00 | 15.22 | 15.12 |
| 23-Jun-11 | 22:00 | 15.20 | 15.12 |
| 23-Jun-11 | 23:00 | 15.18 | 15.12 |
| 24-Jun-11 | 0:00 | 15.10 | 15.12 |
| 24-Jun-11 | 1:00 | 15.08 | 14.96 |
| 24-Jun-11 | 2:00 | 15.03 | 14.96 |
| 24-Jun-11 | 3:00 | 14.98 | 14.96 |
| 24-Jun-11 | 4:00 | 14.96 | 14.96 |
| 24-Jun-11 | 5:00 | 14.91 | 14.81 |
| 24-Jun-11 | 6:00 | 14.82 | 14.81 |
| 24-Jun-11 | 7:00 | 14.75 | 14.81 |
| 24-Jun-11 | 8:00 | 14.77 | 14.81 |
| 24-Jun-11 | 9:00 | 14.86 | 14.81 |
| 24-Jun-11 | 10:00 | 14.89 | 14.81 |
| 24-Jun-11 | 11:00 | 15.06 | 14.96 |
| 24-Jun-11 | 12:00 | 15.18 | 15.12 |
| 24-Jun-11 | 13:00 | 15.29 | 15.28 |
| 24-Jun-11 | 14:00 | 15.39 | 15.43 |
| 24-Jun-11 | 15:00 | 15.39 | 15.59 |
| 24-Jun-11 | 16:00 | 15.18 | 15.43 |
| 24-Jun-11 | 17:00 | 15.27 | 15.43 |
| 24-Jun-11 | 18:00 | 15.34 | 15.59 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 24-Jun-11 | 19:00 | 15.39 | 15.59 |
| 24-Jun-11 | 20:00 | 15.20 | 15.59 |
| 24-Jun-11 | 21:00 | 15.29 | 15.75 |
| 24-Jun-11 | 22:00 | 15.25 | 15.43 |
| 24-Jun-11 | 23:00 | 15.29 | 15.43 |
| 25-Jun-11 | 0:00 | 15.25 | 15.43 |
| 25-Jun-11 | 1:00 | 15.13 | 15.43 |
| 25-Jun-11 | 2:00 | 15.10 | 15.43 |
| 25-Jun-11 | 3:00 | 15.25 | 15.43 |
| 25-Jun-11 | 4:00 | 15.27 | 15.43 |
| 25-Jun-11 | 5:00 | 15.29 | 15.43 |
| 25-Jun-11 | 6:00 | 15.18 | 15.43 |
| 25-Jun-11 | 7:00 | 15.15 | 15.28 |
| 25-Jun-11 | 8:00 | 15.03 | 15.28 |
| 25-Jun-11 | 9:00 | 14.94 | 15.28 |
| 25-Jun-11 | 10:00 | 15.65 | 15.59 |
| 25-Jun-11 | 11:00 | 15.63 | 15.59 |
| 25-Jun-11 | 12:00 | 15.75 | 15.75 |
| 25-Jun-11 | 13:00 | 15.72 | 15.59 |
| 25-Jun-11 | 14:00 | 15.68 | 15.59 |
| 25-Jun-11 | 15:00 | 15.72 | 15.59 |
| 25-Jun-11 | 16:00 | 15.77 | 15.75 |
| 25-Jun-11 | 17:00 | 15.75 | 15.75 |
| 25-Jun-11 | 18:00 | 15.65 | 15.59 |
| 25-Jun-11 | 19:00 | 15.65 | 15.59 |
| 25-Jun-11 | 20:00 | 15.49 | 15.43 |
| 25-Jun-11 | 21:00 | 15.37 | 15.28 |
| 25-Jun-11 | 22:00 | 15.13 | 15.12 |
| 25-Jun-11 | 23:00 | 15.01 | 14.96 |
| 26-Jun-11 | 0:00 | 14.84 | 14.81 |
| 26-Jun-11 | 1:00 | 14.70 | 14.64 |
| 26-Jun-11 | 2:00 | 14.60 | 14.49 |
| 26-Jun-11 | 3:00 | 14.17 | 14.33 |
| 26-Jun-11 | 4:00 | 14.10 | 14.18 |
| 26-Jun-11 | 5:00 | 13.93 | 14.02 |
| 26-Jun-11 | 6:00 | 14.00 | 14.02 |
| 26-Jun-11 | 7:00 | 13.88 | 13.87 |
| 26-Jun-11 | 8:00 | 13.74 | 13.71 |
| 26-Jun-11 | 9:00 | 13.62 | 13.56 |
| 26-Jun-11 | 10:00 | 13.55 | 13.56 |
| 26-Jun-11 | 11:00 | 13.50 | 13.41 |
| 26-Jun-11 | 12:00 | 13.52 | 13.41 |
| 26-Jun-11 | 13:00 | 13.50 | 13.41 |
| 26-Jun-11 | 14:00 | 13.55 | 13.56 |
| 26-Jun-11 | 15:00 | 13.55 | 13.56 |
| 26-Jun-11 | 16:00 | 13.50 | 13.41 |
| 26-Jun-11 | 17:00 | 13.47 | 13.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 26-Jun-11 | 18:00 | 13.40 | 13.41 |
| 26-Jun-11 | 19:00 | 13.38 | 13.41 |
| 26-Jun-11 | 20:00 | 13.35 | 13.41 |
| 26-Jun-11 | 21:00 | 12.92 | 13.25 |
| 26-Jun-11 | 22:00 | 12.85 | 12.94 |
| 26-Jun-11 | 23:00 | 12.82 | 12.94 |
| 27-Jun-11 | 0:00 | 12.85 | 12.94 |
| 27-Jun-11 | 1:00 | 12.82 | 12.78 |
| 27-Jun-11 | 2:00 | 12.75 | 12.78 |
| 27-Jun-11 | 3:00 | 12.70 | 12.63 |
| 27-Jun-11 | 4:00 | 12.49 | 12.63 |
| 27-Jun-11 | 5:00 | 12.56 | 12.63 |
| 27-Jun-11 | 6:00 | 12.51 | 12.47 |
| 27-Jun-11 | 7:00 | 12.46 | 12.47 |
| 27-Jun-11 | 8:00 | 12.36 | 12.32 |
| 27-Jun-11 | 9:00 | 12.20 | 12.32 |
| 27-Jun-11 | 10:00 | 12.29 | 12.32 |
| 27-Jun-11 | 11:00 | 12.27 | 12.32 |
| 27-Jun-11 | 12:00 | 12.34 | 12.32 |
| 27-Jun-11 | 13:00 | 12.41 | 12.32 |
| 27-Jun-11 | 14:00 | 12.41 | 12.32 |
| 27-Jun-11 | 15:00 | 12.46 | 12.47 |
| 27-Jun-11 | 16:00 | 12.49 | 12.47 |
| 27-Jun-11 | 17:00 | 12.46 | 12.32 |
| 27-Jun-11 | 18:00 | 12.46 | 12.47 |
| 27-Jun-11 | 19:00 | 12.44 | 12.32 |
| 27-Jun-11 | 20:00 | 12.44 | 12.32 |
| 27-Jun-11 | 21:00 | 12.41 | 12.32 |
| 27-Jun-11 | 22:00 | 12.34 | 12.32 |
| 27-Jun-11 | 23:00 | 12.29 | 12.32 |
| 28-Jun-11 | 0:00 | 12.27 | 12.17 |
| 28-Jun-11 | 1:00 | 12.24 | 12.17 |
| 28-Jun-11 | 2:00 | 12.17 | 12.17 |
| 28-Jun-11 | 3:00 | 12.07 | 12.01 |
| 28-Jun-11 | 4:00 | 12.05 | 12.01 |
| 28-Jun-11 | 5:00 | 12.00 | 11.86 |
| 28-Jun-11 | 6:00 | 11.90 | 11.86 |
| 28-Jun-11 | 7:00 | 11.86 | 11.86 |
| 28-Jun-11 | 8:00 | 11.83 | 11.86 |
| 28-Jun-11 | 9:00 | 11.76 | 11.70 |
| 28-Jun-11 | 10:00 | 11.61 | 11.54 |
| 28-Jun-11 | 11:00 | 11.71 | 11.70 |
| 28-Jun-11 | 12:00 | 11.71 | 11.70 |
| 28-Jun-11 | 13:00 | 11.90 | 11.86 |
| 28-Jun-11 | 14:00 | 11.88 | 11.86 |
| 28-Jun-11 | 15:00 | 11.71 | 11.70 |
| 28-Jun-11 | 16:00 | 11.76 | 11.70 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 28-Jun-11 | 17:00 | 11.81 | 11.70 |
| 28-Jun-11 | 18:00 | 11.86 | 11.86 |
| 28-Jun-11 | 19:00 | 11.90 | 11.86 |
| 28-Jun-11 | 20:00 | 11.86 | 11.86 |
| 28-Jun-11 | 21:00 | 11.86 | 11.86 |
| 28-Jun-11 | 22:00 | 11.83 | 11.86 |
| 28-Jun-11 | 23:00 | 11.83 | 11.70 |
| 29-Jun-11 | 0:00 | 11.81 | 11.70 |
| 29-Jun-11 | 1:00 | 11.81 | 11.70 |
| 29-Jun-11 | 2:00 | 11.76 | 11.70 |
| 29-Jun-11 | 3:00 | 11.76 | 11.70 |
| 29-Jun-11 | 4:00 | 11.73 | 11.70 |
| 29-Jun-11 | 5:00 | 11.73 | 11.70 |
| 29-Jun-11 | 6:00 | 11.69 | 11.70 |
| 29-Jun-11 | 7:00 | 11.61 | 11.54 |
| 29-Jun-11 | 8:00 | 11.59 | 11.70 |
| 29-Jun-11 | 9:00 | 11.64 | 11.54 |
| 29-Jun-11 | 10:00 | 11.64 | 11.70 |
| 29-Jun-11 | 11:00 | 11.71 | 11.70 |
| 29-Jun-11 | 12:00 | 11.73 | 11.70 |
| 29-Jun-11 | 13:00 | 11.78 | 11.70 |
| 29-Jun-11 | 14:00 | 11.83 | 11.86 |
| 29-Jun-11 | 15:00 | 11.88 | 11.86 |
| 29-Jun-11 | 16:00 | 11.88 | 11.86 |
| 29-Jun-11 | 17:00 | 11.90 | 11.86 |
| 29-Jun-11 | 18:00 | 11.86 | 11.86 |
| 29-Jun-11 | 19:00 | 11.90 | 11.86 |
| 29-Jun-11 | 20:00 | 11.90 | 11.86 |
| 29-Jun-11 | 21:00 | 11.93 | 11.86 |
| 29-Jun-11 | 22:00 | 11.95 | 11.86 |
| 29-Jun-11 | 23:00 | 11.95 | 11.86 |
| 30-Jun-11 | 0:00 | 11.95 | 11.86 |
| 30-Jun-11 | 1:00 | 11.95 | 11.86 |
| 30-Jun-11 | 2:00 | 11.95 | 11.86 |
| 30-Jun-11 | 3:00 | 11.95 | 11.86 |
| 30-Jun-11 | 4:00 | 11.93 | 11.86 |
| 30-Jun-11 | 5:00 | 11.95 | 11.86 |
| 30-Jun-11 | 6:00 | 11.95 | 11.86 |
| 30-Jun-11 | 7:00 | 11.95 | 11.86 |
| 30-Jun-11 | 8:00 | 11.98 | 11.86 |
| 30-Jun-11 | 9:00 | 12.00 | 12.01 |
| 30-Jun-11 | 10:00 | 12.07 | 12.01 |
| 30-Jun-11 | 11:00 | 12.20 | 12.17 |
| 30-Jun-11 | 12:00 | 12.29 | 12.32 |
| 30-Jun-11 | 13:00 | 12.44 | 12.32 |
| 30-Jun-11 | 14:00 | 12.51 | 12.78 |
| 30-Jun-11 | 15:00 | 12.53 | 12.63 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 30-Jun-11 | 16:00 | 12.58 | 12.78 |
| 30-Jun-11 | 17:00 | 12.65 | 12.78 |
| 30-Jun-11 | 18:00 | 12.63 | 12.78 |
| 30-Jun-11 | 19:00 | 13.14 | 13.09 |
| 30-Jun-11 | 20:00 | 13.11 | 13.25 |
| 30-Jun-11 | 21:00 | 13.38 | 13.25 |
| 30-Jun-11 | 22:00 | 13.35 | 13.41 |
| 30-Jun-11 | 23:00 | 13.33 | 13.25 |
| 1-Jul-11 | 0:00 | 13.28 | 13.25 |
| 1-Jul-11 | 1:00 | 13.26 | 13.25 |
| 1-Jul-11 | 2:00 | 13.19 | 13.09 |
| 1-Jul-11 | 3:00 | 13.14 | 13.09 |
| 1-Jul-11 | 4:00 | 13.06 | 12.94 |
| 1-Jul-11 | 5:00 | 12.97 | 12.94 |
| 1-Jul-11 | 6:00 | 12.87 | 12.78 |
| 1-Jul-11 | 7:00 | 12.85 | 12.78 |
| 1-Jul-11 | 8:00 | 12.85 | 12.78 |
| 1-Jul-11 | 9:00 | 12.85 | 12.78 |
| 1-Jul-11 | 10:00 | 12.82 | 12.78 |
| 1-Jul-11 | 11:00 | 12.78 | 12.78 |
| 1-Jul-11 | 12:00 | 12.75 | 12.78 |
| 1-Jul-11 | 13:00 | 12.73 | 12.63 |
| 1-Jul-11 | 14:00 | 12.73 | 12.63 |
| 1-Jul-11 | 15:00 | 12.68 | 12.63 |
| 1-Jul-11 | 16:00 | 12.65 | 12.63 |
| 1-Jul-11 | 17:00 | 12.63 | 12.63 |
| 1-Jul-11 | 18:00 | 12.61 | 12.47 |
| 1-Jul-11 | 19:00 | 12.56 | 12.47 |
| 1-Jul-11 | 20:00 | 12.51 | 12.47 |
| 1-Jul-11 | 21:00 | 12.49 | 12.47 |
| 1-Jul-11 | 22:00 | 12.41 | 12.32 |
| 1-Jul-11 | 23:00 | 12.34 | 12.32 |
| 2-Jul-11 | 0:00 | 12.32 | 12.32 |
| 2-Jul-11 | 1:00 | 12.32 | 12.32 |
| 2-Jul-11 | 2:00 | 12.05 | 12.17 |
| 2-Jul-11 | 3:00 | 12.07 | 12.17 |
| 2-Jul-11 | 4:00 | 12.12 | 12.01 |
| 2-Jul-11 | 5:00 | 12.05 | 12.01 |
| 2-Jul-11 | 6:00 | 11.93 | 11.86 |
| 2-Jul-11 | 7:00 | 11.86 | 11.86 |
| 2-Jul-11 | 8:00 | 11.86 | 11.86 |
| 2-Jul-11 | 9:00 | 11.81 | 11.70 |
| 2-Jul-11 | 10:00 | 11.76 | 11.70 |
| 2-Jul-11 | 11:00 | 11.71 | 11.70 |
| 2-Jul-11 | 12:00 | 11.71 | 11.70 |
| 2-Jul-11 | 13:00 | 11.64 | 11.54 |
| 2-Jul-11 | 14:00 | 11.61 | 11.54 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 2-Jul-11 | 15:00 | 11.61 | 11.54 |
| 2-Jul-11 | 16:00 | 11.61 | 11.54 |
| 2-Jul-11 | 17:00 | 11.61 | 11.54 |
| 2-Jul-11 | 18:00 | 11.64 | 11.54 |
| 2-Jul-11 | 19:00 | 11.66 | 11.54 |
| 2-Jul-11 | 20:00 | 11.64 | 11.54 |
| 2-Jul-11 | 21:00 | 11.59 | 11.54 |
| 2-Jul-11 | 22:00 | 11.57 | 11.54 |
| 2-Jul-11 | 23:00 | 11.57 | 11.54 |
| 3-Jul-11 | 0:00 | 11.54 | 11.54 |
| 3-Jul-11 | 1:00 | 11.52 | 11.54 |
| 3-Jul-11 | 2:00 | 11.49 | 11.39 |
| 3-Jul-11 | 3:00 | 11.52 | 11.54 |
| 3-Jul-11 | 4:00 | 11.49 | 11.39 |
| 3-Jul-11 | 5:00 | 11.47 | 11.39 |
| 3-Jul-11 | 6:00 | 11.47 | 11.39 |
| 3-Jul-11 | 7:00 | 11.47 | 11.39 |
| 3-Jul-11 | 8:00 | 11.44 | 11.39 |
| 3-Jul-11 | 9:00 | 11.54 | 11.54 |
| 3-Jul-11 | 10:00 | 11.64 | 11.54 |
| 3-Jul-11 | 11:00 | 11.83 | 11.86 |
| 3-Jul-11 | 12:00 | 11.83 | 11.86 |
| 3-Jul-11 | 13:00 | 11.93 | 12.01 |
| 3-Jul-11 | 14:00 | 12.12 | 12.17 |
| 3-Jul-11 | 15:00 | 12.34 | 12.32 |
| 3-Jul-11 | 16:00 | 12.53 | 12.63 |
| 3-Jul-11 | 17:00 | 12.61 | 12.63 |
| 3-Jul-11 | 18:00 | 12.73 | 12.78 |
| 3-Jul-11 | 19:00 | 12.80 | 12.78 |
| 3-Jul-11 | 20:00 | 12.80 | 12.78 |
| 3-Jul-11 | 21:00 | 12.85 | 12.78 |
| 3-Jul-11 | 22:00 | 12.92 | 12.94 |
| 3-Jul-11 | 23:00 | 12.97 | 12.94 |
| 4-Jul-11 | 0:00 | 12.97 | 12.94 |
| 4-Jul-11 | 1:00 | 12.94 | 12.94 |
| 4-Jul-11 | 2:00 | 12.82 | 12.94 |
| 4-Jul-11 | 3:00 | 12.90 | 12.94 |
| 4-Jul-11 | 4:00 | 12.82 | 12.94 |
| 4-Jul-11 | 5:00 | 12.90 | 12.94 |
| 4-Jul-11 | 6:00 | 12.82 | 12.94 |
| 4-Jul-11 | 7:00 | 12.82 | 12.94 |
| 4-Jul-11 | 8:00 | 12.80 | 12.94 |
| 4-Jul-11 | 9:00 | 12.90 | 12.94 |
| 4-Jul-11 | 10:00 | 13.02 | 12.94 |
| 4-Jul-11 | 11:00 | 13.21 | 13.09 |
| 4-Jul-11 | 12:00 | 13.35 | 13.25 |
| 4-Jul-11 | 13:00 | 13.47 | 13.41 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 4-Jul-11 | 14:00 | 13.67 | 13.56 |
| 4-Jul-11 | 15:00 | 13.81 | 13.71 |
| 4-Jul-11 | 16:00 | 13.88 | 13.87 |
| 4-Jul-11 | 17:00 | 13.93 | 13.87 |
| 4-Jul-11 | 18:00 | 14.07 | 14.02 |
| 4-Jul-11 | 19:00 | 14.12 | 14.02 |
| 4-Jul-11 | 20:00 | 14.19 | 14.18 |
| 4-Jul-11 | 21:00 | 14.24 | 14.18 |
| 4-Jul-11 | 22:00 | 14.27 | 14.18 |
| 4-Jul-11 | 23:00 | 14.27 | 14.18 |
| 5-Jul-11 | 0:00 | 14.24 | 14.18 |
| 5-Jul-11 | 1:00 | 14.17 | 14.18 |
| 5-Jul-11 | 2:00 | 14.15 | 14.02 |
| 5-Jul-11 | 3:00 | 14.10 | 14.02 |
| 5-Jul-11 | 4:00 | 14.03 | 14.02 |
| 5-Jul-11 | 5:00 | 14.00 | 14.02 |
| 5-Jul-11 | 6:00 | 13.95 | 13.87 |
| 5-Jul-11 | 7:00 | 13.93 | 13.87 |
| 5-Jul-11 | 8:00 | 13.93 | 13.87 |
| 5-Jul-11 | 9:00 | 13.95 | 13.87 |
| 5-Jul-11 | 10:00 | 14.05 | 14.02 |
| 5-Jul-11 | 11:00 | 14.03 | 14.02 |
| 5-Jul-11 | 12:00 | 14.12 | 14.02 |
| 5-Jul-11 | 13:00 | 14.15 | 14.02 |
| 5-Jul-11 | 14:00 | 14.22 | 14.18 |
| 5-Jul-11 | 15:00 | 14.34 | 14.33 |
| 5-Jul-11 | 16:00 | 14.36 | 14.33 |
| 5-Jul-11 | 17:00 | 14.36 | 14.33 |
| 5-Jul-11 | 18:00 | 14.39 | 14.33 |
| 5-Jul-11 | 19:00 | 14.41 | 14.33 |
| 5-Jul-11 | 20:00 | 14.41 | 14.33 |
| 5-Jul-11 | 21:00 | 14.39 | 14.33 |
| 5-Jul-11 | 22:00 | 14.39 | 14.33 |
| 5-Jul-11 | 23:00 | 14.39 | 14.33 |
| 6-Jul-11 | 0:00 | 14.36 | 14.33 |
| 6-Jul-11 | 1:00 | 14.27 | 14.18 |
| 6-Jul-11 | 2:00 | 14.22 | 14.18 |
| 6-Jul-11 | 3:00 | 14.17 | 14.18 |
| 6-Jul-11 | 4:00 | 14.10 | 14.02 |
| 6-Jul-11 | 5:00 | 14.00 | 14.02 |
| 6-Jul-11 | 6:00 | 13.98 | 14.02 |
| 6-Jul-11 | 7:00 | 13.95 | 14.02 |
| 6-Jul-11 | 8:00 | 14.00 | 14.02 |
| 6-Jul-11 | 9:00 | 14.07 | 14.02 |
| 6-Jul-11 | 10:00 | 14.17 | 14.02 |
| 6-Jul-11 | 11:00 | 14.24 | 14.18 |
| 6-Jul-11 | 12:00 | 14.36 | 14.33 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 6-Jul-11 | 13:00 | 14.48 | 14.49 |
| 6-Jul-11 | 14:00 | 14.63 | 14.64 |
| 6-Jul-11 | 15:00 | 14.75 | 14.81 |
| 6-Jul-11 | 16:00 | 14.84 | 14.96 |
| 6-Jul-11 | 17:00 | 14.96 | 14.96 |
| 6-Jul-11 | 18:00 | 15.03 | 14.96 |
| 6-Jul-11 | 19:00 | 15.03 | 15.12 |
| 6-Jul-11 | 20:00 | 15.06 | 14.96 |
| 6-Jul-11 | 21:00 | 15.06 | 15.12 |
| 6-Jul-11 | 22:00 | 15.06 | 14.96 |
| 6-Jul-11 | 23:00 | 15.06 | 14.96 |
| 7-Jul-11 | 0:00 | 15.03 | 14.96 |
| 7-Jul-11 | 1:00 | 14.98 | 14.96 |
| 7-Jul-11 | 2:00 | 14.96 | 14.96 |
| 7-Jul-11 | 3:00 | 14.84 | 14.81 |
| 7-Jul-11 | 4:00 | 14.75 | 14.81 |
| 7-Jul-11 | 5:00 | 14.75 | 14.81 |
| 7-Jul-11 | 6:00 | 14.72 | 14.81 |
| 7-Jul-11 | 7:00 | 14.75 | 14.81 |
| 7-Jul-11 | 8:00 | 14.75 | 14.81 |
| 7-Jul-11 | 9:00 | 14.75 | 14.81 |
| 7-Jul-11 | 10:00 | 14.84 | 14.81 |
| 7-Jul-11 | 11:00 | 14.89 | 14.96 |
| 7-Jul-11 | 12:00 | 14.91 | 14.96 |
| 7-Jul-11 | 13:00 | 14.96 | 15.12 |
| 7-Jul-11 | 14:00 | 14.91 | 14.96 |
| 7-Jul-11 | 15:00 | 14.94 | 14.96 |
| 7-Jul-11 | 16:00 | 14.89 | 14.96 |
| 7-Jul-11 | 17:00 | 14.98 | 14.96 |
| 7-Jul-11 | 18:00 | 14.98 | 14.96 |
| 7-Jul-11 | 19:00 | 14.96 | 14.96 |
| 7-Jul-11 | 20:00 | 14.94 | 14.96 |
| 7-Jul-11 | 21:00 | 14.91 | 14.96 |
| 7-Jul-11 | 22:00 | 14.91 | 14.96 |
| 7-Jul-11 | 23:00 | 14.96 | 14.96 |
| 8-Jul-11 | 0:00 | 14.94 | 14.96 |
| 8-Jul-11 | 1:00 | 14.96 | 15.12 |
| 8-Jul-11 | 2:00 | 14.96 | 15.12 |
| 8-Jul-11 | 3:00 | 14.86 | 15.12 |
| 8-Jul-11 | 4:00 | 14.91 | 15.28 |
| 8-Jul-11 | 5:00 | 14.91 | 15.28 |
| 8-Jul-11 | 6:00 | 14.89 | 15.28 |
| 8-Jul-11 | 7:00 | 14.94 | 15.28 |
| 8-Jul-11 | 8:00 | 14.96 | 15.28 |
| 8-Jul-11 | 9:00 | 14.94 | 15.12 |
| 8-Jul-11 | 10:00 | 14.98 | 15.28 |
| 8-Jul-11 | 11:00 | 15.10 | 15.43 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 8-Jul-11 | 12:00 | 15.22 | 15.59 |
| 8-Jul-11 | 13:00 | 15.41 | 15.75 |
| 8-Jul-11 | 14:00 | 15.58 | 15.91 |
| 8-Jul-11 | 15:00 | 15.82 | 16.23 |
| 8-Jul-11 | 16:00 | 15.75 | 16.23 |
| 8-Jul-11 | 17:00 | 16.13 | 16.38 |
| 8-Jul-11 | 18:00 | 16.01 | 16.54 |
| 8-Jul-11 | 19:00 | 16.34 | 16.54 |
| 8-Jul-11 | 20:00 | 16.23 | 16.54 |
| 8-Jul-11 | 21:00 | 16.34 | 16.38 |
| 8-Jul-11 | 22:00 | 16.37 | 16.38 |
| 8-Jul-11 | 23:00 | 16.23 | 16.38 |
| 9-Jul-11 | 0:00 | 16.13 | 16.23 |
| 9-Jul-11 | 1:00 | 16.25 | 16.38 |
| 9-Jul-11 | 2:00 | 16.06 | 16.23 |
| 9-Jul-11 | 3:00 | 16.08 | 16.23 |
| 9-Jul-11 | 4:00 | 16.03 | 16.07 |
| 9-Jul-11 | 5:00 | 16.03 | 16.07 |
| 9-Jul-11 | 6:00 | 15.99 | 15.91 |
| 9-Jul-11 | 7:00 | 15.94 | 15.91 |
| 9-Jul-11 | 8:00 | 15.94 | 16.07 |
| 9-Jul-11 | 9:00 | 15.99 | 16.07 |
| 9-Jul-11 | 10:00 | 16.06 | 16.23 |
| 9-Jul-11 | 11:00 | 16.01 | 16.23 |
| 9-Jul-11 | 12:00 | 15.96 | 16.38 |
| 9-Jul-11 | 13:00 | 16.11 | 16.71 |
| 9-Jul-11 | 14:00 | 16.25 | 16.71 |
| 9-Jul-11 | 15:00 | 16.51 | 16.86 |
| 9-Jul-11 | 16:00 | 16.75 | 17.02 |
| 9-Jul-11 | 17:00 | 16.73 | 17.18 |
| 9-Jul-11 | 18:00 | 16.87 | 17.18 |
| 9-Jul-11 | 19:00 | 16.70 | 17.18 |
| 9-Jul-11 | 20:00 | 16.73 | 17.18 |
| 9-Jul-11 | 21:00 | 16.77 | 17.18 |
| 9-Jul-11 | 22:00 | 16.80 | 16.86 |
| 9-Jul-11 | 23:00 | 16.56 | 16.86 |
| 10-Jul-11 | 0:00 | 16.51 | 16.86 |
| 10-Jul-11 | 1:00 | 16.53 | 17.02 |
| 10-Jul-11 | 2:00 | 16.68 | 17.02 |
| 10-Jul-11 | 3:00 | 16.53 | 16.86 |
| 10-Jul-11 | 4:00 | 16.70 | 16.86 |
| 10-Jul-11 | 5:00 | 16.65 | 16.86 |
| 10-Jul-11 | 6:00 | 16.63 | 16.86 |
| 10-Jul-11 | 7:00 | 16.65 | 16.71 |
| 10-Jul-11 | 8:00 | 16.58 | 16.86 |
| 10-Jul-11 | 9:00 | 16.51 | 16.86 |
| 10-Jul-11 | 10:00 | 16.65 | 17.02 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 10-Jul-11 | 11:00 | 16.77 | 17.18 |
| 10-Jul-11 | 12:00 | 16.82 | 17.18 |
| 10-Jul-11 | 13:00 | 16.89 | 17.34 |
| 10-Jul-11 | 14:00 | 16.99 | 17.66 |
| 10-Jul-11 | 15:00 | 17.13 | 17.18 |
| 10-Jul-11 | 16:00 | 17.20 | 17.34 |
| 10-Jul-11 | 17:00 | 17.25 | 17.34 |
| 10-Jul-11 | 18:00 | 17.32 | 17.50 |
| 10-Jul-11 | 19:00 | 16.84 | 17.82 |
| 10-Jul-11 | 20:00 | 17.37 | 17.98 |
| 10-Jul-11 | 21:00 | 17.58 | 17.82 |
| 10-Jul-11 | 22:00 | 17.84 | 17.98 |
| 10-Jul-11 | 23:00 | 17.42 | 17.82 |
| 11-Jul-11 | 0:00 | 17.61 | 17.98 |
| 11-Jul-11 | 1:00 | 17.51 | 17.82 |
| 11-Jul-11 | 2:00 | 17.63 | 17.82 |
| 11-Jul-11 | 3:00 | 17.61 | 17.82 |
| 11-Jul-11 | 4:00 | 17.63 | 17.82 |
| 11-Jul-11 | 5:00 | 17.56 | 17.66 |
| 11-Jul-11 | 6:00 | 17.61 | 17.66 |
| 11-Jul-11 | 7:00 | 17.56 | 17.66 |
| 11-Jul-11 | 8:00 | 17.49 | 17.66 |
| 11-Jul-11 | 9:00 | 17.53 | 17.66 |
| 11-Jul-11 | 10:00 | 17.75 | 17.82 |
| 11-Jul-11 | 11:00 | 17.87 | 17.98 |
| 11-Jul-11 | 12:00 | 18.03 | 17.98 |
| 11-Jul-11 | 13:00 | 17.65 | 18.30 |
| 11-Jul-11 | 14:00 | 18.32 | 18.30 |
| 11-Jul-11 | 15:00 | 18.06 | 18.46 |
| 11-Jul-11 | 16:00 | 18.32 | 18.62 |
| 11-Jul-11 | 17:00 | 18.41 | 18.62 |
| 11-Jul-11 | 18:00 | 18.60 | 18.78 |
| 11-Jul-11 | 19:00 | 18.82 | 18.78 |
| 11-Jul-11 | 20:00 | 18.72 | 18.78 |
| 11-Jul-11 | 21:00 | 18.70 | 18.62 |
| 11-Jul-11 | 22:00 | 18.70 | 18.62 |
| 11-Jul-11 | 23:00 | 18.65 | 18.62 |
| 12-Jul-11 | 0:00 | 18.60 | 18.62 |
| 12-Jul-11 | 1:00 | 18.56 | 18.46 |
| 12-Jul-11 | 2:00 | 18.51 | 18.46 |
| 12-Jul-11 | 3:00 | 18.46 | 18.46 |
| 12-Jul-11 | 4:00 | 18.41 | 18.30 |
| 12-Jul-11 | 5:00 | 18.39 | 18.30 |
| 12-Jul-11 | 6:00 | 18.37 | 18.30 |
| 12-Jul-11 | 7:00 | 18.32 | 18.30 |
| 12-Jul-11 | 8:00 | 18.27 | 18.30 |
| 12-Jul-11 | 9:00 | 18.27 | 18.30 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 12-Jul-11 | 10:00 | 18.30 | 18.30 |
| 12-Jul-11 | 11:00 | 18.34 | 18.46 |
| 12-Jul-11 | 12:00 | 18.44 | 18.46 |
| 12-Jul-11 | 13:00 | 18.44 | 18.46 |
| 12-Jul-11 | 14:00 | 18.51 | 18.62 |
| 12-Jul-11 | 15:00 | 18.56 | 18.62 |
| 12-Jul-11 | 16:00 | 18.49 | 18.46 |
| 12-Jul-11 | 17:00 | 18.68 | 18.95 |
| 12-Jul-11 | 18:00 | 19.03 | 18.95 |
| 12-Jul-11 | 19:00 | 18.60 | 18.78 |
| 12-Jul-11 | 20:00 | 18.84 | 19.11 |
| 12-Jul-11 | 21:00 | 18.79 | 18.95 |
| 12-Jul-11 | 22:00 | 18.70 | 18.78 |
| 12-Jul-11 | 23:00 | 18.70 | 18.78 |
| 13-Jul-11 | 0:00 | 18.75 | 18.78 |
| 13-Jul-11 | 1:00 | 18.70 | 18.78 |
| 13-Jul-11 | 2:00 | 18.56 | 18.95 |
| 13-Jul-11 | 3:00 | 18.58 | 18.95 |
| 13-Jul-11 | 4:00 | 18.63 | 18.78 |
| 13-Jul-11 | 5:00 | 18.68 | 18.78 |
| 13-Jul-11 | 6:00 | 18.79 | 18.78 |
| 13-Jul-11 | 7:00 | 18.65 | 18.78 |
| 13-Jul-11 | 8:00 | 18.63 | 18.78 |
| 13-Jul-11 | 9:00 | 18.70 | 18.78 |
| 13-Jul-11 | 10:00 | 18.58 | 18.62 |
| 13-Jul-11 | 11:00 | 18.72 | 18.78 |
| 13-Jul-11 | 12:00 | 18.72 | 18.95 |
| 13-Jul-11 | 13:00 | 18.87 | 19.11 |
| 13-Jul-11 | 14:00 | 18.84 | 19.11 |
| 13-Jul-11 | 15:00 | 18.96 | 19.11 |
| 13-Jul-11 | 16:00 | 18.91 | 19.11 |
| 13-Jul-11 | 17:00 | 18.87 | 19.27 |
| 13-Jul-11 | 18:00 | 18.89 | 19.11 |
| 13-Jul-11 | 19:00 | 18.96 | 19.11 |
| 13-Jul-11 | 20:00 | 18.94 | 19.11 |
| 13-Jul-11 | 21:00 | 18.87 | 19.11 |
| 13-Jul-11 | 22:00 | 18.94 | 19.11 |
| 13-Jul-11 | 23:00 | 18.94 | 19.11 |
| 14-Jul-11 | 0:00 | 18.84 | 19.11 |
| 14-Jul-11 | 1:00 | 18.84 | 19.43 |
| 14-Jul-11 | 2:00 | 18.91 | 19.43 |
| 14-Jul-11 | 3:00 | 18.84 | 19.27 |
| 14-Jul-11 | 4:00 | 18.94 | 19.11 |
| 14-Jul-11 | 5:00 | 18.84 | 18.95 |
| 14-Jul-11 | 6:00 | 18.84 | 18.78 |
| 14-Jul-11 | 7:00 | 18.79 | 18.78 |
| 14-Jul-11 | 8:00 | 18.77 | 18.78 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 14-Jul-11 | 9:00 | 18.77 | 18.62 |
| 14-Jul-11 | 10:00 | 18.77 | 18.62 |
| 14-Jul-11 | 11:00 | 18.79 | 18.78 |
| 14-Jul-11 | 12:00 | 18.79 | 18.78 |
| 14-Jul-11 | 13:00 | 18.82 | 18.78 |
| 14-Jul-11 | 14:00 | 18.89 | 18.78 |
| 14-Jul-11 | 15:00 | 18.94 | 18.95 |
| 14-Jul-11 | 16:00 | 19.06 | 19.11 |
| 14-Jul-11 | 17:00 | 19.06 | 19.11 |
| 14-Jul-11 | 18:00 | 19.08 | 19.11 |
| 14-Jul-11 | 19:00 | 19.08 | 19.11 |
| 14-Jul-11 | 20:00 | 19.06 | 18.95 |
| 14-Jul-11 | 21:00 | 19.01 | 18.95 |
| 14-Jul-11 | 22:00 | 18.94 | 18.95 |
| 14-Jul-11 | 23:00 | 18.89 | 18.78 |
| 15-Jul-11 | 0:00 | 18.82 | 18.78 |
| 15-Jul-11 | 1:00 | 18.72 | 18.62 |
| 15-Jul-11 | 2:00 | 18.65 | 18.62 |
| 15-Jul-11 | 3:00 | 18.53 | 18.46 |
| 15-Jul-11 | 4:00 | 18.41 | 18.46 |
| 15-Jul-11 | 5:00 | 18.32 | 18.30 |
| 15-Jul-11 | 6:00 | 18.13 | 18.14 |
| 15-Jul-11 | 7:00 | 18.06 | 18.14 |
| 15-Jul-11 | 8:00 | 18.11 | 17.98 |
| 15-Jul-11 | 9:00 | 18.03 | 17.98 |
| 15-Jul-11 | 10:00 | 17.94 | 17.82 |
| 15-Jul-11 | 11:00 | 17.87 | 17.82 |
| 15-Jul-11 | 12:00 | 17.84 | 17.82 |
| 15-Jul-11 | 13:00 | 17.77 | 17.66 |
| 15-Jul-11 | 14:00 | 17.75 | 17.66 |
| 15-Jul-11 | 15:00 | 17.65 | 17.66 |
| 15-Jul-11 | 16:00 | 17.68 | 17.66 |
| 15-Jul-11 | 17:00 | 17.63 | 17.50 |
| 15-Jul-11 | 18:00 | 17.61 | 17.50 |
| 15-Jul-11 | 19:00 | 17.56 | 17.50 |
| 15-Jul-11 | 20:00 | 17.51 | 17.50 |
| 15-Jul-11 | 21:00 | 17.42 | 17.34 |
| 15-Jul-11 | 22:00 | 17.34 | 17.34 |
| 15-Jul-11 | 23:00 | 17.08 | 17.18 |
| 16-Jul-11 | 0:00 | 16.96 | 17.02 |
| 16-Jul-11 | 1:00 | 16.87 | 16.86 |
| 16-Jul-11 | 2:00 | 16.77 | 16.71 |
| 16-Jul-11 | 3:00 | 16.70 | 16.71 |
| 16-Jul-11 | 4:00 | 16.58 | 16.54 |
| 16-Jul-11 | 5:00 | 16.51 | 16.54 |
| 16-Jul-11 | 6:00 | 16.34 | 16.38 |
| 16-Jul-11 | 7:00 | 16.37 | 16.38 |

