



**PEBBLE PROJECT
ENVIRONMENTAL BASELINE DOCUMENT
2004 through 2008**

**APPENDIX B.
ILIAMNA LAKE STUDY**

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ACRONYMS AND ABBREVIATIONS

ANOVA	analysis of variance
°C	degrees Celsius
CaCO ₃	calcium carbonate
CALC	chronic aquatic life criteria
CAS	Columbia Analytical Services, Inc
DO	dissolved oxygen
HCO ₃	bicarbonate
HDR	HDR Alaska, Inc.
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
µS/cm	microSiemens per centimeter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliter(s)
mS/cm	milliSiemens per centimeter
MDL	method detection limit
MRL	method reporting limit
NH ₃	ammonia (as N)
NH ₄	ammonium ion
NO ₂	nitrite
NO ₃	nitrate
NTU	nephelometric turbidity unit(s)
ORP	oxidation reduction potential
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
RRO	residual range organics
SE	standard error
SGS	SGS Environmental Services, Inc.
SO ₄	sulfate
TDS	total dissolved solids
TSS	total suspended solids
WAD	weak-acid dissociable

B. APPENDIX B, ILIAMNA LAKE STUDY

B.1 Introduction

Iliamna Lake is the largest lake in the state of Alaska. At approximately 120 kilometers long and 35 kilometers wide, it encompasses 2,622 square kilometers, is more than 300 meters in depth (with a mean depth of 44 meters), and contains a volume of 115.31 cubic kilometers (Lenarz, 1965). Iliamna Lake empties into the Kvichak River, which flows into Bristol Bay.

This report includes study goals, objectives, methods, and results for the environmental and biological components of Iliamna Lake that relate to the Pebble Project. The environmental and biological components are water quality, sediment, mussel tissue, and zooplankton. The sampling program was conducted in 2005 through 2007. The study team collected 2 years of baseline data for each site.

B.2 Study Objectives

This study supplements other ongoing investigations of freshwater systems in the vicinity of the Pebble Project by gathering information on the existing conditions in Iliamna Lake. The specific objectives of the Iliamna Lake Study are as follows:

- Describe existing water quality, sediment, and zooplankton conditions in the lake based on data collected at deeper-water locations.
- Collect baseline information on contaminant accumulation in mussels in relation to the nearby water quality and sediment content.

Water-quality and sediment analyses provide an indication of the baseline characteristics of the physical environment of Iliamna Lake. Zooplankton results are compared throughout the open-water period and among sites to understand spatial and temporal variations in the population that may naturally occur. Mussels were collected because they are known to bioaccumulate aquatic trace elements and may be effective indicators of pollutants such as mercury and other constituents (NOAA, 2007). The results of mussel analyses can be compared with sediment and water-quality data collected at sampling stations located at the same nearshore stations where the mussels were collected.

B.3 Study Area

The study area is in the northeast portion of Iliamna Lake (Figure B-1), extending from the mouth of Upper Talarik Creek to the village of Pile Bay. The area that extends from Upper Talarik Creek to just beyond Whistlewing Bay has a mean depth of 74 meters and contains a variable, glacially scoured bottom. The eastern extent of the lake contains many islands, submerged reefs and pinnacles, and isolated bays with a highly variable bottom contour (Hoag, 1972). This area includes Knutson Bay, Finn Bay, Flat Island, and Pile Bay.

The five deeper-water sites selected for sampling water quality, sediments, zooplankton, and field parameters were located at Pile Bay, Knutson Bay, Northeast Bay (just east of the Iliamna boat dock), Roadhouse Bay, and the mouth of Upper Talarik Creek. The site named Upper Talarik Creek is still technically in Iliamna Lake, although it is recognized that it may be influenced by water quality and hydrology parameters of Upper Talarik Creek. Mussels were collected from nearshore areas at Finn Bay, Flat Island, Bucket Lake, and Whistlewing Bay (Figure B-1). Table B-1 lists the sampling sites and sampling events at each site.

B.4 Scope of Work

The study team conducted the research, field work, and analysis for the Iliamna Lake Study during 2005, 2006, and 2007. The study team consisted of Andra Love, Isaac Watkins, Lynn Spencer, Rebecca Moore, Brent Fenty, and Erin Cunningham of HDR Alaska, Inc. (HDR). John Baechler, John Baechler Jr., and R. B. Smith provided local services. The study team performed its work according to the approach described in the study plan for Pebble Project (a copy is provided in Appendix E of this environmental baseline document) and the field sampling plans for Iliamna Lake (copies are provided in Appendix F).

From May through October 2005 and 2007, the study team collected the following types of samples and information monthly at the five deeper-water sampling sites unless otherwise noted and with the exception of Upper Talarik Creek, which was not visited in September 2005 because of weather conditions:

- Ambient water measurements (also referred to as field parameters): dissolved oxygen (DO), temperature, specific conductance, oxidation reduction potential (ORP), pH, turbidity, and water clarity were recorded at each site, except no pH readings were taken in October 2005 because of an instrument malfunction.
- Water-quality samples: samples were collected at each site for laboratory analysis of a range of parameters (Table B-2).
- Sediment samples: during June and September 2005, sediment samples were collected for laboratory analysis of a suite of major ions and trace elements (Table B-3).
- Zooplankton samples: one vertical zooplankton tow was conducted at each site. HDR biologists identified the samples.

In June and September 2005 and June 2006, the study team collected mussel tissue at the four nearshore sampling sites for analysis of a suite of trace elements (Table B-4). In addition, sediment samples and, less frequently, water samples, were collected at the sites and analyzed for a suite of major ions and trace elements for reconnaissance purposes (Table B-3).

B.5 Methods

B.5.1 Review of Existing Information

The study team reviewed existing information for the Iliamna Lake study area from scientific journal articles, gray literature, and resource-agency files. A web-based literature search indicated that relatively little published information is available for the study area. However, the University of Washington

operates a research station on Iliamna Lake with staff from the Alaska Department of Fish and Game, Commercial Fisheries Division, Central Region. Discussions with Dr. Thomas Quinn and Bethany Lee of the University of Washington, along with results of the literature review, were used to develop the scope of work and study plans.

B.5.2 Sample Collection

The study team conducted sampling in accordance with the field sampling plan for Iliamna Lake for each respective year of sampling (see Appendix F). All samples were collected with clean nitrile gloves, and all samples except zooplankton were collected in clean containers provided by the laboratory. Notes were recorded on field forms created for the lake study or in field notebooks, in accordance with the protocols described in the quality assurance project plan (QAPP; a copy is provided in Appendix G).

To avoid disturbing the water column, the study team collected samples in the following order, unless the order was not possible because of challenging weather or boating conditions:

1. Field parameters recorded at 1-meter depth increments from the surface to the substrate.
2. Water-quality and turbidity samples collected at 1-meter depth, one half the total depth, and 1 meter above substrate.
3. Secchi disk measurement.
4. Plankton tow sample(s).
5. Mussel sample.
6. Sediment sample(s).

B.5.2.1 Field Parameters

The study team recorded the following ambient water parameters concurrent with the monthly water quality sampling event at the deep water sites, and at each freshwater mussel sampling field event: temperature in degrees Celsius (°C), DO (milligrams per liter [mg/L] and percent), specific conductance (milliSiemens per centimeter [mS/cm]), pH, and ORP. These field parameters were measured in the water column at 1-meter depth intervals (to 20 meters depth) with a YSI 556 multi-probe system. In accordance with the QAPP (see Appendix G), the YSI meter was calibrated daily before use. Water samples also were tested for specific conductance (or conductivity) by the laboratory, and those results were reported in micromhos per centimeter ($\mu\text{mhos/cm}$; numerically identical to microSiemens per centimeter [$\mu\text{S/cm}$]; Hem, 1985).

The study team measured turbidity using a turbidimeter. Turbidity measurements were taken at 1 meter below the surface, at half the total depth, and at 1 meter above the substrate. In addition, water clarity was measured using a Secchi disk during each of the sampling events. The study team observed the disk through an Aquascope to avoid variability in results caused by wind and wave action. The study team lowered a 20-centimeter Secchi disk into the lake and recorded the depth where the disk disappeared completely from view. They then lowered the disk approximately 0.3 meter and raised it until it reappeared. The second depth also was recorded, and the average of the two depth readings was calculated to the nearest 0.25 meter. This value was recorded as the Secchi disk clarity reading (Carlson,

1995; Wetzel and Likens, 2000). In cases where the substrate was visible, the total depth was used in place of the Secchi disk clarity reading.

B.5.2.2 Surface Water Collection

To characterize existing water-quality conditions in Iliamna Lake, the study team collected water samples monthly from May through October at the five deeper-water sampling sites in 2005 and 2007, and from the four nearshore sampling sites in 2006 and 2007 (Figure B-1). Sampling sites were accessed by boat and were located with the aid of a hand-held global positioning system (GPS). All samples were collected with clean nitrile gloves, and all samples were collected in clean containers provided by the laboratory.

The study team collected water-quality samples with an 8-liter Model 1010 Niskin water sampler for a total of three samples per site. Samples were collected approximately 1 meter below the surface of the water, at the mid-point of the total water-column depth, and at 1 meter above the lake substrate. The Niskin water sampler was lowered until its top was at the desired sampling depth. A “messenger” was then dropped down the line to trigger the sample bottle to collect water. The sampler was raised to the boat for sample extraction, and the samples were transferred to clean sample bottles provided by the laboratory. The study team transferred samples to Shaw Alaska, Inc., in Iliamna for transportation to the appropriate laboratories.

All sample handling was conducted by gloved scientists using clean procedures. A gloved scientist collected the samples, then handed them to another gloved scientist that was responsible for handling the prepared laboratory bottle, lid, and/or other containers and placement of the containers into the cooler. Samplers changed gloves before collecting each sample. Between sites, sampling equipment was washed in an Alconox solution and rinsed three times in deionized or ambient water. All wastewater from the rinsing procedures was stored in 5-gallon buckets for later disposal.

The depth from which samples were collected was included in the sample location-identification code. The location identifications for all samples collected at one meter below water surface end in “A;” location identifications for samples collected at half of the total depth end in “B;” location identifications for samples collected one meter above the bottom of the lake or at a maximum total depth of 20 meters below the surface end in “C.” Thus, the samples from each sampling site are identified by site and depth as follows:

- Knutson Bay: KN1A, KN1B, KN1C
- Northeast Bay: NE1A, NE1B, NE1C
- Pile Bay: PB1A, PB1B, PB1C
- Roadhouse Bay: RB1A, RB1B, RB1C
- Upper Talarik Creek: UT1A, UT1B, UT1C

B.5.2.3 Sediment Collection

The study team collected sediment samples in June and September 2005 at sampling sites at Pile Bay, Knutson Bay, Northeast Bay, and Roadhouse Bay using an Ekman dredge sampler. Sediment samples collected at the mouth of the Upper Talarik in June 2005 included very little fine sediment and only one

of three sample containers (the one collected for analysis of organics) contained enough fine material to be analyzed; the majority of the material found in the substrate at this was small gravel. The mouth of the Upper Talarik was not visited in September 2005 because of adverse weather conditions.

Sediment samples also were collected from the mussel-bed sampling sites at Bucket Lake, Finn Bay, and Flat Island in 2005 and 2006 and from Whistlewing Bay in 2006. Sediment was collected at these sites either by grab sample or using an Ekman dredge sampler, and was transferred to clean glass sample jars provided by the laboratory. All samples were collected with clean nitrile gloves, and all samples were collected in clean containers provided by the laboratory. The dredge was cleaned according to the methods described for cleaning equipment in the Surface Water Collection section above. The study team transferred samples to Shaw Alaska, Inc., in Iliamna for transportation to the appropriate laboratories.

B.5.2.4 Mussel Collection

Mussel sampling sites were identified in May at Bucket Lake, Finn Bay, Flat Island, and Whistlewing Bay. The study team collected mussels at these sites during June and September/October 2005 and in June 2006, except at Whistlewing Bay, where adverse weather prevented sampling in September 2005. Where depths were shallow enough to wade, samples were collected using the grab method; other deeper sites were sampled using a clam basket scraped along the substrate. All samples were collected with clean nitrile gloves, and all samples were collected in clean containers provided by the laboratory.

At each sampling site, the collected mussels were kept whole, were double-bagged in clean zip-lock bags, and were labeled in accordance with the procedures in the QAPP (see Appendix G of this environmental baseline document). The bagged and labeled mussels were frozen and then placed on gel ice for shipping to the appropriate laboratories by Shaw Alaska, Inc. A laboratory split provided duplicate and triplicate quality control samples, in accordance with the QAPP.

B.5.2.5 Zooplankton Collection

A vertical zooplankton tow was completed monthly between May and October 2005 and 2007 at the five deeper-water sampling sites (Figure B-1). At one site per sampling event, the study team collected three tows to provide material for duplicate and triplicate quality control samples. Sample tows were collected using a 30.48-centimeter-diameter tow net with 80-micrometer mesh. The net was lowered to a depth of 20 meters (or to the substrate if total depth was less than 20 meters) and then raised at a rate of approximately 0.5 meters per second. The net was lifted out of the water and rinsed from the outside to wash organisms from the net into the attached sample bucket, and the entire sampling device was flushed between samples. The sample-bucket contents and the rinse water were transferred to a clean 1-liter Nalgene container and preserved with ethanol within 24 hours. Following field work, the study team verified that labeling on all samples was easily readable and that all bottles were accounted for. Samples were transported to Anchorage by HDR study team members for processing.

B.5.3 Laboratory Processing

B.5.3.1 Surface Water Samples

Water samples were tested for the analytes listed in Table B-2. The analytes include nutrients, total dissolved solids (TDS), total suspended solids (TSS), major ions, trace elements, and total and dissolved

metals. Samples to be analyzed for organics (semivolatile organics, volatile organics, and pesticides/polychlorinated biphenyls [PCBs]) were collected during the June and September 2005 and 2007 sampling events. Details about analytical methods, method detection and reporting limits, and quality assurance/quality control (QA/QC) protocols are described in the QAPP (see Appendix G). Data reported in this Appendix B do not include results that were found to be below the method reporting limits (MRLs; the lowest level at which an analyte can be detected in a sample and measured with a reasonable amount of accuracy).

Sample handling and transportation to the analytical laboratories followed procedures outlined in the QAPP (see Appendix G) and the field sampling plans (see Appendix F). Shaw Alaska, Inc, was responsible for filling out and maintaining electronic chain-of-custody forms and for transporting samples to the appropriate laboratory. Primary and duplicate samples were shipped to SGS Environmental Services, Inc. (SGS), and triplicate samples were shipped to Columbia Analytical Services, Inc (CAS).

B.5.3.2 Sediment Samples

Sediment samples were analyzed for a suite of trace elements and several other analytes (Table B-3). To isolate fine-grained sediments, samples were sieved at the analytical laboratory with a 2-millimeter nylon sieve. Details about methods, method detection and reporting limits, and QA/QC protocols are described in the QAPP (see Appendix G). Sample handling and transportation to the analytical laboratories followed procedures outlined in the QAPP (see Appendix G) and the field sampling plans (see Appendix F). Shaw Alaska, Inc was responsible for filling out and maintaining electronic chain-of-custody forms and for transporting samples to the appropriate laboratory. The primary and duplicate samples were shipped to SGS, and triplicate samples were shipped to CAS.

B.5.3.3 Mussel Tissue

Mussel tissue samples were analyzed for a suite of trace elements and several organic analytes (Table B-4). Details about methods, method detection and reporting limits, and QA/QC protocols are described in the QAPP (see Appendix G). Sample handling and transportation to the analytical laboratories followed procedures outlined in the QAPP (see Appendix G) and the field sampling plans (see Appendix F). Shaw Alaska, Inc. was responsible for filling out and maintaining electronic chain-of-custody forms and for transporting samples to the appropriate laboratories. The primary and duplicate samples were shipped to CAS, and triplicate samples were shipped to North Creek Analytical, Inc.

B.5.3.4 Zooplankton

The study team transported preserved zooplankton samples to the HDR laboratory for identification and analysis. Zooplankton samples were processed in accordance with the methods outlined in the plankton section (10200) of *Standard Methods for Water and Wastewater* (APHA, 2005). Zooplankton samples were concentrated to 100 milliliters using a filter funnel with 80-micrometer mesh. Zooplankton were counted and identified to order, when possible, from 5-milliliter subsamples until a total of 300 zooplankton specimens had been counted or the entire sample was sorted. Zooplankton taxa richness and relative abundance were then calculated using the data. Some taxa were left at a higher taxonomic classification (e.g., Ostracoda) because of the complexity of identifications to a higher resolution.

B.5.4 Statistical Analyses

Laboratory results for the lake study include left-censored data (data near the detection limit) and are not considered normally distributed. Nonparametric statistical analyses were performed using Microsoft Excel and SPSS (Version 14 for Windows). Friedman's Analysis of Variance (ANOVA) was used to test the effects of temporal and spatial variables on field parameters and surface water chemistry. Friedman's ANOVAs were conducted for each water quality site to determine whether significant differences were observed among the water quality parameters at the three depths. Friedman's ANOVAs were also conducted to determine whether there were differences in water quality among months at each site, and whether there were differences by year. Mann-Whitney statistics were used to test for within-site temporal effects on sediments and mussels between two sampling events. Spearman's correlations were used to determine relationships between select water, mussel tissue, and sediment chemistry parameters. AquaChem, Version 5.1, was used in the development of piper plots (diagrams depicting cation and anion concentrations). SPSS was used to create box and whisker plots for water-chemistry analyses. Relative significance (P) for all statistical tests was set at < 0.05 .

B.6 Results and Discussion

During sample collection between 2005 and 2007, 176 water quality samples, 22 sediment samples, 15 mussel samples and 20 zooplankton samples were collected, and additional samples were collected for quality control purposes (see Appendix A). The purpose and nature of sampling differed between the deeper-water sites (Knutson Bay, Northeast Bay, Pile Bay, Roadhouse Bay, and the Upper Talarik Creek outlet) and the nearshore sites (Flat Island, Finn Bay, Whistlewing Bay, and Bucket Lake). The purpose of sampling in the deeper-water sites was to obtain baseline information on the limnological characteristics at those five sites, including water quality, sediments and zooplankton communities. The purpose of sampling the nearshore sites was to document baseline trace elements concentrations in freshwater mussel tissues, and surface water and sediment samples were collected periodically for comparison. Because the purpose was different, results for the two types of sites are discussed separately (Section B.6.1 and Section B.6.2, respectively). Analytical data for surface water sites are in Attachment B-1, data for sediment are in Attachment B-2, and data for mussels are in Attachment B-3. Detected organics results for sediments are presented in Attachment B-4. Attachment B-5 contains box and whisker plots of total and dissolved water chemistry data for the deeper-water sites.

Dissolved concentrations were found to be greater than total concentrations of the same element on approximately 280 occasions—a result that may have been due to introduction of metals into the sample from filters used during the study (see Appendix A for more discussion about these results). In these instances, the dissolved concentrations were rejected based on the assumption that the data were probably biased high.

B.6.1 Limnological Characteristics at Deeper-Water Sites

Field parameters and laboratory results were tested for trends in concentrations between surface, mid-column, and substrate water samples. Not all sites were sampled for all parameters due to field conditions (see Table B-1). With the exception of temperature, pH, and a few of the laboratory parameters at isolated sites (e.g., dissolved manganese at Knutson Bay, total manganese at Northeast Bay, etc.), no notable differences in concentrations were detected between depths ($P > 0.05$); therefore, median concentrations

from the three depths were used to test for temporal (between months or years) and spatial (between sites) differences (Figures B-2 to B-10). Note that most figures show median concentrations for the entire study period.

B.6.1.1 Specific Conductance of Water

Specific conductance (or conductivity) is a measure of the ability of water to conduct an electric current at a specified temperature. It is an indication of the quantity of dissolved solids (or salts) in water and is a function of the valence, mobility, and concentration of ions present in solution.

No spatial or temporal trends were apparent in the specific conductance data (Figures B-2 and B-3). Values were typical of freshwater (CWT, 2004) and ranged from 0.000 to 1.448 mS/cm for Knutson Bay, 0.018 to 0.084 mS/cm for Northeast Bay, 0.027 to 0.264 mS/cm for Pile Bay, 0.023 to 0.600 mS/cm for Roadhouse Bay, and 0.000 to 0.770 mS/cm for Upper Talarik Creek (Attachment B-5, in which values are presented in $\mu\text{S/cm}$). Monthly median specific conductance for Pile Bay, Knutson Bay, and Northeast Bay (the three easternmost sites in the lake) behaved similarly, with lows occurring in June and August (Figure B-2). However, median specific conductance varied little (0.037 to 0.050) among all months and sites, displaying few seasonal trends.

B.6.1.2 The pH of Water

The pH of water is a measure of its hydrogen-ion activity. Freshwater pH values typically fall between 6.5 and 8.5 (Hem, 1985). In Iliamna Lake, pH ranged from 6.10 to 8.34 at Knutson Bay, 5.50 to 7.71 at Northeast Bay, 4.50 to 7.67 at Pile Bay, 6.25 to 7.64 at Roadhouse Bay, and 6.01 to 7.34 at Upper Talarik Creek (Figures B-4 and B-5, Attachment B-5). The pH appeared to have a weak negative correlation with depth at times; however, this trend was not consistent for every site or for every month (Figure B-5). Pile Bay exhibited the lowest values of pH of all sampling sites. The low pH values of 4.50 to 5.36 in July 2005 may have resulted from an equipment malfunction; however, results from May 2007 at Pile Bay (5.71 to 6.10) are also lower than would be expected in natural waters, suggesting that these values may be a part of the natural variability in pH at Pile Bay.

B.6.1.3 Water Temperature

Water temperature determines the amount of oxygen water can contain when at equilibrium with the atmosphere (see Section B.6.4, Dissolved Oxygen). Temperatures measured in the field ranged from 3.81°C to 16.80°C at Knutson Bay, 4.52°C to 17.86°C at Northeast Bay, 3.98°C to 16.31°C at Pile Bay, 4.79°C to 15.59°C at Roadhouse Bay, and 4.00°C to 16.28°C at Upper Talarik Creek (Table B-5, Attachment B-5).

Water temperatures were cooler in 2007 than in 2005. In both years and for most of the sites, temperatures were coldest in May after breakup and warmest in July and August. Thermoclines were evident at some sites during some of the warmer months, most notably in Northeast Bay (Figure B-7). Other sites such as Pile Bay and Knutson Bay often experienced colder temperatures by depth, but with little to no evidence of a thermocline.

Uniform temperature gradients during spring and fall indicate that the lake is dimictic, overturning each fall and spring (Figure B-7). Temperature profiles indicate a period of turnover once in spring before May

and once in September; however, the 2007 depth profiles indicate a turnover event may have begun as early as August at the Roadhouse Bay, Northeast Bay, and the Upper Talarik Creek sites. Relatively homogeneous water temperatures among sampling sites and across depths may be the result of relatively low average air temperatures and high average peak wind velocities (Donaldson, 1967).

Previous studies at Iliamna Lake found that the eastern end of the lake, including Pile Bay and Knutson Bay, had colder surface water temperatures than other areas of the lake (Donaldson, 1967). This was often the case in 2007 as well. Although temperature measurements from May and June 2005 are consistent with this finding, no difference in water temperature between sampling sites existed by July and, contrary to Donaldson's (1967) findings, Knutson Bay and Pile Bay had the warmest temperatures among sampling sites by October 2005.

B.6.1.4 Dissolved Oxygen in Water

The DO concentration in lakes is controlled by several factors, including water temperature, air temperature and pressure, wind velocity and wind-induced vertical mixing, wind-induced re-suspension of bottom sediments in shallow areas, stream-water inputs, photosynthetic or respiratory activity of lake biota, and the quantity of organic matter present. Fish are dependent on sufficient quantities of DO for survival.

DO and temperature are negatively correlated because of the decrease in capacity of water to hold oxygen as temperature increases. At 5°C and 30°C, freshwater DO values in equilibrium with the atmosphere are approximately 12.75 and 7.54 mg/L, respectively (Hem, 1985). Typical DO concentrations in Iliamna Lake ranged from 7.41 to 14.37 mg/L at Knutson Bay, 7.28 to 14.28 mg/L at Northeast Bay, 7.32 to 14.14 mg/L at Pile Bay, 7.21 to 14.17 mg/L at Roadhouse Bay, and 7.20 to 13.80 mg/L at Upper Talarik Creek (Table B-5, Figure B-8, Attachment B-5)—all within the expected range for freshwater. Profiles for temperature and DO often vary inversely by depth; as temperature decreased with depth, DO increased with depth (Figure B-9). Concentrations were, on average, lowest during July and August when water temperatures were highest (Figure B-8).

B.6.1.5 Water Turbidity and Clarity

Turbidity is a measure of the transparency of water that results from the presence of suspended particles. The particles are typically inorganic materials that originate from erosion of soils and re-suspension of bottom sediments (Wetzel, 2001). In some cases, small increases in turbidity can greatly reduce the productive volume of lakes (Edmundson and Koenings, 1985a). For example, an increase of 5 nephelometric turbidity units (NTUs) in the turbidity of a naturally clear lake may reduce productive euphotic volume by about 80 percent. Reduced light availability caused by high turbidity was shown to limit production and abundance of phytoplankton in three southcentral Alaska lakes even when sufficient nutrients were available (Edmundson and Koenings, 1985b). In addition, even low levels of turbidity (4 to 15 NTU) have been shown to alter relationships between light penetration, phosphorus, and phytoplankton production (Lloyd et al, 1987). Increased turbidity also may reduce predation on zooplankton by sockeye salmon (*Oncorhynchus nerka*) and other fish that are visual predators (Wetzel, 2001). Lloyd et al. (1987) observed reduced abundance of zooplankton, macroinvertebrates, and Arctic grayling (*Thymallus arcticus*) in naturally and artificially turbid aquatic systems.

Turbidity in Alaskan waters may range from 0 NTU in clear water streams to 50 NTU in glacial streams (Denby, 1985). The highest median turbidity value of the five deeper-water sites found at Upper Talarik Creek in August 2007 (1.44 NTU; Table B-5). Peaks in May and September (Figure B-10) may have resulted from turnover events that re-suspended sediments in the water column, bringing nutrients to surface waters and stimulating increases in phytoplankton biomass. In addition, some sites experienced a gradual increase in turbidity from June through September, which could have resulted from an increase in phytoplankton/zooplankton growth during higher temperatures and longer photoperiods.

Secchi disk (water clarity) results were generally consistent with turbidity results; the lower the turbidity, the greater the Secchi depth value, or clarity, of the water.

B.6.1.6 Alkalinity and Hardness of Water

Alkalinity is the sum of components in the water that tend to elevate the pH of the water to the alkaline range of the pH scale. Alkalinity is a measure of the capacity of the substances dissolved in water to neutralize acid and is considered to be a measure of the buffering capacity of the water. In most natural waters, alkalinity occurs primarily as bicarbonate and carbonate (Hem, 1985), which are ions formed during the weathering of certain types of rocks such as limestone. Alkalinity is measured by titration with standardized acid to a pH value of approximately 4.5 and is commonly expressed as equivalent mg/L of calcium carbonate (CaCO_3). The pH has a direct effect on organisms as well as an indirect effect on the toxicity of some pollutants in water. Because of its influence on pH, alkalinity is an important water quality parameter.

The chronic aquatic life criteria (CALC) for alkalinity (reported as equivalent concentrations of CaCO_3) in freshwater is 20 mg/L (ADEC, 2003). This is a minimum criterion, which means any alkalinity result less than 20 mg/L is a concern, because waters with low alkalinity are more susceptible to changes in pH.

Alkalinity values for samples from the five sampling sites were consistently below the CALC for alkalinity (Attachments B-1 and B-5). The lowest median values were at Knutson Bay and Pile Bay, and values tended to increase throughout the summer at all sites. The median alkalinity value for all sampling sites (15 mg/L) is similar to the average value of 14.0 mg/L recorded by Donaldson (1967) from 1962 to 1965.

Hardness is a measure of dissolved calcium and magnesium and is practically defined as the effect of alkaline-earth cations (Hem, 1985). Median hardness concentrations ranged from 12.1 mg/L at Knutson Bay in May to approximately 20.9 mg/L in September and 20.3 mg/L in October at Northeast Bay. These concentrations are well below objectionable levels (approximately 100 mg/L) for drinking water (Hem, 1985). As with alkalinity, mean hardness values at sampling sites generally increased slightly from May to October (Figure B-12).

B.6.1.7 Inorganic Nutrients and Other Major Elements

An inorganic nutrient is a substance, such as nitrogen or phosphorus that supports metabolism but does not provide energy. Nitrogen is an important constituent of water quality, in part because it is an essential component of the protoplasm of aquatic biota and is incorporated into many essential organic nutrients and cellular structures. Inorganic nitrogen commonly occurs in three ionic forms in aquatic ecosystems: the nitrate anion (NO_3^-), the nitrite anion (NO_2^-), and the ammonium cation (NH_4^+). Nitrite and nitrate

are two oxidized forms of nitrogen (N) that are analyzed and reported together as the parameter nitrate+nitrite (as N). Ammonia (NH_3), when dissolved in water, can form the ammonium cation (NH_4^+). The equilibrium between ammonia and ammonium is largely determined by the temperature and pH of the water. The total concentration of ammonia and ammonium is analyzed and reported together as the parameter Ammonia (as N).

Total nitrate + nitrite (as N) ranged from 0.101 to 0.218 mg/L at Knutson Bay, 0.102 to 0.180 mg/L at Northeast Bay, 0.106 to 0.256 mg/L at Pile Bay, 0.105 to 0.210 mg/L at Roadhouse Bay, and 0.125 to 0.910 mg/L at Upper Talarik Creek. No seasonal trends were apparent (Figure B-13). Concentrations for total nitrate+nitrite (as N) were well below benchmark levels described in state and federal drinking water standards (Attachments B-1 and B-5).

Laboratory analysis rarely detected ammonia (as N) in the water samples, and there were no detections for the water samples from the Upper Talarik Creek site over the course of the study (Attachment B-1). Values that were detected for ammonia (as N) in water samples were well below the CALC benchmark levels. Ammonia is rapidly assimilated by phytoplankton. Its absence or scarcity in aerobic waters is common.

In sediment samples, nitrate+nitrite (as N) was not detected. Ammonia (as N) ranged from 79 to 362 milligrams per kilogram (mg/kg) at Knutson Bay, from 99 to 245 mg/kg at Northeast Bay, and from 40 to 87 mg/kg at Pile Bay, and one value of 69 mg/kg was found at Roadhouse Bay (Attachment B-2).

Phosphorus is an essential element in the growth of plants and animals. It occurs as organically bound phosphorus or as phosphate. High concentrations of phosphorus in water are not considered to be toxic to human or aquatic life. However, the presence of phosphorus can over-stimulate the growth of algae in lakes and streams, resulting in depletion of oxygen and other secondary effects that may harm aquatic life. Sawyer (1947) first noted that nuisance algal conditions could be expected in lakes when concentrations of inorganic nitrogen ($\text{NH}_3+\text{NO}_2+\text{NO}_3$) and total phosphorus reached levels of 0.3 mg/L and 0.01 mg/L, respectively. These conditions were not evident in the Iliamna Lake Study samples.

Total phosphorus concentrations in surface water were mostly below the MRL of 0.1 mg/L. Phosphorus tended to be detected most often after spring turnover in the earlier summer months of May, June, and July. Phosphorus was found to be above the EPA-recommended threshold of 0.1 mg/L in five measurements during the course of the study; all but one measurement was from a middle-depth sample. The highest concentration of total phosphorus was found at Upper Talarik Creek during the late July/early August 2005 sampling event with a detected value of 0.70 mg/L. The highest detected concentrations at Knutson Bay, Northeast Bay, Pile Bay, and Roadhouse Bay were 0.05, 0.12, 0.05 and 0.06 mg/L, respectively (Attachment B-1). Dissolved phosphorus concentrations in freshwaters are normally about 0.025 mg/L, but higher concentrations can be found in waters with anthropogenic input (e.g., sewage, fertilizers), volcanic influence, or other naturally occurring geologic features in the watershed such as apatite, a mineral with naturally high phosphorus content (Hem, 1985). Phosphorus levels also tend to be positively correlated with suspended sediments or turbidity (Hem, 1995); however, in this study turbidity concentrations were below 1 NTU when measured concurrently with phosphorus levels above the MRL.

B.6.1.8 Major Ions and Dissolved Solids

The study team collected water samples that were analyzed for TDS, TSS, and total major ions (calcium, magnesium, sodium, potassium, iron, aluminum, manganese, sulfate, and chloride), which are primarily derived from soil and rock weathering. Concentrations generally are greatest in drainage basins underlain by rocks and soils that contain easily weathered minerals (Hem, 1985).

TDS concentrations were generally low in the water samples, ranging from undetected at Northeast Bay in June 2005 to 71.3 mg/L at Northeast Bay in May 2007 (Attachments B-1 and B-5). The median TDS concentration for Iliamna Lake (26.30 mg/L) was exactly the same as the average value recorded at Iliamna Lake by Donaldson (1967) from 1962 to 1965 (26.3 mg/L). All concentrations were well below the 500 mg/L TDS standard for drinking water set by the State of Alaska. TDS results were highly variable across most months, making it difficult to discern any meaningful trends. However, it appears that TDS increased at most sites in September (Figure B-14). TDS and conductivity is expected to fluctuate similarly over time, because conductivity is a measure of the TDS in the water. TDS time series plots closely resembled specific conductance plots for some sites (e.g., Pile Bay) and for some months, but did not show consistent similarities for other watersheds (Figures B-2 and B-14).

TSS results in water samples were often below the MRL. When TSS was detected, results ranged from 0.5 mg/L to 77.7 mg/L, with the highest concentrations typically found at Pile Bay (Attachment B-1).

Calcium and magnesium are both essential elements for plants and animals. Calcium is typically the dominant cation in natural waters, and magnesium is commonly the second-most dominant cation (Hem, 1985). Total calcium concentrations ranged from 3,900 to 6,210 micrograms per liter ($\mu\text{g/L}$) at Knutson Bay; 4,960 to 7,390 $\mu\text{g/L}$ at Northeast Bay; 4,410 to 6,550 $\mu\text{g/L}$ at Pile Bay; 5,130 to 7,460 $\mu\text{g/L}$ at Roadhouse Bay; and 5,370 to 6,510 $\mu\text{g/L}$ at Upper Talarik Creek (Attachments B-1 and B-5). Total magnesium concentrations ranged from 559 to 833 $\mu\text{g/L}$ at Knutson Bay; 678 to 1,150 $\mu\text{g/L}$ at Northeast Bay; 582 to 985 $\mu\text{g/L}$ at Pile Bay; 752 to 972 $\mu\text{g/L}$ at Roadhouse Bay; and 724 to 942 $\mu\text{g/L}$ at Upper Talarik Creek. Concentrations tended to be slightly higher in 2007 than in 2005. Median total and dissolved calcium and magnesium concentrations at all sampling sites are fairly consistent from month to month (Figures B-15 and B-16).

The median concentration for total calcium (5,810 $\mu\text{g/L}$) in waters was comparable to the average recorded by Donaldson (1967) from 1962 to 1965 (5,110 $\mu\text{g/L}$). Donaldson also noted that peaks in calcium concentrations near Pile Bay may be attributed to patches of older rock—limestone and greenstone—that protrude through the volcanic mantle on the ridge south of the bay along the upper north shore. No such peaks in calcium concentrations were documented in this study. The median concentration for total magnesium for all sampling sites (818 $\mu\text{g/L}$) also was similar to the average recorded by Donaldson (1967) from 1962 to 1965 (830 $\mu\text{g/L}$).

Sodium, an essential element for all plants and animals, is present in all natural waters, but typically in low concentrations in lakes and rivers. In published literature, the concentration of sodium in rainwater and dilute stream runoff is typically less than 1,000 $\mu\text{g/L}$ (Hem, 1985). Total sodium concentrations in waters recorded in the Pebble studies from May through October 2005 and 2007 ranged between 1,350 and 2,300 $\mu\text{g/L}$ (Attachments B-1 and B-5). Median concentrations in waters were similar at all sites and during all sampling events, with slightly lower sodium concentrations that ranged from 1,340 to 1,950

µg/L in August (Figures B-15 and B-16). The overall median concentration of total sodium of 1,630 µg/L in waters was nearly double that recorded by Donaldson (1967) from 1962 to 1965 (830 µg/L).

Potassium, an essential element for both plants and animals, is abundant in nature but typically occurs in low concentrations (<1,000 µg/L) in natural waters (Hem, 1985). Sampling results indicate total potassium concentrations in waters ranged from 336 to 731 µg/L (one outlying value of 1,860 µg/L in Northeast Bay is suspected to be erroneous) (Attachments B-1 and B-5). Total and dissolved potassium concentrations in waters were generally lower at Knutson Bay (median values of 477 and 493 µg/L, respectively) than at other sites (Figures B-15 and B-16). The overall median total potassium concentration (534 µg/L) in waters was similar to the average recorded by Donaldson (1967) from 1962 to 1965 (600 µg/L).

Sulfate and chloride, both essential for all plants and animals in freshwater environments, are anions primarily derived from the weathering of sedimentary and igneous rocks and biochemical processes (Hem, 1985). Sulfate concentrations in waters ranged from 3.23 to 4.07 mg/L at Knutson Bay, 3.64 to 4.68 mg/L at Northeast Bay, 3.45 to 4.38 mg/L at Pile Bay, 1.55 to 5.93 mg/L at Roadhouse Bay, and 2.17 to 5.74 mg/L at Upper Talarik Creek (Attachment B-1). All reported sulfate concentrations in waters were well below the drinking water standard of 230 mg/L. Chloride was present in waters at concentrations ranging from 0.823 to 1.07 mg/L at Knutson Bay, 0.653 to 5.38 mg/L at Northeast Bay, 0.866 to 1.08 mg/L at Pile Bay, 0.413 to 1.64 mg/L at Roadhouse Bay, and 0.542 to 1.17 mg/L at Upper Talarik Creek (Attachments B-1 and B-5). Chloride concentrations were well below the CALC of 230 mg/L. Median sulfate and chloride concentrations were generally consistent from May through October (Figure B-15).

Other major ions included in the surface water analysis were iron, aluminum, and manganese. All median concentrations (total and dissolved) of these ions in waters varied between sites and months with little apparent trend (Figure B-17; note that in an effort to display temporal variability, Y-axis scales vary among the graphs). At Knutson Bay, total and dissolved aluminum and manganese in waters appeared to decrease throughout the beginning months of the summer, while at Northeast and Roadhouse bays, aluminum and manganese in waters appeared to increase throughout the summer to a peak in September. Increased precipitation events throughout the summer and early fall may contribute metals and other ions to these sites; the lake receives storm water runoff from a developed portion of the village of Iliamna. Knutson and Northeast bays had the highest total iron concentrations (1,560 µg/L and 1,060 µg/L, respectively; Attachment B-1), which were the only two values above the CALC for iron in waters. The median total iron concentration in waters (28.7 µg/L) was much higher than those recorded by Donaldson (1967) from 1962 to 1965 (11.0 µg/L). Northeast Bay and Pile Bay had the highest concentrations of total aluminum in waters at 1,260 and 850 µg/L, respectively. The six occurrences of values above the CALC for total aluminum in waters were found in bottom samples. Aluminum easily sorbs to particulates and may have been captured in stirred substrates during the bottom sampling. The highest reported concentrations of total manganese in waters were recorded at Pile Bay in 2007 at 70.5 and 81.5 µg/L, both of which were above the CALC. All other reported concentrations of manganese in waters were fairly consistent from month to month with slight variations observed between sites. Many manganese concentrations were below the MRL (1 µg/L), and all concentrations are consistent with concentrations expected in natural waters.

The order of cation and anion dominance in Iliamna Lake surface waters is similar to other temperate lakes. In typical temperate lakes, calcium concentrations in waters are higher than magnesium concentrations, which are equal to or higher than sodium concentrations, which are higher than potassium concentrations ($\text{Ca}^{2+} > \text{Mg}^{2+} \geq \text{Na}^+ > \text{K}^+$). In addition, bicarbonate is greater than sulfate, which is greater than chloride ($\text{HCO}_3^- > \text{SO}_4^{2-} > \text{Cl}^-$; Wetzel, 2001). However, at Iliamna Lake sodium in waters was present in higher concentrations than magnesium (median values = 1,630 and 818 $\mu\text{g/L}$, respectively). This finding suggests contributions from igneous rocks in the region (Wetzel, 2001). Further, this dominance of sodium over magnesium in waters differs from nearby and hydrologically up-gradient Lake Clark, where the watershed is dominated by calcareous (calcium, carbonate-rich) rock, and magnesium is present in greater concentrations than sodium (Chamberlain, 1989).

Concentrations of major cations (calcium, magnesium, sodium, and potassium) and major anions (alkalinity as bicarbonate, chloride, and sulfate) in waters were converted to milliequivalents per liter and plotted on a piper plot (Figure B-18). The proportions of the four major cations were plotted on one triangle of the plot, the proportions of the major anions were plotted on another, and then the information from the two triangles was plotted on a diamond. If the pH of water is less than 9.5, which it is in Iliamna Lake (see pH section above), it can be safely assumed that alkalinity is primarily derived from bicarbonate (HCO_3^-) (Hem, 1985). For this reason, total alkalinity was used as a proxy for bicarbonate in the piper plot. Based on the plotting of sample results on the piper plot, surface water samples collected at all Iliamna Lake sampling sites in 2005 and 2007 can be classified as calcium bicarbonate-rich waters. This finding is consistent with the classification of nearby lakes in the basin, such as Kijik Lake (Brabets and Ourso, 2006).

In sediment samples, calcium concentrations ranged from 2,200 to 5,430 mg/kg, with the highest concentration found at Northeast Bay (Attachment B-2). Sodium concentrations in sediments ranged from 154 to 971 mg/kg, with the highest concentration at Northeast Bay. Magnesium concentrations in sediments ranged from 1,070 to 4,510 mg/kg, with the highest concentration occurring at Pile Bay. Potassium concentrations in sediments ranged from 381 to 1,590 mg/kg, with the highest concentration occurring at Northeast Bay. Median concentrations for calcium and sodium in sediments were highest at Northeast Bay, and median concentrations for magnesium and potassium in sediments were highest at Pile Bay (Figures B-19 through B-22; note that Upper Talarik was not sampled in 2005 due to inclement weather and this site does not appear in these graphs).

Iron concentrations in sediments ranged from 7,490 to 26,400 mg/kg, with the highest concentration recorded at Knutson Bay. Aluminum concentrations in sediments ranged from 4,540 to 11,200 mg/kg, with the highest concentration recorded at Knutson Bay. Median aluminum concentrations in sediments over the course of the study were highest at Northeast Bay (9,600 mg/kg), although Pile Bay median concentrations in sediments were almost as high (9,530 mg/kg). Manganese concentrations in sediments ranged from 150 to 591 mg/kg, with the highest concentration occurring at Pile Bay. Median concentrations for iron and manganese in sediments were also highest at Pile Bay (Figures B-23 to B-25).

B.6.1.9 Total and Dissolved Trace Elements

Total and dissolved trace element concentrations in waters were similar among the five deeper-water sample sites. Total zinc in waters ranged from undetected to 16.4 $\mu\text{g/L}$ (Attachments B-1 and B-5). Median total and dissolved zinc in waters varied throughout the sampling season (Figures B-26 and B-27). The highest concentrations of both total and dissolved zinc in waters were found in June and July,

while median concentrations for other months were much lower. Higher zinc concentrations in waters during the summer months could be because of storm water runoff associated with high precipitation events.

Total copper concentrations in waters ranged from 0.345 to 7.87 µg/L, with the highest concentrations occurring in Pile Bay, where concentrations ranged from 0.572 to 7.87 µg/L. Concentrations in waters for Knutson Bay ranged from 0.345 to 1.64 µg/L, those for Northeast Bay ranged from 0.435 to 2.69 µg/L, those for Roadhouse Bay ranged from 0.480 to 0.886 µg/L, and those for Upper Talarik Creek ranged from 0.423 to 0.700 µg/L. Higher copper concentrations in Pile Bay water samples possibly resulted from mineralization in the watersheds adjacent to the bay; however, compared to other sampling sites Pile Bay had lower pH and alkalinity, which could influence the concentration of copper in the surface water. No consistent month-to-month trend in median copper concentrations of surface water was obvious (Figures B-26 to B-27).

Total molybdenum concentrations in waters ranged from 0.499 to 1.16 µg/L; total arsenic concentrations in waters ranged from undetected to 0.916 µg/L; total nickel concentrations in waters ranged from undetected to 2.27 µg/L; and total lead concentrations in waters ranged from undetected to 0.650 µg/L. Median total lead concentrations in waters varied throughout the sampling season, but not in a consistent pattern for each site.

Variable results from month to month in concentrations of trace elements in waters may be linked to concentrations in surface runoff entering Iliamna Lake and to seasonal changes in oxidation reduction that control the complexation of trace elements in lake water and sediments. Total and dissolved trace elements in waters other than lead and zinc displayed no discernable trends from month to month (Figures B-26 to B-27).

Several concentrations documented in the analysis of trace elements in waters were outside the benchmark criteria set forth in the drinking water standards and CALC (Attachment B-1):

- Dissolved copper concentrations at Pile Bay in May and June 2005.
- Total copper concentrations at Pile Bay in May and June 2005 and in May, June, July, August, and October 2007 and at Northeast Bay in October 2007.
- Dissolved lead concentrations at Upper Talarik Creek in September 2007.
- Total lead concentrations at Northeast Bay in October 2005 and August and October 2007, at Pile Bay in August and October 2007, and at Knutson Bay in July 2007.

In sediment samples, zinc concentrations ranged from 23.2 to 58.3 mg/kg, with the lowest concentration occurring at Roadhouse Bay and the highest concentration occurring at Pile Bay. Copper concentrations in sediments ranged from 4.60 to 90.6 mg/kg, with the lowest concentration occurring at Roadhouse Bay and the highest at Pile Bay. Molybdenum concentrations in sediments ranged from undetected to 8.47 mg/kg, with the highest concentration occurring at Knutson Bay. Arsenic concentrations in sediments ranged from lowest (undetected) to highest (6.02 mg/kg) at Northeast Bay. Nickel concentrations in sediments ranged from 2.30 to 6.39 mg/kg, with the lowest concentration occurring at Roadhouse Bay and the highest at Northeast Bay. Lead concentrations in sediments ranged from 2.09 to 7.76 mg/kg, the lowest concentration occurring at Roadhouse Bay and the highest at Knutson Bay. Median concentrations

for zinc, copper and lead in sediments were highest at Pile Bay, and median concentrations for arsenic and nickel in sediments were highest at Northeast Bay (Figures B-28 to B-33).

A comparison of the concentrations of trace elements in sediment samples and in water-quality samples indicates a relatively weak correlation ($R < 0.50$) for most elements at sample sites where both sediment and water-quality data were collected (Knutson Bay, Northeast Bay, Pile Bay, and Roadhouse Bay). These results may indicate that trace elements in the water column originate predominately from surface runoff during storm events, as opposed to sediment re-suspension.

B.6.1.10 Mercury

Low-level mercury analysis was performed on all surface water and sediment samples collected in 2005. Analysis by standard mercury method was performed for sediment samples. All mercury results for surface water samples from the five deeper-water sampling sites were undetected or were below the MRL (Attachment B-1). All results for mercury in sediments fell below the MRL (Attachment B-2).

B.6.1.11 Cyanide

Total cyanide, weak acid dissociable (WAD) cyanide, and thiocyanate (a sulfur cyanide complex) were analyzed in surface water samples. All surface water results were reported by the laboratory as either undetected or at or below the MRL (0.005 mg/L for cyanide and WAD cyanide, and 1 mg/L for thiocyanate; Attachment B-1). The CALC for freshwater (0.0052 mg/L as free cyanide) is the most stringent water-quality benchmark for cyanide.

The majority of sediment results for cyanide fell below the MRL. Total cyanide was above the MRL at Knutson Bay in June (0.077 mg/kg) and October (0.056 mg/kg) 2005 and at Northeast Bay (0.190 mg/kg) and Pile Bay (0.058 mg/kg) in June 2005 (Attachment B-2).

B.6.1.12 Organic Chemistry

Surface water and sediments were sampled for organic constituents, including pesticides/PCBs, volatile compounds, and semivolatile compounds at the five deeper-water sites. The results for all parameters, except total organic carbon (TOC) in water and TOC, residual range organics (RRO), and diesel range organics (DRO) in sediments, were at or below the MRLs. (Attachment B-4, which shows only the sediment results above the MRLs). TOC in water was found to be present at concentrations between 0.519 mg/L (Northeast Bay) and 1.01 mg/L (Upper Talarik Creek) in 2007 (Attachment B-1). In sediments, TOC results ranged from 0.621 percent (Roadhouse Bay) to 2.98 percent (Northeast Bay). Organic carbon is a product of decaying natural organic matter (e.g., leaf fall and organisms), but may be introduced to aquatic systems via anthropogenic sources such as herbicides, pesticides, sewage, etc. High TOC concentrations in freshwaters can be detrimental to aquatic life by increasing the biological oxygen demand on the system. Levels of TOC found in Iliamna Lake are within the normal expected range for freshwaters (Hem, 1985). RRO is another term for heavy fuel products; RRO concentrations in sediment ranged from 55.4 mg/kg at Pile Bay to 499 mg/kg at Knutson Bay, which are well below the cleanup level of 2,000 mg/kg set by the ADEC in water quality regulations 18 AAC 75 (ADEC 2008). Organic constituents tested for during the Iliamna Lake Study are listed in the 2005 QAPP (a copy of which is provided in Appendix G of this environmental baseline document).

B.6.1.13 Zooplankton

Zooplankton often are used as indicators of lake system water quality (APHA, 2005). In addition, they are a primary source of food for plankton-eating fish such as juvenile sockeye salmon. For example, in nearby Lake Clark, juvenile sockeye densities have been strongly correlated with zooplankton in the lake (Sweetman, 2001). Freshwater zooplankton communities are primarily comprised of protozoans, rotifers, cladocerans, and copepods (Wetzel, 2001). In addition to protozoans, six zooplankton taxa were identified in the Iliamna Lake samples: Copepoda, Rotifera, Cladocera, Ostracoda, Laevicaudata and Anostraca (Table B-6). Zooplankton taxa richness at the five deeper-water sites was similar to taxa richness documented in standard literature (Wetzel, 2001) and in previous studies of Iliamna Lake and other lakes in the region (Sweetman, 2001; Lenarz, 1966).

In a 1963-1965 study of Iliamna Lake, copepods accounted for 64.5 percent of the zooplankton community (Lenarz, 1966). Zooplankton samples collected in 2005 and 2007 for the Iliamna Lake Study generally corroborated well with these data in the earlier months of the summer, but not in late summer and fall. In both 2005 and 2007, copepods and rotifers were more abundant than other zooplankton taxa during all months in the season (May to October; Figure B-34). In 2005, copepods dominated the sample composition in May and June, but were replaced by rotifers in the later summer and fall months. In 2007, however, copepods were the dominant taxa during most of the sampling months, and relative abundance generally increased throughout the season.

In both of the study years, cladocerans were absent or were found in minimal numbers earlier in the season (May and June), but increased later in the summer and fall. The cladoceran taxa *Bosmina* had been found to comprise approximately 25 percent of the zooplankton community in a previous study of Iliamna Lake; other documented species included *Diatomus gracilis*, *Erytemora yukonensis*, *Cyclops scutifer*, *Bosmina coregoni*, *Daphnia longiremis*, and *Holopedium gibberum* (Lenarz, 1966).

Although cladocerans were generally a small percentage of the overall zooplankton community, this taxa was more prevalent at Knutson Bay than at other locations. Cladocerans comprised more than 50 percent of the taxa composition at Knutson Bay in July and August 2005 and in August 2007. Pile Bay had the overall lowest population of cladocerans of the sites (Figures B-35 and B-36). With the exception of August 2007, cladocerans at Pile Bay never comprised more than 10 percent of the taxa found at the sampling sites.

Ostracoda, Anostraca, and Laevicaudata were seldom found and comprised less than 1 percent of the overall population of zooplankton from all sampling events at all sites (Figures B-34, B-35, and B-36).

Changes in zooplankton community structure may be influenced by several factors, including predation by juvenile sockeye salmon. Juvenile sockeye spend 1 to 3 years in the limnetic zone of lakes before migrating to the ocean (Burgner, 1991) and are the predominant plankton-eating fish species in Iliamna Lake (Rogers, 1968). A previous study of Iliamna Lake found that the influence of salmon on zooplankton increased from early to late summer and that the abundance of *Cyclops* (order Copepoda) generally decreased while *Bosmina* (order Cladocera) increased from early to late summer and from east to west across the lake. Rotifers were seldom observed and were not counted (Hoag, 1972). Sockeye salmon tend to feed selectively on cladocerans at a greater rate than on more motile and evasive copepods (Burgner, 1991). As densities of plankton-eating fish (sockeye) increase, larger more vulnerable zooplankton such as copepods are increasingly replaced by smaller species (Dodson, 1974; Koenings et

al, 1990; Koenings and Kyle, 1997). The species replacement may explain the relatively low, but seasonal abundance of cladocerans and the dominance of smaller bodied rotifers during the study (Figures B-35 and B-36).

Previous studies of Alaskan lakes that contain sockeye salmon have shown that zooplankton are generally not distributed near the surface, but are concentrated at lower depths in the water column (Sweetman, 2001). Zooplankton have been shown to undertake a daily vertical migration in several lakes (Wetzel, 2001), including Iliamna Lake, where approximately 50 percent of the zooplankton population occurs above 15 meters at midnight but is distributed above 50 meters at noon (Fowler and Lenarz, 1965). Similarly, another study of temperate lakes found that zooplankton were mostly present at depths greater than 10 meters (Yanusz, 1990). Zooplankton presence at greater depths is hypothesized to be a predation-avoidance behavior where zooplankton remain in poorly lit waters and are less susceptible to predation (Sweetman, 2001). Sampling for the Iliamna Lake Study occurred during the daytime and with non-quantitative sampling gear; therefore, no attempt was made in this report to quantify densities of zooplankton present in the samples.

Temperature changes could explain shifts in the composition of a zooplankton community. A 1971 study of Iliamna Lake found that in late June and early July copepods were present in the upper 30 to 40 meters of the water column. As temperatures in the upper water column increased, the vertical distribution of copepods shifted deeper to water with a temperature of less than 8°C (Gunnerod, 1971). The presence of copepods in Iliamna Lake Study samples did not appear to be influenced by water temperature (Figure B-34).

B.6.2 Baseline Trace Elements in Mussel Tissues

Mussels were collected at four nearshore locations to characterize baseline conditions for total trace elements (Attachment B-3; Figures B-37 to B-43). Mussel tissue analyses showed that zinc concentrations were undetected at all sites except Bucket Lake, where concentrations ranged from 158 to 216 mg/kg, with a median value of 174 mg/kg (Figure B-37). Copper concentrations were detected at all four sites, with the highest value recorded at Bucket Lake (72.7 mg/kg). Median concentrations for copper were highest at Flat Island (Figure B-38). Zinc and copper are important micronutrients that are actively taken up by organisms to fulfill metabolic needs. Although both zinc and copper can be toxic at high concentrations, none of the water quality concentrations at the four sites were found to be above the CALC.

Molybdenum concentrations in mussels ranged from 0.33 mg/kg at Bucket Lake to 0.83 mg/kg at Finn Bay, with the highest median concentration of 0.59 mg/kg occurring at Whistlewing Bay (Figure B-39). Selenium was found in freshwater mussel tissue at concentrations up to 4.00 mg/kg, with the highest concentration and the highest median concentration occurring at Flat Island (Figure B-40). Arsenic concentrations ranged from 2.04 mg/kg at Finn Bay to 4.95 mg/kg at Whistlewing Bay, with the highest median concentration at Whistlewing Bay (Figure B-41). Nickel concentrations ranged from 1.13 mg/kg at Flat Island to 7.81 mg/kg at Finn Bay, with the highest median concentration at Finn Bay (Figure B-42). Lead concentrations in mussel tissues ranged from 0.05 mg/kg to 1.16 mg/kg, with the highest concentration at Bucket Lake (Figure B-43). Bucket Lake also had the highest median concentrations of lead and nickel in sediments (Attachment B-2). Fluctuations in concentrations of some trace elements in sediments appeared to be associated with similar fluctuations in results for mussel tissue; however, sample sizes were insufficient to test for true correlations. Consistent with concentrations in samples from

the five deeper-water sites, some concentrations of total and dissolved aluminum in surface water samples from nearshore sites were above the water quality criteria, and all alkalinity results were below the criteria of 20 mg/L.

Mussel tissue analyses showed mercury concentrations ranging from 0.053 to 0.282 mg/kg. The highest concentrations of mercury occurred at Bucket Lake (Attachment B-3). Mercury was not detected in water or sediment at any of the four sites (Attachments B-1 and B-2; note that results below the MRL are not included in the data analysis or reporting, but are included in the attachments for informational purposes).

Water and sediments were sampled for organic constituents, including pesticides/PCBs, volatile compounds, and semivolatile compounds, and mussels were tested for all of these parameters except pesticides/PCBs. Results of the mussel tissue organic constituent analyses were all at or below the MRLs. TOC concentrations in sediments at the freshwater mussel sites ranged from 5.36 percent at Finn Bay to 13.9 percent at Flat Island), much higher than TOC concentrations in sediments in the deeper-water sites. RROs were above the MRL in sediments at Bucket Lake, Flat Island, and Finn Bay, and a few PAH organics were found in the sediments at Bucket Lake (Attachment B-4). Organic constituents tested for during the Iliamna Lake Study are listed in the 2005 QAPP (a copy of which is provided in Appendix G of this environmental baseline document).

B.7 Summary

Five deeper-water sites were sampled for water quality, sediment, and zooplankton in 2005 and 2007, and four nearshore sites were sampled for mussels, water quality, and sediment in 2005 and 2006, with one water-quality sample collected in 2007. The Upper Talarik Creek site was not sampled in September 2005 because of weather conditions, and mussels were not found during that month at Whistlewing Bay. The data collected provide baseline information on benthic and pelagic conditions in Iliamna Lake.

The data collected from Iliamna Lake for water quality, mussel tissue, and sediment indicate that Iliamna Lake is an oligotrophic, dimictic lake with water-quality conditions similar to the natural conditions of other regional lakes. Only a few parameters (e.g., copper, lead, aluminum, iron, manganese, and alkalinity) had results outside of the CALC benchmarks established by the ADEC Alaska Department of Environmental Conservation for freshwater. The concentrations are likely a result of geological influences and are consistent with previous studies conducted at Iliamna Lake and other area watersheds. Field parameters were within normal ranges, with the exception of a few slightly low pH measurements at Pile Bay, and are considered suitable for lake biota.

Concentrations of nutrients and major ions found during the 2005 through 2007 Iliamna Lake Study were similar to concentrations from a study conducted at Iliamna Lake nearly 40 years ago, except for sodium, which was present at nearly twice the concentration found by the earlier study. Cation and anion dominance in Iliamna Lake is generally characteristic of temperate lakes. Sodium was more abundant than magnesium, however, which suggests a contribution from igneous rocks in the region. Depth was not found to have an effect on the concentrations of major ions. Several major ions and TDS were lower earlier in the summers, peaked in September, and declined again in October. The temporary increases may be associated with the influence of precipitation and of inflow from streams.

Temporal and spatial variations were evident in some of the water-quality analytes. Pile Bay and Knutson Bay tended to exhibit similar concentrations, which were often different (usually higher) than the other

three deeper-water sites. Zinc reached peak concentrations in June and July. Copper, lead, zinc, and aluminum were found to be above the CALC or drinking water standards periodically. Alkalinity was almost always below the criteria, indicating that the lake system may not be able to buffer substantial changes in pH. Mercury, cyanide, and organics were rarely found to be above the MRL during the study.

A comparison of the concentrations of trace elements in sediment samples to those in water samples indicates a relatively weak correlation ($R < 0.50$) between corresponding concentrations for sample sites where both sediment and water-quality data were collected (Knutson Bay, Northeast Bay, Pile Bay, and Roadhouse Bay). The results may indicate that trace elements in the water column originate predominately from surface runoff during storm events, as opposed to sediment re-suspension.

Iliamna Lake zooplankton communities were dominated by copepods and rotifers during many of the sampling events. Copepod abundance generally was higher earlier in the summer and declined in later months in 2005; but copepods in 2007 increased in relative abundance from May to October (with the exception of July). In both 2005 and 2007, cladoceran relative abundance was low in the early spring and summer, but increased in late summer and fall. Previous studies suggest that low numbers of cladocerans and a decrease in copepods throughout the summer may result from predation by juvenile sockeye salmon, and this trend is a typical occurrence in sockeye-rearing lakes.

B.8 References

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B.9 Glossary

Benthic—relating to the bottom of a body of water.

Biota—plant and animal life.

Dimictic—lakes that have two mixing periods, typically in spring and fall.

Euphotic zone—layer of water where sunlight is sufficient for photosynthesis to occur.

Eutrophic—biologically productive type of lake because of relatively high rates of nutrient input.

Limnetic zone—area of open water on a lake.

Oligotrophic—unproductive lakes low in nutrients and algae.

Pelagic—relating to the water column, which is a conceptual column of water from surface to bottom sediments.

Thermocline—layer in a large body of water, such as a lake, that sharply separates regions differing in temperature, so that the temperature gradient across the layer is abrupt.

Titration—process or operation of determining the concentration of a substance in solution.

Valence—the combining capacity of an atom or a radical determined by the number of electrons that it will lose, add, or share when it reacts with other atoms; the valence of an element in an ionic compound is equal to the number of electrons that an element loses or gains during the formation of the compound.

TABLES

TABLE B-1
Summary of Sampling, Iliamna Lake Study, 2005 through 2007

Site Name	Samples Collected during Each Sampling Event														
	Field Parameters ^{a, b}			Zooplankton ^b			Surface Water ^b			Sediments ^c			Mussels ^c		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Bucket Lake	x	x	x					x	x		x	x		x	x
Finn Bay	x	x						x			x	x		x	x
Flat Island	x	x						x			x	x		x	x
Knutson Bay	x		x	x		x	x		x		x				
Northeast Bay	x		x	x		x	x		x		x				
Pile Bay	x		x	x		x	x		x		x				
Roadhouse Bay	x		x	x		x	x		x		x				
Upper Talarik Creek ^d	x		x	x		x	x		x						
Whistling Bay ^e		x						x			x		x		x

Notes:

- Field measurements of dissolved oxygen, oxidation reduction potential, pH, water clarity, turbidity, temperature, and specific conductance (no samples collected).
- Sampling events occurred monthly from May through October.
- Sampling events occurred in June and September.
- No measurements or samples were collected at Upper Talarik Creek in September 2005 because of weather conditions.
- No measurements or samples were collected at Whistling Bay in September 2005; mussels were not located.

TABLE B-2
Summary of Surface Water Analyses, Iliamna Lake Study

Analyte	Method	Method Reporting Limit
Aluminum, total and dissolved	E200.8	25 µg/L
Antimony, total and dissolved	E200.8	0.2 µg/L
Arsenic, total and dissolved	E200.8	0.5 µg/L
Barium, total and dissolved	E200.8	0.3 µg/L
Beryllium, total and dissolved	E200.8	0.4 µg/L
Bismuth, total and dissolved	E200.8	5 µg/L
Boron, total and dissolved	E200.7	10 µg/L
Cadmium, total and dissolved	E200.8	0.1 µg/L
Calcium, total and dissolved	200.7	50 µg/L
Chromium, total and dissolved	E200.8	0.2 µg/L
Cobalt, total and dissolved	E200.8	0.1 µg/L
Copper, total and dissolved	E200.8	0.2 µg/L
Iron, total and dissolved	E200.7/200.8	20 µg/L
Lead, total and dissolved	E200.8	0.2 µg/L
Magnesium, total and dissolved	E200.7/200.8	20 µg/L
Manganese, total and dissolved	E200.8	1 µg/L
Molybdenum, total and dissolved	E200.8	1 µg/L
Nickel, total and dissolved	E200.8	0.2 µg/L
Potassium, total and dissolved	E200.7/200.8	50 µg/L
Selenium, total and dissolved	E200.8	1 µg/L
Silicon, dissolved	E200.7	100 µg/L
Silver, total and dissolved	E200.8	0.2 µg/L
Sodium, total and dissolved	E200.7/200.8	100 µg/L
Thallium, total and dissolved	E200.8	0.05 µg/L
Tin, total and dissolved	E200.8	1 µg/L
Vanadium, total and dissolved	E200.8	0.4 µg/L
Zinc, total and dissolved	E200.8	1.5 µg/L
Mercury, total	E1631	0.001 µg/L
pH	E150.1	NA
Specific conductance	E120.1	1 µS/cm
Alkalinity	SM20 2320B	10 mg/L
Acidity	E305.1	NA
Ammonia (as N)	E350.2	0.1 mg/L
Chloride	E300.0	0.1 mg/L
Cyanide, total	SM20 4500	0.005 mg/L
Cyanide, weak acid dissociable	SM20 4500	0.005 mg/L
Fluoride	E300.0	0.1 mg/L
Nitrate+nitrite (as N)	E300.0	0.1 mg/L

Analyte	Method	Method Reporting Limit
Phosphorus, total	E365.2	0.1 mg/L
Sulfate	E300.0	0.1 mg/L
Total dissolved solids	E160.1	10 mg/L
Total suspended solids	E160.2	0.5 mg/L
Thiocyanate	Laboratory SOP	1 mg/L

Notes:

E = U.S. Environmental Protection Agency (EPA), *Methods for Chemical Analysis of Inorganic Substances in Environmental Samples*, EPA/600/R-93-100, August 1993; and *Methods for the Determination of Metals in Environmental Samples*, EPA/600/4-91-010, June 1991.

µg/L = micrograms per liter.

µS/cm = microSiemens per centimeter.

mg/L = milligrams per liter.

NA = not applicable.

SM = American Public Health Association, *Standard Methods for the Examination of Water and Wastewater*, 21st edition, 2005

SOP = standard operating procedure.

TABLE B-3
Summary of Sediment Analyses, Iliamna Lake Study

Analyte	Method
Total metals ^a	SW6010B/6020
Mercury	SW7471 (CVAA)
Total cyanide	SM20 4500
Chloride	E300.0
Fluoride	E300.0
Sulfate	E300.0
Ammonia (as N)	E350.3
Polynuclear aromatic hydrocarbons ^b	SW8270CSIM

Notes:

- a. Aluminum through zinc in Table B-2.
- b. Polynuclear aromatic hydrocarbons are made up of 10 parameters. Individual method reporting limits are provided in the 2005 QAPP (see Appendix G of this environmental baseline document).
- E = U.S. Environmental Protection Agency (EPA), *Methods for Chemical Analysis of Inorganic Substances in Environmental Samples*, EPA/600/R-93-100, August 1993, and *Methods for the Determination of Metals in Environmental Samples*, EPA/600/4-91-010, June 1991.
- SM = American Public Health Association, *Standard Methods for the Examination of Water and Wastewater*, 21st edition, 2005.
- SW = EPA, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*, 3rd edition, September 1986.

TABLE B-4
Summary of Tissue Analyses, Iliamna Lake Study

Analyte	Method
Total metals ^a	PSEP/E200.8
Polynuclear aromatic hydrocarbons ^b	SW8270CSIM

Notes:

- a. Aluminum through zinc in Table B-2.
- b. Polynuclear aromatic hydrocarbons are made up of several parameters. Individual method reporting limits are provided in the 2005 QAPP (see Appendix G of this environmental baseline document).
- PSEP = Puget Sound Estuary Program.
- SW = EPA, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*, 3rd edition, September 1986.

TABLE B-5
Results for Ambient Water Parameters, Iliamna Lake Study, 2005 through 2007

Site Name	Sample Month	Total Depth		Secchi Median ^a (depth in meters)		Turbidity (NTU) ^{b,c}		Temp. (°C) ^c		Spec. Cond. (mS/cm) ^c		DO (%) ^c		DO (mg/L) ^c		pH ^c		ORP (mV) ^c	
		2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
Knutson Bay	May	8.0	17.5	6.0	12.3	0.40 ^d	0.00	4.26	3.82	0.035	0.041	108.5	101.2	14.13	13.31	6.62	6.45	38.25	256.00
	Jun	15.0	15.0	12.5	15.0	0.25	0.42	7.90	5.50	0.038	0.034	111.1	106.0	13.22	13.39	6.79	6.68	25.40	148.45
	Jul	16.0	13.0	—	12.8	0.29	0.26	12.46	12.50	0.046	0.042	105.7	76.5	11.29	8.19	7.67	7.18	30.00	116.55
	Aug	19.0	20.0	9.0	12.8	0.31	0.32	14.36	10.87	0.032	0.043	93.1	68.4	9.32	7.56	6.97	6.95	244.20	232.30
	Sept	15.0	16.0	11.5	13.3	0.57	0.36	10.21	9.41	0.042	0.043	111.9	85.1	12.56	9.73	6.72	7.06	195.30	149.10
	Oct	19.0	10.0	13.5	—	0.29	0.24	8.86	8.14	1.416	0.044	90.5	64.3	10.45	7.59	—	7.12	-163.50	73.75
	Median	15.5	15.5	11.5	12.8	0.29	0.28	10.20	9.41	0.042	0.042	105.7	82.8	11.29	9.48	6.87	6.96	34.60	159.10
Northeast Bay	May	11.0	11.0	—	8.0	0.35 ^e	1.00	7.48	6.01	0.044	0.047	114.0	90.3	13.63	11.27	6.82	6.58	41.20	272.35
	Jun	11.0	12.0	8.7	9.5	0.25	0.37	7.97	7.36	0.043	0.045	115.6	109.6	13.83	13.20	6.83	7.28	9.60	145.80
	Jul	11.0	11.0	9.8	10.8	0.32	0.32	13.44	12.29	0.043	0.048	83.9	103.7	8.75	11.09	6.75	7.12	228.10	157.00
	Aug	12.0	11.0	9.5	11.0	0.66	0.43	14.32	12.16	0.038	0.047	99.4	68.1	10.21	7.31	7.36	6.75	210.30	230.35
	Sept	12.0	11.0	8.3	6.5	0.85 ^d	1.02	10.32	10.81	0.045	0.050	109.2	84.2	12.23	9.32	6.93	7.00	142.70	126.35
	Oct	12.0	13.0	9.3	9.5	0.61	0.58	8.30	7.61	0.045	0.048	86.4	64.6	10.16	7.73	—	6.89	247.10	72.70
	Median	11.5	11.0	9.3	9.5	0.52	0.59	10.32	8.87	0.044	0.047	100.3	87.1	10.53	10.01	6.90	6.99	153.60	149.95
Pile Bay	May	16.0	20.0	—	11.3	0.34	1.00	4.10	4.15	0.040	0.043	106.9	101.8	13.99	13.30	6.32	5.86	69.75	134.40
	Jun	17.0	20.0	8.1	13.0	0.72	0.31	4.98	4.39	0.037	0.042	105.5	101.9	13.49	13.23	6.49	6.69	-44.75	269.30
	Jul	20.0	17.0	—	11.3	0.54	0.45	10.51	11.62	0.043	0.043	106.7	76.2	11.90	8.31	5.30	7.07	195.50	113.40
	Aug	20.0	17.0	8.8	17.0	0.39	0.58	13.84	5.30	0.034	0.045	92.7	67.4	9.57	8.53	7.29	6.41	228.15	252.80
	Sept	19.0	20.0	9.5	12.1	0.76	0.36	10.06	9.93	0.042	0.045	111.3	78.3	12.56	8.85	7.11	6.87	220.80	64.10
	Oct	14.0	20.0	12.5	12.3	0.49	0.42	8.81	8.78	—	0.044	89.3	63.6	10.31	7.39	—	6.91	-109.85	85.25
	Median	18.0	20.0	9.1	12.2	0.54	0.44	9.85	6.62	0.040	0.043	106.2	77.8	12.42	8.77	6.62	6.82	168.55	131.10
Roadhouse Bay	May	10.0	11.0	9.5	8.5	0.31	1.00	8.15	5.31	0.043	0.047	114.6	89.8	13.53	11.31	6.90	6.67	123.20	272.80
	Jun	12.0	11.0	9.3	10.3	0.32	0.38	10.60	6.54	0.043	0.046	114.2	109.8	12.53	13.48	7.10	7.25	12.80	173.25
	Jul	10.0	10.0	11.3	9.5	0.30	0.36	12.32	10.74	0.043	0.047	84.0	106.4	8.99	11.87	6.77	6.49	201.50	20.70
	Aug	10.0	10.0	8.5	10.5	0.61	0.39	14.88	12.30	0.037	0.047	95.7	67.6	9.71	7.24	7.36	6.68	214.50	237.10
	Sept	13.0	11.0	7.6	6.5	0.74	0.91	10.17	10.76	0.088	0.050	108.1	83.0	12.15	9.21	7.06	7.00	159.40	160.45
	Oct	12.0	11.0	9.0	9.0	0.56	0.65	7.42	6.78	0.046	0.046	87.1	65.2	10.48	7.97	—	6.80	191.20	79.20
	Median	11.0	11.0	9.1	9.3	0.47	0.62	10.17	7.89	0.044	0.047	106.2	88.5	11.90	10.75	7.00	6.94	161.80	168.70
Upper Talarik Creek	May	13.0	14.0	10.2	10.8	0.35	0.00	6.96	4.01	0.044	0.046	113.0	89.4	13.72	11.72	6.96	6.47	115.60	319.00
	Jun	14.0	11.0	7.9	8.5	0.76	0.40	7.30	6.47	0.044	0.048	112.1	60.2	13.50	7.38	7.04	7.07	16.50	224.95
	Jul ^f	13.0	9.0	10.8	—	0.31	0.26	10.81	—	0.038	—	80.4	—	8.88	—	6.78	—	170.70	—
	Aug	14.0	13.0	11.5	9.0	0.35	1.44	13.42	12.35	0.034	0.048	95.3	67.5	9.94	7.22	7.11	6.08	260.75	43.15
	Sept ^g	—	11.0	—	—	—	—	—	10.64	—	0.046	—	79.6	—	8.86	—	6.60	—	71.95
	Oct	15.0	14.0	9.0	10.3	0.50	0.46	8.12	8.33	0.045	0.047	87.3	64.7	10.35	7.62	—	6.91	203.20	83.50
	Median	14.0	12.0	10.2	9.6	0.35	0.40	8.12	8.33	0.044	0.046	94.8	67.5	10.34	7.62	7.02	6.64	170.45	136.75

Notes:

a. Each value is the median of two Secchi readings. If substrate was visible, the depth represents the substrate depth at this site.

b. Three turbidity readings were taken at each site at the same depths from which samples were collected.

c. Each value represents the median of values for all depths.

d. Median of only two readings.

e. Only one reading.

f. Water quality samples were taken, but field parameters were not taken because of weather conditions.

g. Field parameters taken, but water quality samples were not taken because of weather conditions.

— = no measurements taken.

DO = dissolved oxygen

mg/L = milligrams per liter.

mS/cm = milliSiemens per centimeter.

mV = millivolt(s).

NTU = nephelometric turbidity unit(s).

ORP = oxidation reduction potential.