**Table A-4 Water Temperature Results from Tidbits Deployed in Area 8 of Kennady Lake, May to July 2011**

| Date (DD-MMM-YY) | Time (HH:MM) | Water Temperature at Four Metres (°C) | Water Temperature at Three Metres (°C) |
|---|---|---|---|
| 16-Jul-11 | 8:00 | 16.39 | 16.38 |
| 16-Jul-11 | 9:00 | 16.39 | 16.38 |
| 16-Jul-11 | 10:00 | 16.42 | 16.38 |
| 16-Jul-11 | 11:00 | 16.42 | 16.38 |
| 16-Jul-11 | 12:00 | 16.42 | 16.38 |
| 16-Jul-11 | 13:00 | 16.39 | 16.38 |
| 16-Jul-11 | 14:00 | 16.44 | 16.38 |
| 16-Jul-11 | 15:00 | 16.51 | 16.38 |
| 16-Jul-11 | 16:00 | 16.56 | 16.54 |
| 16-Jul-11 | 17:00 | 16.61 | 16.54 |
| 16-Jul-11 | 18:00 | 16.63 | 16.71 |
| 16-Jul-11 | 19:00 | 16.65 | 16.71 |
| 16-Jul-11 | 20:00 | 16.58 | 16.71 |
| 16-Jul-11 | 21:00 | 16.58 | 16.54 |
| 16-Jul-11 | 22:00 | 16.56 | 16.54 |
| 16-Jul-11 | 23:00 | 16.53 | 16.54 |
| 17-Jul-11 | 0:00 | 16.49 | 16.38 |
| 17-Jul-11 | 1:00 | 16.46 | 16.38 |
| 17-Jul-11 | 2:00 | 16.42 | 16.38 |
| 17-Jul-11 | 3:00 | 16.39 | 16.38 |
| 17-Jul-11 | 4:00 | 16.34 | 16.23 |
| 17-Jul-11 | 5:00 | 16.30 | 16.23 |
| 17-Jul-11 | 6:00 | 16.27 | 16.23 |
| 17-Jul-11 | 7:00 | 16.13 | 16.23 |
| 17-Jul-11 | 8:00 | 16.15 | 16.23 |
| 17-Jul-11 | 9:00 | 16.20 | 16.23 |
| 17-Jul-11 | 10:00 | 16.25 | 16.23 |
| 17-Jul-11 | 11:00 | 16.11 | 16.23 |
| 17-Jul-11 | 12:00 | 16.11 | 16.23 |
| 17-Jul-11 | 13:00 | 16.15 | 16.23 |

**Note:** DD-MMM-YY = date where D is day, M is month and Y is year; HH:MM = time where H = hour and M = minute; °C = degrees Celcius; V = volts.

**Table A-5 Freshet Water Quality Data in the Lake Outlets during June 2011**

| Parameter | Units | AREA 8 | AREA 8 (Duplicate) | Percent Difference | J1A | J1B | I1 | I1 (Duplicate) | Percent Difference | I2 | G2 | F1 | E1 | N14 | D2 | B2 | Field Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 9-Jun-11 | 9-Jun-11 | | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 | 9-Jun-11 |
| **Conventional Parameters** | | | | | | | | | | | | | | | | | |
| pH | n/a | 6.26 | 6.33 | 1% | 6.29 | 6.39 | 6.23 | 6.24 | 0% | 6.23 | 6.27 | 6.2 | 6.31 | 6.27 | 6.28 | 6.35 | 5.38 |
| Specific conductivity | µS/cm | 17 | 17 | 0% | 13 | 19 | 13 | 13 | 0% | 13 | 13 | 10 | 14 | 12 | 12 | 13 | <1 |
| Hardness | mg/L | 5.3 | 5.5 | 2% | 4.6 | 6.2 | 4.2 | 4 | 2% | 5.1 | 4.1 | 3.4 | 4.5 | 3.5 | 3.9 | 4.4 | <0.5 |
| Total alkalinity | mg/L | 3.8 | 4.3 | 6% | 3.7 | 6 | 3 | 2.8 | 3% | 3 | 2.5 | 2.1 | 3.4 | 3.1 | 2.9 | 3.9 | <0.5 |
| Total dissolved solids, calculated | mg/L | <10 | <10 | 0% | <10 | <10 | <10 | <10 | 0% | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total suspended solids | mg/L | <3 | <1 | **50%** | <1 | <1 | 2 | <1 | **33%** | 2 | 1 | 1 | 1 | 2 | 2 | 1 | <1 |
| Turbidity | NTU | 0.5 | 0.4 | 11% | 0.5 | 0.3 | 0.5 | 0.5 | 0% | 2 | 1.2 | 0.7 | 0.4 | 0.5 | 0.8 | 0.8 | <0.1 |
| **Major Ions** | | | | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 4.6 | 5.2 | 6% | 4.6 | 7.4 | 3.7 | 3.4 | 4% | 3.7 | 3 | 2.5 | 4.1 | 3.8 | 3.6 | 4.8 | <0.5 |
| Calcium | mg/L | 1.3 | 1.3 | 0% | 1.1 | 1.5 | 1 | 0.9 | 5% | 1.2 | 0.9 | 0.8 | 1 | 0.8 | 0.9 | 1.1 | <0.3 |
| Carbonate | mg/L | <0.5 | <0.5 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | 1 | 1 | 0% | <1 | <1 | <1 | <1 | 0% | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Hydroxide | mg/L | <0.5 | <0.5 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.5 | 0.5 | 0% | 0.4 | 0.6 | 0.4 | 0.4 | 0% | 0.5 | 0.4 | 0.3 | 0.5 | 0.3 | 0.4 | 0.4 | <0.2 |
| Potassium | mg/L | 0.4 | 0.4 | 0% | 0.4 | 0.5 | 0.4 | 0.4 | 0% | 0.3 | 0.3 | <0.3 | 0.4 | 0.3 | 0.3 | <0.3 | <0.3 |
| Sodium | mg/L | 0.6 | 0.7 | 8% | <0.5 | 0.7 | 0.5 | 0.5 | 0% | 0.9 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sulphate | mg/L | <1 | <1 | 0% | <1 | <1 | <1 | <1 | 0% | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| **Nutrients** | | | | | | | | | | | | | | | | | |
| Nitrate | mg-N/L | <0.003 | <0.003 | 0% | <0.003 | <0.003 | <0.003 | <0.003 | 0% | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | 0.004 | <0.003 |
| Nitrite | mg N/L | <0.003 | <0.003 | 0% | <0.003 | <0.003 | <0.003 | <0.003 | 0% | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Nitrate+Nitrite | mg N/L | <0.003 | <0.003 | 0% | <0.003 | <0.003 | <0.003 | <0.003 | 0% | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | 0.004 | <0.003 |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.02 | 0.02 | 0% | 0.019 | 0.024 | 0.037 | 0.038 | 1% | 0.036 | 0.046 | 0.058 | 0.044 | 0.042 | 0.041 | 0.066 | <0.001 |
| Antimony | mg/L | <0.0006 | <0.0006 | 0% | <0.0006 | <0.0006 | <0.0006 | <0.0006 | 0% | <0.0006 | <0.0006 | <0.0006 | <0.0006 | <0.0006 | <0.0006 | <0.0006 | <0.0006 |
| Arsenic | mg/L | 0.0006 | 0.0006 | 0% | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0% | 0.0007 | 0.0007 | 0.0007 | 0.0008 | 0.0008 | 0.0007 | 0.0006 | 0.0005 |
| Barium | mg/L | <0.01 | <0.01 | 0% | <0.01 | <0.01 | <0.01 | <0.01 | 0% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Beryllium | mg/L | <0.001 | <0.001 | 0% | <0.001 | <0.001 | <0.001 | <0.001 | 0% | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Boron | mg/L | <0.02 | <0.02 | 0% | <0.02 | <0.02 | <0.02 | <0.02 | 0% | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Cadmium | mg/L | 0.000014 | 0.000022 | **22%** | 0.000022 | 0.000014 | 0.000009 | 0.000009 | 0% | 0.000007 | 0.000038 | 0.000014 | 0.00001 | 0.000005 | 0.000006 | 0.000018 | <0.000005 |
| Chromium | mg/L | 0.001 | 0.001 | 0% | 0.001 | 0.002 | 0.001 | 0.001 | 0% | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | <0.001 | <0.001 |
| Cobalt | mg/L | <0.0003 | <0.0003 | 0% | <0.0003 | <0.0003 | <0.0003 | <0.0003 | 0% | <0.0003 | <0.0003 | <0.0003 | <0.0003 | <0.0003 | <0.0003 | <0.0003 | <0.0003 |
| Copper | mg/L | 0.0007 | 0.0006 | 8% | 0.0006 | 0.0008 | 0.0008 | 0.0007 | 7% | 0.0008 | 0.001 | 0.0006 | 0.0009 | 0.0006 | 0.0008 | 0.0009 | <0.0002 |
| Iron | mg/L | 0.09 | 0.09 | 0% | 0.13 | 0.12 | 0.07 | 0.09 | 13% | 0.17 | 0.23 | 0.47 | 0.28 | 0.24 | 0.25 | 0.97 | <0.06 |
| Lead | mg/L | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Lithium | mg/L | <0.02 | <0.02 | 0% | <0.02 | <0.02 | <0.02 | <0.02 | 0% | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Manganese | mg/L | 0.009 | 0.008 | 6% | <0.004 | 0.005 | 0.007 | 0.008 | 7% | 0.004 | 0.006 | 0.006 | 0.007 | <0.004 | <0.004 | 0.007 | <0.004 |
| Molybdenum | mg/L | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Nickel | mg/L | 0.0012 | 0.0009 | 14% | 0.0009 | 0.0018 | 0.0013 | 0.0015 | 7% | 0.0017 | 0.0025 | 0.001 | 0.0017 | 0.0011 | 0.001 | 0.001 | <0.0005 |
| Selenium | mg/L | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Silver | mg/L | <0.0001 | <0.0001 | 0% | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0% | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Strontium | mg/L | <0.02 | <0.02 | 0% | <0.02 | <0.02 | <0.02 | <0.02 | 0% | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Thallium | mg/L | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0% | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Titanium | mg/L | <0.001 | <0.001 | 0% | <0.001 | <0.001 | <0.001 | <0.001 | 0% | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Uranium | mg/L | <0.0001 | <0.0001 | 0% | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0% | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Vanadium | mg/L | <0.001 | <0.001 | 0% | <0.001 | <0.001 | <0.001 | <0.001 | 0% | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Zinc | mg/L | 0.005 | <0.003 | **25%** | <0.003 | <0.003 | 0.004 | <0.003 | 14% | <0.003 | 0.006 | <0.003 | 0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| **Dissolved Metals** | | | | | | | | | | | | | | | | | |
| Iron | mg/L | <0.06 | <0.06 | 0% | <0.06 | <0.06 | <0.06 | <0.06 | 0% | 0.07 | 0.08 | 0.24 | 0.09 | <0.06 | 0.1 | 0.6 | <0.06 |
| Manganese | mg/L | 0.008 | 0.007 | 7% | <0.004 | <0.004 | 0.005 | 0.005 | 0% | <0.004 | 0.007 | 0.004 | <0.004 | <0.004 | <0.004 | 0.006 | <0.004 |

Note: n/a = not applicable; µS/cm = micro Siemens per centimetre; mg/L = milligrams per litre; NTU = Nephelometric turbidity units; mg N/L = milligrams nitrogen per litre.

**Bold Percent Difference** = percent difference is greater than 20 percent.

**Table A-6 Field Water Quality Profile Data at All Sampling Locations during Under-Ice Conditions in April 2011**

| Site | Sampling Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| **Kennady Lake Areas** | | | | | | | | |
| A3 | 8-Apr-11 | E 591071 N 7038680 | 1.5 | 1.0 | 6.6 | 21.0 | 17.1 | 120 |
| | | | 2.0 | 1.5 | 6.6 | 19.0 | 16.8 | 120 |
| | | | 3.0 | 2.2 | 6.6 | 16.0 | 15.4 | 112 |
| | | | 4.0 | 2.5 | 6.5 | 16.0 | 14.2 | 104 |
| | | | 5.0 | 2.6 | 6.4 | 17.0 | 12.6 | 93 |
| | | | 6.0 | 2.7 | 6.3 | 17.0 | 11.7 | 86 |
| | | | 7.0 | 2.8 | 6.2 | 17.0 | 10.1 | 75 |
| | | | 8.0 | 2.9 | 6.2 | 17.0 | 9.2 | 68 |
| | | | 9.0 | 3.0 | 6.1 | 18.0 | 8.1 | 61 |
| | | | 10.0 | 3.2 | 6.0 | 19.0 | 5.4 | 41 |
| | | | 11.0 | 3.5 | 5.9 | 21.0 | 3.5 | 27 |
| Area 4 | 9-Apr-11 | E 589925 N 7036298 | 1.5 | 0.6 | 6.5 | 21.0 | 17.9 | 125 |
| | | | 2.0 | 1.2 | 6.5 | 19.0 | 17.5 | 124 |
| | | | 3.0 | 1.9 | 6.5 | 17.0 | 16.1 | 116 |
| | | | 4.0 | 2.3 | 6.5 | 15.0 | 15.2 | 111 |
| | | | 5.0 | 2.7 | 6.4 | 15.0 | 13.9 | 103 |
| | | | 6.0 | 2.9 | 6.3 | 13.0 | 11.6 | 87 |
| | | | 7.0 | 3.1 | 6.2 | 16.0 | 10.3 | 78 |
| | | | 8.0 | 3.4 | 6.1 | 16.0 | 8.1 | 61 |
| | | | 9.0 | 3.5 | 6.0 | 16.0 | 6.5 | 49 |
| | | | 10.0 | 3.6 | 6.0 | 18.0 | 5.6 | 42 |
| | | | 11.0 | 3.8 | 6.0 | 19.0 | 4.3 | 33 |
| | | | 11.8 | bottom | - | - | - | - |
| Area 3+5 | 8-Apr-11 | E 589018 N 7036735 | 1.5 | 1.2 | 6.4 | 20.0 | 16.9 | 119 |
| | | | 2.0 | 1.5 | 6.5 | 18.0 | 16.6 | 119 |
| | | | 3.0 | 1.9 | 6.5 | 17.0 | 15.5 | 112 |
| | | | 4.0 | 2.3 | 6.4 | 15.0 | 13.6 | 99 |
| | | | 5.0 | 2.7 | 6.4 | 15.0 | 12.3 | 91 |
| | | | 6.0 | 2.9 | 6.3 | 15.0 | 10.6 | 78 |
| | | | 7.0 | 3.2 | 6.2 | 15.0 | 8.6 | 64 |
| | | | 8.0 | 3.4 | 6.1 | 15.0 | 7.2 | 54 |
| | | | 9.0 | 3.6 | 6.0 | 16.0 | 6.1 | 46 |
| | | | 10.0 | 3.9 | 5.9 | 17.0 | 3.8 | 29 |
| | | | 11.0 | 4.1 | 5.8 | 18.0 | 1.5 | 12 |
| | | | 12.0 | 4.3 | 5.9 | 20.0 | 0.6 | 5 |
| | | | 13.0 | 4.5 | 6.2 | 39.0 | 0.2 | 2 |
| | | | 14.0 | 4.8 | 6.4 | 107.0 | 0.2 | 1 |
| | | | - | bottom | - | - | - | - |

**Table A-6 Field Water Quality Profile Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Site | Sampling Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| Area 6 | 7-Apr-11 | E 589260 N 7035403 | 1.5 | 0.8 | 6.4 | 24.0 | 15.7 | 110 |
| | | | 2.0 | 0.4 | 6.3 | 21.0 | 14.8 | 103 |
| | | | 3.0 | 1.7 | 6.4 | 17.0 | 13.4 | 96 |
| | | | 4.0 | 2.4 | 6.4 | 16.0 | 11.8 | 86 |
| | | | 5.0 | 2.8 | 6.3 | 16.0 | 9.9 | 73 |
| | | | 6.0 | 3.0 | 6.2 | 16.0 | 8.2 | 61 |
| | | | 7.0 | 3.2 | 6.2 | 17.0 | 7.4 | 55 |
| | | | 8.0 | 3.3 | 6.1 | 17.0 | 7.1 | 53 |
| | | | 9.0 | 3.4 | 6.1 | 17.0 | 6.3 | 47 |
| | | | 10.0 | 3.4 | 6.0 | 17.0 | 5.5 | 42 |
| | | | 11.0 | 3.5 | 6.0 | 18.0 | 4.9 | 37 |
| | | | 12.0 | 3.9 | 6.0 | 18.0 | 4.1 | 31 |
| | 7-Apr-11 | | 13.0 | 3.7 | 6.1 | 19.0 | 3.4 | 26 |
| | | | 13.6 | bottom | - | - | - | - |
| Area 7 | | E 590144 N 7034987 | 1.5 | 0.5 | 6.6 | 23.0 | 17.0 | 118 |
| | | | 2.0 | 1.0 | 6.6 | 20.0 | 16.4 | 116 |
| | | | 3.0 | 1.7 | 6.6 | 18.0 | 15.5 | 111 |
| | | | 4.0 | 2.3 | 6.6 | 17.0 | 13.9 | 102 |
| | | | 5.0 | 2.7 | 6.4 | 17.0 | 11.1 | 82 |
| | | | 6.0 | 3.2 | 6.2 | 18.0 | 7.0 | 52 |
| | | | 7.0 | 3.5 | 6.2 | 19.0 | 4.0 | 31 |
| | | | 8.0 | 3.8 | 6.1 | 20.0 | 1.6 | 12 |
| | | | 9.0 | 3.9 | 6.1 | 24.0 | 0.6 | 5 |
| | | | 9.5 | bottom | - | - | - | - |
| Area 8 | 12-Apr-11 | E 591853 N 7035753 | 1.5 | 0.6 | 6.7 | 23.0 | 15.9 | 111 |
| | | | 2.0 | 1.1 | 6.7 | 21.0 | 15.1 | 107 |
| | | | 3.0 | 2.0 | 6.6 | 19.0 | 14.4 | 104 |
| | | | 3.5 | 2.3 | 6.5 | 19.0 | 13.1 | 96 |
| | | | 4.0 | 2.6 | 6.5 | 18.0 | 12.6 | 93 |
| | | | 5.0 | 3.0 | 6.3 | 20.0 | 9.8 | 74 |
| | | | 6.0 | 3.3 | 6.3 | 21.0 | 8.7 | 67 |
| | | | 7.0 | 3.5 | 6.2 | 23.0 | 6.4 | 48 |
| | | | 8.0 | 3.8 | 6.2 | 25.0 | 3.4 | 26 |
| | | | 9.0 | 4.0 | 6.3 | 48.0 | 1.7 | 14 |
| | | | 9.8 | 4.2 | 6.4 | 85.0 | 1.0 | 8 |
| B1 | 6-Apr-11 | E 588056 N 7038254 | 1.5 | 0.9 | 6.2 | 24.0 | 12.2 | 86 |
| | | | 2.0 | 1.8 | 6.1 | 22.0 | 11.3 | 81 |
| | | | 2.5 | 2.4 | 6.1 | 22.0 | 10.1 | 74 |
| | | | 3.0 | 2.9 | 5.9 | 22.0 | 6.9 | 51 |
| | | | 3.5 | 3.3 | 5.9 | 23.0 | 1.7 | 13 |
| | | | 4.1 | bottom | - | - | - | - |

**Table A-6 Field Water Quality Profile Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Site | Sampling Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| D3 | 7-Apr-11 | E 586606 N 7037077 | 1.5 | 1.9 | 6.4 | 27.0 | 7.9 | 57 |
| | | | 2.0 | 2.8 | 6.2 | 27.0 | 5.2 | 39 |
| | | | 2.2 | bottom | - | - | - | - |
| E1 | 5-Apr-11 | E 586663 N 7035331 | 1.5 | 1.2 | 6.2 | 34.0 | 10.8 | 76 |
| | | | 2.0 | 2.5 | 5.7 | 33.0 | 5.8 | 43 |
| | | | 2.5 | 3.4 | 6.4 | 65.0 | 1.0 | 8 |
| | | | - | Bottom | - | - | - | - |
| F1 | 9-Apr-11 | E 588454 N 7033953 | 1.5 | 1.4 | 5.8 | 24.0 | 5.6 | 40 |
| | | | 2.0 | 1.9 | 5.8 | 23.0 | 4.1 | 31 |
| | | | 2.5 | 2.4 | 5.9 | 32.0 | 2.6 | 19 |
| | | | 3.0 | 2.7 | 6.0 | 46.0 | 1.2 | 9 |
| | | | 3.5 | 2.9 | 6.1 | 51.0 | 0.6 | 5 |
| | | | 4.0 | 3.1 | 6.1 | 62.0 | 0.4 | 3 |
| | | | 4.2 Bottom | 3.1 | 6.3 | 61.0 | 0.2 | 2 |
| **Lake Downstream of Kennady Lake** | | | | | | | | |
| N2 | 11-Apr-11 | E 591599 N 7044342 | 1.5 | 0.7 | 6.4 | 32.0 | 14.9 | 107 |
| | | | 2.0 | 1.7 | 6.4 | 34.0 | 14.6 | 105 |
| | | | 2.5 | 2.5 | 6.3 | 34.0 | 13.1 | 97 |
| | | | 3.0 | 2.9 | 6.2 | 30.0 | 11.8 | 87 |
| | | | 3.2 | 3.1 | 6.1 | 48.0 | 9.8 | 73 |
| | | | 4.0 | bottom | - | - | - | - |
| N9 | 8-Apr-11 | E 590944 N 7039568 | 1.5 | 1.5 | 6.6 | 27.0 | 15.9 | 114 |
| | | | 2.0 | 1.6 | 6.3 | 29.0 | 15.0 | 108 |
| | | | 2.3 | 1.8 | 6.4 | 26.0 | 14.7 | 106 |
| | | | - | bottom | - | - | - | - |
| N11 | 6-Apr-11 | E 587413 N 7040208 | 1.5 | 1.9 | 6.7 | 24.0 | 13.9 | 100 |
| | | | 2.0 | 1.8 | 6.6 | 24.0 | 13.4 | 97 |
| | | | 2.5 | 2.3 | 6.5 | 25.0 | 12.3 | 90 |
| | | | 3.0 | bottom | - | - | - | - |
| N12 | 6-Apr-11 | E 588442 N 7039302 | 1.5 | 2.0 | 6.4 | 22.0 | 12.6 | 92 |
| | | | 2.0 | 2.4 | 6.3 | 21.0 | 11.0 | 81 |
| | | | 2.5 | 3.2 | 6.0 | 21.0 | 6.6 | 49 |
| | | | 2.9 | bottom | - | - | - | - |
| N16 | 5-Apr-11 | E 582818 N 7039529 | 1.5 | 0.6 | 6.5 | 18.0 | 17.2 | 120 |
| | | | 2.0 | 1.1 | 6.5 | 16.0 | 15.5 | 110 |
| | | | 2.5 | 1.4 | 6.5 | 15.0 | 14.8 | 106 |
| | | | 3.0 | 1.5 | 6.4 | 15.0 | 14.3 | 103 |
| | | | 3.5 | 1.8 | 6.4 | 14.0 | 13.6 | 98 |
| | | | 4.0 | 2.0 | 6.4 | 13.0 | 12.5 | 91 |
| | | | 4.5 | 2.2 | 6.3 | 13.0 | 12.0 | 87 |
| | | | 5.0 | 2.3 | 6.3 | 14.0 | 11.4 | 83 |
| | | | - | bottom | - | - | - | - |

**Table A-6 Field Water Quality Profile Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Site | Sampling Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| N17 | 5-Apr-11 | E 584508 N 7036583 | 1.5 | 1.3 | 6.5 | 18.0 | 15.6 | 110 |
| | | | 2.0 | 2.1 | 6.4 | 16.0 | 14.7 | 107 |
| | | | 2.5 | 2.5 | 6.4 | 15.0 | 14.1 | 103 |
| | | | 3.0 | 2.9 | 6.3 | 15.0 | 12.5 | 93 |
| | | | 3.5 | 3.1 | 6.2 | 16.0 | 11.0 | 82 |
| | | | 4.0 | 3.4 | 6.1 | 17.0 | 9.3 | 71 |
| | | | 4.5 | 3.6 | 6.0 | 18.0 | 7.9 | 60 |
| | | | 5.0 | 3.7 | 6.0 | 18.0 | 7.0 | 54 |
| | | | 6.0 | 3.8 | 5.9 | 19.0 | 6.0 | 47 |
| | | | 7.0 | 3.9 | 5.9 | 19.0 | 5.0 | 38 |
| | | | 8.0 | 3.9 | 5.8 | 19.0 | 4.4 | 34 |
| | | | 9.0 | 4.0 | 5.8 | 20.0 | 3.0 | 23 |
| | | | 10.0 | 4.3 | 5.8 | 23.0 | 2.4 | 19 |
| | | | 11.0 | 4.5 | 5.8 | 39.0 | 1.8 | 14 |
| | | | 11.8 | bottom | - | - | - | - |
| M3 | 11-Apr-11 | E 597425 N 7043953 | 1.5 | 1.7 | 6.5 | 23.0 | 14.8 | 107 |
| | | | 2.0 | 1.9 | 6.5 | 21.0 | 14.7 | 106 |
| | | | 2.5 | 2.2 | 6.4 | 20.0 | 13.9 | 101 |
| | | | 3.0 | 2.6 | 6.4 | 19.0 | 13.3 | 98 |
| | | | 3.5 | 2.8 | 6.3 | 19.0 | 12.3 | 91 |
| | | | 4.0 | 3.1 | 6.3 | 19.0 | 10.8 | 82 |
| | | | 5.0 | 3.4 | 6.2 | 20.0 | 8.7 | 67 |
| | | | 6.0 | 3.9 | 6.2 | 25.0 | 3.3 | 26 |
| | | | 6.8 | bottom | - | - | - | - |
| M4 | 11-Apr-11 | E 595226 N 7040172 | 1.5 | 0.6 | 6.9 | 22.0 | 16.5 | 114 |
| | | | 2.0 | 1.0 | 6.7 | 20.0 | 16.8 | 118 |
| | | | 3.0 | 1.7 | 6.8 | 18.0 | 15.8 | 113 |
| | | | 4.0 | 2.2 | 6.7 | 17.0 | 13.6 | 100 |
| | | | 5.0 | 2.6 | 6.5 | 17.0 | 11.2 | 84 |
| | | | 6.0 | 2.9 | 6.4 | 17.0 | 9.4 | 70 |
| | | | 7.0 | 3.0 | 6.3 | 18.0 | 8.5 | 64 |
| | | | 8.0 | 3.1 | 6.3 | 18.0 | 7.7 | 58 |
| | | | 9.0 | 3.2 | 6.2 | 18.0 | 7.1 | 53 |
| | | | 10.0 | 3.3 | 6.2 | 19.0 | 6.3 | 47 |
| | | | 11.0 | 3.4 | 6.1 | 20.0 | 4.8 | 36 |
| | | | 11.6 | 3.5 | 6.0 | 21.0 | 3.3 | 26 |