TABLE B-6
Zooplankton Primary Taxa Abundance, Iliamna Lake, 2005 and 2007

Site Name	Sample Month	Vertical Depth Sampled (m)		Total Abundance		Copepoda		Rotifera		Cladocera		Ostracoda		Laevicaudata		Anostraca	
		2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
Knutson Bay	May	8	17.5	312	304	236	250	66	48	4	3	0	3	0	0	0	0
	Jun	15	15	314	323	106	204	46	93	4	10	1	0	0	3	0	0
	Jul	16	13	790	429	223	53	394	227	7	2	0	0	0	1	0	0
	Aug	19	20	353	1141	2	503	5	438	10	200	0	0	0	0	0	0
	Sept	15	16	738	745	323	246	315	413	74	78	0	1	0	6	0	0
	Oct	19	10	121	339	8	150	0	154	7	25	0	7	0	0	0	0
Northeast Bay	May	11	11	391	400	241	63	103	304	3	3	0	7	0	0	0	0
	Jun	11	12	384	391	125	145	152	215	1	12	3	0	0	0	0	0
	Jul	11	11	656	301	164	36	246	216	31	13	0	0	0	1	0	0
	Aug	12	11	951	342	33	123	111	170	4	48	0	0	0	0	0	0
	Sept	12	11	317	351	153	213	83	37	52	101	0	0	0	0	0	0
	Oct	12	13	145	429	11	256	2	50	5	123	1	0	0	0	0	0
Pile Bay	May	16	20	458	446	306	382	41	56	3	3	0	2	0	0	0	0
	Jun	16	20	313	484	288	429	14	0	8	55	0	0	0	0	0	0
	Jul	20	17	698	551	520	80	136	459	6	2	0	0	0	0	0	0
	Aug	20	17	735	414	26	293	516	25	2	96	0	0	0	0	0	0
	Sept	19	20	476	821	171	641	296	78	5	85	0	0	0	0	0	0
	Oct	12	20	310	550	22	440	153	93	8	17	0	0	0	0	0	0
Roadhouse Bay	May	10	11	430	500	204	80	106	296	9	2	2	3	0	0	0	0
	Jun	11	11	336	329	81	197	143	106	0	16	0	0	0	0	2	1
	Jul	10	10	581	561	186	105	238	428	119	16	2	0	0	1	0	0
	Aug	10	10	803	371	27	187	84	126	2	55	0	1	0	0	0	0
	Sept	13	11	315	412	91	268	149	20	46	71	0	11	0	0	0	0
	Oct	12	11	126	353	12	161	0	39	3	153	0	0	0	0	0	0
Upper Talarik Creek	May	13	14	420	323	155	91	214	216	4	6	0	2	0	0	0	0
	Jun	13	11	302	302	108	153	179	110	2	25	0	1	0	0	0	1
	Jul ^a	13	9	822	0	181	0	547	0	34	0	1	0	0	0	0	0
	Aug	14	13	1055	325	288	156	83	52	49	117	0	0	0	0	0	0
	Sept ^b	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Oct	15	14	138	461	33	333	0	33	29	75	0	0	0	0	0	0
TOTAL ABUNDANCE				13,790	12,698	4,324	6,238	4,422	4,502	5,31	1,412	10	38	0	12	2	2

Notes:

- a. July 2005 sample collected August 1.
b. No samples collected in September because of weather.
m = meter.

FIGURES

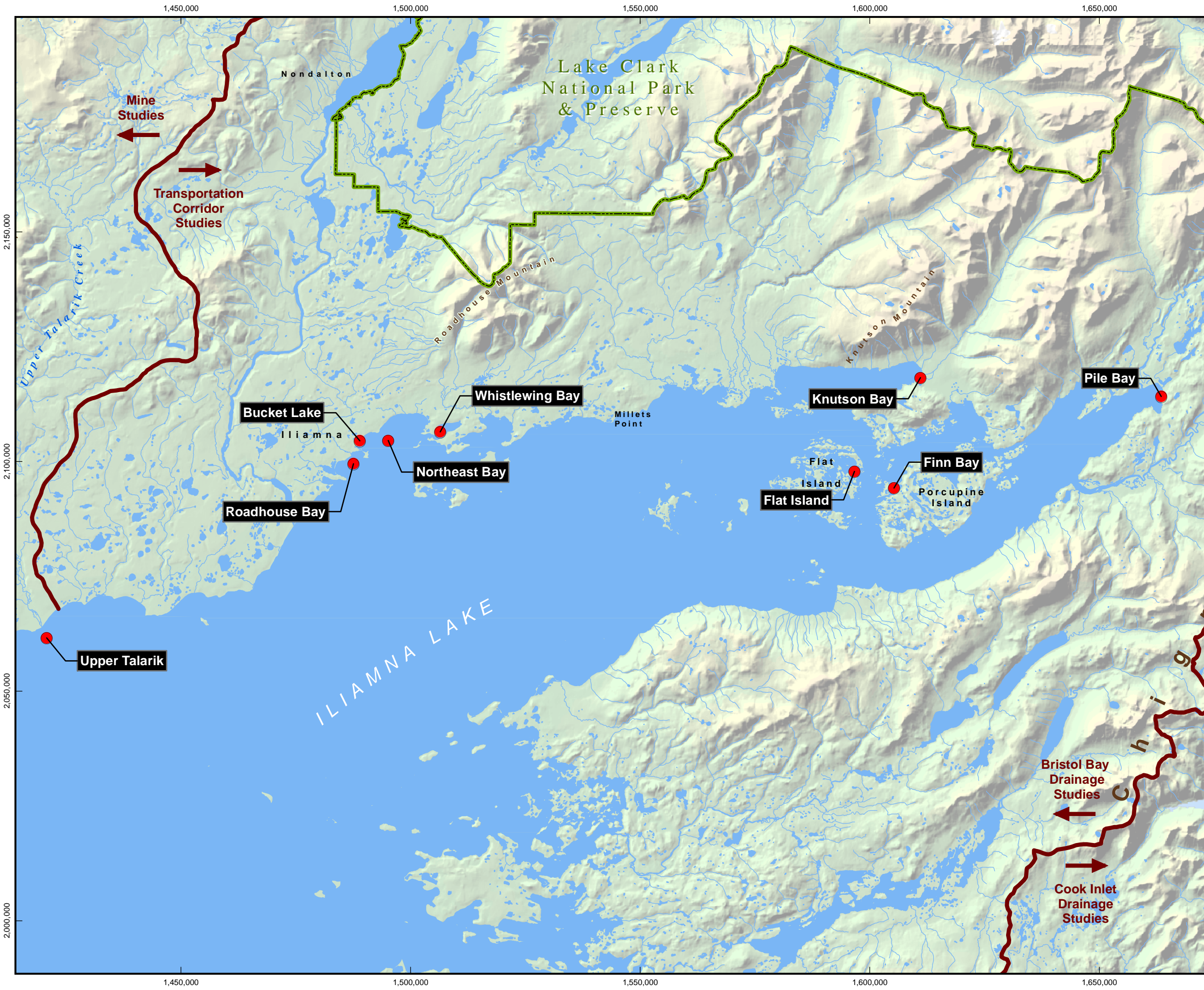


Figure B-1
Iliamna Lake Study Area
and Sampling Sites,
2005-2007

Legend

● Sampling Site



0 2.5 5 Miles

0 2.5 5 Kilometers

Scale 1:250,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: HDR_Lake_EBDFigB-1_v01

Date: December 21, 2010

Version: 1

Author: HDR - MC

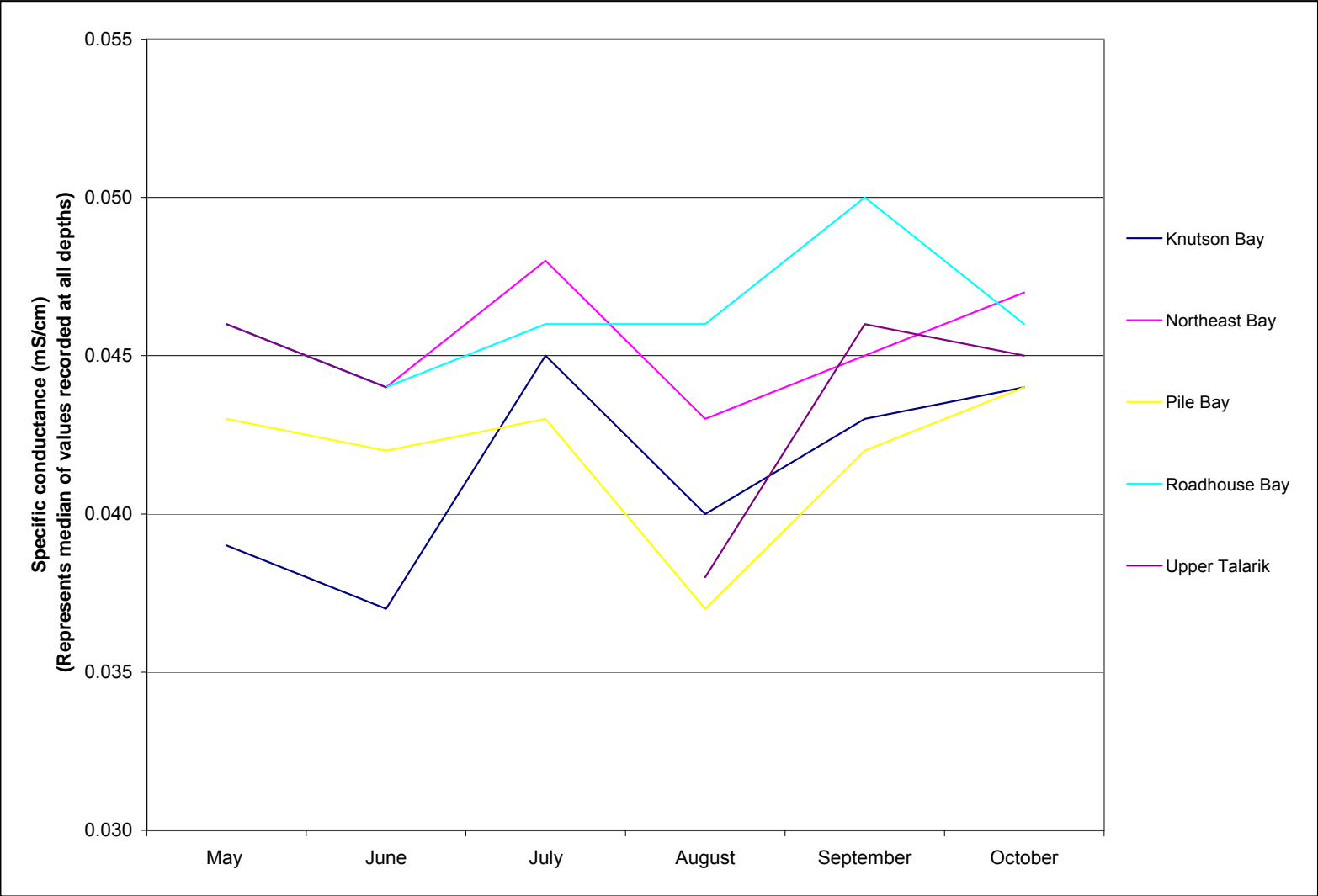


FIGURE B-2
Median Specific Conductance Time Series for Water Samples, May through October 2005 and 2007

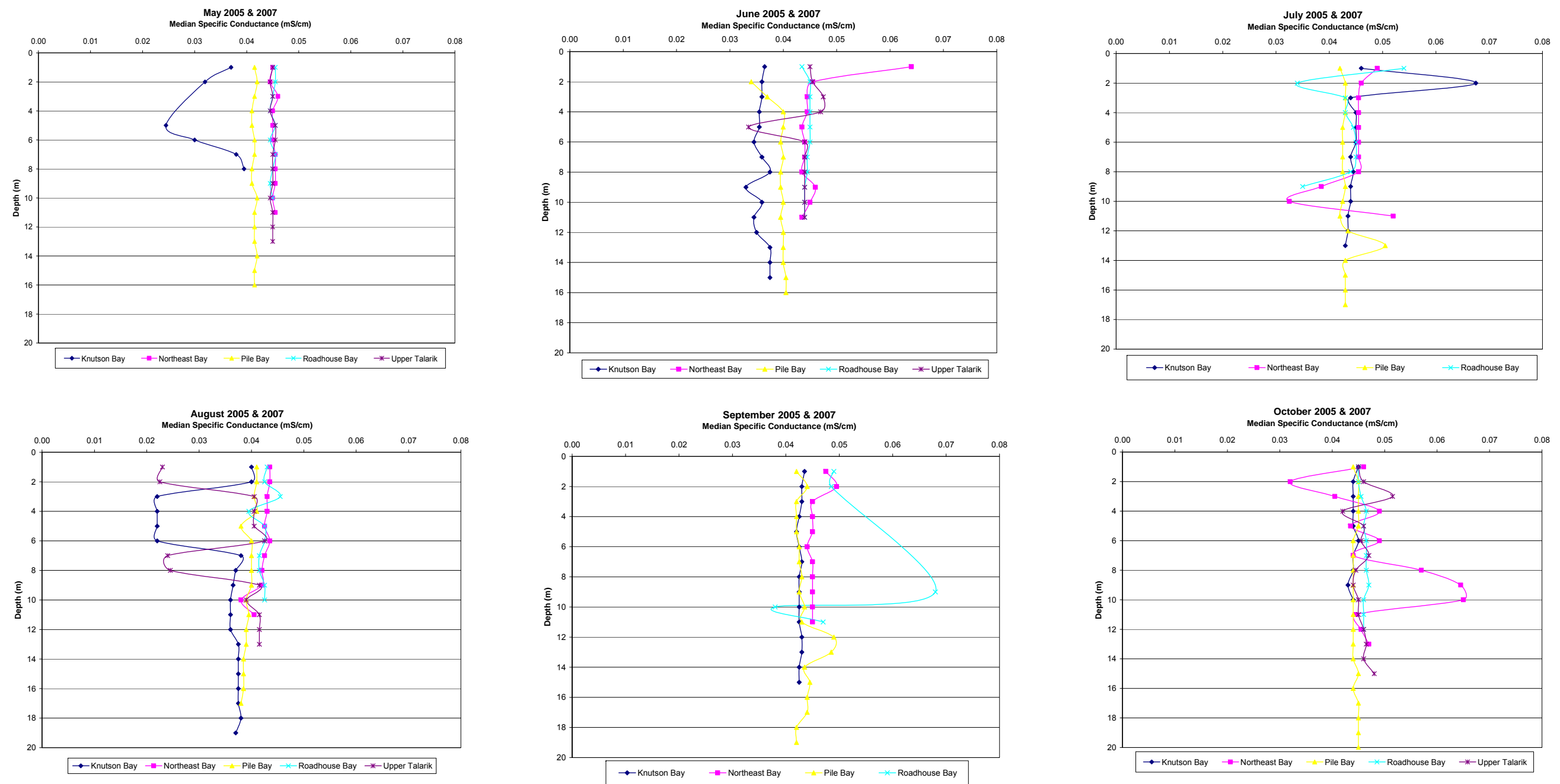


FIGURE B-3
Median Specific Conductance for Water Samples, May through October 2005 and 2007

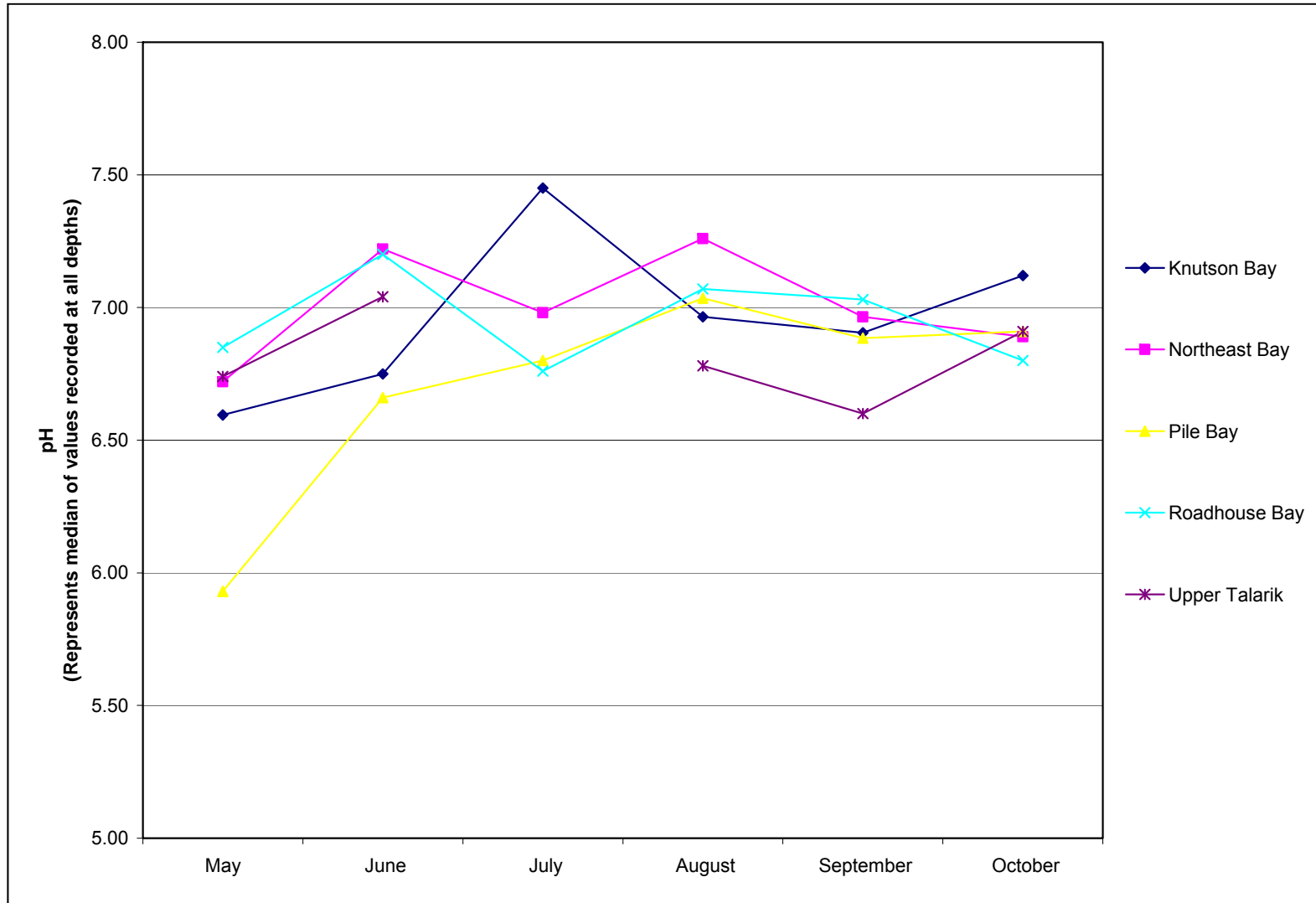


FIGURE B-4
 Median pH Time Series of Water, May through October 2005 and 2007

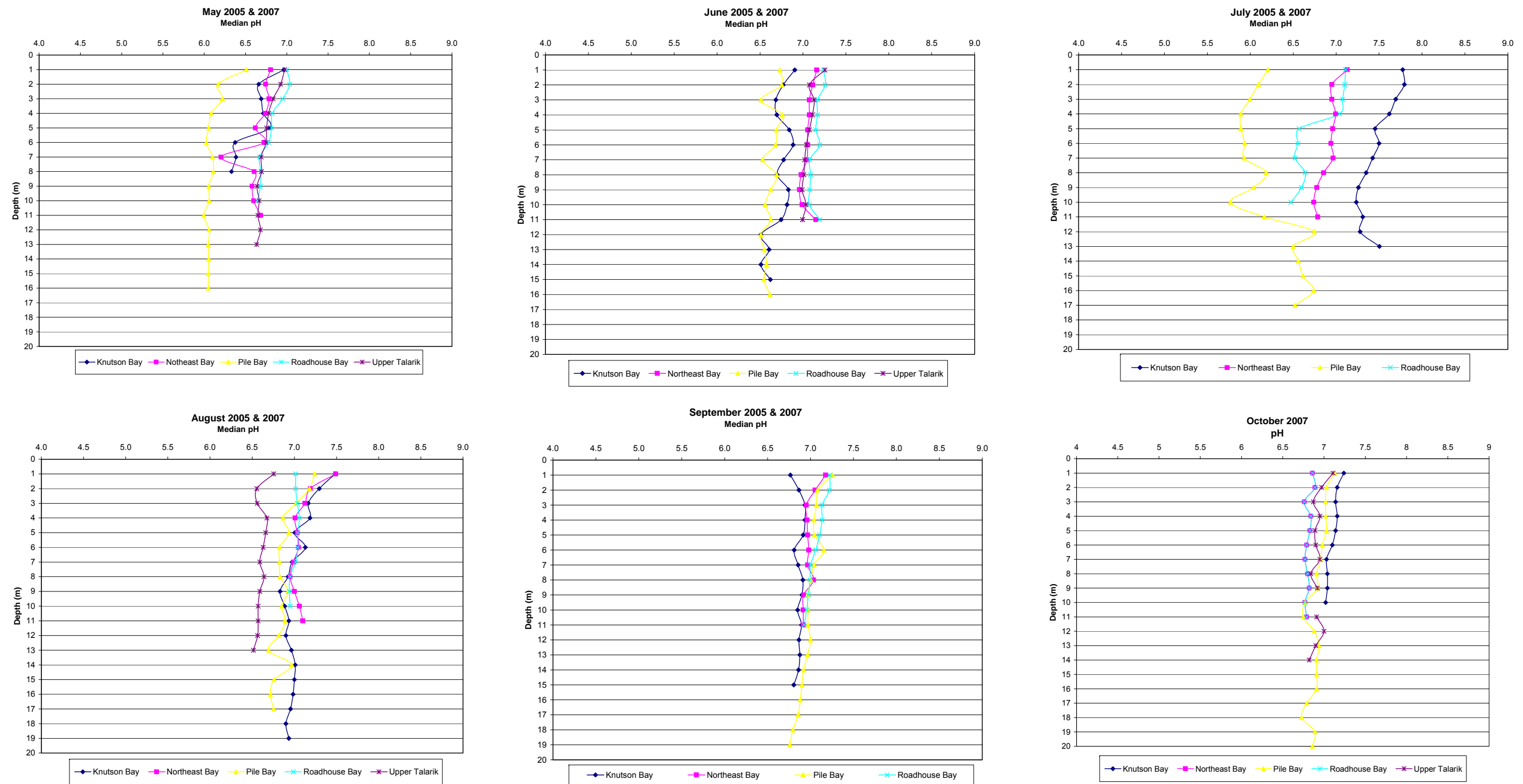


FIGURE B-5
Median pH in Water at 1-meter Depth Increments, May through October 2005 and 2007

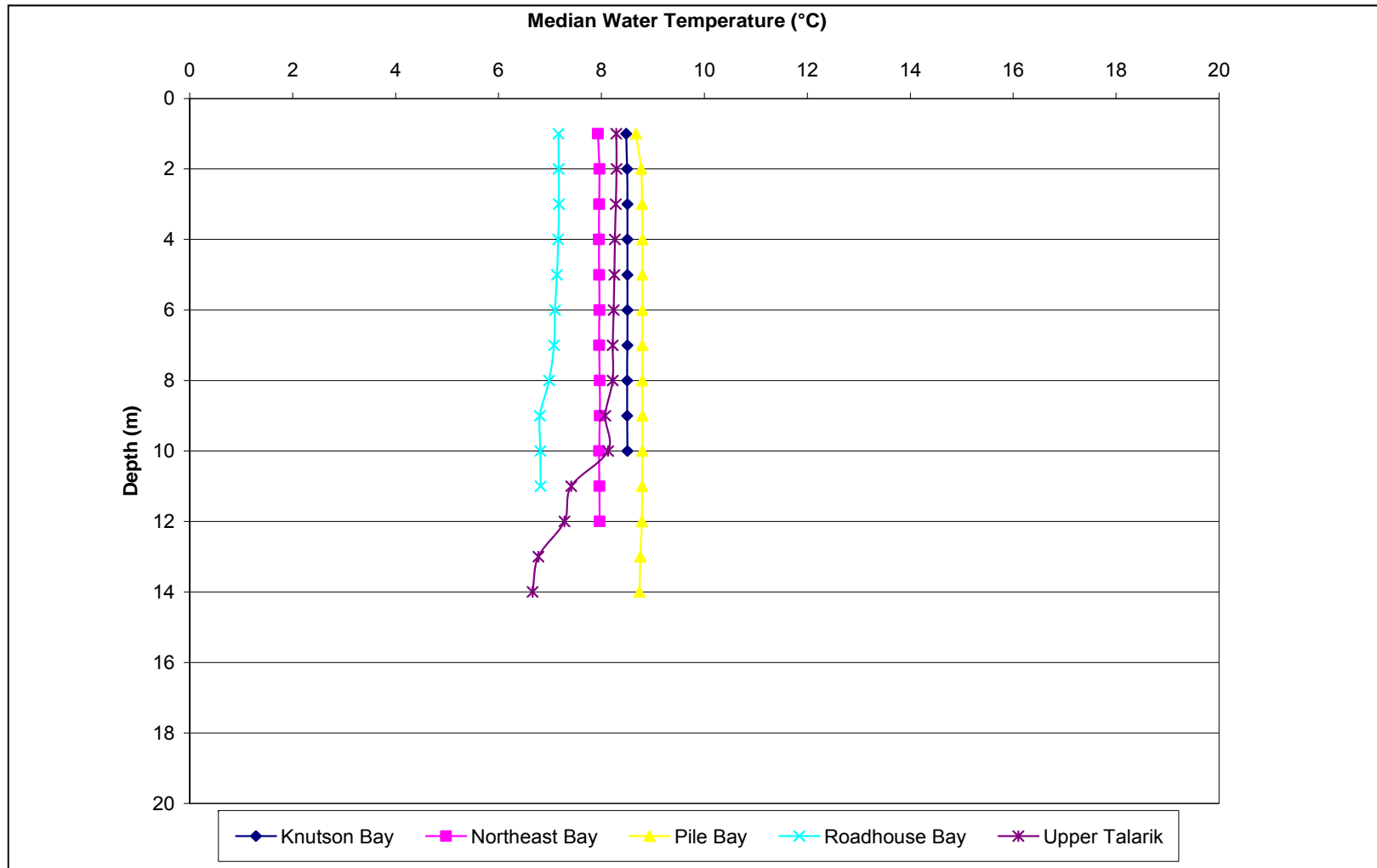


FIGURE B-6
Median Water Temperature Time Series, May through October 2005 and 2007

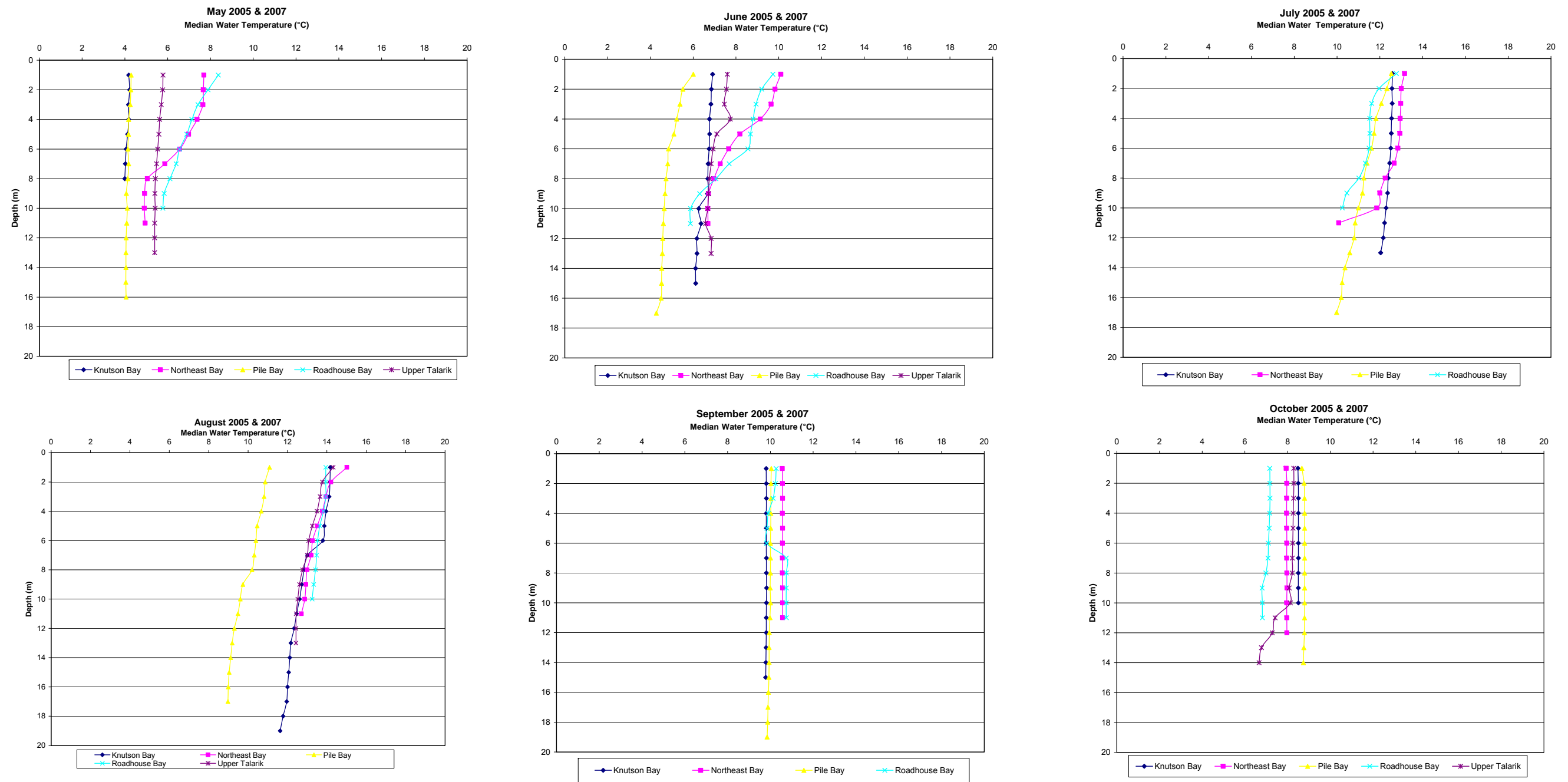


FIGURE B-7
Median Water Temperature at 1-meter Depth Increments, May through October 2005 and 2007

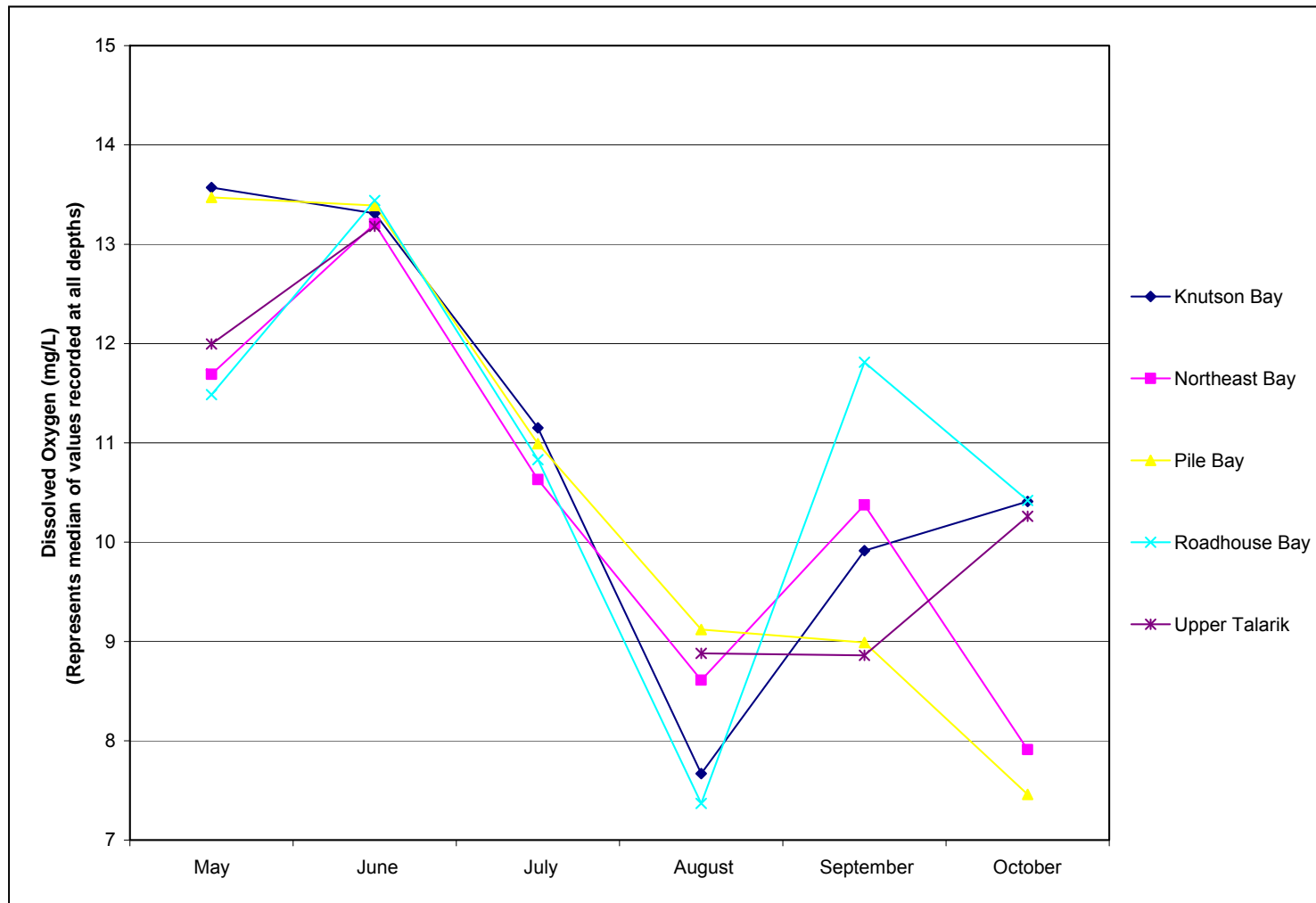


FIGURE B-8
 Median Dissolved Oxygen Time Series in Water by Volume, May through October 2005 and 2007

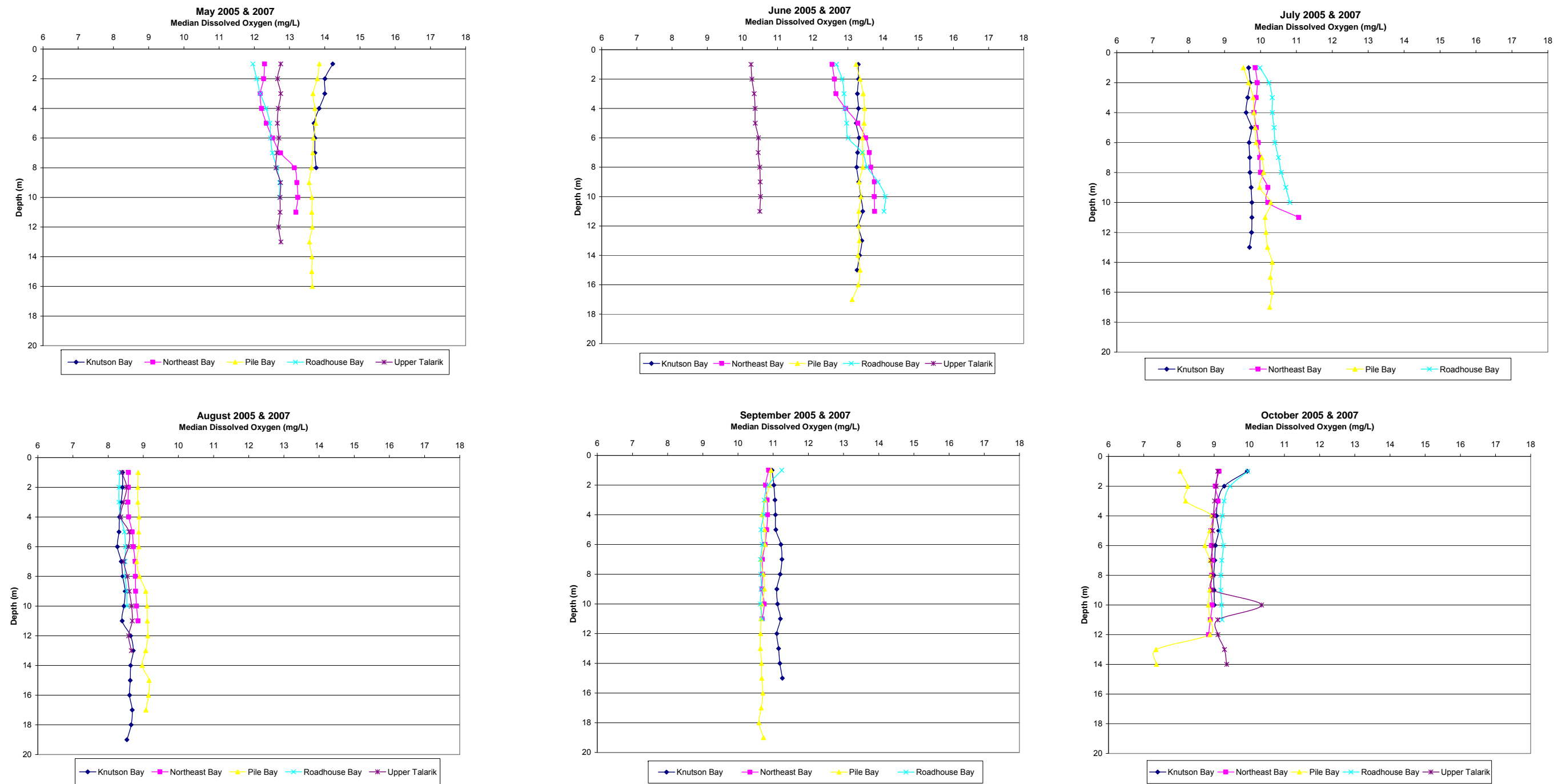


FIGURE B-9
 Median Dissolved Oxygen Time Series in Water at 1-meter Depth Increments, May through October 2005 and 2007

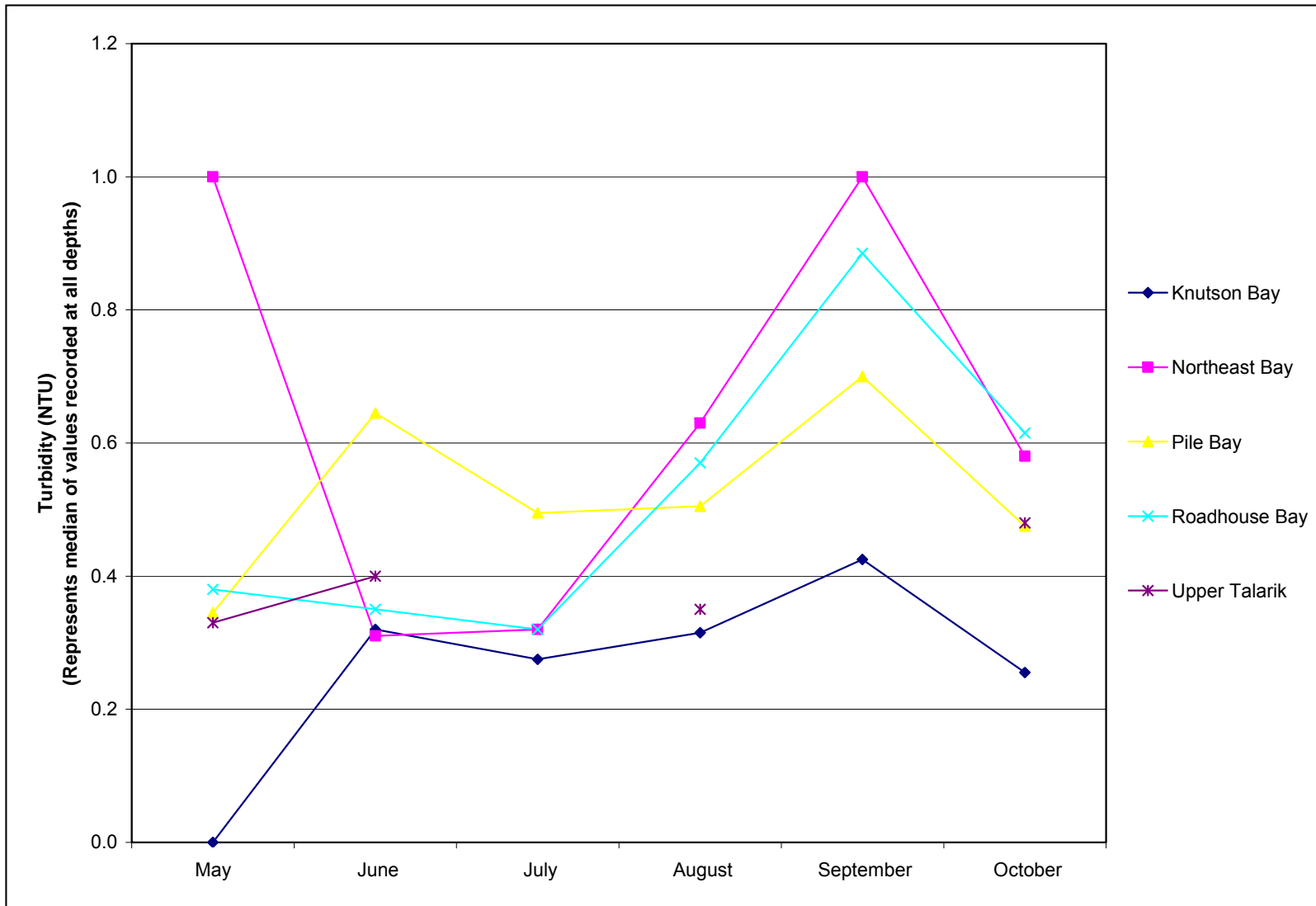


FIGURE B-10
Median Turbidity of Water, May through October 2005 and 2007

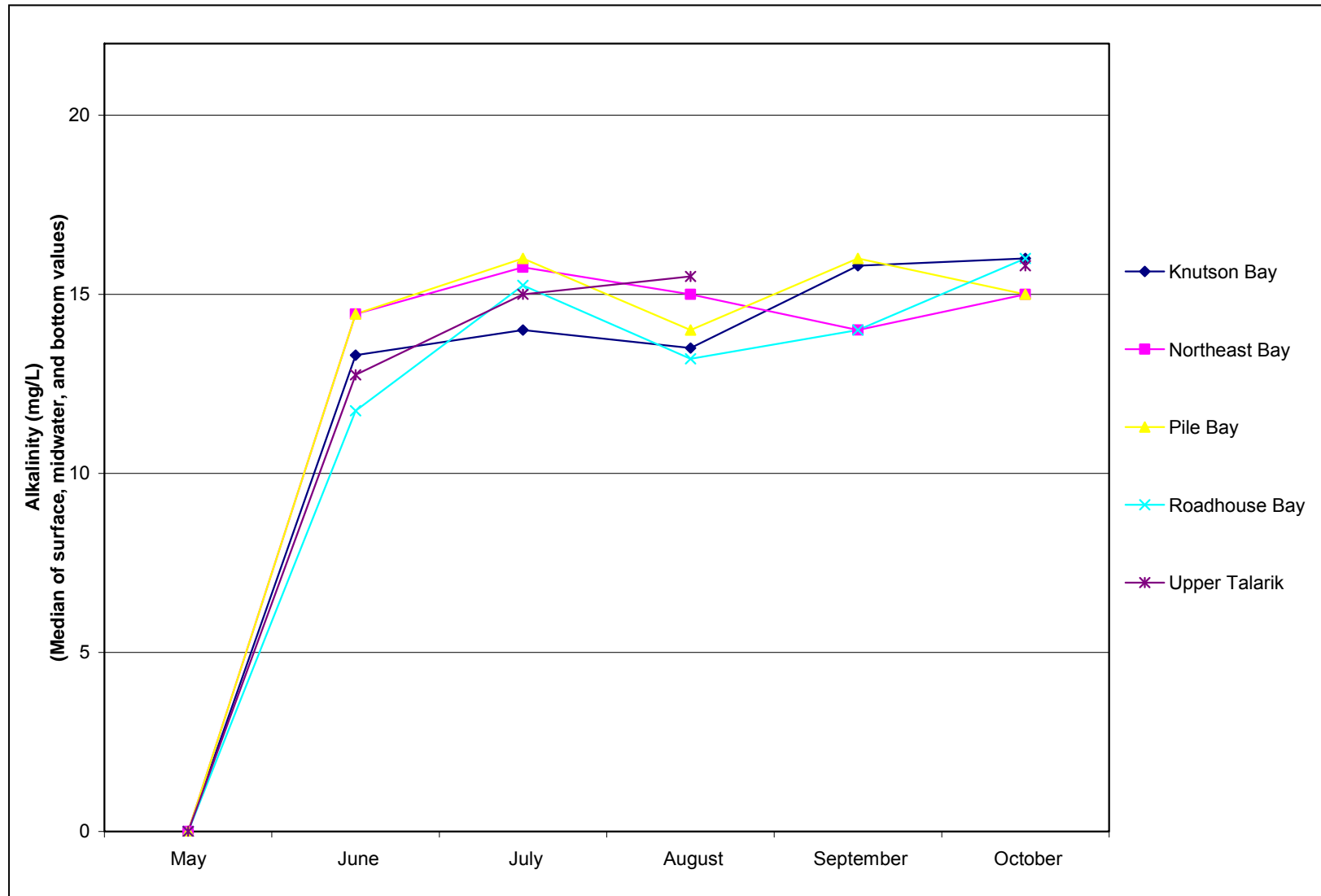


FIGURE B-11
 Median Alkalinity of Water Samples, May through October 2005 and 2007

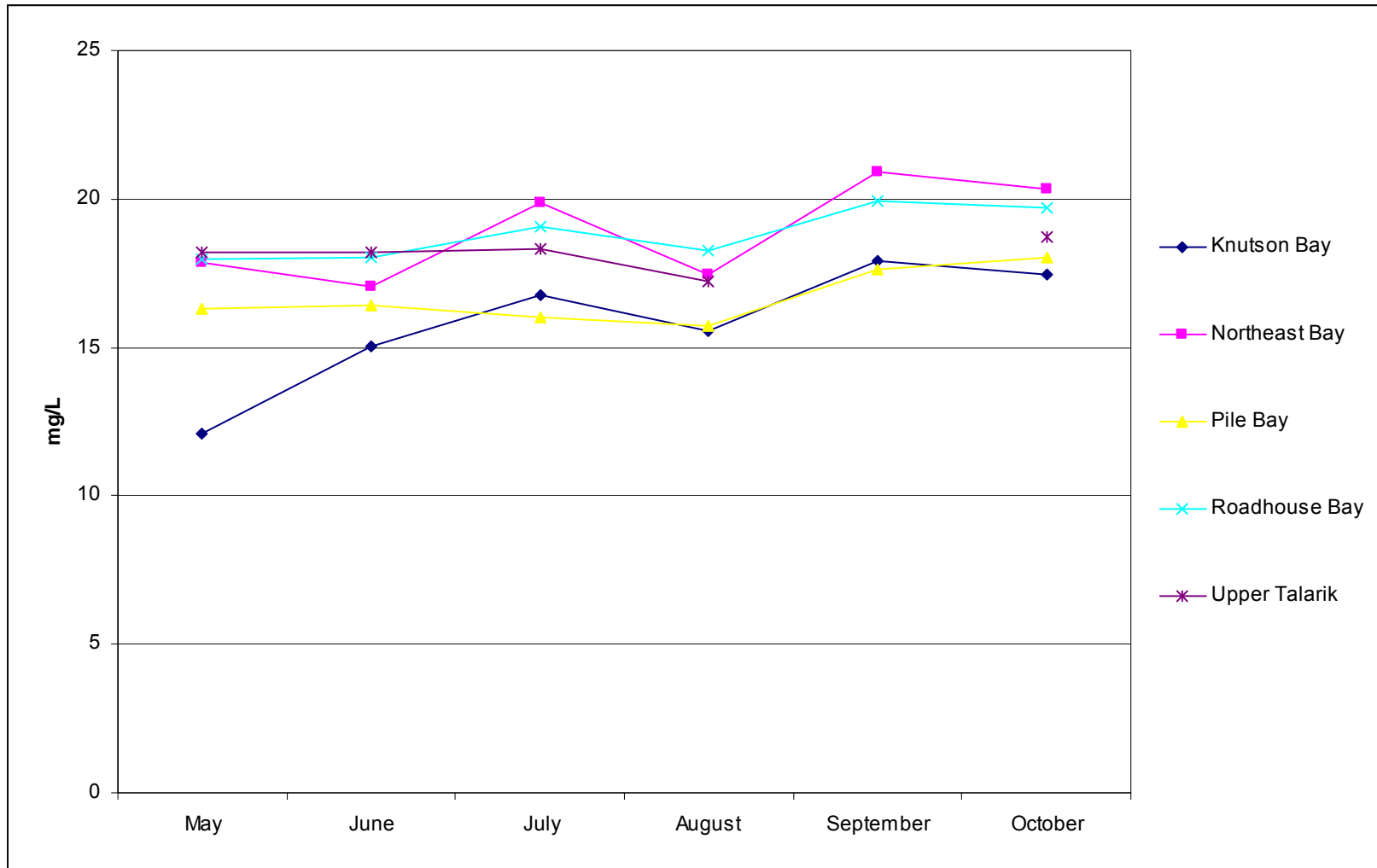


FIGURE B-12
Median Hardness of Water Samples, May through October 2005 and 2007

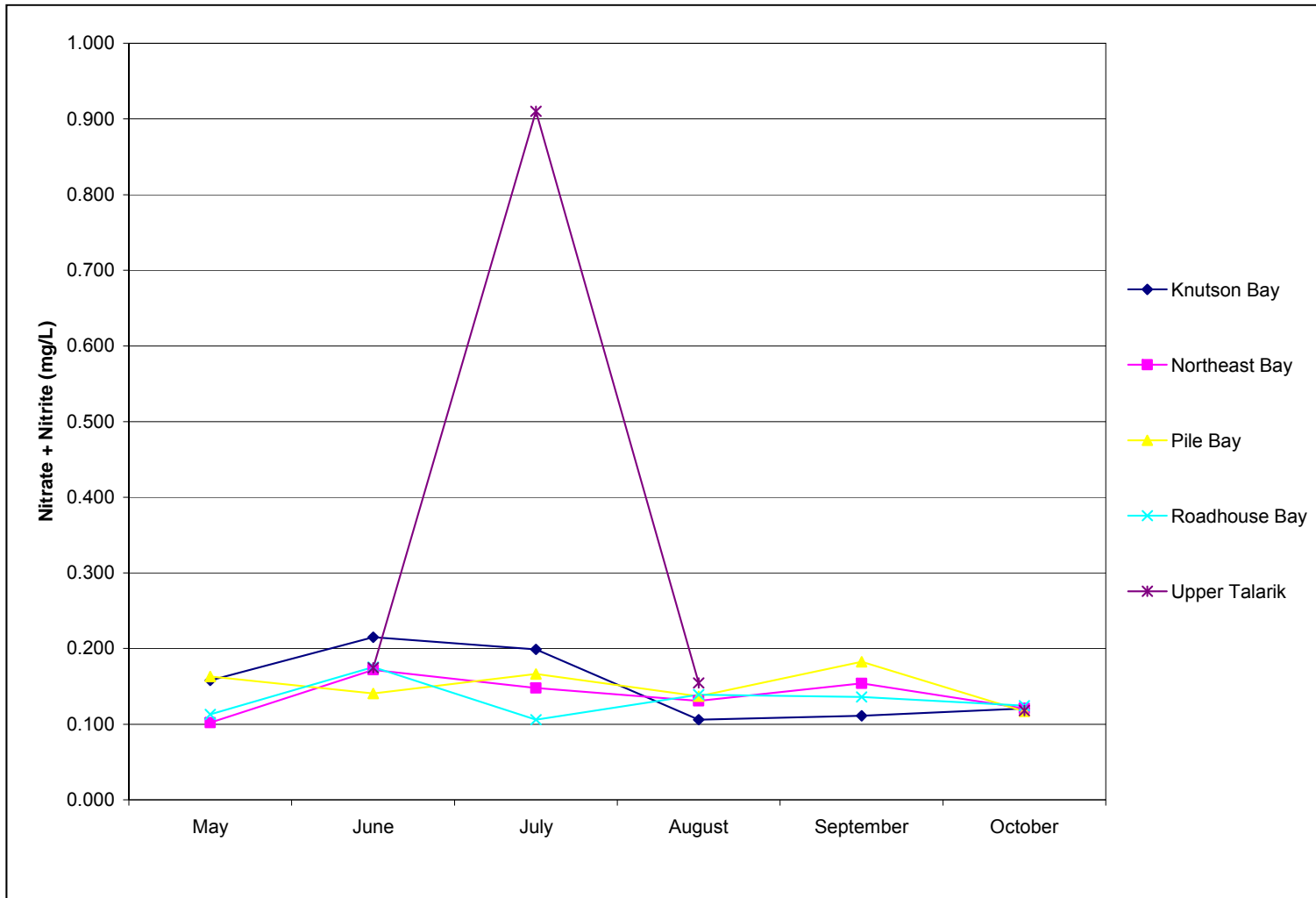


FIGURE B-13
Median Nitrate+Nitrite (as N) of Water Samples, May through October 2005 and 2007

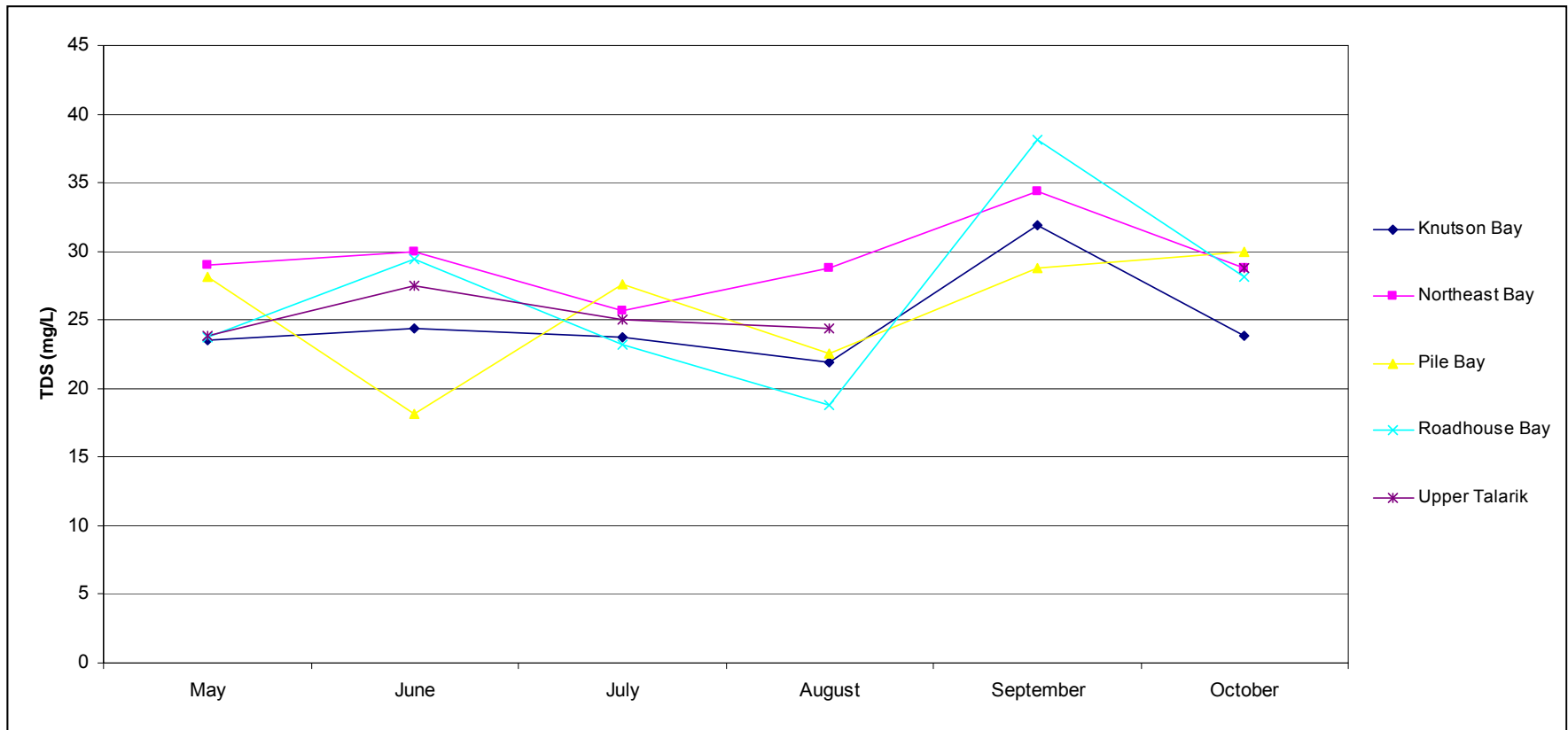


FIGURE B-14
 Median Total Dissolved Solids of Water Samples, May through October 2005 and 2007

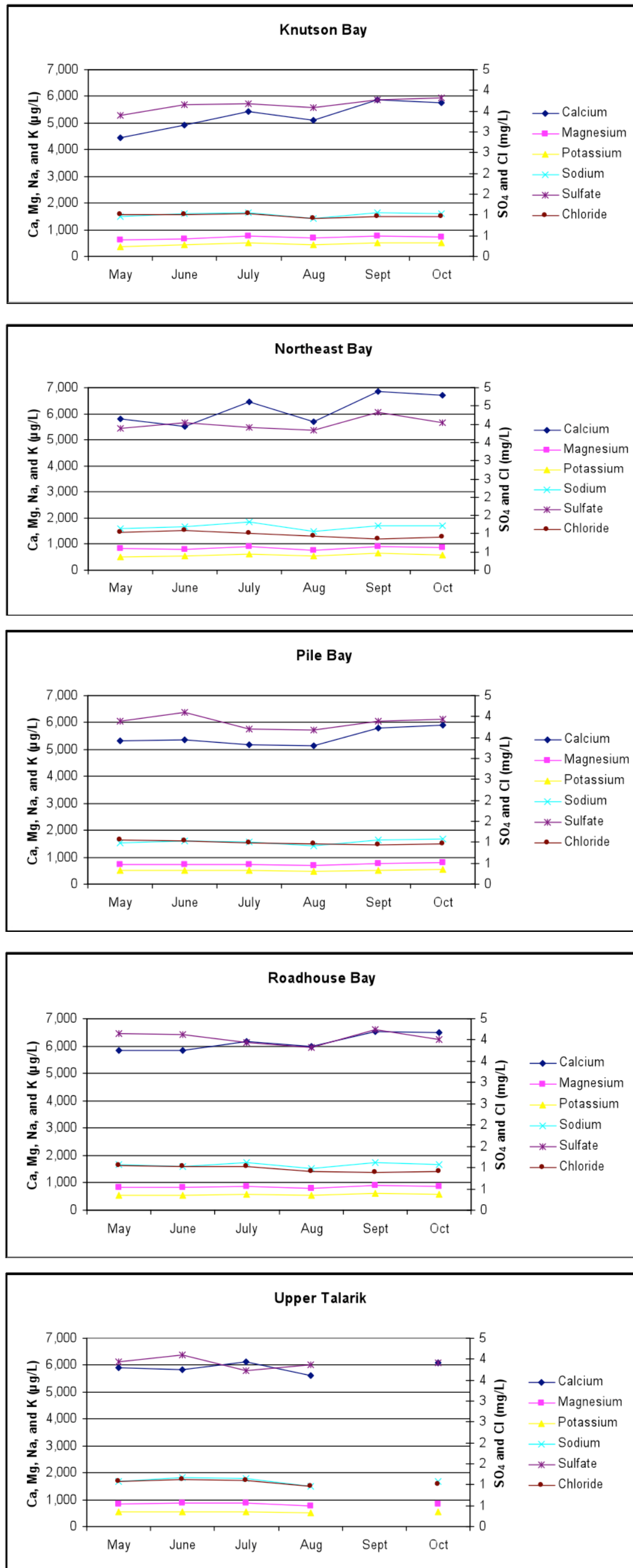


FIGURE B-15
Median Concentrations of Total Major Ions in Water Samples, May through October 2005 and 2007

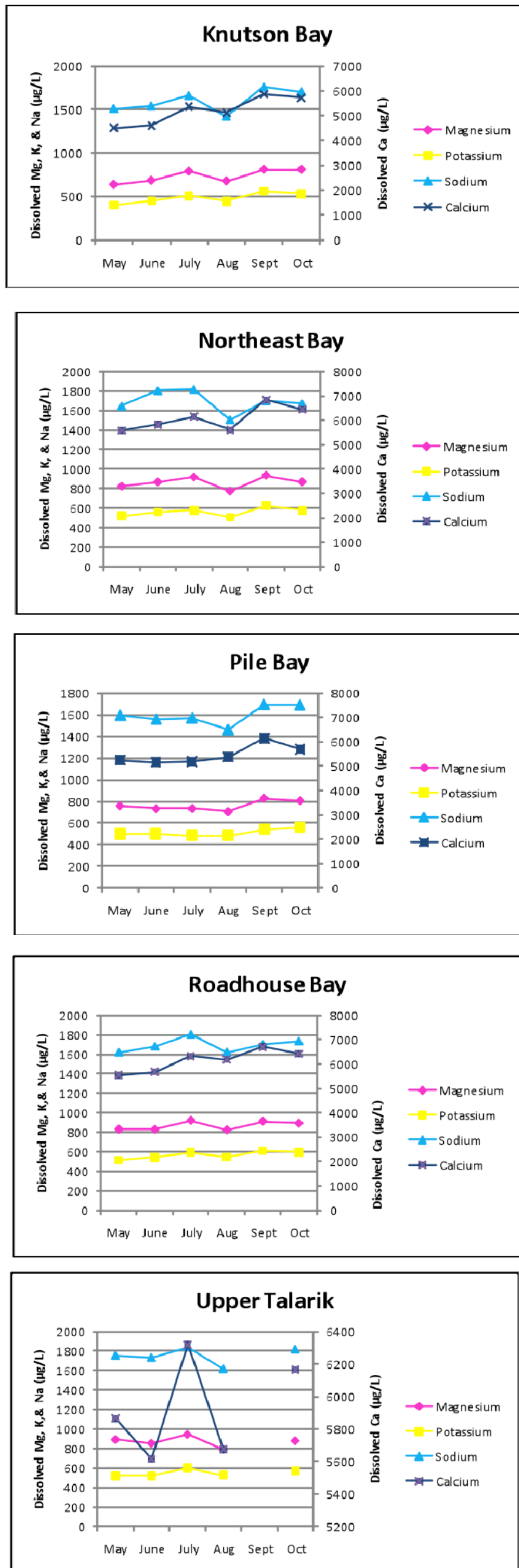


Figure B-16
 Median Concentrations of Dissolved Major Ions in Water Samples, May through October 2005 and 2007

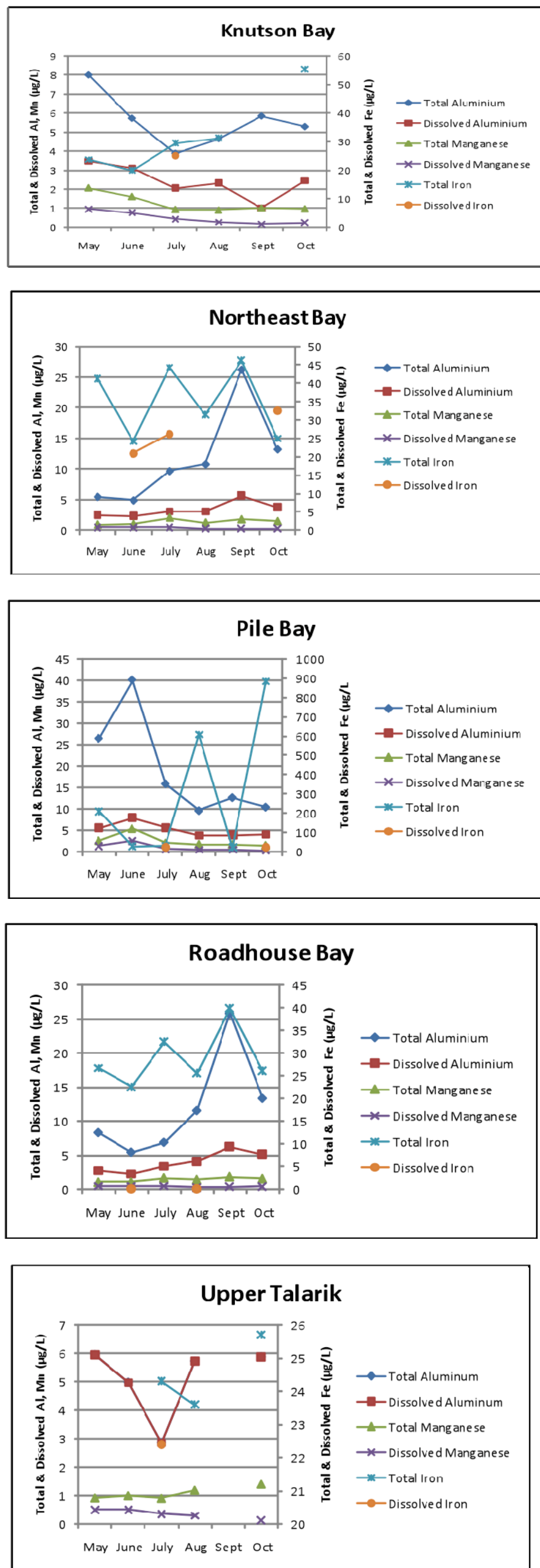


FIGURE B-17
 Median Concentrations of Total and Dissolved Aluminum, Iron, and Manganese, May through October 2005 and 2007

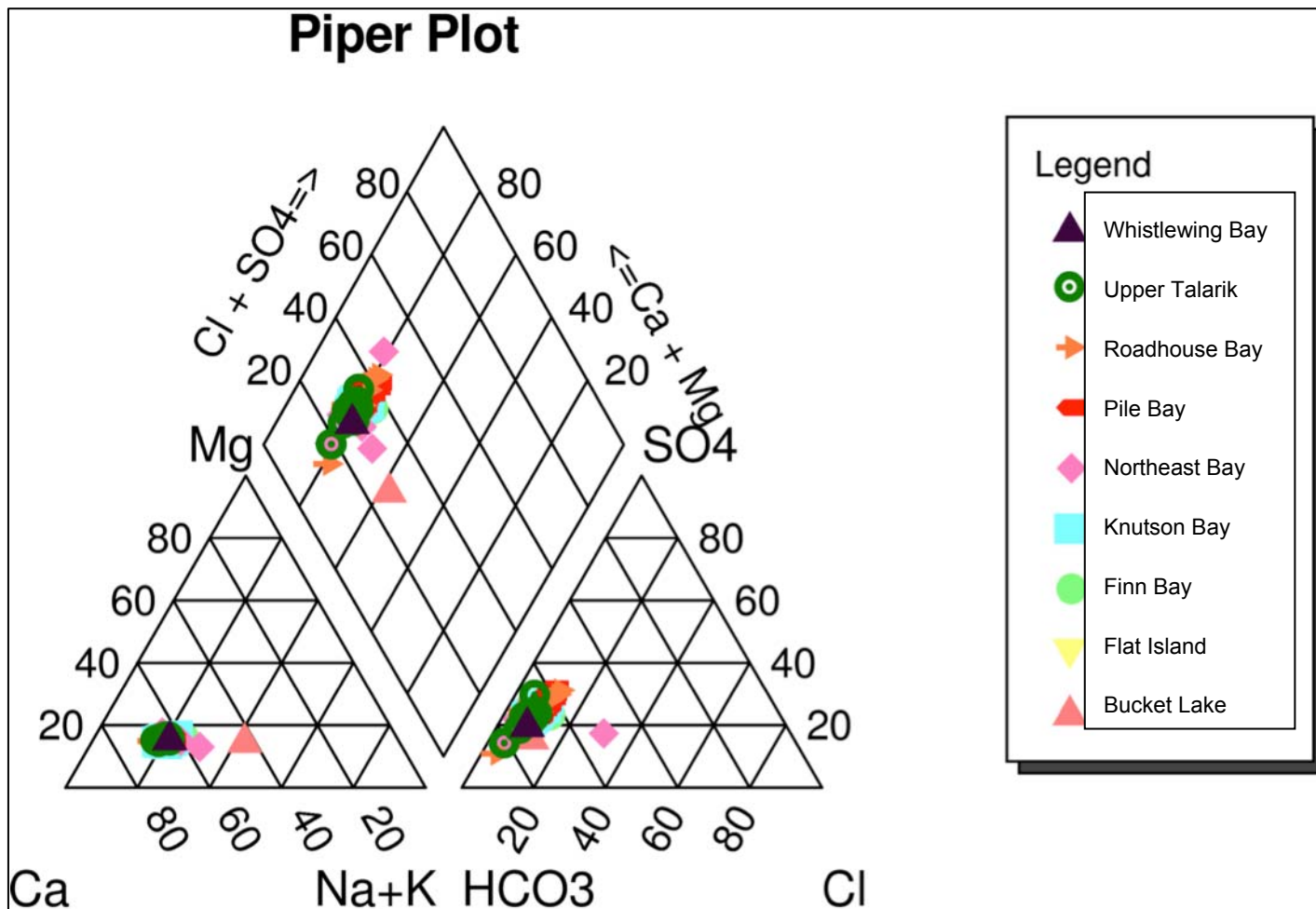


FIGURE B-18
 Piper Plot of Water Chemistry, May through October 2005 and 2007

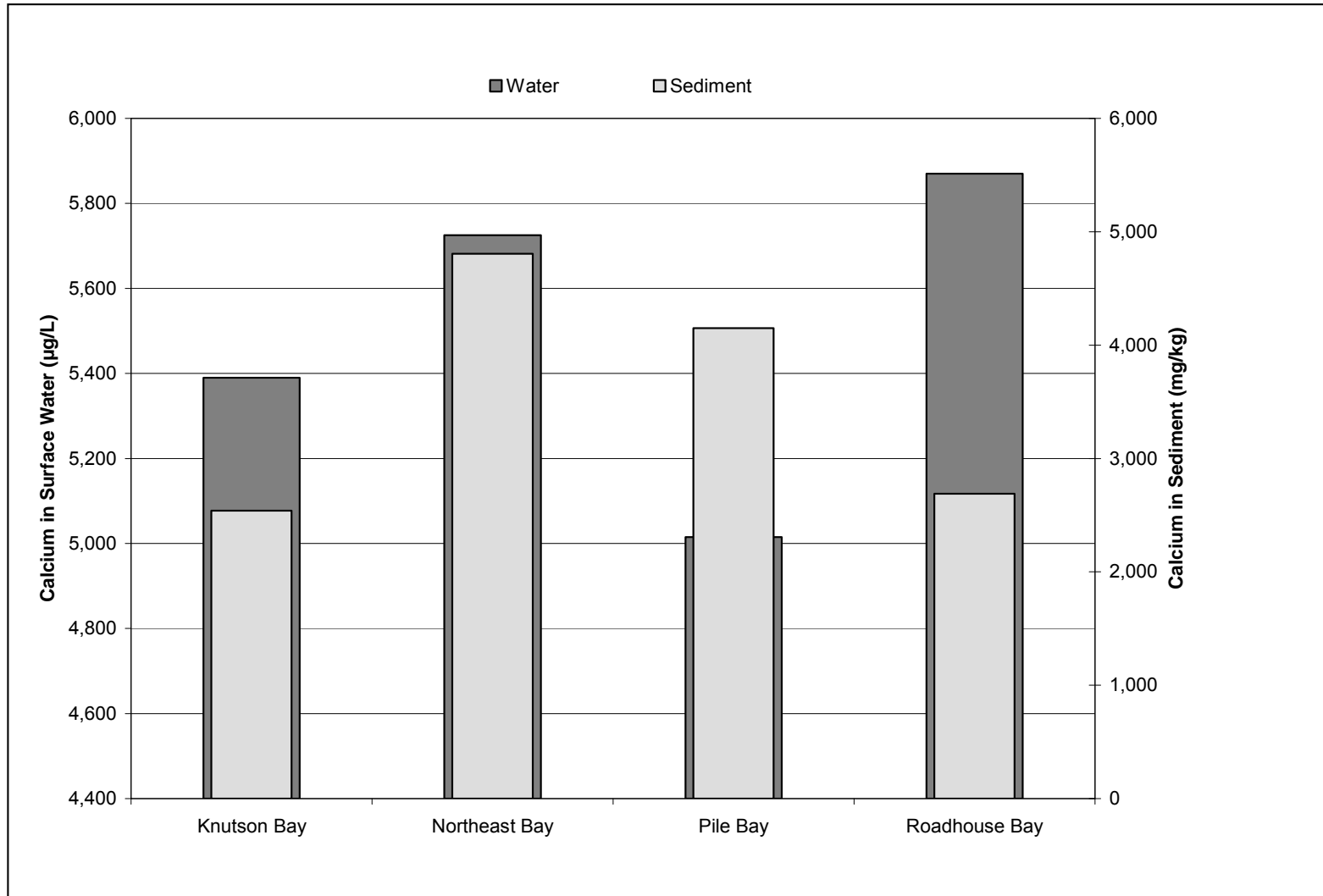


FIGURE B-19
Median Total Calcium Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

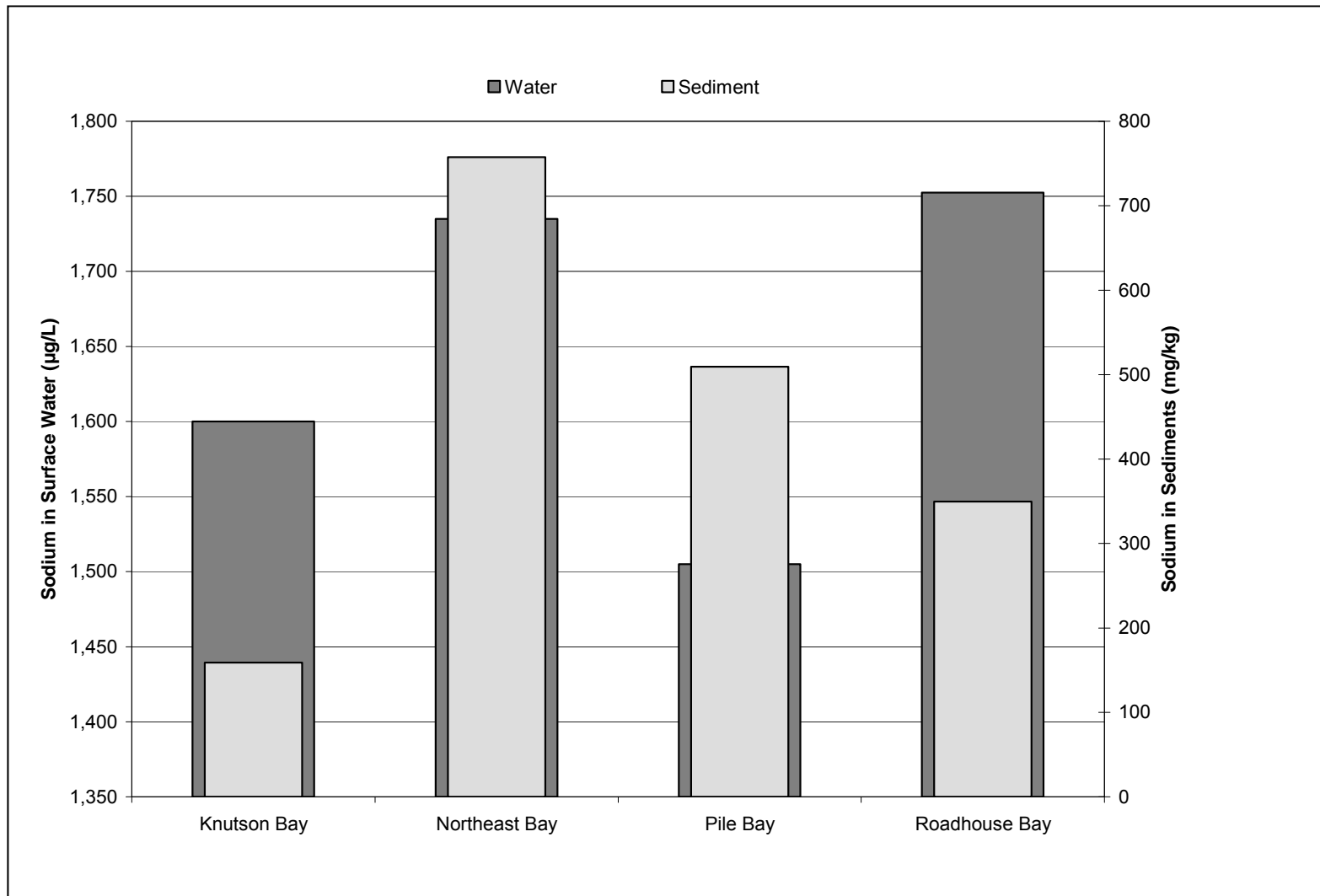


FIGURE B-20
Median Total Sodium Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

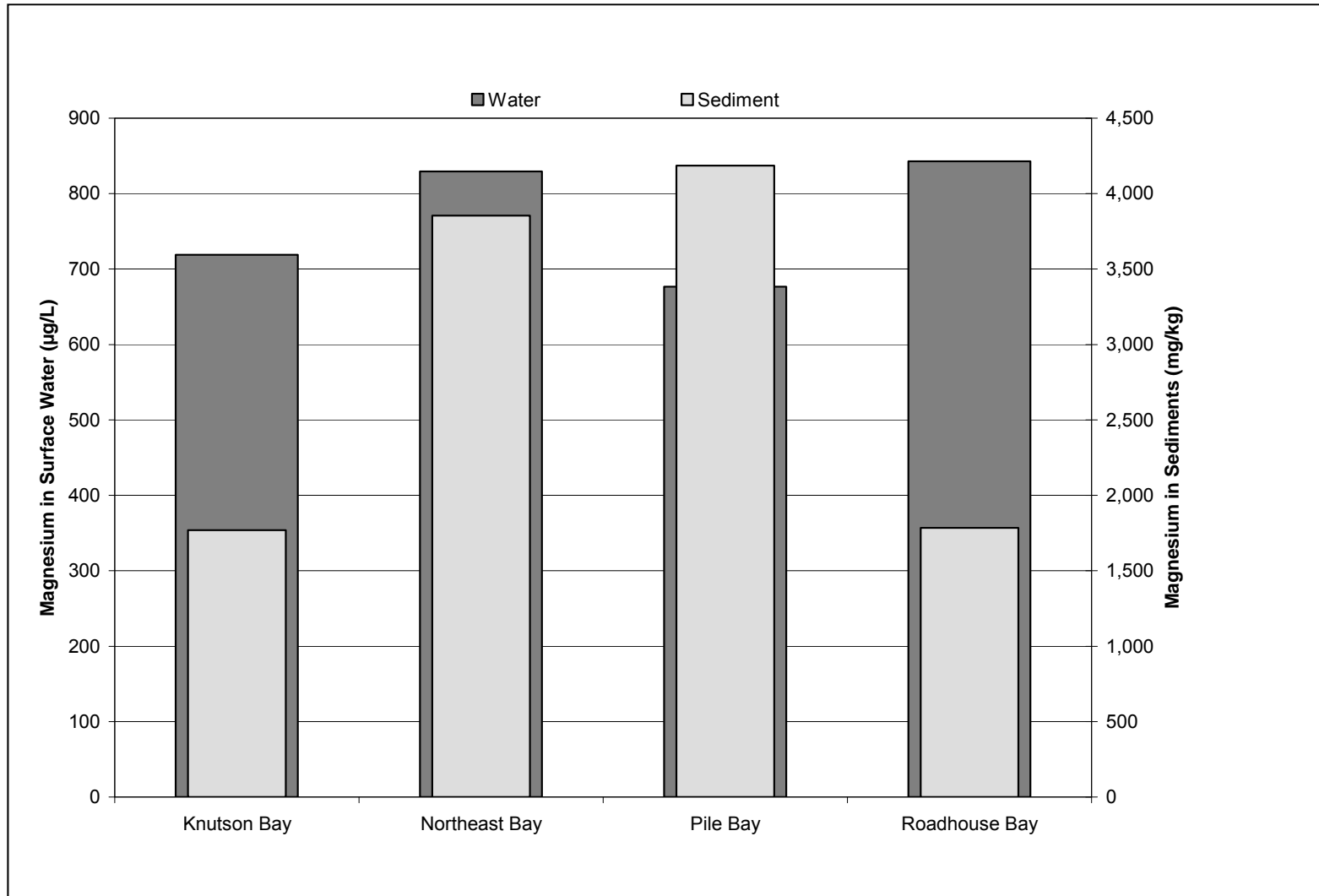


FIGURE B-21
Median Total Magnesium Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

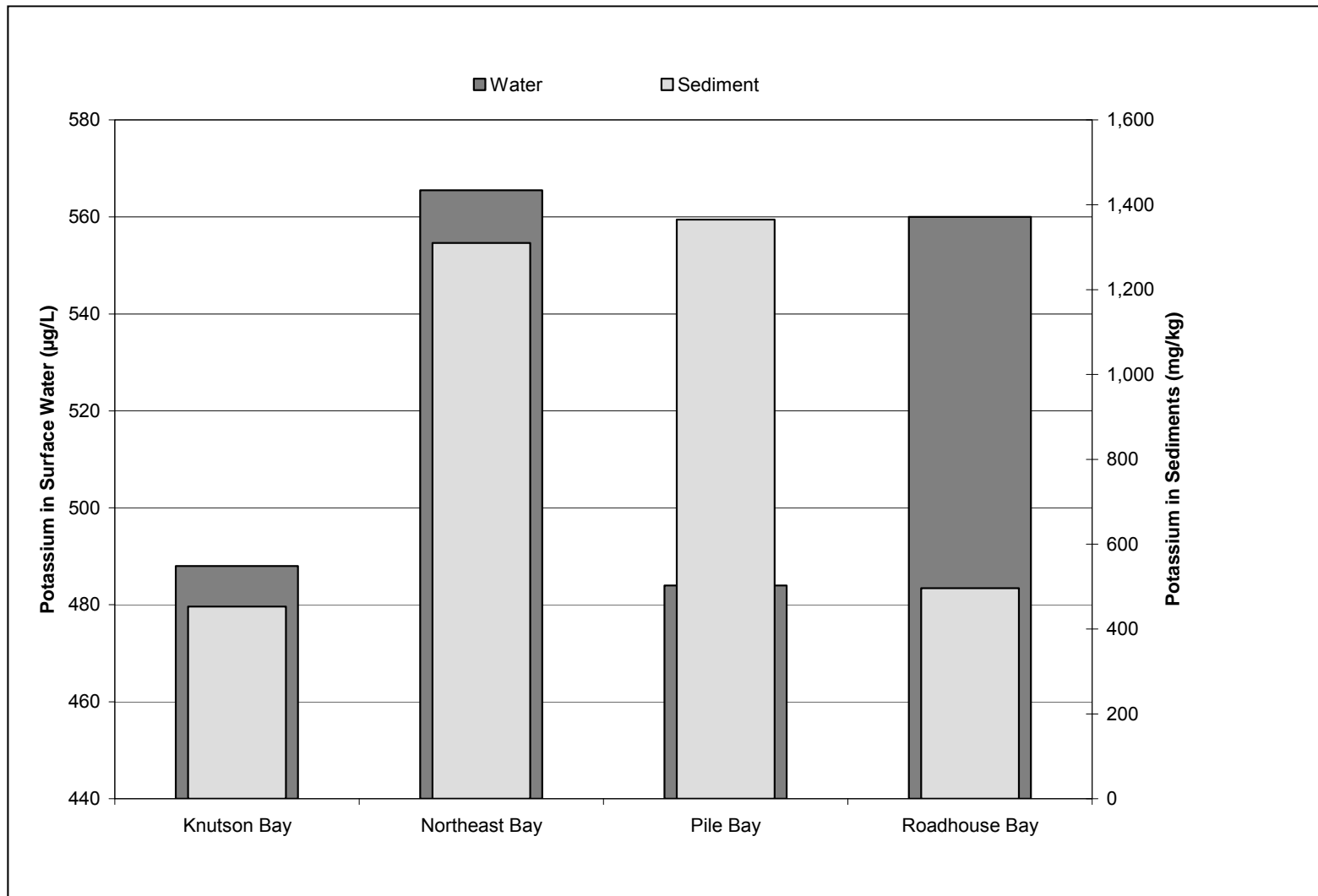


FIGURE B-22
Median Total Potassium Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

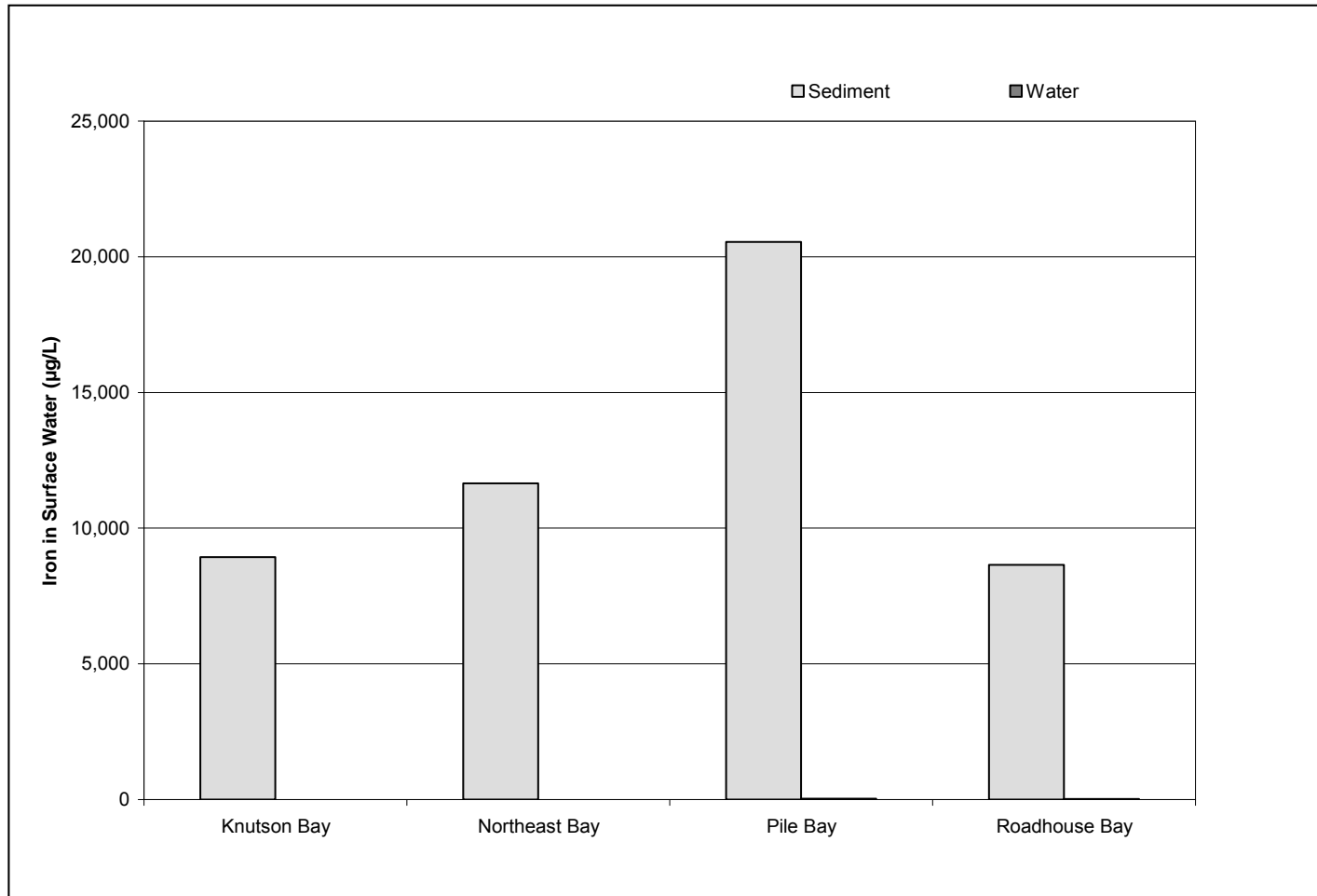


FIGURE B-23
Median Total Iron Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather, and lack of surface water concentration data for Knutson Bay and Roadhouse Bay indicates that samples were below detection level.

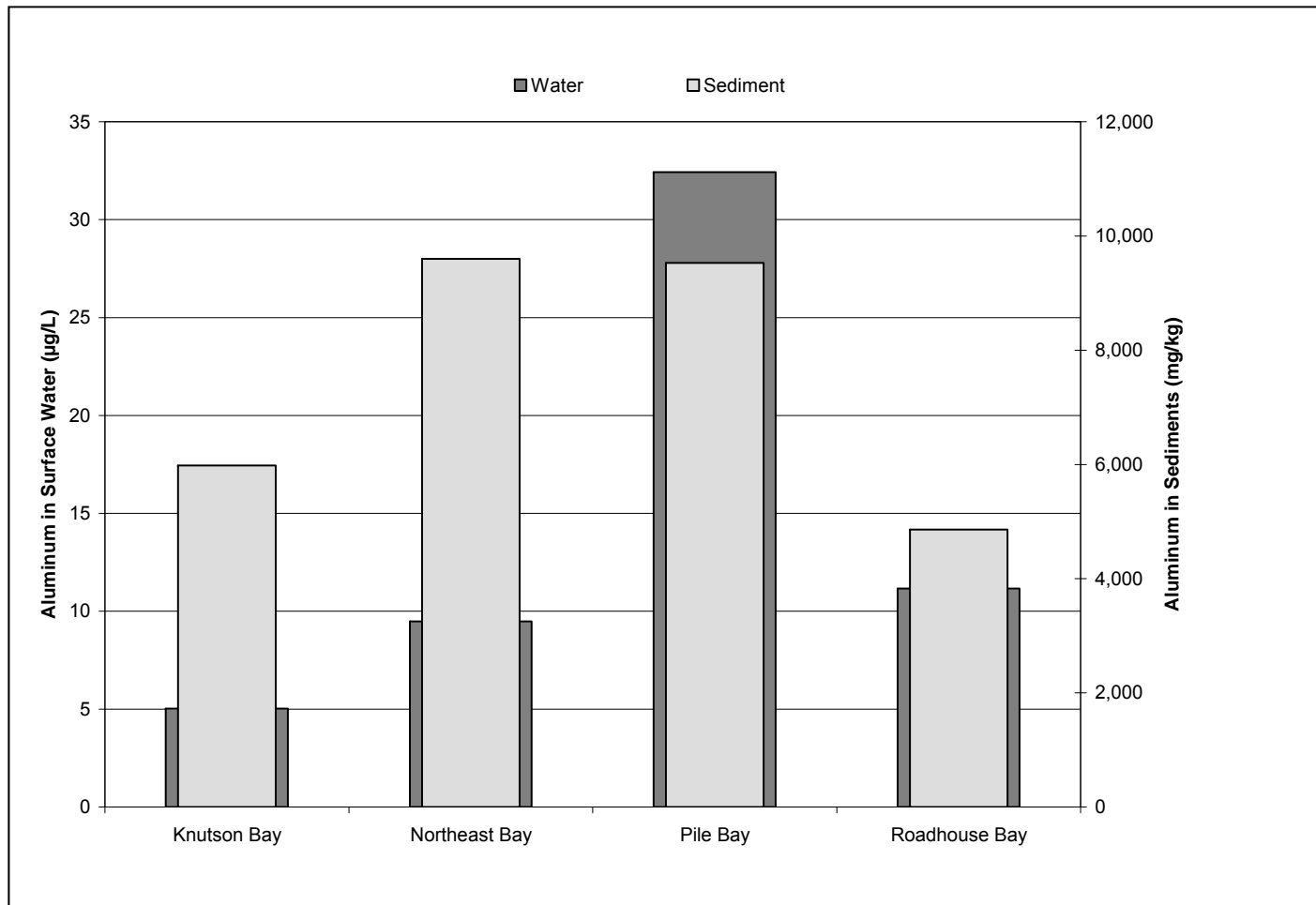


FIGURE B-24
Median Total Aluminum Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

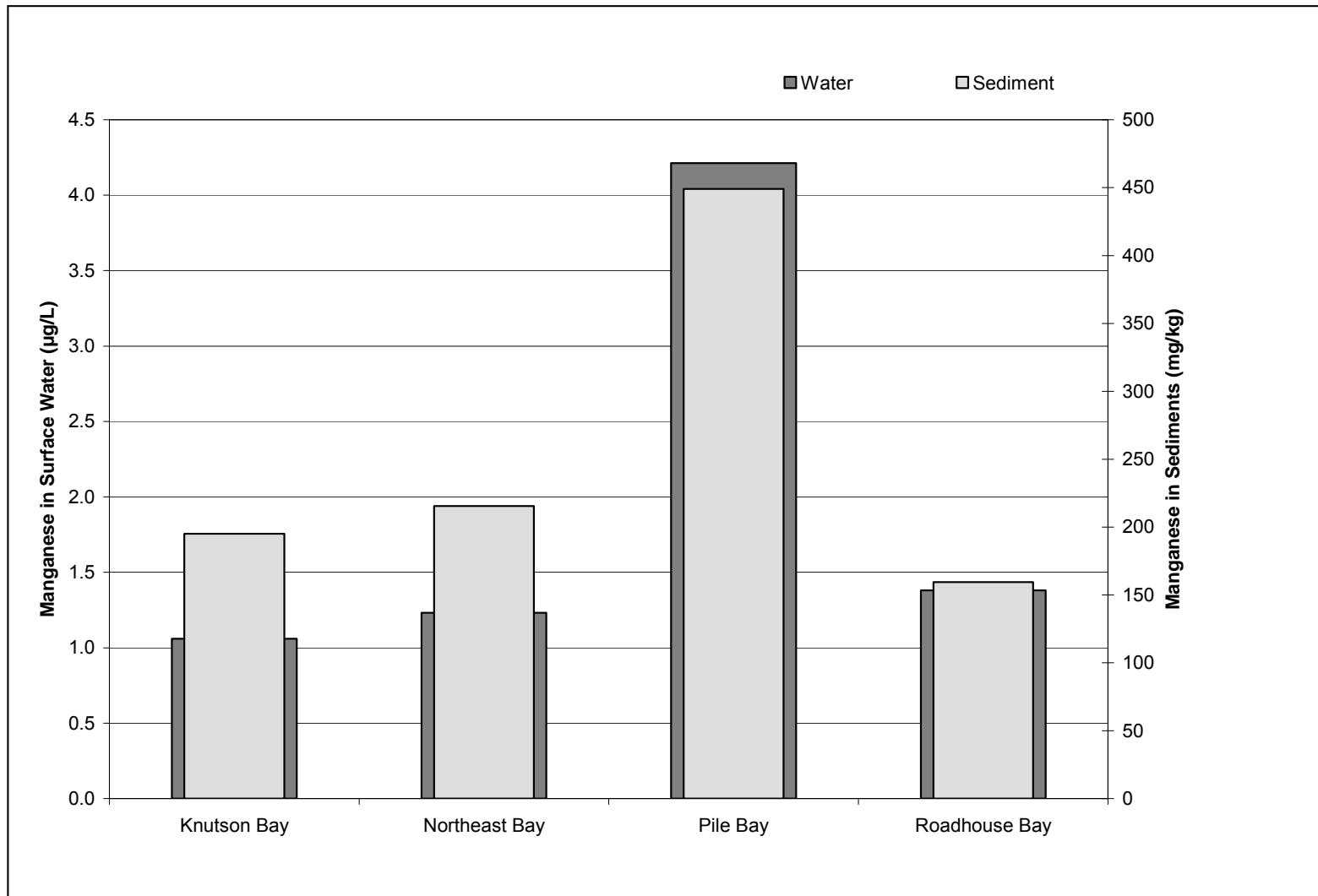


FIGURE B-25
Median Total Manganese Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

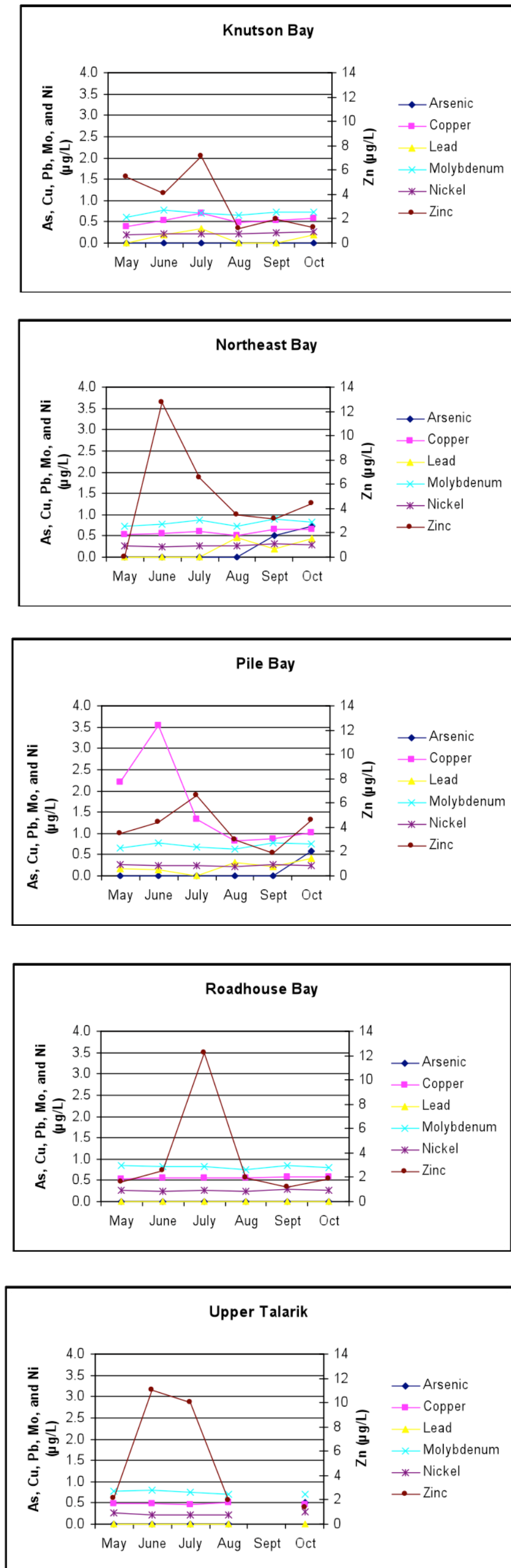


FIGURE B-26
 Median Concentrations of Total Trace Elements in Water Samples, May through October 2005 and 2007

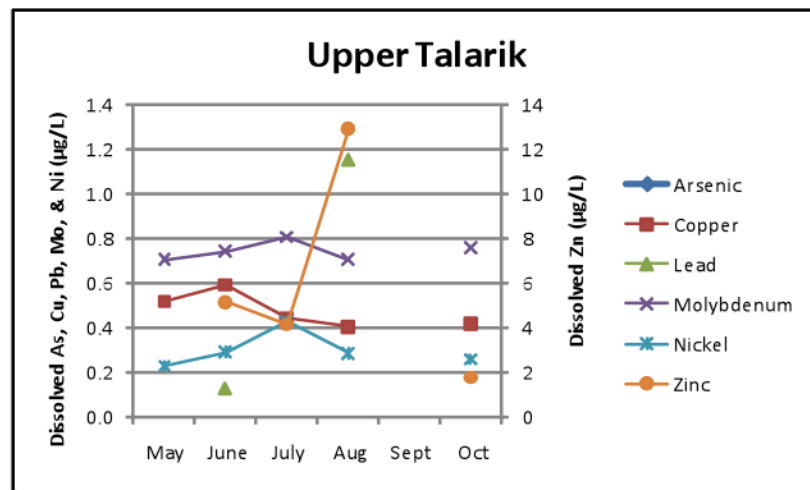
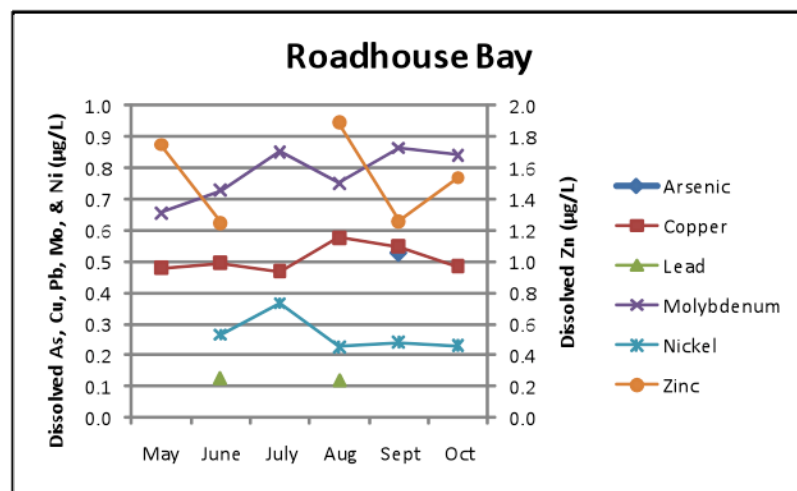
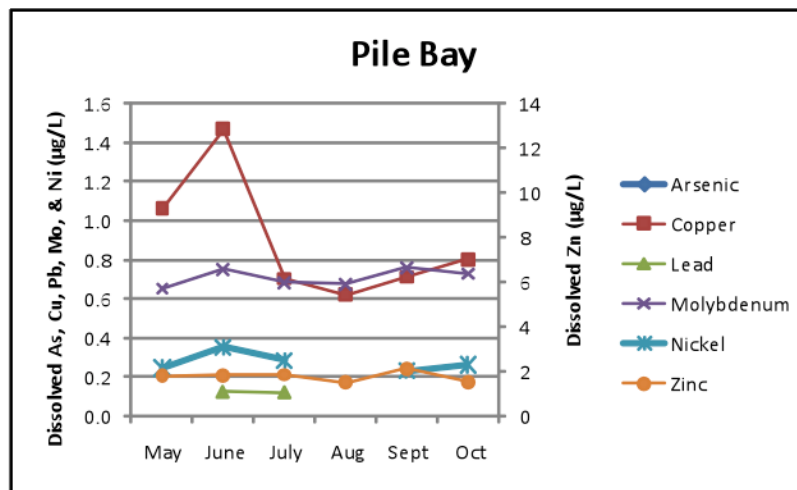
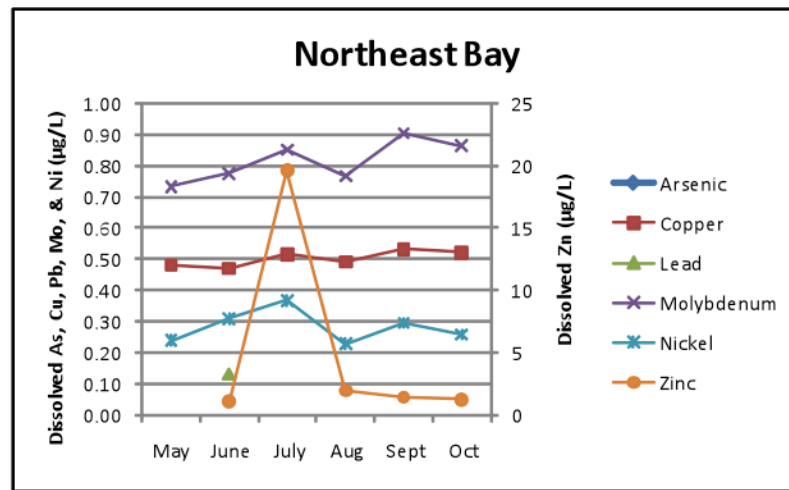
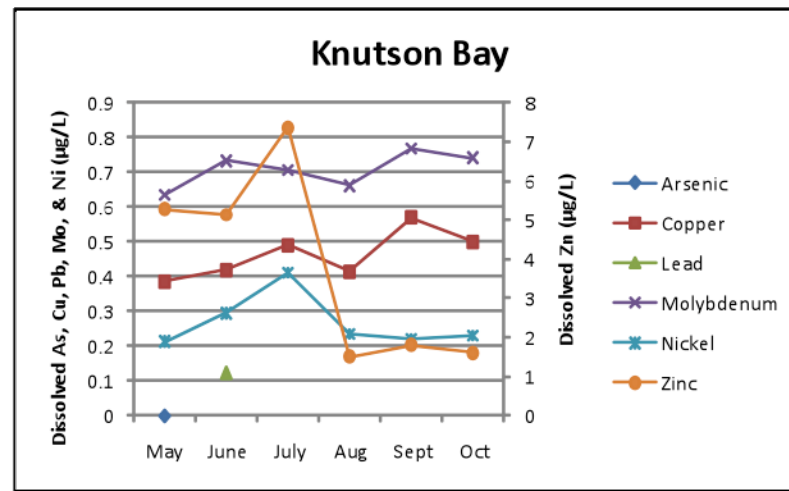


FIGURE B-27
 Median Concentrations of Dissolved Trace Elements in Water Samples, May through October 2005 and 2007

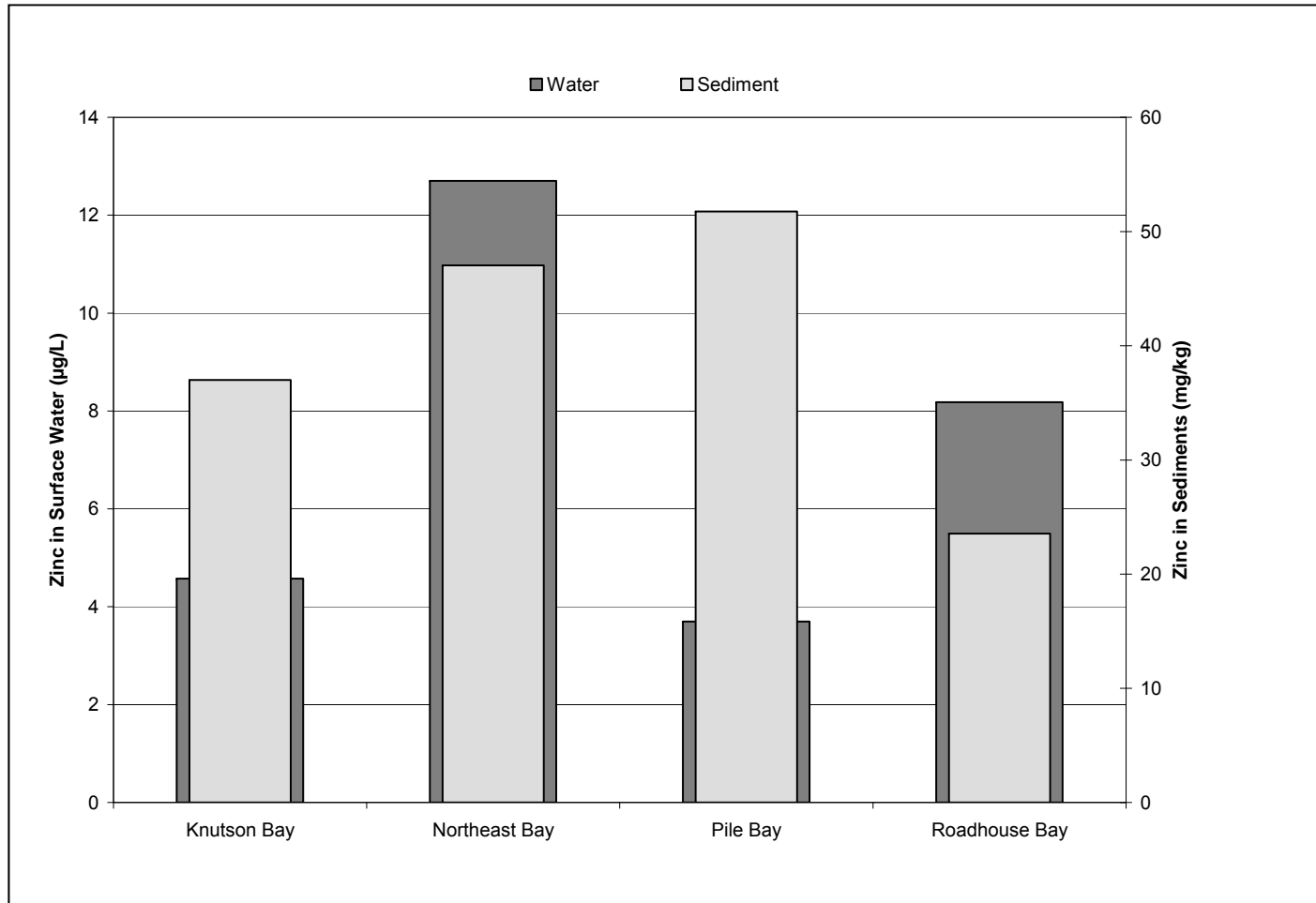


FIGURE B-28
Median Total Zinc Concentrations in Water and Sediment Samples, June and September 2005

Notes:

No samples were collected at Upper Talarik due to inclement weather.

Lack of data representation in the graph indicates that all samples for that media were below detection level.

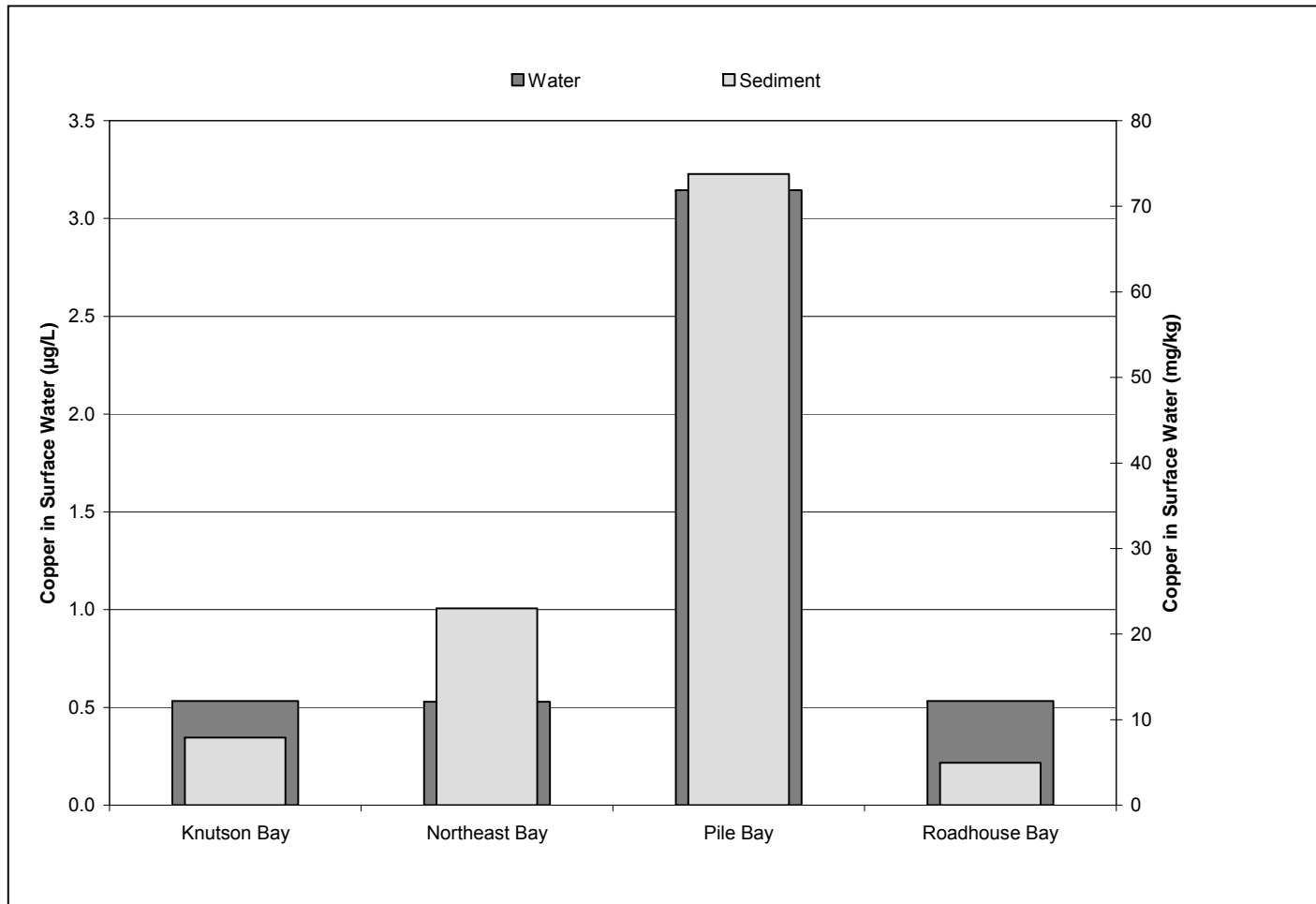


FIGURE B-29
Median Total Copper Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

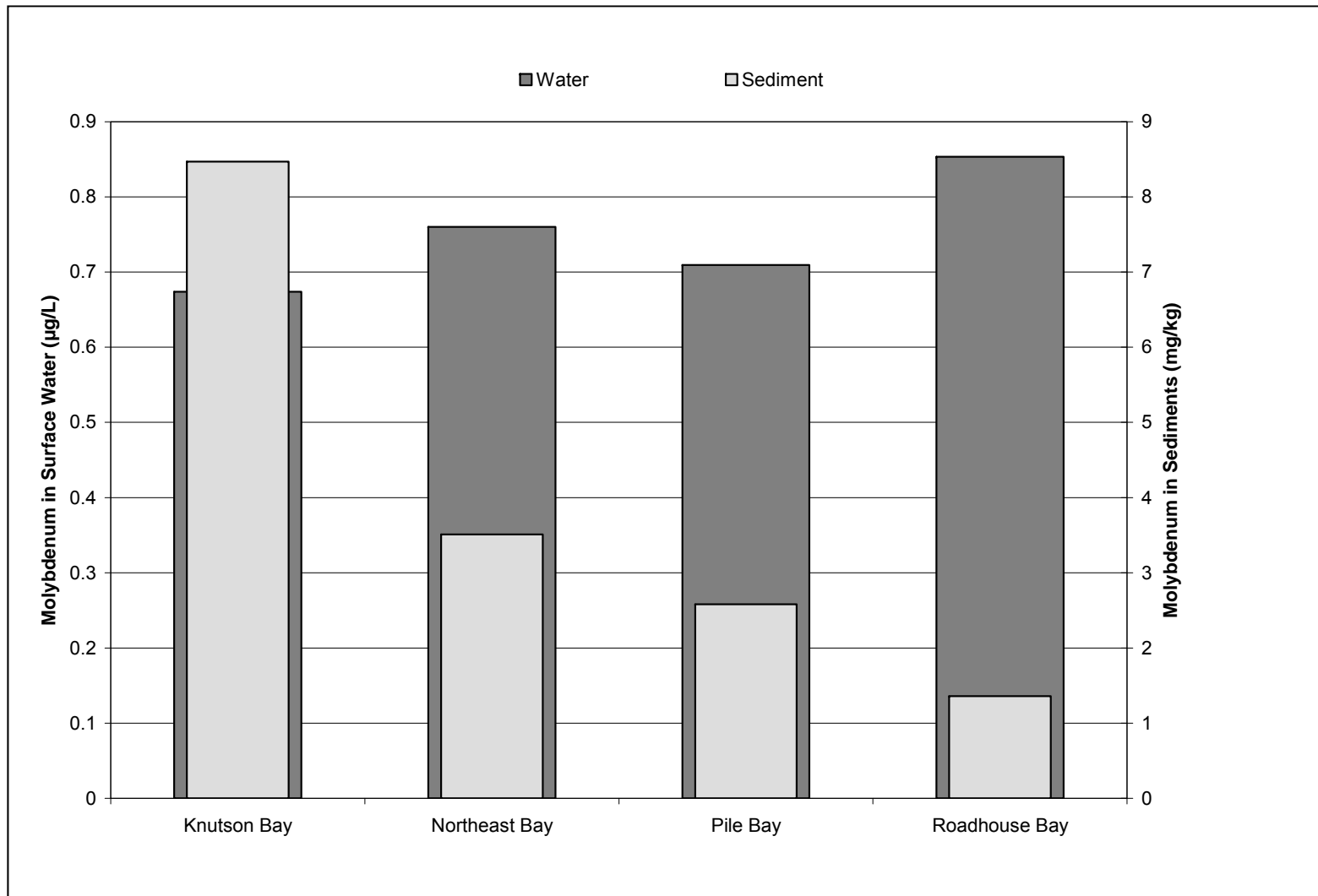


FIGURE B-30
Median Total Molybdenum Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

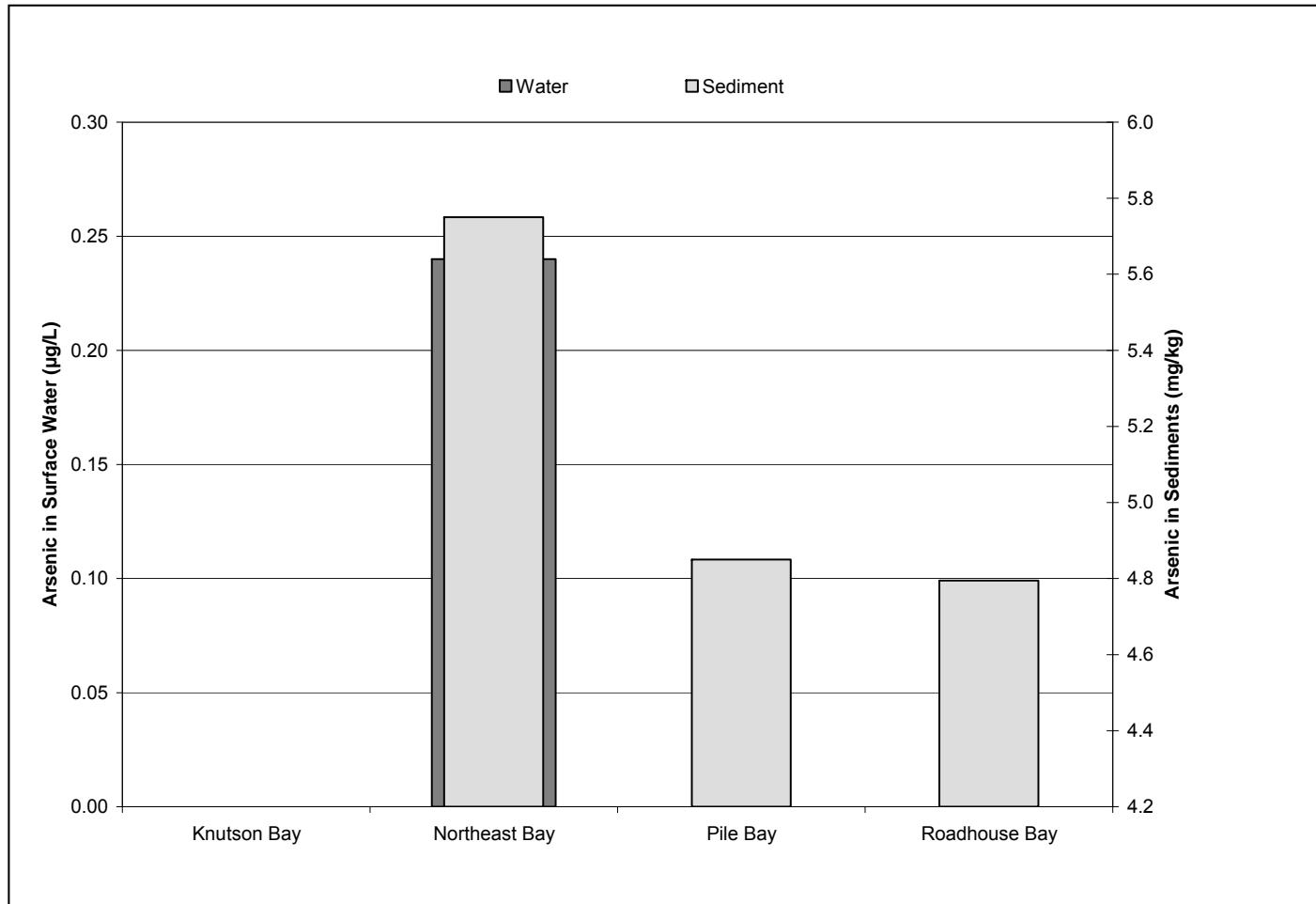


FIGURE B-31
Median Total Arsenic Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather, and lack of data representation in the graph for other sites or media indicates that samples were below detection level.

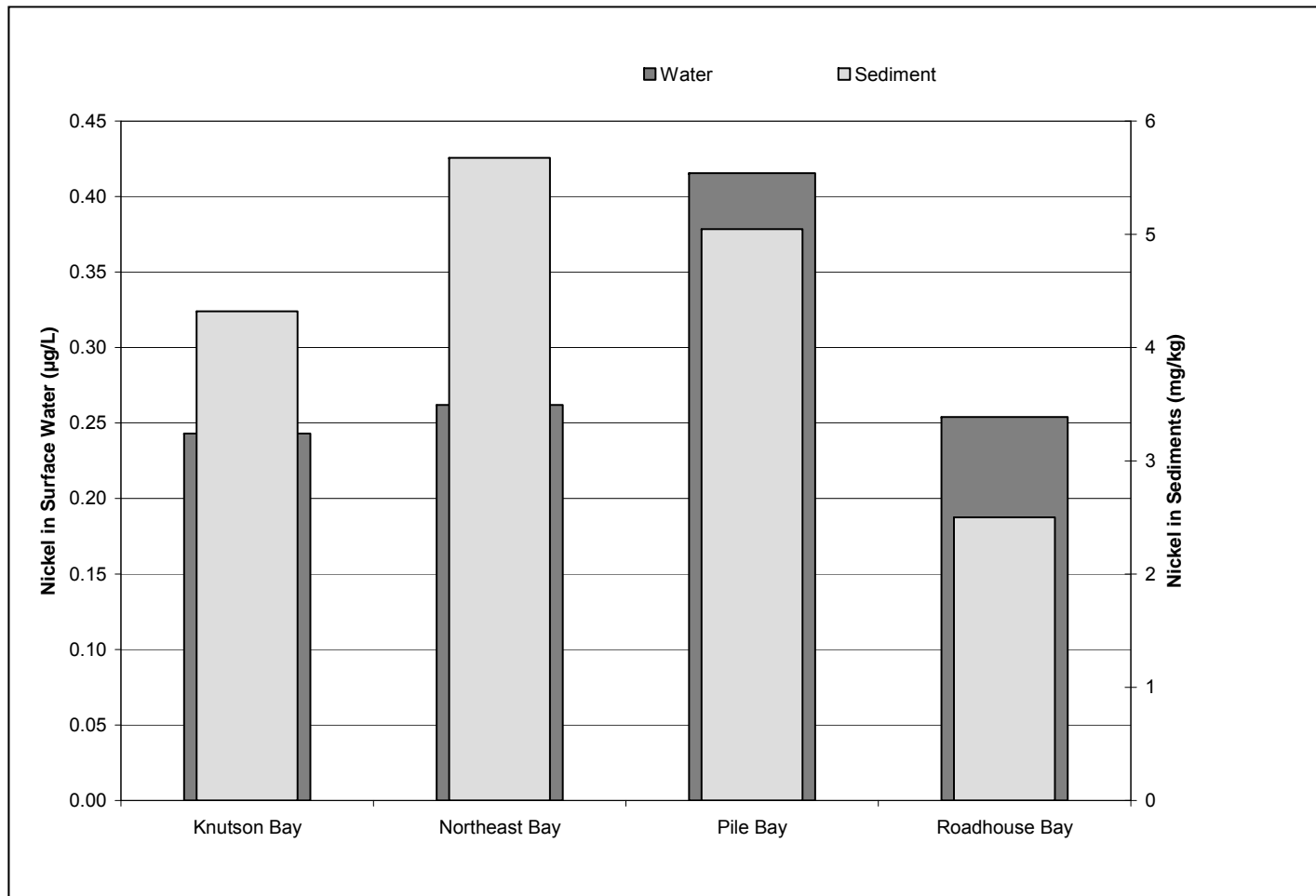


FIGURE B-32
Median Total Nickel Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather.

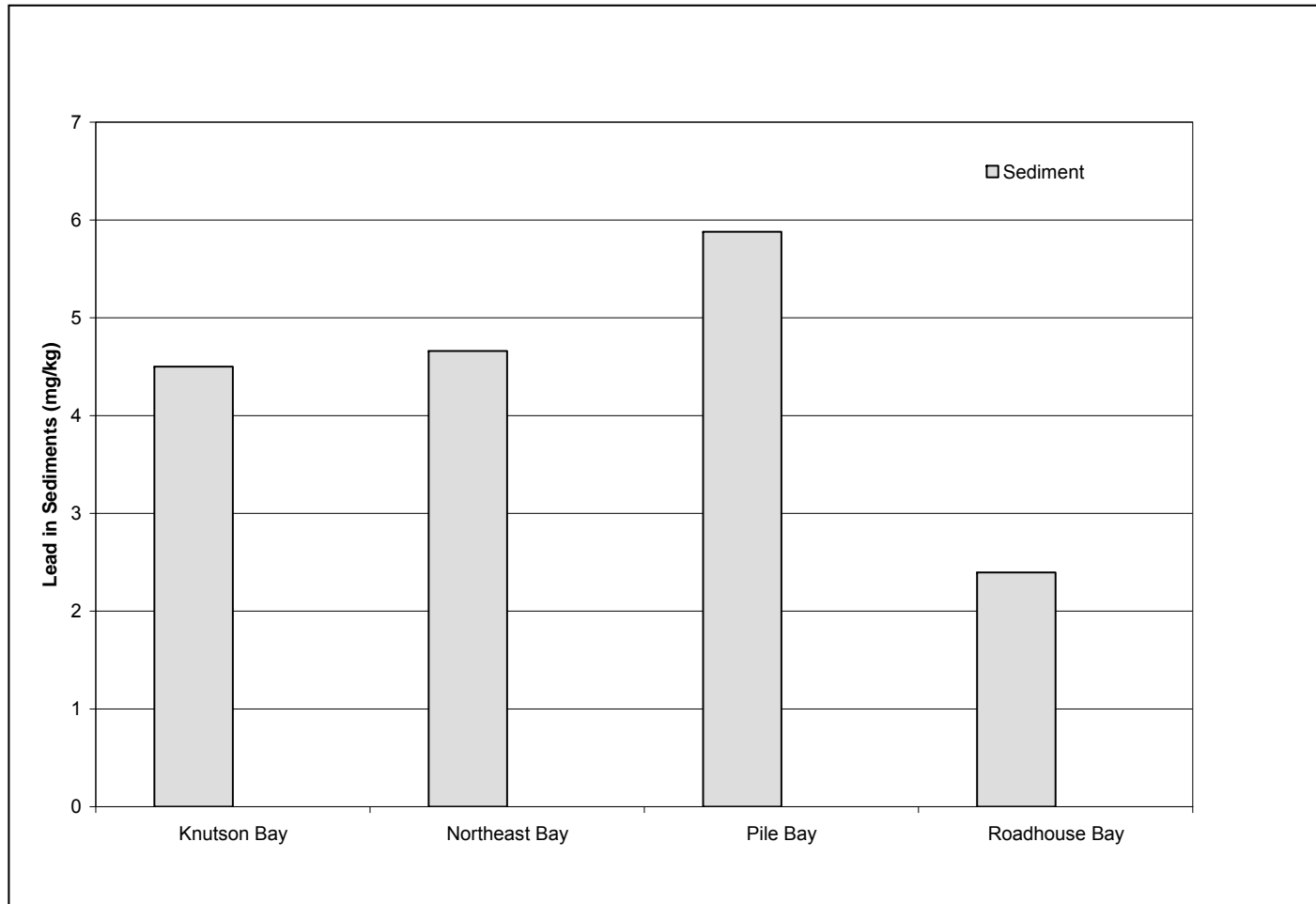


FIGURE B-33
Median Total Lead Concentrations in Water and Sediment Samples, June and September 2005

Note that no samples were collected at Upper Talarik due to inclement weather, and lack of data representation in the graph indicates that all samples for that media were below detection level.

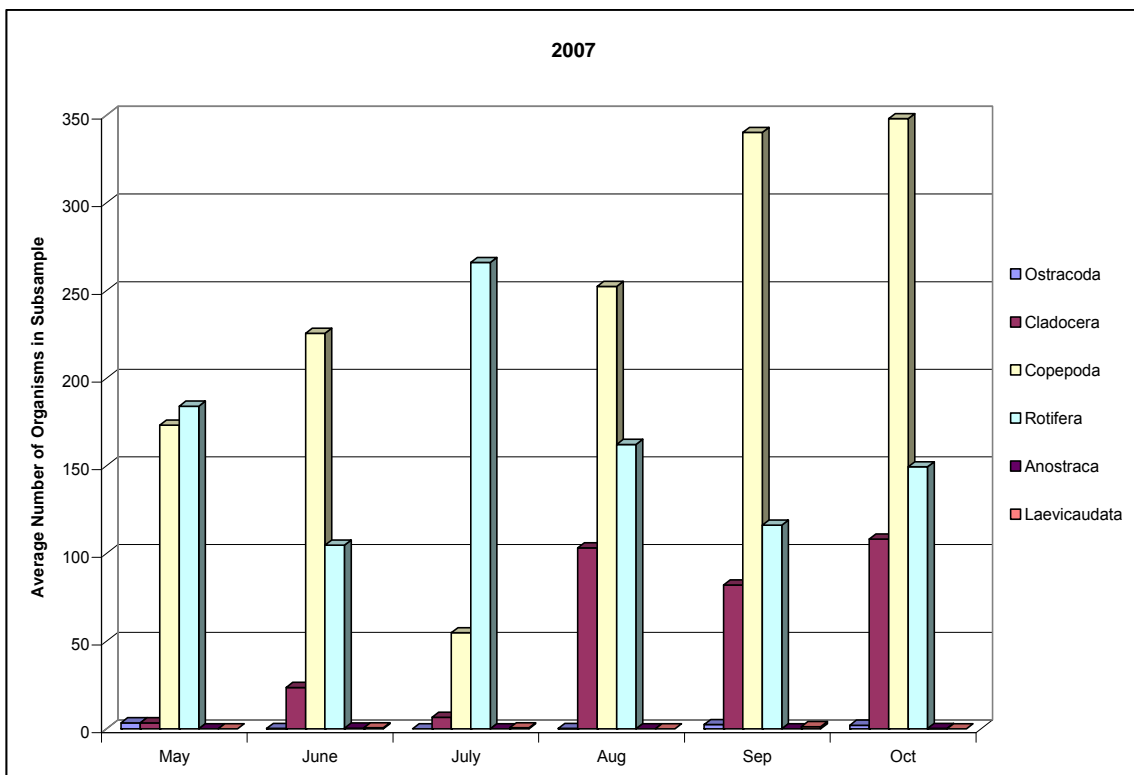
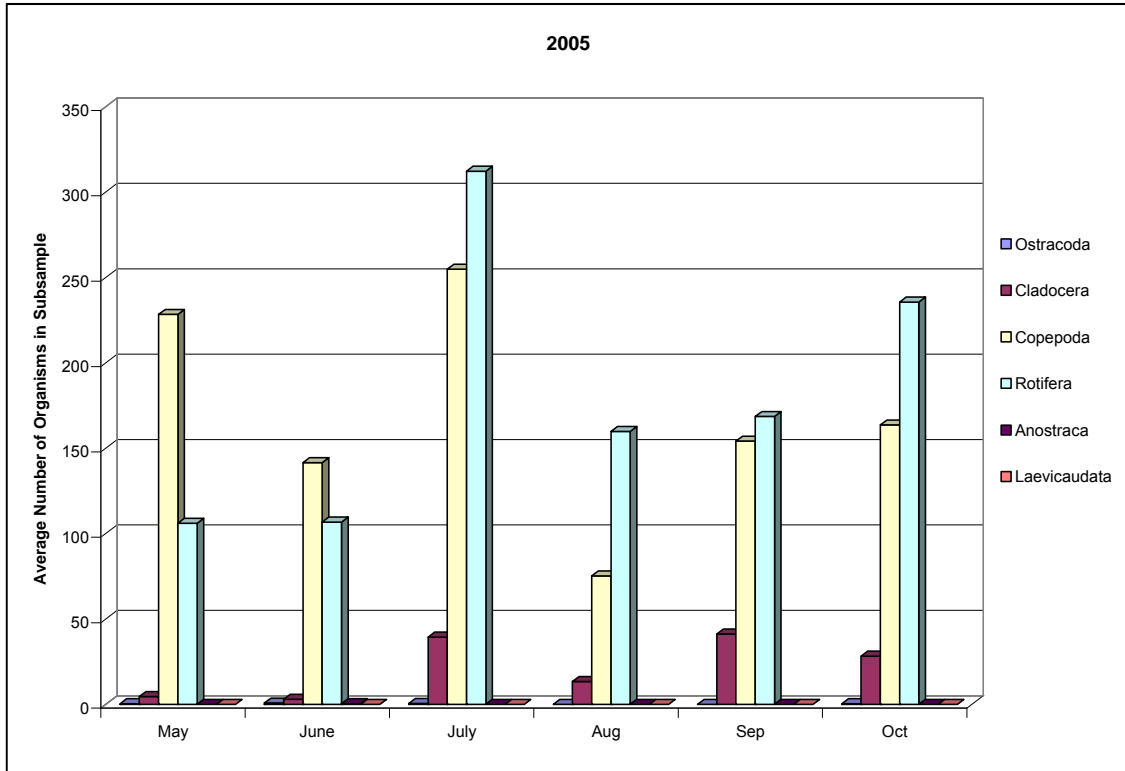


FIGURE B-34
 Zooplankton Relative Taxa Abundance by Month, 2005 and 2007

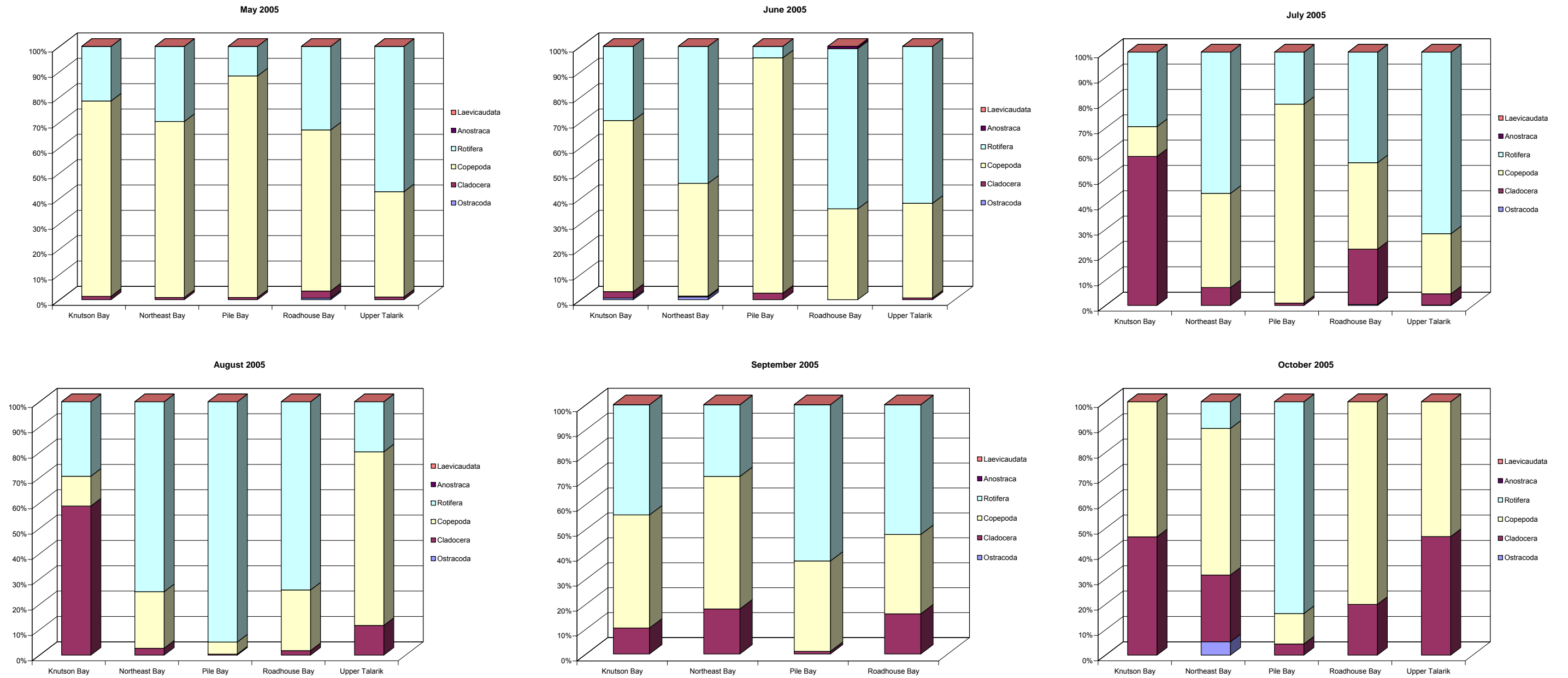


FIGURE B-35
Zooplankton Taxa Percent Composition, 2005

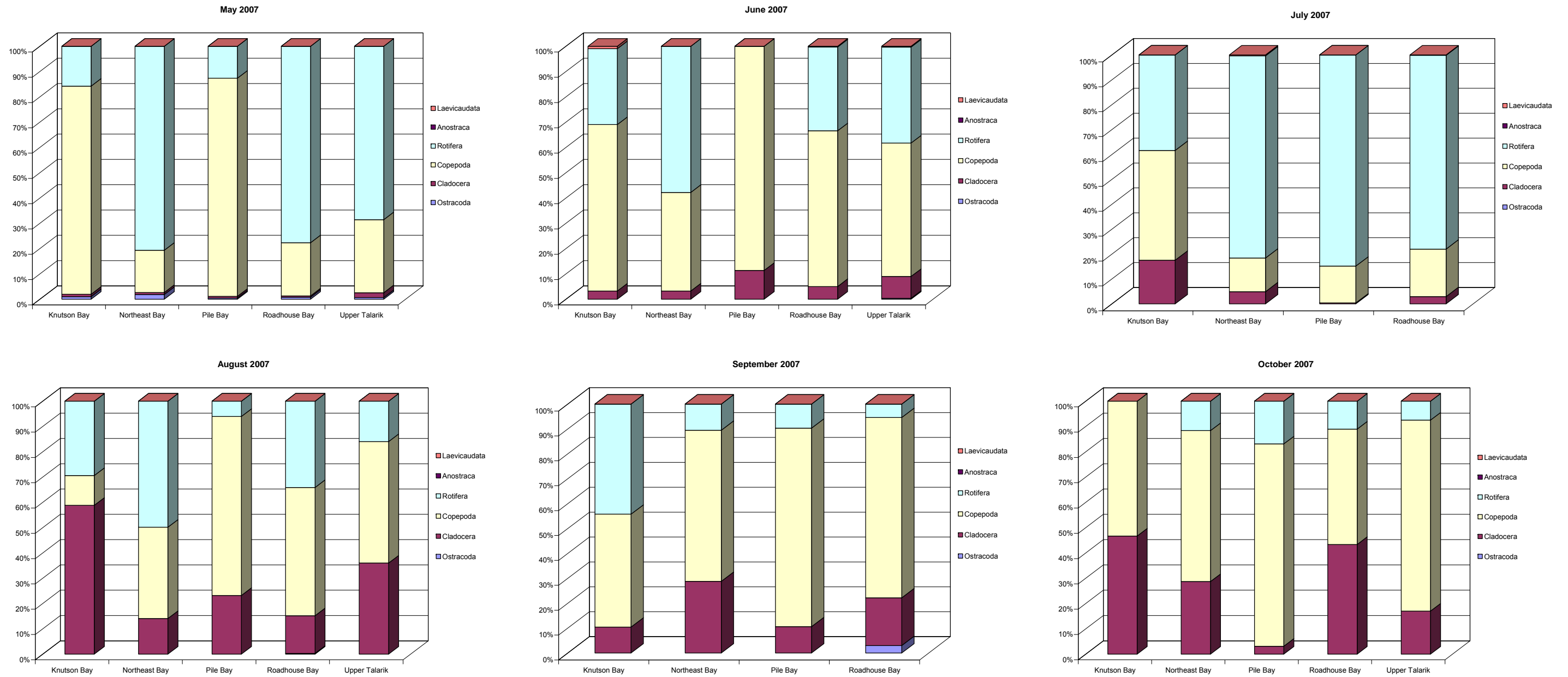


FIGURE B-36
Zooplankton Taxa Percent Composition, 2007

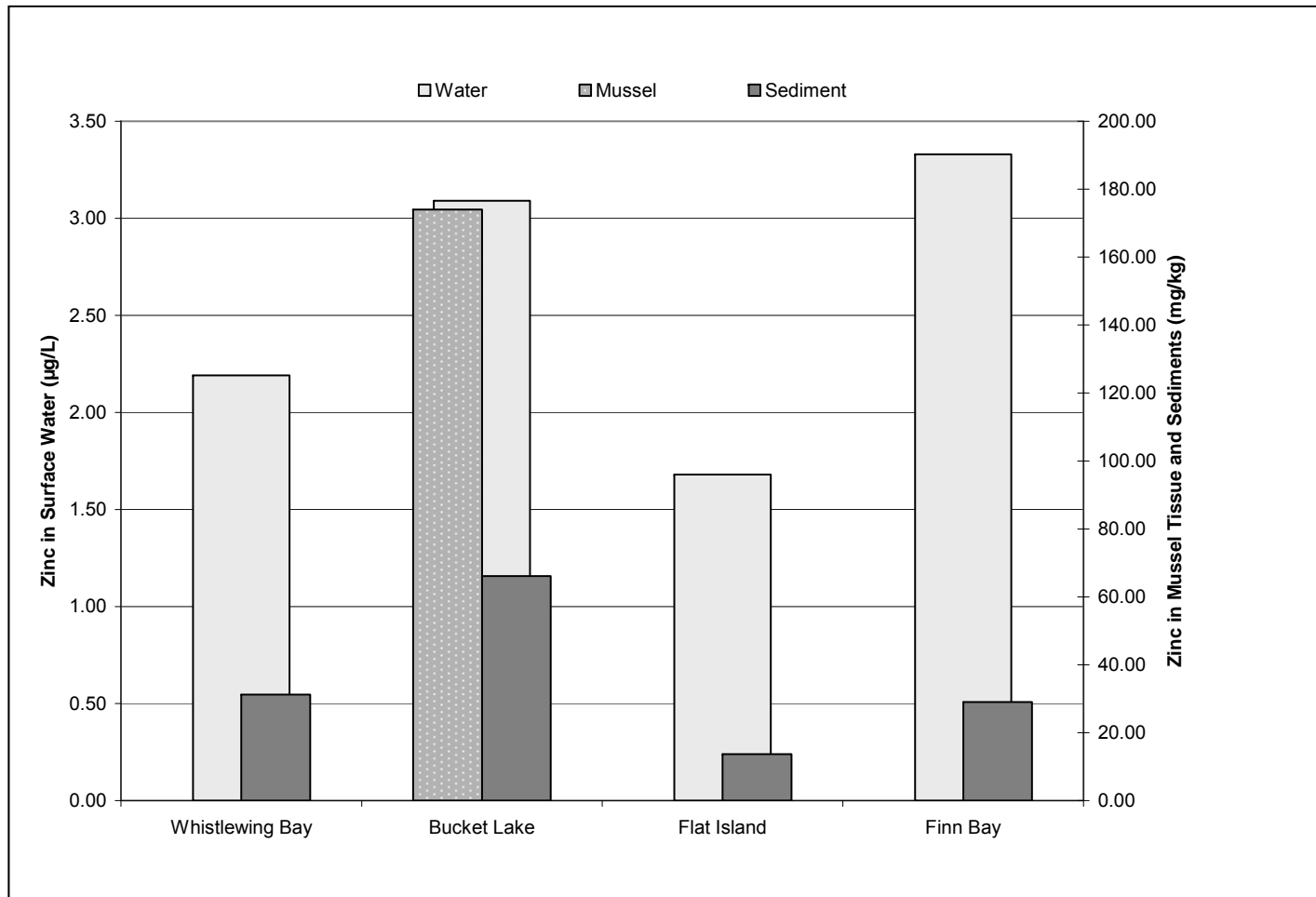


FIGURE B-37
Median Total Zinc Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006.