**Table A-6 Field Water Quality Profile Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Site | Sampling Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| M1 | 11-Apr-11 | E 596446 N 7044993 | 1.5 | 1.1 | 6.3 | 148 | 2.2 | 15 |
| | | | 1.7 | 1.5 | 6.4 | 193 | 0.9 | 7 |
| M2 | 11-Apr-11 | E 597040 N 7044901 | 1.5 | 0.6 | 6.4 | 28 | 13.8 | 96 |
| | | | 2.0 | 1.8 | 6.3 | 26 | 12.9 | 94 |
| | | | 2.5 | 2.4 | 6.3 | 26 | 11.2 | 82 |
| | | | 3.0 | 3.2 | 6.2 | 29 | 6.5 | 51 |
| | | | 3.5 | 3.7 | 6.6 | 34 | 5.2 | 40 |
| L410 | 9-Apr-11 | E 597094 N 7047535 | 1.5 | 0.4 | 6.3 | 22.0 | 16.2 | 112 |
| | | | 2.0 | 1.2 | 6.3 | 21.0 | 15.3 | 109 |
| | | | 2.5 | 1.6 | 6.3 | 20.0 | 14.8 | 107 |
| | | | 3.0 | 2.3 | 6.2 | 19.0 | 13.9 | 102 |
| | | | 3.5 | 2.7 | 6.1 | 18.0 | 9.7 | 71 |
| | | | 4.0 | 3.0 | 6.0 | 18.0 | 8.3 | 66 |
| | | | 4.5 | 3.5 | 6.0 | 22.0 | 6.0 | 47 |
| | | | 5.0 | 3.5 | 6.0 | 23.0 | 5.1 | 39 |
| | | | 5.3 bottom | 3.6 | 6.0 | 53.0 | 2.7 | 20 |
| L1B | 11-Apr-11 | E 594038 N 7039392 | 1.5 | 0.2 | 6.3 | 134 | 4.7 | 34 |
| | | | 1.9 | 0.5 | 6.3 | 137 | 3.1 | 23 |
| L2 | 11-Apr-11 | E 593381 N 7038952 | 1.5 | 0.6 | 6.2 | 52 | 8.0 | 56 |
| | | | 2.0 | 1.2 | 6.2 | 51 | 6.7 | 47 |
| | | | 2.5 | 2.6 | 6.2 | 52 | 4.4 | 33 |
| | | | 3.0 | 3.6 | 6.4 | 132 | 2.0 | 16 |
| | | | 3.5 | 3.9 | 6.6 | 196 | 1.2 | 9 |
| Kirk Lake | 9-Apr-11 | E 592327 N 7061012 | 1.5 | 1.6 | 6.2 | 36.0 | 8.2 | 56 |
| | | | 2.0 | 2.9 | 6.1 | 28.0 | 7.8 | 57 |
| | | | 2.5 | 3.0 | 5.8 | 28.0 | 5.0 | 37 |
| | | | 2.7 | 3.3 | 6.0 | 34.0 | 3.2 | 25 |
| | | | - | Bottom | - | - | - | - |
| **Reference Lakes** | | | | | | | | |
| X6 | 7-Apr-11 | E 586134 N 7032524 | 1.5 | 0.9 | 7.2 | 23.0 | 15.8 | 111 |
| | | | 2.0 | 1.9 | 6.9 | 21.0 | 14.4 | 104 |
| | | | 2.5 | 2.1 | 6.9 | 20.0 | 14.0 | 101 |
| | | | 3.0 | 2.6 | 6.8 | 18.0 | 13.5 | 100 |
| | | | 3.5 | 2.9 | 6.6 | 17.0 | 11.7 | 87 |
| | | | 4.0 | 3.3 | 6.4 | 17.0 | 8.2 | 61 |
| | | | 4.2 | bottom | - | - | - | - |
| Ref | 11-Apr-11 | E 599138 N 7040849 | 1.5 | 2.0 | 6.8 | 20.0 | 16.6 | 120 |
| | | | 2.0 | 1.6 | 6.8 | 19.0 | 16.2 | 116 |
| | | | 2.5 | 1.7 | 6.8 | 18.0 | 15.8 | 114 |
| | | | 3.0 | 1.6 | 6.8 | 18.0 | 15.5 | 111 |

**Table A-6 Field Water Quality Profile Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Site | Sampling Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| | | | 3.5 | 1.7 | 6.8 | 17.0 | 15.0 | 111 |
| | | | 4.0 | 1.7 | 6.7 | 17.0 | 14.5 | 104 |
| | | | 5.0 | 1.9 | 6.7 | 17.0 | 13.9 | 101 |
| | | | 6.0 | 1.9 | 6.7 | 18.0 | 13.5 | 98 |
| | | | 7.0 | 2.1 | 6.6 | 17.0 | 13.0 | 94 |
| | | | 8.0 | 2.2 | 6.6 | 17.0 | 12.3 | 90 |
| | | | 9.0 | 2.3 | 6.5 | 18.0 | 11.7 | 86 |
| | | | 10.0 | 2.4 | 6.5 | 18.0 | 11.3 | 83 |
| | | | 11.0 | 2.5 | 6.5 | 18.0 | 10.7 | 79 |
| | | | 11.8 | 2.7 | 6.2 | 19.0 | 8.3 | 64 |

**Note:** UTM = universal transverse Mercator; NAD = north American datum; m = metre; °C = degree Celsius; µS/cm = microSiemens per centimetre; mg/L = milligrams per litre; % = percent; V = volts.

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| **Kennady Lake Areas** | | | | | | | | |
| A3 | 22-Jul-11 | E 591067 N 7038689 | 0.3 | 15.6 | 6.6 | 13.0 | 9.5 | 96 |
| | | | 1.0 | 15.4 | 6.6 | 13.0 | 9.6 | 96 |
| | | | 2.0 | 15.4 | 6.7 | 13.0 | 9.6 | 96 |
| | | | 3.0 | 15.3 | 6.7 | 13.0 | 9.6 | 96 |
| | | | 4.0 | 15.3 | 6.7 | 13.0 | 9.6 | 96 |
| | | | 5.0 | 15.2 | 6.7 | 13.0 | 9.6 | 96 |
| | | | 6.0 | 15.2 | 6.7 | 13.0 | 9.6 | 96 |
| | | | 7.0 | 15.1 | 6.7 | 13.0 | 9.6 | 95 |
| | | | 8.0 | 15.0 | 6.7 | 13.0 | 9.6 | 95 |
| | | | 9.0 | 14.9 | 6.7 | 13.0 | 9.5 | 94 |
| | | | 10.0 | 14.9 | 6.7 | 13.0 | 9.5 | 94 |
| | | | 11.0 | 14.8 | 6.7 | 13.0 | 9.5 | 94 |
| | | | 12.3 | bottom | - | - | - | - |
| Area 3+5 | 14-Jul-11 | E 589013 N 7036733 | 0.3 | 16.9 | 6.6 | 12.0 | 9.6 | 99 |
| | | | 1.0 | 16.9 | 6.6 | 12.0 | 9.6 | 99 |
| | | | 2.0 | 16.8 | 6.6 | 12.0 | 9.6 | 99 |
| | | | 3.0 | 16.8 | 6.7 | 12.0 | 9.6 | 99 |
| | | | 4.0 | 16.8 | 6.7 | 12.0 | 9.6 | 99 |
| | | | 5.0 | 16.7 | 6.7 | 12.0 | 9.7 | 99 |
| | | | 6.0 | 16.4 | 6.6 | 12.0 | 9.7 | 99 |
| | | | 7.0 | 16.1 | 6.7 | 12.0 | 9.8 | 99 |
| | | | 8.0 | 14.2 | 6.6 | 12.0 | 10.3 | 100 |
| | | | 9.0 | 13.3 | 6.6 | 12.0 | 10.4 | 100 |
| | | | 10.0 | 12.8 | 6.5 | 12.0 | 10.4 | 99 |
| | | | 11.0 | 12.7 | 6.5 | 12.0 | 10.3 | 97 |
| | | | 12.0 | 12.6 | 6.5 | 12.0 | 10.3 | 97 |
| | | | 13.0 | 12.5 | 6.5 | 12.0 | 10.3 | 97 |
| | | | 14.2 | bottom | - | - | - | - |
| Area 4 | 15-Jul-11 | E 589917 N 7036304 | 0.3 | 15.0 | 6.5 | 12.0 | 9.8 | 97 |
| | | | 1.0 | 15.0 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 2.0 | 15.0 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 3.0 | 14.9 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 4.0 | 14.9 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 5.0 | 14.9 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 6.0 | 14.9 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 7.0 | 14.9 | 6.7 | 12.0 | 9.8 | 97 |
| | | | 8.0 | 14.9 | 6.7 | 12.0 | 9.8 | 97 |
| | | | 9.0 | 14.8 | 6.6 | 12.0 | 9.8 | 97 |
| | | | 10.0 | 13.1 | 6.6 | 12.0 | 10.2 | 97 |
| | | | 11.0 | 12.9 | 6.5 | 12.0 | 10.2 | 97 |
| | | | 12.3 | bottom | - | - | - | - |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| Area 6 | 14-Jul-11 | E 589256 N 7035404 | 0.3 | 17.1 | 6.6 | 12.0 | 9.5 | 98 |
| | | | 1.0 | 17.1 | 6.7 | 12.0 | 9.5 | 98 |
| | | | 2.0 | 17.1 | 6.7 | 12.0 | 9.5 | 98 |
| | | | 3.0 | 17.1 | 6.7 | 12.0 | 9.5 | 98 |
| | | | 4.0 | 17.0 | 6.7 | 12.0 | 9.5 | 99 |
| | | | 5.0 | 16.9 | 6.7 | 12.0 | 9.6 | 99 |
| | | | 6.0 | 15.2 | 6.6 | 12.0 | 10.1 | 100 |
| | | | 7.0 | 14.5 | 6.6 | 12.0 | 10.2 | 100 |
| | | | 8.0 | 14.0 | 6.6 | 12.0 | 10.2 | 99 |
| | | | 9.0 | 13.3 | 6.6 | 13.0 | 10.2 | 97 |
| | | | 10.0 | 13.0 | 6.5 | 13.0 | 10.1 | 96 |
| | | | 11.0 | 12.9 | 6.5 | 13.0 | 9.9 | 94 |
| | | | 12.0 | 12.7 | 6.4 | 13.0 | 9.8 | 92 |
| | | | 13.0 | 12.6 | 6.4 | 13.0 | 9.7 | 92 |
| | | | 14.0 | 12.4 | 6.3 | 13.0 | 9.6 | 91 |
| | | | 14.7 | bottom | - | - | - | - |
| Area 7 | 14-Jul-11 | E 590139 N 7034992 | 0.3 | 17.0 | 6.6 | 13.0 | 9.6 | 99 |
| | | | 1.0 | 16.9 | 6.6 | 13.0 | 9.6 | 99 |
| | | | 2.0 | 16.9 | 6.6 | 13.0 | 9.6 | 99 |
| | | | 3.0 | 16.9 | 6.7 | 13.0 | 9.6 | 99 |
| | | | 4.0 | 16.8 | 6.7 | 13.0 | 9.6 | 99 |
| | | | 5.0 | 16.8 | 6.7 | 13.0 | 9.6 | 99 |
| | | | 6.0 | 16.5 | 6.7 | 13.0 | 9.6 | 99 |
| | | | 7.0 | 16.2 | 6.6 | 13.0 | 9.7 | 99 |
| | | | 8.0 | 15.8 | 6.6 | 13.0 | 9.8 | 99 |
| | | | 8.9 | bottom | - | - | - | - |
| Area 8 Outlet | 17-Jul-11 | E 593270 N 7038359 | 0.2 | 15.3 | 6.4 | 13.0 | 9.7 | 96 |
| Area 8 | 17-Jul-11 | E 591853 N 7035753 | 0.3 | 16.4 | 6.7 | 13.0 | 9.3 | 95 |
| | | | 1.0 | 16.4 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 2.0 | 16.3 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 3.0 | 16.3 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 4.0 | 16.3 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 5.0 | 16.2 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 6.0 | 16.2 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 7.0 | 16.1 | 6.8 | 13.0 | 9.3 | 95 |
| | | | 8.0 | 15.9 | 6.8 | 13.0 | 9.4 | 95 |
| | | | 9.0 | 15.8 | 6.8 | 13.0 | 9.4 | 95 |
| | | | 10.0 | bottom | - | - | - | - |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| B1 | 19-Jul-11 | E 588053 N 7038253 | 0.3 | 16.1 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 0.5 | 16.1 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 1.0 | 16.1 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 1.5 | 16.1 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 2.0 | 16.2 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 2.5 | 16.2 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 3.0 | 16.2 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 3.5 | 16.1 | 6.4 | 9.0 | 9.1 | 92 |
| | | | 4.1 | bottom | - | - | - | - |
| D2 | 19-Jul-11 | E 587362 N 7036617 | 0.3 | 14.8 | 6.5 | 16.0 | 9.4 | 93 |
| D3 | 20-Jul-11 | E 586671 N 7037000 | 0.3 | 14.4 | 6.5 | 9.0 | 9.6 | 94 |
| | | | 0.5 | 14.5 | 6.5 | 9.0 | 9.5 | 94 |
| | | | 1.0 | 14.5 | 6.4 | 9.0 | 9.5 | 94 |
| | | | 1.5 | 14.5 | 6.5 | 9.0 | 9.5 | 93 |
| | | | 2.0 | 14.5 | 6.4 | 9.0 | 9.2 | 90 |
| | | | 2.6 | bottom | - | - | - | - |
| E1 | 20-Jul-11 | E 586669 N 7035326 | 0.3 | 14.6 | 6.5 | 13.0 | 9.6 | 95 |
| | | | 0.5 | 14.6 | 6.5 | 13.0 | 9.6 | 95 |
| | | | 1.0 | 14.6 | 6.6 | 13.0 | 9.7 | 95 |
| | | | 1.5 | 14.6 | 6.6 | 13.0 | 9.7 | 95 |
| | | | 2.0 | 14.6 | 6.6 | 13.0 | 9.7 | 95 |
| | | | 2.5 | 14.6 | 6.6 | 13.0 | 9.7 | 95 |
| | | | 3.0 | 14.6 | 6.6 | 13.0 | 9.6 | 9 |
| | | | 3.4 | bottom | - | - | - | - |
| F1 | 18-Jul-11 | E 588444 N 7033965 | 0.3 | 17.0 | 6.4 | 9.0 | 9.5 | 98 |
| | | | 0.5 | 17.0 | 6.4 | 9.0 | 9.5 | 98 |
| | | | 1.0 | 17.0 | 6.4 | 9.0 | 9.5 | 98 |
| | | | 1.5 | 17.0 | 6.5 | 9.0 | 9.5 | 98 |
| | | | 2.0 | 17.0 | 6.5 | 9.0 | 9.5 | 98 |
| | | | 2.5 | 17.0 | 6.5 | 9.0 | 9.5 | 98 |
| | | | 3.0 | 16.9 | 6.5 | 9.0 | 9.5 | 98 |
| | | | 3.2 | bottom | - | - | - | - |
| **Downstream Lakes** | | | | | | | | |
| N1 Outlet | 20-Jul-11 | E 591222 N 7046862 | 0.0 | 15.5 | 6.5 | 10.0 | 9.7 | 97 |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| N1 | 21-Jul-11 | E 591418 N 7046203 | 0.3 | 14.7 | 6.5 | 12.0 | 9.6 | 94 |
| | | | 1.0 | 14.6 | 6.6 | 12.0 | 9.6 | 95 |
| | | | 2.0 | 14.6 | 6.6 | 12.0 | 9.6 | 95 |
| | | | 3.0 | 14.6 | 6.6 | 12.0 | 9.6 | 95 |
| | | | 4.0 | 14.6 | 6.6 | 12.0 | 9.6 | 95 |
| | | | 5.0 | 14.6 | 6.6 | 12.0 | 9.6 | 95 |
| | | | 6.0 | 15.6 | 6.6 | 12.0 | 9.6 | 95 |
| | | | 6.4 | bottom | - | - | - | - |
| N2 | 21-Jul-11 | E 591596 N 7044334 | 0.3 | 14.5 | 6.4 | 14.0 | 9.7 | 95 |
| | | | 0.5 | 14.5 | 6.5 | 14.0 | 9.7 | 95 |
| | | | 1.0 | 14.5 | 6.5 | 13.0 | 9.7 | 95 |
| | | | 1.5 | 14.5 | 6.6 | 14.0 | 9.7 | 95 |
| | | | 2.0 | 14.5 | 6.6 | 14.0 | 9.7 | 95 |
| | | | 2.5 | 14.5 | 6.5 | 14.0 | 9.6 | 94 |
| | | | 3.0 | 14.5 | 6.6 | 14.0 | 8.1 | 81 |
| | | | 3.2 | bottom | - | - | - | - |
| N6 | 17-Jul-11 | E 589533 N 7039563 | 0.3 | 16.9 | 6.8 | 11.0 | 9.7 | 100 |
| | | | 0.5 | 16.7 | 6.8 | 11.0 | 9.7 | 100 |
| | | | 1.0 | 16.6 | 6.9 | 11.0 | 9.7 | 100 |
| | | | 1.5 | 16.2 | 6.9 | 11.0 | 9.7 | 99 |
| | | | 2.0 | 15.8 | 7.0 | 11.0 | 9.8 | 99 |
| | | | 2.6 | bottom | - | - | - | - |
| N7 | 17-Jul-11 | E 589667 N 7038947 | 0.3 | 17.0 | 6.6 | 11.0 | 9.7 | 101 |
| | | | 0.5 | 16.8 | 6.7 | 11.0 | 9.8 | 101 |
| | | | 1.5 | 15.2 | 6.7 | 11.0 | 9.9 | 99 |
| | | | 1.6 | bottom | - | - | - | - |
| N9 | 16-Jul-11 | E 590943 N 7039570 | 0.3 | 15.8 | 6.8 | 12.0 | 9.4 | 95 |
| | | | 0.5 | 15.8 | 6.8 | 12.0 | 9.5 | 95 |
| | | | 1.0 | 15.8 | 6.9 | 12.0 | 9.5 | 95 |
| | | | 1.5 | 15.8 | 6.9 | 12.0 | 9.5 | 95 |
| | | | 2.0 | 15.8 | 6.9 | 12.0 | 9.5 | 95 |
| | | | 2.5 | bottom | - | - | - | - |
| N11 | 16-Jul-11 | E 587410 N 7040205 | 0.3 | 16.4 | 6.6 | 11.0 | 9.1 | 93 |
| | | | 0.5 | 16.4 | 6.7 | 11.0 | 9.1 | 94 |
| | | | 1.0 | 16.4 | 6.7 | 11.0 | 9.2 | 94 |
| | | | 1.5 | 16.4 | 6.7 | 11.0 | 9.2 | 94 |
| | | | 2.0 | 16.3 | 6.7 | 11.0 | 9.2 | 94 |
| | | | 2.5 | 16.3 | 6.7 | 11.0 | 9.2 | 94 |
| | | | 3.0 | 16.1 | 6.7 | 11.0 | 9.3 | 94 |
| | | | 3.5 | Bottom | - | - | - | - |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| N11 Basin | 21-Jul-11 | E 586901 N 7043701 | 0.3 | 15.4 | 6.5 | 12.0 | 9.5 | 95 |
| | | | 0.5 | 15.3 | 6.5 | 12.0 | 9.5 | 95 |
| | | | 1.0 | 15.3 | 6.5 | 12.0 | 9.5 | 95 |
| | | | 1.5 | 15.3 | 6.5 | 12.0 | 9.5 | 95 |
| | | | 2.0 | 15.3 | 6.6 | 12.0 | 9.5 | 95 |
| | | | 2.5 | 15.3 | 6.6 | 12.0 | 9.5 | 95 |
| | | | 3.0 | 15.3 | 6.6 | 12.0 | 9.5 | 95 |
| | | | 3.5 | 15.3 | 6.6 | 12.0 | 9.5 | 95 |
| | | | 4.0 | 15.3 | 6.6 | 12.0 | 9.5 | 95 |
| | | | 4.6 | bottom | - | - | - | - |
| N11 Outlet | 21-Jul-11 | E 589158 N 7043377 | 0.1 | 15.4 | 6.6 | 12.0 | 9.8 | 98 |
| N12 | 16-Jul-11 | E 588436 N 7039295 | 0.3 | 15.5 | 6.6 | 11.0 | 9.2 | 92 |
| | | | 0.5 | 15.5 | 6.6 | 11.0 | 9.2 | 92 |
| | | | 1.0 | 15.5 | 6.7 | 11.0 | 9.2 | 92 |
| | | | 1.5 | 15.5 | 6.7 | 11.0 | 9.2 | 92 |
| | | | 2.0 | 15.5 | 6.7 | 11.0 | 9.2 | 92 |
| | | | 2.5 | 15.6 | 6.7 | 10.0 | 9.2 | 92 |
| | | | 3.0 | 15.6 | 6.6 | 10.0 | 8.8 | 88 |
| | | | 3.3 | bottom | - | - | - | - |
| N13 | 15-Jul-11 | E 588843 N 7038980 | 0.3 | 16.8 | 6.6 | 12.0 | 8.9 | 92 |
| | | | 0.5 | 16.9 | 6.6 | 12.0 | 8.9 | 92 |
| | | | 1.0 | 16.9 | 6.6 | 12.0 | 8.9 | 92 |
| | | | 1.5 | 16.9 | 6.6 | 12.0 | 8.9 | 92 |
| | | | 1.9 | bottom | - | - | - | - |
| N14 | 18-Jul-11 | E 585878 N 7036203 | 0.2 | 15.5 | 6.4 | 9.0 | 9.4 | 94 |
| N16 | 23-Jul-11 | E 582821 N 7039535 | 0.3 | 15.6 | 6.5 | 12.0 | 9.8 | 98 |
| | | | 0.5 | 15.5 | 6.6 | 12.0 | 9.8 | 99 |
| | | | 1.0 | 15.5 | 6.6 | 12.0 | 9.8 | 99 |
| | | | 2.0 | 15.5 | 6.7 | 12.0 | 9.9 | 99 |
| | | | 3.0 | 15.5 | 6.7 | 12.0 | 9.9 | 99 |
| | | | 4.0 | 15.4 | 6.7 | 12.0 | 9.9 | 99 |
| | | | 5.0 | 15.3 | 6.7 | 12.0 | 9.9 | 99 |
| | | | 5.8 | bottom | - | - | - | - |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| N17 | 18-Jul-11 | E 584492 N 7036605 | 0.3 | 16.9 | 6.6 | 12.0 | 9.2 | 95 |
| | | | 1.0 | 16.9 | 6.7 | 12.0 | 9.3 | 95 |
| | | | 2.0 | 16.9 | 6.7 | 12.0 | 9.3 | 96 |
| | | | 3.0 | 16.8 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 4.0 | 16.8 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 5.0 | 16.8 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 6.0 | 16.8 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 7.0 | 16.7 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 8.0 | 16.7 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 9.0 | 16.7 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 10.0 | 16.7 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 11.0 | 16.6 | 6.8 | 12.0 | 9.3 | 96 |
| | | | 11.6 | bottom | - | - | - | - |
| M3 | 18-Aug-11 | E 597425 N 7043953 | 0.3 | 14.3 | 6.6 | 14.0 | 9.8 | 96 |
| | | | -0.1 | 13.6 | 6.2 | 1.0 | 9.9 | 96 |
| | | | -0.1 | 13.6 | 6.2 | 1.0 | 9.9 | 96 |
| | | | 0.2 | 14.3 | 6.6 | 14.0 | 9.8 | 96 |
| | | | 0.4 | 14.3 | 6.6 | 14.0 | 9.8 | 96 |
| | | | 1.0 | 14.3 | 6.7 | 14.0 | 9.8 | 95 |
| | | | 1.6 | 14.3 | 6.7 | 14.0 | 9.8 | 95 |
| | | | 2.1 | 14.3 | 6.6 | 14.0 | 9.8 | 95 |
| | | | 3.1 | 14.3 | 6.7 | 14.0 | 9.8 | 96 |
| | | | 4.0 | 14.3 | 6.7 | 14.0 | 9.8 | 95 |
| | | | 5.0 | 14.3 | 6.6 | 14.0 | 9.8 | 95 |
| | | | 6.0 | 14.3 | 6.7 | 14.0 | 9.8 | 95 |
| M3.2 | 10-Aug-11 | E 596814 N 7042458 | 0.3 | 16.5 | 7.3 | 15.0 | 9.0 | 92.5 |
| | | | 1.0 | 16.6 | 7.1 | 15.0 | 9.0 | 92.2 |
| | | | 1.5 | 16.7 | 7.1 | 15.0 | 9.0 | 92.1 |
| | | | 2.0 | 16.7 | 7.1 | 15.0 | 9.0 | 92.1 |
| M4 | 20-Aug-11 | E 595226 N 7040172 | 0.5 | 13.6 | 6.7 | 14.0 | 9.8 | 95 |
| | | | 1.0 | 13.6 | 6.7 | 14.0 | 9.8 | 95 |
| | | | 2.0 | 13.6 | 6.7 | 14.0 | 9.8 | 94 |
| | | | 3.0 | 13.6 | 6.6 | 14.0 | 9.8 | 95 |
| | | | 4.0 | 13.6 | 6.7 | 14.0 | 9.9 | 95 |
| | | | 5.0 | 13.5 | 6.7 | 14.0 | 9.8 | 94 |
| | | | 6.1 | 13.5 | 6.7 | 14.0 | 9.8 | 94 |
| | | | 7.1 | 13.5 | 6.7 | 14.0 | 9.8 | 94 |
| | | | 8.0 | 13.5 | 6.6 | 14.0 | 9.8 | 94 |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| M4.2 | 10-Aug-11 | E 59085 N 7041273 | 0.3 | 17.0 | 7.2 | 14.0 | 9.2 | 94.8 |
| | | | 1.0 | 17.0 | 7.2 | 14.0 | 9.1 | 94.5 |
| | | | 1.5 | 17.0 | 7.2 | 14.0 | 9.1 | 94.1 |
| | | | 2.0 | 16.9 | 7.1 | 14.0 | 9.1 | 93.7 |
| | | | 2.5 | 16.9 | 7.1 | 14.0 | 9.0 | 93.4 |
| | | | 3.0 | 19.9 | 7.1 | 14.0 | 9.1 | 94.0 |
| M1 | 20-Aug-11 | E 596462 N 7044978 | 0.3 | 9.6 | 6.8 | 14 | 10.6 | 0.3 |
| | | | 1.0 | 9.6 | 6.7 | 14 | 10.6 | 1.0 |
| | | | 1.5 | 9.6 | - | 14 | 10.6 | 1.5 |
| M2 | 18-Aug-11 | E 597010 N 704484.1 | 0.3 | 13.5 | 6.7 | 14 | 9.8 | 0.3 |
| | | | 1.0 | 13.5 | 6.7 | 14 | 9.8 | 1.0 |
| | | | 1.5 | 13.5 | 6.6 | 14 | 9.8 | 1.5 |
| | | | 2.0 | 13.5 | 6.5 | 14 | 9.8 | 2.0 |
| | | | 2.5 | 13.5 | 6.5 | 14 | 9.8 | 2.5 |
| | | | 3.0 | 13.5 | 6.5 | 14 | 9.8 | 3.0 |
| | | | 3.5 | 13.6 | 6.5 | 14 | 9.8 | 3.5 |
| | | | 4.0 | 13.6 | 6.4 | 14 | 9.8 | 4.0 |
| | | | 4.5 | 13.6 | 6.4 | 14 | 9.8 | 4.5 |
| L410 | 17-Aug-11 | E 5923239 N 7061020 | 0.3 | 13.8 | 6.5 | 12.0 | 9.9 | 96 |
| | | | 1.0 | 13.8 | 6.4 | 12.0 | 9.9 | 96 |
| | | | 2.0 | 13.7 | 6.5 | 12.0 | 9.9 | 96 |
| | | | 3.0 | 13.7 | 6.5 | 12.0 | 9.9 | 96 |
| L410.2 | 15-Aug-11 | E 596685 N 7046699 | 0.5 | 15.3 | 6.6 | 12.0 | 9.5 | 95.5 |
| | | | 1.0 | 15.3 | 6.6 | 12.0 | 9.4 | 93.9 |
| | | | 2.0 | 15.3 | 6.6 | 12.0 | 9.4 | 93.9 |
| | | | 3.0 | 15.3 | 6.4 | 12.0 | 9.4 | 93.9 |
| | | | 4.0 | 15.3 | 6.4 | 12.0 | 9.4 | 93.9 |
| | | | 4.5 | 15.3 | 6.4 | 12.0 | 9.4 | 93.9 |
| L2 | 20-Aug-11 | E 593396 N 7038967 | 0.3 | 12.2 | 6.9 | 14 | 10.5 | 0.3 |
| | | | 1.0 | 11.7 | 6.8 | 14 | 10.5 | 1.0 |
| | | | 1.5 | 11.6 | 6.7 | 14 | 10.5 | 1.5 |
| | | | 2.0 | 11.5 | 6.7 | 14 | 10.5 | 2.0 |
| | | | 2.5 | 11.4 | 6.7 | 14 | 10.5 | 2.5 |
| | | | 3.0 | 11.3 | 6.7 | 14 | 10.5 | 3.0 |
| | | | 3.5 | 11.4 | 6.4 | 15 | 9.7 | 3.5 |
| Kirk | 9-Aug-11 | E 597675 N 7071916 | 0.3 | 16.8 | 6.6 | 12.0 | 9.0 | 92 |
| | | | 1.0 | 17.1 | 6.5 | 12.0 | 9.0 | 93 |
| | | | 2.0 | 17.1 | 6.4 | 12.0 | 8.9 | 93 |
| | | | 3.0 | 17.1 | 6.4 | 12.0 | 8.8 | 92 |
| Kirk 2 | 9-Aug-11 | E 597675 | 0.3 | 17.2 | 7.1 | 12.0 | 9.4 | 98 |

**Table A-7 Field Water Quality Profile Data at All Locations during Open-Water Conditions in July/August 2011 (continued)**

| Site | Date | Location (UTM, NAD83, Zone 12) | Water Depth (m) | Water Temperature (°C) | pH | Specific Conductivity (µS/cm) | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) |
|---|---|---|---|---|---|---|---|---|
| | | N 7071916 | 1.0 | 17.2 | 6.8 | 12.0 | 9.4 | 98 |
| | | | 2.0 | 17.2 | 6.8 | 12.0 | 9.4 | 98 |
| **Reference Lakes** | | | | | | | | |
| X6 | 22-Jul-11 | E 586139 N 7032528 | 0.3 | 16.3 | 6.6 | 12.0 | 9.5 | 97 |
| | | | 0.5 | 16.3 | 6.7 | 12.0 | 9.6 | 97 |
| | | | 1.0 | 16.3 | 6.7 | 12.0 | 9.6 | 97 |
| | | | 1.5 | 16.2 | 6.7 | 12.0 | 9.6 | 97 |
| | | | 2.0 | 16.1 | 6.7 | 12.0 | 9.6 | 97 |
| | | | 2.5 | 16.1 | 6.7 | 12.0 | 9.6 | 97 |
| | | | 3.0 | 16.0 | 6.7 | 12.0 | 9.6 | 97 |
| | | | 3.5 | 16.0 | 6.7 | 12.0 | 9.5 | 97 |
| | | | 4.4 | bottom | - | - | - | - |
| East Lake | 22-Jul-11 | E 599139 N 7040863 | 0.3 | 14.5 | 6.7 | 14.0 | 9.8 | 96 |
| | | | 1.0 | 14.5 | 6.7 | 14.0 | 9.8 | 96 |
| | | | 2.0 | 14.4 | 6.7 | 14.0 | 9.8 | 96 |
| | | | 3.0 | 14.4 | 6.7 | 14.0 | 9.9 | 97 |
| | | | 4.0 | 14.4 | 6.7 | 15.0 | 9.9 | 97 |
| | | | 5.0 | 14.4 | 6.7 | 15.0 | 9.9 | 97 |
| | | | 6.0 | 14.4 | 6.7 | 14.0 | 9.9 | 96 |
| | | | 7.0 | 14.4 | 6.7 | 15.0 | 9.9 | 96 |
| | | | 8.0 | 14.4 | 6.7 | 15.0 | 9.9 | 96 |
| | | | 9.0 | 14.3 | 6.7 | 15.0 | 9.9 | 96 |
| | | | 10.0 | 14.3 | 6.7 | 15.0 | 9.9 | 96 |
| | | | 11.0 | 14.3 | 6.7 | 15.0 | 9.9 | 96 |
| | | | 12.0 | 14.3 | 6.7 | 15.0 | 9.9 | 96 |
| | | | 12.6 | bottom | | | | |

**Note:** UTM = universal transverse Mercator; NAD = north American datum; m = metre; °C = degree Celsius; µS/cm = microSiemens per centimetre; mg/L = milligrams per litre; % = percent; V = volts.