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

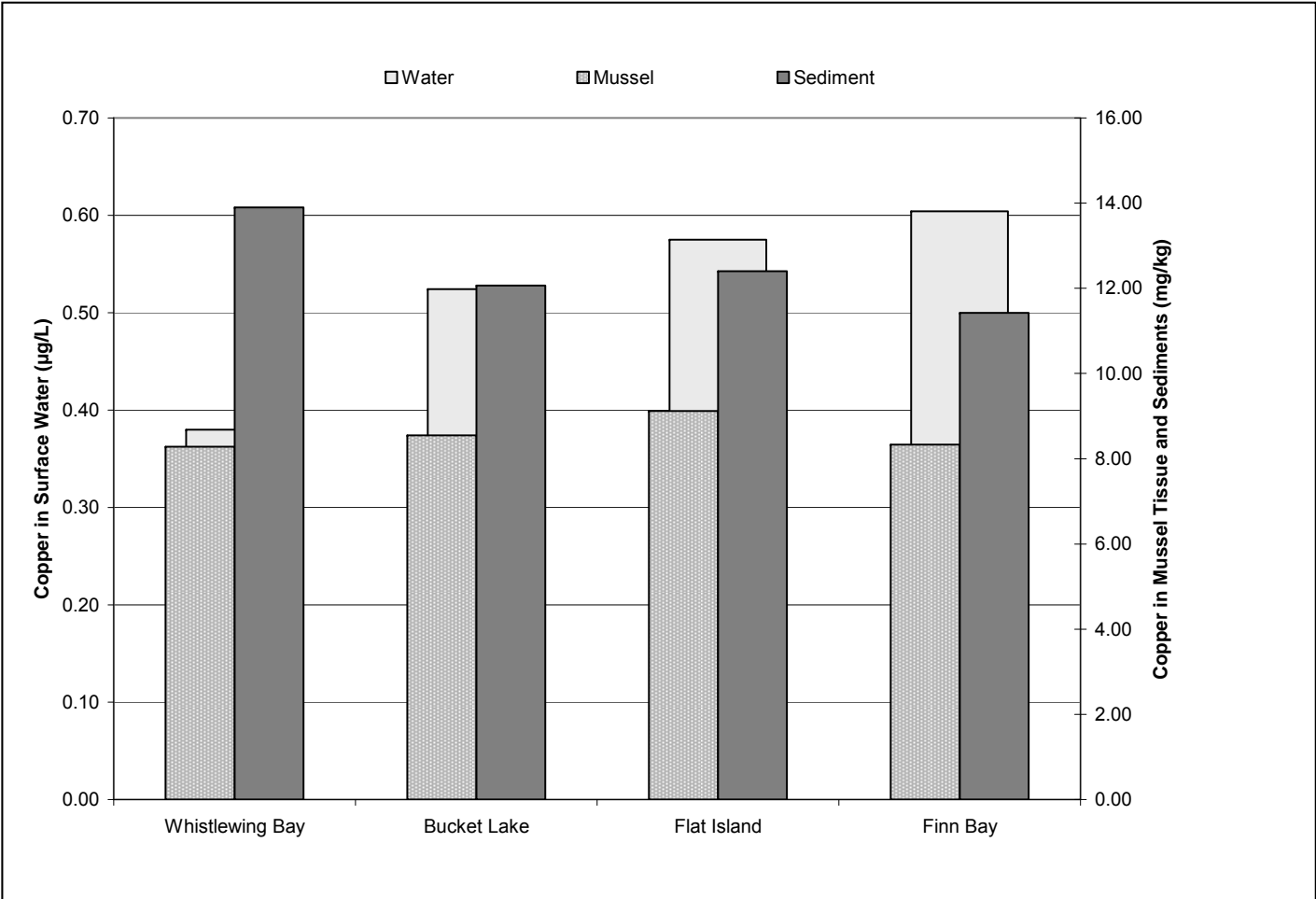


FIGURE B-38
Median Total Copper Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

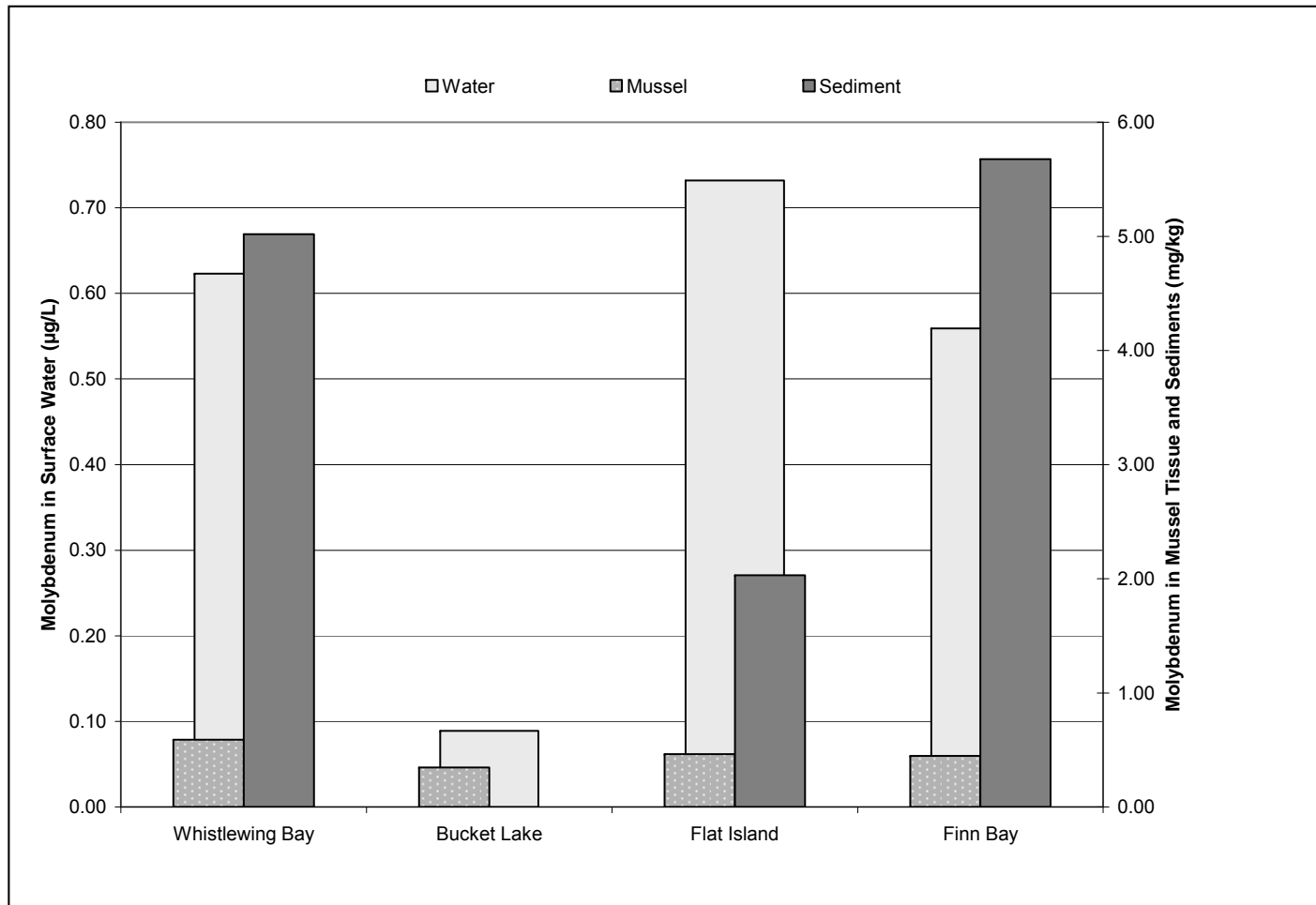


FIGURE B-39
Median Total Molybdenum Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

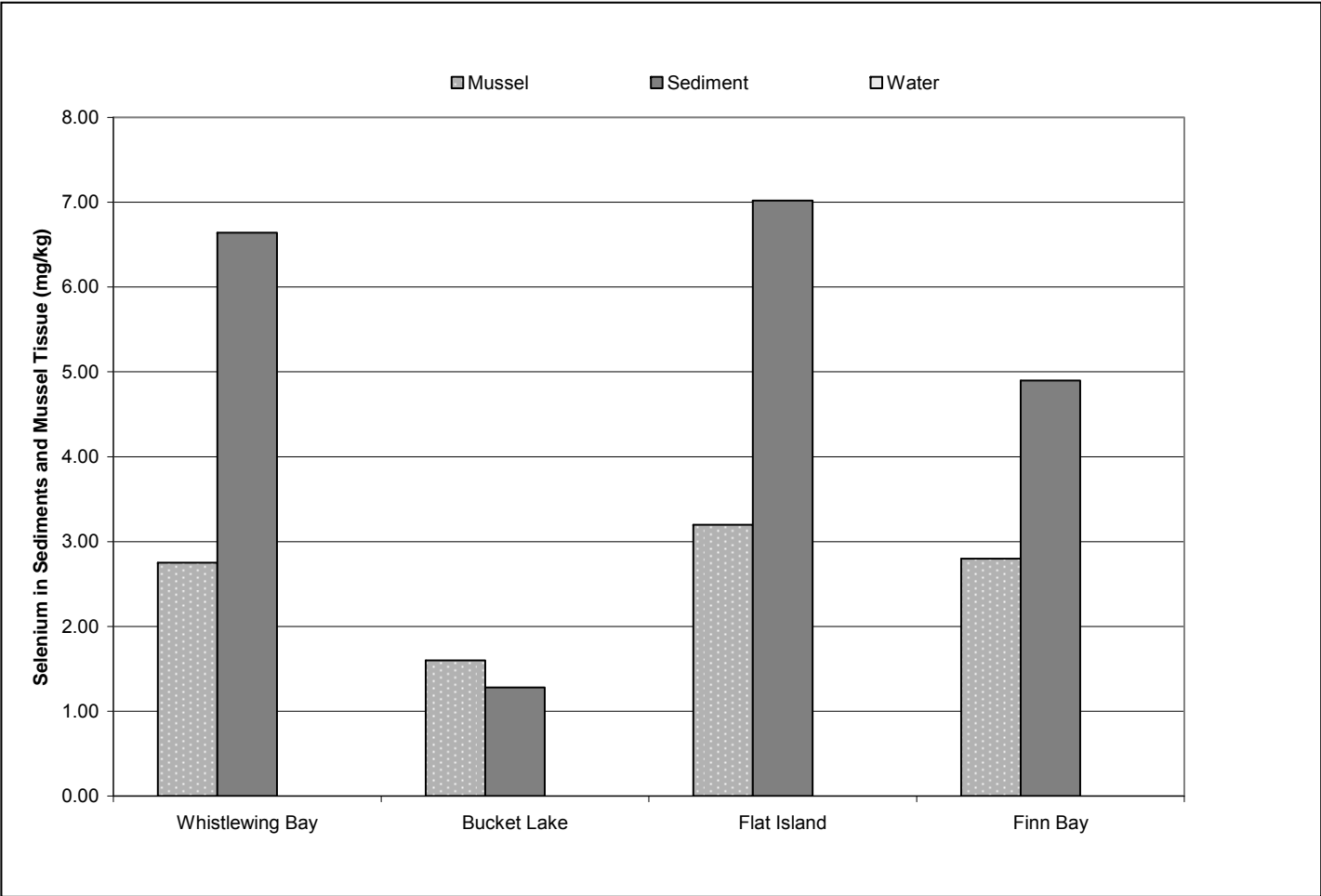


FIGURE B-40
Median Total Selenium Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

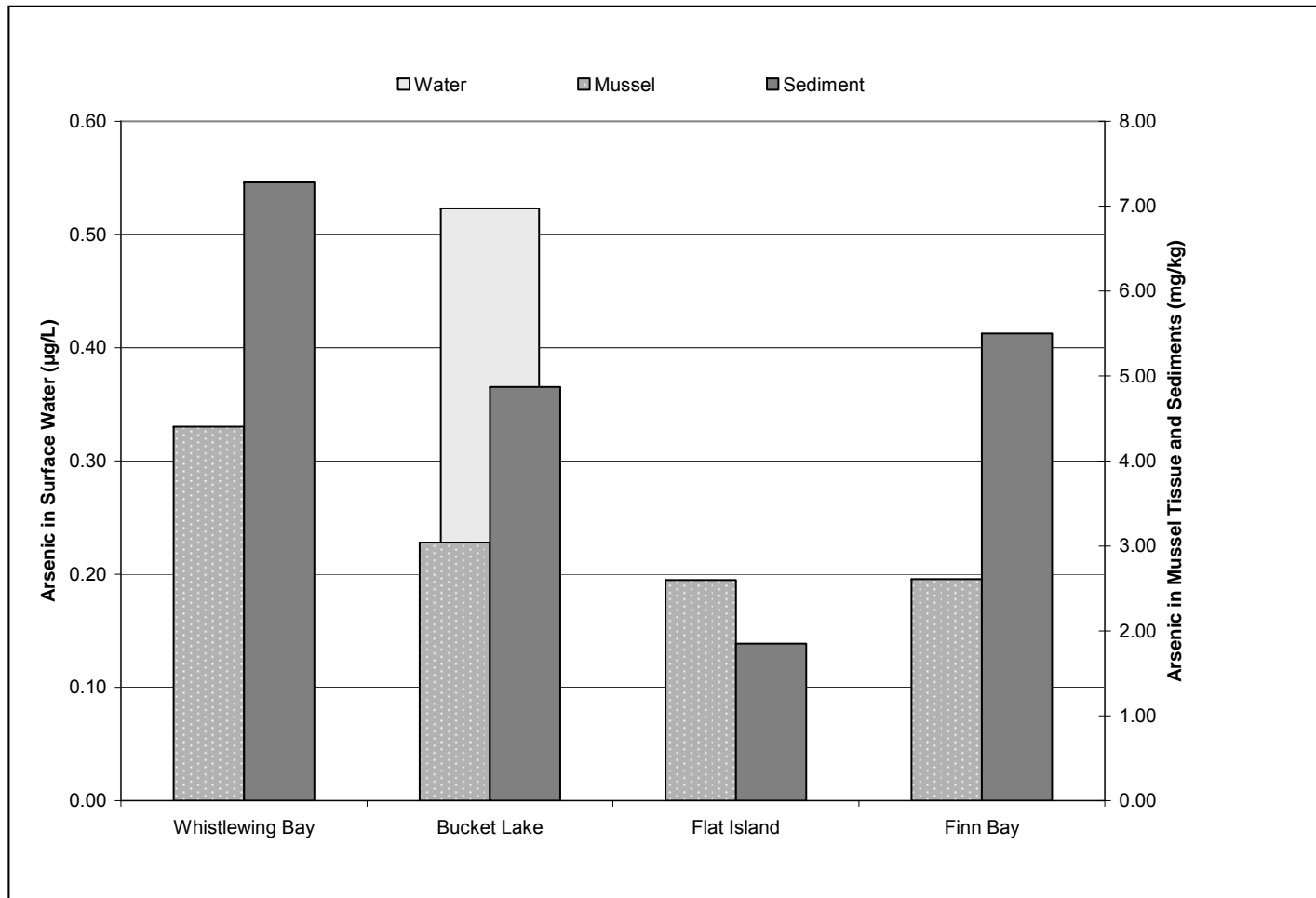


FIGURE B-41
Median Total Arsenic Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

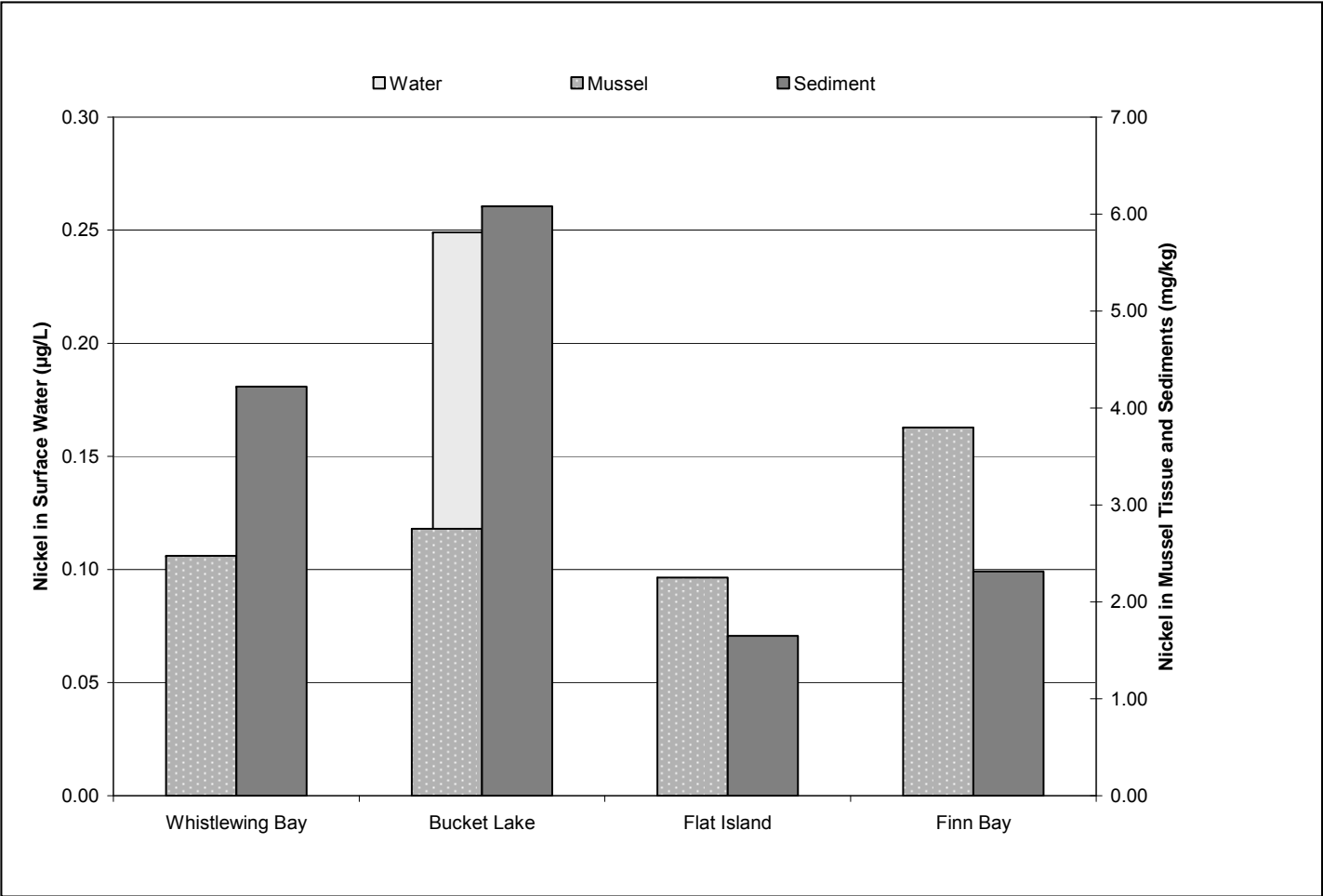


FIGURE B-42
Median Total Nickel Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

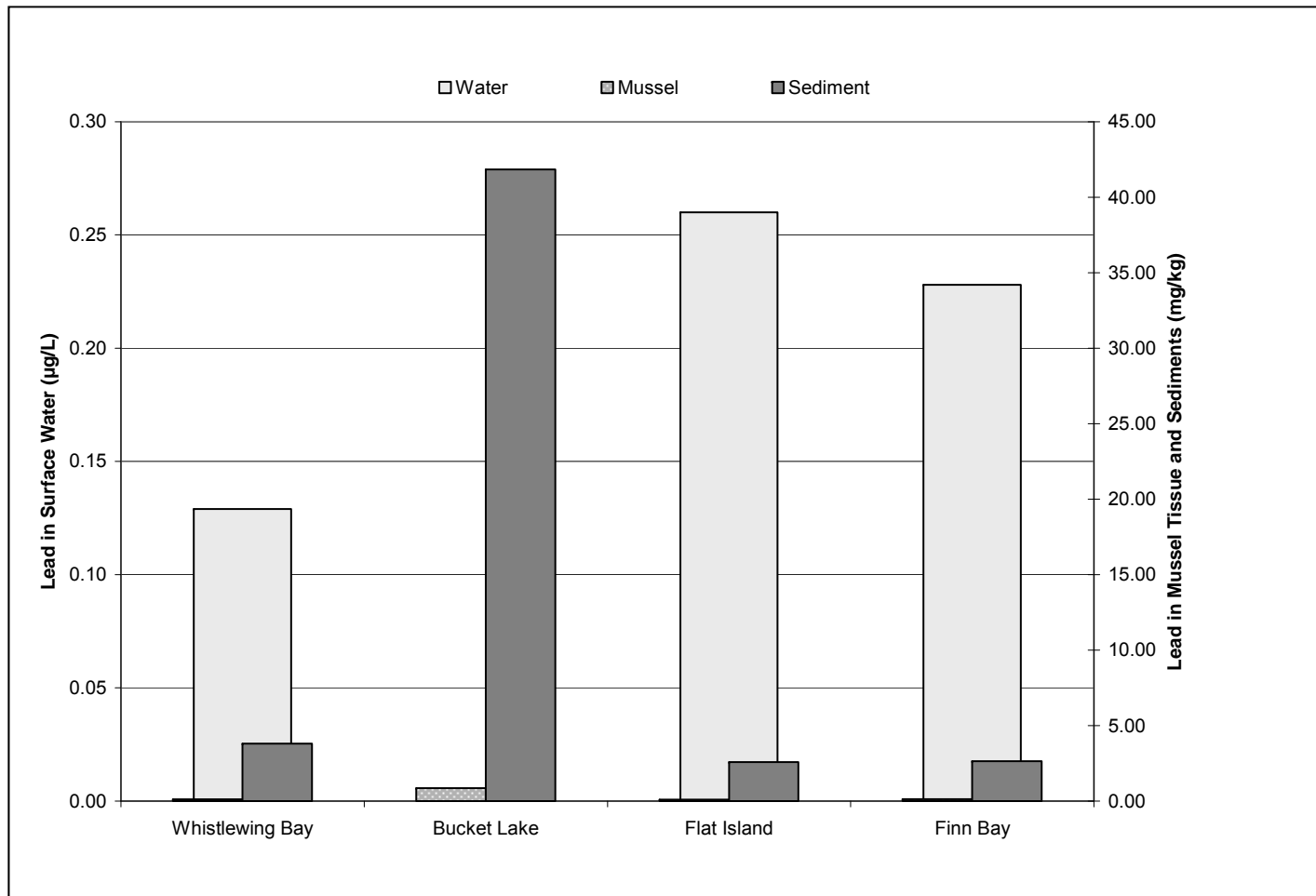


FIGURE B-43
Median Total Lead Concentrations in Freshwater Mussels, Water, and Sediment Samples, June and September 2005, and September 2006

Note that lack of data representation in the graph indicates that all samples for that media were below detection level.

ATTACHMENTS

ATTACHMENT B-1

Laboratory Data Tables
Surface Water Samples

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate	
	Total/Dissolved Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Location: BL1A																		
	Sample Date																	
	09/12/06	12.1	7.61	12.61	17.5	1.90	1.57	13.0	1.93	0.0155	1.93	0.0390	0.0107	0.0400	1.14	0.0630	2.42	
	06/17/07	9.03	7.80	15.03	35.0	1.0	1.57	14.5	0.0155			0.0155	0.0191		1.36	0.0720	0.914	
	Mean	10.565	7.705	13.82	26.25	1.45	1.57	13.75	0.97275	0.0155	1.93	0.0273	0.0149	0.04	1.25	0.0675	1.667	
	Median	10.565	7.705	13.82	26.25	1.45	1.57	13.75	0.97275	0.0155	1.93	0.0273	0.0149	0.04	1.25	0.0675	1.667	
	St. Deviation	2.17	NA	NA	12.37	0.64	0.00	1.06	1.35	NA	NA	0.02	0.01	NA	0.16	0.01	1.06	
	# of values	2	2	2	2	2	2	2	2	1	1	2	2	1	2	2	2	
	Minimum	9.03	7.61	12.61	17.5	1	1.57	13	0.0155	0.0155	1.93	0.0155	0.0107	0.04	1.14	0.0630	0.914	
	Maximum	12.1	7.8	15.03	35.0	1.9	1.57	14.5	1.93	0.0155	1.93	0.0390	0.0191	0.04	1.36	0.0720	2.42	
	% of values undetected						100%		50%	100%		50%						
	# of values between MDL and MRL											1		1		2		
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	3.90	NA	NA	230	NA	NA	
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250	
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Location: FL1A																		
	Sample Date																	
	09/11/06	17.4	8.03	13.22	31.2	1.60	1.57	14.0	0.0480	0.0155	0.0445	0.0530	0.0050	0.0155	1.05	0.0600	4.74	
	Mean	17.4	8.03	13.22	31.2	1.60	1.57	14.0	0.048	0.0155	0.0445	0.0530	0.005	0.0155	1.05	0.0600	4.74	
	Median	17.4	8.03	13.22	31.2	1.60	1.57	14.0	0.048	0.0155	0.0445	0.0530	0.005	0.0155	1.05	0.0600	4.74	
	St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	# of values	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Minimum	17.4	8.03	13.22	31.2	1.60	1.57	14.0	0.048	0.0155	0.0445	0.0530	0.005	0.0155	1.05	0.0600	4.74	
	Maximum	17.4	8.03	13.22	31.2	1.60	1.57	14.0	0.048	0.0155	0.0445	0.0530	0.005	0.0155	1.05	0.0600	4.74	
	% of values undetected						100%			100%				100%				
	# of values between MDL and MRL								1		1	1	1			1		
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	2.33	NA	NA	230	NA	NA	
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250	
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d	
					Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: BL1A																					
Sample Date																					
	09/12/06	0.0020	0.0020	0.46		102	114	0.0282	0.0676	0.523	0.564	1.73	1.51	0.0125	0.0125	0.0075	0.0174	3.26	3.04	0.0185	0.0185
	06/17/07	0.0008	0.0008	0.50		95	80	0.0224	0.0294	0.444	0.525	0.713		0.0125	0.0125	0.0075	0.0075	2.79	2.86	0.0075	0.0075
Mean		0.0014	0.0014	0.48		98.45	96.95	0.0253	0.0485	0.4835	0.5445	1.2215	1.51	0.0125	0.0125	0.0075	0.01245	3.025	2.95	0.013	0.013
Median		0.0014	0.0014	0.48		98.45	96.95	0.0253	0.0485	0.4835	0.5445	1.2215	1.51	0.0125	0.0125	0.0075	0.01245	3.025	2.95	0.013	0.013
St. Deviation		0.00	0.00	0.03	NA	5.02	24.11	0.00	0.03	0.06	0.03	0.72	NA	0.00	0.00	0.00	0.01	0.33	0.13	0.01	0.01
# of values		2	2	2	0	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2
Minimum		0.0008	0.0008	0.46		94.9	79.9	0.0224	0.0294	0.444	0.525	0.713	1.51	0.0125	0.0125	0.0075	0.0075	2.79	2.86	0.0075	0.0075
Maximum		0.0020	0.0020	0.5		102	114	0.0282	0.0676	0.523	0.564	1.73	1.51	0.0125	0.0125	0.0075	0.0174	3.26	3.04	0.0185	0.0185
% of values undetected		50%	50%	50%										100%	100%	100%	50%			100%	100%
# of values between MDL and MRL		1	1	1				2	1	1		1					1	2	2		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	0.0052	NA		87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.046	0.047
Drinking Water Standards (DWS)⁽²⁾		NA	0.2	NA		NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences		0%	0%	0%		100%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Location: FL1A																					
Sample Date																					
	09/11/06	0.00075	0.00075	0.155		11.6	5.84	0.0212	0.0194	0.155	0.155	5.80	5.38	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
Mean		0.00075	0.00075	0.155	NA	11.6	5.84	0.0212	0.0194	0.155	0.155	5.80	5.38	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
Median		0.00075	0.00075	0.155	NA	11.6	5.84	0.0212	0.0194	0.155	0.155	5.80	5.38	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
St. Deviation		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
# of values		1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum		0.00075	0.00075	0.155	NA	11.6	5.84	0.0212	0.0194	0.155	0.155	5.80	5.38	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
Maximum		0.00075	0.00075	0.155	NA	11.6	5.84	0.0212	0.0194	0.155	0.155	5.80	5.38	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
% of values undetected		100%	100%	100%						100%	100%			100%	100%	100%	100%	100%	100%	100%	100%
# of values between MDL and MRL								1	1												
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.074	0.073
Drinking Water Standards (DWS)⁽²⁾		NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences		0%	0%	0%	NA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%	NA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved		
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: BL1A																						
Sample Date																						
	09/12/06	3510	3780	0.050	0.050	0.0662		0.524		463	249	0.0155		801	816	10.0	3.34	0.000475	0.0888	0.116	0.249	
	06/17/07	2630	2810	0.050	0.050	0.0252	0.024	0.583	0.483	204	169	0.277	0.146	596	658	3.3	2.19	0.001090	0.1080	0.118	0.136	0.201
Mean		3070	3295	0.050	0.050	0.0457	0.0244	0.554	0.483	333.5	209	0.1463	0.1460	698.5	737	6.66	2.765	0.00078225	0.0984	0.117	0.193	0.201
Median		3070	3295	0.050	0.050	0.0457	0.0244	0.554	0.483	333.5	209	0.1463	0.1460	698.5	737	6.66	2.765	0.00078225	0.0984	0.117	0.193	0.201
St. Deviation		622.25	685.89	0.00	0.00	0.03	NA	0.04	NA	183.14	56.57	0.18	NA	144.96	111.72	4.72	0.81	0.00	0.01	0.00	0.08	NA
# of values		2	2	2	2	2	1	2	1	2	2	2	1	2	2	2	2	2	2	2	2	2
Minimum		2630	2810	0.050	0.050	0.0252	0.0244	0.524	0.483	204	169	0.0155	0.1460	596	658	3.32	2.19	0.0004745	0.0888	0.116	0.136	0.201
Maximum		3510	3780	0.050	0.050	0.0662	0.0244	0.583	0.483	463	249	0.2770	0.1460	801	816	10	3.34	0.00109	0.108	0.118	0.249	0.201
% of values undetected				100%	100%							50%						50%				
# of values between MDL and MRL																		1			1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	NA	10.98	10.56	NA	NA	1.21	1.16	1000	1000	0.15	0.17	NA	NA	NA	NA	0.012	NA	NA	6.92	6.90
Drinking Water Standards (DWS)⁽²⁾		NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Location: FL1A																						
Sample Date																						
	09/11/06	5620	5760	0.496	0.524	0.0238	0.0230	0.575	0.658	42.3	29.4	0.260		815	839	5.09	0.880	0.000475	0.732	0.770	0.167	
Mean		5620	5760	0.496	0.524	0.0238	0.023	0.575	0.658	42.3	29.4	0.26		815	839	5.09	0.88	0.0004745	0.732	0.770	0.167	
Median		5620	5760	0.496	0.524	0.0238	0.023	0.575	0.658	42.3	29.4	0.26		815	839	5.09	0.88	0.0004745	0.732	0.770	0.167	
St. Deviation		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
# of values		1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0
Minimum		5620	5760	0.496	0.524	0.0238	0.023	0.575	0.658	42.3	29.4	0.26		815	839	5.09	0.88	0.0004745	0.732	0.770	0.167	
Maximum		5620	5760	0.496	0.524	0.0238	0.023	0.575	0.658	42.3	29.4	0.26		815	839	5.09	0.88	0.0004745	0.732	0.770	0.167	
% of values undetected																		100%				
# of values between MDL and MRL																					1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	NA	10.98	10.56	NA	NA	2.09	2.01	1000	1000	0.34	0.36	NA	NA	NA	NA	0.012	NA	NA	11.88	11.85
Drinking Water Standards (DWS)⁽²⁾		NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: BL1A																		
Sample Date																		
09/12/06	240	221	0.155	0.155	2390	0.0348	0.0138	3830		0.0050	0.0050	0.050	0.050	0.250	0.250	3.09		
06/17/07	251	276	0.155	0.155	276	0.0031	0.0031	4100	4120	0.0050	0.0050	0.050	0.050	0.376	0.348	1.97	2.3	
Mean	245.5	248.5	0.155	0.155	1333	0.01895	0.00845	3965	4120	0.0050	0.0050	0.050	0.050	0.313	0.299	2.53		
Median	245.5	248.5	0.155	0.155	1333	0.01895	0.00845	3965	4120	0.0050	0.0050	0.050	0.050	0.313	0.299	2.53		
St. Deviation	7.78	38.89	0.00	0.00	1494.82	0.02	0.01	190.92	NA	0.00	0.00	0.00	0.00	0.09	0.07	0.79	NA	
# of values	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	1
Minimum	240	221	0.155	0.155	276	0.0031	0.0031	3830	4120	0.0050	0.0050	0.050	0.050	0.250	0.250	1.97		
Maximum	251	276	0.155	0.155	2390	0.0348	0.0138	4100	4120	0.0050	0.0050	0.050	0.050	0.376	0.348	3.09		
% of values undetected			100%	100%		50%	50%			100%	100%	100%	100%	100%	100%			
# of values between MDL and MRL							1											
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.07	0.06	NA	NA	NA	NA	NA	NA	NA	NA	15.8	15.6	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Location: FL1A																		
Sample Date																		
09/11/06	538	568	0.155	0.155	831	0.0031	0.0031	1860	2120	0.0050	0.0050	0.050	0.050	0.250	0.250	1.68	2.32	
Mean	538	568	0.155	0.155	831	0.0031	0.0031	1860	2120	0.005	0.0050	0.050	0.050	0.250	0.250	1.68	2.32	
Median	538	568	0.155	0.155	831	0.0031	0.0031	1860	2120	0.0050	0.0050	0.050	0.050	0.250	0.250	1.68	2.32	
St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
# of values	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum	538	568	0.155	0.155	831	0.0031	0.0031	1860	2120	0.0050	0.0050	0.050	0.050	0.250	0.250	1.68	2.32	
Maximum	538	568	0.155	0.155	831	0.0031	0.0031	1860	2120	0.0050	0.0050	0.050	0.050	0.250	0.250	1.68	2.32	
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	100%	100%			
# of values between MDL and MRL																		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.20	0.17	NA	NA	NA	NA	NA	NA	NA	NA	27.2	26.8	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: FN1A																	
	Sample Date																
	09/11/06	16.1	7.57	13.52	31.2	1.70	1.57	11.0	0.0440	0.0155	0.0390	0.0155	0.0050	0.0155	1.23	0.0420	3.10
	Mean	16.1	7.57	13.52	31.2	1.70	1.57	11.0	0.0440	0.0155	0.0390	0.0155	0.0050	0.0155	1.23	0.0420	3.1
	Median	16.1	7.57	13.52	31.2	1.70	1.57	11.0	0.0440	0.0155	0.0390	0.0155	0.0050	0.0155	1.23	0.0420	3.1
	St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	# of values	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Minimum	16.1	7.57	13.52	31.2	1.70	1.57	11.0	0.0440	0.0155	0.0390	0.0155	0.0050	0.0155	1.23	0.0420	3.1
	Maximum	16.1	7.57	13.52	31.2	1.70	1.57	11.0	0.0440	0.0155	0.0390	0.0155	0.0050	0.0155	1.23	0.0420	3.1
	% of values undetected						100%			100%		100%		100%			
	# of values between MDL and MRL								1		1		1				1
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	4.09	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Location: KN1A																	
	Sample Date																
	05/25/05	13.9	7.12	4.23	20.0	0.400	2.5	10.5	0.120			0.0155	0.0011		0.971	0.042	3.32
	06/14/05	14.6	7.00	8.28	20.0	0.075	0.785	12.5	0.097			0.0155	0.004		1.04	0.042	3.66
	07/23/05	16.2	8.17	12.52	31.3	0.150	0.785	13.0	0.079			0.0320	0.048		1.07	0.043	3.94
	08/13/05	15.8	7.27	16.78	17.5	0.075	0.785	14.5	0.033			0.0155	0.010		1.05	0.04	3.79
	09/29/05	18.3	6.25	10.20	29.0	0.200	0.785	14.5	0.074			0.0366	0.00165		1.03	0.05	3.87
	10/14/05	16.8		8.81	35.0	0.075	0.785	15.0	0.0925			0.0500	0.0057		1.02	0.068	4.07
	05/29/07	13.1	6.81	4.13	21.3	0.075	1.57	10.3	0.183			0.0155	0.0165		0.997	0.0660	3.23
	06/11/07	15.8	6.81	5.54	28.8	0.50	1.57	11.0	0.170			0.0155	0.0134		0.957	0.0880	3.52
	07/19/07	18.0	7.55	12.68	20.0	0.400	1.57	14.4	0.050			0.0155	0.0050		1.01	0.0530	3.51
	08/20/07	16.8	7.70	11.58	28.8	0.408	1.57	14.4	0.107			0.0443	0.0053		0.873	0.0350	3.48
	09/22/07	18.4	7.28	9.42	33.8	0.150	1.57	14.8	0.101			0.0155	0.00155		0.873	0.0400	3.66
	10/09/07	18.2	7.42	8.15	23.8	0.0775	1.57	14.3	0.129			0.0155	0.00155		0.890	0.0330	3.57
	Mean	16.3	7.22	9.36	25.8	0.22	1.32	13.3	0.1	NA	NA	0.0239	0.009	NA	0.98	0.050	3.64
	Median	16.5	7.27	9.12	26.3	0.15	1.57	14.4	0.1	NA	NA	0.0155	0.005	NA	1.00	0.043	3.62
	St. Deviation	1.8	0.51	3.73	6	0.16	0.54	1.8	0.04	NA	NA	0.0131	0.013	NA	0.070	0.016	0.25
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	13.1	6.25	4.13	17.5	0.075	0.785	10.3	0.033	NA	NA	0.0155	0.0011	NA	0.873	0.033	3.23
	Maximum	18.4	8.17	16.78	35	0.50	2.5	15	0.183	NA	NA	0.0500	0.048	NA	1.07	0.088	4.07
	% of values undetected					67%	92%		8%			75%	50%				
	# of values between MDL and MRL					4	1	1	5			3	3				12
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.64	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	9%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
	Units	mg/L			mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: FN1A																					
Sample Date																					
	09/11/06	0.00075	0.00075	0.155		30.1	8.89	0.0168	0.0075	0.155	0.155	9.28	7.64	0.0125	0.0125	0.0075	0.0075	2.93	1.25	0.0185	0.0185
Mean		0.00075	0.00075	0.155	NA	30.1	8.89	0.0168	0.0075	0.155	0.155	9.28	7.64	0.0125	0.0125	0.0075	0.0075	2.93	1.25	0.0185	0.0185
Median		0.00075	0.00075	0.155	NA	30.1	8.89	0.0168	0.0075	0.155	0.155	9.28	7.64	0.0125	0.0125	0.0075	0.0075	2.93	1.25	0.0185	0.0185
St. Deviation		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
# of values		1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum		0.00075	0.00075	0.155	NA	30.1	8.89	0.0168	0.0075	0.155	0.155	9.28	7.64	0.0125	0.0125	0.0075	0.0075	2.93	1.25	0.0185	0.0185
Maximum		0.00075	0.00075	0.155	NA	30.1	8.89	0.0168	0.0075	0.155	0.155	9.28	7.64	0.0125	0.0125	0.0075	0.0075	2.93	1.25	0.0185	0.0185
% of values undetected		100%	100%	100%					100%	100%	100%			100%	100%	100%	100%		100%	100%	100%
# of values between MDL and MRL								1										1			
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.070	0.069
Drinking Water Standards (DWS)⁽²⁾		NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences		0%	0%	0%	NA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%	NA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Location: KN1A																					
Sample Date																					
	05/25/05	0.00125	0.00125	0.50		10.4	4.44	0.0208	0.0210	0.125	0.125	4.82	4.54	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.00775
	06/14/05	0.00125	0.00125	0.50		4.66	2.43	0.0332	0.0304	0.305	0.125	5.34	5.18	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.025	0.025
	07/23/05	0.00125	0.00125	0.50		4.03	1.00	0.0268	0.0336	0.125	0.125	4.56	4.82	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
	08/13/05	0.00125	0.00125	0.50		2.97	2.46	0.0142	0.0082	0.125	0.250	5.03	4.75	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
	09/29/05	0.00125	0.00125	0.50		8.69	1.00	0.0262	0.0246	0.125	0.310	5.37	5.34	0.0075	0.0075	0.00155	0.00155	7.9	4.7	0.00775	0.0326
	10/14/05	0.00125	0.00125	0.50		2.80		0.0290	0.0234	0.125	0.250	4.86	5.42	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
	05/29/07	0.00075	0.00075	0.155		6.99	3.45	0.0250	0.0250	0.155	0.155	4.88	5.32	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0075	0.0075
	06/11/07	0.00075	0.00075	0.155	0.652	6.85	3.37	0.0322	0.0364	0.155	0.155	5.96	5.42	0.0125	0.0125	0.0075	0.0075	2.75	1.25	0.0075	0.0075
	07/19/07	0.00075	0.00075	0.155		4.01	2.10	0.0250	0.0250	0.155	0.155	5.78	5.80	0.0125	0.0125	0.0075	0.0075	4.51	4.45	0.0075	0.0075
	08/20/07	0.00075	0.00075	0.155		3.33	1.00	0.0286	0.0334	0.155	0.155	5.33	5.68	0.0125	0.0125	0.0075	0.0075	3.77	3.71	0.0075	0.0075
	09/22/07	0.00075	0.00075	0.155	0.453	3.74	1.00	0.0188	0.0218	0.155	0.155	5.63	5.55	0.0125	0.0125	0.0075	0.0075	3.30	3.10	0.0075	0.0075
	10/09/07	0.00075	0.00075	0.50		5.10	2.13	0.0246	0.0218	0.155	0.155	5.50	5.55	0.0125	0.0125	0.0075	0.0075	3.10	3.18	0.0075	0.0075
Mean		0.0010	0.0010	0.36	0.553	5.30	2.22	0.0254	0.0254	0.155	0.176	5.26	5.28	0.010	0.010	0.0045	0.0045	3.7	3.02	0.009	0.011
Median		0.0010	0.0010	0.5	0.553	4.30	2.13	0.0256	0.0248	0.155	0.155	5.34	5.38	0.010	0.010	0.0045	0.0045	3.5	3.14	0.008	0.008
St. Deviation		0.0003	0.0003	0.18	0.141	2.4	1.18	0.0054	0.0075	0.05	0.06	0.43	0.39	0.003	0.003	0.0031	0.0031	1.9	1.54	0.005	0.008
# of values		12	12	12	2	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Minimum		0.00075	0.00075	0.155	0.453	2.80	1	0.0142	0.0082	0.125	0.125	4.56	4.54	0.0075	0.0075	0.00155	0.00155	1.3	1.25	0.0075	0.0075
Maximum		0.0013	0.0013	0.5	0.652	10.4	4.44	0.0332	0.0364	0.305	0.31	5.96	5.8	0.0125	0.0125	0.0075	0.0075	7.9	5.0	0.025	0.0326
% of values undetected		100%	100%	100%			33%	17%	17%	92%	92%			100%	100%	100%	100%	50%	58%	100%	92%
# of values between MDL and MRL					1			4	5	1	1							6	5		1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.062	0.061
Drinking Water Standards (DWS)⁽²⁾		NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved		
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: FN1A																						
Sample Date																						
09/11/06	5100	4530	0.672	0.305	0.0334	0.0214	0.604	0.563	110	39.4	0.228			813	696	9.47	2.28	0.000475	0.559	0.480	0.177	
Mean	5100	4530	0.672	0.305	0.0334	0.0214	0.604	0.563	110	39.4	0.228			813	696	9.47	2.28	0.0004745	0.559	0.480	0.177	
Median	5100	4530	0.672	0.305	0.0334	0.0214	0.604	0.563	110	39.4	0.228			813	696	9.47	2.28	0.0004745	0.559	0.480	0.177	
St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
# of values	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	
Minimum	5100	4530	0.672	0.305	0.0334	0.0214	0.604	0.563	110	39.4	0.228			813	696	9.47	2.28	0.0004745	0.559	0.480	0.177	
Maximum	5100	4530	0.672	0.305	0.0334	0.0214	0.604	0.563	110	39.4	0.228			813	696	9.47	2.28	0.0004745	0.559	0.480	0.177	
% of values undetected																		100%				
# of values between MDL and MRL																					1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.96	1.88	1000	1000	0.31	0.33	NA	NA	NA	NA	0.012	NA	NA	11.13	11.09	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Location: KN1A																						
Sample Date																						
05/25/05	4580	4030	0.479	0.294	0.0108	0.005	0.414	0.361	10.0	3.1	0.050	0.0155	594	559	1.69	0.515			0.590	0.506	0.212	0.208
06/14/05	4760	4610	0.234		0.0132	0.0132	0.633	0.313	11.0	3.1	0.0155	0.124	672	699	1	0.497	0.000450	0.773	0.722	0.204		
07/23/05	5280	5440	0.031	0.100	0.005	0.005	0.814	0.546	3.1	3.1	0.0155		729	788	0.803	0.207	0.0025	0.609	0.670	0.207		
08/13/05	5220	4960	0.031	0.031	0.0192	0.0198	0.534	0.525	9.22	3.1	0.0155		685	667	0.836	0.264	0.000450	0.640	0.589	0.216		
09/29/05	5980	5910	0.031	0.305	0.0268	0.0186	0.529	0.599	3.1	3.1	0.0155		817	814	1.04	0.066	0.000450	0.734	0.777	0.243		
10/14/05	5530	5700	0.349	0.477	0.0248	0.0202	0.47	0.475	3.1	13.7	0.203	0.0155	738	826	0.10		0.000450	0.682	0.690	0.532	0.2	
05/29/07	4340	4540	0.050	0.100	0.0050	0.0110	0.356		20.9	12.9	0.0155	0.0155	559	638	2.41	1.32	0.000169	0.641	0.677	0.302	0.225	
06/11/07	5220	4570	0.410	0.282	0.0122	0.0150	0.537	0.434	19.6	14.3	0.0155	0.050	674	647	1.87	0.957	0.000169	0.826	0.717	0.100	0.288	
07/19/07	5850	5850	0.050	0.050	0.0100	0.0100	0.602	0.491	29.5	24.9	0.0155	0.0155	821	857	0.977	0.443	0.000169	0.781	0.763	0.320	0.442	
08/20/07	5500	5840	0.204	0.306	0.0050	0.0158	0.478	0.472	10.0	10.0	0.0636	0.0155	748	799	0.861	0.260	0.0025	0.719	0.738	0.167	0.235	
09/22/07	6040	5810	0.100	0.100	0.0050	0.0050	0.587	0.645	14.0	10.3	0.0155		798	801	0.937	0.146	0.0025	0.740	0.696	0.100	0.220	
10/09/07	6000	5740	0.100	0.259	0.0050	0.0050	0.495	0.431	10.0	10.0	0.0155	0.0155	779	744	0.980	0.232	0.000169	0.771	0.772	0.100	0.100	
Mean	5360	5250	0.172	0.209	0.012	0.012	0.537	0.481	12	9.0	0.038	0.033	718	737	1.13	0.446	0.00091	0.709	0.693	0.225	0.240	
Median	5390	5570	0.100	0.259	0.010	0.012	0.532	0.475	10	10	0.016	0.0155	734	766	0.98	0.264	0.00045	0.727	0.707	0.210	0.223	
St. Deviation	570	670	0.161	0.141	0.008	0.006	0.117	0.097	8	7	0.054	0.039	84	93	0.6	0.379	0.00103	0.076	0.079	0.121	0.097	
# of values	12	12	12	11	12	12	12	11	12	12	12	8	12	12	12	11	11	12	12	12	8	
Minimum	4340	4030	0.031	0.031	0.005	0.005	0.356	0.313	3.1	3.1	0.0155	0.0155	559	559	0.10	0.066	0.000169	0.590	0.506	0.100	0.1	
Maximum	6040	5910	0.479	0.477	0.0268	0.0202	0.814	0.645	29.5	24.9	0.203	0.124	821	857	2.41	1.32	0.0025	0.826	0.777	0.532	0.442	
% of values undetected			58%	42%	50%	33%			50%	58%	83%	58%			8%		100%			25%	8%	
# of values between MDL and MRL					1	4			4	4	1					1				1		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.69	1.62	1000	1000	0.25	0.27	NA	NA	NA	NA	0.012	NA	NA	9.61	9.58	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: FN1A																		
Sample Date																		
09/11/06	655	427	0.155	0.155	11200	0.0112	0.0031	1990	1700	0.0050	0.0050	0.050	0.050	0.250	0.250	3.33	1.91	
Mean	655	427	0.155	0.155	11200	0.0112	0.0031	1990	1700	0.0050	0.0050	0.050	0.050	0.250	0.250	3.33	1.91	
Median	655	427	0.155	0.155	11200	0.0112	0.0031	1990	1700	0.0050	0.0050	0.050	0.050	0.250	0.250	3.33	1.91	
St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
# of values	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum	655	427	0.155	0.155	11200	0.0112	0.0031	1990	1700	0.0050	0.0050	0.050	0.050	0.250	0.250	3.33	1.91	
Maximum	655	427	0.155	0.155	11200	0.0112	0.0031	1990	1700	0.0050	0.0050	0.050	0.050	0.250	0.250	3.33	1.91	
% of values undetected			100%	100%			100%			100%	100%	100%	100%	100%	100%			
# of values between MDL and MRL							1											
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.18	0.15	NA	NA	NA	NA	NA	NA	NA	NA	25.5	25.1	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Location: KN1A																		
Sample Date																		
05/25/05	376	344	0.0775	0.0775	1460	0.0031	0.0031	1440	1350	0.0031	0.0031	0.031	0.031	0.10	0.10	1.21	0.633	
06/14/05	471	469	0.25	0.25	1190	0.0031	0.0031	1620	1530	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	11	
07/23/05	478	513	0.0775	0.0775	1000	0.0031	0.0031	1530	1660	0.0031	0.0031	0.031	0.031	0.10	0.10	13.7	14.6	
08/13/05	456	446	0.0775	0.0775	1070	0.0031	0.0031	1400	1400	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	1.5	
09/29/05	538	559	0.0775	0.0775	1170	0.0031	0.0031	1770	1800	0.0031	0.0031	0.031	0.031	0.10	0.10	1.93	1.37	
10/14/05	490	536	0.0775	0.0775	1170	0.0031	0.0031	1600	1710	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75	
05/29/07	367	403	0.155	0.155	1640	0.0031	0.0031	1420	1520	0.0050	0.0050	0.050	0.050	0.155	0.155	5.56	7.17	
06/11/07	437	400	0.155	0.155	1680	0.0031	0.0031	1670	1470	0.0050	0.0050	0.050	0.050	0.155	0.155	6.82	5.14	
07/19/07	543	552	0.155	0.155	1240	0.0031	0.0031	1720	1720	0.0050	0.0050	0.050	0.050	0.155	0.155	2.61	1.20	
08/20/07	478	529	0.155	0.155	1130	0.0031	0.0031	1560	1610	0.0050	0.0050	0.050	0.050	0.155	0.155	1.17	0.50	
09/22/07	540	530	0.155	0.155	1110	0.0031	0.0031	1690	1630	0.0050	0.0050	0.050	0.050	0.155	0.155	1.41	2.18	
10/09/07	524	505	0.155	0.155	1200	0.0031	0.0031	1670	1570	0.0050	0.0050	0.050	0.050	0.155	0.155	1.20	0.50	
Mean	475	482	0.131	0.131	1260	0.0031	0.0031	1590	1580	0.0040	0.0040	0.040	0.040	0.13	0.14	3.16	3.88	
Median	478	509	0.155	0.155	1180	0.0031	0.0031	1610	1590	0.0040	0.0040	0.040	0.040	0.13	0.16	1.31	1.44	
St. Deviation	59	70	0.054	0.054	220	0	0	120	130	0.001	0.001	0.01	0.01	0.03	0.03	3.86	4.70	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Minimum	367	344	0.0775	0.0775	1000	0.0031	0.0031	1400	1350	0.0031	0.0031	0.031	0.031	0.1	0.10	0.75	0.50	
Maximum	543	559	0.25	0.250	1680	0.0031	0.0031	1770	1800	0.0050	0.0050	0.050	0.050	0.155	0.20	13.7	14.6	
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	100%	100%	25%	25%	
# of values between MDL and MRL																1	2	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.13	0.11	NA	NA	NA	NA	NA	NA	NA	NA	22.0	21.7	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: KN1B																	
	Sample Date																
	05/25/05	12.6	6.66	4.30	24.0	0.300	2	13.0	0.170			0.0155	0.0011		0.975	0.039	3.36
	06/14/05	15.0	6.81	7.90	15.0	0.15	0.785	13.0	0.0915			0.0155	0.0035		1.06	0.04	3.79
	07/23/05	16.3	7.54	12.46	31.3	0.313	0.785	14.5	0.093			0.0437	0.0515		1.06	0.041	3.86
	08/13/05	14.5	6.71	14.57	17.5	0.075	0.785	13.0	0.0155			0.043	0.010		0.958	0.043	3.71
	09/29/05	16.4	6.65	10.21	31.3	0.200	0.785	14.0	0.069			0.0155	0.00165		1.03	0.042	3.93
	10/14/05	16.7		8.86	18.8	0.076	0.785	16.0	0.118			0.132	0.0071		1.02	0.066	4.07
	05/29/07	15.1	6.11	3.81	30.0	0.075	1.57	12.5	0.158			0.0155	0.0102		1.03	0.0660	3.46
	06/11/07	15.1	6.75	5.49	31.3	0.088	1.57	10.0	0.215			0.0155	0.0131		0.967	0.0870	3.55
	07/19/07	17.2	7.16	12.54	18.8	0.211	1.57	13.9	0.199			0.0155	0.0050		0.996	0.0530	3.50
	08/20/07	14.8	6.93	10.87	22.5	0.300	1.57	13.2	0.106			0.0155	0.0035		0.823	0.0360	3.44
	09/22/07	18.9	7.08	9.42	32.5	0.079	1.57	14.9	0.111			0.0155	0.00155		0.872	0.0400	3.65
	10/09/07	17.9	7.14	8.14	13.8	0.079	1.57	14.8	0.124			0.0155	0.00155		0.889	0.0430	3.55
	Mean	15.9	6.87	9.05	23.9	0.16	1.28	14.0	0.123	NA	NA	0.0300	0.0090	NA	0.97	0.05	3.66
	Median	15.7	6.81	9.14	23.3	0.12	1.57	14.0	0.115	NA	NA	0.0160	0.0040	NA	0.99	0.043	3.6
	St. Deviation	1.7	0.37	3.36	7.1	0.1	0.45	2	0.056	NA	NA	0.0340	0.014	NA	0.08	0.016	0.22
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	12.6	6.11	3.81	13.8	0.075	0.785	10.0	0.0155	NA	NA	0.0155	0.0011	NA	0.823	0.036	3.36
	Maximum	18.9	7.54	14.57	32.5	0.313	2	16.0	0.215	NA	NA	0.132	0.0515	NA	1.06	0.087	4.07
	% of values undetected					58%	92%		8%			75%	50%				
	# of values between MDL and MRL					5	1	1	3			2	3				12
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.76	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	9%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d
Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: KN1B																				
Sample Date																				
05/25/05	0.00125	0.00125	0.50		10.4	3.49	0.0214	0.0216	0.125	0.125	4.98	4.87	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.0272
06/14/05	0.00125	0.00125	0.50		4.34	2.87	0.0314	0.0296	0.125	0.125	5.40	5.08	0.0075	0.0075	0.0134	0.00155	1.55	1.55	0.025	0.00775
07/23/05	0.00125	0.00125	0.50		3.62	1.00	0.0282	0.0256	0.125	0.125	4.75	4.70	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/13/05	0.00125	0.00125	0.50		4.93	3.22	0.0102	0.0052	0.125	0.125	4.88	4.61	0.0075	0.0075	0.00155	0.00155	5.2	1.55	0.00775	0.00775
09/29/05	0.00125	0.00125	0.50		8.37	2.05	0.0174		0.125	0.125	5.15	5.15	0.0075	0.0075	0.00155	0.00155	5.0	4.4	0.00775	0.0344
10/14/05	0.00125	0.00125	0.50		5.03	2.65	0.0226	0.0302	0.125	0.250	5.07	5.24	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
05/29/07	0.00075	0.00075	0.155		5.08	3.13	0.0250	0.0250	0.155	0.155	5.16	5.54	0.0125	0.0125	0.0075	0.0075	2.57	2.56	0.0075	0.0075
06/11/07	0.00075	0.00075	0.155	0.662	7.28	4.05	0.0304	0.0352	0.155	0.155	5.49	5.48	0.0125	0.0125	0.0075	0.0075	2.66	1.25	0.0075	0.0075
07/19/07	0.00075	0.00075	0.155		3.50	2.90	0.0250	0.0250	0.155	0.155	5.40	5.65	0.0125	0.0125	0.0075	0.0075	3.54	3.96	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		4.62	1.00	0.0075	0.0278	0.155	0.155	4.88	5.14	0.0125	0.0125	0.0075	0.0075	3.23	3.08	0.0075	0.0075
09/22/07	0.00075	0.00075	0.155	0.398	4.08	1.00	0.0202	0.0178	0.155	0.155	5.93	5.31	0.0125	0.0125	0.0075	0.0075	3.24	3.14	0.0075	0.0075
10/09/07	0.00075	0.00075	0.155		5.46	1.00	0.0254	0.0286	0.155	0.155	5.79	5.97	0.0125	0.0125	0.0075	0.0075	3.34	3.45	0.0075	0.0075
Mean	0.001	0.001	0.33	0.530	5.60	2.36	0.0221	0.0250	0.14	0.150	5.24	5.23	0.01	0.01	0.006	0.0045	3.49	3.04	0.009	0.011
Median	0.001	0.001	0.33	0.530	5.00	2.76	0.0238	0.0260	0.14	0.155	5.16	5.20	0.01	0.01	0.008	0.0045	3.29	3.11	0.008	0.008
St. Deviation	0.0003	0.0003	0.18	0.187	2.1	1.11	0.0074	0.0080	0.016	0.035	0.37	0.4	0.003	0.003	0.004	0.0031	1.31	1.37	0.005	0.009
# of values	12	12	12	2	12	12	12	11	12	12	12	12	12	12	12	12	12	12	12	12
Minimum	0.00075	0.00075	0.155	0.398	3.50	1.00	0.0075	0.0052	0.125	0.125	4.75	4.61	0.0075	0.0075	0.00155	0.00155	1.55	1.25	0.0075	0.0075
Maximum	0.00125	0.00125	0.5	0.662	10.4	4.05	0.0314	0.0352	0.155	0.250	5.93	5.97	0.0125	0.0125	0.0134	0.0075	5.2	5.0	0.025	0.0344
% of values undetected	100%	100%	100%			33%	25%	17%	100%	100%			100%	100%	92%	100%	33%	50%	100%	83%
# of values between MDL and MRL			0	1			3	5									8	6		2
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.062	0.061
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: KN1B																					
Sample Date																					
05/25/05	4030	4440	0.031		0.0108	0.009	0.392	0.374	10	3.1	0.050		625	629	1.55	0.515	0.000147	0.543	0.594	0.183	
06/14/05	4840	4740	0.328	0.345	0.0228	0.0072	0.752	0.394	8.73	8.46	0.201	0.133	705	708	1.13	0.483	0.000450	0.760	0.746	0.342	0.375
07/23/05	5260	5170	0.031	0.100	0.005	0.0104	0.466	0.432	3.1	3.1	0.0155		766	755	0.911	0.239	0.0025	0.650	0.644	0.205	
08/13/05	4780	4620	0.062	0.0712	0.0224	0.0212	0.545	0.379	17.5	3.1	0.0155		628	614	1.20	0.338	0.000450	0.646	0.605	0.196	
09/29/05	5390	5840	0.243	0.334	0.0274	0.0254	0.533		11.4	6.44	0.0155		709	787	1.09	0.162	0.000450	0.658	0.765	0.253	
10/14/05	5490	5480	0.292		0.023	0.019	0.721	0.707	9.14	11.1	0.0155		729	785	0.932	0.10	0.000450	0.636	0.710	0.249	
05/29/07	4940	5200	0.100	0.211	0.0102	0.0112	0.408	0.385	23.7	14.7	0.0155	0.0155	662	752	2.81	1.35	0.000169	0.674	0.715	0.100	0.100
06/11/07	4970	4600	0.321	0.328	0.0126	0.0162	0.552	0.419	20.0	14.1	0.0155	0.102	643	657	1.73	1.03	0.000169	0.772	0.720	0.216	0.303
07/19/07	5600	5760	0.050	0.050	0.0100	0.0100	1.64	0.577	27.9	25.0	0.0155	0.0155	784	847	0.911	0.412	0.000169	0.752	0.763	0.215	
08/20/07	4860	5170	0.050	0.274	0.0050	0.0116	0.423	0.417	10.0	10.0	0.0155	0.0155	644	639	0.844	0.208	0.000169	0.653	0.703	0.131	0.134
09/22/07	6210	5780	0.236	0.100	0.0050	0.0050	0.535	0.539	15.8	10.2	0.0155	0.0155	823	773	0.986	0.185	0.000169	0.771	0.710	0.100	0.251
10/09/07	5880	6140	0.352	0.278	0.0050	0.0102	0.684	0.499	10.0	10.0	0.0155	0.0155	769	835	0.972	0.214	0.000169	0.790	0.792	0.100	0.326
Mean	5190	5250	0.175	0.209	0.013	0.013	0.640	0.466	13.9	10	0.034	0.045	707	732	1.26	0.44	0.00045	0.692	0.706	0.191	0.248
Median	5120	5190	0.168	0.243	0.011	0.0108	0.540	0.419	10.7	10	0.016	0.0155	707	754	1.04	0.29	0.00017	0.666	0.713	0.201	0.277
St. Deviation	580	560	0.131	0.118	0.0080	0.0061	0.34	0.105	7.2	6	0.054	0.051	68	81	0.56	0.38	0.00066	0.075	0.062	0.074	0.11
# of values	12	12	12	10	12	12	12	11	12	12	12	7	12	12	12	12	12	12	12	12	6
Minimum	4030	4440	0.031	0.050	0.0050	0.005	0.392	0.374	3.1	3.1	0.0155	0.0155	625	614	0.844	0.1	0.000147	0.543	0.594	0.1	0.1
Maximum	6210	6140	0.352	0.345	0.0274	0.0254	1.64	0.707	27.9	25	0.201	0.133	823	847	2.81	1.35	0.0025	0.790	0.792	0.342	0.375
% of values undetected			42%	25%	42%	17%			33%	42%	92%	42%				8%	100%			25%	8%
# of values between MDL and MRL			1	1	2	6			5	6						1				1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.70	1.63	1000	1000	0.25	0.27	NA	NA	NA	NA	0.012	NA	NA	9.67	9.64
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: KN1B																		
Sample Date																		
05/25/05	342	397	0.0775	0.0775	1390	0.0031	0.0031	1480	1500	0.0031	0.0031	0.031	0.031	0.20	0.10	0.2325	0.602	
06/14/05	481	478	0.25	0.25	1180	0.0031	0.0031	1670	1670	0.0031	0.0031	0.031	0.031	0.10	0.10	2.13		
07/23/05	492	487	0.0775	0.0775	1010	0.0031	0.0031	1600	1570	0.0031	0.0031	0.031	0.031	0.10	0.201	11.8	13.5	
08/13/05	404	403	0.0775	0.0775	1380	0.0031	0.0031	1360	1380	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	0.75	
09/29/05	476	558	0.0775	0.0775	1160	0.0031	0.0031	1440	1760	0.0031	0.0031	0.031	0.031	0.10	0.10	1.34		
10/14/05	478	525	0.0775	0.0775	1230	0.0031	0.0031	1600	1720	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.75	
05/29/07	437	474	0.155	0.155	1460	0.0031	0.0031	1510	1620	0.0050	0.0050	0.050	0.050	0.155	0.155	5.43	2.84	
06/11/07	456	400	0.155	0.155	1760	0.0031	0.0031	1560	1490	0.0050	0.0050	0.050	0.050	0.155	0.155	2.57	1.86	
07/19/07	514	532	0.155	0.155	1300	0.0031	0.0031	1670	1730	0.0050	0.0050	0.050	0.050	0.155	0.155	1.49	0.50	
08/20/07	418	441	0.155	0.155	1230	0.0031	0.0031	1410	1390	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50	
09/22/07	550	526	0.155	0.155	1140	0.0031	0.0031	1730	1640	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.21	
10/09/07	532	552	0.155	0.155	1250	0.0031	0.0031	1640	1680	0.0050	0.0050	0.050	0.050	0.155	0.155	1.31	0.50	
Mean	465	481	0.131	0.131	1290	0.0031	0.0031	1560	1600	0.004	0.004	0.040	0.040	0.14	0.144	2.36	2.30	
Median	477	483	0.155	0.155	1240	0.0031	0.0031	1580	1630	0.004	0.004	0.040	0.040	0.16	0.155	1.33	0.75	
St. Deviation	58	59	0.054	0.054	190	0	0	120	130	0.001	0.001	0.01	0.01	0.03	0.037	3.30	4.01	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	
Minimum	342	397	0.0775	0.0775	1010	0.0031	0.0031	1360	1380	0.0031	0.0031	0.031	0.031	0.10	0.1	0.2325	0.50	
Maximum	550	558	0.25	0.25	1760	0.0031	0.0031	1730	1760	0.005	0.005	0.050	0.050	0.20	0.201	11.8	13.5	
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	100%	92%	42%	42%	
# of values between MDL and MRL															1	1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.13	0.11	NA	NA	NA	NA	NA	NA	NA	NA	22.2	21.9	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: KN1C																	
	Sample Date																
	05/25/05	12.4	6.58	4.17	23.0	0.50	1.88	11.0	0.15			0.0155	0.0011		1.00	0.039	3.42
	06/14/05	14.9	6.61	6.92	17.5	0.075	0.785	14.0	0.0795			0.0155	0.00155		1.06	0.039	3.80
	07/23/05	15.5	7.64	11.82	27.5	0.50	0.785	14.5	0.0965			0.032	0.051		1.05	0.042	3.91
	08/13/05	16.2	6.95	12.76	23.8	0.075	0.785	14.5	0.0155			0.0155	0.010		1.04	0.037	3.77
	09/29/05	16.3	6.77	10.15	35.0	0.20	1.63	14.0	0.063			0.0399	0.00165		1.04	0.039	3.94
	10/14/05	17.4		8.85	25.0	0.15	0.785	14.0	0.121			0.106	0.0057		1.02	0.063	4.05
	05/29/07	15.8	6.67	3.81	30.0	0.152	1.57	14.0	0.158			0.0155	0.0050		1.07	0.0600	3.63
	06/11/07	15.3	6.56	5.32	28.8	0.253	1.57	12.0	0.218			0.0155	0.0116		0.991	0.0850	3.64
	07/19/07	18.1	7.06	11.88	18.8	8.56	1.57	12.9	0.050			0.0155	0.0243		0.970	0.0550	3.46
	08/20/07	15.3	6.95	10.36	21.3	0.408	1.57	13.3	0.104			0.0457	0.0041		0.839	0.0350	3.41
	09/22/07	17.5	6.88	9.4	31.3	0.078	1.57	15.0	0.186			0.0155	0.00155		0.880	0.0400	3.66
	10/09/07	17.5	7.04	8.14	23.8	0.842	1.57	14.9	0.119			0.0155	0.00155		0.885	0.0430	3.54
	Mean	16.0	6.88	8.63	25.5	1.0	1.34	14.0	0.113	NA	NA	0.029	0.01	NA	0.99	0.048	3.69
	Median	16.0	6.88	9.13	24.4	0.20	1.57	14.0	0.112	NA	NA	0.016	0.005	NA	1.01	0.041	3.65
	St. Deviation	1.6	0.31	3.03	5.2	2.4	0.42	1	0.058	NA	NA	0.027	0.015	NA	0.08	0.015	0.21
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	12.4	6.56	3.81	17.5	0.075	0.785	11.0	0.0155	NA	NA	0.0155	0.0011	NA	0.839	0.035	3.41
	Maximum	18.1	7.64	12.76	35.0	8.56	1.88	15	0.218	NA	NA	0.106	0.051	NA	1.07	0.085	4.05
	% of values undetected					50%	83%		17%			67%	58%				
	# of values between MDL and MRL					2	2	1	3			3	2			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.60	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d		
Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: KN1C																				
Sample Date																				
05/25/05	0.00125	0.00125	0.50		9.00	3.61	0.0198	0.0236	0.125	0.292	4.83	4.70	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.00775
06/14/05	0.00125	0.00125	0.0295		4.98	2.43	0.0308	0.0288	0.125	0.125	4.99	5.18	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.025	0.025
07/23/05	0.00125	0.00125	0.50		3.74	2.01	0.0244	0.0272	0.125	0.125	4.55	4.64	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.0246
08/13/05	0.00125	0.00125	0.50		5.42	4.34	0.0148	0.0062	0.250	0.250	5.06	4.77	0.0075	0.0075	0.00155	0.00155	3.7	1.55	0.00775	0.00775
09/29/05	0.00125	0.00125	0.50		7.60	2.15	0.0144	0.0224	0.125	0.125	5.01	5.47	0.0075	0.0075	0.00155	0.00155	4.9	5.2	0.00775	0.0352
10/14/05	0.00125	0.00125	0.50		5.58	2.44	0.031	0.0296	0.250	0.125	5.18	5.08	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
05/29/07	0.0023	0.00075	0.155		4.80	2.69	0.0250	0.0250	0.155	0.155	5.19	5.88	0.0125	0.0125	0.0075	0.0075	2.52	2.89	0.0075	0.0075
06/11/07	0.00075	0.00075	0.155	0.599	6.46	3.50	0.0240	0.0416	0.155	0.155	5.73	5.63	0.0125	0.0125	0.0075	0.0075	2.67	2.79	0.0075	0.0075
07/19/07	0.00075	0.00075	0.155		202	3.75	0.0250	0.0250	0.397	0.155	7.66	5.37	0.0125	0.0125	0.0075	0.0075	3.72	3.79	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		4.68	2.19	0.0180	0.0190	0.155	0.155	4.98	4.93	0.0125	0.0125	0.0075	0.0075	3.35	3.55	0.0075	0.0075
09/22/07	0.00075	0.00075	0.155	0.333	4.08	1.00	0.0180	0.0276	0.155	0.155	5.49	6.22	0.0125	0.0125	0.0075	0.0075	3.16	3.46	0.0075	0.0075
10/09/07	0.00075	0.00075	0.155		28.1	2.49	0.0252	0.0588	0.155	0.155	5.65	6.12	0.0125	0.0125	0.0075	0.0075	3.38	3.53	0.0075	0.0075
Mean	0.0011	0.00	0.288	0.466	24.0	2.72	0.023	0.0279	0.181	0.164	5.36	5.33	0.010	0.010	0.0045	0.0045	3.38	3.03	0.009	0.013
Median	0.0013	0.00	0.155	0.466	6.0	2.47	0.024	0.0261	0.155	0.155	5.12	5.28	0.010	0.010	0.0045	0.0045	3.37	3.18	0.008	0.008
St. Deviation	0.0004	0.0003	0.19	0.188	56	0.92	0.006	0.0127	0.081	0.053	0.8	0.54	0.003	0.003	0.0031	0.0031	1.2	1.3	0.005	0.01
# of values	12	12	12	2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Minimum	0.00075	0.00075	0.0295	0.333	3.74	1.0	0.0144	0.0062	0.125	0.125	4.55	4.64	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.0023	0.00125	0.500	0.599	202	4.34	0.031	0.0588	0.397	0.292	7.66	6.22	0.0125	0.0125	0.0075	0.0075	5.0	5.2	0.025	0.0352
% of values undetected	92%	100%	100%			8%	17%	17%	92%	92%			100%	100%	100%	100%	33%	42%	100%	83%
# of values between MDL and MRL	1		0	1			4	4	1	1							8	7		2
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.062	0.062
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved		
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: KN1C																						
Sample Date																						
05/25/05	3900	4480	0.100			0.009	0.011	0.345	0.417	10.0	3.1	0.0155		634	613	1.45	0.597		0.533	0.577	0.166	
06/14/05	4850	4540	0.100		0.0124	0.0106	0.520			18.8	7.57	0.0155		671	672	1.48	0.576	0.000450	0.710	0.744	0.215	
07/23/05	5060	5100	0.031	0.10	0.010	0.005	0.477			3.1	3.1	0.0155		709	739	1.02	0.435	0.0025	0.629	0.667	0.198	
08/13/05	5350	5170	0.031	0.0758	0.0276	0.0238	0.509	0.380		31.3	10.3	0.0155		697	707	4.62	2.77	0.000450	0.625	0.621	0.217	
09/29/05	5360	6130	0.065		0.028	0.0208	0.544			12.1	3.1	0.0155		719	826	1.06	0.113	0.000450	0.674	0.793	0.228	
10/14/05	5740	5370	0.301	0.497	0.027	0.0218	0.493			13.2	12.9	0.0155		742	787	1.08	0.34	0.000450	0.669	0.704	0.296	
05/29/07	5180	5780	0.050	0.050	0.0108	0.0128	0.437	0.438	31.0	18.6	0.0155	0.0155		697	841	3.50	2.05	0.000169	0.691	0.748	0.100	0.213
06/11/07	5040	4870	0.354	0.320	0.0136	0.0144	0.492	0.419	19.5	13.9	0.050	0.050		655	690	1.73	0.961	0.000169	0.806	0.752	0.264	0.269
07/19/07	5880	5300	0.050	0.050	0.0642	0.0232	0.902	0.466	1560	64.1	0.350	0.050		833	786	8.08	2.72	0.000169	0.894	0.743	0.332	0.379
08/20/07	5010	5070	0.100	0.100	0.0050	0.0050	0.438	0.410	10.0	10.0	0.0155	0.0155		676	681	0.959	0.215	0.0025	0.677	0.703	0.150	0.145
09/22/07	5770	6430	0.050	0.100	0.0050	0.0050	0.544	0.501	14.1	10.6	0.0155	0.0155		762	878	0.917	0.193	0.0025	0.716	0.773	0.100	0.209
10/09/07	5780	6170	0.375	0.255	0.0262	0.0112	0.679	0.502	55.4	10.0	0.0892	0.0155		752	835	7.32	0.932	0.000377	0.757	0.814	0.255	0.229
Mean	5240	5370	0.134	0.172	0.020	0.0137	0.532	0.442	150	13.9	0.052	0.027		712	755	2.77	0.99	0.00093	0.698	0.720	0.210	0.241
Median	5270	5240	0.083	0.100	0.013	0.012	0.501	0.429	20.0	10.2	0.016	0.0155		703	763	1.47	0.59	0.00045	0.684	0.744	0.216	0.221
St. Deviation	550	640	0.13	0.154	0.017	0.0071	0.141	0.044	440	16.5	0.096	0.018		54	83	2.57	0.97	0.00102	0.092	0.07	0.072	0.079
# of values	12	12	12	9	12	12	12	8	12	12	12	6		12	12	12	12	11	12	12	12	6
Minimum	3900	4480	0.031	0.05	0.005	0.005	0.345	0.380	3.1	3.1	0.0155	0.0155		634	613	0.917	0.113	0.000169	0.533	0.577	0.100	0.145
Maximum	5880	6430	0.375	0.497	0.0642	0.0238	0.902	0.502	1560	64.1	0.35	0.05		833	878	8.08	2.77	0.0025	0.894	0.814	0.332	0.379
% of values undetected			67%	42%	17%	25%			25%	42%	83%	50%						91%			17%	
# of values between MDL and MRL			1	1	3	3			5	6	1							1	1		1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.71	1.65	1000	1000	0.26	0.28		NA	NA	NA	NA	0.012	NA	NA	9.75	9.72
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA		NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	8%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: KN1C																	
Sample Date																	
05/25/05	336	398	0.0775	0.0775	1410	0.0031	0.0031	1500	1480	0.0031	0.0031	0.031	0.031	0.10	0.1	0.233	0.233
06/14/05	432	479	0.250	0.250	1200	0.0031	0.0031	1530	1690	0.0031	0.0031	0.031	0.031	0.10	0.10	12.3	6.3
07/23/05	460	481	0.0775	0.0775	1070	0.0031	0.0031	1530	1570	0.0031	0.0031	0.031	0.031	0.10	0.21	11.7	
08/13/05	466	467	0.0775	0.0775	1130	0.0031	0.0031	1410	1440	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	0.75
09/29/05	488	579	0.0775	0.0775	1190	0.0031	0.0031	1480		0.0031	0.0031	0.031	0.031	0.10	0.10	1.07	1.59
10/14/05	492	521	0.0775	0.0775	1250	0.0031	0.0031	1600	1710	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	1.61
05/29/07	474	567	0.155	0.155	1320	0.0031	0.0031	1530	1730	0.0050	0.0050	0.050	0.050	0.155	0.155	5.35	5.27
06/11/07	451	429	0.155	0.155	1750	0.0031	0.0031	1600	1550	0.0050	0.0050	0.050	0.050	0.155	0.155	4.09	1.81
07/19/07	543	498	0.155	0.155	1340	0.0062	0.0031	1750	1660	0.0050	0.0050	0.050	0.112	0.155	0.155	1.64	1.23
08/20/07	434	435	0.155	0.155	1150	0.0031	0.0031	1450	1480	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50
09/22/07	513	570	0.155	0.155	1230	0.0116	0.0031	1620	1790	0.0050	0.0050	0.050	0.050	0.155	0.155	2.66	2.01
10/09/07	522	554	0.155	0.155	1250	0.0031	0.0031	1590	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	1.62	0.50
Mean	468	498	0.131	0.131	1270	0.0040	0.0031	1550	1620	0.0040	0.0040	0.040	0.050	0.13	0.15	3.56	1.98
Median	470	490	0.155	0.155	1240	0.0030	0.0031	1530	1660	0.0040	0.0040	0.040	0.040	0.13	0.16	1.63	1.59
St. Deviation	54	61	0.054	0.054	180	0.003	0	90	120	0.001	0.001	0.01	0.02	0.03	0.04	4.23	1.98
# of values	12	12	12	12	12	12	12	12	11	12	12	12	12	12	12	12	11
Minimum	336	398	0.0775	0.0775	1070	0.0031	0.0031	1410	1440	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233
Maximum	543	579	0.250	0.250	1750	0.0116	0.0031	1750	1790	0.0050	0.0050	0.050	0.112	0.155	0.21	12.3	6.3
% of values undetected			100%	100%		83%	100%			100%	100%	100%	92%	100%	92%	33%	33%
# of values between MDL and MRL						2							1		1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.13	0.11	NA	NA	NA	NA	NA	NA	NA	NA	22.3	22.0
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: NE1A																	
	Sample Date																
	05/24/05	17.3	6.99	7.64	25.0	0.50	1.88	15.0	0.090			0.0155	0.0011		1.07	0.036	3.87
	06/16/05	16.1	6.94	11.34	13.8	0.50	0.785	15.0	0.077			0.0155	0.00155		1.12	0.037	3.98
	07/31/05	19.5	6.84	11.64	23.8	0.51	0.785	16.5	0.0575			0.0155	0.064		1.04	0.038	3.84
	08/12/05	18.1	7.53	17.86	32.5	0.30	1.88	15.5	0.0155			0.0155	0.010		1.00	0.039	4.14
	09/28/05	18.9	6.93	10.32	31.3	0.50	1.63	15.0	0.0775			0.050	0.00165		1.04	0.04	4.20
	10/12/05	18.4		8.22	26.3	0.50	0.785	16.0	0.127			0.133	0.0057		0.993	0.071	4.44
	05/30/07	17.9	6.62	7.75	71.3	0.0775	1.57	15.0	0.0875			0.0155	0.0050		0.988	0.0580	3.85
	06/12/07	18.8	7.38	8.96	32.5	0.281	1.57	15.0	0.168			0.050	0.0128		1.07	0.0830	4.35
	07/18/07	21.2	7.42	13.68	26.3	0.333	1.57	16.3	0.050			0.0155	0.0050		0.989	0.0520	3.95
	08/20/07	16.6	7.45	12.21	17.5	0.316	1.57	15.3	0.0940			0.0155	0.00155		0.866	0.0350	3.64
	09/21/07	21.6	7.42	10.79	33.8	0.562	1.57	17.7	0.141			0.0155	0.00155		0.653	0.0450	4.47
	10/09/07	21.2	6.93	7.65	48.8	0.150	1.57	16.1	0.105			0.0155	0.00155		0.791	0.0420	3.91
	Mean	18.8	7.13	10.67	31.9	0.38	1.43	16.0	0.091	NA	NA	0.031	0.0090	NA	0.97	0.048	4.05
	Median	18.6	6.99	10.56	28.8	0.42	1.57	15.0	0.089	NA	NA	0.016	0.0030	NA	1.00	0.041	3.97
	St. Deviation	1.8	0.31	3.02	15.2	0.16	0.41	1	0.041	NA	NA	0.035	0.018	NA	0.13	0.015	0.26
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	16.1	6.62	7.64	13.8	0.0775	0.785	15.0	0.0155	NA	NA	0.0155	0.0011	NA	0.653	0.035	3.64
	Maximum	21.6	7.53	17.86	71.3	0.562	1.88	17.7	0.168	NA	NA	0.133	0.064	NA	1.12	0.083	4.47
	% of values undetected					25%	75%		17%			92%	75%				
	# of values between MDL and MRL					3	3	1	6				1				12
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.40	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d		
Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1A																				
Sample Date																				
05/24/05	0.00125	0.00125	0.50		6.46	3.49	0.0282	0.0306	0.315	0.125	4.9	4.91	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.00775
06/16/05	0.00125	0.0029	0.50		4.44	1.00	0.0298	0.0392	0.274	0.125	5.43	5.27	0.0075	0.0075	0.00155	0.0068	1.55	1.55	0.025	0.025
07/31/05	0.00125	0.00125	0.50		7.19	3.00	0.0416	0.0312	0.125	0.323	5.67	5.06	0.0075	0.0075	0.0046	0.00155	5.0	5.0	0.00775	0.00775
08/12/05	0.0025	0.00125	0.50		17.5	7.33	0.0182	0.0204	0.125	0.250	5.74	5.28	0.0075	0.0075	0.0038	0.00155	5.0	4.1	0.00775	0.00775
09/28/05	0.00125	0.00125	0.50		14.5	3.75	0.0244	0.0258	0.354	0.557	5.66	6.06	0.0075	0.0075	0.00155	0.00155	1.55	4.1	0.00775	0.00775
10/12/05	0.00125	0.00125	0.50		13.4	3.92	0.037	0.0376	0.521	0.250	5.69	5.54	0.0075	0.0075	0.00155	0.00155	5.0	10.2	0.00775	0.00775
05/30/07	0.00075	0.00075	0.155		3.69	2.20	0.0250	0.0250	0.155	0.155	5.46	5.64	0.0125	0.0125	0.0075	0.0075	2.82	2.97	0.0075	0.0075
06/12/07	0.00075	0.00075	0.155	0.960	5.22	2.51	0.0370	0.0376	0.362	0.155	5.94	5.89	0.0125	0.0125	0.0075	0.0075	3.38	3.84	0.0075	0.0075
07/18/07	0.00075	0.00075	0.155		12.6	3.85	0.0250	0.0250	0.155	0.155	6.48	6.32	0.0125	0.0125	0.0075	0.0075	5.03	4.63	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		5.18	2.89	0.0258	0.0300	0.155	0.155	5.36	5.94	0.0125	0.0125	0.0075	0.0075	3.69	4.01	0.0075	0.0075
09/21/07	0.00075	0.00075	0.155	0.576	36.6	7.79	0.0268	0.0296	0.155	0.155	7.71	7.34	0.0125	0.0125	0.0075	0.0075	3.17	3.05	0.0075	0.0075
10/09/07	0.00075	0.00075	0.155		13.1	3.67	0.0338	0.0308	0.155	0.155	6.87	6.15	0.0125	0.0125	0.0075	0.0075	3.36	3.17	0.0075	0.0075
Mean	0.0011	0.0011	0.33	0.768	11.7	3.78	0.0294	0.0302	0.238	0.213	5.91	5.78	0.010	0.010	0.0050	0.0050	3.43	4	0.009	0.009
Median	0.0010	0.0010	0.33	0.768	9.90	3.58	0.0275	0.0303	0.155	0.155	5.68	5.77	0.010	0.010	0.0061	0.0072	3.37	3.9	0.008	0.008
St. Deviation	0.0005	0.0006	0.18	0.272	9.1	1.95	0.0067	0.0057	0.127	0.124	0.77	0.66	0.003	0.003	0.0028	0.003	1.38	2.2	0.005	0.005
# of values	12	12	12	2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Minimum	0.00075	0.00075	0.155	0.576	3.69	1	0.0182	0.0204	0.125	0.125	4.9	4.91	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.0025	0.0029	0.5	0.96	36.6	7.79	0.0416	0.0392	0.521	0.557	7.71	7.34	0.0125	0.0125	0.0075	0.0075	5.03	10.2	0.025	0.025
% of values undetected	100%	92%	100%			8%	17%	17%	58%	83%			100%	100%	83%	92%	50%	25%	100%	100%
# of values between MDL and MRL		1					4	4	4	1					2	1	5	8		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.071	0.070
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1A																					
Sample Date																					
05/24/05	5610	5150	0.477	0.175	0.0142	0.0082	0.594	0.474	41.3	10.0	0.0155	0.050	804	803	0.994	0.486		0.644	0.618	0.260	0.241
06/16/05	5140	5850	0.347	0.511	0.0118	0.0114	0.454		11.7	20.9	0.0155	0.131	782	846	0.943	0.513	0.000450	0.745	0.803	0.263	
07/31/05	6350	5890	0.10	0.10	0.0268	0.0146	0.711	0.525	18.4	10.8	0.0155		896	859	2.06	0.525	0.000450	0.876	0.835	0.432	0.432
08/12/05	5930	5590	0.167	0.031	0.0284	0.022	0.554	0.519	19.1	3.1	0.0155		793	769	1.36	0.499	0.000450	0.773	0.814	0.273	
09/28/05	6160	6660	0.289		0.0312	0.023	0.701	0.385	17.9	6.45	0.0155		844	932	1.49	0.216	0.000450	0.763	0.853	0.286	
10/12/05	6050	6330	0.383	0.398	0.0332	0.0256	0.704	0.537	22.6	3.1	0.0155		804	848	1.44	0.100	0.000450	0.707	0.780	0.292	
05/30/07	5810	5800	0.100	0.100	0.0050	0.0050	0.435	0.449	18.1	15.7	0.0155	0.050	818	838	0.845	0.412	0.000169	0.799	0.831	0.100	0.100
06/12/07	6120	6300	0.305	0.100	0.0146	0.0120	0.577	0.505	22.5	14.7	0.0155	0.0155	845	1000	1.12	0.585	0.000169	0.892	0.851	0.268	0.322
07/18/07	6860	6690	0.050	0.050	0.0222	0.0100	0.694	0.593	44.3	26.2	0.0155	0.0155	977	1010	2.09	0.485	0.000169	0.920	0.888	0.256	0.383
08/20/07	5440	6010	0.309	0.100	0.0116	0.0116	0.466	0.490	10.0	10.0	0.650	0.0644	744	879	1.09	0.269	0.000169	0.702	0.784	0.171	0.228
09/21/07	7130	7090	0.223	0.100	0.0200	0.0102	0.622	0.552	44.3	17.4	0.050	0.0155	931	948	1.87	0.259	0.000169	0.965	0.966	0.100	0.231
10/09/07	7000	6450	0.100	0.050	0.0142	0.0130	0.628	0.522	26.3	10.0	0.0155	0.0155	895	867	1.34	0.207	0.00133	0.929	0.881	0.205	0.205
Mean	6130	6150	0.238	0.156	0.0194	0.014	0.595	0.505	24.7	12.4	0.071	0.045	844	880	1.39	0.380	0.00040	0.810	0.825	0.242	0.268
Median	6090	6160	0.256	0.100	0.0173	0.012	0.608	0.519	20.8	10.4	0.016	0.0328	831	860	1.35	0.449	0.00045	0.786	0.833	0.262	0.236
St. Deviation	620	540	0.135	0.155	0.0089	0.006	0.101	0.055	12.1	7	0.183	0.040	68	70	0.43	0.16	0.00034	0.104	0.083	0.090	0.106
# of values	12	12	12	11	12	12	12	11	12	12	12	8	12	12	12	12	11	12	12	12	8
Minimum	5140	5150	0.05	0.031	0.0050	0.0050	0.435	0.385	10.0	3.1	0.0155	0.0155	744	769	0.845	0.100	0.000169	0.644	0.618	0.100	0.100
Maximum	7130	7090	0.477	0.511	0.0332	0.0256	0.711	0.593	44.3	26.2	0.65	0.131	977	1010	2.09	0.585	0.00133	0.965	0.966	0.432	0.432
% of values undetected			33%	67%	8%	17%			8%	42%	92%	50%				8%	91%			17%	8%
# of values between MDL and MRL			1	1	3	5			5	5		1					1			1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.99	1.91	1000	1000	0.32	0.34	NA	NA	NA	NA	0.012	NA	NA	11.29	11.25
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1A																		
Sample Date																		
05/24/05	506	472	0.0775	0.0775	901	0.0031	0.0031	1600	1630	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233	
06/16/05	545	568	0.250	0.0775	884	0.0031	0.0031	1720	1790	0.0031	0.0031	0.031	0.031	0.10	0.10	11.9	7.99	
07/31/05	604	559	0.0775	0.0775	965	0.0031	0.0031	1830	1790	0.0031	0.0031	0.031	0.031	0.228	0.10	16.4	19.6	
08/12/05	536	517	0.0775	0.0775	1150	0.0031	0.0031	1480	1480	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75	
09/28/05	567	596	0.0775	0.0775	1160	0.0031	0.0031	1770	1860	0.0031	0.0031	0.031	0.031	0.10	0.10	0.7		
10/12/05	537	572	0.0775	0.0775	1340	0.0031	0.0031	1560	1680	0.0031	0.0031	0.031	0.031	0.10	0.10	4.41	1.61	
05/30/07	531	537	0.155	0.155	1140	0.0031	0.0031	1570	1610	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50		
06/12/07	553	576	0.155	0.155	1190	0.0031	0.0031	1670	1950	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.07	
07/18/07	630	630	0.155	0.155	1290	0.0031	0.0031	1850	1870	0.0050	0.0050	0.050	0.050	0.155	0.155	1.12	0.50	
08/20/07	477	549	0.155	0.155	1120	0.0031	0.0031	1480	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.58	
09/21/07	673	663	0.155	0.155	1720	0.0031	0.0031	1580	1580	0.0050	0.0050	0.050	0.050	0.155	0.155	3.30	1.42	
10/09/07	635	575	0.155	0.155	1280	0.0031	0.0031	1730	1620	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.18	
Mean	566	568	0.131	0.116	1180	0.0031	0.0031	1650	1710	0.0040	0.0040	0.040	0.040	0.138	0.13	3.40	3.59	
Median	549	570	0.155	0.116	1160	0.0031	0.0031	1640	1690	0.0040	0.0040	0.040	0.040	0.155	0.13	0.73	1.30	
St. Deviation	58	50	0.054	0.04	230	0	0	130	140	0.001	0.001	0.01	0.01	0.039	0.03	5.27	6.05	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	
Minimum	477	472	0.0775	0.0775	884	0.0031	0.0031	1480	1480	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233	
Maximum	673	663	0.250	0.155	1720	0.0031	0.0031	1850	1950	0.0050	0.0050	0.050	0.050	0.228	0.155	16.4	19.6	
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	92%	100%	50%	25%	
# of values between MDL and MRL														1		1		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.18	0.15	NA	NA	NA	NA	NA	NA	NA	NA	25.9	25.5	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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	Parameters	Hardness (as CaCO ₃)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: NE1B																	
	Sample Date																
	05/24/05	17.8	6.77	7.57	30	0.30	0.785	15.0	0.070			0.0155	0.0011		1.08	0.035	3.92
	06/16/05	16.1	6.83	7.97	5.0	0.25	0.785	16.0	0.0595			0.0155	0.00155		1.13	0.041	3.98
	07/31/05	18.9	6.83	13.55	25.0	0.303	0.785	14.5	0.034			0.0155	0.12		1.07	0.039	4.13
	08/12/05	19.8	7.37	14.39	32.5	0.075	0.785	16.5	0.0945			0.0155	0.010		0.979	0.04	4.21
	09/28/05	20.2	6.97	10.32	40.0	0.50	1.75	15.5	0.098			0.050	0.00165		1.04	0.04	4.17
	10/12/05	19.0		8.30	17.0	0.30	0.785	15.5	0.132			0.050	0.0057		0.993	0.071	4.36
	05/30/07	18.5	6.55	6.38	26.3	0.400	1.57	15.0	0.0710			0.0155	0.0120		1.01	0.0610	3.85
	06/12/07	18.3	7.28	7.36	30.0	0.250	1.57	15.0	0.178			0.050	0.0050		1.07	0.0820	4.13
	07/18/07	21.2	7.11	12.32	28.8	0.217	1.57	15.9	0.050			0.0155	0.0050		0.954	0.0590	3.86
	08/20/07	15.2	6.73	12.16	30.0	0.430	1.57	15.1	0.0950			0.0155	0.0038		0.869	0.0330	3.64
	09/21/07	22.4	6.99	10.81	36.3	0.526	1.57	20.1	0.180			0.0155	0.00155		0.664	0.0440	4.60
	10/09/07	21.2	6.89	7.62	33.8	0.078	1.57	16.0	0.110			0.0155	0.00155		0.823	0.0420	3.84
	Mean	19.1	6.94	9.90	28	0.30	1.26	15.8	0.10	NA	NA	0.024	0.010	NA	0.97	0.049	4.06
	Median	19.0	6.89	9.31	30	0.30	1.57	15.5	0.090	NA	NA	0.016	0	NA	1	0.042	4.06
	St. Deviation	2.1	0.24	2.72	9	0.14	0.42	1.5	0.05	NA	NA	0.0156	0.03	NA	0.13	0.016	0.26
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	15.2	6.55	6.38	5.0	0.075	0.785	14.5	0.034	NA	NA	0.0155	0.0011	NA	0.664	0.033	3.64
	Maximum	22.4	7.37	14.39	40.0	0.53	1.75	20.1	0.18	NA	NA	0.05	0.12	NA	1.13	0.082	4.6
	% of values undetected				8%	33%	92%		8%			100%	67%				
	# of values between MDL and MRL					6	1	1	7				2				12
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.52	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d
Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1B																				
Sample Date																				
05/24/05	0.00125	0.00125	0.50		6.67	2.56	0.0298	0.0298	0.306	0.125	4.99	4.67	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0164	0.00775
06/16/05	0.00125	0.00125	0.50		4.67	1	0.0306		0.125	0.125	5.27	5.5	0.0075	0.0075	0.00155	0.0059	1.55	1.55	0.025	0.025
07/31/05	0.00125	0.00125	0.50		6.8	3.2	0.0378	0.0332	0.125	0.125	5.64	5.15	0.0075	0.0075	0.0052	0.00155	5	5	0.00775	0.00775
08/12/05	0.00125	0.00125	0.50		23.2	4.69	0.0248	0.0142	0.125	0.25	6.58	5.29	0.0075	0.0075	0.00155	0.00155	5	3.1	0.00775	0.00775
09/28/05	0.00125	0.00125	0.50		15.8	3.43	0.0282	0.024	0.125	0.125	6.07	5.89	0.0075	0.0075	0.00155	0.00155	4.3	1.55	0.00775	0.00775
10/12/05	0.00125	0.00125	0.50		11	3.13	0.0388	0.037	0.25	0.25	5.67	5.45	0.0075	0.0075	0.00155	0.00155	5	5	0.00775	0.00775
05/30/07	0.00075	0.00075	0.155		4.60	3.77	0.0250	0.0250	0.155	0.155	5.72	5.96	0.0125	0.0125	0.0075	0.0075	2.92	3.70	0.0075	0.0075
06/12/07	0.00075	0.00075	0.155	0.940	5.93	2.17	0.0364	0.0384	0.155	0.155	5.45	5.71	0.0125	0.0125	0.0075	0.0075	3.43	3.64	0.0075	0.0075
07/18/07	0.00075	0.00075	0.155		12.2	3.42	0.0250	0.0250	0.155	0.155	6.47	6.06	0.0125	0.0125	0.0075	0.0075	5.36	4.78	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		6.46	3.31	0.0190	0.0206	0.155	0.155	5.35	5.34	0.0125	0.0125	0.0075	0.0075	3.95	3.90	0.0075	0.0632
09/21/07	0.00075	0.00075	0.155	0.519	40.2	7.55	0.0276	0.0264	0.155	0.155	7.94	7.15	0.0125	0.0125	0.0075	0.0075	3.25	3.10	0.0075	0.0075
10/09/07	0.00075	0.00075	0.155		13.4	3.82	0.0298	0.0320	0.155	0.155	6.70	6.30	0.0125	0.0125	0.0075	0.0075	3.57	3.15	0.0075	0.0075
Mean	0.001	0.001	0.33	0.73	12.6	3.5	0.0294	0.028	0.166	0.161	5.99	5.71	0.01	0.01	0.0048	0.0049	3.74	3.3	0.010	0.014
Median	0.001	0.001	0.33	0.73	8.9	3.37	0.029	0.026	0.155	0.155	5.7	5.61	0.01	0.01	0.0064	0.0067	3.76	3.4	0.008	0.008
St. Deviation	0.0003	0.0003	0.18	0.298	10.3	1.57	0.0059	0.007	0.056	0.044	0.82	0.64	0.003	0.003	0.003	0.003	1.29	1.3	0.005	0.016
# of values	12	12	12	2	12	12	12	11	12	12	12	12	12	12	12	12	12	12	12	12
Minimum	0.00075	0.00075	0.155	0.519	4.6	1	0.019	0.0142	0.125	0.125	4.99	4.67	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.00125	0.00125	0.5	0.94	40.2	7.55	0.0388	0.0384	0.306	0.25	7.94	7.15	0.0125	0.0125	0.0075	0.0075	5.36	5	0.025	0.0632
% of values undetected	100%	100%	100%			8%	17%	17%	92%	100%			100%	100%	92%	92%	42%	42%	92%	92%
# of values between MDL and MRL							4	4	1						1	1	6	7	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.069	0.068
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved		
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: NE1B																						
Sample Date																						
05/24/05	5770	5310	0.494	0.326	0.0136	0.0126	0.625	0.460	10.0	10.0	0.050			820	769	0.915	0.51	0.000147	0.647	0.625	0.260	
06/16/05	5120	5730	0.322	0.368	0.0096	0.0116	0.472		14.7	9.73	0.0155			796	857	0.934	0.31	0.000450	0.780	0.737	0.234	
07/31/05	6070	5870	0.100	0.100	0.020	0.0106	0.663	0.546	14.7	10.8	0.0155			895	866	1.92	0.521	0.000450	0.832	0.803	0.284	
08/12/05	6530	5700	0.268	0.031	0.0326	0.0208	0.639	0.490	27.1	3.1	0.0155			842	777	1.40	0.456	0.000450	0.831	0.780	0.267	
09/28/05	6600	6510	0.279		0.0322	0.0204	0.587	0.529	19.2	6.25	0.0155			898	901	1.60	0.176	0.000450	0.811	0.824	0.321	
10/12/05	6240	6010	0.335	0.381	0.035	0.0252	0.708	0.456	15.5	3.1	0.0155			821	793	1.42	0.10	0.000450	0.745	0.734	0.298	
05/30/07	6020	6040	0.100	0.266	0.0102	0.0050	0.474	0.487	19.6	16.7	0.0155	0.050		853	891	0.890	0.427	0.000169	0.826	0.850	0.100	0.100
06/12/07	5950	6080	0.100	0.100	0.0050	0.0174	0.522	0.483	15.7	13.5	0.0155	0.0155		828	937	1.01	0.492	0.000169	0.787	0.812	0.223	0.297
07/18/07	6880	6420	0.185	0.050	0.0100	0.0100	0.570	0.439	33.8	25.7	0.0155	0.0155		984	968	1.30	0.422	0.000169	0.931	0.867	0.233	0.328
08/20/07	4960	5620	0.100	0.219	0.0050	0.0106	0.474	0.494	10.0	10.0	0.290	0.0444		678	771	0.953	0.277	0.000169	0.643	0.755	0.160	
09/21/07	7390	7020	0.100	0.100	0.0210	0.0122	0.667	0.629	46.3	15.9	0.050	0.0155		966	938	2.00	0.290	0.0025	1.03	0.957	0.100	
10/09/07	6990	6620	0.100	0.050	0.0154	0.0114	0.562	0.530	23.6	10.0	0.0155	0.0155		905	889	1.30	0.252	0.000169	0.908	0.864	0.100	0.258
Mean	6210	6080	0.210	0.181	0.017	0.014	0.580	0.504	20.9	11.2	0.044	0.026		857	863	1.30	0.353	0.00048	0.810	0.801	0.215	0.246
Median	6160	6030	0.140	0.100	0.015	0.0119	0.579	0.490	17.5	10.0	0.0155	0.0155		848	878	1.30	0.366	0.00031	0.820	0.808	0.234	0.278
St. Deviation	720	490	0.13	0.135	0.011	0.0057	0.082	0.053	10.6	6.3	0.079	0.016		81	70	0.4	0.138	0.00065	0.11	0.084	0.08	0.101
# of values	12	12	12	11	12	12	12	11	12	12	12	6		12	12	12	12	12	12	12	12	4
Minimum	4960	5310	0.100	0.031	0.005	0.005	0.472	0.439	10.0	3.1	0.0155	0.0155		678	769	0.89	0.10	0.000147	0.643	0.625	0.100	0.100
Maximum	7390	7020	0.494	0.381	0.035	0.0252	0.708	0.629	46.3	25.7	0.29	0.05		984	968	2.00	0.521	0.0025	1.03	0.957	0.321	0.328
% of values undetected			50%	50%	25%	17%			17%	42%	92%	42%					8%	100%			25%	8%
# of values between MDL and MRL			1		3	4			6	6		1					1				1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.92	1.84	1000	1000	0.30	0.32		NA	NA	NA	NA	0.012	NA	NA	10.89	10.86
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA		NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1B																	
Sample Date																	
05/24/05	516	493	0.0775	0.0775	910	0.0031	0.0031	1620	1600	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233
06/16/05	539	565	0.250	0.0775	874	0.0031	0.0031	1630	1820	0.0031	0.0031	0.031	0.031	0.10	0.10	13.5	0.75
07/31/05	582	559	0.0775	0.0775	966	0.0031	0.0031	1810	1790	0.0031	0.0031	0.031	0.031	0.10	0.10	15.3	
08/12/05	587	526	0.0775	0.0775	1230	0.0031	0.0031	1520	1420	0.0031	0.0031	0.031	0.031	0.10	0.479	0.75	0.75
09/28/05	612	579	0.0775	0.0775	1150	0.0031	0.0031	1840	1770	0.0031	0.0031	0.031	0.031	0.306	0.10	0.637	0.919
10/12/05	542	530	0.0775	0.0775	1300	0.0031	0.0031	1570	1550	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.75
05/30/07	553	552	0.155	0.155	1160	0.0031	0.0031	1640	1660	0.0050	0.0050	0.050	0.106	0.155	0.155	0.50	
06/12/07	531	554	0.155	0.155	1130	0.0031	0.0031	1690	1820	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50
07/18/07	620	596	0.155	0.155	1270	0.0031	0.0031	1880	1800	0.0050	0.0050	0.050	0.050	0.155	0.155	1.09	0.50
08/20/07	1860	494	0.155	0.155	1080	0.0031	0.0031	1950	1560	0.0050	0.0050	0.050	0.050	0.155	0.155	5.03	2.33
09/21/07	693	658	0.155	0.155	1720	0.0031	0.0031	1630	1570	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.48
10/09/07	624	596	0.155	0.155	1320	0.0031	0.0031	1730	1670	0.0050	0.0050	0.050	0.050	0.155	0.155	1.06	1.13
Mean	690	559	0.131	0.116	1180	0.0031	0.0031	1710	1670	0.0040	0.004	0.040	0.05	0.145	0.159	3.28	0.93
Median	580	557	0.155	0.116	1160	0.0031	0.0031	1670	1670	0.0040	0.004	0.040	0.04	0.155	0.155	0.69	0.75
St. Deviation	370	46	0.054	0.04	230	0	0	130	130	0.001	0.001	0.01	0.02	0.058	0.104	5.37	0.60
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10
Minimum	516	493	0.0775	0.0775	874	0.0031	0.0031	1520	1420	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.2325
Maximum	1860	658	0.250	0.155	1720	0.0031	0.0031	1950	1820	0.0050	0.005	0.050	0.106	0.306	0.479	15.3	2.33
% of values undetected			100%	100%		100%	100%			100%	100%	100%	92%	92%	92%	50%	50%
# of values between MDL and MRL													1	1		1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.17	0.14	NA	NA	NA	NA	NA	NA	NA	NA	25.0	24.6
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: NE1C																	
	Sample Date																
	05/24/05	17.1	6.82	5.32	28.0	2.4	1.63	14.0	0.08			0.0155	0.0011		1.12	0.035	3.92
	06/16/05	15.8	6.76	6.36	26.3	0.50	0.785	15.5	0.0695			0.0155	0.00155		1.14	0.039	4.01
	07/31/05	18.2	6.49	12.27	20.0	0.303	0.785	16.5	0.148			0.0155	0.024		1.08	0.040	3.95
	08/12/05	18.1	7.71	13.07	27.5	0.075	0.785	16.0	0.0485			0.033	0.010		1.05	0.038	4.02
	09/28/05	19.4	6.91	10.31	15.0	0.40	0.785	15.5	0.0655			0.050	0.00165		1.03	0.044	4.11
	10/12/05	19.5		8.34	26.0	0.50	0.785	16.0	0.12			0.050	0.0057		5.38	0.061	4.14
	05/30/07	17.9	6.38	4.57	52.5	0.150	1.57	15.0	0.102			0.0155	0.0125		1.02	0.0590	3.92
	06/12/07	18.0	7.40	7.07	32.5	1.20	1.57	14.0	0.172			0.050	0.0177		1.04	0.0790	4.06
	07/18/07	20.3	7.10	7.89	27.5	1.26	1.57	15.9	0.050			0.0155	0.0411		0.971	0.0510	3.87
	08/20/07	16.8	6.75	12.15	26.3	0.0765	1.57	15.0	0.131			0.0412	0.0032		0.865	0.0320	3.64
	09/21/07	22.1	6.94	10.83	35.0	1.81	1.57	20.0	0.154			0.0155	0.00155		0.670	0.0450	4.68
	10/09/07	22.3	6.84	7.58	31.3	22.7	1.57	29.6	0.122			0.128	0.0324		0.829	0.0400	3.94
	Mean	18.8	6.92	8.81	29.0	3.0	1.25	17.0	0.105	NA	NA	0.037	0.0127	NA	1.35	0.047	4.02
	Median	18.2	6.84	8.12	27.5	1.0	1.57	16.0	0.111	NA	NA	0.024	0.0079	NA	1.04	0.042	3.98
	St. Deviation	2	0.38	2.85	9.1	6	0.41	4	0.042	NA	NA	0.032	0.0135	NA	1.28	0.014	0.24
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	15.8	6.38	4.57	15	0.075	0.785	14.0	0.0485	NA	NA	0.0155	0.0011	NA	0.67	0.032	3.64
	Maximum	22.3	7.71	13.07	52.5	22.7	1.63	29.6	0.172	NA	NA	0.128	0.0411	NA	5.38	0.079	4.68
	% of values undetected					25%	92%		8%			75%	42%				
	# of values between MDL and MRL					2	1		4			2	2			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.72	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	18%	0%	0%	0%	0%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d	
					Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1C																					
Sample Date																					
05/24/05	0.00125	0.00125	0.50		6.95	2.39	0.0306	0.0294	0.125	0.125	4.78	4.89	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0162	0.00775	
06/16/05	0.00125	0.0029	0.50		4.48	1.00	0.0296	0.0382	0.125	0.125	5.39	5.27	0.0075	0.0075	0.00155	0.0038	1.55	1.55	0.025	0.025	
07/31/05	0.00125	0.00125	0.50		7.21	2.95	0.0334	0.0344	0.125	0.125	5.43	4.87	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775	
08/12/05	0.00125	0.00125	0.50		15.2	2.78	0.0216	0.0124	0.250	0.250	5.69	5.02	0.0075	0.0075	0.00155	0.00155	5.0	3.3	0.00775	0.00775	
09/28/05	0.00125	0.00125	0.50		13.6	3.14	0.0238	0.0158	0.125	0.313	5.80	5.84	0.0075	0.0075	0.00155		6.8	1.55	0.0162	0.00775	
10/12/05	0.00125	0.00125	0.50		12.4	2.16	0.0402	0.00155	0.250	0.125	5.77	0.10	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775	
05/30/07	0.00075	0.00075	0.155		3.78	2.42	0.0250	0.0250	0.155	0.155	5.57	6.45	0.0125	0.0125	0.0075	0.0075	2.93	3.40	0.0075	0.0075	
06/12/07	0.00075	0.00075	0.155	0.894	11.8	2.32	0.0360	0.0386	0.155	0.155	5.88	5.46	0.0125	0.0125	0.0075	0.0075	2.90	3.63	0.0075	0.0075	
07/18/07	0.00075	0.00075	0.155		19.4	2.74	0.0250	0.0250	0.155	0.155	6.38	6.25	0.0125	0.0125	0.0075	0.0075	4.28	4.88	0.0075	0.0075	
08/20/07	0.00075	0.00075	0.155		5.18	2.10	0.0180	0.0198	0.155	0.155	5.14	5.30	0.0125	0.0125	0.0075	0.0075	3.83	3.82	0.0075	0.0075	
09/21/07	0.00075	0.00075	0.155	0.592	419	7.65	0.0298	0.0298	0.508	0.155	12.1	7.45	0.0125	0.0125	0.0075	0.0075	3.10	3.32	0.0075	0.0075	
10/09/07	0.00075	0.00075	0.155		1260	5.80	0.0424	0.0364	0.916	0.155	21.7	6.84	0.0125	0.0125	0.0075	0.0075	3.25	3.38	0.0300	0.0075	
Mean	0.001	0.0011	0.33	0.743	150	3.12	0.0296	0.0255	0.254	0.166	7.50	5.31	0.010	0.010	0.0045	0.0050	3.8	3.08	0.012	0.009	
Median	0.001	0.0010	0.33	0.743	10.0	2.58	0.0297	0.0272	0.155	0.155	5.70	5.38	0.010	0.010	0.0045	0.0075	3.5	3.35	0.0080	0.008	
St. Deviation	0.0003	0.0006	0.18	0.214	370	1.81	0.0074	0.0114	0.235	0.057	4.9	1.83	0.003	0.003	0.0031	0.0029	1.5	1.26	0.008	0.005	
# of values	12	12	12	2	12	12	12	12	12	12	12	12	12	12	12	11	12	12	12	12	
Minimum	0.00075	0.00075	0.16	0.592	3.78	1.00	0.0180	0.00155	0.125	0.125	4.78	0.10	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075	
Maximum	0.00125	0.0029	0.50	0.894	1260	7.65	0.0424	0.0386	0.916	0.313	21.7	7.45	0.0125	0.0125	0.0075	0.0075	6.8	5.0	0.0300	0.025	
% of values undetected	100%	92%	100%			8%	17%	25%	83%	92%		8%	100%	100%	100%	83%	42%	42%	75%	100%	
# of values between MDL and MRL		1					4	4		1						1	7	7	3		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.071	0.070	
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA	
% of CALC exceedences	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1C																					
Sample Date																					
05/24/05	5560	5360	0.523	0.304	0.015	0.0124	0.732	0.518	10.0	10.0	0.050			788	787	1.00	0.564		0.653	0.635	0.260
06/16/05	5050	5610	0.387	0.373	0.011	0.0150	0.590	0.457	12.3	7.18	0.0155			780	836	0.954	0.264	0.000450	0.749	0.703	0.230
07/31/05	5870	5760	0.100	0.100	0.0184	0.0104	0.551	0.508	10.5	8.8	0.0155			858	829	1.94	0.484	0.0025	0.790	0.795	0.191
08/12/05	5920	5310	0.208	0.031	0.026	0.0198	0.543	0.498	35.7	6.27	0.0155			794	729	2.38	0.281	0.000450	0.752	0.675	0.243
09/28/05	6330	6210	0.238		0.0238	0.0134	0.512	0.495	15.6	6.68	0.0155			877	904	1.52	0.169	0.000450	0.771	0.712	0.290
10/12/05	6400	7.75	0.448	0.233	0.032	0.0130	0.565	0.050	16.1	3.1	0.325	0.050	848	0.775	1.47	0.031	0.000450	0.743	0.0031	0.298	0.0155
05/30/07	5810	6400	0.100		0.0050	0.0114	0.493	0.536	17.0	15.7	0.0155	0.0155	818	938	0.694	0.297	0.000169	0.806	0.893	0.100	0.236
06/12/07	5860	5810	0.299	0.050	0.0140	0.0110	0.588	0.448	25.8	11.9	0.050	0.0155	813	874	1.31	0.435	0.000169	0.822	0.748	0.246	0.100
07/18/07	6580	6560	0.116	0.050	0.0228	0.0100	0.566	0.465	49.5	26.6	0.0155	0.050	930	982	2.47	0.454	0.000169	0.874	0.879	0.254	0.353
08/20/07	5480	5530	0.100	0.100	0.0100	0.0050	0.466	0.410	10.0	10.0	0.0155	0.0155	746	770	1.04	0.224	0.000169	0.709	0.743	0.160	0.158
09/21/07	7180	7250	0.351	0.100	0.142	0.0124	1.25	0.535	439	17.0	0.187	0.0155	1000	972	20.9	0.452	0.0025	1.03	0.993	0.323	0.359
10/09/07	7040	6610	0.663		0.380	0.0198	2.69	0.507	1060	32.6	0.546	0.0334	1150	924	30.4	1.58	0.000664	0.985	0.895	0.707	0.363
Mean	6090	5530	0.294	0.149	0.060	0.0128	0.800	0.452	140	13	0.106	0.028	870	795	5.50	0.44	0.00074	0.810	0.723	0.275	0.226
Median	5900	5790	0.269	0.100	0.020	0.0124	0.570	0.497	20.0	10	0.016	0.0155	830	855	1.50	0.37	0.00045	0.780	0.746	0.250	0.236
St. Deviation	630	1840	0.186	0.123	0.11	0.0041	0.63	0.132	310	8.8	0.168	0.016	110	263	9.6	0.39	0.00089	0.11	0.251	0.149	0.14
# of values	12	12	12	9	12	12	12	12	12	12	12	7	12	12	12	12	11	12	12	12	7
Minimum	5050	7.75	0.100	0.031	0.005	0.0050	0.466	0.050	10.0	3.1	0.0155	0.0155	746	0.775	0.694	0.031	0.000169	0.653	0.0031	0.100	0.0155
Maximum	7180	7250	0.663	0.373	0.38	0.0198	2.69	0.536	1060	33	0.546	0.05	1150	982	30.4	1.58	0.0025	1.03	0.993	0.707	0.363
% of values undetected		8%	25%	50%	8%	17%		8%	17%	25%	75%	50%		8%		8%	91%		8%	8%	17%
# of values between MDL and MRL			1		2	4			5	7		1				1	1			1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.99	1.91	1000	1000	0.32	0.33	NA	NA	NA	NA	0.012	NA	NA	11.27	11.24
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	8%	0%	8%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: NE1C																		
Sample Date																		
05/24/05	498	504	0.0775	0.0775	920	0.0031	0.0031	1580	1660	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233	
06/16/05	553	545	0.250	0.0775	877	0.0031	0.0031	1680	1760	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75		
07/31/05	565	551	0.0775	0.0775	982	0.0031	0.0031	2300	2030	0.0031	0.0031	0.031	0.031	0.10	0.10	6.51		
08/12/05	535	491	0.0775	0.0775	1080	0.0031	0.0031	1500	1420	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75	
09/28/05	586	588	0.0775	0.0775	1160	0.0031	0.0031	1790	1790	0.0031	0.0031	0.031	0.031	0.10	0.252	0.805	1.22	
10/12/05	556	7.75	0.0775	0.0775	75	0.0031	0.0031	1650	15.5	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75	
05/30/07	538	588	0.155	0.155	1240	0.0031	0.0031	1590	1760	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50		
06/12/07	540	531	0.155	0.155	1040	0.0031	0.0031	1570	1680	0.0050	0.0102	0.050	0.050	0.155	0.155	0.50	1.11	
07/18/07	605	610	0.155	0.155	1220	0.0031	0.0031	1800	1840	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50	
08/20/07	484	486	0.155	0.155	1070	0.0031	0.0031	1490	1530	0.0050	0.0050	0.050	0.050	0.155	0.155	1.92	0.50	
09/21/07	706	683	0.155	0.155	1770	0.0031	0.0031	1600	1630	0.0050	0.0050	0.050	0.050	0.936	0.155	2.95	1.14	
10/09/07	731	603	0.155	0.155	1370	0.0031	0.0031	1770	1680	0.0050	0.0050	0.050	0.050	2.68	0.155	5.24	1.30	
Mean	575	516	0.131	0.116	1070	0.0031	0.0031	1690	1570	0.0040	0.0040	0.040	0.040	0.40	0.14	1.78	0.83	
Median	555	548	0.155	0.116	1080	0.0031	0.0031	1630	1680	0.0040	0.0040	0.040	0.040	0.10	0.155	0.75	0.75	
St. Deviation	75	170	0.054	0.04	390	0	0	220	510	0.001	0.002	0.01	0.01	0.8	0.045	2.07	0.38	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	9	
Minimum	484	7.75	0.0775	0.0775	75	0.0031	0.0031	1490	15.5	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233	
Maximum	731	683	0.25	0.155	1770	0.0031	0.0031	2300	2030	0.0050	0.0102	0.050	0.050	2.68	0.252	6.51	1.3	
% of values undetected		8%	100%	100%	8%	100%	100%		8%	100%	92%	100%	100%	83%	92%	58%	42%	
# of values between MDL and MRL											1			1	1	1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.18	0.15	NA	NA	NA	NA	NA	NA	NA	NA	25.8	25.5	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: PB1A																	
	Sample Date																
	05/25/05	15.5	7.04	4.32	25.0	0.20	1.63	12.0	0.16			0.0155	0.0011		1.04	0.034	3.96
	06/14/05	13.4	6.78	7.08	20.0	0.20	0.785	10.5	0.154			0.0155	0.0090		0.962	0.031	4.38
	07/23/05	14.6	5.36	13.01	30.0	0.211	0.785	12.0	0.098			0.0155	0.0535		0.935	0.036	4.32
	08/13/05	15.5	7.45	16.31	22.5	0.075	0.785	15.0	0.0155			0.0155	0.010		1.04	0.035	3.90
	09/29/05	16.9	7.67	10.11	30.0	0.40	1.63	14.5	0.087			0.0155	0.00165		1.02	0.039	4.00
	10/14/05	17.3		8.56	27.5	0.60	0.785	14.0	0.123			0.050	0.0057		1.01	0.064	4.15
	05/29/07	16.9	5.98	4.30	22.5	0.206	5.00	13.9	0.136			0.0155	0.0050		1.07	0.0550	3.82
	06/11/07	18.3	6.68	4.99	12.5	0.075	1.57	14.0	0.133			0.0155	0.0132		1.05	0.0830	3.94
	07/19/07	17.8	7.41	12.13	23.8	0.200	1.57	13.5	0.050			0.0155	0.0050		0.983	0.0530	3.53
	08/20/07	15.0	7.03	6.62	25.0	0.435	1.57	14.0	0.133			0.0155	0.0064		0.893	0.0310	3.45
	09/22/07	19.2	6.84	9.96	35.0	0.208	1.57	15.0	0.0960			0.138	0.00155		0.870	0.0390	3.76
	10/09/07	19.5	7.13	8.78	30.0	0.080	1.57	14.7	0.0925			0.0155	0.0033		0.924	0.0420	3.73
	Mean	16.7	6.85	8.85	25.0	0.20	1.60	14.0	0.11	NA	NA	0.029	0.010	NA	0.98	0.045	3.91
	Median	16.9	7.03	8.67	25.0	0.20	1.57	14.0	0.11	NA	NA	0.016	0.0050	NA	1	0.039	3.92
	St. Deviation	1.9	0.67	3.70	6	0.2	1.14	1	0.043	NA	NA	0.036	0.014	NA	0.07	0.016	0.28
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	13.4	5.36	4.3	12.5	0.075	0.785	10.5	0.0155	NA	NA	0.0155	0.0011	NA	0.87	0.031	3.45
	Maximum	19.5	7.67	16.31	35.0	0.60	5.00	15.0	0.16	NA	NA	0.138	0.0535	NA	1.07	0.083	4.38
	% of values undetected					25%	75%		17%			92%	50%				
	# of values between MDL and MRL					8	3	1	4				4			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	7.02	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	18%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
	Total/Dissolved				Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d	
	Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1A																					
Sample Date																					
05/25/05	0.00125	0.00125	0.50		25.2	9.00	0.0292	0.0316	0.369	0.125	5.23	5.21	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0252	0.00775	
06/14/05	0.00125	0.00125	0.0295		46.3	12.0	0.0326	0.0286	0.125	0.26	6.29	5.93	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.025	0.025	
07/23/05	0.00125	0.00125	0.50		24.8	7.92	0.0194	0.0218	0.125	0.125	4.93	4.91	0.0075	0.0075	0.00155	0.00155	5	5	0.00775	0.00775	
08/13/05	0.00125	0.00125	0.50		9.06	3.34	0.0144	0.0054	0.125	0.125	5.20	4.67	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.00775	
09/29/05	0.00125	0.00125	0.50		21.8	5.53	0.0016		0.378	0.402	5.75	5.25	0.0075	0.0075	0.0050	0.00155	5	6	0.00775	0.00775	
10/14/05	0.00125	0.00125	0.50		10.3	3.92	0.0204	0.0284	0.25	0.125	5.41	5.39	0.0075	0.0075	0.00155	0.00155	5	5	0.00775	0.00775	
05/29/07	0.00075	0.00075	0.155		5.79	3.37	0.0250	0.0250	0.155	0.155	5.55	5.97	0.0125	0.0125	0.0075	0.0075	3.20	3.25	0.0075	0.0075	
06/11/07	0.00075	0.00075	0.155	0.825	10.3	4.63	0.0288	0.0416	0.155	0.155	6.06	6.27	0.0125	0.0125	0.0075	0.0075	4.05	3.68	0.0075	0.0075	
07/19/07	0.00075	0.00075	0.155		11.1	6.35	0.0250	0.0250	0.155	0.155	5.96	5.76	0.0125	0.0125	0.0075	0.0075	5.13	4.41	0.0075	0.0075	
08/20/07	0.00075	0.00075	0.155		6.53	4.15	0.0075	0.0318	0.155	0.155	5.12	5.98	0.0125	0.0125	0.0075	0.0075	3.60	3.78	0.0075	0.0075	
09/22/07	0.00075	0.00075	0.155	0.350	11.1	3.82	0.0192	0.0262	0.155	0.155	6.20	6.28	0.0125	0.0125	0.0075	0.0075	3.53	3.43	0.0075	0.0075	
10/09/07	0.00075	0.00075	0.155		8.63	3.58	0.0256	0.0310	0.155	0.155	6.13	5.85	0.0125	0.0125	0.0075	0.0075	3.35	3.23	0.0075	0.0075	
Mean	0.001	0.001	0.29	0.588	15.9	5.6	0.0207	0.0269	0.19	0.17	5.65	5.62	0.010	0.010	0.0048	0.0045	3.54	3.54	0.011	0.0090	
Median	0.001	0.001	0.16	0.588	10.7	4.4	0.0227	0.0284	0.16	0.16	5.65	5.81	0.010	0.010	0.0063	0.0045	3.57	3.56	0.0080	0.0080	
St. Deviation	0.0003	0.0003	0.19	0.336	11.8	2.7	0.0092	0.0088	0.091	0.08	0.47	0.53	0.003	0.003	0.003	0.0031	1.39	1.45	0.007	0.005	
# of values	12	12	12	2	12	12	12	11	12	12	12	12	12	12	12	12	12	12	12	12	
Minimum	0.00075	0.00075	0.030	0.350	5.79	3.34	0.0016	0.0054	0.125	0.125	4.93	4.67	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075	
Maximum	0.00125	0.00125	0.5	0.825	46.3	12.0	0.0326	0.0416	0.378	0.402	6.29	6.28	0.0125	0.0125	0.0075	0.0075	5.13	6.00	0.0252	0.025	
% of values undetected	100%	100%	100%				33%	17%	83%	83%			100%	100%	100%	100%	50%	42%	92%	100%	
# of values between MDL and MRL				1			3	5	2	2							5	7	1		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.063	0.063	
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved		
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Location: PB1A																						
Sample Date																						
05/25/05	5070	4550	0.519	0.204	0.047	0.0374	2.23	1.46	10.0	10.0	0.050			696	683	2.55	1.85	0.000147	0.646	0.573	0.263	
06/14/05	4410	3970	0.305	0.406	0.100	0.0942	4.35	2.69	43.8	16.5	0.050			582	558	7.03	6.19	0.000450	0.722	0.715	0.236	
07/23/05	4740	4640	0.031	0.10	0.0454	0.0174	1.45	1.01	11.6	3.1	0.0155			667	652	3.95	1.98	0.0025	0.625	0.633	0.223	
08/13/05	5080	4760	0.0664	0.031	0.0314	0.0214	0.794	0.628	12.6	3.1	0.0155			682	643	1.72	0.442	0.000450	0.617	0.536	0.213	
09/29/05	5500	5570	0.642	0.427	0.0284	0.029	1.10	0.804	24.6	3.1	0.0155			766	731	2.09	0.283	0.000450	0.499		0.272	
10/14/05	5670	5670	0.278		0.0332	0.0234	1.18	0.827	10.5	11.5	0.0155			754	781	1.46	0.229	0.000450	0.659	0.727	0.258	
05/29/07	5510	5910	0.100	0.050	0.0126	0.0114	0.674	0.636	17.9	13.9	0.0155	0.050		762	846	1.52	0.846	0.000169	0.724	0.762	0.100	0.202
06/11/07	5990	6030	0.423	0.278	0.0182	0.0172	0.958	0.794	20.8	18.3	0.0155	0.050		804	873	2.61	1.08	0.000169	0.800	0.818	0.226	0.353
07/19/07	5790	5590	0.050	0.050	0.0280	0.0100	2.97	0.765	29.8	23.7	0.050	0.0155		815	786	1.89	0.695	0.000169	0.771	0.752	0.286	0.278
08/20/07	4930	5740	0.050	0.100	0.0126	0.0140	0.572	0.625	10.0	10.0	0.0400	0.0398		662	739	1.13	0.651	0.000169	0.625	0.711	0.143	0.130
09/22/07	6310	6490	0.213	0.228	0.0164	0.0116	0.853	0.683	20.5	13.7	0.050	0.0155		842	885	1.66	0.428	0.0025	0.771	0.803	0.100	0.100
10/09/07	6440	5990	0.050	0.050	0.0170	0.0050	0.928	0.646	10.0	10.0	0.0155	0.0155		824	815	1.33	0.255	0.000169	0.828	0.749	0.100	0.213
Mean	5450	5410	0.227	0.175	0.033	0.0243	1.50	0.960	18.5	11.0	0.029	0.031		738	749	2.41	1.24	0.00065	0.691	0.707	0.202	0.213
Median	5510	5630	0.157	0.100	0.028	0.0173	1.03	0.780	15.3	11.0	0.0155	0.028		758	760	1.81	0.67	0.00031	0.691	0.727	0.225	0.208
St. Deviation	630	750	0.209	0.145	0.024	0.0237	1.13	0.59	10.3	6	0.017	0.017		80	101	1.64	1.66	0.00087	0.095	0.090	0.071	0.093
# of values	12	12	12	11	12	12	12	12	12	12	12	6		12	12	12	12	12	12	11	12	6
Minimum	4410	3970	0.031	0.031	0.0126	0.0050	0.572	0.625	10.0	3.1	0.0155	0.0155		582	558	1.13	0.229	0.000147	0.499	0.536	0.1	0.1
Maximum	6440	6490	0.642	0.427	0.10	0.0942	4.35	2.69	43.8	23.7	0.050	0.05		842	885	7.03	6.19	0.0025	0.828	0.818	0.286	0.353
% of values undetected			42%	50%		17%			25%	50%	92%	42%						100%			25%	8%
# of values between MDL and MRL			1		5	4			4	5	1	1									1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.74	1.68	1000	1000	0.26	0.28		NA	NA	NA	NA	0.012	NA	NA	9.92	9.89
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA		NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	25%	8%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1A																		
Sample Date																		
05/25/05	468	432	0.0775	0.0775	1250	0.0031	0.0031	1510	1520	0.0031	0.0031	0.031	0.031	0.10	0.10	2.45	2.03	
06/14/05	445	437	0.25	0.25	1460	0.0031	0.0031	1390	1450	0.0031	0.0031	0.071	0.031	0.10	0.10	7.15		
07/23/05	446	449	0.0775	0.0775	1090	0.0031	0.0031	1430	1420	0.0031	0.0031	0.031	0.031	0.262	0.211	12.8		
08/13/05	449	443	0.0775	0.0775	1100	0.0031	0.0031	1350	1300	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.750	
09/29/05	512	500	0.0775	0.0775	1260	0.0031	0.0031	1630	1580	0.0031	0.0031	0.031	0.031	0.206	0.10	0.771	0.862	
10/14/05	498	573	0.0775	0.0775	1170	0.0031	0.0031	1560	1680	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	1.85	
05/29/07	514	613	0.155	0.155	1130	0.0062	0.0031	1590	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	3.47	3.69	
06/11/07	543	577	0.155	0.155	1300	0.0031	0.0031	1690	1730	0.0216	0.0050	0.050	0.050	0.155	0.155	0.50	1.19	
07/19/07	530	513	0.155	0.155	1280	0.0031	0.0031	1710	1650	0.0050	0.0050	0.050	0.050	0.155	0.155	2.83	1.61	
08/20/07	433	501	0.155	0.155	1260	0.0031	0.0031	1400	1560	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.35	
09/22/07	583	585	0.155	0.155	1250	0.0031	0.0031	1770	1760	0.0050	0.0050	0.050	0.050	0.155	0.155	3.07	2.62	
10/09/07	590	542	0.155	0.155	1160	0.0031	0.0031	1770	1610	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.11	
Mean	501	514	0.13	0.13	1230	0.0034	0.0031	1570	1580	0.0050	0.0040	0.040	0.040	0.15	0.137	2.96	1.71	
Median	505	507	0.16	0.16	1250	0.0031	0.0031	1580	1600	0.0040	0.0040	0.050	0.040	0.16	0.155	1.61	1.48	
St. Deviation	54	64	0.054	0.054	100	0.0009	0	150	140	0.005	0.001	0.01	0.01	0.048	0.036	3.66	0.90	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	
Minimum	433	432	0.0775	0.0775	1090	0.0031	0.0031	1350	1300	0.0031	0.0031	0.031	0.031	0.1	0.10	0.50	0.75	
Maximum	590	613	0.25	0.25	1460	0.0062	0.0031	1770	1760	0.0216	0.005	0.071	0.050	0.262	0.211	12.8	3.69	
% of values undetected			100%	100%		92%	100%			92%	100%	92%	100%	83%	92%	42%	8%	
# of values between MDL and MRL						1						1		2	1	1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.14	0.12	NA	NA	NA	NA	NA	NA	NA	NA	22.7	22.4	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