**Table A-8 Water Quality Field and Laboratory Data at All Sampling Locations during Under-Ice Conditions in April 2011**

| Parameter | Units | Kennady Lake | | | | | | | | | | | | B Basin | D Basin | E Basin | F Basin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A3 | A3 | Area 3+5 | Area 3+5 | Area 4 | Area 4 | Area 6 | Area 6 | Area 7 | Area 7 | Area 8 | Area 8 | B1 | D3 | E1 | F1 |
| | | 9-Apr-11 | 9-Apr-11 | 8-Apr-11 | 8-Apr-11 | 9-Apr-11 | 9-Apr-11 | 7-Apr-11 | 7-Apr-11 | 7-Apr-11 | 7-Apr-11 | 12-Apr-11 | 12-Apr-11 | 6-Apr-11 | 7-Apr-11 | 5-Apr-11 | 9-Apr-11 |
| **Field Parameter** | | | | | | | | | | | | | | | | | |
| Depth | metres | 11 | 2 | 12 | 2 | 10 | 2 | 12 | 2 | 8 | 2 | 8 | 2 | 2 | 2 | 2 | 2.5 |
| pH (field) | n/a | 5.87 | 6.57 | 5.87 | 6.46 | 5.97 | 6.52 | 5.97 | 6.29 | 6.06 | 6.57 | 6.15 | 6.69 | 6.13 | 6.22 | 5.69 | 5.86 |
| Specific conductivity (field) | µS/cm | 21 | 19 | 20 | 18 | 18 | 19 | 18 | 21 | 20 | 20 | 25 | 21 | 22 | 27 | 33 | 32 |
| Water temperature | °C | 3.51 | 1.46 | 4.27 | 1.48 | 3.63 | 1.23 | 3.89 | 0.42 | 3.77 | 0.97 | 3.79 | 1.12 | 1.78 | 2.84 | 2.53 | 2.37 |
| Dissolved oxygen | % | 26.7 | 119.9 | 4.6 | 118.5 | 42.3 | 123.8 | 30.8 | 102.5 | 12.3 | 115.6 | 25.8 | 106.5 | 80.9 | 38.6 | 43.2 | 18.9 |
| Dissolved oxygen | mg/L | 3.54 | 16.79 | 0.59 | 16.59 | 5.6 | 17.45 | 4.08 | 14.81 | 1.62 | 16.41 | 3.4 | 15.08 | 11.26 | 5.17 | 5.83 | 2.59 |
| **Conventional Parameter** | | | | | | | | | | | | | | | | | |
| Colour | TCU | 2 | 3 | <2 | <2 | <2 | 2 | <2 | <2 | <2 | 3 | 3 | 3 | 20 | 12 | 17 | 30 |
| pH (laboratory) | n/a | 6.72 | 7.01 | 6.75 | 6.97 | 6.62 | 6.9 | 6.73 | 6.85 | 6.72 | 6.88 | 6.61 | 6.84 | 6.73 | 6.72 | 6.89 | 6.53 |
| Specific conductivity (laboratory) | µS/cm | 19 | 21 | 17 | 20 | 17 | 21 | 18 | 21 | 19 | 21 | 24 | 22 | 23 | 26 | 33 | 24 |
| Total dissolved solids | mg/L | 32 | 26 | 24 | 26 | 32 | 34 | 34 | 22 | 20 | 28 | 26 | 20 | 40 | 34 | 48 | 42 |
| Total dissolved solids, calculated | mg/L | <10 | 10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | 10 | 12 | <10 | 10 | 12 | 16 | 12 |
| Total organic carbon | mg/L | 3.3 | 4.3 | 2.5 | 3.9 | 2 | 3.4 | 2.6 | 3.6 | 2.3 | 3.7 | 2.7 | 4.6 | 7.5 | 7 | 10 | 8.3 |
| Dissolved organic carbon | mg/L | 3.1 | 4.3 | 2.4 | 3.7 | 2.1 | 3.4 | 2.4 | 3.6 | 2.4 | 3.7 | 2.7 | 4 | 7.5 | 7.2 | 9.3 | 8.1 |
| Hardness | mg/L | 7 | 8.2 | 5.5 | 6.8 | 6.1 | 7.7 | 5.9 | 7.7 | 6.6 | 7.4 | 8.1 | 7.3 | 8.1 | 9 | 12 | 9.3 |
| Hardness | mg $CaCO_3$/L | 6.7 | 8 | 5.9 | 8.1 | 6 | 7.2 | 6.1 | 8 | 6.9 | 7.9 | 8.4 | 7.8 | 8.3 | 9.7 | 12.6 | 9.1 |
| Alkalinity, phenolphthalein | mg $CaCO_3$/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg $CaCO_3$/L | 6.5 | 7.3 | 5.2 | 6.1 | 5.1 | 6.1 | 6.3 | 6.6 | 6.2 | 6.5 | 5.7 | 6.2 | 7.4 | 10 | 11 | 7.2 |
| Turbidity | NTU | 0.1 | 0.4 | 0.1 | 0.3 | <0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.1 | 0.3 | 0.3 | 0.8 | 0.9 |
| Total suspended solids | mg/L | <1 | <1 | 2 | <1 | <1 | <1 | 3 | 1 | 1 | <1 | <1 | 2 | <1 | 1 | <1 | 6 |
| **Major Ions** | | | | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 7.9 | 9 | 6.4 | 7.4 | 6.2 | 7.5 | 7.7 | 8 | 7.6 | 7.9 | 7 | 7.6 | 9 | 12 | 14 | 8.8 |
| Calcium | mg/L | 1.7 | 2 | 1.3 | 1.5 | 1.5 | 1.8 | 1.3 | 1.7 | 1.6 | 1.6 | 2 | 1.7 | 2 | 2.1 | 2.7 | 2 |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | 1 | 1 | <1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 1 |
| Fluoride | mg/L | 0.06 | 0.07 | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 0.07 | 0.06 | 0.07 | 0.06 |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.6 | 0.8 | 0.6 | 0.7 | 0.6 | 0.8 | 0.6 | 0.8 | 0.7 | 0.8 | 0.7 | 0.7 | 0.8 | 0.9 | 1.4 | 1 |
| Potassium | mg/L | 0.6 | 0.8 | 0.4 | 0.6 | 0.5 | 0.7 | 0.4 | 0.7 | 0.5 | 0.7 | 0.5 | 0.5 | 0.5 | 0.8 | 1.1 | 0.6 |
| Sodium | mg/L | 0.7 | 0.9 | 0.6 | 0.9 | 0.6 | 0.9 | 0.6 | 0.9 | 0.6 | 0.9 | 0.8 | 0.9 | 0.9 | 1.1 | 1.5 | 1.1 |
| Sulphate | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Sulphide | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |

**Table A-8 Water Quality Field and Laboratory Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | Kennady Lake | | | | | | | | | | | | B Basin | D Basin | E Basin | F Basin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A3 | A3 | Area 3+5 | Area 3+5 | Area 4 | Area 4 | Area 6 | Area 6 | Area 7 | Area 7 | Area 8 | Area 8 | B1 | D3 | E1 | F1 |
| | | 9-Apr-11 | 9-Apr-11 | 8-Apr-11 | 8-Apr-11 | 9-Apr-11 | 9-Apr-11 | 7-Apr-11 | 7-Apr-11 | 7-Apr-11 | 7-Apr-11 | 12-Apr-11 | 12-Apr-11 | 6-Apr-11 | 7-Apr-11 | 5-Apr-11 | 9-Apr-11 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | | | | | |
| Chemical oxygen demand | mg/L | 7 | 11 | 5 | 10 | 13 | 5 | 7 | 20 | 10 | 11 | 7 | 10 | 24 | 22 | 30 | 20 |
| Nitrate+Nitrite | mg N/L | 0.083 | <0.003 | 0.044 | <0.003 | 0.034 | <0.003 | 0.059 | <0.003 | 0.074 | 0.19 | 0.078 | <0.003 | 0.072 | <0.003 | 0.055 | 0.15 |
| Nitrate | mg N/L | 0.083 | <0.003 | 0.044 | <0.003 | 0.034 | <0.003 | 0.059 | <0.003 | 0.074 | 0.19 | 0.078 | <0.003 | 0.072 | <0.003 | 0.055 | 0.15 |
| Nitrite | mg N/L | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Total ammonia | mg N/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.1 | <0.05 | <0.05 |
| Total Kjeldahl nitrogen | mg/L | 0.22 | 0.31 | 0.2 | 0.29 | 0.21 | 0.32 | 0.18 | 0.26 | 0.23 | 0.28 | 0.25 | 0.31 | 0.49 | 0.56 | 0.61 | 0.56 |
| Total phosphorus | mg/L | 0.002 | 0.002 | 0.001 | <0.001 | 0.002 | 0.002 | <0.001 | <0.001 | 0.001 | <0.001 | 0.002 | 0.002 | 0.004 | 0.002 | 0.013 | 0.006 |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0051 | 0.0053 | 0.0042 | 0.005 | 0.003 | 0.0028 | 0.0035 | 0.0036 | 0.0036 | 0.0034 | 0.007 | 0.0048 | 0.0585 | 0.0188 | 0.0314 | 0.0798 |
| Antimony | mg/L | <0.00002 | 0.00002 | <0.00002 | <0.0001 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | 0.00002 | <0.00002 | 0.00022 | 0.00021 | 0.00003 |
| Arsenic | mg/L | 0.00008 | 0.00013 | 0.00011 | 0.0007 | 0.0001 | 0.00017 | 0.00012 | 0.00018 | 0.00012 | 0.00013 | 0.00014 | 0.00015 | 0.00021 | 0.0003 | 0.00031 | 0.00032 |
| Barium | mg/L | 0.00295 | 0.00222 | 0.0038 | 0.003 | 0.00311 | 0.00271 | 0.00421 | 0.00393 | 0.0049 | 0.00359 | 0.00597 | 0.00299 | 0.00639 | 0.00621 | 0.00585 | 0.00644 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00005 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.00003 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | 0.013 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Cadmium | mg/L | <0.000005 | 0.000007 | <0.000005 | <0.00003 | 0.000005 | 0.000008 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000007 | 0.00001 | 0.00001 | 0.000085 | 0.000068 | 0.000011 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0005 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0002 | 0.0001 | 0.0001 | 0.0001 |
| Cobalt | mg/L | 0.000274 | 0.000007 | 0.000173 | <0.00003 | 0.000019 | <0.000005 | 0.00013 | 0.000019 | 0.000634 | 0.000022 | 0.00318 | 0.000021 | 0.000152 | 0.000535 | 0.000238 | 0.000753 |
| Copper | mg/L | 0.00047 | 0.0007 | 0.00034 | 0.0006 | 0.00025 | 0.00041 | 0.00034 | 0.00051 | 0.00034 | 0.00053 | 0.00042 | 0.00066 | 0.00113 | 0.00101 | 0.00173 | 0.00115 |
| Iron | mg/L | 0.026 | 0.005 | 0.024 | 0.009 | 0.017 | 0.004 | 0.053 | 0.007 | 0.138 | 0.007 | 0.596 | 0.018 | 0.182 | 0.432 | 0.214 | 0.621 |
| Lead | mg/L | <0.000005 | 0.000015 | 0.000006 | 0.00005 | <0.000005 | 0.000012 | 0.000006 | 0.000019 | <0.000005 | 0.000014 | 0.000011 | 0.000042 | 0.000019 | 0.00007 | 0.000093 | 0.000027 |
| Lithium | mg/L | 0.0011 | 0.0014 | 0.0008 | <0.003 | 0.0007 | 0.0018 | 0.0008 | 0.0011 | 0.0008 | 0.0012 | 0.001 | 0.0011 | 0.0014 | 0.0019 | 0.0042 | 0.0008 |
| Manganese | mg/L | 0.104 | 0.00154 | 0.118 | 0.0017 | 0.0236 | 0.00231 | 0.065 | 0.00284 | 0.201 | 0.00594 | 0.438 | 0.00215 | 0.0113 | 0.044 | 0.0258 | 0.0337 |
| Mercury | mg/L | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | 0.0012 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00005 | <0.00005 | 0.00007 | 0.00011 |
| Nickel | mg/L | 0.00031 | 0.00029 | 0.00038 | 0.0002 | 0.00026 | 0.00024 | 0.00038 | 0.0003 | 0.00047 | 0.00027 | 0.00058 | 0.00029 | 0.00074 | 0.00081 | 0.00102 | 0.00064 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.0002 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | 0.00006 | 0.00007 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silicon | mg/L | 0.4 | 0.3 | 0.3 | <0.5 | 0.3 | 0.1 | 0.3 | 0.2 | 0.4 | 0.2 | 0.5 | 0.3 | 0.7 | 0.4 | 0.3 | 0.6 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.00003 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.0088 | 0.01 | 0.00931 | 0.0123 | 0.00921 | 0.0111 | 0.00987 | 0.0124 | 0.0111 | 0.0118 | 0.0133 | 0.011 | 0.0123 | 0.0133 | 0.0162 | 0.0131 |
| Sulphur | mg/L | <10 | <10 | <10 | 1290 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | 0.00022 | <0.00001 | 0.0001 | <0.00001 | 0.00022 | <0.00001 | 0.00015 | <0.00001 | 0.00014 | <0.00001 | 0.00018 | 0.00013 | 0.00042 | 0.00065 | 0.00013 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.00001 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | 0.000004 | <0.000002 | 0.000003 | 0.000003 | 0.000003 | 0.000005 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.003 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.0009 | 0.0005 |
| Uranium | mg/L | 0.000005 | 0.000008 | <0.000002 | 0.00001 | <0.000002 | 0.000003 | 0.000002 | 0.000004 | 0.000002 | 0.000002 | 0.000006 | 0.000005 | 0.000032 | 0.000009 | 0.000016 | 0.00004 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.001 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0005 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.0007 | 0.0017 | 0.0008 | 0.0019 | 0.0009 | 0.0012 | 0.0007 | 0.001 | 0.0008 | 0.001 | 0.0011 | 0.0014 | 0.0027 | 0.0047 | 0.0039 | 0.0028 |
| **Dissolved Metals** | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0039 | 0.0046 | 0.0026 | 0.0028 | 0.0025 | 0.0023 | 0.0032 | 0.0029 | 0.0023 | 0.0026 | 0.0029 | 0.0063 | 0.0539 | 0.0153 | 0.0273 | 0.0651 |
| Antimony | mg/L | 0.00008 | 0.00003 | <0.00002 | 0.00005 | 0.00007 | 0.00004 | 0.00007 | 0.00005 | 0.00005 | 0.00007 | 0.00003 | 0.00004 | 0.0001 | 0.00027 | 0.00017 | 0.00014 |
| Arsenic | mg/L | 0.00008 | 0.00015 | 0.00009 | 0.00013 | 0.00008 | 0.00015 | 0.00008 | 0.00017 | 0.00008 | 0.00015 | 0.00012 | 0.00016 | 0.00021 | 0.00024 | 0.00028 | 0.00027 |
| Barium | mg/L | 0.00296 | 0.00222 | 0.00335 | 0.00258 | 0.00296 | 0.00258 | 0.00357 | 0.00348 | 0.0042 | 0.00297 | 0.00541 | 0.00301 | 0.00567 | 0.00529 | 0.00593 | 0.00637 |

**Table A-8 Water Quality Field and Laboratory Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | Kennady Lake | | | | | | | | | | | | B Basin | D Basin | E Basin | F Basin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A3 | A3 | Area 3+5 | Area 3+5 | Area 4 | Area 4 | Area 6 | Area 6 | Area 7 | Area 7 | Area 8 | Area 8 | B1 | D3 | E1 | F1 |
| | | 9-Apr-11 | 9-Apr-11 | 8-Apr-11 | 8-Apr-11 | 9-Apr-11 | 9-Apr-11 | 7-Apr-11 | 7-Apr-11 | 7-Apr-11 | 7-Apr-11 | 12-Apr-11 | 12-Apr-11 | 6-Apr-11 | 7-Apr-11 | 5-Apr-11 | 9-Apr-11 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Cadmium | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000012 | <0.000005 | <0.000005 | 0.000008 | 0.000006 | 0.00001 | 0.000074 | 0.000062 | 0.00001 |
| Chromium | mg/L | 0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0002 | <0.0001 | 0.0002 | 0.0002 |
| Cobalt | mg/L | 0.00175 | 0.000335 | 0.000591 | 0.00151 | 0.00153 | 0.000336 | 0.00199 | 0.0012 | 0.00205 | 0.0017 | 0.00364 | 0.000495 | 0.00418 | 0.00332 | 0.000664 | 0.00382 |
| Copper | mg/L | 0.00049 | 0.00081 | 0.00033 | 0.0004 | 0.00037 | 0.00047 | 0.00045 | 0.00049 | 0.00024 | 0.00045 | 0.00032 | 0.00058 | 0.00112 | 0.0009 | 0.00166 | 0.00117 |
| Iron | mg/L | 0.018 | 0.003 | 0.007 | 0.008 | 0.01 | 0.002 | 0.009 | 0.005 | 0.011 | 0.006 | 0.291 | 0.006 | 0.13 | 0.267 | 0.119 | 0.437 |
| Lead | mg/L | 0.000029 | 0.000015 | 0.000014 | 0.000023 | 0.000036 | 0.000011 | 0.000015 | 0.000013 | 0.000012 | 0.000023 | 0.00001 | 0.000015 | 0.000026 | 0.000068 | 0.000053 | 0.000062 |
| Lithium | mg/L | 0.0012 | 0.0014 | 0.0007 | 0.0012 | 0.0008 | 0.0019 | 0.0007 | 0.0013 | 0.0009 | 0.0013 | 0.001 | 0.0012 | 0.0016 | 0.0019 | 0.0042 | 0.001 |
| Manganese | mg/L | 0.105 | 0.00176 | 0.109 | 0.00357 | 0.0205 | 0.00262 | 0.0561 | 0.00438 | 0.18 | 0.00784 | 0.422 | 0.00232 | 0.0162 | 0.0454 | 0.0268 | 0.0391 |
| Mercury | mg/L | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00007 | <0.00005 | 0.00006 | 0.00011 |
| Nickel | mg/L | 0.00127 | 0.00034 | 0.00088 | 0.00042 | 0.00047 | 0.00029 | 0.00052 | 0.00039 | 0.00054 | 0.00045 | 0.00055 | 0.00032 | 0.0012 | 0.00098 | 0.00108 | 0.00101 |
| Silicon | mg/L | 0.4 | 0.3 | 0.4 | 0.2 | 0.4 | 0.1 | 0.4 | 0.2 | 0.5 | 0.2 | 0.5 | 0.2 | 0.7 | 0.4 | 0.3 | 0.7 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | 0.00005 | 0.00005 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00913 | 0.0108 | 0.00918 | 0.0106 | 0.00941 | 0.0115 | 0.00981 | 0.0122 | 0.0106 | 0.0115 | 0.0133 | 0.0108 | 0.0122 | 0.0131 | 0.0172 | 0.0128 |
| Tin | mg/L | <0.00001 | 0.00024 | <0.00001 | 0.00002 | <0.00001 | 0.0002 | <0.00001 | 0.00015 | <0.00001 | 0.00013 | <0.00001 | 0.00018 | 0.00013 | 0.00041 | 0.00062 | 0.00013 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | <0.000002 | 0.000005 | 0.000003 | 0.000003 | 0.000004 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000006 | 0.00001 | 0.000002 | 0.000003 | <0.000002 | 0.000004 | <0.000002 | 0.000002 | <0.000002 | 0.000002 | 0.000004 | 0.000006 | 0.000037 | 0.000007 | 0.000011 | 0.000035 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zinc | mg/L | 0.0009 | 0.0015 | 0.0009 | 0.0007 | 0.0015 | 0.0013 | 0.0008 | 0.0009 | 0.001 | 0.0012 | 0.0014 | 0.0014 | 0.0032 | 0.0045 | 0.0041 | 0.0053 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | - | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.003 | 0.002 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **Volatile Organics** | | | | | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Ethyl benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylenes | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |

**Table A-8 Water Quality Field and Laboratory Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | M Basin | | | | N Basin | | | | | | | Lake L410 | | Kirk Lake | Reference Lake | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3 | M4 | M4 | N11 | N12 | N16 | N17 | N17 | N2 | N9 | L410 | L410 | Kirk Lake | X6 | East Lake |
| | | 11-Apr-11 | 11-Apr-11 | 11-Apr-11 | 11-Apr-11 | 6-Apr-11 | 6-Apr-11 | 5-Apr-11 | 5-Apr-11 | 5-Apr-11 | 11-Apr-11 | 8-Apr-11 | 9-Apr-11 | 9-Apr-11 | 9-Apr-11 | 7-Apr-11 | 11-Apr-11 |
| **Field Parameter** | | | | | | | | | | | | | | | | | |
| Depth | metres | 2 | 4 | 2 | 9 | 2 | 2 | 2.5 | 1.5 | 10 | 2 | 2 | 2 | 4.5 | 2 | 2 | 5 |
| pH (field) | n/a | 6.51 | 6.26 | 6.72 | 6.2 | 6.56 | 6.26 | 6.45 | 6.47 | 5.79 | 6.35 | 6.31 | 6.25 | 5.99 | 6.11 | - | 6.7 |
| Specific conductivity (field) | µS/cm | 21 | 19 | 20 | 18 | 24 | 21 | 15 | 18 | 23 | 34 | 29 | 21 | 22 | 28 | - | 17 |
| Water temperature | °C | 1.93 | 3.14 | 1.04 | 3.15 | 1.78 | 2.38 | 1.36 | 1.25 | 4.27 | 1.7 | 1.63 | 1.23 | 3.45 | 2.85 | - | 1.85 |
| Dissolved oxygen | % | 106.4 | 82.1 | 117.8 | 53.2 | 96.5 | 80.7 | 105.6 | 110.2 | 18.8 | 105.3 | 107.8 | 108.8 | 46.6 | 57.3 | - | 100.8 |
| Dissolved oxygen | mg/L | 14.71 | 10.84 | 16.82 | 7.13 | 13.42 | 11.02 | 14.81 | 15.58 | 2.42 | 14.58 | 15.02 | 15.33 | 6.01 | 7.75 | - | 13.91 |
| **Conventional Parameter** | | | | | | | | | | | | | | | | | |
| Colour | TCU | 6 | 5 | 6 | 4 | 3 | 4 | <2 | 3 | <2 | 6 | 3 | 5 | 4 | 7 | <2 | <2 |
| pH (laboratory) | n/a | 6.89 | 6.8 | 6.93 | 6.69 | 6.89 | 6.86 | 6.93 | 6.91 | 6.78 | 6.92 | 6.93 | 6.89 | 6.84 | 6.95 | 5.69 | 6.93 |
| Specific conductivity (laboratory) | µS/cm | 22 | 19 | 21 | 18 | 23 | 22 | 16 | 20 | 21 | 32 | 27 | 23 | 22 | 35 | <1 | 18 |
| Total dissolved solids | mg/L | 22 | 24 | 34 | 22 | 30 | 30 | 28 | 34 | 24 | 34 | 30 | 28 | 28 | 36 | 14 | 22 |
| Total dissolved solids, calculated | mg/L | 10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | 15 | 12 | 12 | 11 | 18 | <10 | <10 |
| Total organic carbon | mg/L | 4.8 | 4 | 4.6 | 3.3 | 4.4 | 4.9 | 2.6 | 4 | 2.8 | 6.3 | 5.9 | 4.7 | 4.5 | 5.9 | <0.5 | 3.1 |
| Dissolved organic carbon | mg/L | 4.6 | 4.2 | 4.5 | 2.9 | 4.6 | 4.7 | 2.6 | 3.9 | 2.3 | 6.4 | 6 | 4.8 | 4.4 | 5.8 | <0.5 | 2.9 |
| Hardness | mg/L | 8.5 | 7.9 | 8.1 | 6.5 | 7.6 | 7.7 | 5.3 | 6.5 | 6.8 | 13 | 9.4 | 8.6 | 8 | 14 | <0.5 | 7.3 |
| Hardness | mg-$CaCO_3$/L | 8.2 | 7.8 | 7.9 | 6.5 | 7.6 | 8.5 | 6.3 | 7.1 | 7 | 12 | 10.1 | 8.6 | 7.8 | 12.7 | <0.5 | 6.6 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 6.7 | 5.8 | 6.3 | 5.5 | 7.6 | 7.9 | 5.3 | 6.7 | 7.9 | 9.2 | 9 | 7.3 | 7 | 11 | 0.7 | 5.9 |
| Turbidity | NTU | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.4 | 0.4 | 0.2 | 0.3 | 0.4 | 0.2 | <0.1 | <0.1 |
| Total suspended solids | mg/L | <1 | <1 | <1 | 1 | <1 | <1 | <1 | 2 | 1 | 1 | <1 | <1 | <1 | <1 | <1 | <1 |
| **Major Ions** | | | | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 8.1 | 7.1 | 7.7 | 6.7 | 9.3 | 9.7 | 6.5 | 8.2 | 9.6 | 11 | 11 | 8.9 | 8.5 | 14 | 0.8 | 7.3 |
| Calcium | mg/L | 1.9 | 1.8 | 1.9 | 1.6 | 1.7 | 1.8 | 1.2 | 1.6 | 1.7 | 3.1 | 2.2 | 2.1 | 1.9 | 2.9 | <0.3 | 1.6 |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | 1 | 1 | 1 | 1 | 1 | <1 | <1 | 1 | <1 | 3 | 1 | 2 | 2 | 2 | <1 | <1 |
| Fluoride | mg/L | 0.05 | <0.05 | 0.05 | <0.05 | 0.05 | 0.08 | <0.05 | <0.05 | <0.05 | 0.08 | 0.05 | 0.06 | 0.06 | 0.07 | <0.05 | <0.05 |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.9 | 0.8 | 0.8 | 0.6 | 0.8 | 0.7 | 0.6 | 0.6 | 0.6 | 1.1 | 0.9 | 0.8 | 0.8 | 1.5 | <0.2 | 0.8 |
| Potassium | mg/L | 0.7 | 0.6 | 0.7 | 0.5 | 0.6 | 0.6 | 0.5 | 0.6 | 0.5 | 0.9 | 0.8 | 0.8 | 0.7 | 1.2 | <0.3 | 0.5 |
| Sodium | mg/L | 1 | 0.9 | 1 | 0.7 | 0.9 | 0.8 | 0.6 | 0.7 | 0.6 | 1.3 | 1.1 | 1 | 0.9 | 1.5 | <0.5 | 0.7 |
| Sulphate | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 2 | <1 | <1 |
| Sulphide | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.007 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | | | | | |
| Chemical oxygen demand | mg/L | 13 | 6 | 5 | 6 | 7 | 14 | 16 | 17 | 13 | 13 | 20 | 6 | 7 | 12 | <5 | <5 |
| Nitrate+Nitrite | mg-N/L | <0.003 | 0.017 | <0.003 | 0.047 | 0.01 | 0.018 | <0.003 | <0.003 | 0.077 | 0.005 | <0.003 | 0.005 | <0.003 | 0.015 | <0.003 | <0.003 |
| Nitrate | mg-N/L | <0.003 | 0.017 | <0.003 | 0.047 | 0.01 | 0.018 | <0.003 | <0.003 | 0.077 | 0.005 | <0.003 | 0.005 | <0.003 | 0.015 | <0.003 | <0.003 |

**Table A-8 Water Quality Field and Laboratory Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | M Basin | | | | N Basin | | | | | | | Lake L410 | | Kirk Lake | Reference Lake | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3 | M4 | M4 | N11 | N12 | N16 | N17 | N17 | N2 | N9 | L410 | L410 | Kirk Lake | X6 | East Lake |
| | | 11-Apr-11 | 11-Apr-11 | 11-Apr-11 | 11-Apr-11 | 6-Apr-11 | 6-Apr-11 | 5-Apr-11 | 5-Apr-11 | 5-Apr-11 | 11-Apr-11 | 8-Apr-11 | 9-Apr-11 | 9-Apr-11 | 9-Apr-11 | 7-Apr-11 | 11-Apr-11 |
| Nitrite | mg-N/L | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Total ammonia | mg-N/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Total Kjeldahl nitrogen | mg/L | 0.42 | 0.36 | 0.41 | 0.26 | 0.39 | 0.49 | 0.28 | 0.41 | 0.29 | 0.52 | 0.43 | 0.39 | 0.35 | 0.5 | <0.05 | 0.25 |
| Total phosphorus | mg/L | 0.005 | 0.002 | 0.002 | 0.004 | <0.001 | 0.001 | <0.001 | 0.002 | 0.006 | 0.002 | 0.001 | 0.004 | 0.003 | 0.002 | <0.001 | 0.001 |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0114 | 0.0088 | 0.0085 | 0.0064 | 0.0058 | 0.0106 | 0.0038 | 0.0063 | 0.0042 | 0.0112 | 0.0052 | 0.0106 | 0.0091 | 0.0117 | 0.002 | 0.0044 |
| Antimony | mg/L | 0.00004 | <0.00002 | 0.00002 | <0.00002 | <0.00002 | 0.00002 | 0.00003 | 0.00005 | <0.00002 | 0.00004 | 0.00005 | 0.00008 | <0.00002 | 0.00004 | <0.00002 | <0.00002 |
| Arsenic | mg/L | 0.00019 | 0.00018 | 0.00017 | 0.00011 | 0.00014 | 0.00019 | 0.00008 | 0.00015 | 0.00009 | 0.00022 | 0.00021 | 0.00018 | 0.00015 | 0.00031 | <0.00002 | 0.00012 |
| Barium | mg/L | 0.00336 | 0.0032 | 0.00288 | 0.00315 | 0.00449 | 0.00521 | 0.00266 | 0.00363 | 0.00527 | 0.00583 | 0.00505 | 0.00388 | 0.00365 | 0.00537 | 0.00003 | 0.00177 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000006 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.006 | 0.005 | <0.005 |
| Cadmium | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000014 | 0.000008 | 0.000014 | <0.000005 | 0.000006 | 0.00002 | 0.000013 | <0.000005 | <0.000005 | <0.000005 | 0.000009 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Cobalt | mg/L | 0.000021 | 0.000021 | 0.000015 | 0.000039 | 0.000014 | 0.000033 | 0.000012 | 0.000029 | 0.00178 | 0.000028 | 0.000025 | 0.000022 | 0.000024 | 0.000049 | <0.000005 | 0.000007 |
| Copper | mg/L | 0.00072 | 0.00057 | 0.0007 | 0.00046 | 0.00063 | 0.00102 | 0.00054 | 0.00088 | 0.00041 | 0.001 | 0.00086 | 0.00077 | 0.0006 | 0.00135 | 0.00046 | 0.0004 |
| Iron | mg/L | 0.018 | 0.018 | 0.015 | 0.026 | 0.009 | 0.038 | 0.006 | 0.012 | 0.343 | 0.044 | 0.017 | 0.018 | 0.018 | 0.042 | <0.001 | 0.005 |
| Lead | mg/L | 0.000023 | 0.000008 | 0.000013 | <0.000005 | 0.000012 | 0.000032 | 0.000021 | 0.000081 | 0.000029 | 0.00002 | 0.000028 | 0.000035 | 0.000009 | 0.000013 | 0.000105 | <0.000005 |
| Lithium | mg/L | 0.0016 | 0.0013 | 0.0012 | 0.0009 | 0.0014 | 0.0013 | 0.001 | 0.0013 | 0.0008 | 0.0018 | 0.0018 | 0.0014 | 0.0012 | 0.0026 | <0.0005 | 0.001 |
| Manganese | mg/L | 0.0115 | 0.0112 | 0.00117 | 0.0203 | 0.00099 | 0.00952 | 0.00072 | 0.00199 | 0.213 | 0.0074 | 0.00583 | 0.00237 | 0.00241 | 0.00648 | 0.00006 | 0.00164 |
| Mercury | mg/L | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | 0.0000008 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <6E-07 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00005 | <0.00005 | 0.00007 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00041 | 0.00037 | 0.00045 | 0.00038 | 0.00024 | 0.00033 | 0.00021 | 0.00034 | 0.00046 | 0.00043 | 0.00037 | 0.00041 | 0.00035 | 0.00107 | 0.00002 | 0.00022 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silicon | mg/L | 0.2 | 0.2 | 0.4 | 0.5 | 0.1 | 0.3 | <0.1 | 0.2 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | <0.1 | <0.1 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.011 | 0.01 | 0.0109 | 0.00928 | 0.0119 | 0.0122 | 0.00935 | 0.0108 | 0.0114 | 0.0176 | 0.0144 | 0.012 | 0.011 | 0.0165 | <0.00005 | 0.00727 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | 0.00069 | 0.00017 | 0.00023 | <0.00001 | 0.00014 | 0.0002 | 0.00026 | 0.00038 | 0.00002 | 0.00022 | 0.00029 | 0.0004 | 0.00007 | 0.00011 | <0.00001 | 0.00003 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000009 | 0.000007 | 0.00001 | 0.000007 | 0.000005 | 0.000015 | 0.000003 | 0.000005 | 0.000003 | 0.000018 | 0.000008 | 0.000012 | 0.000012 | 0.000014 | <0.000002 | 0.000006 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.0012 | 0.0009 | 0.0009 | 0.0014 | 0.0007 | 0.0038 | 0.001 | 0.002 | 0.0015 | 0.0016 | 0.0016 | 0.0019 | 0.001 | 0.0013 | 0.0003 | 0.0007 |
| **Dissolved Metals** | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0072 | 0.0068 | 0.006 | 0.0046 | 0.0058 | 0.0087 | 0.0027 | 0.0053 | 0.0018 | 0.0085 | 0.0047 | 0.0083 | 0.008 | 0.01 | 0.0013 | 0.0029 |
| Antimony | mg/L | 0.00008 | 0.00005 | 0.00007 | 0.00005 | 0.00005 | 0.00007 | 0.00004 | 0.00005 | 0.00009 | 0.00007 | 0.00013 | 0.00009 | 0.00008 | 0.00011 | <0.00002 | 0.00008 |
| Arsenic | mg/L | 0.00015 | 0.00015 | 0.00015 | 0.0001 | 0.00011 | 0.00015 | 0.0001 | 0.00014 | 0.00006 | 0.00018 | 0.00017 | 0.00014 | 0.00014 | 0.00027 | <0.00002 | 0.0001 |
| Barium | mg/L | 0.00319 | 0.00317 | 0.00279 | 0.00308 | 0.0038 | 0.00482 | 0.00276 | 0.00373 | 0.00513 | 0.00571 | 0.00434 | 0.00381 | 0.00366 | 0.00532 | 0.00004 | 0.00172 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Cadmium | mg/L | 0.00001 | <0.000005 | <0.000005 | <0.000005 | 0.000007 | 0.000014 | 0.000011 | 0.000019 | <0.000005 | 0.000009 | 0.000019 | 0.000007 | 0.000006 | <0.000005 | <0.000005 | <0.000005 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