	Parameters	Hardness (as CaCO ₃)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: PB1B																	
	Sample Date																
	05/25/05	15.6	6.30	4.12	56.0	0.50	2.38	11.0	0.190			0.0155	0.0011		1.02	0.033	4.06
	06/14/05	14.2	6.47	4.99	17.5	0.50	0.785	11.0	0.122			0.0155	0.00155		1.00	0.032	4.32
	07/23/05	15.1	4.50	10.51	33.8	0.303	0.785	13.5	0.126			0.0155	0.048		1.00	0.034	3.93
	08/13/05	17.1	7.32	13.96	28.8	0.30	0.785	12.0	0.0785			0.0155	0.010		1.05	0.038	4.00
	09/29/05	16.1	7.11	10.06	28.8	0.20	0.785	13.5	0.089			0.0155	0.013		1.01	0.038	4.06
	10/14/05	16.8		8.81	30.0	0.20	0.785	14.5	0.130			0.148	0.014		1.02	0.062	4.18
	05/29/07	16.8	5.77	4.15	20.0	0.302	1.57	14.0	0.166			0.0155	0.0050		1.07	0.0560	3.81
	06/11/07	18.9	6.62	4.39	18.8	0.700	1.57	13.0	0.189			0.0155	0.0119		1.05	0.0830	3.94
	07/19/07	17.5	7.07	11.64	26.3	0.200	1.57	13.4	0.158			0.0155	0.0050		0.976	0.0520	3.54
	08/20/07	15.9	6.39	5.34	21.3	0.1595	1.57	14.4	0.137			0.0155	0.0104		0.888	0.0155	3.47
	09/22/07	18.3	6.84	9.95	28.8	0.077	1.57	15.0	0.259			0.0155	0.241		0.868	0.0380	3.77
	10/09/07	18.2	6.77	8.78	38.8	0.0815	1.57	14.7	0.117			0.0155	0.00155		0.875	0.0390	3.62
	Mean	16.7	6.47	8.06	29.1	0.29	1.31	13.0	0.147	NA	NA	0.0270	0.030	NA	0.99	0.043	3.89
	Median	16.8	6.62	8.80	28.8	0.25	1.57	14.0	0.134	NA	NA	0.0160	0.010	NA	1.01	0.038	3.94
	St. Deviation	1.4	0.78	3.35	10.6	0.19	0.52	1	0.05	NA	NA	0.038	0.07	NA	0.07	0.017	0.26
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	14.2	4.5	4.12	17.5	0.077	0.785	11.0	0.0785	NA	NA	0.0155	0.0011	NA	0.868	0.0155	3.47
	Maximum	18.9	7.32	13.96	56.0	0.70	2.38	15.0	0.259	NA	NA	0.148	0.241	NA	1.07	0.083	4.32
	% of values undetected					25%	92%					92%	50%			8%	
	# of values between MDL and MRL					6	1	1	2				2			11	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	7.07	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	45%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d
					Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1B																				
Sample Date																				
05/25/05	0.00125	0.00125	0.50		56.8	8.19	0.0322	0.0236	0.328	0.125	5.37	5.06	0.0075	0.0075	0.00155	0.00155	5.1	1.55	0.00775	0.00775
06/14/05	0.00125	0.00125	0.50		39.8	8.42	0.150	0.0320	0.125	0.125	6.19	5.59	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.025	0.025
07/23/05	0.00125	0.00125	0.50		16.0	5.26	0.0230	0.0244	0.125	0.125	5.04	4.66	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/13/05	0.00125	0.00125	0.50		11.0	3.87	0.0170	0.0120	0.125	0.125	5.45	4.86	0.0075	0.0075	0.00155	0.00155	3.4	1.55	0.00775	0.00775
09/29/05	0.00125	0.00125	0.50		6.1		0.0196	0.0166	0.125	0.292	5.24	5.61	0.0075	0.0075	0.00155	0.00155	5.4	6.7	0.00775	0.00775
10/14/05	0.0025	0.00125	0.50		10.7	4.16	0.0298	0.0244	0.125	0.125	5.58	5.29	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
05/29/07	0.00075	0.00075	0.155		5.80	4.18	0.0250	0.0250	0.155	0.155	5.43	5.80	0.0125	0.0125	0.0075	0.0075	3.24	3.30	0.0075	0.0075
06/11/07	0.00075	0.00075	0.155	0.713	9.72	3.71	0.0334	0.0504	0.155	0.155	6.35	6.15	0.0125	0.0125	0.0075	0.0075	3.93	3.44	0.0075	0.0075
07/19/07	0.00075	0.00075	0.155		9.78	5.17	0.0250	0.0250	0.155	0.155	5.96	6.13	0.0125	0.0125	0.0075	0.0075	4.27	4.85	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		5.55	2.73	0.0172	0.0352	0.155	0.155	4.96	5.94	0.0125	0.0125	0.0075	0.0075	3.77	3.78	0.0075	0.0075
09/22/07	0.00075	0.00075	0.155	0.415	12.5	3.37	0.0164	0.0196	0.155	0.155	5.92	5.88	0.0125	0.0125	0.0075	0.0075	3.23	3.37	0.0075	0.0075
10/09/07	0.00075	0.00075	0.155		8.72	3.52	0.0294	0.0336	0.155	0.155	5.78	6.00	0.0125	0.0125	0.0075	0.0075	3.70	3.41	0.0075	0.0075
Mean	0.0011	0.0010	0.33	0.564	16.0	4.78	0.035	0.0268	0.157	0.154	5.61	5.58	0.010	0.010	0.0045	0.0045	4.0	3.63	0.0090	0.0090
Median	0.0010	0.0010	0.33	0.564	10.2	4.16	0.025	0.0247	0.155	0.155	5.52	5.71	0.010	0.010	0.0045	0.0045	3.9	3.43	0.0080	0.0080
St. Deviation	0.0005	0.0003	0.18	0.211	15.8	1.89	0.037	0.01	0.056	0.046	0.44	0.5	0.003	0.003	0.0031	0.0031	1.1	1.59	0.005	0.005
# of values	12	12	12	2	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Minimum	0.00075	0.00075	0.155	0.415	5.55	2.73	0.0164	0.0120	0.125	0.125	4.96	4.66	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.0025	0.00125	0.5	0.713	56.8	8.42	0.15	0.0504	0.328	0.292	6.35	6.15	0.0125	0.0125	0.0075	0.0075	5.4	6.7	0.025	0.025
% of values undetected	100%	100%	100%				17%	17%	92%	92%			100%	100%	100%	100%	25%	42%	100%	100%
# of values between MDL and MRL				1			4	3	1	1							9	7		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.065	0.065
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1B																					
Sample Date																					
05/25/05	5120	4730	0.526	0.236	0.0544	0.0442	2.62	1.96	10.0	3.1	0.114		691	639	3.13	2.58		0.619	0.654	0.253	
06/14/05	4650	4550	0.355	0.359	0.0818	0.0632	6.03	2.35	27.1	7.78	0.0155	0.129	639	626	5.64	4.35	0.000450	0.778	0.721	0.882	0.731
07/23/05	4890	4790	0.031	0.100	0.0284	0.0050	1.21	0.724	7.15	3.1	0.0155		701	669	2.11	0.300	0.0025	0.628	0.603	0.229	
08/13/05	5650	5180	0.189	0.130	0.0356	0.0206	0.839	0.678	12.9	3.1	0.0155		725	707	1.76	0.246	0.000450	0.7	0.643	0.23	
09/29/05	5300	5520	0.269	0.282	0.0326	0.0388	0.893		6.75	16.9	0.225	0.0155	697	736	0.352		0.000450	0.669	0.721	1.04	0.231
10/14/05	5460	5650	0.354	0.552	0.0278	0.0230	1.02	0.845	12.6	11.6	0.0155		778	796	1.48	0.217	0.000450	0.691	0.708	0.197	0.591
05/29/07	5470	5710	0.050	0.202	0.0144	0.0116	0.722	0.639	17.7	15.6	0.0155		760	837	1.48	0.791	0.000169	0.723	0.745	0.100	0.100
06/11/07	6160	5780	0.347	0.287	0.0202	0.0148	0.900	0.821	23.7	17.1	0.0155	0.050	844	842	2.68	0.848	0.000169	0.847	0.783	0.250	0.332
07/19/07	5720	5810	0.103	0.050	0.0272	0.0100	0.941	0.530	30.4	25.4	0.0155	0.0155	792	838	1.84	0.655	0.000169	0.755	0.778	0.233	0.311
08/20/07	5190	5920	0.100		0.0108	0.0162	0.588	0.618	10.0	10.0	0.0155	0.0510	708	809	1.11	0.275	0.000169	0.653	0.731	0.149	0.191
09/22/07	6010	6170	0.100	0.207	0.0166	0.0100	0.744	0.741	19.0	11.5	0.0155	0.0155	799	824	1.61	0.481	0.0025	0.761	0.761	0.100	0.314
10/09/07	6020	6260	0.050	0.050	0.0166	0.0102	0.786	0.690	10.0	10.0	0.0155	0.0155	773	854	1.23	0.263	0.000169	0.783	0.780	0.100	0.305
Mean	5470	5510	0.206	0.223	0.0305	0.0223	1.44	0.96	15.6	11.3	0.041	0.042	742	765	2.04	1.00	0.00069	0.717	0.719	0.31	0.345
Median	5470	5680	0.146	0.207	0.0275	0.0155	0.900	0.724	12.8	10.8	0.016	0.016	743	803	1.69	0.48	0.00045	0.712	0.726	0.23	0.311
St. Deviation	470	570	0.16	0.148	0.02	0.0175	1.54	0.60	7.9	6.7	0.064	0.042	58	85	1.34	1.3	0.0009	0.07	0.058	0.31	0.197
# of values	12	12	12	11	12	12	12	11	12	12	12	7	12	12	12	11	11	12	12	12	9
Minimum	4650	4550	0.031	0.050	0.0108	0.0050	0.588	0.530	6.75	3.1	0.0155	0.0155	639	626	0.352	0.217	0.000169	0.619	0.603	0.1	0.100
Maximum	6160	6260	0.526	0.552	0.0818	0.0632	6.03	2.35	30.4	25.4	0.225	0.129	844	854	5.64	4.35	0.0025	0.847	0.783	1.04	0.731
% of values undetected			42%	25%		17%			25%	42%	83%	42%					100%			25%	8%
# of values between MDL and MRL			2	1	4	5			6	6		1								1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.81	1.74	1000	1000	0.28	0.30	NA	NA	NA	NA	0.012	NA	NA	10.30	10.27
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	17%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1B																		
Sample Date																		
05/25/05	465	448	0.0775	0.0775	1280	0.0031	0.0031	1470	1420	0.0031	0.0031	0.031	0.031	0.20	0.10	0.499	0.688	
06/14/05	489	456	0.25	0.25	1320	0.0031	0.0031	1510	1460	0.0031	0.0031	0.031	0.031	0.10	0.10	4.37		
07/23/05	465	455	0.0775	0.0775	1060	0.0031	0.0031	1510	1460	0.0031	0.0031	0.031	0.031	0.419	0.243	12.8		
08/13/05	501	474	0.0775	0.0775	1040	0.0031	0.0031	1430	1440	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	1.51	
09/29/05	482	488	0.0775	0.0775	1210	0.0031	0.0031	1470	1460	0.0031	0.0031	0.031	0.031	0.10	0.10	1.64	0.877	
10/14/05	518	566	0.0775	0.0775	1190	0.0031	0.0031	1630	1740	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75	
05/29/07	509	543	0.155	0.155	1120	0.0031	0.0031	1580	1670	0.0050	0.0050	0.050	0.050	0.155	0.155	3.42	1.58	
06/11/07	565	544	0.155	0.155	1250	0.0031	0.0031	1750	1660	0.0050	0.0050	0.050	0.050	0.155	0.155	2.09	1.63	
07/19/07	529	548	0.155	0.155	1300	0.0031	0.0031	1640	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	1.18	2.09	
08/20/07	458	535	0.155	0.155	1140	0.0031	0.0031	1460	1630	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50		
09/22/07	539	569	0.155	0.155	1250	0.0031	0.0031	1650	1780	0.0050	0.0050	0.050	0.050	0.155	0.155	1.63	2.12	
10/09/07	539	560	0.155	0.155	1200	0.0031	0.0031	1620	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50	
Mean	505	516	0.131	0.131	1200	0.0031	0.0031	1560	1590	0.004	0.0040	0.040	0.040	0.162	0.148	2.51	1.31	
Median	505	539	0.155	0.155	1210	0.0031	0.0031	1550	1650	0.004	0.0040	0.040	0.040	0.155	0.155	1.41	1.51	
St. Deviation	34	47	0.054	0.054	90	0	0	100	130	0.001	0.001	0.01	0.01	0.087	0.044	3.46	0.61	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	9	
Minimum	458	448	0.0775	0.0775	1040	0.0031	0.0031	1430	1420	0.0031	0.0031	0.031	0.031	0.10	0.10	0.499	0.5	
Maximum	565	569	0.25	0.25	1320	0.0031	0.0031	1750	1780	0.005	0.0050	0.050	0.050	0.419	0.243	12.8	2.12	
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	92%	92%	33%	17%	
# of values between MDL and MRL															1	1	2	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.15	0.13	NA	NA	NA	NA	NA	NA	NA	NA	23.6	23.3	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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Surface Water Laboratory Results Summary**

	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: PB1C																	
	Sample Date																
	05/25/05	15.8	6.25	4	50.0	0.40	2.25	12.5	0.180			0.0155	0.0050		1.03	0.033	4.00
	06/14/05	14.5	6.48	4.7	13.8	0.40	0.785	12.0	0.136			0.0155	0.0088		1.00	0.032	4.26
	07/23/05	14.7	6.69	8.73	28.8	0.20	0.785	13.5	0.178			0.0155	0.054		1.02	0.041	3.86
	08/13/05	15.5	7.10	12.72	22.5	0.147	0.785	14.0	0.045			0.0155	0.010		1.03	0.036	3.88
	09/29/05	17.0	6.93	9.82	17.5	0.075	0.785	14.5	0.099			0.0155	0.016		1.01	0.038	4.02
	10/14/05	17.9		8.79	35.0	0.30	0.785	13.5	0.115			0.050	0.0085		1.01	0.06	4.21
	05/29/07	17.8	5.93	4.12	31.3	4.10	1.57	14.5	0.124			0.0155	0.0474		1.08	0.0490	3.84
	06/11/07	20.1	6.69	4.25	41.3	36.8	1.57	13.0	0.145			0.0155	0.0278		1.05	0.0810	3.95
	07/19/07	16.9	6.96	10.66	21.3	4.60	1.57	13.4	0.175			0.0155	0.0050		0.967	0.0540	3.46
	08/20/07	16.6	6.41	5.17	20.0	77.6	1.57	14.1	0.144			0.0155	0.0120		0.888	0.0310	3.48
	09/22/07	18.7	6.89	9.87	27.5	0.150	1.57	14.8	0.106			0.0455	0.00155		0.866	0.0390	3.77
	10/09/07	20.0	6.86	8.65	30.0	25.9	1.57	15.0	0.107			0.0155	0.0416		0.917	0.0330	3.73
	Mean	17.1	6.65	7.62	28.3	13	1.30	13.7	0.130	NA	NA	0.021	0.020	NA	0.99	0.044	3.87
	Median	17.0	6.69	8.69	28.2	0.40	1.57	13.8	0.130	NA	NA	0.016	0.011	NA	1.01	0.039	3.87
	St. Deviation	1.9	0.35	3.02	10.3	24	0.49	0.9	0.039	NA	NA	0.0126	0.018	NA	0.07	0.015	0.25
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	14.5	5.93	4	13.8	0.075	0.785	12.0	0.045	NA	NA	0.0155	0.00155	NA	0.866	0.031	3.46
	Maximum	20.1	7.1	12.72	50.0	77.6	2.25	15.0	0.180	NA	NA	0.050	0.054	NA	1.08	0.081	4.26
	% of values undetected					25%	92%					92%	25%				
	# of values between MDL and MRL					4	1	1	2			1	4			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.92	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	36%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
	Units	mg/L	mg/L	mg/L	mg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	d µg/L	Total µg/L	Dissolved µg/L	Total µg/L	d µg/L
Location: PB1C																					
Sample Date																					
05/25/05	0.00125	0.00125	0.50		27.8	6.86	0.0614	0.025	0.125	0.125	5.18	5.03	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0176	0.020	
06/14/05	0.00125	0.00125	0.50		40.4	8.31	0.0292	0.0278	0.125	0.125	5.95	5.46	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.025	0.025	
07/23/05	0.00125	0.00125	0.50		15.8	4.47	0.028	0.0242	0.125	0.125	4.87	4.85	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775	
08/13/05	0.00125	0.00125	0.50		10.3	3.73	0.0146	0.0064	0.125	0.125	5.12	4.84	0.0075	0.0075	0.00155	0.00155	3.8	1.55	0.00775	0.00775	
09/29/05	0.00125	0.00125	0.50		26.0	17.6	0.0238	0.0294	0.261	0.492	5.87	6.27	0.0075	0.0075	0.0044	0.0052	5.6	3.9	0.00775	0.00775	
10/14/05	0.00125	0.0025	0.50		13.3	4.48	0.027	0.0314	0.125	0.125	5.76	5.43	0.0075	0.0075	0.0048	0.00155	5.0	5.0	0.00775	0.00775	
05/29/07	0.00075	0.00075	0.155		224	3.66	0.0250	0.0250	0.155	0.155	9.69	6.03	0.0125	0.0125	0.0075	0.0075	3.25	3.34	0.0075	0.0075	
06/11/07	0.00075	0.00075	0.155	0.789	139	7.50	0.0366	0.0504	0.155	0.155	8.80	6.33	0.0125	0.0125	0.0075	0.0075	3.89	3.57	0.0075	0.0075	
07/19/07	0.00075	0.00075	0.155		79.8	5.97	0.0250	0.0250	0.155	0.155	6.73	5.93	0.0125	0.0125	0.0075	0.0075	4.12	4.66	0.0075	0.0075	
08/20/07	0.00075	0.00075	0.155		542	8.20	0.0238	0.0294	0.468	0.155	11.2	5.34	0.0125	0.0125	0.0075	0.0075	3.63	3.60	0.0075	0.0075	
09/22/07	0.00075	0.00075	0.155	0.571	12.9	3.88	0.0206	0.0270	0.155	0.155	5.93	6.18	0.0125	0.0125	0.0075	0.0075	3.48	3.22	0.0075	0.0075	
10/09/07	0.00075	0.00075	0.155		850	12.0	0.0370	0.0288	0.585	0.155	14.3	5.50	0.0125	0.0125	0.0075	0.0075	3.31	3.05	0.0075	0.0075	
Mean	0.0010	0.0011	0.33	0.680	165	7.20	0.0293	0.0275	0.213	0.171	7.5	5.6	0.01	0.01	0.005	0.0048	3.68	3.33	0.010	0.010	
Median	0.0010	0.0010	0.33	0.680	34.0	6.40	0.026	0.0274	0.155	0.155	5.9	5.48	0.01	0.01	0.0062	0.0064	3.72	3.46	0.0080	0.0080	
St. Deviation	0.0003	0.0005	0.18	0.154	264	4.1	0.0118	0.0096	0.153	0.102	2.9	0.54	0.003	0.003	0.0028	0.003	1.24	1.26	0.006	0.006	
# of values	12	12	12	2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Minimum	0.00075	0.00075	0.155	0.571	10.3	3.66	0.0146	0.0064	0.125	0.125	4.87	4.84	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075	
Maximum	0.00125	0.0025	0.5	0.789	850	17.6	0.0614	0.0504	0.585	0.492	14.3	6.33	0.0125	0.0125	0.0075	0.0075	5.6	5.0	0.025	0.025	
% of values undetected	100%	100%	100%				17%	17%	75%	92%			100%	100%	83%	92%	33%	42%	92%	92%	
# of values between MDL and MRL							4	4	2	1					2	1	8	7	1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.065	0.064	
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA	
% of CALC exceedences	0%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1C																					
Sample Date																					
05/25/05	5160	4790	0.502	0.317	0.0432	0.0372	2.16	1.59	10.0	3.1	0.050		719	662	2.57	1.94		0.647	0.619	0.271	
06/14/05	4720	4350	0.263	0.392	0.0822	0.0686	3.62	2.12	26.7	9.65	0.050	0.120	655	613	5.13	3.99	0.000450	0.751	0.697	0.248	0.348
07/23/05	4740	4830	0.031	0.031	0.025	0.0128	1.03	0.684	6.72	3.1	0.0155	0.122	684	686	1.94	0.323	0.000450	0.597	0.572	0.216	
08/13/05	5080	5020	0.0996	0.143	0.031	0.0220	0.888	0.609	12.1	9.95	0.0155		676	669	1.7	0.195	0.000450	0.623	0.588	0.221	
09/29/05	5590	6120	0.08		0.0474	0.0478	1.25		26.8	11.1	0.0155		743	831	2.49	1.69	0.000450	0.796	0.825	0.262	
10/14/05	5820	5720	0.369		0.033	0.0210	1.03	0.86	15.7	10.7	0.0155		824	823	1.58	0.249	0.000450	0.728	0.733	0.246	
05/29/07	5780	5950	0.100	0.247	0.162	0.0136	5.22	0.665	210	14.1	0.206	0.050	823	872	41.3	0.770	0.00105	0.582		0.100	0.290
06/11/07	6550	6100	0.392	0.336	0.0940	0.0228	3.48	0.792	115	18.9	0.146	0.050	900	858	21.1	0.852	0.000169	0.755	0.839	0.338	0.354
07/19/07	5490	5550	0.050	0.050	0.0590	0.0100	1.62	0.599	101	24.3	0.050	0.0155	776	826	8.94	0.523	0.000169	0.741	0.738	0.272	0.285
08/20/07	5300	5570	0.242	0.210	0.304	0.0148	6.18	0.605	608	10.0	0.311	0.0676	816	707	70.5	1.87	0.0025	0.642	0.725	0.322	0.155
09/22/07	6150	6240	0.209	0.209	0.0184	0.0050	0.869	0.677	21.2	12.6	0.0155		819	840	1.73	0.440	0.000169	0.769	0.747	0.100	0.229
10/09/07	6410	5660	0.238	0.050	0.387	0.0196	7.87	0.780	884	22.1	0.415	0.0155	985	772	81.5	3.13	0.000169	0.923	0.723	0.413	0.220
Mean	5570	5490	0.215	0.199	0.107	0.0246	2.93	0.91	170	12.5	0.109	0.063	785	763	20	1.33	0.00059	0.713	0.710	0.251	0.269
Median	5540	5620	0.224	0.210	0.053	0.0203	1.89	0.684	27.0	10.9	0.05	0.050	796	798	3.9	0.810	0.00045	0.735	0.725	0.255	0.285
St. Deviation	600	610	0.15	0.128	0.119	0.0182	2.37	0.49	282	6.6	0.135	0.044	97	90	28.7	1.23	0.00068	0.098	0.087	0.089	0.072
# of values	12	12	12	10	12	12	12	11	12	12	12	7	12	12	12	12	11	12	11	12	7
Minimum	4720	4350	0.031	0.031	0.0184	0.0050	0.869	0.599	6.72	3.1	0.0155	0.0155	655	613	1.58	0.195	0.000169	0.582	0.572	0.1	0.155
Maximum	6550	6240	0.502	0.392	0.387	0.0686	7.87	2.12	884	24.3	0.415	0.122	985	872	81.5	3.99	0.0025	0.923	0.839	0.413	0.35
% of values undetected			25%	25%		17%			8%	25%	67%	33%					91%			17%	
# of values between MDL and MRL			2	1	1	3			3	7		1				1	1				1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	1.80	1.73	1000	1000	0.27	0.29	NA	NA	NA	NA	0.012	NA	NA	10.25	10.22
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	50%	9%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: PB1C																		
Sample Date																		
05/25/05	477	456	0.0775	0.0775	1210	0.0031	0.0031	1510	1460	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.676	
06/14/05	480	458	0.0775	0.25	1270	0.0031	0.0031	1500	1410	0.0031	0.0031	0.031	0.031	0.10	0.10	13.4	15.6	
07/23/05	445	452	0.0775	0.0775	1050	0.0031	0.0031	1470	1490	0.0031	0.0031	0.031	0.031	0.284	0.10	10.4		
08/13/05	454	454	0.0775	0.0775	1150	0.0031	0.0031	1360	1380	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	0.75	
09/29/05	501	525	0.0775	0.0775	1270	0.0031	0.0031	1560	1720	0.0031	0.0031	0.031	0.031	0.10	0.10	0.927		
10/14/05	557	560	0.0775	0.0775	1180	0.0031	0.0031	1700	1790	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	1.54	
05/29/07	558	563	0.155	0.155	1150	0.0031	0.0031	1630	1710	0.0050	0.0050	0.050	0.050	0.396	0.155	4.27	1.21	
06/11/07	649	582	0.155	0.155	1320	0.0031	0.0031	1850	1720	0.0050	0.0050	0.050	0.050	0.155	0.155	3.12	2.03	
07/19/07	520	537	0.155	0.155	1260	0.0031	0.0031	1600	1670	0.0050	0.0050	0.050	0.050	0.155	0.155	1.77	0.50	
08/20/07	513	492	0.155	0.155	1110	0.0062	0.0031	1490	1480	0.0100	0.0050	0.050	0.050	1.01	0.155	2.99	2.59	
09/22/07	552	559	0.155	0.155	1200	0.0031	0.0031	1690	1670	0.0050	0.0050	0.050	0.050	0.155	0.155	2.10	1.35	
10/09/07	639	510	0.155	0.155	1100	0.0070	0.0031	1760	1550	0.0050	0.0050	0.050	0.050	1.37	0.155	4.54	0.50	
Mean	529	512	0.116	0.131	1190	0.0037	0.0031	1590	1590	0	0.004	0.04	0.040	0.34	0.14	3.77	2.67	
Median	517	518	0.116	0.155	1190	0.0031	0.0031	1580	1610	0	0.004	0.04	0.040	0.16	0.16	2.55	1.28	
St. Deviation	66	49	0.04	0.054	80	0.0014	0	140	140	0	0.001	0.01	0.01	0.42	0.03	4.09	4.59	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	
Minimum	445	452	0.0775	0.0775	1050	0.0031	0.0031	1360	1380	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.50	
Maximum	649	582	0.155	0.25	1320	0.0070	0.0031	1850	1790	0.01	0.0050	0.050	0.050	1.37	0.2	13.4	15.6	
% of values undetected			100%	100%		83%	100%			92%	100%	100%	100%	67%	100%	25%	25%	
# of values between MDL and MRL						2				1				2		1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.15	0.13	NA	NA	NA	NA	NA	NA	NA	NA	23.5	23.2	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

**2004-2007 Iliamna Lake Study
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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: RB1A																	
	Sample Date																
	05/26/05	17.4	7.05	8.97	12.5	0.30	2.63	15.0	0.080			0.0155	0.0011		1.64	0.044	5.92
	06/15/05	15.9	7.23	11.81	21.3	0.30	0.785	15.8	0.076			0.0155	0.00155		0.413	0.035	1.55
	07/31/05	17.4	6.97	12.4	22.5	0.206	0.785	14.5	0.106			0.0155	0.00165		1.06	0.04	3.94
	08/14/05	17.9	6.75	15.59	22.5	0.30	0.785	16.0	0.0155			0.0155	0.010		0.933	0.066	4.06
	09/28/05	20.0	7.39	10.37	38.8	0.30	0.785	16.0	0.083			0.0155	0.00165		1.03	0.040	4.17
	10/13/05	17.6		7.45	33.8	0.303	0.785	16.0	0.11			0.164	0.0057		0.96	0.077	4.26
	05/30/07	19.0	6.95	7.89	28.8	0.1615	1.57	16.4	0.0990			0.0155	0.0050		0.879	0.0620	4.29
	06/12/07	18.3	7.25	7.65	32.5	0.250	1.57	15.0	0.181			0.050	0.0050		1.03	0.0830	4.15
	07/18/07	21.1	7.25	13.16	23.8	0.300	1.57	16.4	0.105			0.0155	0.0050		0.965	0.0520	3.91
	08/20/07	18.6	7.28	12.33	12.5	0.211	1.57	15.7	0.0945			0.0406	0.0048		0.874	0.0350	3.77
	09/21/07	21.9	7.06	10.76	30.0	0.521	1.57	17.1	0.136			0.0155	0.00155		0.647	0.0450	4.62
	10/09/07	20.5	6.86	6.88	38.8	0.086	1.57	15.5	0.105			0.0155	0.0033		0.851	0.0410	3.76
	Mean	18.8	7.09	10.44	26.5	0.27	1.33	15.8	0.099	NA	NA	0.033	0.0040	NA	0.940	0.052	4.03
	Median	18.5	7.06	10.57	26.3	0.30	1.57	15.9	0.102	NA	NA	0.016	0.0040	NA	0.950	0.045	4.11
	St. Deviation	1.8	0.2	2.72	8.9	0.11	0.57	0.7	0.039	NA	NA	0.043	0.003	NA	0.29	0.016	0.97
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	15.9	6.75	6.88	12.5	0.086	0.785	14.5	0.0155	NA	NA	0.0155	0.0011	NA	0.413	0.035	1.55
	Maximum	21.9	7.39	15.59	38.8	0.521	2.63	17.1	0.181	NA	NA	0.164	0.010	NA	1.64	0.083	5.92
	% of values undetected					25%	92%		8%			83%	75%				
	# of values between MDL and MRL					8	1	1	5			1	3			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.29	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
	Units	mg/L	mg/L	mg/L	mg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	d µg/L	Total µg/L	Dissolved µg/L	Total µg/L	d µg/L
Location: RB1A																					
Sample Date																					
05/26/05	0.00125	0.00125	0.50		7.17	2.82	0.035		0.125	0.125	5.02	4.62	0.0075	0.0336	0.0082	0.00155	1.55	8.4	0.0216	0.00775	
06/15/05	0.00125	0.00125	0.50		4.59	2.19	0.0272	0.0352	0.271	0.125	5.12	5.47	0.0075	0.0075	0.00155	0.0036	1.55	1.55	0.025	0.00775	
07/31/05	0.00125	0.00125	0.50		6.45	3.83	0.026	0.0314	0.125	0.125	5.11	5.21	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775	
08/14/05	0.0025	0.0025	0.50		13.9	4.39	0.0148	0.0100	0.25	0.125	5.70	5.29	0.0075	0.0075	0.00155	0.00155	4.8	1.55	0.00775	0.00775	
09/28/05	0.00125	0.00125	0.50		15.1	3.61	0.0258	0.026	0.125	0.529	5.93	5.95	0.0075	0.0075	0.00155	0.00155	4.9	3.6	0.0234	0.00775	
10/13/05	0.0025	0.0025	0.50		19.0	4.96	0.0244		0.25	0.125	5.45	5.19	0.0075	0.0075	0.00155	0.0042	5.0	5.0	0.00775	0.00775	
05/30/07	0.00075	0.00075	0.155		9.96	4.74	0.0250	0.0250	0.318	0.155	5.71	6.11	0.0125	0.0125	0.0075	0.0075	2.86	2.95	0.0075	0.0075	
06/12/07	0.00075	0.00075	0.155	0.928	5.40	2.08	0.0358	0.0456	0.155	0.155	5.52	5.43	0.0125	0.0125	0.0075	0.0075	3.56	3.33	0.0075	0.0075	
07/18/07	0.00075	0.00075	0.155		7.28	5.19	0.0250	0.0250	0.155	0.155	6.44	6.29	0.0125	0.0125	0.0075	0.0075	4.61	4.32	0.0075	0.0075	
08/20/07	0.00075	0.00075	0.155		5.74	2.88	0.0236	0.0234	0.155	0.155	5.71	5.74	0.0125	0.0125	0.0075	0.0075	3.85	3.87	0.0075	0.0075	
09/21/07	0.00075	0.00075	0.155	0.555	40.1	19.7	0.0254	0.0328	0.155	0.155	7.87	7.55	0.0125	0.0125	0.0075	0.0075	3.09	3.17	0.0075	0.0075	
10/09/07	0.00075	0.00075	0.155		13.1	4.74	0.0282	0.0292	0.155	0.155	6.39	6.02	0.0125	0.0125	0.0075	0.0075	3.39	3.25	0.0075	0.0075	
Mean	0.0012	0.0012	0.33	0.742	12.3	5.10	0.0264	0.0284	0.187	0.174	5.83	5.74	0.010	0.0122	0.0051	0.0049	3.68	3.83	0.012	0.0076	
Median	0.001	0.001	0.33	0.742	8.60	4.10	0.0256	0.0276	0.155	0.155	5.71	5.61	0.010	0.0125	0.0075	0.0059	3.71	3.47	0.0080	0.0076	
St. Deviation	0.0006	0.0006	0.18	0.264	9.9	4.7	0.0054	0.0092	0.067	0.113	0.79	0.74	0.003	0.0072	0.0031	0.0028	1.25	1.81	0.007	0.0001	
# of values	12	12	12	2	12	12	12	10	12	12	12	12	12	12	12	12	12	12	12	12	
Minimum	0.00075	0.00075	0.155	0.555	4.59	2.08	0.0148	0.0100	0.125	0.125	5.02	4.62	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075	
Maximum	0.0025	0.0025	0.5	0.928	40.1	19.7	0.0358	0.0456	0.318	0.529	7.87	7.55	0.0125	0.0336	0.0082	0.0075	5.0	8.4	0.025	0.00775	
% of values undetected	100%	100%	100%				17%	17%	83%	92%			100%	92%	92%	83%	33%	33%	83%	100%	
# of values between MDL and MRL							4	4	2						1	2	8	8	2		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.072	0.071	
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1A																					
Sample Date																					
05/26/05	5600	4560	0.265	0.0964	0.0188	0.0152	0.545	0.472	10.0	10.0	0.050		826	747	1.01	0.489		0.864	0.587	0.259	
06/15/05	5130	5580	0.367	0.339	0.0102	0.0162	0.503	0.521	23.2	11.2	0.0155	0.126	752	840	1.09	0.528	0.000450	0.736	0.675	0.212	
07/31/05	5590	6040	0.100	0.100	0.0158	0.0138	0.886		10.3	3.1	0.0155		832	855	1.96	0.659	0.000450	0.743	0.779	0.196	
08/14/05	5900	5710	0.0812	0.0648	0.0222	0.0174	0.612		18.0	3.1	0.0155	0.050	776	773	1.30	0.271	0.000450	0.718	0.648	0.261	0.253
09/28/05	6530	6490	0.251		0.026	0.0262	0.586	0.564	17.6	10.6	0.0155		895	904	1.57	0.268	0.000450	0.809	0.786	0.296	
10/13/05	5640	5450	0.431	0.456	0.0194	0.027	0.784	0.462	33	3.1	0.0155		848	807	1.58	0.348	0.000450	0.738	0.851	0.232	
05/30/07	6200	6580	0.100	0.100	0.0124	0.0050	0.480	0.520	26.7	19.0	0.0155	0.0155	856	900	1.06	0.600	0.000169	0.848	0.912	0.100	0.100
06/12/07	5980	5770	0.217	0.050	0.0050		0.527	0.454	15.5	10.6	0.0155	0.0155	821	821	0.999	0.506	0.000169	0.830	0.783	0.237	0.311
07/18/07	6850	6710	0.050	0.050	0.0100	0.0100	0.575	0.509	32.5	27.1	0.0155	0.0155	970	992	1.32	0.439	0.000169	0.926	0.878	0.278	0.349
08/20/07	6090	5730	0.239	0.283	0.0112	0.0124	0.494		10.0	10.0	0.0155	0.0470	816	768	1.37	0.279	0.000169	0.799	0.751	0.163	0.163
09/21/07	7230	7280	0.100	0.100	0.0208	0.0154	0.636	0.714	47.5	27.3	0.050	0.050	943	966	1.97	0.805	0.000169	0.995	1.010	0.100	0.241
10/09/07	6750	6550	0.204	0.100	0.0134	0.0050	0.520	0.440	29.8	10.0	0.0155	0.0155	882	846	1.51	0.425	0.000169	0.890	0.843	0.100	0.100
Mean	6120	6040	0.20	0.158	0.0154	0.0149	0.596	0.517	22.8	12.0	0.0213	0.042	851	852	1.39	0.468	0.000297	0.825	0.79	0.203	0.217
Median	6040	5910	0.211	0.100	0.0146	0.0152	0.560	0.509	20.6	10.0	0.0155	0.031	840	843	1.35	0.464	0.000169	0.820	0.78	0.222	0.241
St. Deviation	620	720	0.119	0.137	0.0061	0.0071	0.123	0.084	11.5	8	0.0134	0.038	63	77	0.34	0.166	0.000146	0.085	0.12	0.072	0.099
# of values	12	12	12	11	12	11	12	9	12	12	12	8	12	12	12	12	11	12	12	12	7
Minimum	5130	4560	0.050	0.050	0.0050	0.0050	0.480	0.440	10.0	3.1	0.0155	0.0155	752	747	0.999	0.268	0.000169	0.718	0.587	0.1	0.100
Maximum	7230	7280	0.431	0.456	0.026	0.027	0.886	0.714	47.5	27.3	0.050	0.126	970	992	1.97	0.805	0.0004495	0.995	1.01	0.296	0.349
% of values undetected			33%	50%	17%	25%			17%	50%	100%	50%					100%			25%	17%
# of values between MDL and MRL			1	2	3	2			4	4		1								1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.02	1.94	1000	1000	0.33	0.34	NA	NA	NA	NA	0.012	NA	NA	11.49	11.46
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1A																	
Sample Date																	
05/26/05	514	428	0.0775	0.0775	951	0.0031	0.0031	1690	1600	0.0031	0.0031	0.031	0.031	0.10	0.20	0.2325	0.97
06/15/05	522	551	0.25	0.0775	885	0.0031	0.0031	1630	1790	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	
07/31/05	542	573	0.0775	0.0775	985	0.0031	0.0031	1690	1800	0.0031	0.0031	0.031	0.031	0.10	0.10	13.4	
08/14/05	534	508	0.0775	0.0775	1160	0.0031	0.0031	1450	1460	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	1.89
09/28/05	608	576	0.0775	0.0775	1210	0.0031	0.0031	1820	1800	0.0031	0.0031	0.031	0.031	0.10	0.10	0.921	1.69
10/13/05	517	516	0.0775	0.0775	1460	0.0031	0.0031	1650	1600	0.0031	0.0031	0.031	0.031	0.529	0.432	0.2325	0.75
05/30/07	580	607	0.155	0.155	1440	0.0031	0.0031	1530	1620	0.0050	0.0050	0.050	0.050	0.155	0.155	1.60	
06/12/07	531	533	0.155	0.155	1050	0.0070	0.0031	1590	1570	0.0142	0.0116	0.050	0.050	0.155	0.155	1.62	0.50
07/18/07	634	615	0.155	0.155	1280	0.0031	0.0031	1840	1810	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50
08/20/07	533	501	0.155	0.155	1050	0.0031	0.0031	1600	1520	0.0050	0.0116	0.050	0.050	0.155	0.155	1.08	
09/21/07	680	686	0.155	0.155	1850	0.0031	0.0031	1580	1590	0.0050	0.0050	0.050	0.050	0.155	0.155	1.02	1.06
10/09/07	604	580	0.155	0.155	1410	0.0031	0.0031	1750	1680	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50
Mean	567	556	0.131	0.116	1230	0.0034	0.0031	1650	1650	0.0050	0.0050	0.04	0.04	0.163	0.172	1.88	0.98
Median	538	562	0.155	0.116	1190	0.0031	0.0031	1640	1610	0.0040	0.0040	0.04	0.04	0.155	0.155	0.84	0.86
St. Deviation	54	66	0.054	0.04	280	0.0011	0	110	120	0.003	0.003	0.01	0.01	0.118	0.089	3.65	0.55
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	8
Minimum	514	428	0.0775	0.0775	885	0.0031	0.0031	1450	1460	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.5
Maximum	680	686	0.25	0.155	1850	0.007	0.0031	1840	1810	0.0142	0.0116	0.05	0.05	0.529	0.432	13.4	1.89
% of values undetected			100%	100%		92%	100%			92%	83%	100%	100%	92%	92%	50%	33%
# of values between MDL and MRL						1				1	2					1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.19	0.16	NA	NA	NA	NA	NA	NA	NA	NA	26.3	26.0
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: RB1B																	
	Sample Date																
	05/26/05	17.8	6.90	8.38	15.0	0.20	0.785	14.0	0.080			0.0155	0.0011		1.61	0.047	5.93
	06/15/05	17.4	7.08	10.6	18.8	0.40	0.785	14.5	0.080			0.0155	0.00155		1.14	0.037	4.11
	07/31/05	18.0	6.69	12.31	21.3	0.421	2.25	12.0	1.66			0.0155	0.00165		1.07	0.050	4.17
	08/14/05	17.0	7.43	14.99	21.3	0.30	0.785	16.0	0.166			0.0155	0.010		0.957	0.038	3.88
	09/28/05	19.3	7.17	10.18	38.8	0.075	0.785	15.5	0.0785			0.05	0.00165		1.03	0.038	4.16
	10/13/05	18.4		7.42	20.0	0.20	0.785	16.0	0.139			0.05	0.0057		0.97	0.064	4.34
	05/30/07	19.3	6.73	5.41	31.3	0.0775	1.57	13.5	0.0995			0.0155	0.0104		0.936	0.0600	4.00
	06/12/07	18.5	7.22	6.56	37.5	0.0925	1.57	18.0	0.170			0.050	0.0050		1.02	0.0860	4.25
	07/18/07	20.1	6.45	10.76	38.8	0.505	1.57	16.4	0.050			0.0155	0.0304		0.943	0.0530	3.92
	08/20/07	19.6	6.65	12.3	17.5	0.426	1.57	15.6	0.112			0.0155	0.00155		0.860	0.0450	3.72
	09/21/07	22.6	6.98	10.76	37.5	0.521	1.57	16.9	0.151			0.0868	0.00155		0.696	0.0440	4.38
	10/09/07	20.5	6.83	6.78	22.5	0.078	1.57	15.5	0.210			0.107	0.00155		0.850	0.0340	3.74
	Mean	19.0	6.92	9.70	26.7	0.27	1.3	15.3	0.25	NA	NA	0.038	0.0060	NA	1.01	0.050	4.22
	Median	18.9	6.90	10.39	21.9	0.25	1.57	15.6	0.13	NA	NA	0.016	0.0017	NA	0.96	0.046	4.14
	St. Deviation	1.6	0.29	2.84	9.3	0.17	0.49	1.6	0.45	NA	NA	0.032	0.0084	NA	0.22	0.015	0.58
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	17.0	6.5	5.41	15.0	0.075	0.785	12.0	0.050	NA	NA	0.0155	0.0011	NA	0.696	0.034	3.72
	Maximum	22.6	7.43	14.99	38.8	0.521	2.25	18.0	1.66	NA	NA	0.107	0.0304	NA	1.61	0.086	5.93
	% of values undetected					33%	92%		8%			83%	75%				
	# of values between MDL and MRL					6	1	1	4			1	1			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.62	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	9%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d
Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1B																				
Sample Date																				
05/26/05	0.00125	0.00125	0.50		9.44	2.55	0.0358		0.405	0.125	5.22	4.49	0.0075	0.0282	0.0096		1.55	5.3	0.0242	0.0156
06/15/05	0.00125	0.00125	0.50		4.07	1.0	0.0608	0.018	0.125	0.125	5.56	3.25	0.0075	0.0075	0.0394	0.00155	1.55	1.55	0.025	0.00775
07/31/05	0.00125	0.00125	0.50		6.32	2.32	0.0312	0.030	0.125	0.125	5.48	5.03	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/14/05	0.00125	0.00125	0.50		14.8	4.84	0.0052		0.125	0.125	5.34	5.98	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.00775
09/28/05	0.00125	0.00125	0.50		18	4.12	0.0252	0.026	0.302	0.125	5.83	6.64	0.0075	0.0075	0.00155	0.00155	4.2	1.55	0.0312	0.00775
10/13/05	0.00125	0.00125	0.50		11.8	5.41	0.0318	0.0318	0.25	0.25	5.58	5.86	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
05/30/07	0.00075	0.00075	0.155		7.06	3.26	0.0250	0.0250	0.155	0.155	6.05	6.25	0.0125	0.0125	0.0075	0.0075	2.92	3.74	0.0075	0.0075
06/12/07	0.00075	0.00075	0.155	0.954	6.05	2.49	0.0378	0.0404	0.155	0.155	5.98	6.34	0.0125	0.0125	0.0075	0.0075	3.00	4.07	0.0075	0.0075
07/18/07	0.00075	0.00075	0.155		6.57	3.10	0.0250	0.0250	0.155	0.155	6.27	6.35	0.0125	0.0125	0.0075	0.0075	4.54	4.72	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		9.22	3.79	0.0228	0.0244	0.155	0.155	8.38	5.75	0.0125	0.0125	0.0075	0.0075	4.11	3.85	0.0202	0.0075
09/21/07	0.00075	0.00075	0.155	0.581	34.3	6.65	0.0298	0.0318	0.155	0.155	7.91	7.19	0.0125	0.0125	0.0075	0.0075	3.45	2.92	0.0075	0.0075
10/09/07	0.00075	0.00075	0.155		13.4	5.25	0.0286	0.0356	0.155	0.155	6.27	6.27	0.0125	0.0125	0.0075	0.0075	3.31	3.32	0.0075	0.0075
Mean	0.0010	0.0010	0.33	0.768	11.8	3.73	0.0299	0.029	0.189	0.15	6.16	5.78	0.010	0.0117	0.0080	0.0048	3.35	3.55	0.013	0.0080
Median	0.0010	0.0010	0.33	0.768	9.3	3.53	0.0292	0.028	0.155	0.155	5.91	6.12	0.010	0.0125	0.0080	0.0075	3.38	3.80	0.0080	0.0080
St. Deviation	0.0003	0.0003	0.18	0.264	8.2	1.6	0.0128	0.006	0.087	0.035	0.99	1.07	0.003	0.0058	0.01	0.0031	1.29	1.4	0.009	0.002
# of values	12	12	12	2	12	12	12	10	12	12	12	12	12	12	12	11	12	12	12	12
Minimum	0.00075	0.00075	0.155	0.581	4.07	1.0	0.0052	0.018	0.125	0.125	5.22	3.25	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.00125	0.00125	0.50	0.954	34.3	6.65	0.0608	0.0404	0.405	0.25	8.38	7.19	0.0125	0.0282	0.0394	0.0075	5.0	5.3	0.0312	0.0156
% of values undetected	100%	100%	100%			8%	17%	17%	83%	100%			100%	92%	83%	92%	42%	42%	75%	92%
# of values between MDL and MRL							5	4	2					1	1		7	7	3	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.074	0.072
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1B																					
Sample Date																					
05/26/05	5730	4530	0.227	0.031	0.0180		0.522	0.337	10.0	10.0	0.050		849	744	1.03	0.459	0.000147	0.881	0.656	0.256	
06/15/05	5550	3840	0.253	0.100	0.0298	0.00155	0.516		11.9	3.1	0.0155	0.0814	853	546	1.09	0.304	0.000450	1.16	0.439	0.212	
07/31/05	5830	5900	0.100	0.100	0.0146	0.0106	0.553		10.6	8.34	0.0155		834	831	1.97	0.801	0.000450	0.788	0.789	0.22	
08/14/05	5570	6290	0.031		0.0244	0.0180	0.591	0.577	25.6	7.62	0.0155		759	908	1.42	0.289	0.000450	0.657	0.752	0.245	
09/28/05	6280	6280	0.209		0.0246	0.0242	0.557	0.529	23.0		0.0155		868	857	1.67	0.461	0.000450	0.759	0.748	0.295	
10/13/05	6040	6310	0.296		0.023	0.0288	0.516	0.478	20.5	12.7	0.0155		815	923	1.42	0.424	0.000450	0.711	0.787	0.279	
05/30/07	6280	6290	0.100	0.100	0.0112	0.0116	0.492	0.488	23.8	18.0	0.0155	0.0155	882	928	0.990	0.395	0.000169	0.873	0.895	0.100	0.100
06/12/07	6000	6580	0.281	0.100	0.0118	0.0150	0.593	0.520	21.9	16.0	0.050	0.050	844	990	0.986	0.512	0.000169	0.873	0.884	0.260	0.252
07/18/07	6510	6610	0.050	0.050	0.0100	0.0100	0.535	0.431	32.3	25.6	0.0155	0.0155	927	986	1.22	0.377	0.000169	0.887	0.876	0.250	0.402
08/20/07	6470	6140	0.291	0.313	0.0322	0.0108	0.569		10.0	10.0	0.564	0.0155	846	809	1.49	0.293	0.000169	0.817	0.796	0.183	0.200
09/21/07	7460	6920	0.219	0.100	0.0192	0.0100	0.649	0.594	44.8	16.4	0.050	0.0155	972	920	1.94	0.300	0.0025	1.02	0.944	0.100	0.215
10/09/07	6770	6670	0.050	0.100	0.0136	0.0050	0.564	0.492	24.9	10.0	0.0155	0.0155	868	899	1.47	0.409	0.000169	0.855	0.846	0.100	0.242
Mean	6210	6030	0.176	0.110	0.0194	0.0132	0.555	0.494	21.6	12.5	0.070	0.030	860	862	1.39	0.419	0.00048	0.860	0.784	0.21	0.235
Median	6160	6290	0.214	0.100	0.0186	0.0108	0.555	0.492	22.5	10.0	0.016	0.016	851	904	1.42	0.402	0.00031	0.860	0.793	0.23	0.229
St. Deviation	550	910	0.102	0.08	0.0074	0.0079	0.043	0.077	10.3	6.1	0.156	0.026	53	122	0.34	0.142	0.00065	0.13	0.134	0.07	0.098
# of values	12	12	12	9	12	11	12	9	12	11	12	7	12	12	12	12	12	12	12	12	6
Minimum	5550	3840	0.031	0.031	0.01	0.00155	0.492	0.337	10.0	3.1	0.0155	0.0155	759	546	0.986	0.289	0.000147	0.657	0.439	0.1	0.1
Maximum	7460	6920	0.296	0.313	0.0322	0.0288	0.649	0.594	44.8	25.6	0.564	0.0814	972	990	1.97	0.801	0.0025	1.16	0.944	0.295	0.402
% of values undetected			42%	67%	8%	25%			17%	33%	92%	50%					100%			25%	8%
# of values between MDL and MRL					4	4			2	6		1								1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.08	1.99	1000	1000	0.34	0.35	NA	NA	NA	NA	0.012	NA	NA	11.78	11.74
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1B																		
Sample Date																		
05/26/05	536	420	0.0775	0.0775	963	0.0031	0.0031	1760	1580	0.0031	0.0031	0.031	0.0692	0.10	0.20	0.233	0.601	
06/15/05	540	347	0.25	0.0775	893	0.0031	0.0031	1780	1150	0.0031	0.0031	0.031	0.031	0.10	0.272	8.18	0.75	
07/31/05	563	558	0.0775	0.0775	989	0.0031	0.0031	1740	1750	0.0031	0.0031	0.031	0.031	0.225	0.10	11.1		
08/14/05	503	606	0.0775	0.0775	1140	0.0031	0.0031	1430		0.0031	0.0031	0.031	0.031	0.10	0.10	0.75		
09/28/05	589	545	0.0775	0.0775	1230	0.0031	0.0031	1780	1700	0.0031	0.0031	0.031	0.031	0.10	0.10	1.2	0.949	
10/13/05	533	601	0.0775	0.165	1430	0.0031	0.0031	1590	1760	0.0031	0.0031	0.031	0.031	0.10	0.20	0.75	1.51	
05/30/07	612	582	0.155	0.155	1310	0.0031	0.0031	1640	1670	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50		
06/12/07	553	624	0.155	0.155	1320	0.0031	0.0031	1580	1880	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.25	
07/18/07	603	617	0.155	0.155	1300	0.0031	0.0031	1750	1810	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50	
08/20/07	568	538	0.155	0.155	1130	0.0031	0.0031	1690	1620	0.0050	0.0050	0.050	0.050	0.155	0.155	2.03	3.01	
09/21/07	695	641	0.155	0.155	1620	0.0031	0.0031	1720	1590	0.0050	0.0050	0.050	0.050	0.155	0.155	1.15	1.22	
10/09/07	593	592	0.155	0.155	1370	0.0031	0.0031	1710	1710	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50	
Mean	574	556	0.131	0.124	1220	0.0031	0.0031	1680	1660	0.0040	0.0040	0.040	0.040	0.138	0.159	2.28	1.14	
Median	566	587	0.155	0.155	1270	0.0031	0.0031	1720	1700	0.0040	0.0040	0.040	0.050	0.155	0.155	0.75	0.95	
St. Deviation	50	88	0.054	0.041	210	0	0	100	190	0.001	0.001	0.01	0.01	0.039	0.049	3.52	0.79	
# of values	12	12	12	12	12	12	12	12	11	12	12	12	12	12	12	12	9	
Minimum	503	347	0.0775	0.0775	893	0.0031	0.0031	1430	1150	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.50	
Maximum	695	641	0.25	0.165	1620	0.0031	0.0031	1780	1880	0.0050	0.0050	0.050	0.0692	0.225	0.272	11.1	3.01	
% of values undetected			100%	92%		100%	100%			100%	100%	100%	92%	92%	92%	58%	25%	
# of values between MDL and MRL				1									1	1	1	1	2	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.20	0.17	NA	NA	NA	NA	NA	NA	NA	NA	27.0	26.6	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: RB1C																	
	Sample Date																
	05/26/05	17.3	6.82	6.76	20.0	0.20	1.63	15.0	0.090			0.0155	0.0011		1.07	0.035	3.92
	06/15/05	18.1	6.95	6.46	26.3	0.70	0.785	16.0	0.0845			0.0155	0.00155		1.13	0.037	4.01
	07/31/05	17.9	6.70	11	22.5	0.309	0.785	15.0	0.172			0.0155	0.062		1.06	0.042	4.01
	08/14/05	17.1	7.38	14.21	17.5	0.30	0.785	16.0	0.0155			0.0155	0.042		0.942	0.036	3.90
	09/28/05	19.6	6.91	9.46	35.0	0.60	0.785	16.0	0.0965			0.050	0.00165		1.03	0.04	4.04
	10/13/05	19.0		7.13	40.0	0.306	0.785	17.0	0.105			0.050	0.0057		0.971	0.064	4.33
	05/30/07	18.2	6.47	4.81	27.5	6.26	1.57	15.0	0.113			0.0155	0.0050		1.02	0.0570	4.01
	06/12/07	18.0	7.16	5.28	38.8	0.2525	1.57	17.0	0.0785			0.050	0.0181		1.03	0.0850	4.19
	07/18/07	20.4	6.25	9.5	25.0	1.56	1.57	16.2	0.106			0.0155	0.0050		0.980	0.0560	3.92
	08/20/07	19.6	6.53	12.29	20.0	0.0775	1.57	15.7	0.0735			0.0155	0.00155		0.868	0.0400	3.75
	09/21/07	19.9	6.99	10.73	38.8	0.515	1.57	16.9	0.127			0.0155	0.00155		0.727	0.0440	4.33
	10/09/07	20.4	6.79	6.51	22.5	0.0805	1.57	16.1	0.168			0.0155	0.00155		0.860	0.0320	3.74
	Mean	18.8	6.81	8.68	27.8	0.93	1.25	16.0	0.102	NA	NA	0.024	0.012	NA	0.970	0.047	4.01
	Median	18.6	6.82	8.30	25.7	0.31	1.57	16.0	0.101	NA	NA	0.016	0.0030	NA	1.00	0.041	4.01
	St. Deviation	1.2	0.32	2.97	8.2	1.73	0.41	1	0.042	NA	NA	0.0156	0.02	NA	0.11	0.015	0.19
	# of values	12	11	12	12	12	12	12	12	0	0	12	12	0	12	12	12
	Minimum	17.1	6.25	4.81	17.5	0.0775	0.785	15.0	0.0155	NA	NA	0.0155	0.0011	NA	0.727	0.032	3.74
	Maximum	20.4	7.38	14.21	40.0	6.26	1.63	17.0	0.172	NA	NA	0.050	0.062	NA	1.13	0.085	4.33
	% of values undetected					25%	92%		8%			100%	67%				
	# of values between MDL and MRL					4	1	1	5				1			12	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.78	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	18%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d		
					Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1C																				
Sample Date																				
05/26/05	0.00125	0.00125	0.50		6.88	2.34	0.0350	0.0304	0.125	0.125	5.14	4.73	0.0075	0.0075	0.00155	0.00155	1.55	3.4	0.033	0.00775
06/15/05	0.00125	0.0030	0.50		6.54	0.31	0.0462	0.0206	0.125	0.125	5.84	3.29	0.0075	0.0075	0.0096	0.00155	1.55	1.55	0.025	0.00775
07/31/05	0.00125	0.00125	0.50		7.21	3.63	0.0302	0.0280	0.125	0.125	5.44	5.05	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/14/05	0.00125	0.0025	0.50		19.5	6.53	0.0090		0.125	0.125	5.43	5.87	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.00775	0.00775
09/28/05	0.00125	0.00125	0.50		23.1	5.86	0.025	0.0210	0.125	0.407	5.69	5.69	0.0075	0.0075	0.00155	0.00155	6.2	1.55	0.0308	0.00775
10/13/05	0.00125	0.00125	0.50		13.6	5.81	0.032	0.0316	0.250	0.125	5.60	5.72	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
05/30/07	0.00075	0.00075	0.155		48.1	2.34	0.0250	0.0250	0.155	0.155	6.72	6.24	0.0125	0.0125	0.0075	0.0075	2.81	3.29	0.0075	0.0075
06/12/07	0.00075	0.00075	0.155	0.909	5.49	2.25	0.0370	0.0424	0.155	0.155	5.71	6.36	0.0125	0.0125	0.0075	0.0075	2.89	4.09	0.0075	0.0075
07/18/07	0.00075	0.00075	0.155		25.2	2.46	0.0250	0.0250	0.155	0.155	6.68	6.29	0.0125	0.0125	0.0075	0.0075	4.59	4.60	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		7.87	2.93	0.0210	0.0218	0.155	0.155	6.00	5.97	0.0125	0.0125	0.0075	0.0075	4.21	4.20	0.0240	0.0075
09/21/07	0.00075	0.00075	0.155	0.462	28.6	7.56	0.0202	0.0350	0.155	0.155	6.74	7.31	0.0125	0.0125	0.0075	0.0075	2.89	3.33	0.0075	0.0160
10/09/07	0.00075	0.00075	0.155		13.3	5.03	0.0308	0.0338	0.155	0.155	6.21	6.36	0.0125	0.0125	0.0075	0.0075	3.31	3.41	0.0075	0.0075
Mean	0.0010	0.0013	0.33	0.686	17.1	3.92	0.0280	0.029	0.150	0.164	5.93	5.74	0.010	0.010	0.0052	0.0045	3.46	3.13	0.014	0.0080
Median	0.0010	0.001	0.33	0.686	13.5	3.28	0.0280	0.028	0.155	0.155	5.78	5.92	0.010	0.010	0.0075	0.0045	3.10	3.37	0.0080	0.0080
St. Deviation	0.0003	0.0007	0.18	0.316	12.7	2.19	0.009	0.007	0.035	0.078	0.54	1.02	0.003	0.003	0.0033	0.0031	1.54	1.28	0.01	0.002
# of values	12	12	12	2	12	12	12	11	12	12	12	12	12	12	12	12	12	12	12	12
Minimum	0.00075	0.00075	0.16	0.462	5.49	0.31	0.0090	0.0206	0.125	0.125	5.14	3.29	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.00125	0.0030	0.50	0.909	48.1	7.56	0.0462	0.0424	0.250	0.407	6.74	7.31	0.0125	0.0125	0.0096	0.0075	6.20	5.00	0.033	0.016
% of values undetected	100%	92%	100%			8%	17%	17%	100%	92%			100%	100%	92%	100%	42%	42%	75%	92%
# of values between MDL and MRL		1		1			5	4		1					1		7	7	3	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.073	0.072
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1C																					
Sample Date																					
05/26/05	5590	4800	0.238	0.139	0.0216	0.0114	0.705	0.399	10.0	10.0	0.050		813	763	1.06	0.460		0.725	0.627	0.281	
06/15/05	5810	4000	0.373	0.100	0.0202	0.00155	0.673	0.471	37.5	3.10	0.0408	0.0822	881	553	1.21	0.218	0.000450	0.815	0.404	0.243	
07/31/05	5790	5890	0.100	0.100	0.0414	0.0112	0.511	0.542	9.93	14.6	0.0155		843	856	1.28	0.545	0.000450	0.770	0.827	2.27	0.375
08/14/05	5610	6230	0.031		0.0252	0.0198	0.512	0.605	14.6	6.66	0.0155	0.119	757	873	1.24	0.239	0.00111	0.690	0.729	0.242	
09/28/05	6400	6500	0.238		0.0274	0.0224	0.547	0.474	39.9	11.7	0.0155		883	887	2.34	0.556	0.000450	0.731	0.742	0.296	
10/13/05	6230	6230	0.290		0.0308	0.0252	0.579	0.550	25.9		0.0155		826	884	1.61	0.632	0.000450	0.696	0.772	0.278	
05/30/07	5930	6430	0.238	0.300	0.0260	0.0112	0.606	0.532	62.1	16.0	0.050	0.050	828	924	4.21	0.320	0.000169	0.701		0.100	0.100
06/12/07	5860	6640	0.237	0.337	0.0126	0.0130	0.582		20.5	15.5	0.0155	0.050	827	1010	0.940	0.466	0.000169	0.824	0.882	0.240	0.267
07/18/07	6620	6600	0.050	0.050	0.0248	0.0100	0.580	0.404	50.0	25.6	0.050	0.0155	945	987	2.19	0.332	0.000169	0.883	0.884	0.277	0.359
08/20/07	6440	6310	0.277	0.363	0.0152	0.0112	0.554	0.480	10.0	10.0	0.0312	0.0462	844	842	1.46	0.285	0.000169	0.818	0.844	0.219	0.198
09/21/07	6540	7340	0.100	0.100	0.0144	0.0106	0.547	0.534	36.8	18.1	0.0155	0.0155	861	972	1.68	0.334	0.0025	0.865	0.972	0.100	0.290
10/09/07	6730	6820	0.050	0.050	0.0134	0.0138	0.602	0.544	26.2	10.0	0.0155	0.0155	877	925	1.55	0.375	0.00115	0.848	0.841	0.100	0.218
Mean	6130	6150	0.190	0.171	0.0228	0.0134	0.583	0.503	28.6	12.8	0.0275	0.049	849	870	1.73	0.397	0.00066	0.781	0.775	0.390	0.258
Median	6080	6370	0.240	0.100	0.0232	0.0113	0.580	0.532	26.1	11.7	0.0155	0.048	844	890	1.51	0.355	0.00045	0.793	0.827	0.240	0.267
St. Deviation	410	910	0.11	0.126	0.0084	0.0063	0.058	0.064	17	6.1	0.0157	0.037	46	120	0.89	0.133	0.0007	0.07	0.154	0.6	0.096
# of values	12	12	12	9	12	12	12	11	12	11	12	8	12	12	12	12	11	12	11	12	7
Minimum	5590	4000	0.031	0.050	0.0126	0.00155	0.511	0.399	9.93	3.1	0.0155	0.0155	757	553	0.940	0.218	0.000169	0.690	0.404	0.100	0.100
Maximum	6730	7340	0.373	0.363	0.0414	0.0252	0.705	0.605	62.1	25.6	0.050	0.119	945	1010	4.21	0.632	0.0025	0.883	0.972	2.27	0.375
% of values undetected			42%	42%		17%			17%	33%	83%	42%					82%			25%	8%
# of values between MDL and MRL				1	4	5			2	6	2	2					2				1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.07	1.99	1000	1000	0.34	0.35	NA	NA	NA	NA	0.012	NA	NA	11.77	11.74
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: RB1C																		
Sample Date																		
05/26/05	524	445	0.0775	0.0775	939	0.0031	0.0031	1680	1610	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233	
06/15/05	563	358	0.25	0.0775	872	0.0031	0.0031	1830	1170	0.0031	0.0031	0.031	0.031	0.10	0.31	2.55		
07/31/05	555	563	0.0775	0.0775	1010	0.0031	0.0031	1740	1770	0.0031	0.0031	0.031	0.031	0.10	0.10	14.4		
08/14/05	518	633	0.0775	0.0775	1180	0.0031	0.0031	1410	1690	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75		
09/28/05	578	560	0.0775	0.0775	1330	0.0031	0.0031	1800	1770	0.0031	0.0031	0.031	0.031	0.215	0.10	0.656	0.948	
10/13/05	549	598	0.0775	0.0775	1390	0.0031	0.0031	1620	1800	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	1.57	
05/30/07	547	584	0.155	0.155	1260	0.0031	0.0031	1560	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.75	
06/12/07	540	626	0.155	0.155	1270	0.0031	0.0031	1580	1870	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50	
07/18/07	613	624	0.155	0.155	1280	0.0031	0.0031	1790	1830	0.0050	0.0050	0.050	0.050	0.155	0.155	1.05	0.50	
08/20/07	565	553	0.155	0.155	1180	0.0031	0.0031	1690	1670	0.0050	0.0050	0.050	0.050	0.155	0.155	1.96	1.86	
09/21/07	606	673	0.155	0.155	1690	0.0031	0.0031	1520	1700	0.0050	0.0050	0.050	0.050	0.155	0.155	1.96	1.30	
10/09/07	597	602	0.155	0.155	1390	0.0031	0.0031	1740	1770	0.0050	0.0050	0.050	0.050	0.155	0.155	1.86	0.50	
Mean	563	568	0.13	0.116	1230	0.0031	0.0031	1660	1700	0.0040	0.0040	0.040	0.040	0.14	0.15	2.22	1.02	
Median	559	591	0.16	0.116	1270	0.0031	0.0031	1690	1740	0.0040	0.0040	0.040	0.040	0.16	0.16	0.90	0.95	
St. Deviation	31	87	0.054	0.04	220	0	0	130	180	0.001	0.001	0.01	0.01	0.037	0.06	3.91	0.62	
# of values	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	9	
Minimum	518	358	0.0775	0.0775	872	0.0031	0.0031	1410	1170	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233	
Maximum	613	673	0.25	0.155	1690	0.0031	0.0031	1830	1870	0.0050	0.0050	0.050	0.050	0.22	0.31	14.4	1.86	
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	92%	92%	42%	33%	
# of values between MDL and MRL														1	1	1	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.20	0.17	NA	NA	NA	NA	NA	NA	NA	NA	27.0	26.6	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: UT1A																	
	Sample Date																
	05/26/05	17.5	7.20	7.54	22.5	0.5	0.785	15.0	0.080			0.0155	0.0011		1.04	0.035	3.92
	06/15/05	16.7	7.34	7.97	27.5	0.6	0.785	15.5	0.0455			0.0155	0.0022		1.16	0.037	4.02
	08/01/05	19.3	7.06	11.63	25.0	0.4	0.785	16.0	0.0875			0.0155	0.00165		1.09	0.04	3.77
	08/12/05	16.4	6.93	16.28	26.3	0.075	0.785	15.0	0.0715			0.0155	0.010		1.12	0.04	3.81
	08/14/05																
	10/13/05	18.1		8.24	28.8	0.0765	0.785	17.0	0.078			0.050	0.0057		1.08	0.06	4.14
	05/30/07	18.9	6.75	4.05	25.0	0.1625	1.57	15.0	0.0665			0.0155	0.0261		1.12	0.0610	4.16
	06/12/07	17.7	7.17	7.23	27.5	0.600	1.57	16.0	0.168			0.0355	0.00155		1.05	0.0820	4.17
	07/18/07	18.3			25.0	0.235	1.57	15.7	0.050			0.0155	0.0050		1.10	0.0520	3.68
	08/20/07	17.3	6.58	12.35	23.8	0.309	1.57	16.0	0.176			0.0155	0.0060		0.825	0.0360	3.88
	10/09/07	19.8	7.11	8.34	25.0	0.333	1.57	15.8	0.125			0.0155	0.00155		0.968	0.0420	3.68
	Mean	18.0	7.02	9.29	25.6	0.33	1.18	16.0	0.095	NA	NA	0.021	0.0060	NA	1.06	0.049	3.92
	Median	17.9	7.09	8.24	25.0	0.32	1.18	16.0	0.079	NA	NA	0.016	0.0040	NA	1.09	0.041	3.90
	St. Deviation	1.1	0.25	3.57	1.9	0.2	0.41	1	0.046	NA	NA	0.012	0.008	NA	0.1	0.015	0.19
	# of values	10	8	9	10	10	10	10	10	0	0	10	10	0	10	10	10
	Minimum	16.4	6.58	4.05	22.5	0.075	0.785	15.0	0.0455	NA	NA	0.0155	0.0011	NA	0.825	0.035	3.68
	Maximum	19.8	7.34	16.28	28.8	0.6	1.57	17.0	0.176	NA	NA	0.050	0.0261	NA	1.16	0.082	4.17
	% of values undetected					30%	100%		10%			90%	70%				
	# of values between MDL and MRL					5		1	6			1	2			10	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.52	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%

**2004-2007 Iliamna Lake Study
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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d
					Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1A																				
Sample Date																				
05/26/05	0.00125	0.00125	0.50		10.4		0.0274	0.0284	0.125	0.125	5.13		0.0075	0.0075	0.00155	0.00155	1.55		0.0286	0.0498
06/15/05	0.00125	0.00125	0.50		4.90	1.00	0.0366	0.0364	0.403	0.125	5.45	5.35	0.0075	0.0075	0.0218	0.00155	1.55	1.55	0.025	0.025
08/01/05	0.00125	0.00125	0.50		8.64	2.85	0.0214	0.0312	0.354	0.461	5.10	4.97	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/12/05	0.00125	0.00125	0.50		4.32	2.35	0.0146	0.0120	0.125	0.25	4.82	4.98	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
08/14/05																				
10/13/05	0.00125	0.00125	0.50		4.76	2.7	0.0284	0.0348	0.511	0.25	5.06	5.35	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
05/30/07	0.00075	0.00075	0.155		2.54	1.00	0.0504	0.0250	0.155	0.155	5.78	6.62	0.0125	0.0125	0.0075	0.0075	3.10	4.02	0.0075	0.0075
06/12/07	0.00075	0.00075	0.155	1.01	6.38	2.61	0.0344	0.0448	0.155	0.155	5.32	5.97	0.0125	0.0125	0.0075	0.0075	3.19	3.81	0.0075	0.0075
07/18/07	0.00075	0.00075	0.155		2.21	1.00	0.0250	0.0250	0.155	0.155	5.31	5.69	0.0125	0.0125	0.0075	0.0075	4.55	4.44	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		11.4	4.61	0.0208	0.0380	0.155	0.155	5.67	6.90	0.0125	0.0125	0.0075	0.0075	3.67	3.94	0.0075	0.0075
10/09/07	0.00075	0.00075	0.50	0.619	5.70	1.00	0.0268	0.0284	0.155	0.155	5.74	5.69	0.0125	0.0125	0.0075	0.0075	3.35	3.34	0.0075	0.0075
Mean	0.0010	0.0010	0.36	0.81	6.10	2.12	0.0286	0.0304	0.229	0.199	5.34	5.72	0.010	0.010	0.0070	0.0045	3.60	3.24	0.011	0.014
Median	0.0010	0.0010	0.5	0.81	5.30	2.35	0.0271	0.0298	0.155	0.155	5.32	5.69	0.010	0.010	0.0080	0.0045	3.51	3.81	0.0080	0.0080
St. Deviation	0.0003	0.0003	0.18	0.28	3.1	1.24	0.01	0.009	0.139	0.102	0.32	0.676	0.003	0.003	0.006	0.0031	1.32	1.35	0.008	0.014
# of values	10	10	10	2	10	9	10	10	10	10	10	9	10	10	10	10	10	9	10	10
Minimum	0.00075	0.00075	0.155	0.619	2.21	1.00	0.0146	0.0120	0.125	0.125	4.82	4.97	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.00125	0.00125	0.5	1.01	11.4	4.61	0.0504	0.0448	0.511	0.461	5.78	6.90	0.0125	0.0125	0.0218	0.0075	5.00	5	0.0286	0.0498
% of values undetected	100%	100%	100%			40%	10%	20%	70%	90%			100%	100%	90%	100%	50%	40%	90%	90%
# of values between MDL and MRL							3	3	2	1							5	5	1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.071	0.070
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1A																					
Sample Date																					
05/26/05	5630	5480	0.290	0.337	0.0156		0.523	0.590	10.0	10.0	0.050		843	813	1.12	0.767		0.684	0.581	0.278	
06/15/05	5370	5830	0.302	0.333	0.0190	0.0138	0.466	0.378	8.01	6.45	0.0155	0.126	799	848	0.877	0.351	0.000450	1.11	0.733	0.231	
08/01/05	6240	6110	0.100	0.100	0.0184	0.0176	0.423		23.6	8.53	0.0155		896	932	2.48	1.29	0.000450	0.711	0.708	0.209	
08/12/05	5380	5370	0.156	0.031	0.0216	0.0260	0.537	0.443	7.93	3.10	0.0155		724	765	0.674	0.437		0.639	0.626	0.228	
08/14/05																	0.000450				
10/13/05	5900	5900	0.340	0.51	0.0308	0.0258	0.429	0.331	6.80	11	0.0155		816	878	1.20	0.100	0.000450	0.638	0.744	0.272	
05/30/07	6120	6550	0.361	0.100	0.0112	0.0120	0.483	0.516	15.0	15.1	0.0155	0.050	872	995	0.810	0.516	0.000169	0.822	0.837	0.100	0.226
06/12/07	5670	6430	0.100	0.100	0.0104	0.0154	0.433	0.458	17.6	16.4	0.0155	0.0155	862	1050	1.05	0.596	0.000169	0.778	0.846	0.202	0.310
07/18/07	5980	6320	0.194	0.340	0.0100	0.0100	0.456		10.0	20.8	0.0155	0.050	827	876	0.809	0.302	0.000169	0.758	0.814	0.234	
08/20/07	5650	6850	0.100		0.0120	0.0142	0.471		10.0	10.0	0.0155	2.18	772	889	1.25	0.256	0.000169	0.788	0.901	0.160	0.185
10/09/07	6510	6360	0.050	0.100	0.0104	0.0050	0.437	0.415	10.0	10.0	0.0155	0.0386	858	884	1.53	0.125	0.000169	0.812	0.780	0.100	0.225
Mean	5850	6120	0.200	0.217	0.0159	0.0155	0.466	0.447	12.0	11.0	0.019	0.410	827	890	1.18	0.470	0.00029	0.770	0.757	0.201	0.237
Median	5790	6220	0.180	0.100	0.0138	0.0142	0.461	0.443	10.0	10.0	0.0155	0.050	835	880	1.09	0.390	0.00017	0.770	0.762	0.219	0.226
St. Deviation	370	470	0.11	0.165	0.0067	0.0069	0.039	0.086	5	5	0.0109	0.868	51	80	0.52	0.35	0.000148	0.14	0.1	0.063	0.053
# of values	10	10	10	9	10	9	10	7	10	10	10	6	10	10	10	10	9	10	10	10	4
Minimum	5370	5370	0.050	0.031	0.0100	0.0050	0.423	0.331	6.80	3.10	0.0155	0.0155	724	765	0.674	0.100	0.000169	0.638	0.581	0.100	0.185
Maximum	6510	6850	0.361	0.51	0.0308	0.0260	0.537	0.59	23.6	20.8	0.05	2.18	896	1050	2.48	1.29	0.0004495	1.11	0.901	0.278	0.31
% of values undetected			40%	50%	10%	20%			40%	40%	100%	30%				10%	100%			20%	
# of values between MDL and MRL			2		4	3			5	5		1								1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.00	1.92	1000	1000	0.32	0.34	NA	NA	NA	NA	0.012	NA	NA	11.38	11.35
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾		
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1A																		
Sample Date																		
05/26/05	527	465	0.0775	0.0775	1020	0.0031	0.0031	1690	1660	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233	
06/15/05	542	556	0.25	0.0775	860	0.0031	0.0031	1650	1780	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75		
08/01/05	534	536	0.0775	0.0775	1080	0.0031	0.0031	1790	1930	0.0031	0.0031	0.031	0.031	0.247	0.10	13.4	14.1	
08/12/05	470	488	0.0775	0.0775	878	0.0031	0.0031	1440	1540	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75	
08/14/05																		
10/13/05	510	567	0.0775	0.0775	1010	0.0031	0.0031	1640	1810	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	2.08	
05/30/07	562	598	0.155	0.155	1050	0.0031	0.0031	1730	1890	0.0050	0.0050	0.050	0.050	0.155	0.155	2.60		
06/12/07	501	581	0.155	0.155	1280	0.0031	0.0031	1710	1990	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.41	
07/18/07	525	569	0.155	0.155	1070	0.0062	0.0031	1680	1770	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.35	
08/20/07	509	612	0.155	0.155	1380	0.0031	0.0031	1470	1690	0.0050	0.0050	0.050	0.050	0.155	0.155	2.51		
10/09/07	575	558	0.155	0.155	1010	0.0031	0.0031	1760	1730	0.0050	0.0050	0.050	0.050	0.155	0.155	1.33	1.33	
Mean	526	553	0.13	0.12	1060	0.0034	0.0031	1660	1780	0.0040	0.0040	0.040	0.040	0.14	0.13	2.33	3.04	
Median	526	563	0.16	0.12	1040	0.0031	0.0031	1690	1780	0.0040	0.0040	0.040	0.040	0.16	0.13	0.75	1.35	
St. Deviation	30	46	0.056	0.041	160	0.001	0	120	130	0.001	0.001	0.01	0.01	0.046	0.03	3.98	4.91	
# of values	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	
Minimum	470	465	0.0775	0.0775	860	0.0031	0.0031	1440	1540	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233	
Maximum	575	612	0.25	0.155	1380	0.0062	0.0031	1790	1990	0.0050	0.0050	0.050	0.050	0.25	0.16	13.4	14.1	
% of values undetected			100%	100%		90%	100%			100%	100%	100%	100%	90%	100%	60%	20%	
# of values between MDL and MRL						1								1				
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.18	0.16	NA	NA	NA	NA	NA	NA	NA	NA	26.1	25.7	
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

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	Parameters	Hardness (as CaCO3)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: UT1B																	
	Sample Date																
	05/26/05	17.6	6.95	7.06	23.8	0.500	0.785	14.5	0.090			0.0155	0.0028		1.07	0.037	3.96
	06/15/05	18.4	7.04	7.3	27.5	0.600	0.785	16.0	0.065			0.0155	0.00155		1.17	0.038	4.01
	08/01/05	18.2	6.78	11.05	20.0	0.521	0.785	15.0	0.91			0.0155	0.70		1.12	0.039	4.08
	08/12/05	18.3	7.14	13.65	32.5	0.075	0.785	16.0	0.0155			0.0155	0.010		1.10	0.036	3.77
	08/14/05																
	10/13/05	18.4		8.12	27.5	0.0775	0.785	16.0	0.116			0.050	0.0057		1.07	0.073	4.15
	05/30/07	18.2	6.55	4	27.5	0.163	1.57	15.2	0.0795			0.0155	0.0124		1.10	0.0510	3.84
	06/12/07	19.5	7.09	6.5	30.0	0.250	1.57	15.0	0.181			0.050	0.0050		1.07	0.0850	4.20
	07/18/07	19.3			27.5	0.345	1.57	15.9	0.050			0.0155	0.105		1.06	0.0500	3.68
	08/20/07	19.0	6.05	12.35	18.8	0.538	1.57	16.0	0.133			0.0155	0.00155		0.825	0.0340	3.96
	10/09/07	19.7	6.90	8.32	52.5	0.211	1.57	15.8	0.108			0.0155	0.00155		0.542	0.0420	2.17
	Mean	18.7	6.81	8.71	28.8	0.328	1.18	16.0	0.175	NA	NA	0.022	0.080	NA	1.01	0.049	3.78
	Median	18.4	6.93	8.12	27.5	0.298	1.18	16.0	0.099	NA	NA	0.016	0.010	NA	1.07	0.041	3.96
	St. Deviation	0.7	0.36	3.07	9.3	0.2	0.41	1	0.262	NA	NA	0.0145	0.22	NA	0.19	0.017	0.59
	# of values	10	8	9	10	10	10	10	10	0	0	10	10	0	10	10	10
	Minimum	17.6	6.05	4	18.8	0.075	0.785	14.5	0.0155	NA	NA	0.016	0.00155	NA	0.542	0.034	2.17
	Maximum	19.7	7.14	13.65	52.5	0.600	1.57	16.0	0.91	NA	NA	0.050	0.70	NA	1.17	0.085	4.20
	% of values undetected					40%	100%		20%			100%	50%				
	# of values between MDL and MRL					2		1	3				2			10	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.86	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	13%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾		
	Total/Dissolved Units	mg/L	mg/L	mg/L	mg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	Dissolved µg/L	Total µg/L	d µg/L	Total µg/L	Dissolved µg/L	Total µg/L	d µg/L
Location: UT1B																					
Sample Date																					
05/26/05		0.00125	0.00125	0.50		9.33	2.93	0.0260	0.0300	0.28	0.125	5.08	4.95	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0248	0.00775
06/15/05		0.00125	0.0040	0.50		3.65	0.31	0.0390	0.0186	0.125	0.125	5.85	3.34	0.0075	0.0075	0.0044	0.00155	1.55	1.55	0.00775	0.00775
08/01/05		0.00125	0.00125	0.50		5.72	2.42	0.0276	0.0326	0.125	0.264	5.03	4.81	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/12/05		0.00125	0.00125	0.50		4.57	2.60	0.0194	0.0140	0.25	0.125	5.41	4.65	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
08/14/05																					
10/13/05		0.00125	0.00125	0.50		5.24	2.80	0.0344	0.0316	0.125	0.125	5.16	5.56	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
05/30/07		0.00075	0.00075	0.155		2.82	1.00	0.0250	0.0576	0.155	0.155	5.55	6.45	0.0125	0.0125	0.0075	0.0075	3.08	4.09	0.0075	0.0075
06/12/07		0.00075	0.00075	0.155	1.01	6.60	2.80	0.0386	0.0412	0.155	0.155	5.78	5.99	0.0125	0.0125	0.0075	0.0075	3.47	3.61	0.0075	0.0075
07/18/07		0.00075	0.00075	0.155		2.86	1.00	0.0250	0.0250	0.155	0.155	5.65	5.98	0.0125	0.0125	0.0075	0.0075	4.62	5.28	0.0075	0.0075
08/20/07		0.00075	0.00075	0.155		15.6	3.63	0.0246	0.0222	0.310	0.313	6.28	5.64	0.0125	0.0125	0.0075	0.0075	4.02	3.63	0.0075	0.0075
10/09/07		0.00075	0.00075	0.50	0.617	6.17	2.47	0.0302	0.0284	0.155	0.155	5.73	5.85	0.0125	0.0125	0.0075	0.0075	3.35	3.55	0.0075	0.0075
Mean		0.0010	0.0013	0.36	0.81	6.30	2.20	0.0290	0.0301	0.184	0.170	5.55	5.32	0.010	0.010	0.0048	0.0045	3.66	3.48	0.0090	0.0076
Median		0.0010	0.0010	0.5	0.81	5.50	2.50	0.0268	0.0292	0.155	0.155	5.60	5.60	0.010	0.010	0.0060	0.0045	3.75	3.62	0.0080	0.0076
St. Deviation		0.0003	0.001	0.18	0.28	3.8	1.1	0.0065	0.0123	0.069	0.065	0.39	0.9	0.003	0.003	0.003	0.0031	1.33	1.47	0.005	0.0001
# of values		10	10	10	2	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Minimum		0.00075	0.00075	0.155	0.617	2.82	0.31	0.0194	0.0140	0.125	0.125	5.03	3.34	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum		0.00125	0.0040	0.5	1.01	15.6	3.63	0.0390	0.0576	0.31	0.313	6.28	6.45	0.0125	0.0125	0.0075	0.0075	5.00	5.28	0.0248	0.00775
% of values undetected		100%	90%	100%			30%	20%	10%	80%	80%			100%	100%	90%	100%	50%	50%	90%	100%
# of values between MDL and MRL			1					3	3	2	2					1		5	4	1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾		NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.076	0.074
Drinking Water Standards (DWS)⁽²⁾		NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1B																					
Sample Date																					
05/26/05	5640	4920	0.318	0.121	0.0122	0.0088	0.543	0.389	10.0	10.0	0.050	0.050	856	821	0.959	0.457	0.000406	0.674	0.605	0.269	0.227
06/15/05	5920	3950	0.308	0.100	0.0198	0.00155	0.456	0.388	11.9	3.1	0.0155	0.0822	889	561	0.894	0.196	0.000450	0.764	0.415	0.224	
08/01/05	5850	5670	0.100	0.100	0.0110	0.0120	0.448	0.328	8.2	3.1	0.0155		878	820	1.11	0.293	0.000450	0.747	0.707	0.192	
08/12/05	5970	5210	0.144	0.031	0.0224	0.0216	0.541	0.447	13.1	3.1	0.0155		822	746	1.45	0.484		0.680	0.571	0.249	
08/14/05																	0.000450				
10/13/05	6010	6180	0.303	0.634	0.0294	0.0214	0.514	0.412	14.9	11.1	0.0155		827	889	1.29	0.100	0.000450	0.674	0.700	0.283	
05/30/07	5890	6340	0.454	0.394	0.0050	0.0122	0.481	0.572	15.3	15.7	0.050		839	981	0.771	0.506	0.000169	0.809	0.797	0.100	
06/12/07	6300	6350	0.213	0.050	0.0128	0.0148	0.496	0.521	18.7	15.7	0.0155	0.050	918	1040	1.16	0.623	0.000169	0.825	0.878	0.222	0.304
07/18/07	6240	6390	0.050	0.050	0.0100	0.0100	0.548	0.419	25.4	23.5	0.0155	0.0155	895	965	0.911	0.402	0.000169	0.799	0.806	0.241	0.424
08/20/07	6210	5890	0.261	0.100	0.0134	0.0050	0.667	0.369	10.0	3.10	0.0155	0.0155	849	765	1.36	0.188	0.000169	0.850	0.781	0.191	0.169
10/09/07	6450	6150	0.050	0.249	0.0118	0.0102	0.514	0.417	10.0	10.0	0.0155	0.0155	871	862	1.55	0.132	0.000169	0.803	0.787	0.100	0.257
Mean	6050	5710	0.220	0.183	0.0148	0.0118	0.521	0.426	13.8	10.0	0.0224	0.038	864	850	1.15	0.338	0.000305	0.763	0.705	0.207	0.276
Median	5990	6020	0.237	0.100	0.0125	0.0111	0.514	0.415	12.5	10.0	0.0155	0.033	864	840	1.14	0.348	0.000288	0.782	0.744	0.223	0.257
St. Deviation	250	800	0.133	0.193	0.0071	0.0064	0.062	0.072	5.2	7	0.0145	0.027	31	140	0.26	0.18	0.000144	0.066	0.139	0.064	0.096
# of values	10	10	10	10	10	10	10	10	10	10	10	6	10	10	10	10	10	10	10	10	5
Minimum	5640	3950	0.050	0.031	0.0050	0.00155	0.448	0.328	8.2	3.1	0.0155	0.0155	822	561	0.771	0.100	0.000169	0.674	0.415	0.100	0.169
Maximum	6450	6390	0.454	0.634	0.0294	0.0216	0.667	0.572	25.4	23.5	0.05	0.0822	918	1040	1.55	0.623	0.000450	0.850	0.878	0.283	0.424
% of values undetected			30%	60%	20%	30%			30%	60%	100%	50%				10%	90%			20%	
# of values between MDL and MRL			1	1	3	4			6	3		1				1	1			1	1
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.14	2.06	1000	1000	0.36	0.37	NA	NA	NA	NA	0.012	NA	NA	12.15	12.12
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1B																	
Sample Date																	
05/26/05	532	448	0.0775	0.0775	950	0.0031	0.0031	1750	1660	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233
06/15/05	570	361	0.0775	0.0775	823	0.0031	0.0031	1840	1170	0.0031	0.0031	0.031	0.031	0.10	0.10	11.0	8.84
08/01/05	557	527	0.0775	0.0775	855	0.0031	0.0031	1810	1700	0.0031	0.0031	0.031	0.031	0.10	0.262	4.57	14.4
08/12/05	515	469	0.0775	0.0775	989	0.0031	0.0031	1610	1500	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75
08/14/05																	
10/13/05	524	582	0.0775	0.0775	948	0.0031	0.0031	1670	1820	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	1.75
05/30/07	546	587	0.155	0.155	1000	0.0070	0.0092	1680	1850	0.0050	0.0050	0.050	0.050	0.155	0.155	1.66	
06/12/07	555	571	0.155	0.155	1320	0.0031	0.0031	1850	1980	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	
07/18/07	579	602	0.155	0.155	1110	0.0031	0.0031	2090	2230	0.0050	0.0050	0.050	0.123	0.155	0.155	6.66	6.89
08/20/07	557	525	0.155	0.155	1160	0.0031	0.0031	1600	1460	0.0050	0.0050	0.050	0.050	0.155	0.155	1.35	1.42
10/09/07	569	557	0.155	0.155	1020	0.0031	0.0031	1780	1680	0.0050	0.0050	0.050	0.050	0.155	0.155	1.50	0.50
Mean	550	523	0.12	0.12	1020	0.0035	0.0037	1770	1710	0.0040	0.0040	0.040	0.050	0.13	0.14	2.85	4.35
Median	556	542	0.12	0.12	990	0.0031	0.0031	1770	1690	0.0040	0.0040	0.040	0.040	0.13	0.16	1.43	1.59
St. Deviation	21	76	0.041	0.041	150	0.0012	0.0019	140	290	0.001	0.001	0.01	0.03	0.03	0.05	3.54	5.18
# of values	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8
Minimum	515	361	0.0775	0.0775	823	0.0031	0.0031	1600	1170	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233
Maximum	579	602	0.16	0.16	1320	0.0070	0.0092	2090	2230	0.0050	0.0050	0.050	0.123	0.16	0.26	11.0	14.4
% of values undetected			100%	100%		90%	90%			100%	100%	100%	90%	100%	90%	40%	30%
# of values between MDL and MRL						1	1						1		1		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.21	0.18	NA	NA	NA	NA	NA	NA	NA	NA	27.9	27.5
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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	Parameters	Hardness (as CaCO ₃)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved																
	Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: UT1C																	
	Sample Date																
	05/26/05	18.4	6.96	6.76	20.0	0.30	0.785	14.5	0.080			0.0155	0.0011		1.06	0.036	3.94
	06/15/05	18.0	7.04	6.84	13.8	0.90	0.785	15.0	0.0485			0.0155	0.0035		1.16	0.042	3.95
	08/01/05	18.0	6.57	10.48	26.3	1.00	0.785	15.0	0.079			0.0155	0.170		1.13	0.038	3.89
	08/12/05	17.2	7.05	12.53	20.0	0.075	0.785	15.5	0.0155			0.0155	0.010		1.11	0.043	3.86
	08/14/05																
	10/13/05	18.7		7.06	38.8	0.08	0.785	16.0	0.0635			0.050	0.0057		1.08	0.067	4.13
	05/30/07	18.2	6.40	4.02	23.8	1.09	1.57	14.0	0.0620			0.0155	0.0139		1.10	0.0600	3.87
	06/12/07	19.6	6.97	6.29	27.5	0.250	1.57	17.0	0.0680			0.050	0.0050		1.06	0.0890	4.19
	07/18/07	20.0			23.8	0.086	1.57	15.3	0.050			0.0155	0.0201		1.05	0.0550	3.67
	08/20/07	16.5	6.01	12.34	25.0	0.215	1.57	16.0	0.0905			0.0155	0.0067		0.810	0.0380	5.74
	10/09/07	18.7	6.91	5.69	28.8	0.326	1.57	16.4	0.120			0.0155	0.00155		0.868	0.0400	3.24
	Mean	18.3	6.74	8.00	24.8	0.40	1.18	15.0	0.070	NA	NA	0.022	0.020	NA	1.04	0.051	4.05
	Median	18.3	6.94	6.84	24.4	0.30	1.18	15.0	0.070	NA	NA	0.016	0.010	NA	1.07	0.043	3.92
	St. Deviation	1	0.38	3.03	6.6	0.4	0.41	1	0.03	NA	NA	0.0145	0.05	NA	0.11	0.017	0.65
	# of values	10	8	9	10	10	10	10	10	0	0	10	10	0	10	10	10
	Minimum	16.5	6.01	4.02	13.8	0.075	0.785	14.0	0.0155	NA	NA	0.016	0.0011	NA	0.81	0.036	3.24
	Maximum	20.0	7.05	12.53	38.8	1.09	1.57	17.0	0.120	NA	NA	0.050	0.170	NA	1.16	0.089	5.74
	% of values undetected					40%	100%		20%			100%	40%				
	# of values between MDL and MRL					3		1	7				3			10	
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	6.89	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	25%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	0%

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Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d		
					Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1C																				
Sample Date																				
05/26/05	0.00125	0.00125	0.50		8.95	2.33	0.0312	0.0316	0.125	0.125	5.10	5.03	0.0075	0.0075	0.0052	0.00155	1.55	1.55	0.00775	0.00775
06/15/05	0.00125	0.00125	0.50		3.42	0.31	0.0356	0.0166	0.125	0.125	5.56	3.26	0.0075	0.0075	0.0050	0.00155	1.55	1.55	0.00775	0.00775
08/01/05	0.00125	0.00125	0.50		3.93	2.98	0.0240	0.0296	0.125	0.125	5.08	4.86	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
08/12/05	0.00125	0.00125	0.50		4.01	1.00	0.0140	0.0066	0.125	0.125	5.19	4.65	0.0075	0.0075	0.00155	0.00155	5.0	1.55	0.00775	0.00775
08/14/05																				
10/13/05	0.00125	0.00125	0.50		6.03	2.15	0.0284	0.0326	0.25	0.125	5.46	5.44	0.0075	0.0075	0.00155	0.00155	5.0	5.0	0.00775	0.00775
05/30/07	0.00075	0.00075	0.155		2.93		0.0250		0.155	0.155	5.57	6.46	0.0125	0.0125	0.0075	0.0075	2.97	3.90	0.0075	0.0075
06/12/07	0.00075	0.00075	0.155	0.980	5.04	1.00	0.0402	0.0332	0.155	0.155	6.03	5.13	0.0125	0.0125	0.0075	0.0075	3.80	3.23	0.0075	0.0075
07/18/07	0.00075	0.00075	0.155		2.85	1.00	0.0250	0.0250	0.155	0.155	5.92	5.85	0.0125	0.0125	0.0075	0.0075	4.45	4.30	0.0075	0.0075
08/20/07	0.00075	0.00075	0.155		13.0	4.59	0.0180	0.0398	0.155	0.155	5.47		0.0125	0.0125	0.0075	0.0075	3.36	3.92	0.0075	0.0075
10/09/07	0.00075	0.00075	0.50	0.816	10.1	3.28	0.0262	0.0348	0.155	0.155	5.23	5.75	0.0125	0.0125	0.0075	0.0075	3.05	3.29	0.0075	0.0075
Mean	0.0010	0.0010	0.36	0.9	6.00	2.07	0.027	0.028	0.153	0.140	5.46	5.16	0.010	0.010	0.0052	0.0045	3.57	3.33	0.0076	0.0076
Median	0.0010	0.0010	0.5	0.9	4.50	2.15	0.026	0.032	0.155	0.140	5.47	5.13	0.010	0.010	0.0064	0.0045	3.58	3.60	0.0076	0.0076
St. Deviation	0.0003	0.0003	0.18	0.12	3.5	1.38	0.008	0.010	0.037	0.016	0.33	0.91	0.003	0.003	0.0027	0.0031	1.32	1.36	0.0001	0.0001
# of values	10	10	10	2	10	9	10	9	10	10	10	9	10	10	10	10	10	10	10	10
Minimum	0.00075	0.00075	0.155	0.816	2.85	0.31	0.014	0.0066	0.125	0.125	5.08	3.26	0.0075	0.0075	0.00155	0.00155	1.55	1.55	0.0075	0.0075
Maximum	0.00125	0.00125	0.5	0.98	13.0	4.59	0.0402	0.0398	0.250	0.155	6.03	6.46	0.0125	0.0125	0.0075	0.0075	5.00	5.00	0.00775	0.00775
% of values undetected	100%	100%	100%			40%	20%	10%	100%	100%			100%	100%	80%	100%	50%	50%	100%	100%
# of values between MDL and MRL							3	4							2		5	5		
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.072	0.071
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1C																					
Sample Date																					
05/26/05	5940	4960	0.391	0.131	0.0150	0.0114	0.501	0.355	10.0	10.0	0.0155	0.050	866	822	0.892	0.386		0.783	0.609	0.279	0.234
06/15/05	5760	3920	0.346	0.100	0.0108	0.00155	0.541	0.366	11.7	3.1	0.0155	0.0818	887	552	0.963	0.129	0.000450	0.736	0.395	0.207	0.272
08/01/05	5820	5680	0.100	0.100	0.0120	0.0138	0.700	0.354	7.13	3.1	0.0155	0.123	843	816	1.04	0.155	0.00250	0.731	0.701	0.206	
08/12/05	5610	5140	0.089	0.031	0.0208	0.0202	0.468	0.402	3.1	3.1	0.0155		766	722	0.925	0.219		0.627	0.608	0.219	
08/14/05																	0.000450				
10/13/05	6110	5910	0.344	0.538	0.0266	0.0212	0.473	0.448	10.8	9.54	0.0155		833	878	1.26	0.100	0.000450	0.666	0.729	0.281	
05/30/07	5910	6250	0.050	0.100	0.0104	0.0174	0.445		16.7	16.9	0.0155	0.050	850	965	0.979	0.619	0.000169	0.780	0.813	0.100	
06/12/07	6310	5400	0.100	0.050	0.0128	0.0116	0.516	0.395	17.2	11.9	0.0155	0.0155	942	862	1.05	0.427	0.000169	0.861	0.749	0.244	0.250
07/18/07	6500	6300	0.050	0.050	0.0100	0.0100	0.471	0.464	23.2	22.4	0.0155	0.0155	921	947	0.956	0.364	0.000169	0.822	0.801	0.202	
08/20/07	5420		0.100	0.240	0.0120	0.0164	0.469	0.540	10.0	10.0	0.0155	0.0430	726		1.20	0.300	0.000169	0.740		0.162	0.283
10/09/07	6100	6640	0.100	0.100	0.0140	0.0106	0.448	0.438	25.7	10.0	0.0155	0.0380	831	955	2.05	0.491	0.000402	0.732	0.766	0.100	0.284
Mean	5950	5580	0.170	0.140	0.0140	0.0134	0.503	0.418	13.6	10.0	0.0155	0.052	847	835	1.13	0.319	0.00055	0.748	0.686	0.200	0.265
Median	5930	5680	0.100	0.100	0.0120	0.0127	0.472	0.402	11.3	10.0	0.0155	0.047	847	862	1.01	0.332	0.00040	0.738	0.729	0.207	0.272
St. Deviation	320	830	0.14	0.15	0.005	0.0058	0.075	0.061	7.1	6	0	0.036	65	132	0.34	0.17	0.00074	0.069	0.132	0.064	0.022
# of values	10	9	10	10	10	10	10	9	10	10	10	8	10	9	10	10	9	10	9	10	5
Minimum	5420	3920	0.050	0.031	0.0100	0.00155	0.445	0.354	3.1	3.1	0.0155	0.0155	726	552	0.892	0.100	0.00017	0.627	0.395	0.100	0.234
Maximum	6500	6640	0.391	0.538	0.0266	0.0212	0.700	0.54	25.7	22.4	0.0155	0.123	942	965	2.05	0.619	0.0025	0.861	0.813	0.281	0.284
% of values undetected			60%	70%	10%	20%			30%	60%	100%	40%				10%	89%			20%	
# of values between MDL and MRL			1	1	4	4			5	3		3				2	1			1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.03	1.95	1000	1000	0.33	0.35	NA	NA	NA	NA	0.012	NA	NA	11.54	11.51
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: UT1C																	
Sample Date																	
05/26/05	539	456	0.0775	0.0775	962	0.0031	0.0031	1670	1670	0.0031	0.0031	0.031	0.031	0.10	0.10	0.233	0.233
06/15/05	566	352	0.0775	0.0775	797	0.0031	0.0031	1840	1130	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	
08/01/05	551	542	0.0775	0.0775	826	0.0031	0.0031	1790	1770	0.0031	0.0031	0.031	0.031	0.10	0.10	15.2	12.9
08/12/05	488	468	0.0775	0.0775	890	0.0031	0.0031	1500	1470	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75
08/14/05																	
10/13/05	534	589	0.0775	0.0775	1000	0.0031	0.0031	1670	1830	0.0031	0.0031	0.031	0.031	0.10	0.10	0.75	0.75
05/30/07	543	577	0.155	0.155	1010	0.0031	0.0031	1680	1830	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	
06/12/07	560	486	0.155	0.155	1130	0.0031	0.0031	1930	1680	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50
07/18/07	593	600	0.155	0.155	1090	0.0031	0.0031	1830	1840	0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	0.50
08/20/07	489		0.155	0.155	1390	0.0031	0.0031	1340		0.0050	0.0050	0.050	0.050	0.155	0.155	0.50	1.64
10/09/07	517	574	0.155	0.155	1260	0.0031	0.0031	1690	1840	0.0050	0.0050	0.050	0.050	0.155	0.155	1.28	0.50
Mean	538	516	0.116	0.116	1040	0.0031	0.0031	1690	1670	0.0041	0.0041	0.041	0.041	0.13	0.13	2.10	2.22
Median	541	542	0.116	0.116	1010	0.0031	0.0031	1690	1770	0.0041	0.0041	0.041	0.041	0.13	0.13	0.63	0.63
St. Deviation	33	82	0.041	0.041	190	0	0	170	240	0.001	0.001	0.01	0.01	0.03	0.03	4.61	4.34
# of values	10	9	10	10	10	10	10	10	9	10	10	10	10	10	10	10	8
Minimum	488	352	0.0775	0.0775	797	0.0031	0.0031	1340	1130	0.0031	0.0031	0.031	0.031	0.10	0.10	0.2325	0.233
Maximum	593	600	0.155	0.155	1390	0.0031	0.0031	1930	1840	0.0050	0.0050	0.050	0.050	0.16	0.16	15.2	12.9
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	100%	100%	80%	60%
# of values between MDL and MRL																	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.19	0.16	NA	NA	NA	NA	NA	NA	NA	NA	26.5	26.1
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

	Parameters	Hardness (as CaCO ₃)	pH (field)	Temperature (field)	Total Dissolved Solids	Total Suspended Solids	Acidity	Alkalinity	Total Nitrate + Nitrite (as N)	Nitrite (as N)	Nitrate (as N)	Ammonia (as N) ⁽³⁾	Total Phosphorus	Ortho- phosphate	Chloride	Fluoride	Sulfate
	Total/Dissolved Units	mg/L	pH Units	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Location: WW1A																	
	Sample Date																
	09/11/06	17.6	7.63	13.88	33.8	1.10	1.57	15.0	0.0350	0.0155	0.0320	0.0155	0.0050	0.0155	0.937	0.0480	3.48
	Mean	17.6	7.63	13.88	33.8	1.10	1.57	15.0	0.0350	0.0155	0.0320	0.0155	0.0050	0.0155	0.937	0.0480	3.48
	Median	17.6	7.63	13.88	33.8	1.10	1.57	15.0	0.0350	0.0155	0.0320	0.0155	0.0050	0.0155	0.937	0.0480	3.48
	St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	# of values	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Minimum	17.6	7.63	13.88	33.8	1.10	1.57	15.0	0.0350	0.0155	0.0320	0.0155	0.0050	0.0155	0.937	0.0480	3.48
	Maximum	17.6	7.63	13.88	33.8	1.10	1.57	15.0	0.0350	0.0155	0.0320	0.0155	0.0050	0.0155	0.937	0.0480	3.48
	% of values undetected						100%			100%		100%		100%			
	# of values between MDL and MRL								1		1		1				1
	Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	>6.5 and <8.5	NA	NA	NA	NA	>=20	NA	NA	NA	3.86	NA	NA	230	NA	NA
	Drinking Water Standards (DWS)⁽²⁾	NA	>6.0 and <8.5	NA	500	NA	NA	NA	10	NA	NA	NA	NA	NA	250	4	250
	% of CALC exceedences	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Key:																
	Bold Results	= Parameter undetected by test, value shown is 1/2 MDL or 1/2 MRL.															
		If result was not detected at the lab MDL, the value shown is 1/2 MDL.															
		If flagged U or UJ, the value shown is 1/2 MRL.															
	Green Results	= Estimate result reported by laboratory below reporting limit (MRL).															
	Red Results	= Result exceed applicable Chronic Aquatic Life Criteria and/or Drinking Water Standards.															
		MDL = Method Detection Limit.															
		MRL = Method Reporting Limit.															
		NA = Not Applicable , no limit established.															
		CALC = ADEC Chronic Aquatic Life Criteria															
		DWS = Drinking Water Standards -18 AAC 70, Water Quality Standards, under fresh water uses, (6)(A)(i) and (6)(C).															
		ADEC = Alaska Department of Environmental Conservation															
		EPA = Environmental Protection Agency															
		WAD Cyanide = Weak Acid Dissociable Cyanide															
		(1) CALC come from the ADEC Alaska Water Quality Criteria Manual – Table III and from the ADEC Water Quality Standards for Fresh Water Uses under use (C).															
		(2) DWS come from the ADEC Alaska Water Quality Criteria Manual – Table I, the ADEC Water Quality Standards under use (A)(i), and EPA Primary Drinking Water Standards.															
		(3) Ammonia CALC limit dependant on calculated lowest 5th percentile of temperature and pH.															
		(4) Cadmium, Chromium III, Copper, Lead, Nickel and Zinc CALC limits are dependent on Hardness lowest 5th percentile.															
		(5) Criterion given is for free cyanide. ADEC has determined that the WAD cyanide method is to be used for analysis and the result is to be applied to the free cyanide criterion.															
		(6) Criterion given is the more stringent of those available for chromium III and chromium VI. Analysis is of total chromium.															
		(7) The Criterion given for total mercury concentration is based on the Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances, 2002.															
		(8) Criterion given is an acute criterion, rather than a chronic criterion. No chronic aquatic life criterion has been established for silver.															
		(9) Precision displayed in values may be less than actual where unit conversions were necessary, esp. Hg, Si, B.															