**Table A-8 Water Quality Field and Laboratory Data at All Sampling Locations during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | M Basin | | | | N Basin | | | | | | | Lake L410 | | Kirk Lake | Reference Lake | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3 | M4 | M4 | N11 | N12 | N16 | N17 | N17 | N2 | N9 | L410 | L410 | Kirk Lake | X6 | East Lake |
| | | 11-Apr-11 | 11-Apr-11 | 11-Apr-11 | 11-Apr-11 | 6-Apr-11 | 6-Apr-11 | 5-Apr-11 | 5-Apr-11 | 5-Apr-11 | 11-Apr-11 | 8-Apr-11 | 9-Apr-11 | 9-Apr-11 | 9-Apr-11 | 7-Apr-11 | 11-Apr-11 |
| Cobalt | mg/L | 0.00114 | 0.000938 | 0.00138 | 0.00122 | 0.00163 | 0.00152 | 0.000256 | 0.000328 | 0.00345 | 0.00122 | 0.00188 | 0.000598 | 0.00176 | 0.00184 | <0.000005 | 0.00196 |
| Copper | mg/L | 0.00072 | 0.00063 | 0.00067 | 0.00051 | 0.00056 | 0.0009 | 0.00055 | 0.00079 | 0.00036 | 0.00093 | 0.00072 | 0.00075 | 0.00075 | 0.00132 | <0.00005 | 0.00053 |
| Iron | mg/L | 0.021 | 0.011 | 0.009 | 0.01 | 0.009 | 0.023 | 0.003 | 0.005 | 0.016 | 0.012 | 0.008 | 0.008 | 0.011 | 0.018 | <0.001 | 0.008 |
| Lead | mg/L | 0.000044 | 0.00001 | 0.000012 | 0.000012 | 0.000023 | 0.000031 | 0.000025 | 0.000061 | 0.000017 | 0.000023 | 0.000027 | 0.000022 | 0.000077 | 0.000012 | 0.000099 | 0.000035 |
| Lithium | mg/L | 0.0016 | 0.0014 | 0.0014 | 0.001 | 0.0013 | 0.0014 | 0.0011 | 0.0012 | 0.0009 | 0.0018 | 0.0019 | 0.0014 | 0.0012 | 0.0024 | <0.0005 | 0.0011 |
| Manganese | mg/L | 0.0126 | 0.0121 | 0.00299 | 0.0164 | 0.00337 | 0.0111 | 0.00078 | 0.00224 | 0.212 | 0.00555 | 0.00777 | 0.00241 | 0.00429 | 0.00813 | 0.00006 | 0.00356 |
| Mercury | mg/L | 0.0000009 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | 0.0000007 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <6E-07 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00006 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00052 | 0.00053 | 0.00051 | 0.0005 | 0.00044 | 0.00045 | 0.00024 | 0.00038 | 0.00064 | 0.00058 | 0.00204 | 0.00042 | 0.00061 | 0.00123 | <0.00002 | 0.00046 |
| Silicon | mg/L | 0.2 | 0.2 | 0.4 | 0.5 | 0.2 | 0.4 | 0.1 | 0.2 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | <0.1 | <0.1 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.0113 | 0.0106 | 0.0111 | 0.00952 | 0.0119 | 0.0116 | 0.00966 | 0.0113 | 0.0114 | 0.0179 | 0.0141 | 0.0126 | 0.0117 | 0.0171 | <0.00005 | 0.00737 |
| Tin | mg/L | 0.00069 | 0.00018 | 0.00026 | 0.00001 | 0.00013 | 0.00019 | 0.00028 | 0.00039 | 0.00004 | 0.00022 | 0.00026 | 0.00039 | 0.00007 | 0.00009 | <0.00001 | 0.00003 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | 0.000003 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.00001 | 0.00001 | 0.00001 | 0.000008 | 0.000005 | 0.000012 | 0.000003 | 0.000005 | <0.000002 | 0.000018 | 0.000004 | 0.000012 | 0.000011 | 0.000016 | <0.000002 | 0.000006 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zinc | mg/L | 0.0013 | 0.0009 | 0.0009 | 0.0008 | 0.0013 | 0.0035 | 0.0011 | 0.0025 | 0.0016 | 0.0034 | 0.0022 | 0.0016 | 0.0043 | 0.0015 | 0.0001 | 0.0007 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 |
| **Volatile Organics** | | | | | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Ethyl benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylenes | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |

**Note:** n/a = not applicable; µS/cm = micro Siemens per centimetre; °C = degrees Celsius; % = percent saturation; mg/L = milligrams per litre; TCU = true color units: mg-$CaCO_3$/L = milligrams calcium carbonate per litre; NTU = Nephelometric turbidity units; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligrams phosphorus per litre.

F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; m- = meta; p- = para; o- = ortho.

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011**

| Parameter | Units | Kennady Lake | | | | | | A Basin | B Basin | D Basin | | E Basin | F Basin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Area 3+5 | Area 4 | Area 6 | Area 7 | Area 8 | Area 8 (Outlet) | A3 | B1 | D2 | D3 | E1 | F1 |
| | | 14-Jul-11 | 15-Jul-11 | 14-Jul-11 | 14-Jul-11 | 17-Jul-11 | 17-Jul-11 | 22-Jul-11 | 19-Jul-11 | 19-Jul-11 | 20-Jul-11 | 20-Jul-11 | 18-Jul-11 |
| **Field Parameter** | | | | | | | | | | | | | |
| Depth | meters | 7 | 6 | 7 | 4 | 5 | 0.1 | 6 | 2 | 0 | 1 | 1.5 | 1.5 |
| pH (field) | n/a | 6.65 | 6.62 | 6.61 | 6.65 | 6.78 | 6.43 | 6.71 | 6.42 | 6.54 | 6.44 | 6.57 | 6.45 |
| Specific conductivity (field) | µS/cm | 12 | 12 | 12 | 13 | 13 | 13 | 13 | 9 | 16 | 9 | 13 | 9 |
| Water temperature | °C | 16.13 | 14.91 | 14.5 | 16.81 | 16.22 | 15.3 | 15.19 | 16.15 | 14.75 | 14.46 | 14.64 | 17.01 |
| Dissolved oxygen | % | 99.4 | 96.9 | 99.7 | 98.7 | 94.8 | 96.4 | 95.6 | 92.1 | 92.5 | 93.5 | 95.2 | 98.3 |
| Dissolved oxygen | mg/L | 9.79 | 9.79 | 10.16 | 9.58 | 9.31 | 9.65 | 9.6 | 9.06 | 9.37 | 9.54 | 9.67 | 9.5 |
| **Conventional Parameter** | | | | | | | | | | | | | |
| Colour | TCU | <2 | <2 | 2 | 3 | 4 | 4 | 4 | 18 | 22 | 7 | 13 | 16 |
| pH (laboratory) | n/a | 6.95 | 6.82 | 6.94 | 6.95 | 6.9 | 6.88 | 6.89 | 6.75 | 6.85 | 6.63 | 6.76 | 6.64 |
| Specific conductivity (laboratory) | µS/cm | 13 | 13 | 14 | 14 | 14 | 14 | 14 | 10 | 16 | 9 | 13 | 10 |
| Total dissolved solids | mg/L | 32 | 14 | 22 | 12 | 18 | 12 | 22 | 26 | 38 | 12 | 16 | 26 |
| Total dissolved solids, calculated | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total organic carbon | mg/L | 2.7 | 2.9 | 2.7 | 3.4 | 2.8 | 3.2 | 3.6 | 5.7 | 9.9 | 4.6 | 6.2 | 5.5 |
| Dissolved organic carbon | mg/L | 2.6 | 2.8 | 2.6 | 3.3 | 2.8 | 3.1 | 3.6 | 5.4 | 8.4 | 4.4 | 6.2 | 5.3 |
| Hardness | mg/L | 4.5 | 4.3 | 4.7 | 4.7 | 4.9 | 5 | 4.6 | 3.8 | 5.8 | 3.1 | 4.7 | 3.3 |
| Hardness | mg-$CaCO_3$/L | 4.5 | 4.5 | 4.7 | 4.6 | 4.8 | 4.4 | 9.1 | 3.8 | 6.7 | 3 | 4.7 | 3.3 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 3.5 | 3.6 | 4.2 | 3.7 | 3.7 | 3 | 4.7 | 3.8 | 5 | 2.4 | 3.9 | 2.4 |
| Turbidity | NTU | 0.1 | 0.1 | 0.2 | 0.4 | 0.2 | 0.8 | 0.2 | 0.8 | 4.9 | 0.9 | 0.9 | 0.8 |
| Total suspended solids | mg/L | <1 | <1 | <1 | 1 | <1 | <1 | <1 | <1 | 9 | <1 | <1 | 2 |
| **Major Ions** | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 4.3 | 4.4 | 5.1 | 4.5 | 4.5 | 3.6 | 5.7 | 4.6 | 6.1 | 2.9 | 4.8 | 2.9 |
| Calcium | mg/L | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 0.91 | 1.4 | 0.8 | 1.1 | 0.8 |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | 1 | <1 | 1 | 1 | <1 | <1 | <1 | <1 | <1 | 1 | <1 | <1 |
| Fluoride | mg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 | <0.05 | 0.06 | 0.07 | <0.05 |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.43 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.46 | 0.4 | 0.56 | 0.3 | 0.52 | 0.34 |
| Potassium | mg/L | 0.34 | 0.31 | 0.36 | 0.37 | 0.38 | 0.37 | 0.39 | <0.3 | 0.44 | <0.3 | 0.44 | <0.3 |
| Sodium | mg/L | <0.5 | <0.5 | 0.53 | 0.52 | 0.6 | 0.6 | <0.5 | <0.5 | 0.6 | 0.6 | 0.7 | <0.5 |
| Sulphate | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Sulphide | mg/L | 0.004 | <0.002 | 0.003 | 0.004 | 0.01 | 0.008 | <0.002 | 0.006 | 0.02 | <0.002 | <0.002 | 0.015 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | |
| Chlorophyll *a* | µg/L | 0.6 | 0.7 | 2.6 | 1.3 | 0.9 | - | <0.5 | 1.3 | 8 | 1.3 | 1.6 | 7.3 |
| Chemical oxygen demand | mg/L | 7 | 13 | 10 | 14 | 12 | 15 | 14 | 22 | 48 | 16 | 19 | 27 |
| Nitrate+Nitrite | mg-N/L | 0.003 | <0.003 | 0.009 | <0.003 | <0.003 | 0.006 | <0.003 | <0.003 | <0.003 | 0.014 | <0.003 | <0.003 |
| Nitrate | mg-N/L | <0.003 | <0.003 | 0.004 | <0.003 | <0.003 | 0.006 | <0.003 | <0.003 | <0.003 | 0.009 | <0.003 | <0.003 |
| Nitrite | mg-N/L | 0.003 | <0.003 | 0.005 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | 0.005 | <0.003 | <0.003 |
| Total ammonia | mg-N/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Total Kjeldahl nitrogen | mg/L | 0.13 | 0.19 | 0.21 | 0.19 | 0.27 | 0.37 | 0.19 | 0.4 | 0.97 | 0.39 | 0.42 | 0.52 |
| Total phosphorus | mg/L | 0.005 | 0.003 | 0.003 | 0.004 | 0.009 | 0.004 | 0.008 | 0.008 | 0.016 | 0.005 | 0.007 | 0.01 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | Kennady Lake | | | | | | A Basin | B Basin | D Basin | | E Basin | F Basin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Area 3+5 | Area 4 | Area 6 | Area 7 | Area 8 | Area 8 (Outlet) | A3 | B1 | D2 | D3 | E1 | F1 |
| | | 14-Jul-11 | 15-Jul-11 | 14-Jul-11 | 14-Jul-11 | 17-Jul-11 | 17-Jul-11 | 22-Jul-11 | 19-Jul-11 | 19-Jul-11 | 20-Jul-11 | 20-Jul-11 | 18-Jul-11 |
| **Total Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.005 | 0.0045 | 0.0064 | 0.007 | 0.0104 | 0.0175 | 0.0179 | 0.0519 | 0.0948 | 0.029 | 0.0369 | 0.0474 |
| Antimony | mg/L | 0.0002 | 0.00007 | 0.00008 | 0.00008 | 0.00003 | <0.00002 | 0.00003 | 0.00004 | <0.00002 | 0.00006 | 0.00003 | 0.00009 |
| Arsenic | mg/L | 0.0001 | 0.00009 | 0.00009 | 0.00013 | 0.00014 | 0.00013 | 0.00011 | 0.00017 | 0.00031 | 0.00016 | 0.00019 | 0.00021 |
| Barium | mg/L | 0.00202 | 0.00199 | 0.00207 | 0.00212 | 0.00206 | 0.0018 | 0.00223 | 0.00287 | 0.00537 | 0.00178 | 0.00204 | 0.00227 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.005 | <0.05 | <0.05 | <0.005 | <0.005 | <0.05 |
| Cadmium | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000009 | 0.000007 | <0.000005 | <0.000005 | 0.000012 | 0.000006 | <0.000005 | 0.000012 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | 0.0002 | <0.0001 | <0.0001 | 0.0001 |
| Cobalt | mg/L | 0.000018 | 0.000011 | 0.000011 | 0.000018 | 0.000027 | 0.00004 | 0.000023 | 0.000078 | 0.000256 | 0.000035 | 0.00009 | 0.000072 |
| Copper | mg/L | 0.0004 | 0.00038 | 0.00035 | 0.0004 | 0.00043 | 0.00058 | 0.00073 | 0.00078 | 0.00172 | 0.00065 | 0.00083 | 0.00065 |
| Iron | mg/L | 0.008 | 0.009 | 0.011 | 0.013 | 0.03 | 0.066 | 0.021 | 0.253 | 0.438 | 0.107 | 0.142 | 0.169 |
| Lead | mg/L | 0.000013 | 0.000013 | 0.00001 | 0.000019 | 0.000007 | 0.000023 | 0.000055 | 0.000039 | 0.000051 | 0.000033 | 0.000012 | 0.000018 |
| Lithium | mg/L | 0.0007 | 0.0008 | 0.0007 | 0.0007 | 0.0008 | 0.0008 | 0.0011 | 0.0008 | 0.0015 | 0.0009 | 0.0011 | <0.0005 |
| Manganese | mg/L | 0.00363 | 0.00388 | 0.00313 | 0.00338 | 0.00316 | 0.00341 | 0.00363 | 0.00293 | 0.00738 | 0.00173 | 0.0031 | 0.00232 |
| Mercury | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | <0.000002 | 0.000002 | 0.000004 | 0.000006 | <0.000002 | 0.000002 | <0.000002 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | 0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00006 | <0.00005 | <0.00005 | 0.00026 | 0.00019 | 0.00013 |
| Nickel | mg/L | 0.00021 | 0.00017 | 0.00021 | 0.0002 | 0.00021 | 0.00035 | 0.00078 | 0.00042 | 0.00086 | 0.00032 | 0.00047 | 0.00026 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silicon | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | <0.1 | 0.1 | <0.1 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00701 | 0.00661 | 0.00702 | 0.00709 | 0.00713 | 0.00642 | 0.0077 | 0.00545 | 0.00995 | 0.00413 | 0.0061 | 0.00443 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00004 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Thallium | mg/L | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000004 | 0.000003 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.0008 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | <0.000002 | 0.000003 | 0.000006 | 0.000005 | 0.000005 | 0.000011 | 0.000008 | 0.000023 | 0.000034 | 0.000008 | 0.000013 | 0.000019 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0003 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.001 | 0.0013 | 0.0011 | 0.001 | 0.0014 | 0.0013 | 0.012 | 0.0029 | 0.0025 | 0.0017 | 0.0008 | 0.0013 |
| **Dissolved Metals** | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.003 | 0.0037 | 0.0041 | 0.0042 | 0.0067 | 0.0117 | 0.0081 | 0.0451 | 0.0349 | 0.0204 | 0.0241 | 0.0353 |
| Antimony | mg/L | 0.00007 | <0.00002 | 0.00069 | 0.00006 | 0.00004 | <0.00002 | 0.00002 | 0.0001 | <0.00002 | 0.00018 | 0.00006 | <0.00002 |
| Arsenic | mg/L | 0.00013 | 0.0001 | 0.00012 | 0.00012 | 0.00016 | 0.00014 | 0.00011 | 0.00018 | 0.00027 | 0.00012 | 0.00019 | 0.00021 |
| Barium | mg/L | 0.00166 | 0.00165 | 0.00187 | 0.00194 | 0.00181 | 0.00162 | 0.00155 | 0.00248 | 0.00373 | 0.00157 | 0.00196 | 0.00222 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.005 | <0.05 | <0.05 | <0.005 | <0.005 | <0.05 |
| Cadmium | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000007 | 0.000009 | <0.000005 | 0.000011 | 0.000013 | <0.000005 | 0.000006 | 0.000013 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Cobalt | mg/L | 0.000007 | 0.000028 | 0.000006 | 0.000009 | 0.000012 | 0.000018 | 0.000009 | 0.000035 | 0.000082 | 0.000051 | 0.000032 | 0.000071 |
| Copper | mg/L | 0.00038 | 0.00042 | 0.00042 | 0.00035 | 0.00043 | 0.00053 | 0.00058 | 0.00066 | 0.00123 | 0.00075 | 0.0008 | 0.00068 |
| Iron | mg/L | 0.003 | 0.003 | 0.004 | 0.004 | 0.013 | 0.036 | 0.007 | 0.198 | 0.117 | 0.068 | 0.06 | 0.077 |
| Lead | mg/L | 0.000007 | 0.000029 | 0.00002 | 0.000007 | 0.000012 | 0.000018 | 0.000016 | 0.000037 | 0.000029 | 0.000037 | 0.000014 | 0.000019 |
| Lithium | mg/L | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0009 | 0.0008 | 0.0008 | 0.0012 | 0.0009 | 0.0011 | <0.0005 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | Kennady Lake | | | | | | A Basin | B Basin | D Basin | | E Basin | F Basin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Area 3+5 | Area 4 | Area 6 | Area 7 | Area 8 | Area 8 (Outlet) | A3 | B1 | D2 | D3 | E1 | F1 |
| | | 14-Jul-11 | 15-Jul-11 | 14-Jul-11 | 14-Jul-11 | 17-Jul-11 | 17-Jul-11 | 22-Jul-11 | 19-Jul-11 | 19-Jul-11 | 20-Jul-11 | 20-Jul-11 | 18-Jul-11 |
| Manganese | mg/L | 0.00171 | 0.00099 | 0.00066 | 0.00094 | 0.00057 | 0.00144 | 0.00087 | 0.00132 | 0.00119 | 0.00083 | 0.00048 | 0.00127 |
| Mercury | mg/L | <0.000002 | <0.000002 | 0.000003 | 0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | 0.000004 | 0.000003 | 0.000002 | <0.000002 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00011 |
| Nickel | mg/L | 0.00017 | 0.00025 | 0.00026 | 0.00021 | 0.00022 | 0.00023 | 0.00021 | 0.00036 | 0.00063 | 0.00042 | 0.00042 | 0.00034 |
| Silicon | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | <0.1 | 0.1 | <0.1 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00642 | 0.00589 | 0.00654 | 0.00677 | 0.00635 | 0.00565 | 0.00606 | 0.00507 | 0.00779 | 0.00343 | 0.00607 | 0.0042 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | <0.000002 | 0.000002 | <0.000002 | <0.000002 | 0.000005 | 0.000009 | 0.000004 | 0.000021 | 0.000017 | 0.000004 | 0.00001 | 0.000018 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zinc | mg/L | 0.0007 | 0.0032 | 0.0019 | 0.0012 | 0.0011 | 0.0016 | 0.0012 | 0.0021 | 0.0031 | 0.0055 | 0.0012 | 0.0023 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **Volatile Organics** | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Ethyl benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylenes | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | N Basin | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N1 | N1 (outlet) | N2 | N7 | N9 | N11 | N11.2 | N11 (Outlet) | N12 | N13 | N14 | N16 | N17 |
| | | 20-Jul-11 | 20-Jul-11 | 21-Jul-11 | 17-Jul-11 | 16-Jul-11 | 16-Jul-11 | 21-Jul-11 | 21-Jul-11 | 16-Jul-11 | 15-Jul-11 | 18-Jul-11 | 23-Jul-11 | 18-Jul-11 |
| **Field Parameter** | | | | | | | | | | | | | | |
| Depth | meters | 3 | 0 | 1.5 | 0 | 1 | 1.5 | 2 | 0 | 1.5 | 1 | 0 | 3 | 5 |
| pH (field) | n/a | 6.59 | 6.51 | 6.55 | 6.62 | 6.85 | 6.69 | 6.55 | 6.61 | 6.69 | 6.63 | 6.57 | 6.65 | 6.78 |
| Specific conductivity (field) | µS/cm | 12 | 10 | 14 | 12 | 12 | 11 | 12 | 12 | 11 | 12 | 12 | 12 | 12 |
| Water temperature | °C | 14.62 | 15.52 | 14.48 | 16.88 | 15.78 | 16.36 | 15.29 | 15.35 | 15.54 | 16.87 | 16.81 | 15.45 | 16.83 |
| Dissolved oxygen | % | 94.6 | 97 | 94.9 | 95.1 | 95.3 | 93.7 | 94.7 | 98 | 92 | 92 | 91.8 | 98.6 | 95.6 |
| Dissolved oxygen | mg/L | 9.62 | 9.68 | 9.68 | 9.22 | 9.45 | 9.18 | 9.48 | 9.8 | 9.17 | 8.92 | 8.9 | 9.85 | 9.28 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | N Basin | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N1 | N1 (outlet) | N2 | N7 | N9 | N11 | N11.2 | N11 (Outlet) | N12 | N13 | N14 | N16 | N17 |
| | | 20-Jul-11 | 20-Jul-11 | 21-Jul-11 | 17-Jul-11 | 16-Jul-11 | 16-Jul-11 | 21-Jul-11 | 21-Jul-11 | 16-Jul-11 | 15-Jul-11 | 18-Jul-11 | 23-Jul-11 | 18-Jul-11 |
| **Conventional Parameter** | | | | | | | | | | | | | | |
| Colour | TCU | 3 | 3 | 5 | 19 | 3 | 3 | 3 | 4 | 4 | 20 | 4 | <2 | 3 |
| pH (laboratory) | n/a | 6.8 | 6.76 | 6.78 | 6.81 | 6.83 | 6.7 | 7.01 | 6.8 | 6.76 | 6.84 | 6.65 | 6.84 | 6.91 |
| Specific conductivity (laboratory) | µS/cm | 12 | 11 | 14 | 12 | 12 | 11 | 68 | 12 | 11 | 13 | 10 | 12 | 12 |
| Total dissolved solids | mg/L | 22 | <10 | 26 | 24 | 14 | 10 | 16 | 20 | <10 | 16 | 16 | 52 | 14 |
| Total dissolved solids, calculated | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total organic carbon | mg/L | 3 | 2.7 | 4.7 | 7.2 | 3.5 | 3.1 | 3.6 | 4.1 | 3.7 | 7.3 | 4 | 2.5 | 3 |
| Dissolved organic carbon | mg/L | 2.9 | 2.7 | 4.7 | 7.2 | 3.5 | 3 | 3.5 | 4.1 | 3.7 | 6.9 | 4 | 2.5 | 2.9 |
| Hardness | mg/L | 4.3 | 3.3 | 4.4 | 4.3 | 4.5 | 3.3 | 4 | 4.2 | 4 | 5 | 3 | 4 | 4 |
| Hardness | mg-$CaCO_3$/L | 4.3 | 3.6 | 4.6 | 4.2 | 4.5 | 4 | 4.3 | 4.3 | 3.9 | 5 | 3.1 | 6.9 | 4.3 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 3.4 | 3.4 | 3.2 | 3.4 | 3.4 | 3.7 | 5.7 | 3.6 | 3.6 | 4.4 | 1.9 | 3.7 | 4.1 |
| Turbidity | NTU | 0.6 | 0.3 | 0.8 | 0.7 | 0.2 | 0.3 | 0.4 | 0.7 | 0.5 | 0.7 | 0.4 | 0.1 | 0.3 |
| Total suspended solids | mg/L | 1 | <1 | <1 | 3 | <1 | <1 | <1 | 1 | <1 | <1 | <1 | <1 | <1 |
| **Major Ions** | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 4.2 | 4.1 | 4 | 4.2 | 4.2 | 4.6 | 6.9 | 4.3 | 4.4 | 5.4 | 2.3 | 4.6 | 5 |
| Calcium | mg/L | 1.1 | 0.8 | 1.11 | 0.9 | 1.1 | 0.9 | 1.1 | 1 | 1 | 1.3 | 0.7 | 1.03 | 1.1 |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | <1 | <1 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Fluoride | mg/L | 0.05 | 0.05 | 0.06 | <0.05 | <0.05 | <0.05 | 0.05 | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.42 | 0.33 | 0.4 | 0.5 | 0.41 | 0.3 | 0.34 | 0.43 | 0.4 | 0.42 | 0.3 | 0.45 | 0.33 |
| Potassium | mg/L | 0.34 | <0.3 | 0.32 | 0.41 | 0.37 | <0.3 | 0.31 | 0.35 | 0.31 | 0.32 | <0.3 | 0.37 | 0.32 |
| Sodium | mg/L | 0.6 | 0.5 | 0.6 | 0.64 | <0.5 | <0.5 | 0.7 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sulphate | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Sulphide | mg/L | <0.002 | <0.002 | <0.002 | 0.023 | 0.003 | <0.002 | <0.002 | <0.002 | 0.003 | 0.007 | 0.012 | 0.004 | 0.025 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | | |
| Chlorophyll *a* | µg/L | 1.5 | - | 1.7 | 3.8 | 1.1 | <0.5 | 2.1 | 1.4 | 1.1 | 2.2 | 0.7 | 0.6 | 0.8 |
| Chemical oxygen demand | mg/L | 9 | 9 | 15 | 25 | 18 | 18 | 14 | 16 | 18 | 34 | 17 | 10 | 12 |
| Nitrate+Nitrite | mg-N/L | <0.003 | 0.005 | <0.003 | 0.004 | <0.003 | <0.003 | <0.003 | 0.003 | <0.003 | 0.011 | <0.003 | <0.003 | <0.003 |
| Nitrate | mg-N/L | <0.003 | 0.005 | <0.003 | 0.004 | <0.003 | <0.003 | <0.003 | 0.003 | <0.003 | 0.011 | <0.003 | <0.003 | <0.003 |
| Nitrite | mg-N/L | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Total ammonia | mg-N/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Total Kjeldahl nitrogen | mg/L | 0.25 | 0.25 | 0.32 | 0.63 | 0.22 | 0.24 | 0.28 | 0.27 | 0.28 | 0.36 | 0.46 | 0.25 | 0.37 |
| Total phosphorus | mg/L | 0.004 | 0.004 | 0.007 | 0.009 | 0.005 | 0.004 | 0.005 | 0.005 | 0.004 | 0.009 | 0.008 | 0.003 | 0.005 |
| **Total Metals** | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0078 | 0.01 | 0.0195 | 0.0868 | 0.0075 | 0.0087 | 0.0095 | 0.0142 | 0.0159 | 0.0487 | 0.0185 | 0.0094 | 0.0087 |
| Antimony | mg/L | <0.00002 | <0.00002 | 0.00002 | <0.00002 | 0.00003 | 0.00012 | 0.00002 | <0.00002 | <0.00002 | 0.00007 | <0.00002 | 0.00007 | 0.00014 |
| Arsenic | mg/L | 0.00009 | 0.00007 | 0.00011 | 0.00028 | 0.00012 | 0.00011 | 0.00007 | 0.00009 | 0.00012 | 0.00024 | 0.00021 | 0.00009 | 0.00011 |
| Barium | mg/L | 0.00187 | 0.00164 | 0.00255 | 0.00285 | 0.00181 | 0.00208 | 0.00216 | 0.00207 | 0.00227 | 0.00271 | 0.00194 | 0.00233 | 0.00223 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | N Basin | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N1 | N1 (outlet) | N2 | N7 | N9 | N11 | N11.2 | N11 (Outlet) | N12 | N13 | N14 | N16 | N17 |
| | | 20-Jul-11 | 20-Jul-11 | 21-Jul-11 | 17-Jul-11 | 16-Jul-11 | 16-Jul-11 | 21-Jul-11 | 21-Jul-11 | 16-Jul-11 | 15-Jul-11 | 18-Jul-11 | 23-Jul-11 | 18-Jul-11 |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | <0.05 | <0.05 | <0.05 | <0.005 | <0.005 | <0.05 | <0.05 | <0.05 | <0.005 | <0.05 |
| Cadmium | mg/L | <0.000005 | <0.000005 | <0.000005 | 0.000014 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000031 | <0.000005 | 0.000011 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Cobalt | mg/L | 0.00003 | 0.000015 | 0.000051 | 0.000102 | 0.000017 | 0.000018 | 0.000029 | 0.000049 | 0.00004 | 0.000091 | 0.000065 | 0.000014 | 0.000023 |
| Copper | mg/L | 0.00037 | 0.00039 | 0.00055 | 0.00102 | 0.00044 | 0.00043 | 0.0004 | 0.00042 | 0.00053 | 0.00067 | 0.00079 | 0.00037 | 0.00045 |
| Iron | mg/L | 0.03 | 0.015 | 0.071 | 0.233 | 0.021 | 0.024 | 0.036 | 0.065 | 0.045 | 0.199 | 0.069 | 0.009 | 0.025 |
| Lead | mg/L | 0.000016 | 0.000008 | 0.000012 | 0.000038 | 0.000016 | 0.000018 | 0.000011 | 0.000021 | 0.000013 | 0.000026 | 0.00002 | 0.000021 | 0.000005 |
| Lithium | mg/L | 0.0008 | 0.0007 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0009 | 0.0012 | 0.0094 | 0.0009 | 0.0007 |
| Manganese | mg/L | 0.00346 | 0.00249 | 0.00605 | 0.00178 | 0.00445 | 0.00292 | 0.00404 | 0.00912 | 0.00419 | 0.003 | 0.00585 | 0.00258 | 0.00254 |
| Mercury | mg/L | <0.000002 | <0.000002 | 0.000002 | 0.000002 | 0.000003 | 0.000003 | <0.000002 | <0.000002 | 0.000004 | 0.000003 | <0.000002 | <0.000002 | 0.000003 |
| Molybdenum | mg/L | 0.0001 | 0.00011 | 0.00008 | 0.00008 | <0.00005 | <0.00005 | 0.00006 | 0.0001 | <0.00005 | 0.00007 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00017 | 0.00017 | 0.00019 | 0.00047 | 0.00017 | 0.00018 | 0.00021 | 0.00018 | 0.00019 | 0.00029 | 0.00034 | 0.00018 | 0.0002 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silicon | mg/L | 0.1 | 0.2 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00593 | 0.00487 | 0.00696 | 0.00591 | 0.00593 | 0.00622 | 0.00624 | 0.00616 | 0.00576 | 0.00679 | 0.00416 | 0.00739 | 0.00645 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | <0.00001 | <0.00001 | 0.00002 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00003 | <0.00001 | 0.00003 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | 0.000004 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | 0.000004 | 0.000003 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000004 | 0.000008 | 0.000015 | 0.000022 | 0.000003 | 0.000004 | 0.000005 | 0.000007 | 0.000007 | 0.000012 | 0.000013 | 0.000003 | 0.000006 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.0018 | 0.0012 | 0.0008 | 0.0019 | 0.001 | 0.0009 | 0.0007 | 0.0007 | 0.0013 | 0.0015 | 0.0019 | 0.0057 | 0.0008 |
| **Dissolved Metals** | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0039 | 0.0083 | 0.0107 | 0.073 | 0.0053 | 0.0056 | 0.0062 | 0.0079 | 0.0094 | 0.0372 | 0.0111 | 0.0045 | 0.0056 |
| Antimony | mg/L | 0.00008 | <0.00002 | 0.00004 | <0.00002 | 0.00009 | 0.00003 | 0.00005 | <0.00002 | 0.00004 | 0.00023 | <0.00002 | 0.00007 | <0.00002 |
| Arsenic | mg/L | 0.00007 | 0.00006 | 0.0001 | 0.00024 | 0.00011 | 0.00008 | 0.00009 | 0.00009 | 0.00013 | 0.00021 | 0.00017 | 0.0001 | 0.00011 |
| Barium | mg/L | 0.00188 | 0.0015 | 0.00229 | 0.0026 | 0.00195 | 0.00169 | 0.00199 | 0.00198 | 0.00206 | 0.00231 | 0.00181 | 0.00194 | 0.00202 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | <0.005 | <0.05 | <0.05 | <0.05 | <0.005 | <0.005 | <0.05 | <0.05 | <0.05 | <0.005 | <0.05 |
| Cadmium | mg/L | <0.000005 | <0.000005 | <0.000005 | 0.000014 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000013 | <0.000005 | 0.000006 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Cobalt | mg/L | 0.00001 | 0.000035 | 0.000021 | 0.000082 | 0.000008 | 0.000059 | 0.000051 | 0.000018 | 0.000017 | 0.000089 | 0.000051 | 0.000006 | 0.000018 |
| Copper | mg/L | 0.00031 | 0.00053 | 0.00056 | 0.00105 | 0.00069 | 0.00173 | 0.00049 | 0.00039 | 0.00046 | 0.00066 | 0.00072 | 0.00035 | 0.00039 |
| Iron | mg/L | 0.008 | 0.007 | 0.028 | 0.174 | 0.008 | 0.007 | 0.012 | 0.027 | 0.018 | 0.144 | 0.028 | 0.004 | 0.008 |
| Lead | mg/L | 0.000008 | 0.000036 | 0.000016 | 0.000039 | 0.000018 | 0.000102 | 0.000031 | 0.000011 | 0.000012 | 0.000039 | 0.000026 | 0.00001 | 0.000008 |
| Lithium | mg/L | 0.0008 | 0.0006 | 0.0008 | 0.0007 | 0.0009 | 0.0008 | 0.0007 | 0.0008 | 0.001 | 0.001 | 0.0008 | 0.0008 | 0.0006 |
| Manganese | mg/L | 0.00044 | 0.00075 | 0.00041 | 0.00135 | 0.00079 | 0.00044 | 0.00045 | 0.00182 | 0.00177 | 0.00222 | 0.00186 | 0.0013 | 0.00027 |
| Mercury | mg/L | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | 0.00008 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00006 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00015 | 0.00026 | 0.00021 | 0.00048 | 0.00018 | 0.00034 | 0.00026 | 0.00016 | 0.00013 | 0.00035 | 0.00036 | 0.00018 | 0.0002 |
| Silicon | mg/L | 0.1 | 0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00607 | 0.00429 | 0.00643 | 0.00564 | 0.00625 | 0.00425 | 0.0053 | 0.00628 | 0.00561 | 0.00588 | 0.00359 | 0.0065 | 0.00562 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | N Basin | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N1 | N1 (outlet) | N2 | N7 | N9 | N11 | N11.2 | N11 (Outlet) | N12 | N13 | N14 | N16 | N17 |
| | | 20-Jul-11 | 20-Jul-11 | 21-Jul-11 | 17-Jul-11 | 16-Jul-11 | 16-Jul-11 | 21-Jul-11 | 21-Jul-11 | 16-Jul-11 | 15-Jul-11 | 18-Jul-11 | 23-Jul-11 | 18-Jul-11 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00003 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Thallium | mg/L | <0.000002 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000003 | 0.000003 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000002 | 0.000004 | 0.000009 | 0.000021 | 0.000003 | <0.000002 | 0.000003 | 0.000004 | 0.000009 | 0.000011 | 0.000009 | <0.000002 | 0.000003 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zinc | mg/L | 0.002 | 0.0044 | 0.0018 | 0.0025 | 0.0006 | 0.0088 | 0.0042 | 0.0009 | 0.0006 | 0.0042 | 0.0033 | 0.0014 | 0.0022 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.003 | <0.002 | <0.002 | <0.002 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **Volatile Organics** | | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Ethyl benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylenes | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | M Basin | | | | Lake L410 | | | | | | Kirk Lake | | Reference Lakes | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3.2 | M4.2 | M4.3 | L410 | L410-D | L410.2 | L410 OUTLET | L410 INLET SE | L410 INLET SW | KIRK | KIRK 2 | X6 | East Lake |
| | | 18-Aug-11 | 10-Aug-11 | 10-Aug-11 | 20-Aug-11 | 10-Aug-11 | 10-Aug-11 | 12-Aug-11 | 9-Aug-11 | 9-Aug-11 | 9-Aug-11 | 10-Aug-11 | 9-Aug-11 | 22-Jul-11 | 22-Jul-11 |
| **Field Parameter** | | | | | | | | | | | | | | | |
| Depth | meters | 1 | 1.5 | 1.5 | 6 | 2.5 | 3 | 3.01 | 0.3 | 0.2 | 0.3 | 2 | 1.5 | 2 | 6.5 |
| pH (field) | n/a | 6.65 | 7.07 | 7.15 | 6.71 | 7.07 | 7.06 | 6.58 | 6.62 | 6.46 | 6.49 | 6.41 | - | 6.7 | 6.66 |
| Specific conductivity (field) | µS/cm | 14 | 15 | 14 | 14 | 10 | 10 | 11 | 12 | 15 | 12 | 13 | - | 12 | 14 |
| Water temperature | °C | 14.3 | 16.65 | 16.96 | 13.53 | 17.32 | 17.32 | 16.5 | 18.26 | 17.73 | 18.34 | 17.08 | - | 16.14 | 14.5 |
| Dissolved oxygen | % | 95.4 | 92.1 | 94.1 | 94.1 | 96.9 | 96.9 | 95.8 | 96.9 | 99.4 | 96.6 | 92.5 | - | 97.1 | 96.3 |
| Dissolved oxygen | mg/L | 9.77 | 8.96 | 9.11 | 9.8 | 9.3 | 9.3 | 9.36 | 9.12 | 9.46 | 9.08 | 8.92 | - | 9.57 | 9.82 |
| **Conventional Parameter** | | | | | | | | | | | | | | | |
| Colour | TCU | 5 | 6 | 5 | 5 | 3 | 4 | 4 | 4 | 7 | 3 | 4 | <2 | 2 | <2 |
| pH (laboratory) | n/a | 6.83 | 6.83 | 6.85 | 6.88 | 6.72 | 6.73 | 6.69 | 6.66 | 6.82 | 6.73 | 6.68 | 6.91 | 6.88 | 6.87 |
| Specific conductivity (laboratory) | µS/cm | 15 | 16 | 15 | 15 | 12 | 12 | 12 | 12 | 15 | 12 | 14 | 15 | 13 | 16 |
| Total dissolved solids | mg/L | 26 | 20 | 24 | 14 | 12 | 18 | 28 | 22 | 28 | 14 | 26 | 20 | 18 | 20 |
| Total dissolved solids, calculated | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | M Basin | | | | Lake L410 | | | | | | Kirk Lake | | Reference Lakes | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3.2 | M4.2 | M4.3 | L410 | L410-D | L410.2 | L410 OUTLET | L410 INLET SE | L410 INLET SW | KIRK | KIRK 2 | X6 | East Lake |
| | | 18-Aug-11 | 10-Aug-11 | 10-Aug-11 | 20-Aug-11 | 10-Aug-11 | 10-Aug-11 | 12-Aug-11 | 9-Aug-11 | 9-Aug-11 | 9-Aug-11 | 10-Aug-11 | 9-Aug-11 | 22-Jul-11 | 22-Jul-11 |
| Total organic carbon | mg/L | 4.2 | 3.9 | 3.2 | 3.7 | 4.1 | 4 | 4.1 | 4.5 | 4.9 | 3.7 | 4.1 | 3 | 3.7 | 2.6 |
| Dissolved organic carbon | mg/L | 3.4 | 3.6 | 3.2 | 3.4 | 4 | 3.6 | 3.8 | 4.2 | 4.3 | 3.5 | 4 | 3 | 2.7 | 2.6 |
| Hardness | mg/L | 5 | 5.9 | 5.2 | 4.9 | 4.1 | 4.3 | 4.3 | 4 | 5.3 | 4.2 | 4.6 | 5.2 | 4.2 | 4.9 |
| Hardness | mg-$CaCO_3$/L | 4.8 | 5.4 | 5.2 | 5.2 | 4.2 | 4.3 | 4.3 | 4.2 | 5.4 | 4.3 | 4.6 | 5.2 | 6.4 | 6.8 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 3.6 | <0.5 | 0.5 | 3.8 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.3 | 4.2 | 4 | 4.3 |
| Turbidity | NTU | 0.3 | 0.4 | 0.3 | 0.3 | 0.6 | 0.6 | 0.6 | 0.8 | 0.9 | 0.6 | 0.9 | 0.4 | 0.2 | 0.3 |
| Total suspended solids | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| **Major Ions** | | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 4.4 | <0.5 | 0.6 | 4.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.5 | 5.1 | 4.9 | 5.2 |
| Calcium | mg/L | 1.07 | 1.28 | 1.19 | 1.18 | 0.96 | 0.92 | 0.98 | 0.87 | 1.05 | 0.97 | 1.01 | 1.02 | 1.07 | 5.61 |
| Carbonate | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | <1 | 1 | 1 | <1 | 1 | <1 | 1 | 1 | 1 | 1 | 1 | <1 | <1 | <1 |
| Fluoride | mg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | <0.05 |
| Hydroxide | mg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.5 | 0.51 | 0.46 | 0.53 | 0.37 | 0.38 | 0.38 | 0.39 | 0.5 | 0.38 | 0.49 | 0.52 | 0.4 | 0.65 |
| Potassium | mg/L | 0.42 | 0.44 | 0.41 | 0.43 | 0.4 | 0.38 | 0.38 | 0.39 | 0.45 | 0.38 | 0.48 | 0.5 | 0.33 | 0.41 |
| Sodium | mg/L | 0.57 | 0.55 | 0.51 | 0.6 | 0.49 | 0.46 | 0.47 | 0.5 | 0.57 | 0.49 | 0.54 | 0.5 | 0.47 | 0.74 |
| Sulphate | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 1 | <1 | <1 |
| Sulphide | mg/L | <0.002 | <0.002 | <0.002 | <0.002 | 0.033 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | 0.004 | <0.002 | <0.002 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | | | |
| Chlorophyll *a* | µg/L | 2.4 | 1.9 | 0.5 | 1 | 3 | 2.4 | 1.2 | - | - | - | 2 | <0.5 | 0.7 | 0.7 |
| Chemical oxygen demand | mg/L | 6 | 16 | 8 | <5 | 8 | 9 | 6 | 10 | 18 | 11 | 11 | 9 | 24 | 12 |
| Nitrate+Nitrite | mg-N/L | <0.003 | 0.005 | 0.012 | <0.003 | <0.003 | 0.006 | <0.003 | 0.004 | <0.003 | 0.006 | 0.004 | <0.003 | 0.003 | <0.003 |
| Nitrate | mg-N/L | <0.003 | 0.005 | 0.007 | <0.003 | <0.003 | 0.006 | <0.003 | 0.004 | <0.003 | 0.006 | 0.004 | <0.003 | 0.003 | <0.003 |
| Nitrite | mg-N/L | <0.003 | <0.003 | 0.005 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Total ammonia | mg-N/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Total Kjeldahl nitrogen | mg/L | 0.37 | 0.34 | 0.26 | 0.27 | 0.38 | 0.34 | 0.28 | 0.45 | 0.33 | 0.3 | 0.34 | 0.21 | 0.26 | 0.18 |
| Total phosphorus | mg/L | 0.003 | 0.004 | 0.004 | 0.002 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.007 | 0.004 | 0.003 | 0.003 |
| **Total Metals** | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0098 | 0.0149 | 0.0094 | 0.0095 | 0.0153 | 0.0162 | 0.0147 | 0.0185 | 0.0205 | 0.0172 | 0.0207 | 0.0063 | 0.0102 | 0.0095 |
| Antimony | mg/L | <0.00002 | 0.0001 | 0.00008 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | 0.00017 | 0.00009 | 0.00004 | <0.00002 |
| Arsenic | mg/L | 0.00014 | 0.00014 | 0.00015 | 0.00013 | 0.00014 | 0.00014 | 0.00013 | 0.00014 | 0.00017 | 0.00011 | 0.00017 | 0.00015 | 0.00014 | 0.0001 |
| Barium | mg/L | 0.00198 | 0.00204 | 0.00208 | 0.00212 | 0.00186 | 0.00216 | 0.00215 | 0.00185 | 0.00182 | 0.00194 | 0.00213 | 0.00197 | 0.00247 | 0.00186 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | 0.000011 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.05 | <0.05 | <0.05 | <0.005 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.005 | <0.005 |
| Cadmium | mg/L | 0.000008 | 0.000006 | 0.00001 | <0.000005 | 0.000008 | 0.00001 | <0.000005 | <0.000005 | <0.000005 | 0.000012 | <0.000005 | 0.000023 | <0.000005 | <0.000005 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Cobalt | mg/L | 0.00003 | 0.000057 | 0.000026 | 0.000029 | 0.000037 | 0.000049 | 0.000042 | 0.000082 | 0.000097 | 0.000038 | 0.000067 | 0.000035 | 0.000017 | 0.000014 |
| Copper | mg/L | 0.00056 | 0.00057 | 0.00058 | 0.00059 | 0.00058 | 0.00066 | 0.0006 | 0.00063 | 0.00077 | 0.00146 | 0.00107 | 0.00065 | 0.00041 | 0.00047 |
| Iron | mg/L | 0.045 | 0.121 | 0.044 | 0.04 | 0.051 | 0.051 | 0.049 | 0.098 | 0.143 | 0.056 | 0.052 | 0.02 | 0.018 | 0.014 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | M Basin | | | | Lake L410 | | | | | | Kirk Lake | | Reference Lakes | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3.2 | M4.2 | M4.3 | L410 | L410-D | L410.2 | L410 OUTLET | L410 INLET SE | L410 INLET SW | KIRK | KIRK 2 | X6 | East Lake |
| | | 18-Aug-11 | 10-Aug-11 | 10-Aug-11 | 20-Aug-11 | 10-Aug-11 | 10-Aug-11 | 12-Aug-11 | 9-Aug-11 | 9-Aug-11 | 9-Aug-11 | 10-Aug-11 | 9-Aug-11 | 22-Jul-11 | 22-Jul-11 |
| Lead | mg/L | 0.000024 | 0.000015 | 0.000006 | 0.000169 | 0.000008 | 0.000025 | 0.000012 | 0.000013 | 0.000014 | 0.000013 | 0.000033 | 0.000033 | 0.000015 | 0.00003 |
| Lithium | mg/L | 0.001 | 0.0009 | 0.001 | 0.0008 | 0.0009 | 0.0009 | 0.0008 | 0.0009 | 0.0012 | 0.0008 | 0.0011 | 0.0012 | 0.0008 | 0.0011 |
| Manganese | mg/L | 0.00284 | 0.00631 | 0.00348 | 0.00314 | 0.00384 | 0.00555 | 0.00546 | 0.00889 | 0.0086 | 0.00503 | 0.00454 | 0.00503 | 0.00238 | 0.0025 |
| Mercury | mg/L | | 0.0000224 | 0.0000275 | | 0.0000085 | 0.0000026 | 0.0000048 | 0.000004 | 0.0000126 | 0.0000015 | <0.0000006 | 0.0000123 | <0.0000006 | 0.000002 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00006 | 0.00023 |
| Nickel | mg/L | 0.00029 | 0.00029 | 0.0003 | 0.00027 | 0.00024 | 0.00027 | 0.00024 | 0.00026 | 0.00047 | 0.00019 | 0.00057 | 0.0005 | 0.0002 | 0.0005 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silicon | mg/L | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | <0.1 | <0.1 | <0.1 | <0.1 |
| Silver | mg/L | 0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000006 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00658 | 0.00733 | 0.00715 | 0.00726 | 0.00559 | 0.00611 | 0.00606 | 0.0057 | 0.00666 | 0.0062 | 0.00585 | 0.00621 | 0.0074 | 0.00654 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Thallium | mg/L | 0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000002 | 0.000002 | <0.000002 | 0.000002 | 0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000006 | 0.00001 | 0.000012 | 0.000009 | 0.000012 | 0.000015 | 0.000013 | 0.000016 | 0.000014 | 0.000015 | 0.000016 | 0.000011 | 0.000002 | 0.000006 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.0006 | 0.0008 | 0.0007 | 0.001 | 0.0008 | 0.0008 | 0.0009 | 0.0009 | 0.0011 | 0.0009 | 0.0013 | 0.0032 | 0.0044 | 0.006 |
| **Dissolved Metals** | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0065 | 0.0121 | 0.006 | 0.0062 | 0.0075 | 0.0073 | 0.0071 | 0.0077 | 0.0107 | 0.0075 | 0.0092 | 0.0026 | 0.0054 | 0.0237 |
| Antimony | mg/L | <0.00002 | 0.00009 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | 0.0001 | 0.00015 | 0.00005 | 0.00005 |
| Arsenic | mg/L | 0.00014 | 0.00014 | 0.0001 | 0.00015 | 0.00012 | 0.0001 | 0.00011 | 0.00011 | 0.00015 | 0.0001 | 0.00019 | 0.00013 | 0.00009 | 0.00008 |
| Barium | mg/L | 0.00191 | 0.00203 | 0.00204 | 0.00201 | 0.00184 | 0.00213 | 0.0021 | 0.00256 | 0.00175 | 0.00189 | 0.00205 | 0.00207 | 0.00205 | 0.0027 |
| Beryllium | mg/L | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.05 | <0.05 | <0.05 | 0.008 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.005 | <0.005 |
| Cadmium | mg/L | 0.000014 | 0.000006 | 0.00001 | <0.000005 | 0.000019 | 0.000007 | <0.000005 | 0.000008 | 0.000019 | 0.000045 | 0.000009 | <0.000005 | <0.000005 | 0.000008 |
| Chromium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 |
| Cobalt | mg/L | 0.000015 | 0.000024 | 0.000021 | 0.000015 | 0.000027 | 0.00002 | 0.000026 | 0.000028 | 0.000052 | 0.000025 | 0.000026 | 0.000014 | 0.000012 | 0.000022 |
| Copper | mg/L | 0.00065 | 0.0006 | 0.00052 | 0.00055 | 0.00077 | 0.00073 | 0.00088 | 0.00052 | 0.00068 | 0.00067 | 0.00098 | 0.00055 | 0.00035 | 0.00071 |
| Iron | mg/L | 0.018 | 0.079 | 0.045 | 0.014 | 0.009 | 0.01 | 0.009 | 0.028 | 0.068 | 0.019 | 0.01 | 0.003 | 0.008 | 0.012 |
| Lead | mg/L | 0.000022 | 0.000013 | 0.000011 | 0.000011 | 0.000029 | 0.000036 | 0.000024 | 0.000007 | 0.000052 | 0.000036 | 0.000022 | 0.000012 | 0.000011 | 0.00009 |
| Lithium | mg/L | 0.001 | 0.0011 | 0.001 | 0.0009 | 0.001 | 0.001 | 0.001 | 0.0009 | 0.0015 | 0.0009 | 0.0012 | 0.0013 | 0.0008 | 0.0011 |
| Manganese | mg/L | 0.00097 | 0.0123 | 0.00155 | 0.00072 | 0.00034 | 0.00069 | 0.00061 | 0.00371 | 0.00418 | 0.0014 | 0.00049 | 0.0007 | 0.00043 | 0.00118 |
| Mercury | mg/L | | <0.0000006 | <0.0000006 | | <6E-07 | <6E-07 | <6E-07 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.000002 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00029 | 0.00027 | 0.00029 | 0.00033 | 0.00029 | 0.00037 | 0.0003 | 0.00019 | 0.0004 | 0.00037 | 0.00062 | 0.00042 | 0.0002 | 0.00055 |
| Silicon | mg/L | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | <0.1 | <0.1 | <0.1 | <0.1 |
| Selenium | mg/L | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | 0.00001 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00658 | 0.00744 | 0.00691 | 0.00725 | 0.00539 | 0.00586 | 0.00589 | 0.00557 | 0.00641 | 0.00601 | 0.00571 | 0.00625 | 0.00628 | 0.00856 |
| Sulphur | mg/L | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | 0.00002 | 0.00083 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00002 |
| Thallium | mg/L | 0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | 0.0075 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000006 | 0.000008 | 0.000007 | 0.000007 | 0.000009 | 0.00001 | 0.000009 | 0.00001 | 0.000007 | 0.000006 | 0.00001 | 0.000005 | 0.000002 | 0.000009 |

**Table A-9 Water Quality Field and Laboratory Data at All Sampling Locations during Open-Water Conditions in July/August 2011 (continued)**

| Parameter | Units | M Basin | | | | Lake L410 | | | | | | Kirk Lake | | Reference Lakes | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M3 | M3.2 | M4.2 | M4.3 | L410 | L410-D | L410.2 | L410 OUTLET | L410 INLET SE | L410 INLET SW | KIRK | KIRK 2 | X6 | East Lake |
| | | 18-Aug-11 | 10-Aug-11 | 10-Aug-11 | 20-Aug-11 | 10-Aug-11 | 10-Aug-11 | 12-Aug-11 | 9-Aug-11 | 9-Aug-11 | 9-Aug-11 | 10-Aug-11 | 9-Aug-11 | 22-Jul-11 | 22-Jul-11 |
| Vanadium | mg/L | <0.0002 | <0.0002 | <0.0002 | 0.0003 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0006 |
| Zinc | mg/L | 0.0007 | 0.0031 | 0.004 | 0.0162 | 0.0042 | 0.0013 | 0.0044 | 0.0022 | 0.005 | 0.0008 | 0.0033 | 0.0026 | 0.0015 | 0.0233 |
| Zirconium | mg/L | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | 0.003 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.4 | <0.4 | <0.4 | <0.0004 | 0.0006 | <0.0004 | <0.0004 | <0.0004 | <0.4 | <0.0004 |
| Toluene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.4 | <0.4 | <0.4 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.4 | <0.0004 |
| Ethyl benzene | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.4 | <0.4 | <0.4 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.4 | <0.0004 |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylenes | mg/L | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.8 | <0.8 | <0.8 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.8 | <0.0008 |

Note: n/a = not applicable; µS/cm = micro Siemens per centimetre; °C = degrees Celsius; % = percent saturation; mg/L = milligrams per litre; TCU = true color units: mg-$CaCO_3$/L = milligrams calcium carbonate per litre; NTU = Nephelometric turbidity units; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligrams phosphorus per litre.

F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; m- = meta; p- = para; o- = ortho.

**Table A-10 Sediment Quality Data during July/August 2011**

| Parameter | Units | EAST LAKE | X6 | A3 | AREA 3+5 | AREA 4 | AREA 6 | AREA 7 | AREA 8 | D2 | D3 | E1 | N1 | N2 | N7 | N6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 22-Jul-11 | 22-Jul-11 | 22-Jul-11 | 14-Jul-11 | 15-Jul-11 | 14-Jul-11 | 14-Jul-11 | 17-Jul-11 | 19-Jul-11 | 20-Jul-11 | 20-Jul-11 | 21-Jul-11 | 21-Jul-11 | 17-Jul-11 | 17-Jul-11 |
| **Texture** | | | | | | | | | | | | | | | | |
| Particle size - % sand | % | 63 | 80 | 55 | 56 | 58 | 58 | 60 | 63 | 63 | 65 | 75 | 63 | 70 | 75 | 75 |
| Particle size - % silt | % | 32 | 15 | 36 | 32 | 32 | 35 | 24 | 29 | 34 | 30 | 20 | 29 | 23 | 20 | 18 |
| Particle size - % clay | % | 5 | 5 | 10 | 12 | 10 | 8 | 17 | 8 | 3 | 5 | 6 | 8 | 8 | 5 | 7 |
| moisture content | % | 85 | 91 | 88 | 93 | 93 | 91 | 94 | 93 | 85 | 88 | 91 | 91 | 92 | 88 | 92 |
| **Conventional Parameters** | | | | | | | | | | | | | | | | |
| Total Organic Carbon | % | 7 | 12 | 8.7 | 14 | 13 | 10 | 16 | 14 | 38 | 16 | 22 | 17 | 16 | 24 | 23 |
| Total Inorganic Carbon | % | <0.02 | 1.7 | <0.02 | <0.02 | 1.6 | <0.02 | 0.1 | <0.02 | <0.02 | <0.02 | 0.28 | <0.02 | <0.02 | <0.02 | <0.02 |
| Total Carbon | % | 6.5 | 14 | 8.2 | 13 | 14 | 10 | 16 | 14 | 37 | 16 | 22 | 16 | 16 | 23 | 21 |
| **Total Metals** | | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 17,000 | 9700 | 13,000 | 18,000 | 14,000 | 14,000 | 13,000 | 14,000 | 6,800 | 8,700 | 10,000 | 13,000 | 10,000 | 8,300 | 8,100 |
| Antimony | mg/kg | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 | <1 | <1 | <1 | <1 | <1 | <1 |
| Arsenic | mg/kg | 12 | 4 | 4 | 5 | 3 | 3 | 4 | 6 | 4 | 4 | 4 | 3 | 2 | 3 | 3 |
| Barium | mg/kg | 120 | 58 | 61 | 80 | 77 | 100 | 71 | 84 | 95 | 48 | 71 | 76 | 65 | 73 | 76 |
| Beryllium | mg/kg | 0.8 | 0.4 | 0.5 | 0.6 | 0.5 | 0.5 | <0.4 | 0.5 | <0.8 | <0.4 | 0.4 | 0.6 | 0.4 | <0.4 | <0.4 |
| Boron | mg/kg | 3 | 8 | 4 | 5 | 7 | 8 | 9 | 6 | <4 | 3 | 2 | 7 | 6 | <2 | 3 |
| Cadmium | mg/kg | 0.6 | 0.3 | 0.3 | 0.7 | 0.7 | 0.4 | 0.4 | 0.3 | 0.8 | 0.2 | 0.4 | 0.4 | 0.3 | 0.5 | 0.4 |
| Chromium | mg/kg | 45 | 63 | 39 | 42 | 38 | 51 | 31 | 53 | 20 | 43 | 41 | 47 | 35 | 22 | 170 |
| Cobalt | mg/kg | 24 | 8 | 15 | 14 | 10 | 14 | 11 | 22 | 10 | 5 | 7 | 10 | 5 | 5 | 6 |
| Copper | mg/kg | 76 | 40 | 65 | 60 | 53 | 51 | 49 | 63 | 64 | 42 | 62 | 56 | 50 | 66 | 53 |
| Iron | mg/kg | 46,000 | 27,000 | 38,000 | 41,000 | 22,000 | 27,000 | 30,000 | 40,000 | 11,000 | 23,000 | 15,000 | 35,000 | 14,000 | 6,400 | 8,800 |
| Lead | mg/kg | 6 | 6 | 6 | 5 | 6 | 9 | 6 | 6 | 4 | 3 | 5 | 7 | 4 | 4 | 7 |
| Lithium | mg/kg | 23 | 11 | 16 | 18 | 16 | 19 | 13 | 15 | <20 | <10 | 11 | 13 | <10 | <10 | <10 |
| Manganese | mg/kg | 2400 | 220 | 320 | 420 | 410 | 360 | 380 | 280 | 140 | 94 | 110 | 290 | 110 | 62 | 110 |
| Mercury | mg/kg | <0.05 | 0.06 | 0.09 | 0.06 | 0.07 | 0.09 | 0.09 | <0.05 | 0.2 | <0.05 | 0.12 | 0.07 | 0.06 | <0.05 | <0.05 |
| Molybdenum | mg/kg | 3.6 | 3 | 3.7 | 5 | 3 | 3.1 | 3.3 | 3.9 | 1 | 3.2 | 2.9 | 4 | 3.1 | 2.2 | 2.3 |
| Nickel | mg/kg | 88 | 42 | 30 | 35 | 36 | 64 | 26 | 40 | 41 | 35 | 40 | 36 | 29 | 31 | 93 |
| Selenium | mg/kg | 1 | 0.7 | 0.9 | 1.1 | 1 | 0.8 | 0.9 | 1.3 | 1 | 0.8 | 0.9 | 1 | 0.8 | 1 | 0.9 |
| Silver | mg/kg | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 | <1 | <1 | <1 | <1 | <1 | <1 |
| Strontium | mg/kg | 13 | 16 | 11 | 18 | 20 | 22 | 20 | 16 | 39 | 16 | 20 | 18 | 19 | 23 | 22 |
| Thallium | mg/kg | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.6 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Titanium | mg/kg | 360 | 230 | 370 | 290 | 270 | 340 | 270 | 330 | 190 | 190 | 300 | 250 | 190 | 230 | 180 |
| Uranium | mg/kg | 4 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 |
| Vanadium | mg/kg | 51 | 30 | 42 | 46 | 37 | 38 | 33 | 43 | 20 | 32 | 35 | 40 | 28 | 23 | 28 |
| Zinc | mg/kg | 150 | 78 | 91 | 170 | 89 | 84 | 79 | 96 | 100 | 52 | 69 | 93 | 58 | 89 | 77 |
| **General Organics** | | | | | | | | | | | | | | | | |
| Total Phenolics | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | 0.05 | <0.02 | <0.02 | 0.14 | <0.02 | <0.02 | 0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| F1 ($C_6$-$C_{10}$) | mg/kg | <84 | <130 | <96 | <160 | <180 | <130 | <200 | <160 | <78 | <96 | <120 | 310 | <120 | <96 | <160 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/kg | <84 | <130 | <96 | <160 | <180 | <130 | <200 | <160 | <78 | <96 | <120 | 310 | <120 | <96 | <160 |
| F2 ($C_{10}$-$C_{16}$) | mg/kg | <60 | <100 | <70 | <100 | <300 | <90 | <100 | <10 | <60 | <80 | <100 | <100 | <100 | <10 | <10 |
| F3 ($C_{16}$-$C_{34}$) | mg/kg | <60 | <100 | <70 | <100 | <300 | <90 | <100 | <10 | 330 | <80 | 170 | <100 | <100 | 240 | 140 |
| F4 ($C_{34}$-$C_{50}$) | mg/kg | <60 | <100 | <70 | <100 | <300 | <90 | <100 | <10 | <60 | <80 | <100 | <100 | <100 | 18 | <10 |