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Total Cyanide	Cyanide WAD ⁽⁵⁾	Thiocyanate	TOC	Aluminum		Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium ⁽⁴⁾	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	d	Total	Dissolved	Total	d
Units	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: WW1A																				
Sample Date																				
09/11/06	0.00075	0.00075	0.155		6.48	5.20	0.0075	0.0075	0.155	0.394	4.88	4.65	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
Mean	0.00075	0.00075	0.155	NA	6.48	5.20	0.0075	0.0075	0.155	0.394	4.88	4.65	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
Median	0.00075	0.00075	0.155	NA	6.48	5.20	0.0075	0.0075	0.155	0.394	4.88	4.65	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
# of values	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum	0.00075	0.00075	0.155	NA	6.48	5.20	0.0075	0.0075	0.155	0.394	4.88	4.65	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
Maximum	0.00075	0.00075	0.155	NA	6.48	5.20	0.0075	0.0075	0.155	0.394	4.88	4.65	0.0125	0.0125	0.0075	0.0075	1.25	1.25	0.0185	0.0185
% of values undetected	100%	100%	100%				100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%
# of values between MDL and MRL										1										
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	0.0052	NA	NA	87	87	NA	NA	150	150	NA	NA	NA	NA	NA	NA	NA	NA	0.075	0.073
Drinking Water Standards (DWS)⁽²⁾	NA	0.2	NA	NA	NA	NA	6	NA	10	NA	2,000	NA	4	NA	NA	NA	NA	NA	5	NA
% of CALC exceedences	0%	0%	0%	NA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

2004-2007 Iliamna Lake Study Surface Water Laboratory Results Summary

Parameters	Calcium		Chromium ^(4,6)		Cobalt		Copper ⁽⁴⁾		Iron		Lead ⁽⁴⁾		Magnesium		Manganese		Mercury ⁽⁷⁾	Molybdenum		Nickel ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: WW1A																					
Sample Date																					
09/11/06	5550	5410	0.390	0.406	0.0256	0.0228	0.380	0.459	82.4	46.5	0.129		897	814	6.59	1.05	0.000475	0.623	0.635	0.171	
Mean	5550	5410	0.390	0.406	0.0256	0.0228	0.380	0.459	82.4	46.5	0.129		897	814	6.59	1.05	0.000475	0.623	0.635	0.171	
Median	5550	5410	0.390	0.406	0.0256	0.0228	0.380	0.459	82.4	46.5	0.129		897	814	6.59	1.05	0.000475	0.623	0.635	0.171	
St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
# of values	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0
Minimum	5550	5410	0.390	0.406	0.0256	0.0228	0.380	0.459	82.4	46.5	0.129		897	814	6.59	1.05	0.000475	0.623	0.635	0.171	
Maximum	5550	5410	0.390	0.406	0.0256	0.0228	0.380	0.459	82.4	46.5	0.129		897	814	6.59	1.05	0.0004745	0.623	0.635	0.171	
% of values undetected																	1				
# of values between MDL and MRL																				1	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	10.98	10.56	NA	NA	2.11	2.03	1000	1000	0.35	0.36	NA	NA	NA	NA	0.012	NA	NA	12.00	11.96
Drinking Water Standards (DWS)⁽²⁾	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	50	NA	2	NA	NA	100	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

**2004-2007 Iliamna Lake Study
Surface Water Laboratory Results Summary**

Parameters	Potassium		Selenium		Silicon	Silver ⁽⁸⁾		Sodium		Thallium		Tin		Vanadium		Zinc ⁽⁴⁾	
	Total/Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location: WW1A																	
Sample Date																	
09/11/06	489	471	0.155	0.155	800	0.0031	0.0031	1790	1670	0.0050	0.0050	0.050	0.050	0.250	0.250	2.19	3.17
Mean	489	471	0.155	0.155	800	0.0031	0.0031	1790	1670	0.0050	0.0050	0.050	0.050	0.250	0.250	2.19	3.17
Median	489	471	0.155	0.155	800	0.0031	0.0031	1790	1670	0.0050	0.0050	0.050	0.050	0.250	0.250	2.19	3.17
St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
# of values	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum	489	471	0.155	0.155	800	0.0031	0.0031	1790	1670	0.0050	0.0050	0.050	0.050	0.250	0.250	2.19	3.17
Maximum	489	471	0.155	0.155	800	0.0031	0.0031	1790	1670	0.0050	0.0050	0.050	0.050	0.250	0.250	2.19	3.17
% of values undetected			100%	100%		100%	100%			100%	100%	100%	100%	100%	100%		
# of values between MDL and MRL																	
Chronic Aquatic Life Criteria (CALC)⁽¹⁾	NA	NA	5	4.6	NA	0.20	0.17	NA	NA	NA	NA	NA	NA	NA	NA	27.5	27.1
Drinking Water Standards (DWS)⁽²⁾	NA	NA	50	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA
% of CALC exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of DWS exceedences	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

ATTACHMENT B-2

Laboratory Data Tables Sediment Samples

**2004-2007 Iliamna Lake Study
Sediment Laboratory Results Summary**

	Parameters	Total Solids	Total Organic Carbon	Chloride	Fluoride	Sulfate	Total Cyanide	Ammonia (as N)	Acid Volatile Sulfides	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Cadmium-SEM	Calcium	Chromium	Cobalt
	Basis	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BL1C																					
	Sample Date																				
	09/28/05	27.1	10.8	9.4	1.84	54.4	0.035	233		12600	0.188	4.98	114		0.110	2.65	22.3		5600	10.50	3.95
	09/12/06	66.8		7.3	0.64	3.3	0.080	37	0.35	8600	0.022	4.76	119	0.12	0.045	2.51	0.045	0.05	3130	5.61	4.15
	Mean	47.0	10.8	8.4	1.24	28.9	0.058	135	0.35	10600	0.105	4.87	117	0.12	0.077	2.58	11.2	0.05	4365	8.06	4.05
	Median	47.0	10.8	8.4	1.24	28.9	0.058	135	0.35	10600	0.105	4.87	117	0.12	0.077	2.58	11.2	0.05	4365	8.06	4.05
	St. Deviation	28.1	NA	1.5	0.85	36.1	0.032	138	NA	2828	0.117	0.16	4	#DIV/0!	0.046	0.10	15.7	NA	1747	3.46	0.14
	# of values	2.0	1.0	2.0	2.00	2.0	2.000	2	1	2	2.000	2.00	2	2.00	2.000	2.00	2.0	1	2	2.00	2.00
	Minimum	27.1	10.8	7.3	0.64	3.3	0.035	37	0.35	8600	0.022	4.76	114	0.12	0.045	2.51	0.0	0.05	3130	5.61	3.95
	Maximum	66.8	10.8	9.4	1.84	54.4	0.080	233	0.35	12600	0.188	4.98	119	0.12	0.110	2.65	22.3	0.05	5600	10.50	4.15
	% of values undetected					50%			100%		50%			100%		50%	100%				
	# of values between MDL and MRL				1		1				1			2		1					
FL1C																					
	Sample Date																				
	06/14/05		11.1	18.3	53.7	426	0.430	570		4420	0.102	1.85	28	0.20	0.031	3.55	0.162		3960	2.72	1.19
	09/29/05	14.6	13.9	10.8	3.41	67.3	0.015	335		3380	0.106	1.06	19	0.26	0.212	2.41	0.212		2900	1.37	0.51
	09/11/06	12.1		9.0	3.64	14.9	0.042	508	0.35	6090	0.127	3.07	34	0.13	0.253	4.08	0.253	0.35	5000	1.23	1.64
	Mean	13.4	12.5	12.7	20.25	169.4	0.162	471	0.35	4630	0.112	1.99	27	0.20	0.165	3.35	0.209	0.35	3953	1.77	1.11
	Median	13.4	12.5	10.8	3.64	67.3	0.042	508	0.35	4420	0.106	1.85	28	0.20	0.212	3.55	0.212	0.35	3960	1.37	1.19
	St. Deviation	1.8	2.0	4.9	28.97	223.8	0.232	122	NA	1367	0.013	1.01	8	0.07	0.118	0.85	0.046	NA	1050	0.82	0.57
	# of values	2.0	2.0	3.0	3.00	3.0	3.000	3	1	3	3.000	3.00	3	3.00	3.000	3.00	3.000	1	3	3.00	3.00
	Minimum	12.1	11.1	9.0	3.41	14.9	0.015	335	0.35	3380	0.102	1.06	19	0.13	0.031	2.41	0.162	0.35	2900	1.23	0.51
	Maximum	14.6	13.9	18.3	53.70	426.0	0.430	570	0.35	6090	0.127	3.07	34	0.26	0.253	4.08	0.253	0.35	5000	2.72	1.64
	% of values undetected				33%		33%		100%		67%	33%		33%	100%	33%	67%	100%		33%	33%
	# of values between MDL and MRL				1		1				1			1		2	1			1	1
FN1C																					
	Sample Date																				
	06/14/05		5.36	17.0	25.2	399	0.260	303		5280	0.089	3.29	36	0.15	0.031	1.54	0.090		1940	3.02	1.67
	09/11/06	16.8		18.5	0.92	49.5	0.088	494	16.8	6590	0.091	7.71	42	0.09	0.181	6.19	0.181	0.25	3060	1.46	2.36
	Mean	16.8	5.36	17.8	13.06	224.3	0.174	399	16.8	5935	0.090	5.50	39	0.12	0.106	3.87	0.135	0.25	2500	2.24	2.02
	Median	16.8	5.36	17.8	13.06	224.3	0.174	399	16.8	5935	0.090	5.50	39	0.12	0.106	3.87	0.135	0.25	2500	2.24	2.02
	St. Deviation	NA	NA	1.1	17.17	247.1	0.122	135	NA	926	0.001	3.13	5	0.04	0.106	3.29	0.064	NA	792	1.10	0.49
	# of values	1.0	1.00	2.0	2.00	2.0	2.000	2	1	2	2.000	2.00	2	2.00	2.000	2.00	2.000	1	2	2.00	2.00
	Minimum	16.8	5.36	17.0	0.92	49.5	0.088	303	16.8	5280	0.089	3.29	36	0.09	0.031	1.54	0.090	0.25	1940	1.46	1.67
	Maximum	16.8	5.36	18.5	25.20	399.0	0.260	494	16.8	6590	0.091	7.71	42	0.15	0.181	6.19	0.181	0.25	3060	3.02	2.36
	% of values undetected				50%						50%			50%	100%	50%	50%	100%			
	# of values between MDL and MRL										1						1			1	1

**2004-2007 Iliamna Lake Study
Sediment Laboratory Results Summary**

	Parameters	Copper	Copper-SEM	Iron	Lead	Lead-SEM	Magnesium	Manganese	Mercury	Mercury-SEM	Molybdenum	Nickel	Nickel-SEM	Potassium	Selenium	Silver	Sodium	Sulfur	Thallium	Tin	Vanadium	Zinc	Zinc-SEM
	Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BL1C																							
	Sample Date																						
	09/28/05	18.3		11900	79.10		3190	208	0.064		0.55	6.43		641	0.27	0.055	481		0.011	6.78	40.8	88.2	
	09/12/06	5.8	2.2	15400	4.58	8.9	4080	272	0.009	0.01	0.22	5.73	0.6	521	1.28	0.022	277	313	0.043	0.59	29.9	44.0	11.2
	Mean	12.1	2.2	13700	41.84	8.9	3635	240	0.036	0.01	0.39	6.08	0.6	581	0.77	0.039	379	313	0.027	3.69	35.4	66.1	11.2
	Median	12.1	2.2	13700	41.84	8.9	3635	240	0.036	0.01	0.39	6.08	0.6	581	0.77	0.039	379	313	0.027	3.69	35.4	66.1	11.2
	St. Deviation	8.8	NA	2500	52.69	NA	629	45	0.039	NA	0.23	0.49	NA	85	0.72	0.023	144	NA	0.023	4.37	7.7	31.3	NA
	# of values	2.0	1	2	2.00	1	2	2	2.000	1	2.00	2.00	1	2	2.00	2.000	2	1	2.000	2.00	2.0	2.0	1
	Minimum	5.8	2.2	11900	4.58	8.9	3190	208	0.009	0.01	0.22	5.73	0.6	521	0.27	0.022	277	313	0.011	0.59	29.9	44.0	11.2
	Maximum	18.3	2.2	15400	79.10	8.9	4080	272	0.064	0.01	0.55	6.43	0.6	641	1.28	0.055	481	313	0.043	6.78	40.8	88.2	11.2
	% of values undetected								50%	100%	100%			50%	100%				50%				
	# of values between MDL and MRL								1											1			
FL1C																							
	Sample Date																						
	06/14/05	11.5		4180	1.78		615	89	0.023		2.03	1.65		203	1.54	0.015	417		0.020	0.50	12.9	12.6	
	09/29/05	12.4		1850	1.29		483	39	0.040		1.06	1.55		106	0.51	0.106	339		0.021	3.42	3.2	13.7	
	09/11/06	16.0	8.5	2570	3.39	7.15	994	118	0.049	0.06	2.86	2.62	1.45	343	12.50	0.127	554	2070	0.082	1.27	16.0	24.8	14.6
	Mean	13.3	8.5	2870	2.15	7.15	697	82	0.037	0.06	1.98	1.94	1.45	217	4.85	0.083	437	2070	0.041	1.73	10.7	17.0	14.6
	Median	12.4	8.5	2570	1.78	7.15	615	89	0.040	0.06	2.03	1.65	1.45	203	1.54	0.106	417	2070	0.021	1.27	12.9	13.7	14.6
	St. Deviation	2.4	NA	1190	1.10	NA	265	40	0.013	NA	0.90	0.59	NA	119	6.65	0.059	109	NA	0.035	1.51	6.7	6.7	NA
	# of values	3.0	1	3	3.00	1	3	3	3.000	1	3.00	3.00	1	3	3.00	3.000	3	1	3.000	3.00	3.0	3.0	1
	Minimum	11.5	8.5	1850	1.29	7.15	483	39	0.023	0.06	1.06	1.55	1.45	106	0.51	0.015	339	2070	0.020	0.50	3.2	12.6	14.6
	Maximum	16.0	8.5	4180	3.39	7.15	994	118	0.049	0.06	2.86	2.62	1.45	343	12.50	0.127	554	2070	0.082	3.42	16.0	24.8	14.6
	% of values undetected					100%			67%	100%	33%		100%	33%	33%	100%			67%	100%	33%		
	# of values between MDL and MRL				1				1		1			1			2				1		
FN1C																							
	Sample Date																						
	06/14/05	9.4		11200	2.57		707	98	0.018		4.58	1.55		268	0.77	0.015	455		0.040	0.50	23.1	24.4	
	09/11/06	13.5	8.5	15000	2.73	4.75	838	132	0.035	0.04	6.77	3.08	0.95	389	9.02	0.091	534	2840	0.058	0.91	27.8	33.7	19.9
	Mean	11.4	8.5	13100	2.65	4.75	773	115	0.027	0.04	5.68	2.32	0.95	329	4.90	0.053	495	2840	0.049	0.70	25.5	29.1	19.9
	Median	11.4	8.5	13100	2.65	4.75	773	115	0.027	0.04	5.68	2.32	0.95	329	4.90	0.053	495	2840	0.049	0.70	25.5	29.1	19.9
	St. Deviation	2.9	NA	2700	0.11	NA	93	24	0.012	NA	1.55	1.08	NA	86	5.83	0.053	56	NA	0.013	0.29	3.3	6.6	NA
	# of values	2.0	1	2	2.00	1	2	2	2.000	1	2.00	2.00	1	2	2.00	2.000	2	1	2.000	2.00	2.0	2.0	1
	Minimum	9.4	8.5	11200	2.57	4.75	707	98	0.018	0.04	4.58	1.55	0.95	268	0.77	0.015	455	2840	0.040	0.50	23.1	24.4	19.9
	Maximum	13.5	8.5	15000	2.73	4.75	838	132	0.035	0.04	6.77	3.08	0.95	389	9.02	0.091	534	2840	0.058	0.91	27.8	33.7	19.9
	% of values undetected					100%			50%	100%			100%		100%				50%	100%			
	# of values between MDL and MRL								1					1			1						

**2004-2007 Iliamna Lake Study
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	Parameters	Total Solids	Total Organic Carbon	Chloride	Fluoride	Sulfate	Total Cyanide	Ammonia (as N)	Acid Volatile Sulfides	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Cadmium-SEM	Calcium	Chromium	Cobalt
	Basis	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
KN1C																					
	Sample Date																				
	06/14/05	62.0	1.27	7.28	8.78	42.3	0.077	79		4540	0.036	0.91	27	0.13	0.030	1.50	0.065		2200	2.03	1.44
	09/29/05	65.6	0.68	2.37	0.76	2.7	0.014	59		5980	0.023	0.71	31	0.11	0.045	1.07	0.099		2540	3.08	2.12
	10/14/05	22.7		5.80	2.20	67.7	0.056	362		11200	0.068	2.86	60	0.18	0.135	5.25	0.135		3810	6.34	2.68
	Mean	50.1	0.98	5.15	3.91	37.6	0.049	167		7240	0.042	1.49	39	0.14	0.070	2.61	0.100		2850	3.82	2.08
	Median	62.0	0.98	5.80	2.20	42.3	0.056	79		5980	0.036	0.91	31	0.13	0.045	1.50	0.099		2540	3.08	2.12
	St. Deviation	23.8	0.41	2.52	4.28	32.8	0.032	170		3504	0.023	1.19	18	0.04	0.057	2.30	0.035		849	2.25	0.62
	# of values	3.0	2.00	3.00	3.00	3.0	3.000	3	0	3	3.000	3.00	3	3.00	3.000	3.00	3.000	0	3	3.00	3.00
	Minimum	22.7	0.68	2.37	0.76	2.7	0.014	59		4540	0.023	0.71	27	0.11	0.030	1.07	0.065		2200	2.03	1.44
	Maximum	65.6	1.27	7.28	8.78	67.7	0.077	362		11200	0.068	2.86	60	0.18	0.135	5.25	0.135		3810	6.34	2.68
	% of values undetected					67%	33%				67%				100%	33%	33%				
	# of values between MDL and MRL										1	3		2		1	2				
NE1C																					
	Sample Date																				
	06/16/05	37.5	2.47	28.2	13.0	146	0.190	99		9000	0.118	6.02	111	0.24	0.031	1.55	0.262		4180	8.08	4.07
	09/28/05	28.1	2.98	62.3	1.78	7.0	0.016	245		10200	0.112	5.48	138	0.12	0.108	2.70	0.324		5430	8.85	4.58
	Mean	32.8	2.73	45.3	7.4	76.5	0.103	172		9600	0.115	5.75	125	0.18	0.069	2.12	0.293		4805	8.47	4.33
	Median	32.8	2.73	45.3	7.4	76.5	0.103	172		9600	0.115	5.75	125	0.18	0.069	2.12	0.293		4805	8.47	4.33
	St. Deviation	6.6	0.36	24.1	7.9	98.3	0.123	103		849	0.004	0.38	19	0.08	0.054	0.82	0.044		884	0.54	0.36
	# of values	2.0	2.00	2.0	2.0	2.0	2.000	2	0	2	2.000	2.00	2	2.00	2.000	2.00	2.000	0	2	2.00	2.00
	Minimum	28.1	2.47	28.2	1.78	7.0	0.016	99		9000	0.112	5.48	111	0.12	0.031	1.55	0.262		4180	8.08	4.07
	Maximum	37.5	2.98	62.3	13.0	146.0	0.190	245		10200	0.118	6.02	138	0.24	0.108	2.70	0.324		5430	8.85	4.58
	% of values undetected					50%	50%								100%	50%					
	# of values between MDL and MRL										1			1		1	1				
PB1C																					
	Sample Date																				
	06/14/05	55.6	0.95	3.11	3.99	88.8	0.058	87		8360	0.107	4.22	98	0.11	0.116	1.54	0.157		3630	7.21	4.76
	09/29/05	50.8	1.08	1.53	0.98	19.7	0.014	40		10700	0.093	5.48	123	0.06	0.156	3.23	0.158		4670	9.23	6.66
	Mean	53.2	1.01	2.32	2.49	54.3	0.036	64		9530	0.100	4.85	110	0.09	0.136	2.38	0.158		4150	8.22	5.71
	Median	53.2	1.01	2.32	2.49	54.3	0.036	64		9530	0.100	4.85	110	0.09	0.136	2.38	0.158		4150	8.22	5.71
	St. Deviation	3.4	0.10	1.12	2.13	48.9	0.031	33		1655	0.010	0.89	18	0.03	0.028	1.20	0.001		735	1.43	1.34
	# of values	2.0	2.00	2.00	2.00	2.0	2.000	2	0	2	2.000	2.00	2	2.00	2.000	2.00	2.000	0	2	2.00	2.00
	Minimum	50.8	0.95	1.53	0.98	19.7	0.014	40		8360	0.093	4.22	98	0.06	0.116	1.54	0.157		3630	7.21	4.76
	Maximum	55.6	1.08	3.11	3.99	88.8	0.058	87		10700	0.107	5.48	123	0.11	0.156	3.23	0.158		4670	9.23	6.66
	% of values undetected					50%	50%									50%					
	# of values between MDL and MRL			1							1			1	2		2				

**2004-2007 Iliamna Lake Study
Sediment Laboratory Results Summary**

	Parameters	Copper	Copper-SEM	Iron	Lead	Lead-SEM	Magnesium	Manganese	Mercury	Mercury-SEM	Molybdenum	Nickel	Nickel-SEM	Potassium	Selenium	Silver	Sodium	Sulfur	Thallium	Tin	Vanadium	Zinc	Zinc-SEM
	Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
KN1C																							
	Sample Date																						
	06/14/05	6.7		8940	7.76		1770	195	0.006		0.59	2.68		381	0.07	0.015	154		0.019	0.48	12.6	27.9	
	09/29/05	7.9		7490	4.50		2400	279	0.009		0.23	5.91		572	0.11	0.023	159		0.005	0.74	15.3	37.0	
	10/14/05	16.1		26400	3.61		1070	172	0.026		8.47	4.32		453	1.09	0.068	636		0.037	2.18	42.3	43.7	
	Mean	10.2		14280	5.29		1747	215	0.014		3.09	4.30		469	0.42	0.035	316		0.020	1.13	23.4	36.2	
	Median	7.9		8940	4.50		1770	195	0.009		0.59	4.32		453	0.11	0.023	159		0.019	0.74	15.3	37.0	
	St. Deviation	5.1		10520	2.18		665	56	0.011		4.66	1.62		96	0.58	0.028	277		0.016	0.92	16.4	7.9	
	# of values	3.0	0	3	3.00	0	3	3	3.000	0	3.00	3.00	0	3	3.00	3.000	3	0	3.000	3.00	3.0	3.0	0
	Minimum	6.7		7490	3.61		1070	172	0.006		0.23	2.68		381	0.07	0.015	154		0.005	0.48	12.6	27.9	
	Maximum	16.1		26400	7.76		2400	279	0.026		8.47	5.91		572	1.09	0.068	636		0.037	2.18	42.3	43.7	
	% of values undetected								100%		33%				100%	100%			33%	100%			
	# of values between MDL and MRL										1								2				
NE1C																							
	Sample Date																						
	06/16/05	22.4		10700	4.57		3840	196	0.015		3.35	4.96		1030	0.77	0.015	544		0.077	0.50	36.2	42.8	
	09/28/05	23.6		12600	4.75		3870	235	0.021		3.67	6.39		1590	1.07	0.054	971		0.011	1.73	37.7	51.3	
	Mean	23.0		11700	4.66		3855	216	0.018		3.51	5.68		1310	0.92	0.034	758		0.044	1.11	37.0	47.1	
	Median	23.0		11700	4.66		3855	216	0.018		3.51	5.68		1310	0.92	0.034	758		0.044	1.11	37.0	47.1	
	St. Deviation	0.8		1300	0.13		21	28	0.004		0.23	1.01		396	0.21	0.027	302		0.047	0.87	1.1	6.0	
	# of values	2.0	0	2	2.00	0	2	2	2.000	0	2.00	2.00	0	2	2.00	2.000	2	0	2.000	2.00	2.0	2.0	0
	Minimum	22.4		10700	4.57		3840	196	0.015		3.35	4.96		1030	0.77	0.015	544		0.011	0.50	36.2	42.8	
	Maximum	23.6		12600	4.75		3870	235	0.021		3.67	6.39		1590	1.07	0.054	971		0.077	1.73	37.7	51.3	
	% of values undetected								50%							100%			50%	100%			
	# of values between MDL and MRL								1						1								
PB1C																							
	Sample Date																						
	06/14/05	56.9		17000	5.75		3860	307	0.019		2.23	4.02		1150	0.63	0.015	428		0.061	0.50	37.8	45.2	
	09/29/05	90.6		24100	6.01		4510	591	0.012		2.93	6.07		1580	0.15	0.081	591		0.028	0.97	48.8	58.3	
	Mean	73.8		20600	5.88		4185	449	0.015		2.58	5.05		1365	0.39	0.048	510		0.044	0.73	43.3	51.8	
	Median	73.8		20600	5.88		4185	449	0.015		2.58	5.05		1365	0.39	0.048	510		0.044	0.73	43.3	51.8	
	St. Deviation	23.8		5000	0.18		460	201	0.005		0.49	1.45		304	0.34	0.046	115		0.023	0.33	7.8	9.3	
	# of values	2.0	0	2	2.00	0	2	2	2.000	0	2.00	2.00	0	2	2.00	2.000	2	0	2.000	2.00	2.0	2.0	0
	Minimum	56.9		17000	5.75		3860	307	0.012		2.23	4.02		1150	0.15	0.015	428		0.028	0.50	37.8	45.2	
	Maximum	90.6		24100	6.01		4510	591	0.019		2.93	6.07		1580	0.63	0.081	591		0.061	0.97	48.8	58.3	
	% of values undetected								50%						50%	50%				100%			
	# of values between MDL and MRL								1						1				1				

**2004-2007 Iliamna Lake Study
Sediment Laboratory Results Summary**

	Parameters	Total Solids	Total Organic Carbon	Chloride	Fluoride	Sulfate	Total Cyanide	Ammonia (as N)	Acid Volatile Sulfides	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Cadmium-SEM	Calcium	Chromium	Cobalt
	Basis	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RB1C																					
	Sample Date																				
	06/15/05									4920	0.070	5.12	71	0.12	0.030	1.51	0.127		2710	5.31	1.86
	09/28/05	55.7	0.62	37.8	0.90	5.0	0.016	69		4800	0.061	4.47	64	0.12	0.054	1.14	0.136		2670	5.20	1.96
	Mean	55.7	0.62	37.8	0.90	5.0	0.016	69	NA	4860	0.066	4.80	68	0.12	0.042	1.33	0.132		2690	5.26	1.91
	Median	55.7	0.62	37.8	0.90	5.0	0.016	69	NA	4860	0.066	4.80	68	0.12	0.042	1.33	0.132		2690	5.26	1.91
	St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	85	0.006	0.46	5	0.00	0.017	0.26	0.006		28	0.08	0.07
	# of values	1.0	1.00	1.0	1.00	1.0	1.000	1	0	2	2.000	2.00	2	2.00	2.000	2.00	2.000	0	2	2.00	2.00
	Minimum	55.7	0.62	37.8	0.90	5.0	0.016	69	NA	4800	0.061	4.47	64	0.12	0.030	1.14	0.127		2670	5.20	1.86
	Maximum	55.7	0.62	37.8	0.90	5.0	0.016	69	NA	4920	0.070	5.12	71	0.12	0.054	1.51	0.136		2710	5.31	1.96
	% of values undetected						100%								100%	50%					
	# of values between MDL and MRL										2			1		1	2				
WW1C																					
	Sample Date																				
	09/11/06	19.2		97.6	3.65	61.7	0.400	512	4.4	7000	0.077	7.28	71	0.42	0.154	6.33	0.154	0.2	3870	4.35	3.35
	Mean	19.2		97.6	3.65	61.7	0.400	512	4.4	7000	0.077	7.28	71	0.42	0.154	6.33	0.154	0.2	3870	4.35	3.35
	Median	19.2		97.6	3.65	61.7	0.400	512	4.4	7000	0.077	7.28	71	0.42	0.154	6.33	0.154	0.2	3870	4.35	3.35
	St. Deviation	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	# of values	1.0	0	1.0	1.00	1.0	1.000	1	1	1	1.000	1.00	1	1.00	1.000	1.00	1.000	1	1	1.00	1.00
	Minimum	19.2		97.6	3.65	61.7	0.400	512	4.4	7000	0.077	7.28	71	0.42	0.154	6.33	0.154	0.2	3870	4.35	3.35
	Maximum	19.2		97.6	3.65	61.7	0.400	512	4.4	7000	0.077	7.28	71	0.42	0.154	6.33	0.154	0.2	3870	4.35	3.35
	% of values undetected										100%				100%		100%	100%			
	# of values between MDL and MRL					1								1							
	Key:	Bold Results = Parameter undetected by test, value shown is 1/2 MDL or 1/2 MRL.																			
		If result was not detected at the lab MDL, the value shown is 1/2 MDL.																			
		If result was validation flagged U or UJ, the value shown is 1/2 MRL.																			
		Green Results = Estimate result reported by laboratory below reporting limit (MRL).																			
		MDL = Method Detection Limit.																			
		MRL = Method Reporting Limit.																			
		NA = Not Applicable.																			
		SEM = Simultaneously Extracted Metals (Simultaneous with Acid Volatile Sulfides)																			
	Notes:	All results reported on dry weight basis, except total solids reported on wet weight basis.																			
		mg/kg = milligrams per kilogram.																			

**2004-2007 Iliamna Lake Study
Sediment Laboratory Results Summary**

	Parameters	Copper	Copper-SEM	Iron	Lead	Lead-SEM	Magnesium	Manganese	Mercury	Mercury-SEM	Molybdenum	Nickel	Nickel-SEM	Potassium	Selenium	Silver	Sodium	Sulfur	Thallium	Tin	Vanadium	Zinc	Zinc-SEM
	Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RB1C																							
	Sample Date																						
	06/15/05	5.3		8290	2.70		1840	169	0.006		1.36	2.30		486	0.16	0.015	360		0.020	0.49	20.2	23.9	
	09/28/05	4.6		9010	2.09		1730	150	0.011		1.30	2.70		507	0.13	0.027	339		0.005	0.87	21.0	23.2	
	Mean	5.0		8650	2.40		1785	160	0.008		1.33	2.50		497	0.15	0.021	350		0.013	0.68	20.6	23.6	
	Median	5.0		8650	2.40		1785	160	0.008		1.33	2.50		497	0.15	0.021	350		0.013	0.68	20.6	23.6	
	St. Deviation	0.5		510	0.43		78	13	0.003		0.04	0.28		15	0.02	0.008	15		0.011	0.27	0.6	0.5	
	# of values	2.0	0	2	2.00	0	2	2	2.000	0	2.00	2.00	0	2	2.00	2.000	2	0	2.000	2.00	2.0	2.0	0
	Minimum	4.6		8290	2.09		1730	150	0.006		1.30	2.30		486	0.13	0.015	339		0.005	0.49	20.2	23.2	
	Maximum	5.3		9010	2.70		1840	169	0.011		1.36	2.70		507	0.16	0.027	360		0.020	0.87	21.0	23.9	
	% of values undetected								100%						50%	100%			50%	100%			
	# of values between MDL and MRL										1				1								
WW1C																							
	Sample Date																						
	09/11/06	13.9	7.1	9690	3.81	3.95	1910	292	0.031	0.03	5.02	4.22	0.8	684	6.64	0.077	423	2110	0.050	0.77	28.8	31.2	15.7
	Mean	13.9	7.1	9690	3.81	3.95	1910	292	0.031	0.03	5.02	4.22	0.8	684	6.64	0.077	423	2110	0.050	0.77	28.8	31.2	15.7
	Median	13.9	7.1	9690	3.81	3.95	1910	292	0.031	0.03	5.02	4.22	0.8	684	6.64	0.077	423	2110	0.050	0.77	28.8	31.2	15.7
	St. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	# of values	1.0	1	1	1.00	1	1	1	1.000	1	1.00	1.00	1	1	1.00	1.000	1	1	1.000	1.00	1.0	1.0	1
	Minimum	13.9	7.1	9690	3.81	3.95	1910	292	0.031	0.03	5.02	4.22	0.8	684	6.64	0.077	423	2110	0.050	0.77	28.8	31.2	15.7
	Maximum	13.9	7.1	9690	3.81	3.95	1910	292	0.031	0.03	5.02	4.22	0.8	684	6.64	0.077	423	2110	0.050	0.77	28.8	31.2	15.7
	% of values undetected					100%			100%	100%			100%			100%			100%	100%			
	# of values between MDL and MRL																1						

ATTACHMENT B-3

Laboratory Data Tables Mussel Samples

2005-2007 Iliamna lake Study
Mussel Tissue Sample Laboratory Analysis Results Summary

	Parameters	Total Solids	Total Lipids	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc
	Basis	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Bucket Lake, Mussel																	
	Sample Date																
	06/16/05	3.58	0.25	0.004	2.91	0.013	1.06	0.90	6.4	0.85	0.192	0.36	1.22	0.8	0.052	0.011	165
	09/28/05	4.57	0.22	0.010	3.13	0.017	0.69	1.90	9.0	0.73	0.191	0.33	2.68	1.6	0.042	0.012	158
	09/12/06	4.08		0.009	3.02	0.010	0.67	1.00	8.1	0.88	0.282	0.33	2.83	1.7	0.052	0.011	216
	06/13/07	3.45	0.18	0.01	3.06	0.016	0.90	10.1	72.7	1.16	0.130	0.44	6.73	1.4	0.055	0.011	183
	Mean	3.92	0.22	0.008	3.03	0.014	0.83	3.48	24.0	0.90	0.199	0.37	3.37	1.4	0.050	0.011	181
	Median	3.83	0.22	0.010	3.04	0.015	0.80	1.45	8.6	0.86	0.192	0.35	2.76	1.5	0.052	0.011	174
	St. Deviation	0.51	0.04	0.003	0.09	0.003	0.18	4.44	32.5	0.18	0.063	0.05	2.36	0.4	0.006	0.001	26
	# of values	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Minimum	3.45	0.18	0.004	2.91	0.01	0.67	0.9	6.37	0.73	0.13	0.33	1.22	0.8	0.042	0.011	158
	Maximum	4.57	0.25	0.01	3.13	0.02	1.06	10.1	72.70	1.16	0.28	0.44	6.73	1.7	0.055	0.012	216
	% of values undetected			50%		25%											
	# of values between MDL and MRL			2		3								1		4	
Finn Bay, Mussel																	
	Sample Date																
	06/14/05	4.45	0.30	0.014	2.83	0.015	0.46	0.70	8.3	0.26	0.123	0.83	1.40	2.4	0.043	0.009	145
	10/14/05	4.88	0.28	0.004	2.04	0.005	0.32	2.40	15.5	0.13	0.098	0.43	7.81	2.8	0.039	0.007	115
	09/11/06	5.05		0.007	2.61	0.010	0.58	0.40	7.5	0.07	0.125	0.45	3.80	3.4	0.041	0.007	190
	Mean	4.79	0.29	0.008	2.49	0.010	0.45	1.17	10.5	0.15	0.115	0.57	4.34	2.9	0.041	0.008	150
	Median	4.88	0.29	0.007	2.61	0.010	0.46	0.70	8.3	0.13	0.123	0.45	3.80	2.8	0.041	0.007	145
	St. Deviation	0.31	0.01	0.005	0.41	0.005	0.13	1.08	4.4	0.10	0.015	0.23	3.24	0.5	0.002	0.001	38
	# of values	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Minimum	4.45	0.28	0.004	2.04	0.005	0.321	0.4	7.54	0.073	0.0984	0.43	1.4	2.4	0.039	0.007	115
	Maximum	5.05	0.3	0.014	2.83	0.015	0.578	2.4	15.5	0.26	0.125	0.83	7.81	3.4	0.043	0.009	190
	% of values undetected			33%		33%											
	# of values between MDL and MRL			2		2		1									3
Flat Island, Mussel																	
	Sample Date																
	06/14/05	4.23	0.39	0.012	2.86	0.012	0.64	0.15	9.1	0.11	0.071	0.63	1.13	2.9	0.052	0.009	130
	09/29/05	6.43	0.46	0.004	2.09	0.007	0.43	0.50	7.2	0.05	0.053	0.34	3.27	3.2	0.055	0.007	106
	09/11/06	6.00		0.009	2.60	0.010	0.85	0.20	10.6	0.11	0.085	0.46	2.25	4.0	0.052	0.006	145
	Mean	5.55	0.43	0.008	2.52	0.010	0.64	0.28	9.0	0.09	0.070	0.48	2.22	3.4	0.053	0.007	127
	Median	6.00	0.43	0.009	2.60	0.010	0.64	0.20	9.1	0.11	0.071	0.46	2.25	3.2	0.052	0.007	130
	St. Deviation	1.17	0.05	0.004	0.39	0.003	0.21	0.19	1.7	0.03	0.016	0.15	1.07	0.6	0.002	0.002	20
	# of values	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Minimum	4.23	0.39	0.004	2.09	0.007	0.429	0.15	7.15	0.05	0.0533	0.34	1.13	2.9	0.052	0.006	106
	Maximum	6.43	0.46	0.012	2.86	0.012	0.849	0.5	10.6	0.11	0.0847	0.63	3.27	4	0.055	0.009	145
	% of values undetected			33%		33%		67%									
	# of values between MDL and MRL			2		2											3

2005-2007 Iliamna lake Study
Mussel Tissue Sample Laboratory Analysis Results Summary

	Parameters	Total Solids	Total Lipids	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc
	Basis	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Whistlewing Bay, Mussel																	
	Sample Date																
	06/16/05	4.39	0.20	0.019	4.95	0.018	1.05	1.40	7.3	0.14	0.110	0.64	1.87	2.5	0.040	0.010	165
	09/11/06	5.84		0.015	3.86	0.010	0.87	0.20	9.3	0.10	0.146	0.54	3.08	3.0	0.051	0.007	170
	Mean	5.12	0.20	0.017	4.41	0.014	0.96	0.80	8.3	0.12	0.128	0.59	2.48	2.8	0.046	0.009	168
	Median	5.12	0.20	0.017	4.41	0.014	0.96	0.80	8.3	0.12	0.128	0.59	2.48	2.8	0.046	0.009	168
	St. Deviation	1.03	NA	0.003	0.77	0.006	0.13	0.85	1.4	0.03	0.025	0.07	0.86	0.4	0.008	0.002	4
	# of values	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Minimum	4.39	0.2	0.015	3.86	0.01	0.865	0.2	7.29	0.095	0.11	0.538	1.87	2.5	0.04	0.007	165
	Maximum	5.84	0.2	0.019	4.95	0.018	1.05	1.4	9.28	0.14	0.146	0.64	3.08	3	0.051	0.01	170
	% of values undetected					50%		50%									
	# of values between MDL and MRL			2		1											2
	Key:	Bold Results = Parameter undetected by test, value shown is 1/2 MDL or 1/2 MRL.															
		If result was not detected at the lab MDL, the value shown is 1/2 MDL.															
		If result was validation flagged U or UJ, the value shown is 1/2 MRL.															
		Green Results = Estimate result reported by laboratory below reporting limit (MRL).															
		MDL = Method Detection Limit.															
		MRL = Method Reporting Limit.															
		NA = Not Applicable.															
		Note: All results reported on dry weight basis, except total solids and total lipids reported on wet weight basis.															
	Notes:	All results reported on dry weight basis, except total solids and total lipids reported on wet weight basis.															
		mg/kg = milligrams per kilogram.															

ATTACHMENT B-4

Laboratory Data Tables Detected Organics in Sediment Samples

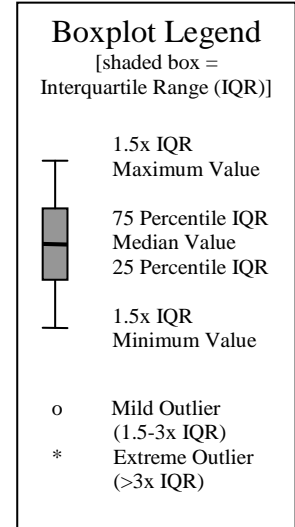
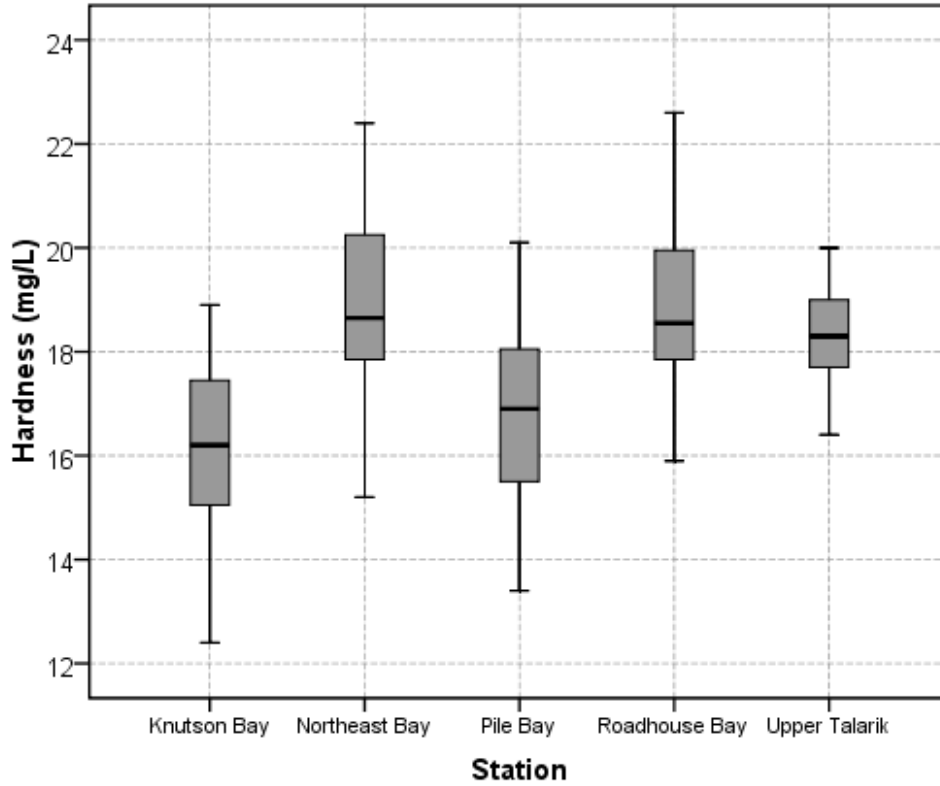
Iliamna Lake Study, Detected Laboratory Organic Constituents of Sediments Samples				
Site	Lab Method	Date	Result	Units
Benzo(a)anthracene				
BUL	8270SIM	8/18/07	12.5	µg/kg
Benzo(a)pyrene				
BUL	8270SIM	8/18/07	21.0	µg/kg
Benzo(b)fluoranthene				
BUL	8270SIM	8/18/07	28.3	µg/kg
Chrysene				
BUL	8270SIM	8/18/07	15.1	µg/kg
Diesel Range Organics				
KN1C	AK102	6/14/05	66.6	µg/kg
Fluoranthene				
BUL	8270SIM	8/18/07	19.4	µg/kg
Indeno(1,2,3-cd)pyrene				
BUL	8270SIM	8/18/07	13.0	µg/kg
Phenanthrene				
BUL	8270SIM	8/18/07	13.7	µg/kg
Pyrene				
BUL	8270SIM	8/18/07	19.1	µg/kg
Residual Range Organics				
BUL	AK103	6/13/07	48.7	mg/kg
PB1C	AK103	6/14/05	55.4	mg/kg
RB1C	AK103	9/28/05	106	mg/kg
NE1C	AK103	6/16/05	110	mg/kg
PB1C	AK103	9/29/05	131	mg/kg
FN1C	AK103	6/14/05	137	mg/kg
FL1C	AK103	6/14/05	167	mg/kg
KN1C	AK103	9/29/05	223	mg/kg
NE1C	AK103	9/28/05	373	mg/kg
KN1C	AK103	6/14/05	499	mg/kg
FL1C	AK103	9/29/05	2140	mg/kg
BL1C	AK103	9/28/05	2460	mg/kg
Total Organic Carbon				
RB1C	E415.1	9/28/05	0.621	Percent
KN1C	E415.1	9/29/05	0.684	Percent
PB1C	E415.1	6/14/05	0.945	Percent
PB1C	E415.1	9/29/05	1.08	Percent
KN1C	E415.1	6/14/05	1.27	Percent
NE1C	E415.1	6/16/05	2.47	Percent
NE1C	E415.1	9/28/05	2.98	Percent
FN1C	E415.1	6/14/05	5.36	Percent
BL1C	E415.1	9/28/05	10.8	Percent
FL1C	E415.1	6/14/05	11.1	Percent
FL1C	E415.1	9/29/05	13.9	Percent

ATTACHMENT B-5

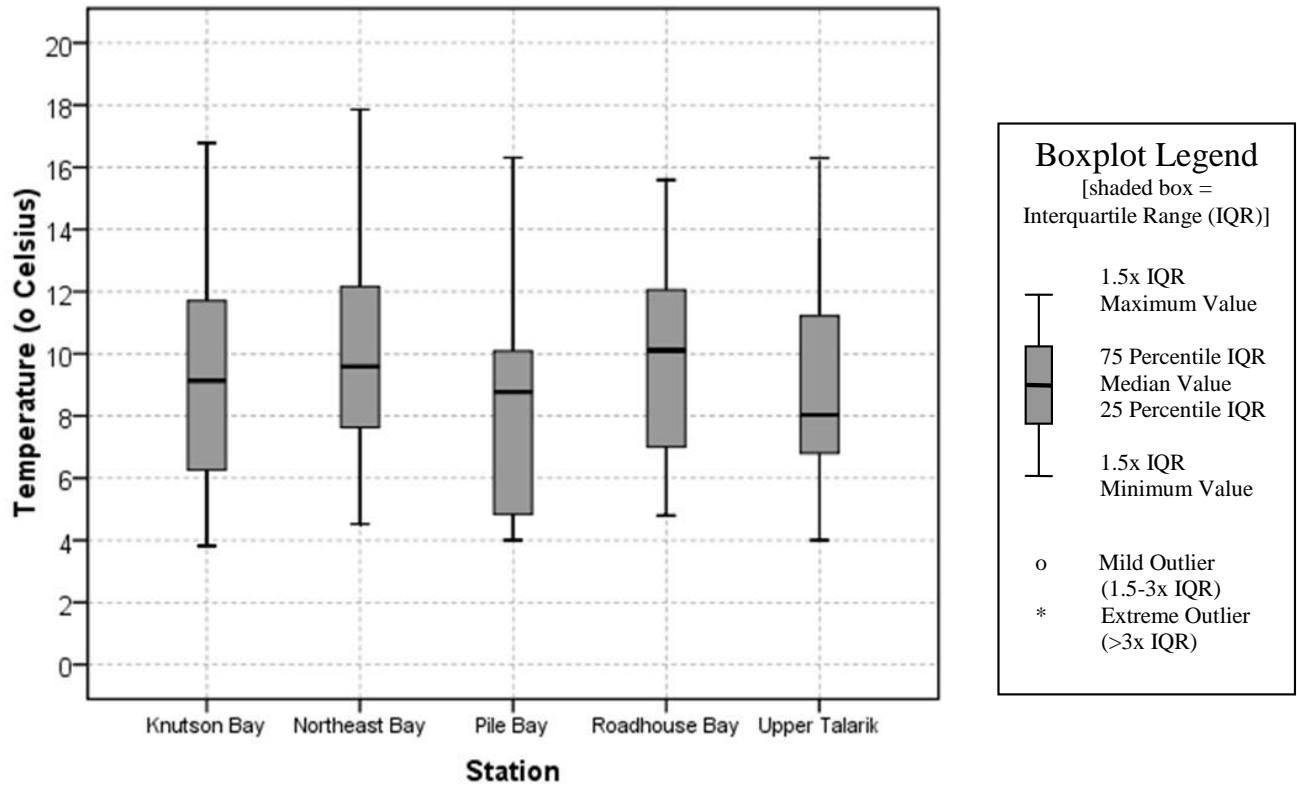
Box and Whisker Plots for Surface Water Chemistry

(Note that some parameters are not displayed as box and whisker plots because of limited number of detections. Box and whisker plots are sometimes referred to simply as boxplots.)

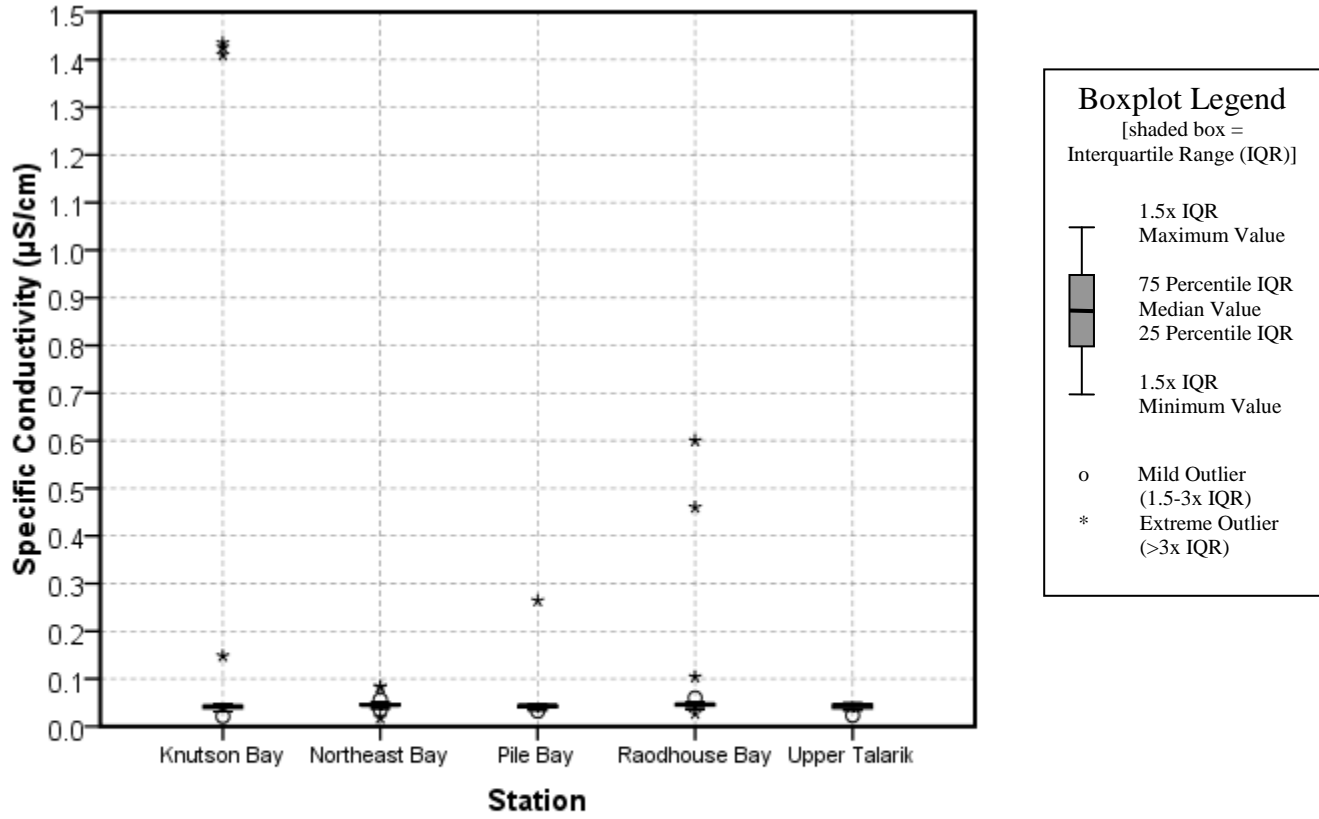
Hardness (mg/L)



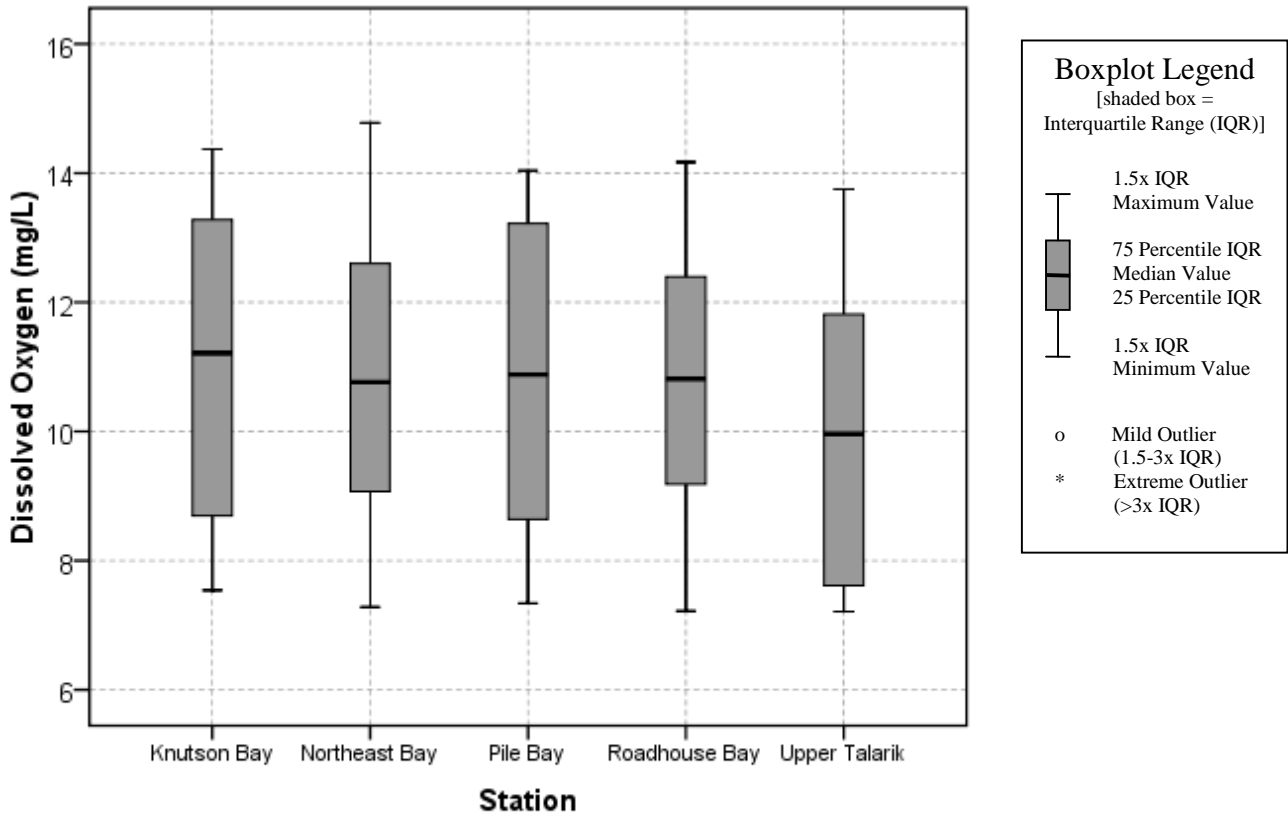
Temperature (°Celsius)



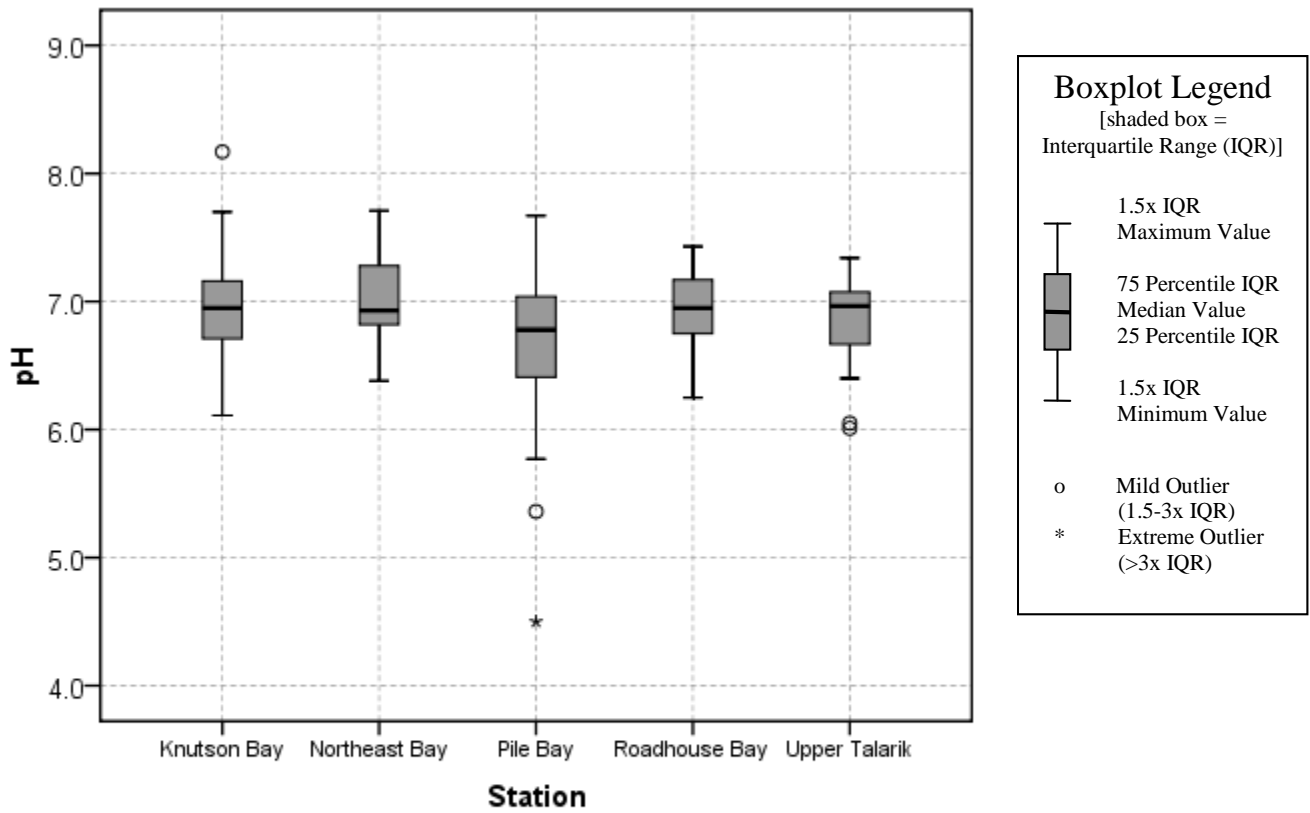
Specific Conductivity ($\mu\text{S}/\text{cm}$)



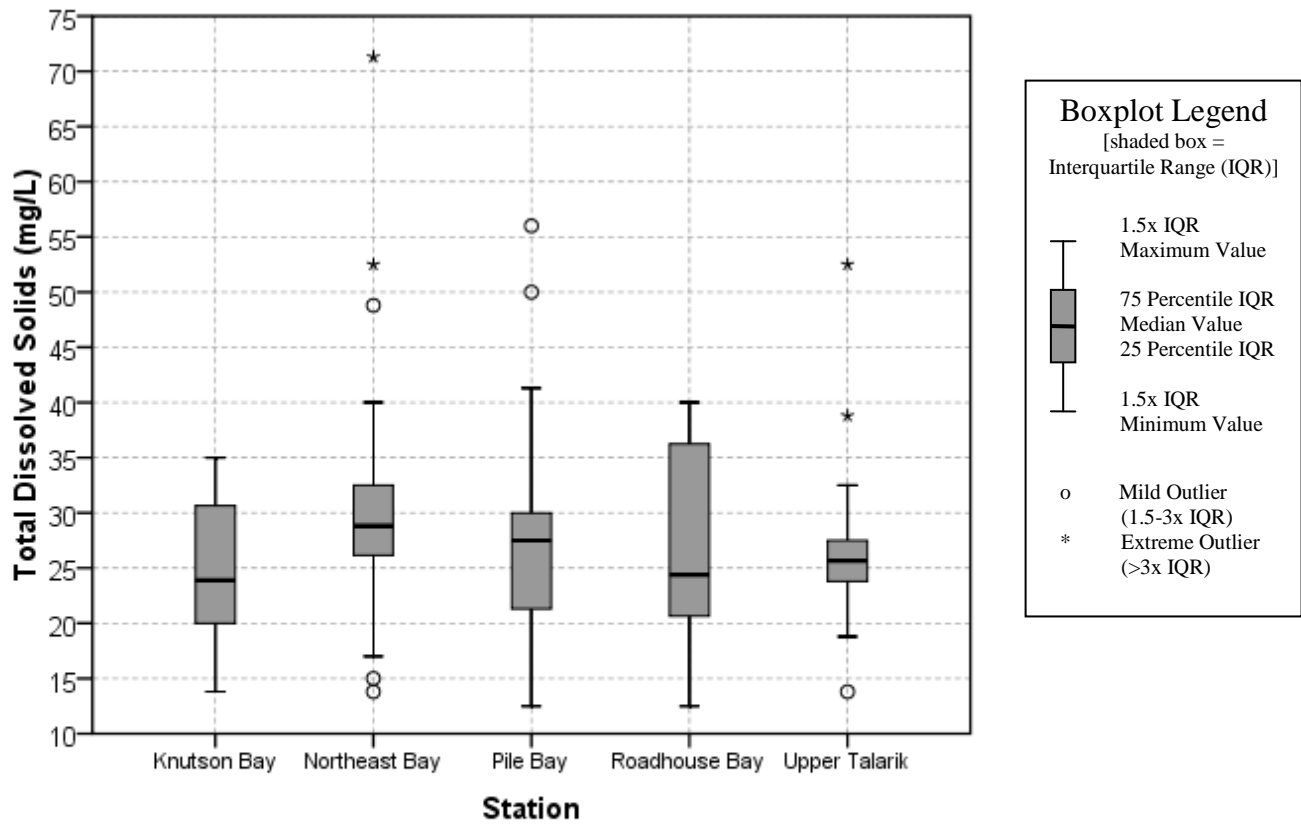
Dissolved Oxygen (mg/L)



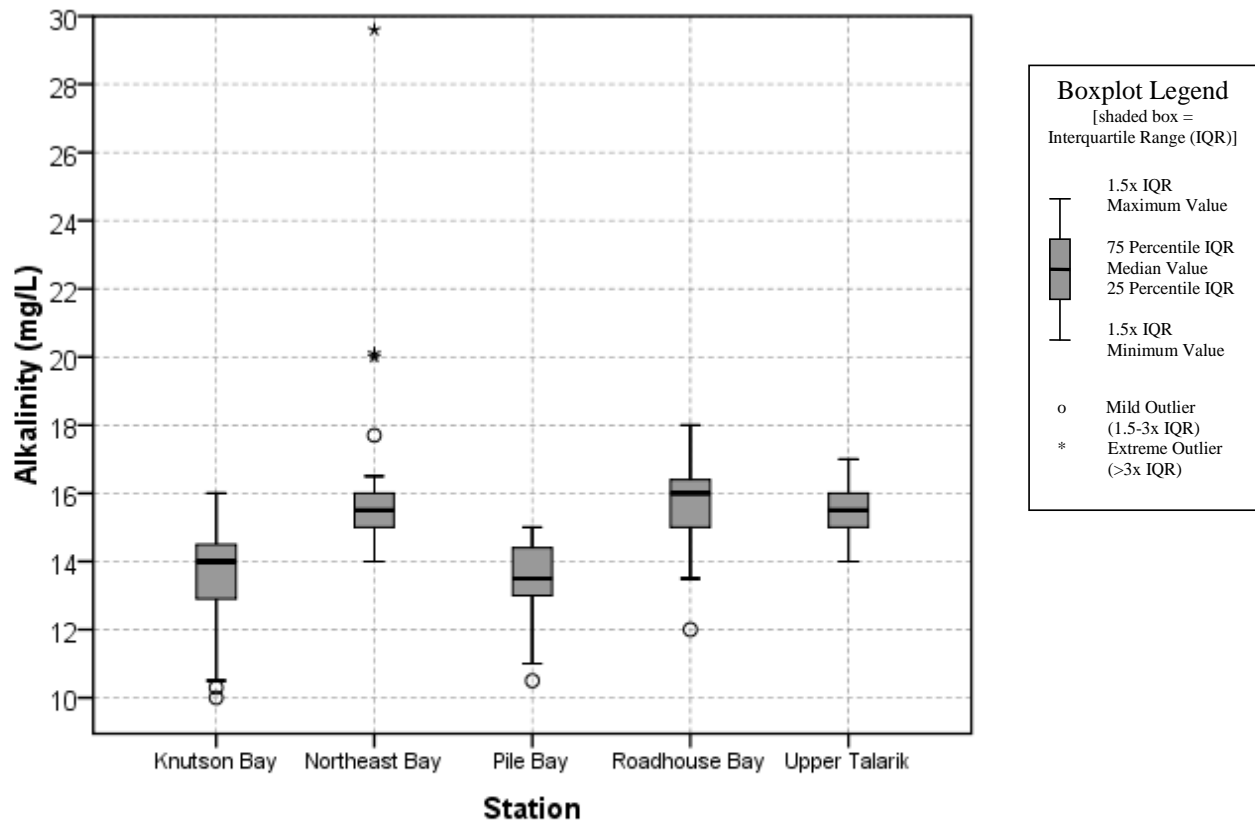
pH



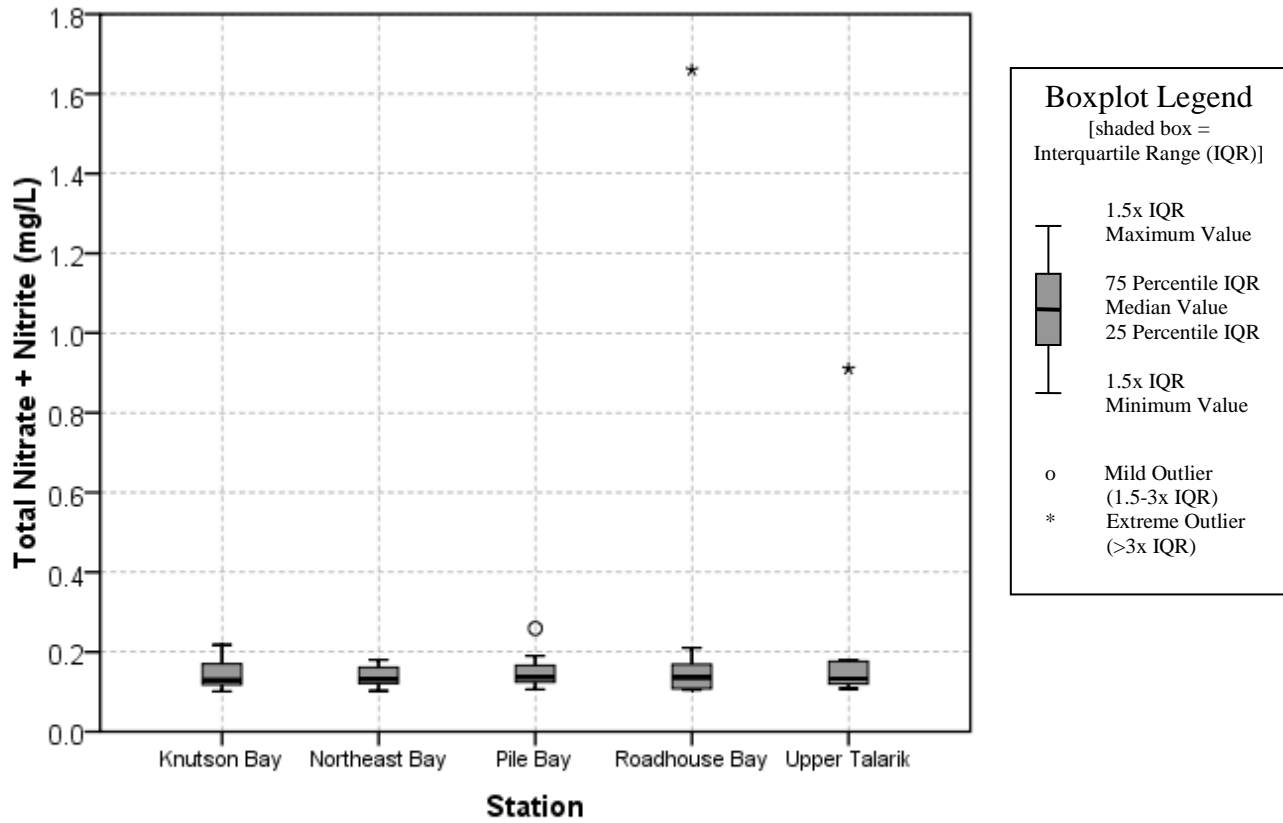
Total Dissolved Solids (mg/L)



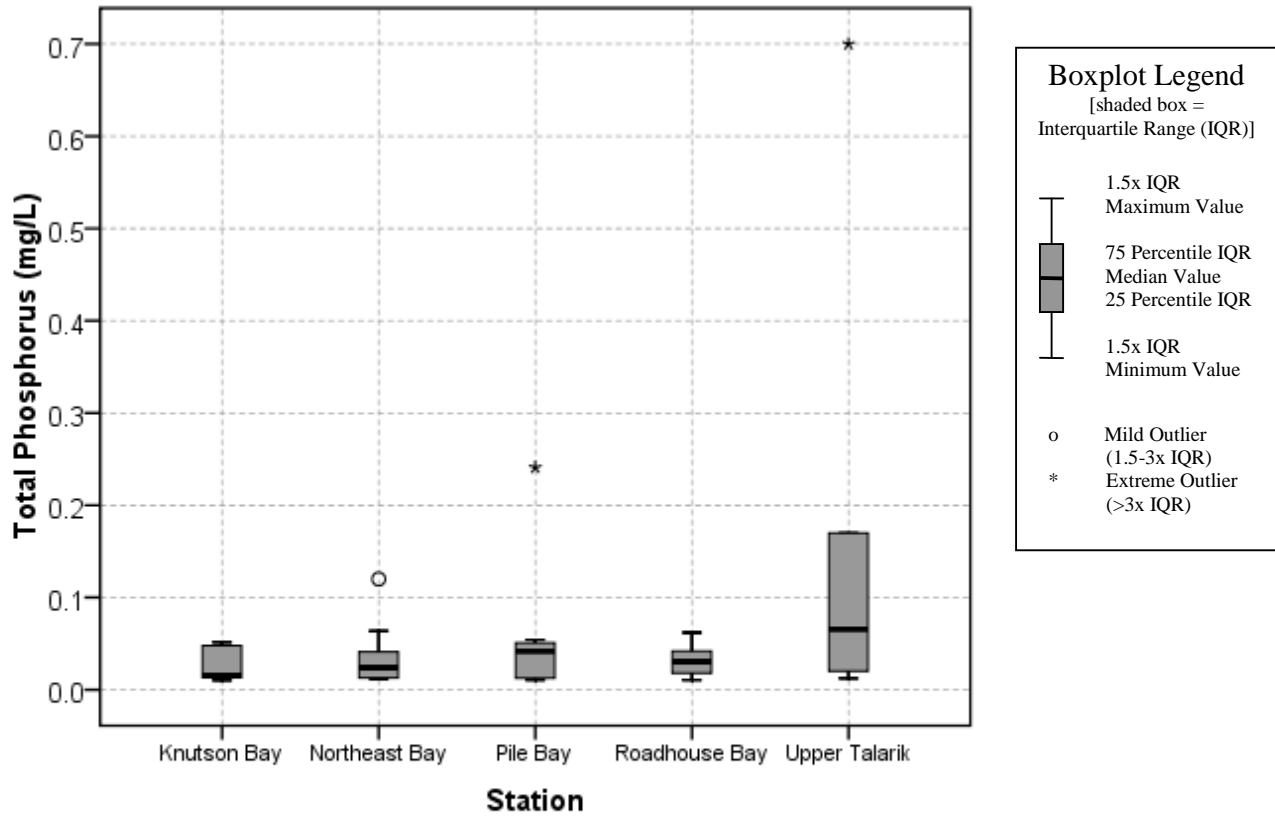
Alkalinity (mg/L)



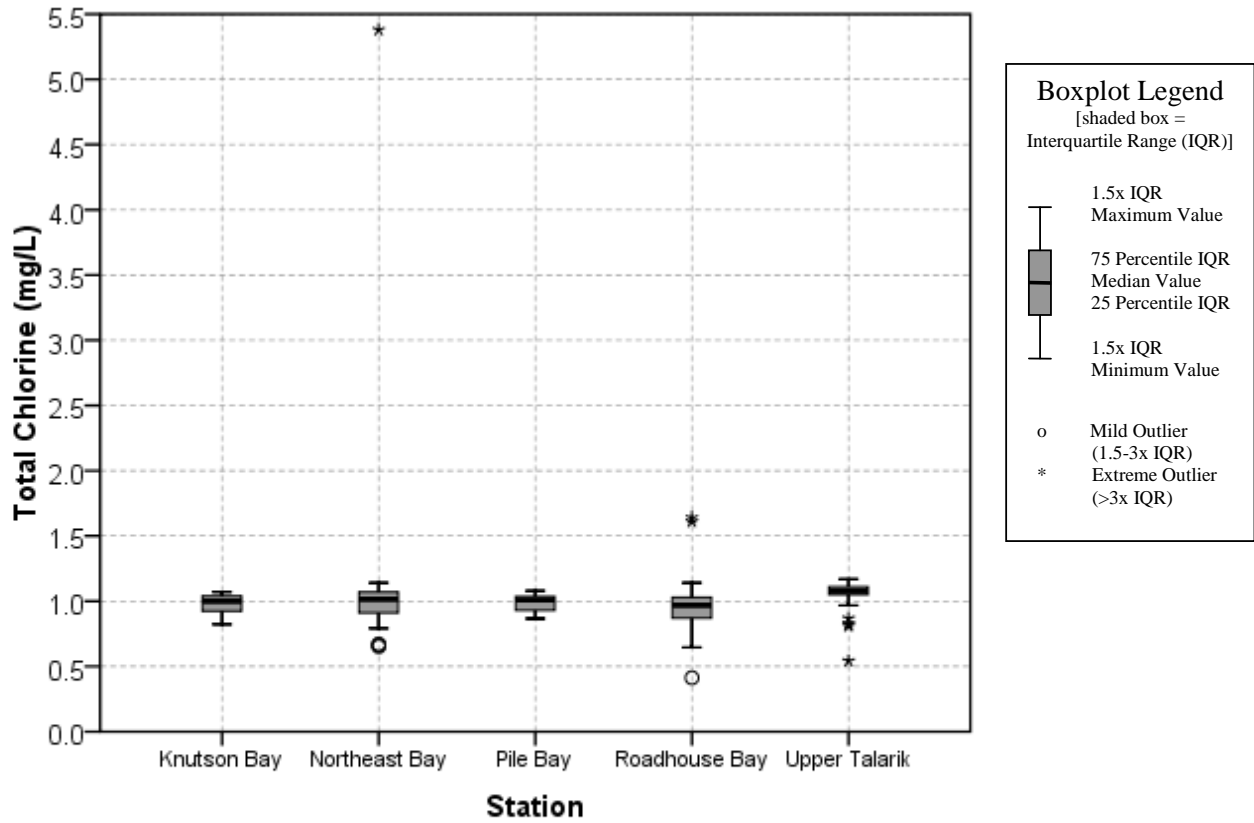
Total Nitrate + Nitrite (mg/L)