**Table A-10 Sediment Quality Data Collected during July/August 2011 (continued)**

| Parameter | Units | EAST LAKE | X6 | A3 | AREA 3+5 | AREA 4 | AREA 6 | AREA 7 | AREA 8 | D2 | D3 | E1 | N1 | N2 | N7 | N6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 22-Jul-11 | 22-Jul-11 | 22-Jul-11 | 14-Jul-11 | 15-Jul-11 | 14-Jul-11 | 14-Jul-11 | 17-Jul-11 | 19-Jul-11 | 20-Jul-11 | 20-Jul-11 | 21-Jul-11 | 21-Jul-11 | 17-Jul-11 | 17-Jul-11 |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| Benzene | mg/kg | <0.035 | 0.059 | 0.055 | <0.065 | <0.075 | 0.11 | <0.085 | <0.065 | 0.058 | <0.04 | 0.69 | <0.05 | 0.63 | <0.04 | <0.065 |
| Toluene | mg/kg | <0.14 | <0.22 | <0.16 | <0.26 | <0.3 | <0.22 | <0.34 | <0.26 | 0.14 | <0.16 | <0.2 | <0.2 | <0.2 | <0.16 | <0.26 |
| Ethylbenzene | mg/kg | 0.12 | 0.24 | 0.11 | <0.13 | <0.15 | <0.11 | <0.17 | <0.13 | <0.065 | <0.08 | <0.1 | <0.1 | <0.1 | <0.08 | <0.13 |
| m&p-Xylene | mg/kg | <0.28 | <0.44 | <0.32 | <0.52 | <0.6 | <0.44 | <0.68 | <0.52 | <0.26 | <0.32 | <0.4 | <0.4 | <0.4 | <0.32 | <0.52 |
| o-Xylene | mg/kg | 0.16 | 0.27 | <0.16 | <0.26 | <0.3 | <0.22 | <0.34 | <0.26 | <0.13 | <0.16 | <0.2 | <0.2 | <0.2 | <0.16 | <0.26 |
| Xylenes | mg/kg | 0.42 | 0.68 | 0.42 | <0.52 | <0.6 | <0.44 | <0.68 | <0.52 | <0.26 | <0.32 | <0.4 | <0.4 | <0.4 | <0.32 | <0.52 |

**Table A-10 Sediment Quality Data Collected during July/August 2011 (continued)**

| Parameter | Units | N9 | N11 (BASIN) | N12 | N13 | N16 | N17 | M3 | M3.2 | M4 | M4.2 | L410 | L410.2 | KIRK | KIRK 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16-Jul-11 | 21-Jul-11 | 16-Jul-11 | 15-Jul-11 | 23-Jul-11 | 18-Jul-11 | 8/18/2011 | 8/10/2011 | 8/20/2011 | 8/10/2011 | 8/10/2011 | 8/13/2011 | 8/10/2011 | 8/9/2011 |
| **Texture** | | | | | | | | | | | | | | | |
| Particle size - % sand | % | 73 | 68 | 73 | 59 | 97 | 73 | 63 | 62 | 67 | 59 | 66 | 67 | 43 | 88 |
| Particle size - % silt | % | 24 | 26 | 20 | 31 | 3 | 18 | 24 | 27 | 28 | 30 | 23 | 23 | 41 | 10 |
| Particle size - % clay | % | 3 | 6 | 8 | 10 | <2 | 9 | 14 | 11 | 5 | 11 | 11 | 10 | 16 | <2 |
| moisture content | % | 77 | 92 | 93 | 92 | 43 | 92 | 90 | 91 | 92 | 88 | 91 | 82 | 85 | 31 |
| **Conventional Parameters** | | | | | | | | | | | | | | | |
| Total Organic Carbon | % | 5.6 | 15 | 21 | 34 | 0.5 | 16 | 13 | 7.9 | 15 | 9.1 | 14 | 13 | 7.4 | 0.61 |
| Total Inorganic Carbon | % | <0.02 | 0.04 | 0.23 | 1.7 | 0.04 | 0.03 | <0.02 | <0.02 | 0.11 | 0.87 | 1.4 | 1.5 | 0.58 | 0.06 |
| Total Carbon | % | 5.4 | 15 | 21 | 35 | 0.53 | 16 | 13 | 7.4 | 15 | 9.9 | 15 | 14 | 7.9 | 0.66 |
| **Total Metals** | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 4500 | 15000 | 9700 | 6600 | 2000 | 11000 | 19000 | 16000 | 20000 | 12000 | 7300 | 8600 | 14000 | 3500 |
| Antimony | mg/kg | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Arsenic | mg/kg | 1 | 3 | 3 | 3 | <1 | 4 | 5 | 3 | 4 | 6 | 2 | 2 | 3 | 1 |
| Barium | mg/kg | 34 | 76 | 59 | 64 | 13 | 61 | 95 | 110 | 85 | 71 | 64 | 56 | 100 | 52 |
| Beryllium | mg/kg | <0.4 | 0.7 | 0.4 | <0.4 | <0.4 | 0.4 | 0.6 | 0.5 | 0.9 | 0.7 | <0.4 | <0.4 | 0.5 | <0.4 |
| Boron | mg/kg | <2 | 7 | 3 | <2 | <2 | 6 | 3 | 6 | <2 | 4 | 6 | 5 | 5 | 2 |
| Cadmium | mg/kg | 0.1 | 0.4 | 0.5 | 0.5 | <0.1 | 0.4 | 0.6 | 0.2 | 0.8 | 0.6 | 0.2 | 0.4 | 0.2 | 0.1 |
| Chromium | mg/kg | 13 | 42 | 51 | 14 | 4 | 110 | 39 | 51 | 36 | 34 | 35 | 38 | 50 | 17 |
| Cobalt | mg/kg | 4 | 8 | 9 | 5 | 2 | 10 | 13 | 13 | 14 | 16 | 8 | 5 | 13 | 4 |
| Copper | mg/kg | 13 | 62 | 49 | 40 | <5 | 54 | 61 | 39 | 73 | 48 | 36 | 39 | 40 | <5 |
| Iron | mg/kg | 11000 | 36000 | 15000 | 12000 | 5200 | 29000 | 31000 | 21000 | 37000 | 40000 | 16000 | 11000 | 20000 | 7900 |
| Lead | mg/kg | 2 | 5 | 5 | 3 | 1 | 7 | 6 | 4 | 6 | 4 | 3 | 5 | 4 | 1 |
| Lithium | mg/kg | <10 | 17 | <10 | <10 | <10 | 10 | 20 | 33 | 15 | 12 | 15 | 12 | 30 | 13 |
| Manganese | mg/kg | 430 | 230 | 120 | 97 | 93 | 180 | 310 | 290 | 330 | 510 | 150 | 130 | 280 | 150 |
| Mercury | mg/kg | <0.05 | 0.05 | 0.06 | 0.09 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.07 | <0.05 | <0.05 |
| Molybdenum | mg/kg | 1 | 5.2 | 5.4 | 2.5 | <0.4 | 3.1 | 4.1 | 1.3 | 4.6 | 5.4 | 1.6 | 1.5 | 1.3 | 0.4 |
| Nickel | mg/kg | 10 | 33 | 39 | 20 | 4 | 65 | 36 | 40 | 32 | 39 | 31 | 28 | 40 | 11 |
| Selenium | mg/kg | <0.5 | 1 | 1 | 1 | <0.5 | 1.1 | 0.9 | 0.5 | 1.2 | 0.7 | 0.7 | 0.5 | <0.5 | <0.5 |
| Silver | mg/kg | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Strontium | mg/kg | <10 | 19 | 22 | 36 | <10 | 18 | 17 | 15 | 16 | 13 | 17 | 17 | 16 | <10 |

**Table A-10 Sediment Quality Data Collected during July/August 2011 (continued)**

| Parameter | Units | N9 | N11 (BASIN) | N12 | N13 | N16 | N17 | M3 | M3.2 | M4 | M4.2 | L410 | L410.2 | KIRK | KIRK 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16-Jul-11 | 21-Jul-11 | 16-Jul-11 | 15-Jul-11 | 23-Jul-11 | 18-Jul-11 | 8/18/2011 | 8/10/2011 | 8/20/2011 | 8/10/2011 | 8/10/2011 | 8/13/2011 | 8/10/2011 | 8/9/2011 |
| Thallium | mg/kg | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Titanium | mg/kg | 200 | 300 | 170 | 120 | 110 | 170 | 360 | 960 | 240 | 250 | 370 | 230 | 850 | 400 |
| Uranium | mg/kg | 1 | 4 | 4 | 2 | <1 | 2 | 3 | 2 | 4 | 3 | 3 | 3 | 2 | <1 |
| Vanadium | mg/kg | 13 | 41 | 30 | 18 | 6 | 34 | 51 | 47 | 61 | 44 | 27 | 26 | 46 | 16 |
| Zinc | mg/kg | 24 | 110 | 170 | 59 | 13 | 88 | 140 | 100 | 160 | 180 | 56 | 55 | 96 | 20 |
| **General Organics** | | | | | | | | | | | | | | | |
| Total Phenolics | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | 0.04 | <0.02 | 0.45 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| F1 ($C_6$-$C_{10}$) | mg/kg | <48 | <120 | <180 | <160 | <12 | <160 | <120 | <130 | <140 | <96 | <130 | <60 | <79 | <12 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/kg | <48 | <120 | <180 | <160 | <12 | <160 | <120 | <130 | <140 | <96 | <130 | <60 | <79 | <12 |
| F2 ($C_{10}$-$C_{16}$) | mg/kg | <40 | <100 | <100 | <100 | <10 | <10 | <90 | <100 | <10 | <70 | <100 | <50 | <50 | <10 |
| F3 ($C_{16}$-$C_{34}$) | mg/kg | <40 | <100 | <100 | 170 | <10 | <10 | <90 | <100 | <10 | <70 | <100 | <50 | <50 | <10 |
| F4 ($C_{34}$-$C_{50}$) | mg/kg | <40 | <100 | <100 | <100 | <10 | <10 | <90 | <100 | <10 | <70 | <100 | <50 | <50 | <10 |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| Benzene | mg/kg | <0.02 | <0.05 | <0.075 | <0.065 | <0.005 | <0.065 | <0.05 | <0.053 | <0.06 | <0.04 | <0.054 | <0.025 | <0.033 | <0.005 |
| Toluene | mg/kg | <0.08 | <0.2 | <0.3 | <0.26 | <0.02 | <0.26 | <0.1 | <0.11 | <0.12 | <0.08 | <0.11 | <0.05 | <0.066 | <0.01 |
| Ethylbenzene | mg/kg | <0.04 | <0.1 | <0.15 | <0.13 | 0.012 | <0.13 | <0.2 | <0.21 | <0.24 | <0.16 | <0.22 | <0.1 | <0.13 | <0.02 |
| m&p-Xylene | mg/kg | <0.16 | <0.4 | <0.6 | <0.52 | <0.04 | <0.52 | <0.4 | <0.42 | <0.48 | <0.32 | <0.43 | <0.2 | <0.26 | <0.04 |
| o-Xylene | mg/kg | <0.08 | <0.2 | <0.3 | <0.26 | 0.021 | <0.26 | <0.2 | <0.21 | <0.24 | <0.16 | <0.22 | <0.1 | <0.13 | <0.02 |
| Xylenes | mg/kg | <0.16 | <0.4 | <0.6 | <0.52 | <0.04 | <0.52 | <0.4 | <0.42 | <0.48 | <0.32 | <0.43 | <0.2 | <0.26 | <0.04 |

**Note:** % = percent content; n/a = not applicable; µs/cm = micro Siemens per centimeter; mg/kg = milligrams per kilogram.

(a) = Detection limit for sample D2.

(l) = Result exceeds the interim sediment quality guideline (CCME 2002).

(p) = Result exceeds probable effect level (CCME 2002).

F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; m- = meta; p- = para; o- = ortho.

**Table A-11 Quality Assurance / Quality Control Data for Water Quality Parameters during Under-Ice Conditions in April 2011**

| Parameter | Units | A3 | A3 (Split) | Percent Difference | Area 8 | Area 8 (Split) | Percent Difference | Area 4 | Area 4 (Dup) | Percent Difference | Area 7 | Area 7 (Dup) | Percent Difference | Equipment Blank | Equipment Blank | Equipment Blank | Field Blank | Field Blank | Field Blank | Travel Blank | Travel Blank | Travel Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 9-Apr-11 | 9-Apr-11 | | 12-Apr-11 | 12-Apr-11 | | 9-Apr-11 | 9-Apr-11 | | 7-Apr-11 | 7-Apr-11 | | 4-Apr-11 | 12-Apr-11 | 12-Apr-11 | 6-Apr-11 | 8-Apr-11 | 11-Apr-11 | 4-Apr-11 | 7-Apr-11 | 12-Apr-11 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | |
| Depth | metres | 2 | 2 | 0% | 2 | 2 | 0% | 2 | 2 | 0% | 2 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| pH (field) | - | 6.57 | 6.57 | 0% | 6.69 | 6.69 | 0% | 6.52 | 6.52 | 0% | 6.57 | 6.57 | 0% | - | - | - | - | - | - | - | - | - |
| Specific conductivity (field) | µS/cm | 19 | 19 | 0% | 21 | 21 | 0% | 19 | 19 | 0% | 20 | 20 | 0% | - | - | - | - | - | - | - | - | - |
| Temperature | °C | 1.46 | 1.46 | 0% | 1.12 | 1.12 | 0% | 1.23 | 1.23 | 0% | 0.97 | 0.97 | 0% | - | - | - | - | - | - | - | - | - |
| Dissolved oxygen | % | 119.9 | 119.9 | 0% | 106.5 | 106.5 | 0% | 123.8 | 123.8 | 0% | 115.6 | 115.6 | 0% | - | - | - | - | - | - | - | - | - |
| Dissolved oxygen | mg/L | 16.79 | 16.79 | 0% | 15.08 | 15.08 | 0% | 17.45 | 17.45 | 0% | 16.41 | 16.41 | 0% | - | - | - | - | - | - | - | - | - |
| **Conventional Parameters** | | | | | | | | | | | | | | | | | | | | | | |
| Colour | TCU | 3 | 3 | 0% | 3 | 3 | 0% | 2 | 3 | **40%** | 3 | <2 | - | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| pH (laboratory) | - | 7.01 | 7.03 | 0% | 6.84 | 6.85 | 0% | 6.9 | 6.89 | 0% | 6.88 | 6.89 | 0% | 5.93 | 5.67 | 6.2 | 5.81 | 5.7 | 5.71 | 5.8 | 5.69 | 5.56 |
| Specific conductivity (laboratory) | µS/cm | 21 | 21 | 0% | 22 | 22 | 0% | 21 | 21 | 0% | 21 | 22 | 5% | 1 | 1 | 3 | <1 | <1 | 1 | <1 | <1 | 1 |
| Total dissolved solids | mg/L | 26 | 36 | **32%** | 20 | 20 | 0% | 34 | 30 | 13% | 28 | 32 | 13% | <10 | <10 | <10 | <10 | 12 | <10 | <10 | 14 | <10 |
| Total dissolved solids, calculated | mg/L | 10 | <10 | - | <10 | <10 | - | <10 | <10 | - | 10 | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total organic carbon | mg/L | 4.3 | 4.3 | 0% | 4.6 | 3.8 | 19% | 3.4 | 3.8 | 11% | 3.7 | 3.9 | 5% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 | <0.5 | <0.5 | <0.5 |
| Dissolved organic carbon | mg/L | 4.3 | 4.3 | 0% | 4 | 4 | 0% | 3.4 | 3.3 | 3% | 3.7 | 4.3 | 15% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Hardness | mg/L | 8.2 | 8.3 | 1% | 7.3 | 7.4 | 1% | 7.7 | 7.7 | 0% | 7.4 | 7.4 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Hardness | mg-$CaCO_3$/L | 8 | 7.8 | 3% | 7.8 | 7.9 | 1% | 7.2 | 7.3 | 1% | 7.9 | 7.8 | 1% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 7.3 | 8.2 | 12% | 6.2 | 5.8 | 7% | 6.1 | 6.4 | 5% | 6.5 | 6.5 | 0% | 0.7 | <0.5 | <0.5 | 0.5 | <0.5 | 0.8 | 0.6 | 0.7 | <0.5 |
| Turbidity | NTU | 0.4 | 0.4 | 0% | 0.1 | 0.2 | - | 0.1 | 0.3 | - | 0.2 | 0.2 | 0% | <0.1 | 0.1 | 0.2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total suspended solids | mg/L | <1 | 1 | - | 2 | 1 | - | <1 | <1 | - | <1 | <1 | - | 1 | <1 | <1 | <1 | <1 | <1 | 1 | <1 | 1 |
| **Major Ions** | | | | | | | | | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 9 | 10 | 11% | 7.6 | 7.1 | 7% | 7.5 | 7.8 | 4% | 7.9 | 7.9 | 0% | 0.8 | <0.5 | <0.5 | 0.6 | <0.5 | 1 | 0.7 | 0.8 | <0.5 |
| Calcium | mg/L | 2 | 2 | 0% | 1.7 | 1.7 | 0% | 1.8 | 1.8 | 0% | 1.6 | 1.6 | 0% | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Carbonate | mg/L | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | 1 | <1 | - | 2 | 2 | 0% | 2 | 2 | 0% | 2 | 2 | 0% | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 1 |
| Fluoride | mg/L | 0.07 | 0.07 | 0% | 0.05 | 0.05 | 0% | 0.06 | 0.06 | 0% | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Hydroxide | mg/L | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.8 | 0.8 | 0% | 0.7 | 0.7 | 0% | 0.8 | 0.8 | 0% | 0.8 | 0.8 | 0% | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Potassium | mg/L | 0.8 | 0.8 | 0% | 0.5 | 0.6 | 18% | 0.7 | 0.7 | 0% | 0.7 | 0.7 | 0% | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Sodium | mg/L | 0.9 | 0.9 | 0% | 0.9 | 1 | 11% | 0.9 | 0.9 | 0% | 0.9 | 0.9 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sulphate | mg/L | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Sulphide | mg/L | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | | | | | | | | | | |
| Chemical oxygen demand | mg/L | 11 | 8 | **32%** | 10 | 12 | 18% | 5 | 10 | - | 11 | 16 | **37%** | 11 | <5 | <5 | <5 | 7 | **65** | <5 | <5 | <5 |
| nitrate + nitrite | mg-N/L | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | 0.19 | <0.003 | **-** | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Nitrate | mg-N/L | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | 0.19 | <0.003 | **-** | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Nitrite | mg-N/L | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| Total ammonia | mg-N/L | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Total Kjeldahl nitrogen | mg/L | 0.31 | 0.27 | 14% | 0.31 | 0.31 | 0% | 0.32 | 0.28 | 13% | 0.28 | 0.29 | 4% | 0.06 | <0.05 | <0.05 | <0.05 | 0.07 | <0.05 | <0.05 | <0.05 | <0.05 |
| Total phosphorus | mg/L | 0.002 | 0.002 | 0% | 0.002 | 0.002 | 0% | 0.002 | 0.001 | - | <0.001 | <0.001 | - | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | **0.01** | <0.001 | <0.001 |

**Table A-11 Quality Assurance / Quality Control Data for Water Quality Parameters during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | A3 | A3 (Split) | Percent Difference | Area 8 | Area 8 (Split) | Percent Difference | Area 4 | Area 4 (Dup) | Percent Difference | Area 7 | Area 7 (Dup) | Percent Difference | Equipment Blank | Equipment Blank | Equipment Blank | Field Blank | Field Blank | Field Blank | Travel Blank | Travel Blank | Travel Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 9-Apr-11 | 9-Apr-11 | | 12-Apr-11 | 12-Apr-11 | | 9-Apr-11 | 9-Apr-11 | | 7-Apr-11 | 7-Apr-11 | | 4-Apr-11 | 12-Apr-11 | 12-Apr-11 | 6-Apr-11 | 8-Apr-11 | 11-Apr-11 | 4-Apr-11 | 7-Apr-11 | 12-Apr-11 |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0053 | 0.0053 | 0% | 0.0048 | 0.005 | 4% | 0.0028 | 0.0028 | 0% | 0.0034 | 0.0042 | **21%** | **0.0019** | 0.001 | 0.0009 | 0.0006 | 0.0005 | 0.0006 | 0.0008 | **0.002** | **0.0011** |
| Antimony | mg/L | 0.00002 | 0.00003 | - | 0.00002 | 0.00002 | 0% | <0.00002 | <0.00002 | - | <0.00002 | 0.00004 | **-** | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Arsenic | mg/L | 0.00013 | 0.00015 | 14% | 0.00015 | 0.00017 | 13% | 0.00017 | 0.00018 | 6% | 0.00013 | 0.00017 | **27%** | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Barium | mg/L | 0.00222 | 0.0022 | 1% | 0.00299 | 0.0029 | 3% | 0.00271 | 0.00264 | 3% | 0.00359 | 0.00347 | 3% | 0.00009 | 0.00005 | 0.00004 | 0.00005 | 0.00004 | 0.00003 | 0.00003 | 0.00003 | 0.00009 |
| Beryllium | mg/L | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | - | <0.005 | <0.005 | - | <0.005 | <0.005 | - | <0.005 | <0.005 | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.006 | <0.005 | 0.005 | <0.005 |
| Cadmium | mg/L | 0.000007 | <0.000005 | - | 0.00001 | 0.000008 | **22%** | 0.000008 | <0.000005 | **-** | <0.000005 | 0.000008 | **-** | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Chromium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0002 |
| Cobalt | mg/L | 0.000007 | 0.000012 | **53%** | 0.000021 | 0.000017 | **21%** | <0.000005 | 0.000007 | - | 0.000022 | 0.000019 | 15% | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Copper | mg/L | 0.0007 | 0.00068 | 3% | 0.00066 | 0.00066 | 0% | 0.00041 | 0.0004 | 2% | 0.00053 | 0.00053 | 0% | **0.00029** | <0.00005 | 0.00019 | <0.00005 | <0.00005 | <0.00005 | 0.0001 | **0.00046** | 0.00017 |
| Iron | mg/L | 0.005 | 0.005 | 0% | 0.018 | 0.009 | **67%** | 0.004 | 0.003 | **29%** | 0.007 | 0.007 | 0% | 0.005 | 0.001 | <0.001 | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.002 |
| Lead | mg/L | 0.000015 | 0.000019 | **24%** | 0.000042 | 0.00004 | 5% | 0.000012 | 0.000009 | **29%** | 0.000014 | 0.000024 | **53%** | **0.000094** | **0.000106** | **0.000118** | **0.00005** | **0.000047** | **0.000096** | **0.000125** | **0.000105** | **0.000177** |
| Lithium | mg/L | 0.0014 | 0.0013 | 7% | 0.0011 | 0.0013 | 17% | 0.0018 | 0.0016 | 12% | 0.0012 | 0.0013 | 8% | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Manganese | mg/L | 0.00154 | 0.00144 | 7% | 0.00215 | 0.00168 | **25%** | 0.00231 | 0.00218 | 6% | 0.00594 | 0.00787 | **28%** | 0.00005 | **0.00042** | <0.00005 | 0.00007 | <0.00005 | <0.00005 | <0.00005 | 0.00006 | 0.00006 |
| Mercury | mg/L | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | 0.0000007 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00029 | 0.00025 | 15% | 0.00029 | 0.00031 | 7% | 0.00024 | 0.0002 | 18% | 0.00027 | 0.00033 | 20% | 0.00002 | 0.00003 | 0.00006 | <0.00002 | <0.00002 | <0.00002 | 0.00002 | 0.00002 | 0.00002 |
| Selenium | mg/L | <0.00004 | <0.00004 | - | 0.00007 | 0.00005 | **33%** | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | 0.00004 | 0.00005 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | 0.00005 |
| Silicon | mg/L | 0.3 | 0.3 | 0% | 0.3 | 0.2 | **40%** | 0.1 | 0.1 | 0% | 0.2 | 0.2 | 0% | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Silver | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.01 | 0.01 | 0% | 0.011 | 0.0114 | 4% | 0.0111 | 0.0106 | 5% | 0.0118 | 0.0116 | 2% | <0.00005 | <0.00005 | <0.00005 | 0.00006 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00006 |
| Sulphur | mg/L | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | 0.00022 | 0.00023 | 4% | 0.00018 | 0.00017 | 6% | 0.00022 | 0.00017 | **26%** | 0.00014 | 0.00029 | **70%** | **0.00006** | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | **0.00006** | <0.00001 | <0.00001 |
| Thallium | mg/L | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000008 | 0.000008 | 0% | 0.000005 | 0.000005 | 0% | 0.000003 | 0.000002 | - | 0.000002 | 0.000003 | - | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Vanadium | mg/L | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.0017 | 0.0016 | 6% | 0.0014 | 0.0015 | 7% | 0.0012 | 0.0011 | 9% | 0.001 | 0.0017 | **52%** | **0.0017** | **0.0006** | **0.0009** | 0.0004 | 0.0004 | 0.0003 | 0.0002 | 0.0003 | **0.0024** |
| **Dissolved Metals** | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0046 | 0.0044 | 4% | 0.0063 | 0.0037 | **52%** | 0.0023 | 0.0026 | 12% | 0.0026 | 0.0036 | **32%** | **0.0011** | **0.0072** | **0.0013** | 0.0004 | 0.0008 | 0.0005 | 0.0007 | **0.0013** | 0.0008 |
| Antimony | mg/L | 0.00003 | 0.00003 | 0% | 0.00004 | 0.00009 | **77%** | 0.00004 | 0.00003 | **29%** | 0.00007 | 0.00004 | **55%** | 0.00009 | 0.00003 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Arsenic | mg/L | 0.00015 | 0.00014 | 7% | 0.00016 | 0.00014 | 13% | 0.00015 | 0.00015 | 0% | 0.00015 | 0.00015 | 0% | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Barium | mg/L | 0.00222 | 0.00222 | 0% | 0.00301 | 0.00281 | 7% | 0.00258 | 0.00267 | 3% | 0.00297 | 0.00313 | 5% | 0.00008 | 0.00004 | 0.00006 | 0.00003 | 0.00003 | 0.00004 | 0.00004 | 0.00004 | 0.00004 |
| Beryllium | mg/L | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | **0.000044** | <0.000005 | <0.000005 |
| Boron | mg/L | <0.005 | <0.005 | - | <0.005 | <0.005 | - | <0.005 | <0.005 | - | <0.005 | <0.005 | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Cadmium | mg/L | <0.000005 | 0.000006 | - | 0.000006 | 0.000008 | **29%** | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Chromium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0002 |
| Cobalt | mg/L | 0.000335 | 0.000091 | **115%** | 0.000495 | 0.00194 | **119%** | 0.000336 | 0.000261 | **25%** | 0.0017 | 0.000329 | **135%** | **0.000514** | **0.000455** | <0.000005 | **0.000133** | **0.000164** | **0.000068** | <0.000005 | <0.000005 | <0.000005 |
| Copper | mg/L | 0.00081 | 0.00077 | 5% | 0.00058 | 0.0005 | 15% | 0.00047 | 0.00049 | 4% | 0.00045 | 0.00045 | 0% | 0.0002 | 0.00007 | 0.00007 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00011 |
| Iron | mg/L | 0.003 | 0.003 | 0% | 0.006 | 0.01 | **50%** | 0.002 | 0.002 | 0% | 0.006 | 0.004 | **40%** | **0.026** | 0.005 | 0.001 | 0.003 | 0.003 | 0.002 | <0.001 | <0.001 | <0.001 |
| Lead | mg/L | 0.000015 | 0.000012 | **22%** | 0.000015 | 0.000035 | **80%** | 0.000011 | 0.000011 | 0% | 0.000023 | 0.000021 | 9% | **0.000078** | **0.000078** | **0.000116** | 0.000012 | 0.000022 | **0.000062** | **0.000111** | **0.000099** | **0.000157** |
| Lithium | mg/L | 0.0014 | 0.0014 | 0% | 0.0012 | 0.0012 | 0% | 0.0019 | 0.0018 | 5% | 0.0013 | 0.0015 | 14% | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Manganese | mg/L | 0.00176 | 0.00143 | **21%** | 0.00232 | 0.00427 | **59%** | 0.00262 | 0.00244 | 7% | 0.00784 | 0.00713 | 9% | **0.00121** | **0.00094** | 0.00008 | **0.0003** | **0.00031** | **0.00017** | <0.00005 | 0.00006 | <0.00005 |
| Mercury | mg/L | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | - | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 | <0.0000006 |

**Table A-11 Quality Assurance / Quality Control Data for Water Quality Parameters during Under-Ice Conditions in April 2011 (continued)**

| Parameter | Units | A3 | A3 (Split) | Percent Difference | Area 8 | Area 8 (Split) | Percent Difference | Area 4 | Area 4 (Dup) | Percent Difference | Area 7 | Area 7 (Dup) | Percent Difference | Equipment Blank | Equipment Blank | Equipment Blank | Field Blank | Field Blank | Field Blank | Travel Blank | Travel Blank | Travel Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Molybdenum | mg/L | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00034 | 0.00036 | 6% | 0.00032 | 0.00044 | **32%** | 0.00029 | 0.00027 | 7% | 0.00045 | 0.00028 | **47%** | 0.00008 | 0.00008 | 0.00003 | <0.00002 | 0.00008 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Silicon | mg/L | 0.3 | 0.3 | 0% | 0.2 | 0.2 | 0% | 0.1 | 0.1 | 0% | 0.2 | 0.2 | 0% | 0.1 | 0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Selenium | mg/L | <0.00004 | <0.00004 | - | 0.00005 | 0.00005 | 0% | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.0108 | 0.0107 | 1% | 0.0108 | 0.0108 | 0% | 0.0115 | 0.0115 | 0% | 0.0115 | 0.0117 | 2% | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00005 |
| Tin | mg/L | 0.00024 | 0.00023 | 4% | 0.00018 | 0.00017 | 6% | 0.0002 | 0.00018 | 11% | 0.00013 | 0.00027 | **70%** | 0.00002 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00004 | <0.00001 | <0.00001 |
| Thallium | mg/L | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.00001 | 0.00001 | 0% | 0.000006 | 0.000005 | 18% | 0.000004 | 0.000004 | 0% | 0.000002 | 0.000003 | - | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Vanadium | mg/L | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | **0.0012** | **0.0009** | **0.0008** | 0.0004 | **0.0006** | 0.0004 | 0.0002 | 0.0001 | **0.0006** |
| Zinc | mg/L | 0.0015 | 0.0016 | 6% | 0.0014 | 0.0016 | 13% | 0.0013 | 0.0011 | 17% | 0.0012 | 0.0016 | **29%** | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | 0.002 | 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | - | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | - | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | - | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - |
| **Volatile Organics** | | | | | | | | | | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | - |
| Toluene | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | - |
| Ethylbenzene | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | - |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | - |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | - |
| Xylenes | mg/L | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | - |

Note: n/a = not applicable; µS/cm = micro Siemens per centimetre; °C = degrees Celsius; % = percent saturation; mg/L = milligrams per litre; TCU = true colour units: mg-$CaCO_3$/L = milligrams calcium carbonate per litre; NTU = Nephelometric turbidity units; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligrams phosphorus per litre.

F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; m- = meta; p- = para; o- = ortho.

**Bold Percent Difference** = percent difference of duplicate samples greater than 20%; **Bold Results** = blank samples with results greater than five times the detection limit.

## Table A-12 Quality Assurance / Quality Control Data for Water Quality Parameters during Open-Water Condition in July 2011

| Parameter | Units | A3 | A3 (Split) | Percent Difference | Area 7 | Area 7 (Split) | Percent Difference | Area 8 | Area 8 (Split) | Percent Difference | Area 4 | Area 4 (Duplicate) | Percent Difference | M3 | M3 (Duplicate) | Percent Difference | M4.3 | M4.3 (Split) | Percent Difference | Field Blank | Field Blank | Equipment Blank | Equipment Blank | Travel Blank | Travel Blank | Travel Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 22-Jul-11 | 22-Jul-11 | | 14-Jul-11 | 14-Jul-11 | | 17-Jul-11 | 17-Jul-11 | | 15-Jul-11 | 15-Jul-11 | | 18-Aug-11 | 18-Aug-11 | | 20-Aug-11 | 20-Aug-11 | | 19-Jul-11 | 23-Jul-11 | 13-Jul-11 | 23-Jul-11 | 13-Jul-11 | 18-Jul-11 | 21-Jul-11 |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Depth | | 6 | 6 | 0% | 4 | 4 | 0% | 5 | 5 | 0% | 6 | 6 | 0% | 1 | 1 | 0% | 6 | 6 | 0% | - | - | - | - | - | - | - |
| pH (field) | n/a | 6.71 | - | - | 6.65 | - | - | 6.78 | - | - | 6.62 | - | - | 6.65 | - | - | 6.71 | - | - | - | - | - | - | - | - | - |
| Specific conductivity (field) | µS/cm | 13 | - | - | 13 | - | - | 13 | - | - | 12 | - | - | 14 | - | - | 14 | - | - | - | - | - | - | - | - | - |
| Water temperature | °C | 15.19 | - | - | 16.81 | - | - | 16.22 | - | - | 14.91 | - | - | 14.3 | - | - | 13.53 | - | - | - | - | - | - | - | - | - |
| Dissolved oxygen | % | 95.6 | - | - | 98.7 | - | - | 94.8 | - | - | 96.9 | - | - | 95.4 | - | - | 94.1 | - | - | - | - | - | - | - | - | - |
| Dissolved oxygen | mg/L | 9.6 | - | - | 9.58 | - | - | 9.31 | - | - | 9.79 | - | - | 9.77 | - | - | 9.8 | - | - | - | - | - | - | - | - | - |
| **Conventional Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Colour | TCU | 4 | 4 | 0% | 3 | 2 | - | 4 | 4 | 0% | <2 | <2 | - | 5 | 5 | 0% | 5 | 4 | **22%** | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| pH (laboratory) | n/a | 6.89 | 6.86 | 0% | 6.95 | 6.96 | 0% | 6.9 | 6.93 | 0% | 6.82 | 6.81 | 0% | 6.83 | 6.88 | 1% | 6.88 | 6.88 | 0% | 5.64 | 5.47 | 5.51 | 5.39 | 5.6 | 5.57 | 5.66 |
| Specific conductivity (laboratory) | µS/cm | 14 | 14 | 0% | 14 | 14 | 0% | 14 | 14 | 0% | 13 | 13 | 0% | 15 | 15 | 0% | 15 | 15 | 0% | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Total dissolved solids | mg/L | 22 | 24 | 9% | 12 | 12 | 0% | 18 | 14 | 25% | 14 | 14 | 0% | 26 | 24 | 8% | 14 | 12 | 15% | <10 | 12 | <10 | <10 | 24 | <10 | <10 |
| Total dissolved solids, calculated | mg/L | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total organic carbon | mg/L | 3.6 | 3.3 | 9% | 3.4 | 3 | 13% | 2.8 | 3 | 7% | 2.9 | 2.9 | 0% | 4.2 | 3.7 | 13% | 3.7 | 3.4 | 8% | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dissolved organic carbon | mg/L | 3.6 | 3.7 | 3% | 3.3 | 2.7 | 20% | 2.8 | 3 | 7% | 2.8 | 2.9 | 4% | 3.4 | 3.5 | 3% | 3.4 | 3.3 | 3% | <0.5 | <0.5 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 |
| Hardness | mg/L | 4.6 | 4.6 | 0% | 4.7 | 4.7 | 0% | 4.9 | 4.9 | 0% | 4.3 | 4.7 | 9% | 5 | 5 | 0% | 4.9 | 5 | 2% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Hardness | mg-$CaCO_3$/L | 9.1 | 17.8 | **65%** | 4.6 | 4.7 | 2% | 4.8 | 4.7 | 2% | 4.5 | 4.3 | 5% | 4.8 | 4.9 | 2% | 5.2 | 5.2 | 0% | <0.5 | <0.5 | <0.5 | **12.4** | <0.5 | <0.5 | <0.5 |
| Alkalinity, phenolphthalein | mg-$CaCO_3$/L | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total alkalinity | mg-$CaCO_3$/L | 4.7 | 4.2 | 11% | 3.7 | 3.7 | 0% | 3.7 | 3.7 | 0% | 3.6 | 3.5 | 3% | 3.6 | 3.5 | 3% | 3.8 | 3.8 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Turbidity | NTU | 0.2 | 0.2 | 0% | 0.4 | 0.4 | 0% | 0.2 | 0.2 | 0% | 0.1 | 0.2 | - | 0.3 | 0.4 | **29%** | 0.3 | 0.3 | 0% | <0.1 | 0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Total suspended solids | mg/L | <1 | <1 | - | 1 | 1 | 0% | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | 1 | <1 | <1 | <1 | <1 | <1 | <1 |
| **Major Ions** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bicarbonate | mg/L | 5.7 | 5.2 | 9% | 4.5 | 4.5 | 0% | 4.5 | 4.5 | 0% | 4.4 | 4.3 | 2% | 4.4 | 4.3 | 2% | 4.6 | 4.6 | 0% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Calcium | mg/L | 1.1 | 3.7 | **108%** | 1.1 | 1.1 | 0% | 1.1 | 1.1 | 0% | 1.1 | 1.1 | 0% | 1.07 | 1.27 | 17% | 1.18 | 1.18 | 0% | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | 0.37 |
| Carbonate | mg/L | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/L | <1 | <1 | - | 1 | 1 | 0% | <1 | 1 | - | <1 | <1 | - | <1 | 2 | **-** | <1 | <1 | - | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Fluoride | mg/L | 0.06 | 0.06 | 0% | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Hydroxide | mg/L | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Magnesium | mg/L | 0.46 | 0.53 | 14% | 0.5 | 0.5 | 0% | 0.5 | 0.5 | 0% | 0.4 | 0.5 | **22%** | 0.5 | 0.44 | 13% | 0.53 | 0.54 | 2% | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Potassium | mg/L | 0.39 | 0.39 | 0% | 0.37 | 0.33 | 11% | 0.38 | 0.36 | 5% | 0.31 | 0.34 | 9% | 0.42 | 0.45 | 7% | 0.43 | 0.45 | 5% | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Sodium | mg/L | <0.5 | 0.62 | - | 0.52 | <0.5 | - | 0.6 | 0.6 | 0% | <0.5 | <0.5 | - | 0.57 | 0.6 | 5% | 0.6 | 0.61 | 2% | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sulphate | mg/L | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Sulphide | mg/L | <0.002 | 0.007 | **-** | 0.004 | <0.002 | **-** | 0.01 | 0.022 | **75%** | <0.002 | 0.004 | **-** | <0.002 | <0.002 | - | <0.002 | <0.002 | - | **0.021** | <0.002 | 0.004 | <0.002 | <0.002 | **0.027** | <0.002 |
| **Nutrients and Biological Measurements** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorophyll a | µg/L | <0.5 | 0.8 | **-** | 1.3 | 1.1 | 17% | 0.9 | 1 | 11% | 0.7 | <0.5 | - | 2.4 | 1.2 | **67%** | 1 | 1.6 | **46%** | <0.5 | <0.5 | - | - | - | - | - |
| Chemical oxygen demand | mg/L | 14 | 13 | 7% | 14 | 7 | **67%** | 12 | 16 | **29%** | 13 | 12 | 8% | 6 | 5 | 18% | <5 | 7 | - | <5 | 7 | 5 | 7 | <5 | <5 | <5 |
| Nitrate + Nitrite | mg-N/L | <0.003 | 0.012 | **-** | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | 0.007 | 0.003 | 0.009 | <0.003 | 0.003 |
| Nitrate | mg-N/L | <0.003 | 0.012 | **-** | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | <0.003 | 0.003 | 0.003 | <0.003 | 0.003 |
| Nitrite | mg-N/L | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | - | <0.003 | <0.003 | 0.007 | <0.003 | 0.006 | <0.003 | <0.003 |
| Total ammonia | mg-N/L | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | 0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.09 |
| Total Kjeldahl nitrogen | mg/L | 0.19 | 0.23 | 19% | 0.19 | 0.2 | 5% | 0.27 | 0.33 | 20% | 0.19 | 0.15 | **24%** | 0.37 | 0.36 | 3% | 0.27 | 0.3 | 11% | <0.05 | <0.05 | <0.05 | 0.2 | <0.05 | <0.05 | 0.12 |
| Total phosphorus | mg/L | 0.008 | 0.002 | **120%** | 0.004 | 0.005 | **22%** | 0.009 | 0.004 | **77%** | 0.003 | 0.002 | **40%** | 0.003 | 0.002 | **40%** | 0.002 | 0.004 | **67%** | 0.003 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | <0.001 |

**Table A-12 Quality Assurance / Quality Control Data for Water Quality Parameters during Open-Water Condition in July 2011 (continued)**

| Parameter | Units | A3 | A3 (Split) | Percent Difference | Area 7 | Area 7 (Split) | Percent Difference | Area 8 | Area 8 (Split) | Percent Difference | Area 4 | Area 4 (Duplicate) | Percent Difference | M3 | M3 (Duplicate) | Percent Difference | M4.3 | M4.3 (Split) | Percent Difference | Field Blank | Field Blank | Equipment Blank | Equipment Blank | Travel Blank | Travel Blank | Travel Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 22-Jul-11 | 22-Jul-11 | | 14-Jul-11 | 14-Jul-11 | | 17-Jul-11 | 17-Jul-11 | | 15-Jul-11 | 15-Jul-11 | | 18-Aug-11 | 18-Aug-11 | | 20-Aug-11 | 20-Aug-11 | | 19-Jul-11 | 23-Jul-11 | 13-Jul-11 | 23-Jul-11 | 13-Jul-11 | 18-Jul-11 | 21-Jul-11 |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0179 | 0.0283 | **45%** | 0.007 | 0.0068 | 3% | 0.0104 | 0.0114 | 9% | 0.0045 | 0.0053 | 16% | 0.0098 | 0.0109 | 11% | 0.0095 | 0.009 | 5% | 0.0003 | **0.0012** | **0.0004** | **0.0196** | 0.0005 | 0.0003 | 0.0004 |
| Antimony | mg/L | 0.00003 | 0.00003 | 0% | 0.00008 | 0.00009 | 12% | 0.00003 | 0.00002 | - | 0.00007 | 0.00007 | 0% | <0.00002 | <0.00002 | - | <0.00002 | <0.00002 | - | <0.00002 | <0.00002 | **0.00035** | **0.00065** | <0.00002 | <0.00002 | <0.00002 |
| Arsenic | mg/L | 0.00011 | 0.00012 | 9% | 0.00013 | 0.00014 | 7% | 0.00014 | 0.00013 | 7% | 0.00009 | 0.00011 | 20% | 0.00014 | 0.00013 | 7% | 0.00013 | 0.00013 | 0% | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Barium | mg/L | 0.00223 | 0.00317 | **35%** | 0.00212 | 0.00202 | 5% | 0.00206 | 0.00204 | 1% | 0.00199 | 0.00169 | 16% | 0.00198 | 0.00198 | 0% | 0.00212 | 0.00212 | 0% | <0.00002 | 0.00007 | 0.00004 | 0.00147 | 0.00003 | <0.00002 | 0.00002 |
| Beryllium | mg/L | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Total recoverable bismuth | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | 0.000011 | <0.000005 | **-** | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000025 | 0.00002 |
| Boron | mg/L | <0.005 | <0.005 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.005 | <0.005 | - | <0.05 | <0.005 | <0.05 | <0.005 | <0.05 | <0.05 | <0.005 |
| Cadmium | mg/L | <0.000005 | 0.000012 | **-** | <0.000005 | <0.000005 | - | 0.000009 | <0.000005 | **-** | <0.000005 | <0.000005 | - | 0.000008 | 0.000006 | **29%** | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | 0.000005 | <0.000005 | 0.00002 | 0.000005 |
| Chromium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | 0.0001 | <0.0001 |
| Cobalt | mg/L | 0.000023 | 0.000022 | 4% | 0.000018 | 0.000015 | 18% | 0.000027 | 0.000028 | 4% | 0.000011 | 0.00001 | 10% | 0.00003 | 0.000038 | **24%** | 0.000029 | 0.000024 | 19% | <0.000005 | <0.000005 | <0.000005 | 0.000007 | <0.000005 | <0.000005 | <0.000005 |
| Copper | mg/L | 0.00073 | 0.0008 | 9% | 0.0004 | 0.00047 | 16% | 0.00043 | 0.00044 | 2% | 0.00038 | 0.00036 | 5% | 0.00056 | 0.00059 | 5% | 0.00059 | 0.0006 | 2% | 0.00008 | <0.00005 | <0.00005 | 0.00019 | 0.0002 | 0.00015 | 0.00012 |
| Iron | mg/L | 0.021 | 0.024 | 13% | 0.013 | 0.013 | 0% | 0.03 | 0.032 | 6% | 0.009 | 0.009 | 0% | 0.045 | 0.047 | 4% | 0.04 | 0.041 | 2% | <0.001 | 0.001 | <0.001 | **0.009** | <0.001 | <0.001 | <0.001 |
| Lead | mg/L | 0.000055 | 0.000079 | **36%** | 0.000019 | 0.000014 | **30%** | 0.000007 | 0.000012 | **53%** | 0.000013 | 0.000009 | **36%** | 0.000024 | 0.000028 | 15% | 0.000169 | 0.000017 | **163%** | 0.000015 | 0.000016 | 0.000007 | **0.000069** | 0.000022 | 0.000013 | 0.000018 |
| Lithium | mg/L | 0.0011 | 0.0013 | 17% | 0.0007 | 0.0008 | 13% | 0.0008 | 0.0008 | 0% | 0.0008 | 0.0008 | 0% | 0.001 | 0.0011 | 10% | 0.0008 | 0.0008 | 0% | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Manganese | mg/L | 0.00363 | 0.00388 | 7% | 0.00338 | 0.00332 | 2% | 0.00316 | 0.00311 | 2% | 0.00388 | 0.00358 | 8% | 0.00284 | 0.00304 | 7% | 0.00314 | 0.00322 | 3% | <0.00005 | <0.00005 | <0.00005 | 0.00083 | <0.00005 | <0.00005 | <0.00005 |
| Mercury | mg/L | 0.000002 | 0.000002 | 0% | <0.000002 | 0.000003 | - | 0.000003 | <0.000002 | - | <0.000002 | 0.000004 | **-** | - | - | - | | | - | 0.000004 | <0.000002 | <0.000002 | 0.000002 | 0.000003 | <0.000002 | <0.000002 |
| Molybdenum | mg/L | 0.00006 | 0.00008 | **29%** | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00078 | 0.00048 | **48%** | 0.0002 | 0.00024 | 18% | 0.00021 | 0.00024 | 13% | 0.00017 | 0.0002 | 16% | 0.00029 | 0.00031 | 7% | 0.00027 | 0.00032 | 17% | <0.00002 | 0.00003 | <0.00002 | **0.00016** | <0.00002 | <0.00002 | <0.00002 |
| Selenium | mg/L | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silicon | mg/L | 0.2 | 0.2 | 0% | <0.1 | <0.1 | - | 0.1 | 0.1 | 0% | <0.1 | <0.1 | - | 0.2 | 0.2 | 0% | 0.2 | 0.2 | 0% | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Silver | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | 0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.0077 | 0.0108 | **34%** | 0.00709 | 0.00702 | 1% | 0.00713 | 0.00684 | 4% | 0.00661 | 0.00654 | 1% | 0.00658 | 0.00677 | 3% | 0.00726 | 0.00734 | 1% | <0.00005 | 0.00015 | <0.00005 | **0.00421** | <0.00005 | <0.00005 | <0.00005 |
| Sulphur | mg/L | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | 0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | 0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00001 | <0.00001 | 0.00002 |
| Thallium | mg/L | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | 0.000002 | 0.000004 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | <0.000002 | <0.000002 | 0.000004 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000008 | 0.000011 | **32%** | 0.000005 | 0.000003 | **50%** | 0.000005 | 0.000005 | - | 0.000003 | <0.000002 | - | 0.000006 | 0.000006 | 0% | 0.000009 | 0.00001 | 11% | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Vanadium | mg/L | 0.0003 | 0.0009 | **100%** | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | <0.0002 | **0.0007** | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Zinc | mg/L | 0.012 | 0.0253 | **71%** | 0.001 | 0.0017 | **52%** | 0.0014 | 0.0011 | **24%** | 0.0013 | 0.0008 | **48%** | 0.0006 | 0.0002 | **100%** | 0.001 | 0.0007 | **35%** | 0.0003 | **0.0015** | 0.0004 | **0.0215** | 0.0005 | 0.0005 | **0.0006** |
| **Dissolved Metals** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/L | 0.0081 | 0.0198 | **84%** | 0.0042 | 0.0041 | 2% | 0.0067 | 0.0069 | 3% | 0.0037 | 0.003 | **21%** | 0.0065 | 0.0077 | 17% | 0.0062 | 0.0054 | 14% | 0.0003 | <0.0002 | 0.0003 | 0.001 | 0.0004 | 0.0004 | **0.0019** |
| Antimony | mg/L | 0.00002 | 0.00002 | - | 0.00006 | 0.00006 | 0% | 0.00004 | 0.00013 | **106%** | <0.00002 | 0.00002 | - | <0.00002 | <0.00002 | - | <0.00002 | <0.00002 | - | <0.00002 | <0.00002 | **0.00016** | **0.00035** | <0.00002 | <0.00002 | <0.00002 |
| Arsenic | mg/L | 0.00011 | 0.00008 | **32%** | 0.00012 | 0.00013 | 8% | 0.00016 | 0.00013 | **21%** | 0.0001 | 0.0001 | 0% | 0.00014 | 0.00014 | 0% | 0.00015 | 0.00013 | 14% | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 | <0.00002 |
| Barium | mg/L | 0.00155 | 0.00222 | **36%** | 0.00194 | 0.00181 | 7% | 0.00181 | 0.00177 | 2% | 0.00165 | 0.00167 | 1% | 0.00191 | 0.0022 | 14% | 0.00201 | 0.00201 | 0% | **0.00012** | 0.00002 | <0.00002 | 0.00006 | <0.00002 | <0.00002 | **0.00013** |
| Beryllium | mg/L | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.00001 | 0.000015 | **0.000031** |
| Boron | mg/L | <0.005 | <0.005 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | <0.05 | <0.05 | - | 0.008 | 0.008 | 0% | <0.05 | <0.005 | <0.05 | <0.005 | <0.05 | <0.05 | <0.005 |
| Cadmium | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | 0.000007 | 0.000008 | 13% | <0.000005 | <0.000005 | - | 0.000014 | 0.000011 | 24% | <0.000005 | <0.000005 | - | 0.00001 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | 0.000013 | 0.000008 |
| Chromium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | 0.0001 | 0.0001 |
| Cobalt | mg/L | 0.000009 | 0.000014 | **43%** | 0.000009 | 0.000005 | **57%** | 0.000012 | 0.000008 | **40%** | 0.000028 | 0.000007 | **120%** | 0.000015 | 0.000082 | **138%** | 0.000015 | 0.000018 | 18% | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Copper | mg/L | 0.00058 | 0.00059 | 2% | 0.00035 | 0.00041 | 16% | 0.00043 | 0.00036 | 18% | 0.00042 | 0.00035 | 18% | 0.00065 | 0.00074 | 13% | 0.00055 | 0.00063 | 14% | <0.00005 | <0.00005 | <0.00005 | <0.00005 | 0.00021 | 0.00015 | 0.00015 |
| Iron | mg/L | 0.007 | 0.011 | **44%** | 0.004 | 0.004 | 0% | 0.013 | 0.012 | 8% | 0.003 | 0.007 | **80%** | 0.018 | 0.021 | 15% | 0.014 | 0.015 | 7% | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.001 |
| Lead | mg/L | 0.000016 | 0.00004 | **86%** | 0.000007 | 0.000014 | **67%** | 0.000012 | 0.00001 | 18% | 0.000029 | 0.000011 | **90%** | 0.000022 | 0.000083 | **116%** | 0.000011 | 0.000048 | **125%** | 0.000006 | <0.000005 | <0.000005 | 0.000011 | 0.000016 | 0.000015 | 0.000025 |
| Lithium | mg/L | 0.0008 | 0.001 | **22%** | 0.0007 | 0.0008 | 13% | 0.0007 | 0.0008 | 13% | 0.0007 | 0.0008 | 13% | 0.001 | 0.001 | 0% | 0.0009 | 0.0009 | 0% | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Manganese | mg/L | 0.00087 | 0.00113 | **26%** | 0.00094 | 0.00089 | 5% | 0.00057 | 0.00063 | 10% | 0.00099 | 0.00115 | 15% | 0.00097 | 0.00103 | 6% | 0.00072 | 0.00074 | 3% | <0.00005 | <0.00005 | <0.00005 | 0.00006 | <0.00005 | <0.00005 | 0.00009 |
| Mercury | mg/L | <0.000002 | <0.000002 | - | 0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | 0.000003 | - | - | - | - | | | - | 0.000003 | <0.000002 | <0.000002 | 0.000002 | <0.000002 | <0.000002 | <0.000002 |

**Table A-12 Quality Assurance / Quality Control Data for Water Quality Parameters during Open-Water Condition in July 2011 (continued)**

| Parameter | Units | A3 | A3 (Split) | Percent Difference | Area 7 | Area 7 (Split) | Percent Difference | Area 8 | Area 8 (Split) | Percent Difference | Area 4 | Area 4 (Duplicate) | Percent Difference | M3 | M3 (Duplicate) | Percent Difference | M4.3 | M4.3 (Split) | Percent Difference | Field Blank | Field Blank | Equipment Blank | Equipment Blank | Travel Blank | Travel Blank | Travel Blank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 22-Jul-11 | 22-Jul-11 | | 14-Jul-11 | 14-Jul-11 | | 17-Jul-11 | 17-Jul-11 | | 15-Jul-11 | 15-Jul-11 | | 18-Aug-11 | 18-Aug-11 | | 20-Aug-11 | 20-Aug-11 | | 19-Jul-11 | 23-Jul-11 | 13-Jul-11 | 23-Jul-11 | 13-Jul-11 | 18-Jul-11 | 21-Jul-11 |
| Molybdenum | mg/L | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | - | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Nickel | mg/L | 0.00021 | 0.00033 | **44%** | 0.00021 | 0.00031 | **38%** | 0.00022 | 0.00022 | 0% | 0.00025 | 0.00018 | 33% | 0.00029 | 0.00062 | **73%** | 0.00033 | 0.00033 | 0% | <0.00002 | <0.00002 | 0.00002 | 0.00003 | <0.00002 | <0.00002 | <0.00002 |
| Silicon | mg/L | 0.1 | 0.2 | | <0.1 | <0.1 | - | 0.1 | 0.1 | 0% | <0.1 | <0.1 | - | 0.2 | 0.2 | 0% | 0.2 | 0.2 | 0% | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Selenium | mg/L | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | - | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 | <0.00004 |
| Silver | mg/L | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | - | 0.00001 | 0.000006 | **50%** | <0.000005 | <0.000005 | - | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 | <0.000005 |
| Strontium | mg/L | 0.00606 | 0.008 | **28%** | 0.00677 | 0.00637 | 6% | 0.00635 | 0.00615 | 3% | 0.00589 | 0.0064 | 8% | 0.00658 | 0.0062 | 6% | 0.00725 | 0.0073 | 1% | <0.00005 | <0.00005 | <0.00005 | 0.00007 | <0.00005 | <0.00005 | **0.0003** |
| Sulphur | mg/L | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin | mg/L | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | <0.00001 | - | <0.00001 | 0.00004 | **-** | <0.00001 | <0.00001 | - | <0.00001 | 0.00001 | <0.00001 | <0.00001 | 0.00002 | <0.00001 | 0.00003 |
| Thallium | mg/L | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | 0.000002 | <0.000002 | - | <0.000002 | <0.000002 | - | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Titanium | mg/L | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | - | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Uranium | mg/L | 0.000004 | 0.000008 | **67%** | <0.000002 | <0.000002 | - | 0.000005 | 0.000004 | **22%** | 0.000002 | <0.000002 | - | 0.000006 | 0.000006 | 0% | 0.000007 | 0.000009 | **25%** | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 | <0.000002 |
| Vanadium | mg/L | <0.0002 | 0.0003 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | <0.0002 | <0.0002 | - | 0.0003 | 0.0002 | - | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Zirconium | mg/L | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | <0.0001 | <0.0001 | - | **0.0011** | **0.0006** | 0.0004 | **0.0014** | 0.0005 | 0.0004 | **0.0022** |
| Zinc | mg/L | 0.0012 | 0.0106 | **159%** | 0.0012 | 0.0021 | **55%** | 0.0011 | 0.0008 | **32%** | 0.0032 | 0.001 | **105%** | 0.0007 | 0.0013 | **60%** | 0.0162 | 0.0014 | **168%** | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **General Organics** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Naphthenic acids | mg/L | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Total phenolics | mg/L | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | - | <0.002 | <0.002 | - | 0.003 | 0.003 | 0% | <0.002 | <0.002 | - | 0.003 | <0.002 | <0.002 | <0.002 | 0.003 | <0.002 | 0.003 |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F1 ($C_6$-$C_{10}$) | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F2 ($C_{10}$-$C_{16}$) | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F3 ($C_{16}$-$C_{34}$) | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| F4 ($C_{34}$-$C_{50}$) | mg/L | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **Volatile Organics** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Benzene | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Toluene | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Ethylbenzene | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylene, m-, p- | mg/L | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |
| Xylene, o- | mg/L | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | - | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Xylenes | mg/L | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | - | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 | <0.0008 |

**Note**: n/a = not applicable; µS/cm = micro Siemens per centimetre; °C = degrees Celsius; % = percent saturation; mg/L = milligrams per litre; TCU = true colour units: mg-$CaCO_3$/L = milligrams calcium carbonate per litre; NTU = Nephelometric turbidity units; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligrams phosphorus per litre.

F1 ($C_6$-$C_{10}$) = fraction 1 hydrocarbons with 6 to 10 carbon atoms; F1 ($C_6$-$C_{10}$)-BTEX = fraction 1 hydrocarbons with 6 to 10 carbon atoms excluding benzene, toluene, ethylbenzene and xylene; F2 ($C_{10}$-$C_{16}$) = fraction 2 hydrocarbons with 10 to 16 carbon atoms; F3 ($C_{16}$-$C_{34}$) = fraction 3 hydrocarbons with 16 to 34 carbon atoms; F4 ($C_{34}$-$C_{50}$) = fraction F3 hydrocarbons with 34 to 50 carbon atoms; m- = meta; p- = para; o- = ortho.

**Bold Percent Difference** = percent difference of duplicate samples greater than 20%; **Bold Results** = blank samples with results greater than five times the detection limit.

**Table A-13 Sediment Quality Assurance / Quality Control Data for Lake Bottom Samples during July 2011**

| Parameter | Units | A3 | A3 (Split) | Percent Difference | AREA 4 | Area 4 (Duplicate) | Percent Difference | AREA 7 | Area 7 (Split) | Percent Difference | AREA 8 | Area 8 (Duplicate) | Percent Difference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 22-Jul-11 | 22-Jul-11 | | 15-Jul-11 | 15-Jul-11 | | 14-Jul-11 | 14-Jul-11 | | 17-Jul-11 | 17-Jul-11 | |
| **Texture** | | | | | | | | | | | | | |
| Particle size - % sand | % | 55 | 52 | 6% | 58 | 63 | 8% | 60 | 60 | 0% | 63 | 65 | 3% |
| Particle size - % silt | % | 36 | 34 | 6% | 32 | 28 | 13% | 24 | 25 | 4% | 29 | 28 | 4% |
| Particle size - % clay | % | 10 | 14 | **33%** | 10 | 9 | 11% | 17 | 15 | 13% | 8 | 7 | 13% |
| moisture content | % | 88 | 88 | 0% | 93 | 93 | 0% | 94 | 94 | 0% | 93 | 92 | 1% |
| **Conventional Parameters** | | | | | | | | | | | | | |
| Total Organic Carbon | % | 8.7 | 8.2 | 6% | 13 | 11 | 17% | 16 | 16 | 0% | 14 | 14 | 0% |
| Total Inorganic Carbon | % | <0.02 | 0.19 | - | 1.6 | 0.15 | **166%** | 0.1 | 0.37 | **115%** | <0.02 | 0.21 | - |
| Total Carbon | % | 8.2 | 8.4 | 2% | 14 | 12 | 15% | 16 | 16 | 0% | 14 | 15 | 7% |
| **Total Metals** | | | | | | | | | | | | | |
| Aluminum | mg/kg | 13,000 | 13,000 | 0% | 14,000 | 12,000 | 15% | 13,000 | 13,000 | 0% | 14,000 | 15,000 | 7% |
| Antimony | mg/kg | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - |
| Arsenic | mg/kg | 4 | 4 | 0% | 3 | 3 | 0% | 4 | 5 | **22%** | 6 | 7 | 15% |
| Barium | mg/kg | 61 | 61 | 0% | 77 | 67 | 14% | 71 | 79 | 11% | 84 | 73 | 14% |
| Beryllium | mg/kg | 0.5 | 0.5 | 0% | 0.5 | 0.4 | **22%** | <0.4 | 0.5 | - | 0.5 | 0.5 | 0% |
| Boron | mg/kg | 4 | 3 | **29%** | 7 | 3 | **80%** | 9 | 10 | 11% | 6 | 5 | 18% |
| Cadmium | mg/kg | 0.3 | 0.3 | 0% | 0.7 | 0.6 | 15% | 0.4 | 0.4 | 0% | 0.3 | 0.4 | **29%** |
| Chromium | mg/kg | 39 | 37 | 5% | 38 | 35 | 8% | 31 | 56 | **57%** | 53 | 85 | **46%** |
| Cobalt | mg/kg | 15 | 15 | 0% | 10 | 9 | 11% | 11 | 12 | 9% | 22 | 25 | 13% |
| Copper | mg/kg | 65 | 65 | 0% | 53 | 44 | 19% | 49 | 55 | 12% | 63 | 66 | 5% |
| Iron | mg/kg | 38,000 | 38,000 | 0% | 22,000 | 18,000 | 20% | 30,000 | 31,000 | 3% | 40,000 | 47,000 | 16% |
| Lead | mg/kg | 6 | 6 | 0% | 6 | 4 | **40%** | 6 | 7 | 15% | 6 | 6 | 0% |
| Lithium | mg/kg | 16 | 18 | 12% | 16 | 13 | **21%** | 13 | 13 | 0% | 15 | 15 | 0% |
| Manganese | mg/kg | 320 | 330 | 3% | 410 | 280 | **38%** | 380 | 410 | 8% | 280 | 290 | 4% |
| Mercury | mg/kg | 0.09 | 0.08 | 12% | 0.07 | <0.05 | - | 0.09 | 0.09 | 0% | <0.05 | <0.05 | - |
| Molybdenum | mg/kg | 3.7 | 3.7 | 0% | 3 | 3.2 | 6% | 3.3 | 3.9 | 17% | 3.9 | 4.1 | 5% |
| Nickel | mg/kg | 30 | 29 | 3% | 36 | 31 | 15% | 26 | 39 | **40%** | 40 | 55 | **32%** |
| Selenium | mg/kg | 0.9 | 0.9 | 0% | 1 | 0.9 | 11% | 0.9 | 1 | 11% | 1.3 | 1.3 | 0% |
| Silver | mg/kg | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - | <1 | <1 | - |
| Strontium | mg/kg | 11 | 12 | 9% | 20 | 16 | **22%** | 20 | 20 | 0% | 16 | 16 | 0% |
| Thallium | mg/kg | <0.3 | <0.3 | - | <0.3 | <0.3 | - | <0.3 | <0.3 | - | <0.3 | <0.3 | - |
| Titanium | mg/kg | 370 | 400 | 8% | 270 | 250 | 8% | 270 | 270 | 0% | 330 | 310 | 6% |
| Uranium | mg/kg | 3 | 3 | 0% | 3 | 2 | - | 2 | 3 | | 3 | 3 | 0% |
| Vanadium | mg/kg | 42 | 41 | 2% | 37 | 34 | 8% | 33 | 36 | 9% | 43 | 44 | 2% |
| Zinc | mg/kg | 91 | 90 | 1% | 89 | 120 | **30%** | 79 | 87 | 10% | 96 | 100 | 4% |
| **General Organics** | | | | | | | | | | | | | |
| Total Phenolics | mg/kg | <0.02 | <0.02 | - | 0.05 | <0.02 | - | <0.02 | <0.02 | - | 0.14 | 0.08 | **55%** |
| F1 ($C_6$-$C_{10}$) - BTEX | mg/kg | <96 | <96 | - | <180 | <170 | - | <200 | <220 | - | <160 | <160 | - |
| F1 ($C_6$-$C_{10}$) | mg/kg | <96 | <96 | - | <180 | <170 | - | <200 | <220 | - | <160 | <160 | - |
| F2 ($C_{10}$-$C_{16}$) | mg/kg | <70 | <80 | - | <300 | <100 | - | <100 | <200 | - | <10 | <10 | - |
| F3 ($C_{16}$-$C_{34}$) | mg/kg | <70 | <80 | - | <300 | <100 | - | <100 | <200 | - | <10 | <10 | - |
| F4 ($C_{34}$-$C_{50}$) | mg/kg | <70 | <80 | - | <300 | <100 | - | <100 | <200 | - | <10 | <10 | - |
| **Volatile Organics** | | | | | | | | | | | | | |
| Benzene | mg/kg | 0.055 | 0.18 | **106%** | <0.075 | <0.07 | - | <0.085 | <0.09 | - | <0.065 | <0.065 | - |
| Toluene | mg/kg | <0.16 | <0.16 | - | <0.3 | <0.28 | - | <0.34 | <0.36 | - | <0.26 | <0.26 | - |
| Ethylbenzene | mg/kg | 0.11 | 0.089 | **21%** | <0.15 | <0.14 | - | <0.17 | <0.18 | - | <0.13 | <0.13 | - |
| m&p-Xylene | mg/kg | <0.32 | <0.32 | - | <0.6 | <0.56 | - | <0.68 | <0.72 | - | <0.52 | <0.52 | - |
| o-Xylene | mg/kg | <0.16 | <0.16 | - | <0.3 | <0.28 | - | <0.34 | <0.36 | - | <0.26 | <0.26 | - |
| Xylenes | mg/kg | 0.42 | 0.36 | 15% | <0.6 | <0.56 | - | <0.68 | <0.72 | - | <0.52 | <0.52 | - |

Note: [(a)] = Range of minimum and maximum detection limits presented.

% = percent content; n/a = not applicable; µs/cm = micro Siemens per centimetre; mg/kg = milligrams per kilogram, **Bold value** = percent difference greater than 20%.

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.


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