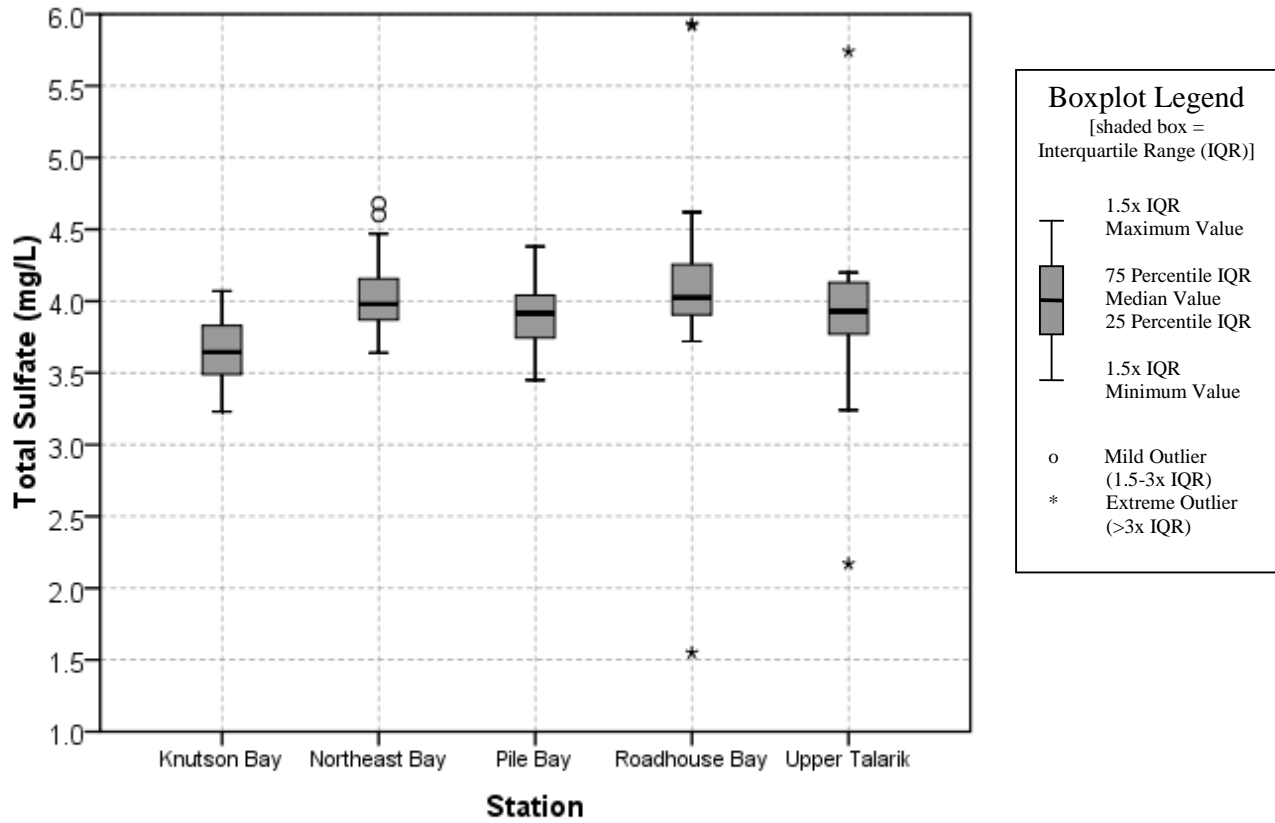
Total Phosphorus (mg/L)



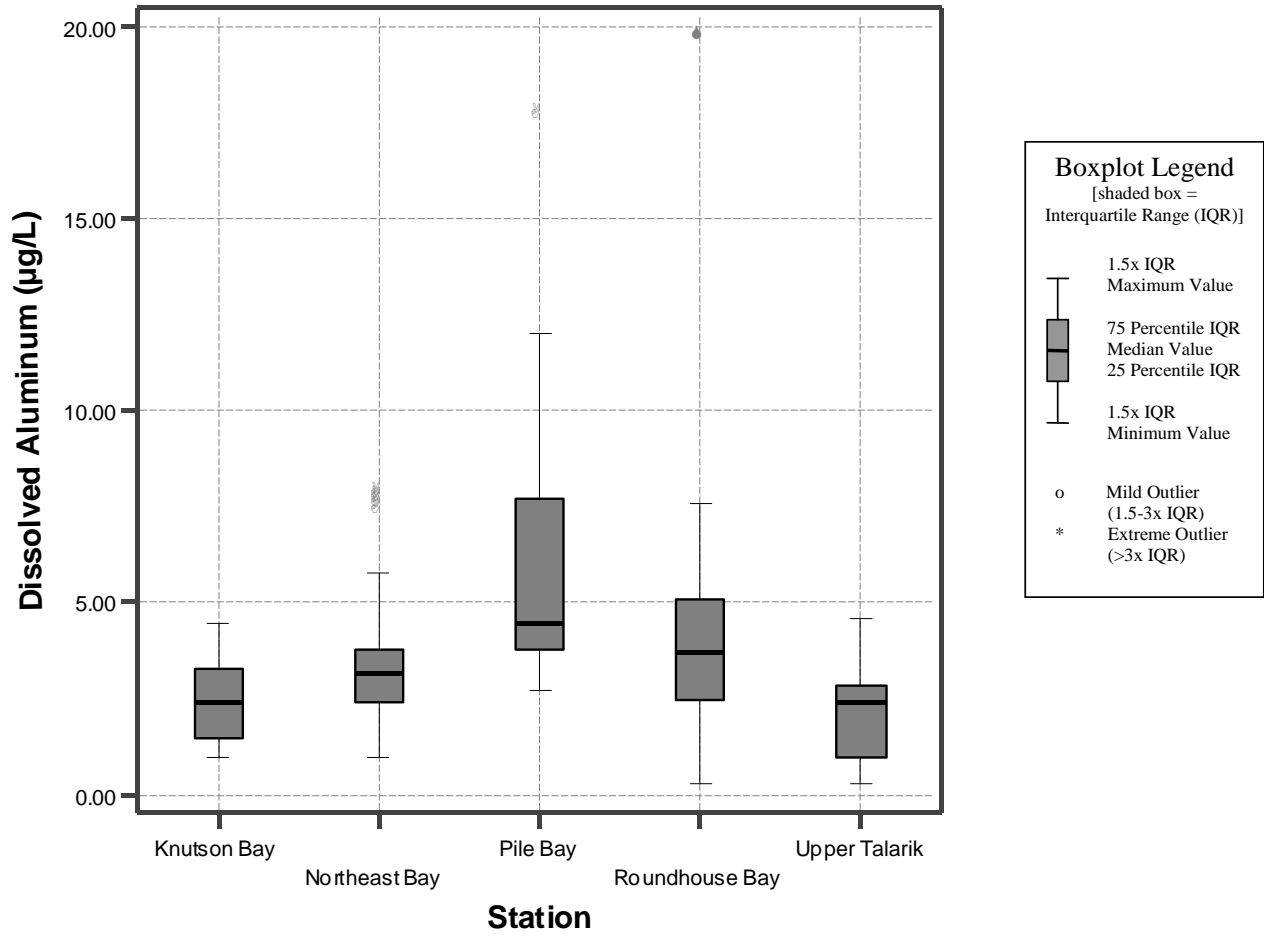
Total Chlorine (mg/L)



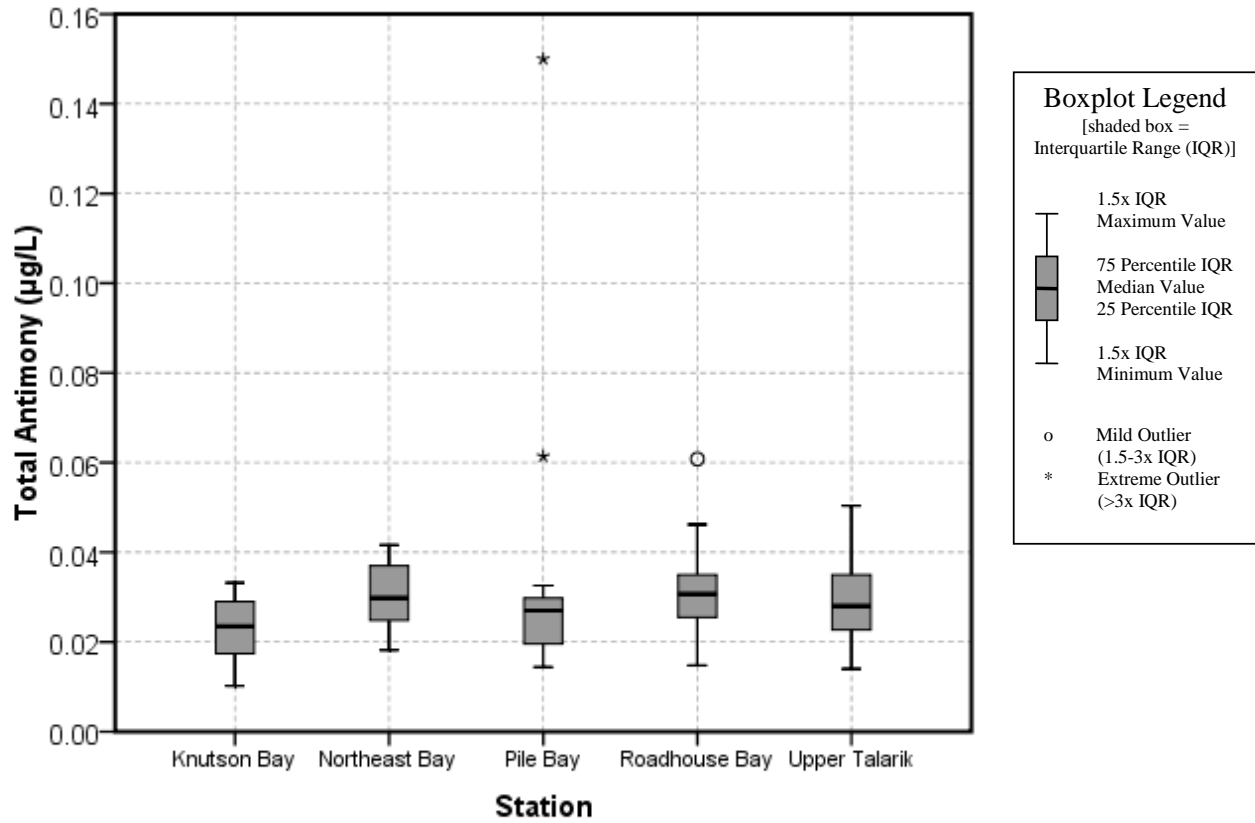
Total Sulfate (mg/L)



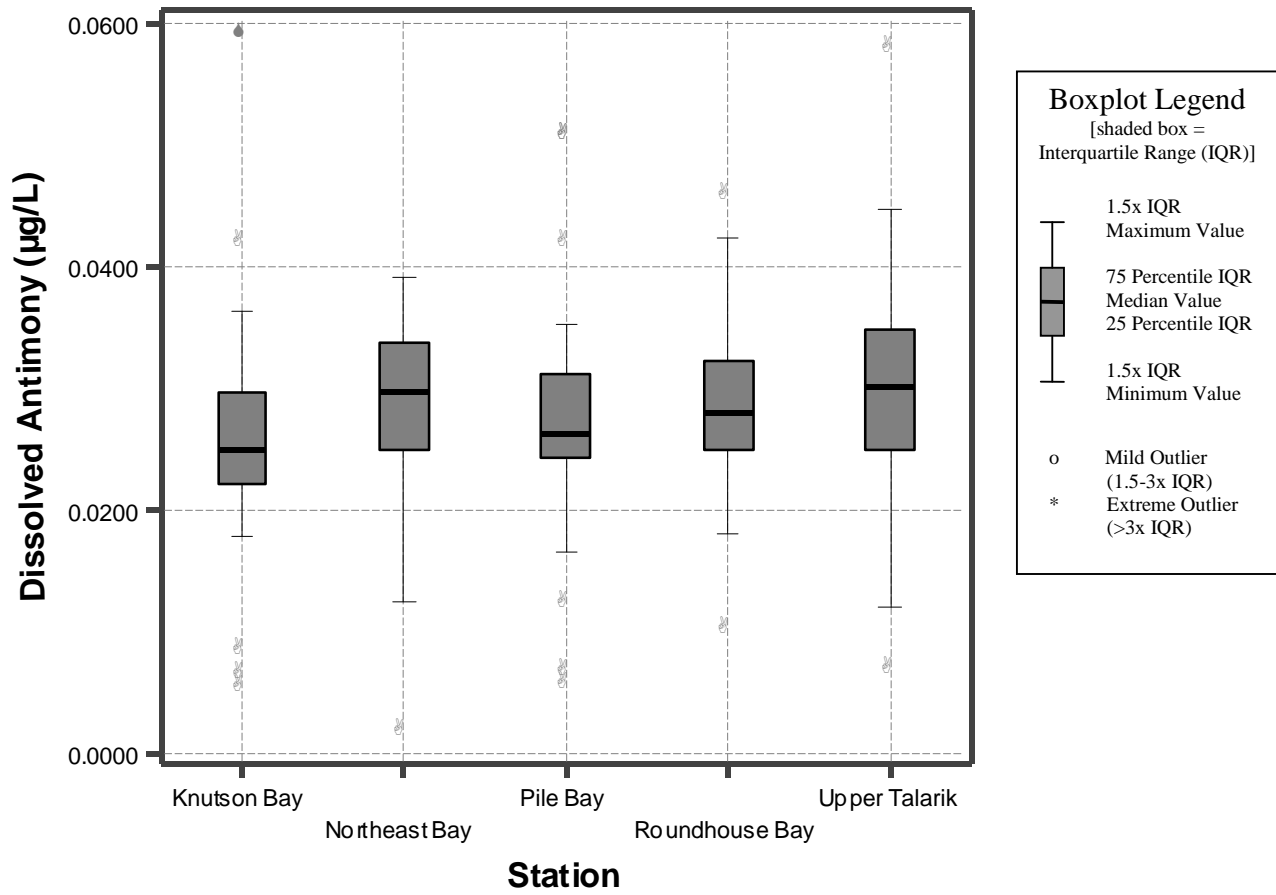
Dissolved Aluminum ($\mu\text{g/L}$)



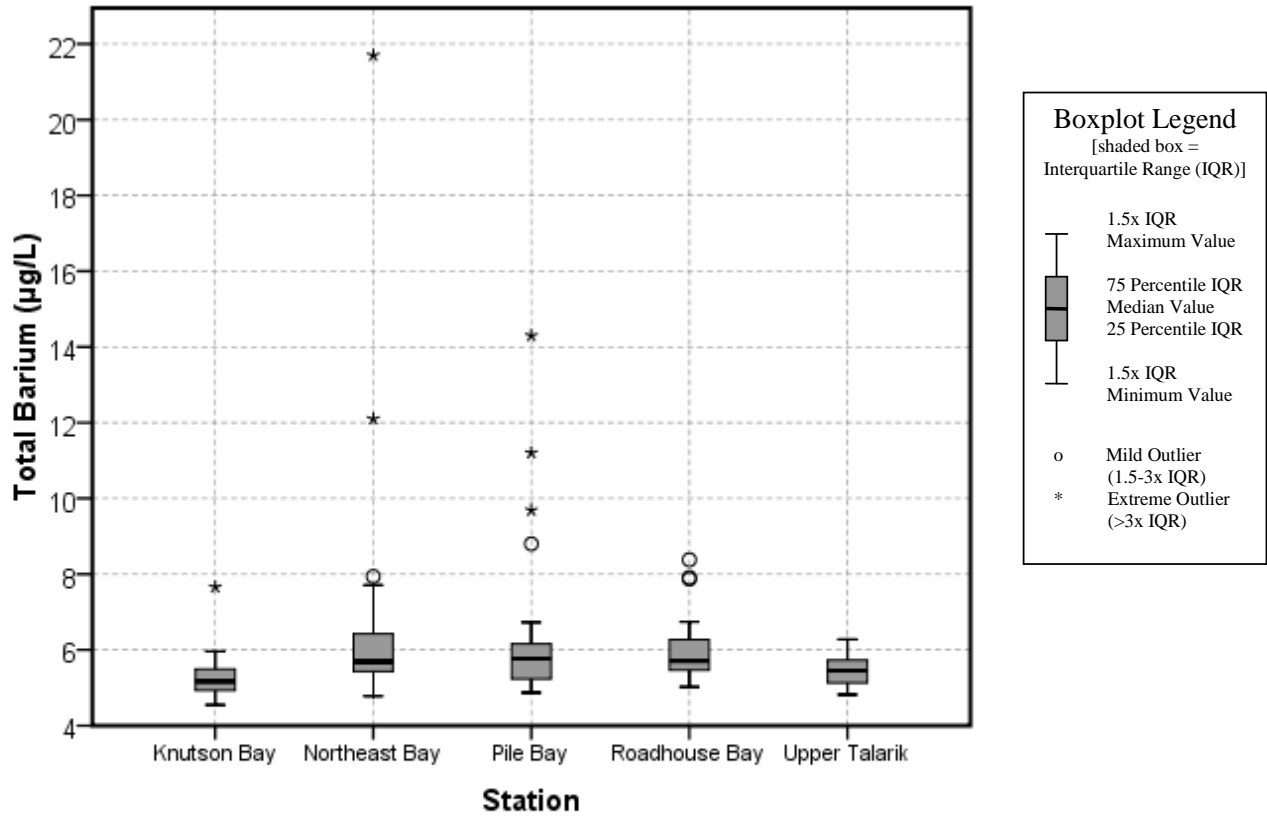
Total Antimony ($\mu\text{g/L}$)



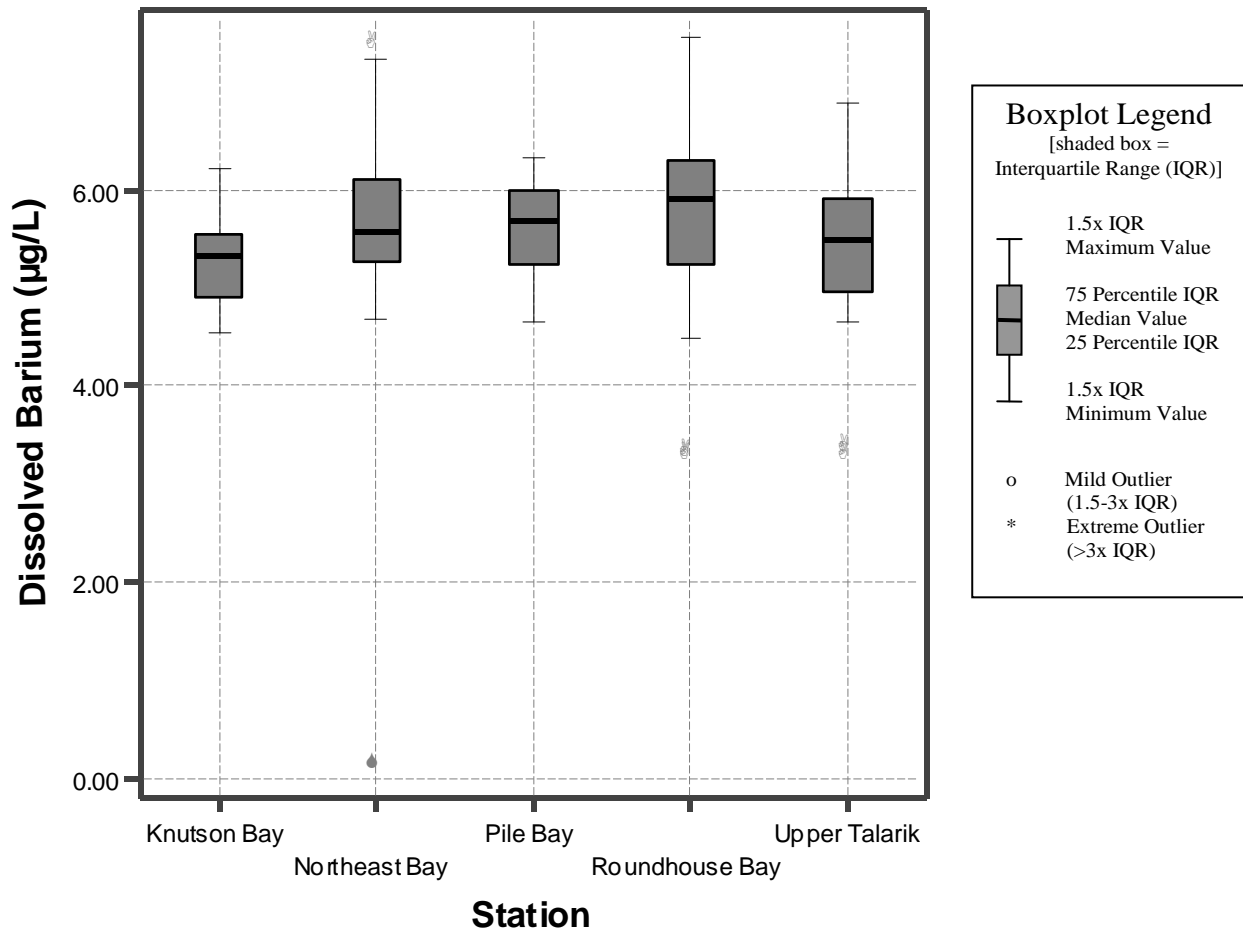
Dissolved Antimony ($\mu\text{g/L}$)



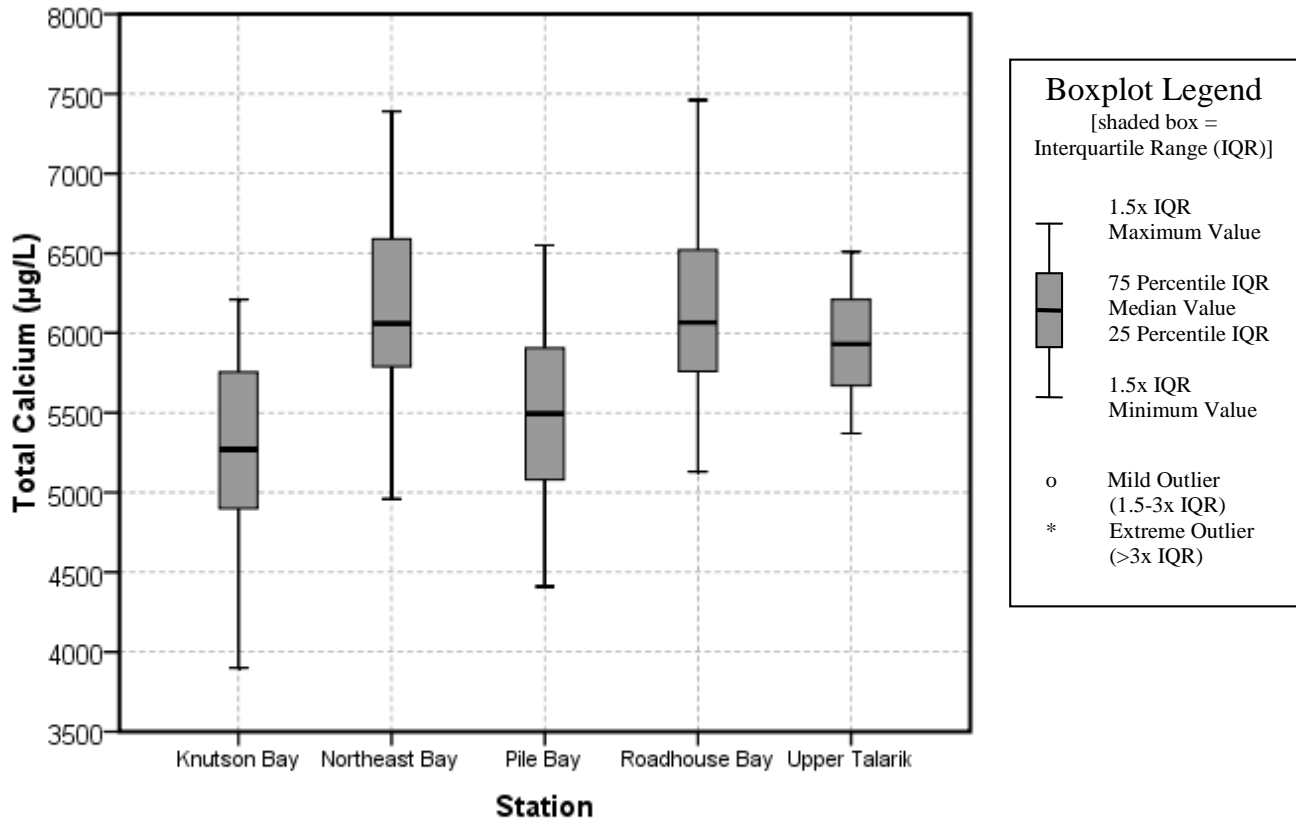
Total Barium ($\mu\text{g/L}$)



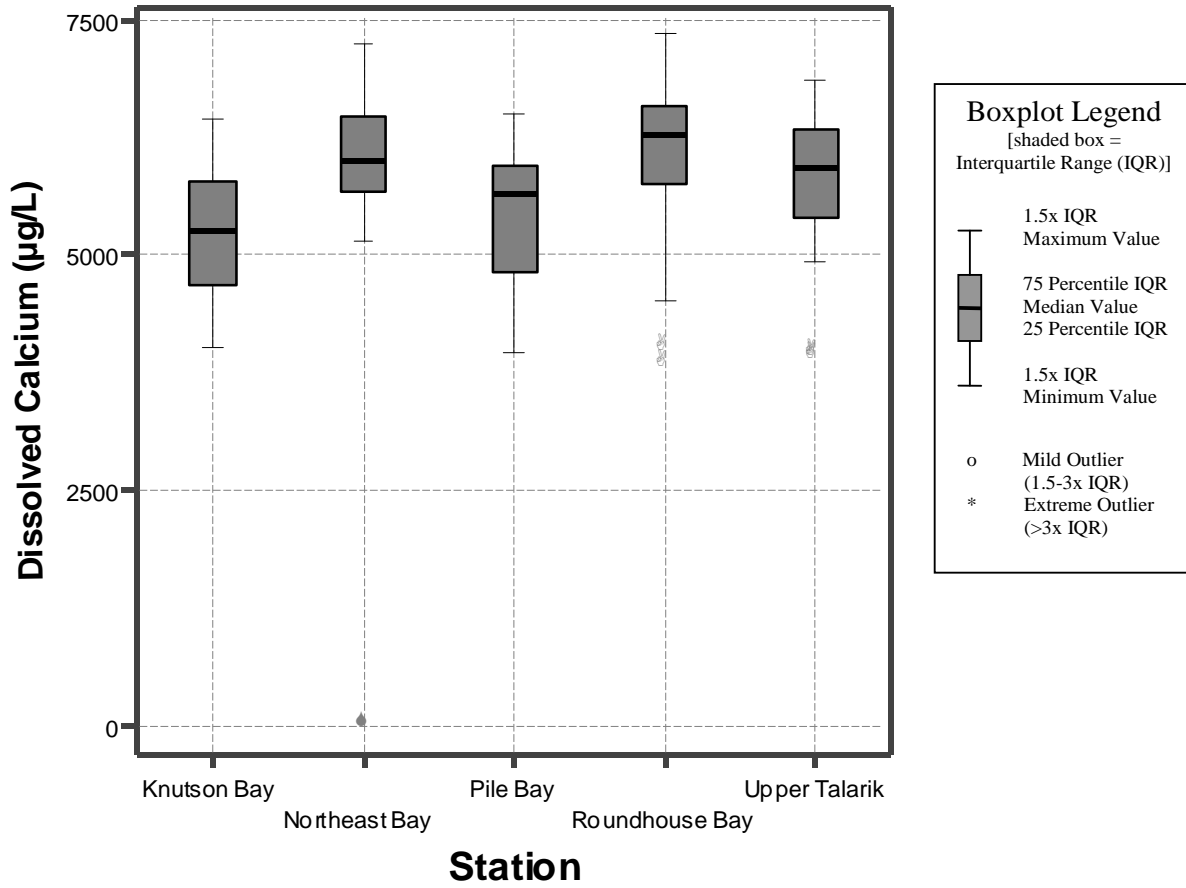
Dissolved Barium ($\mu\text{g/L}$)



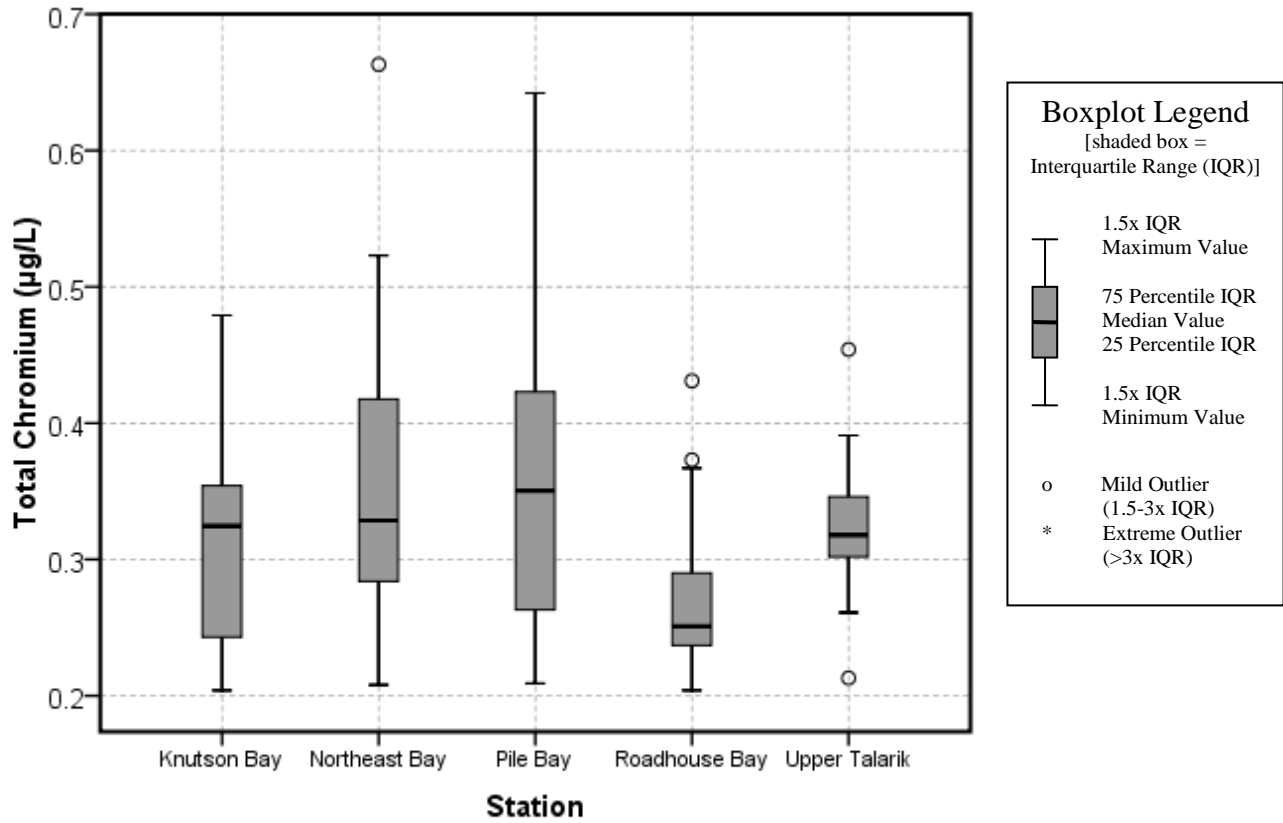
Total Calcium ($\mu\text{g/L}$)



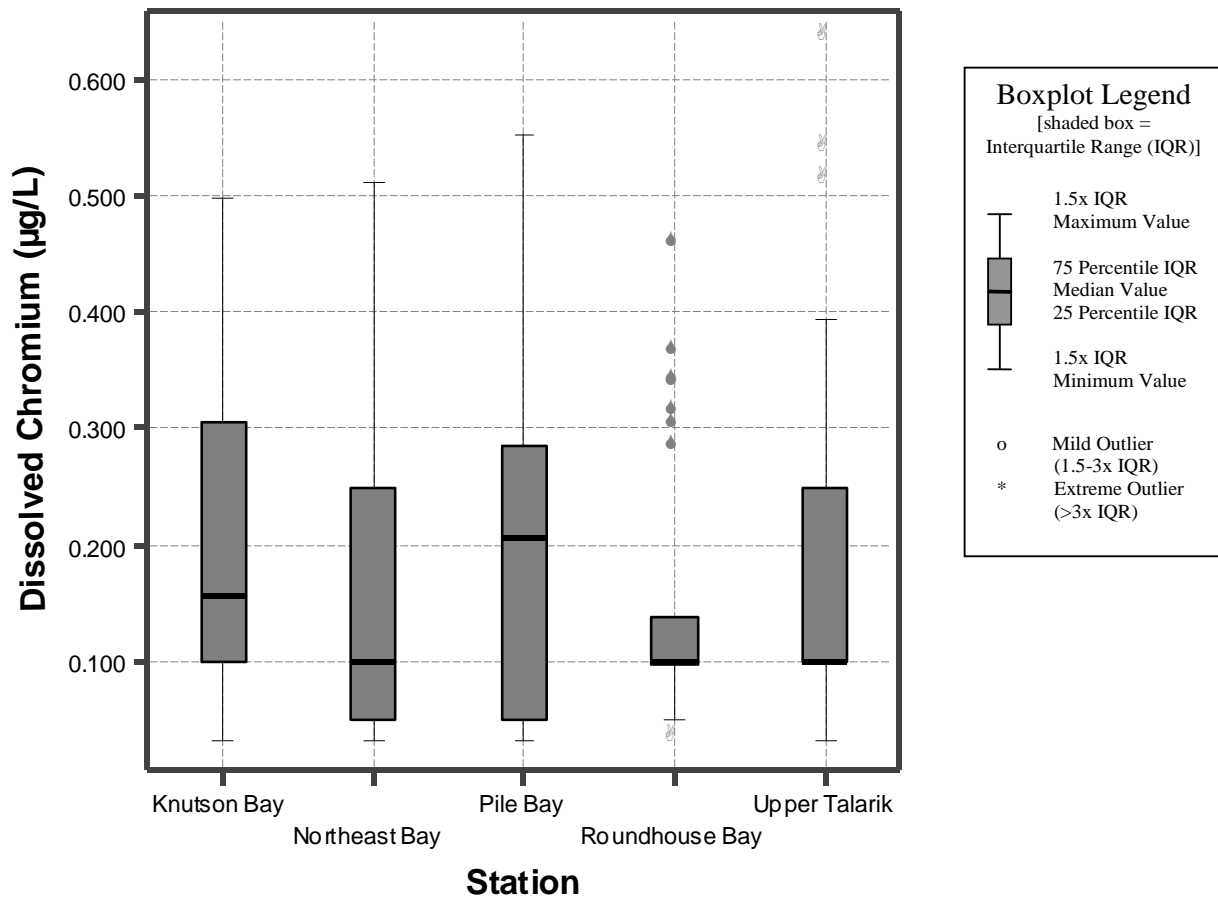
Dissolved Calcium ($\mu\text{g/L}$)



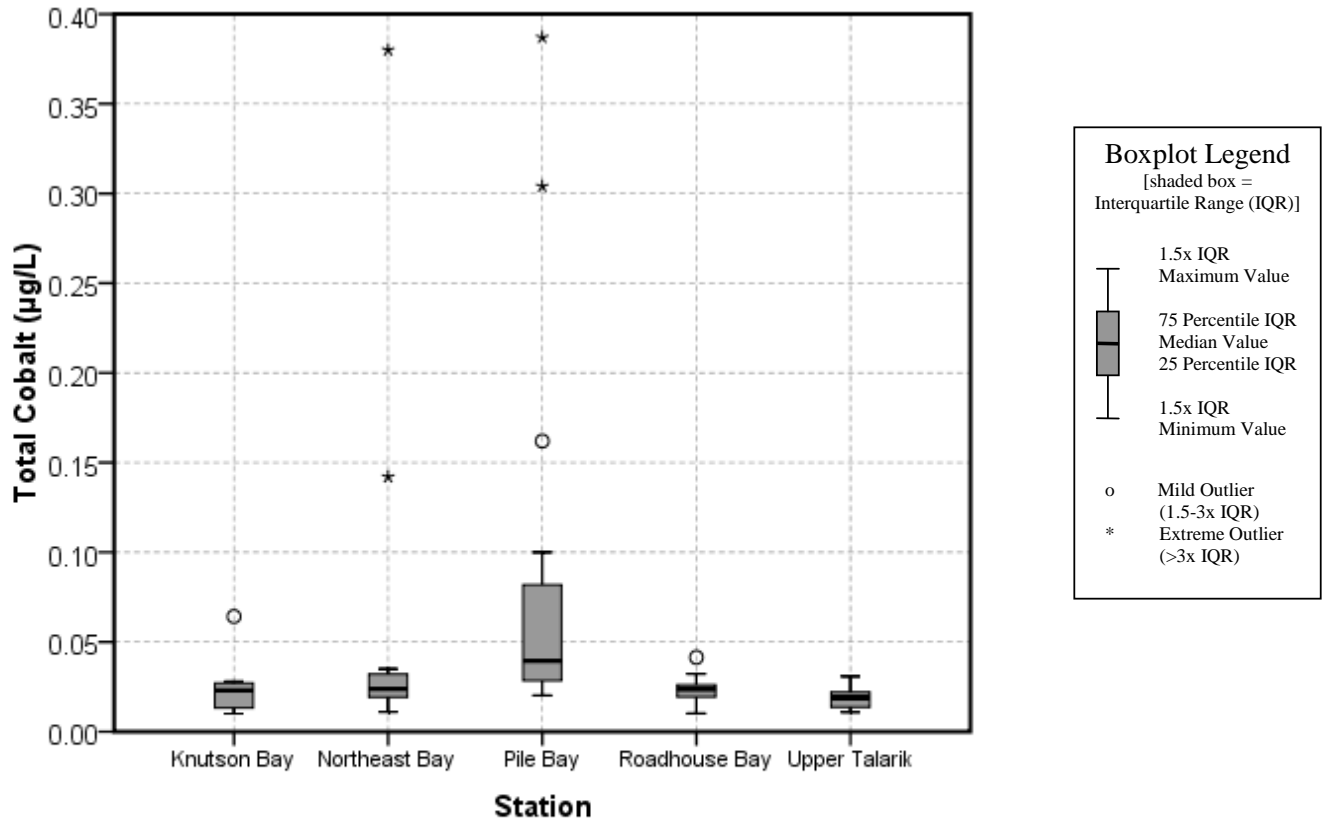
Total Chromium ($\mu\text{g/L}$)



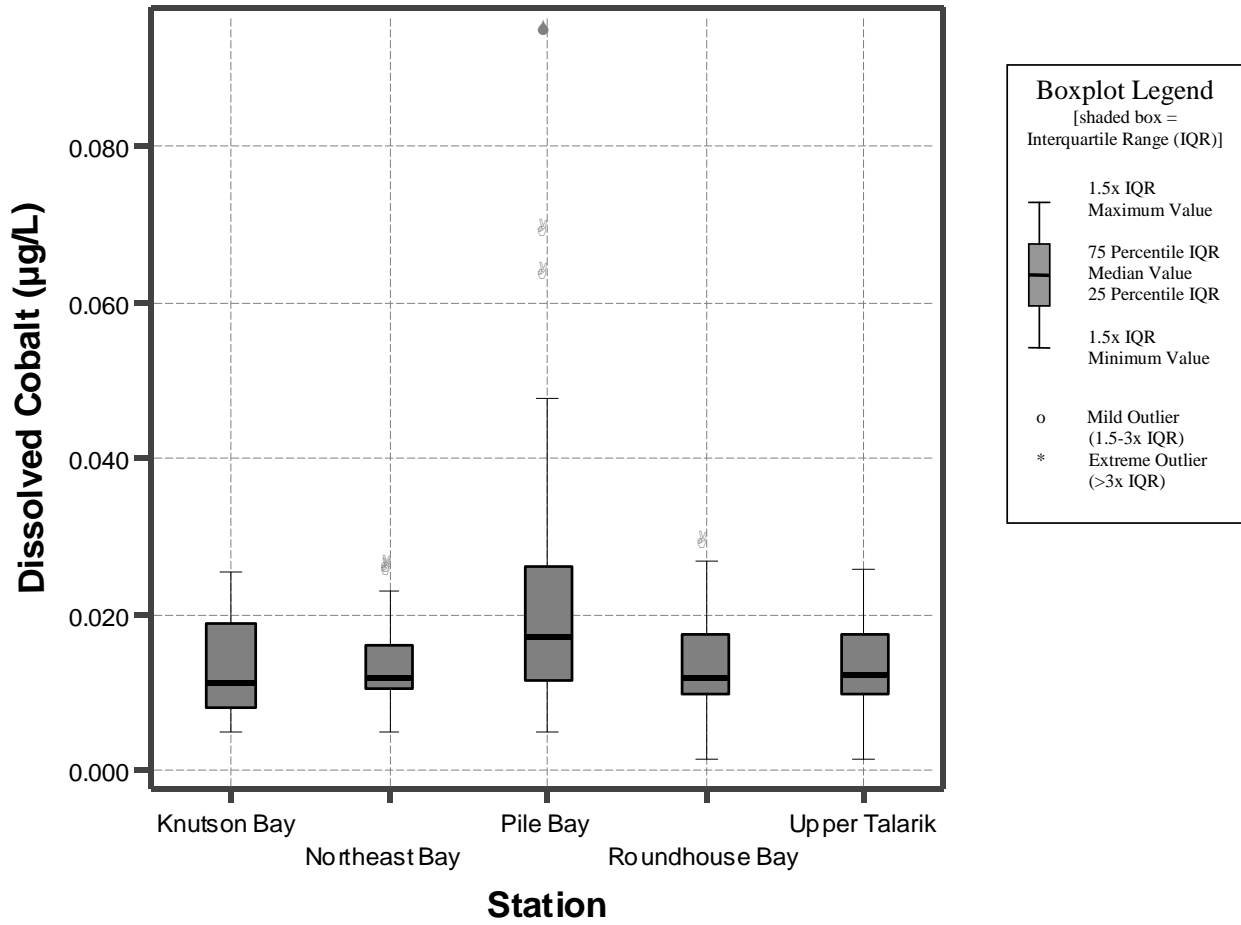
Dissolved Chromium ($\mu\text{g/L}$)



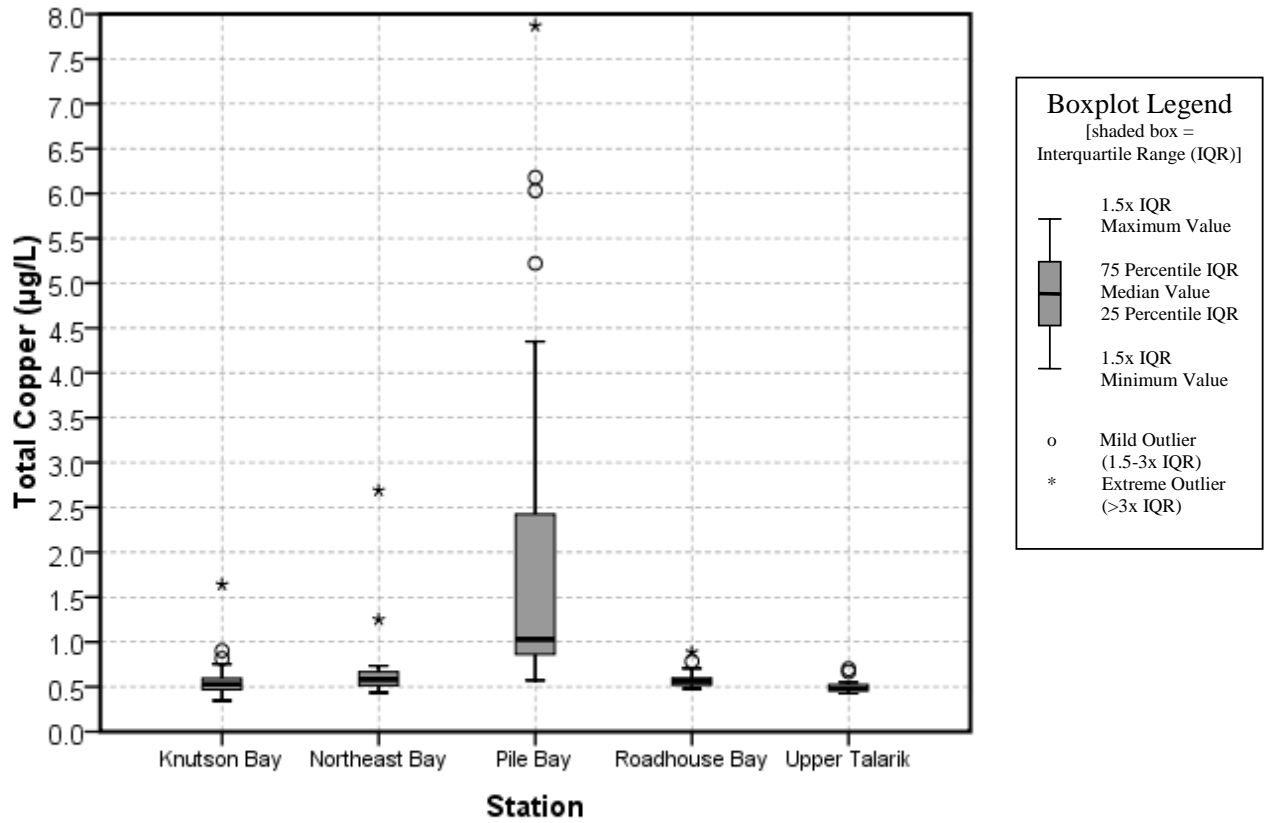
Total Cobalt ($\mu\text{g/L}$)



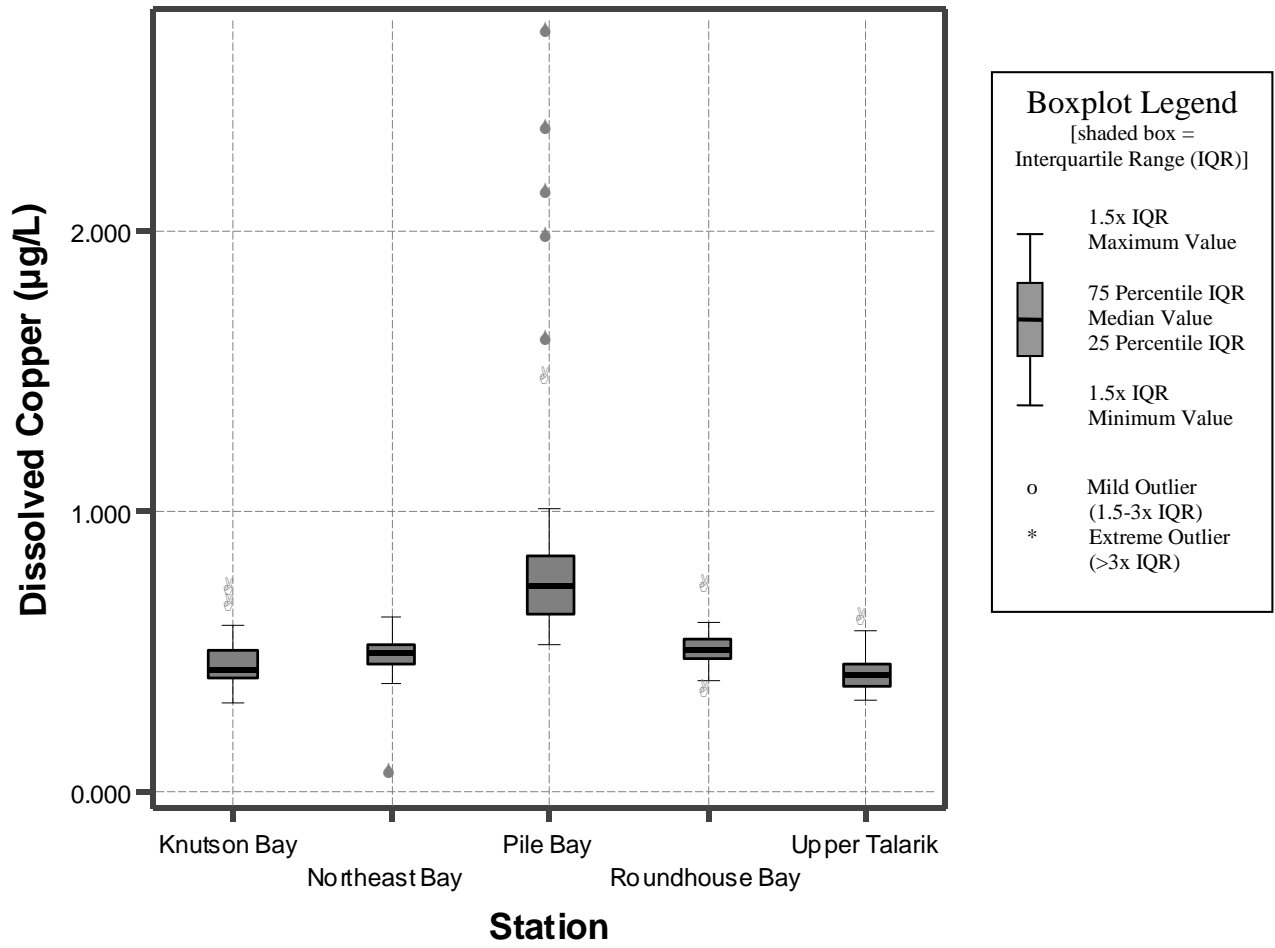
Dissolved Cobalt ($\mu\text{g/L}$)



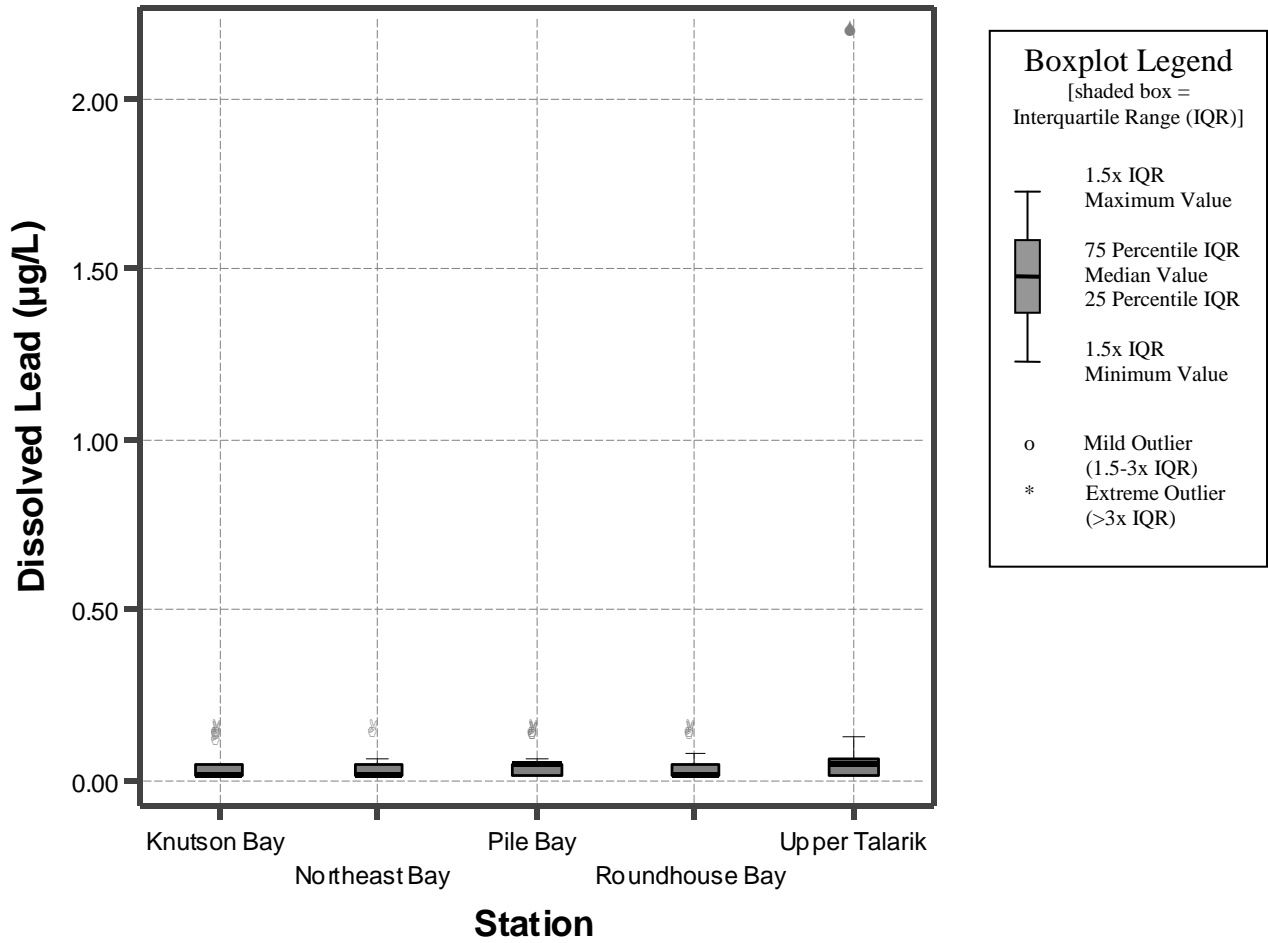
Total Copper ($\mu\text{g/L}$)



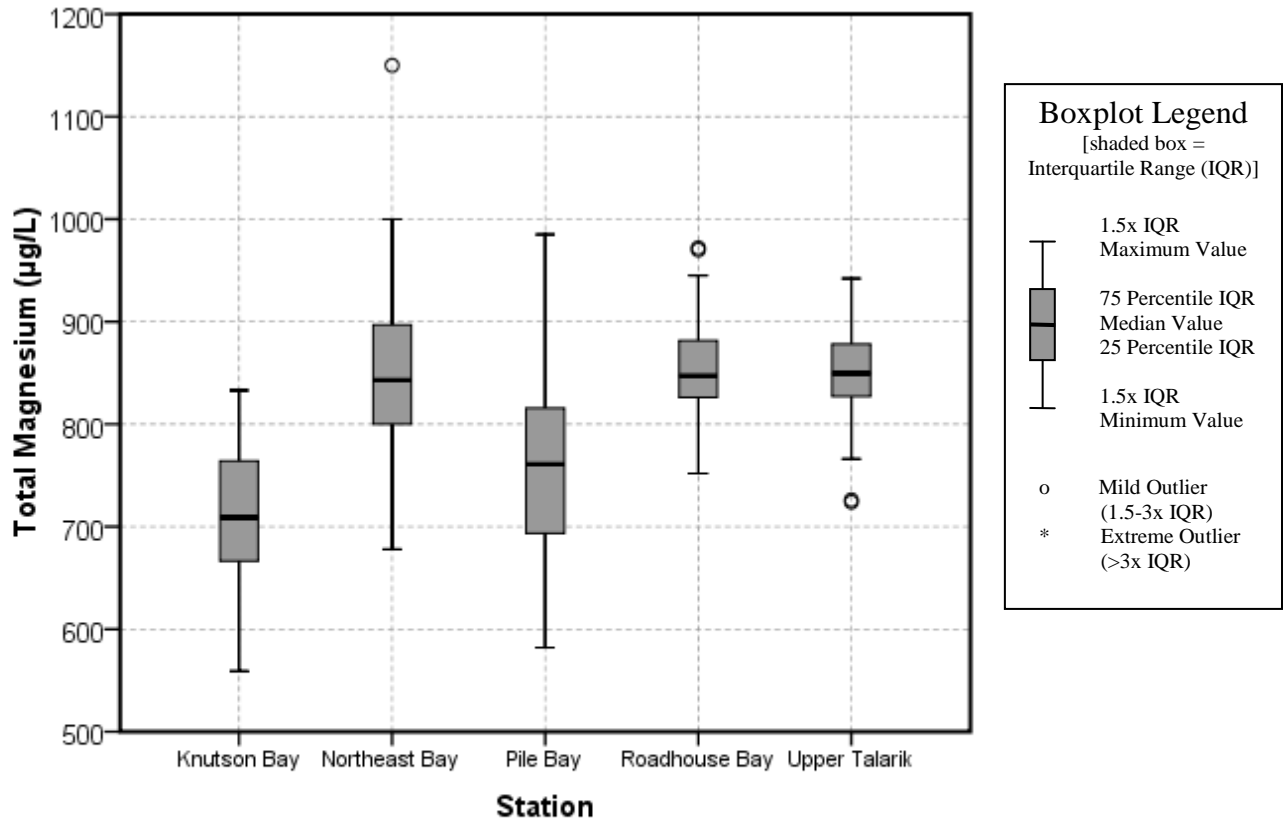
Dissolved Copper ($\mu\text{g/L}$)



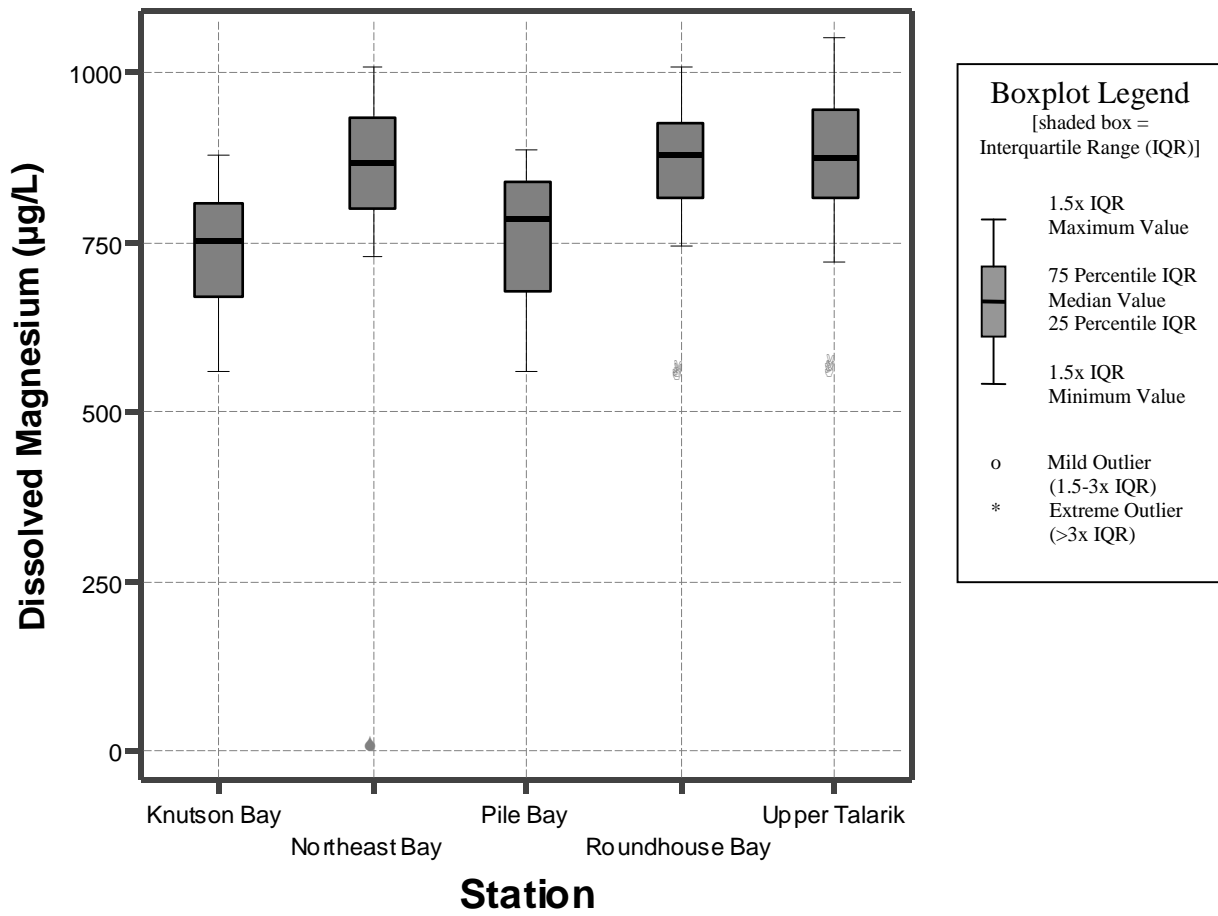
Dissolved Lead ($\mu\text{g/L}$)



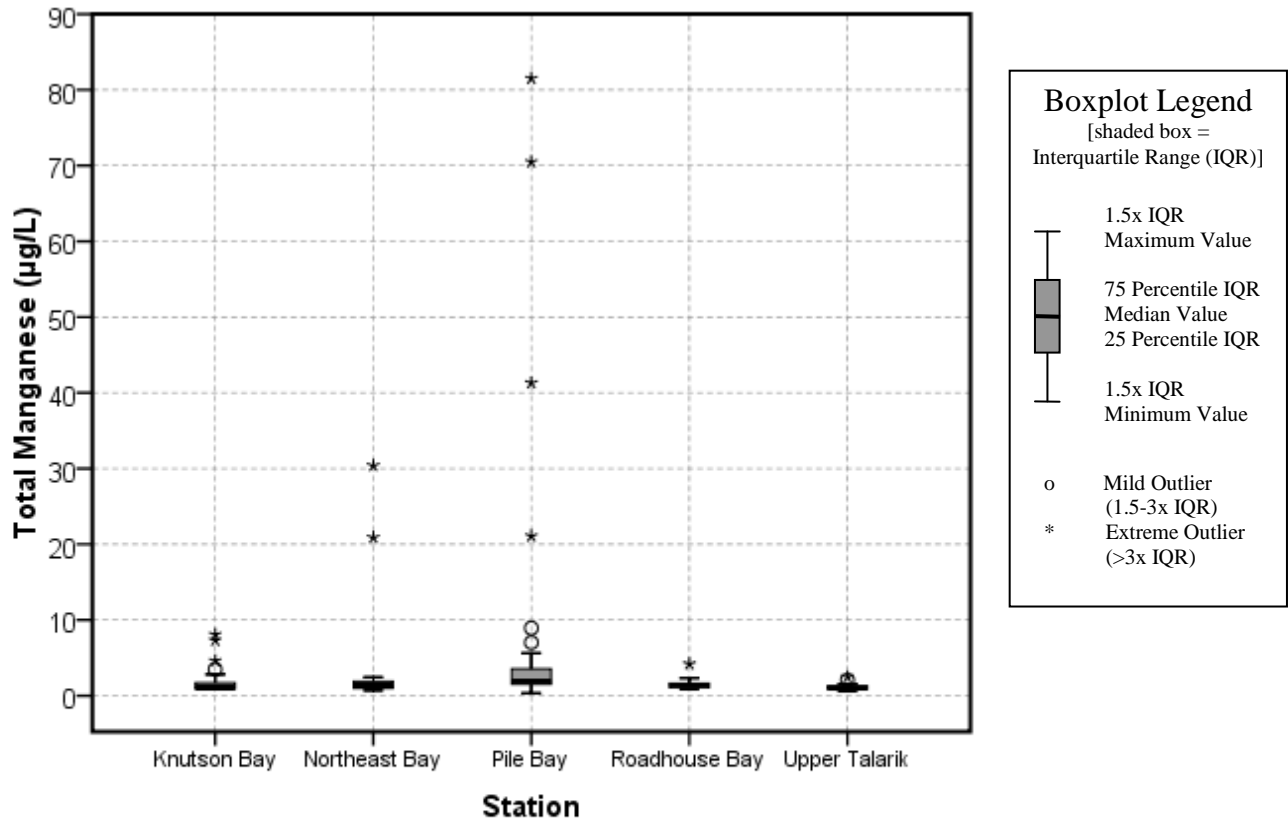
Total Magnesium ($\mu\text{g/L}$)



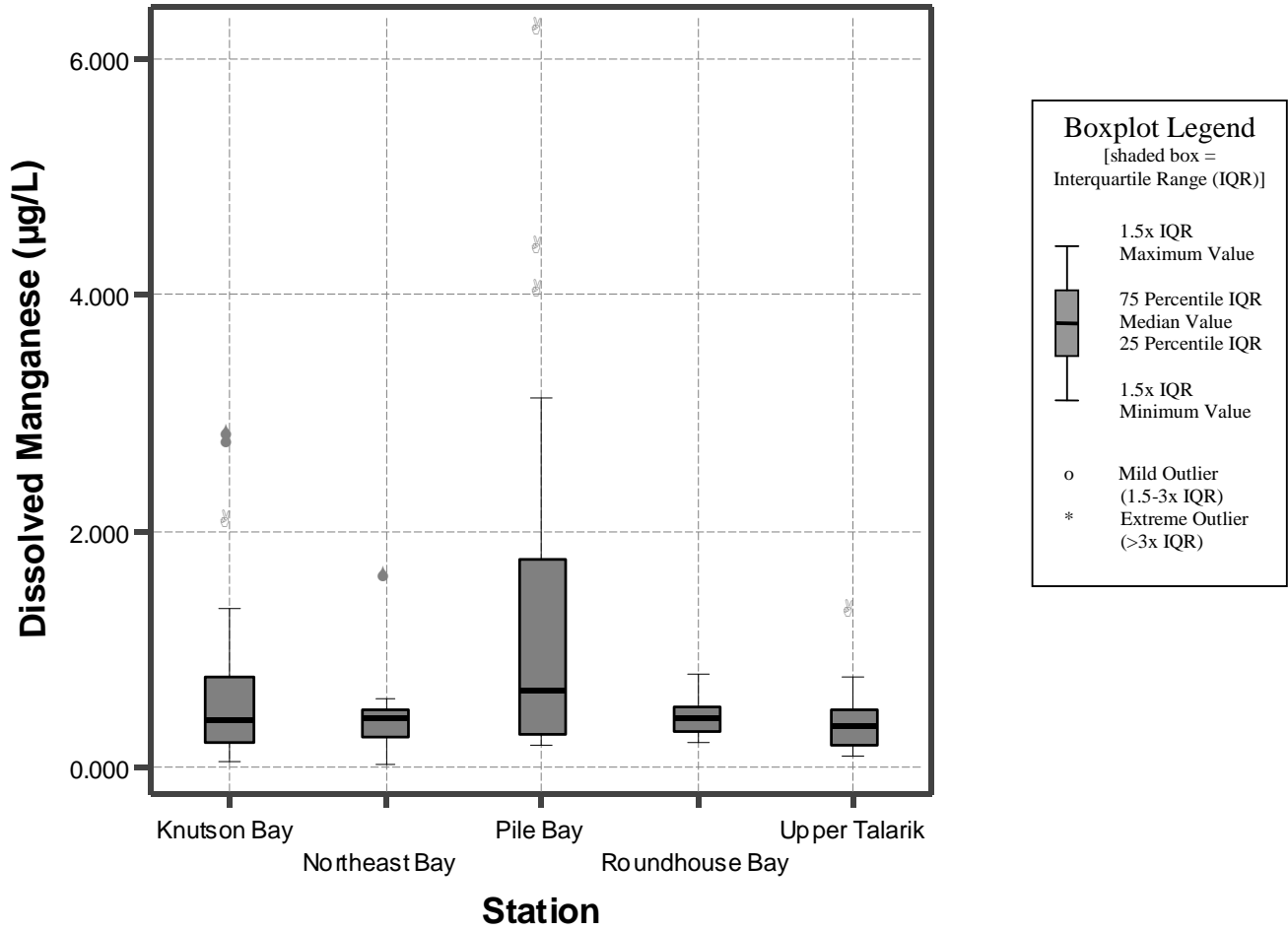
Dissolved Magnesium ($\mu\text{g/L}$)



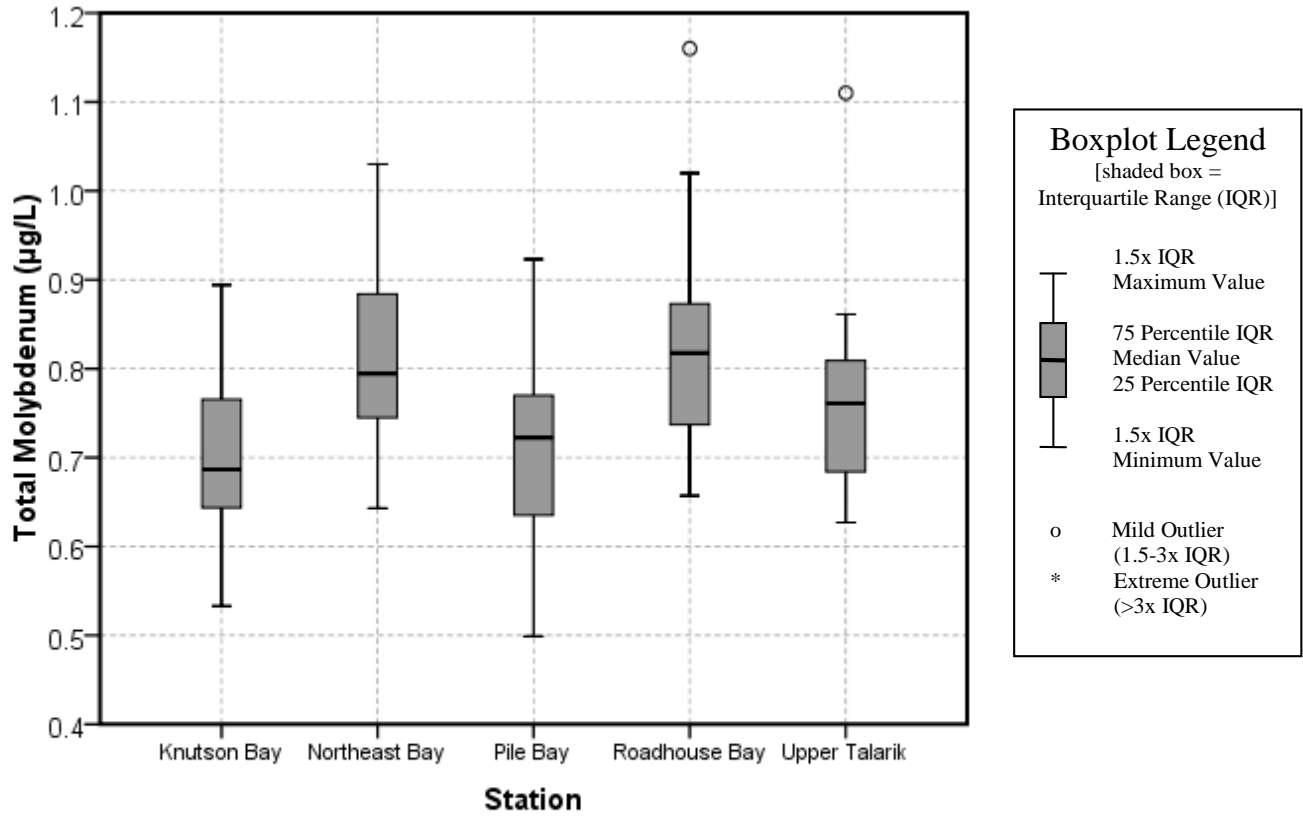
Total Manganese ($\mu\text{g/L}$)



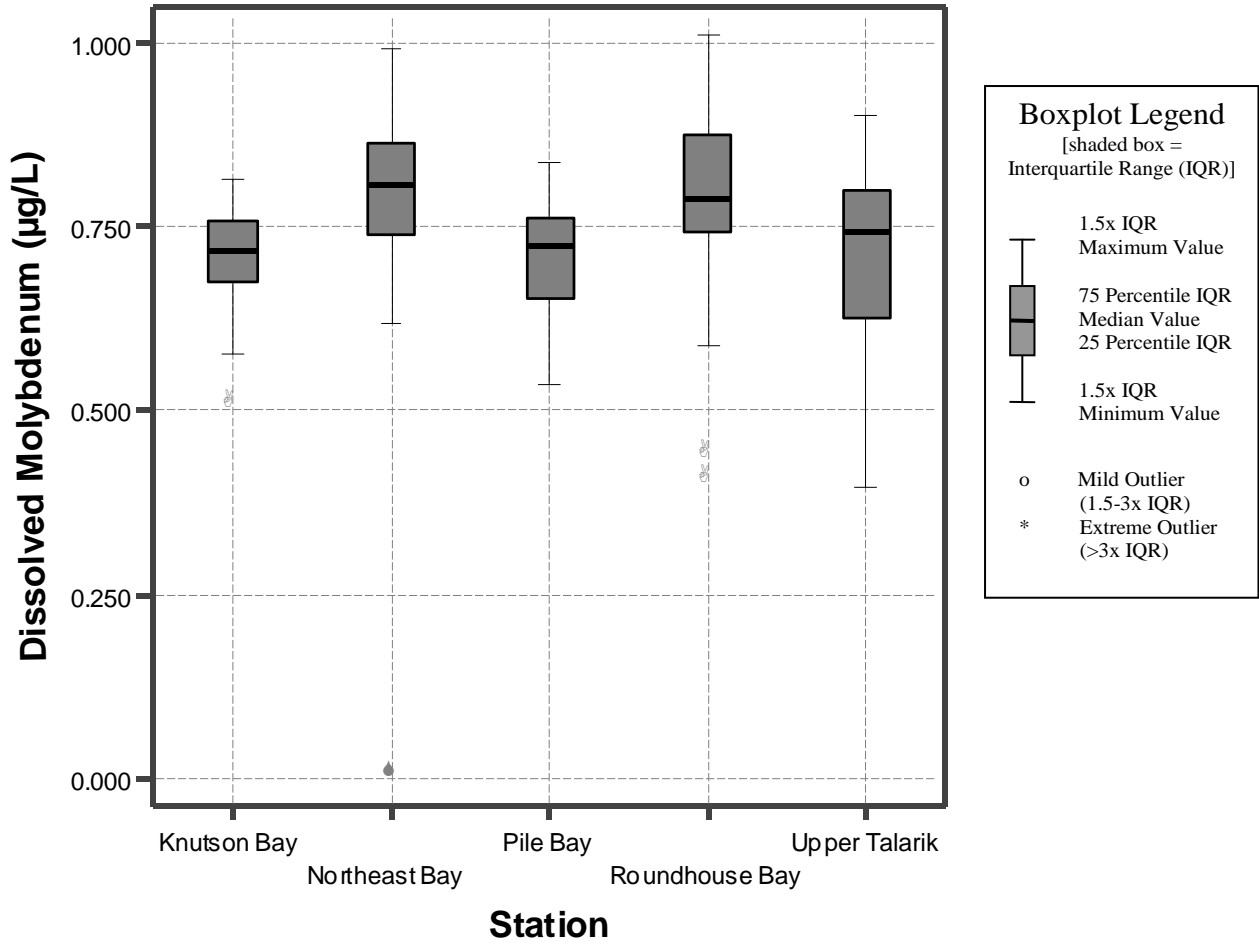
Dissolved Manganese ($\mu\text{g/L}$)



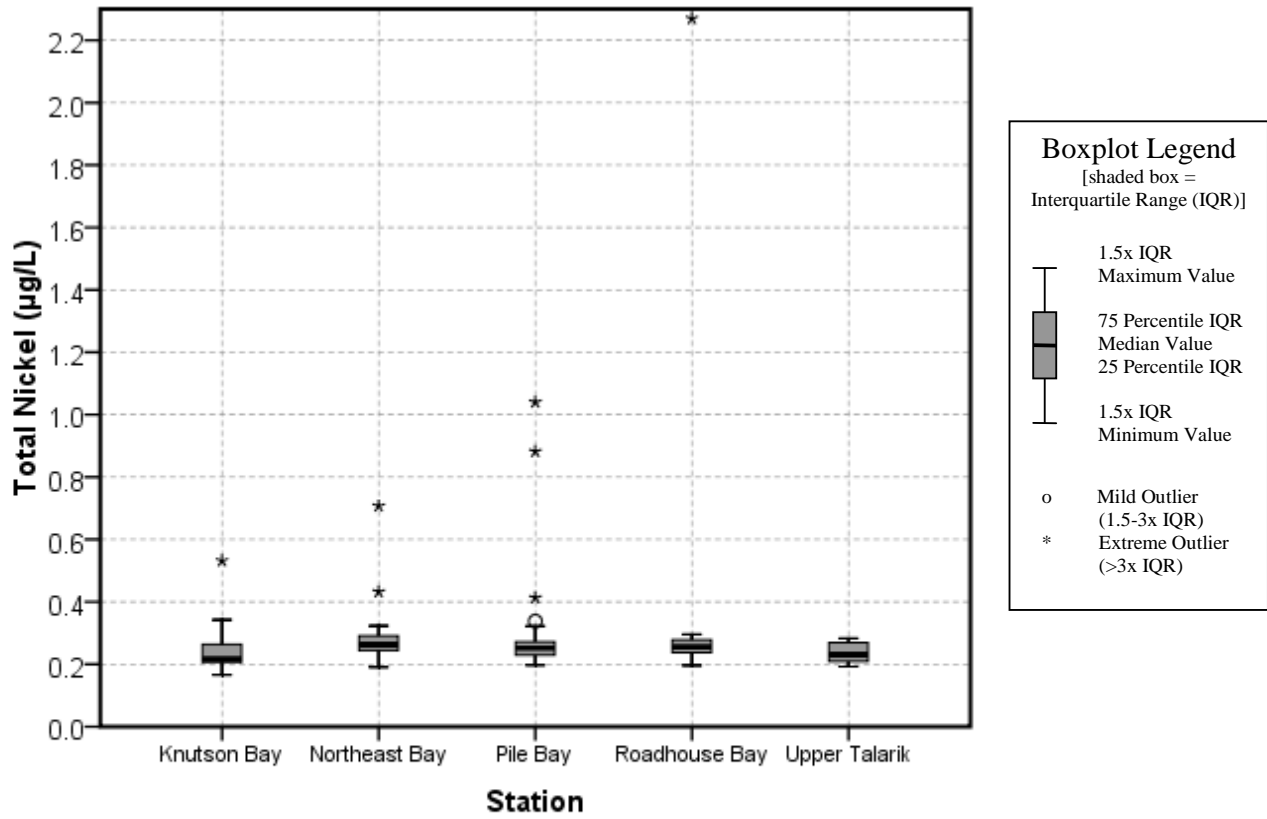
Total Molybdenum ($\mu\text{g/L}$)



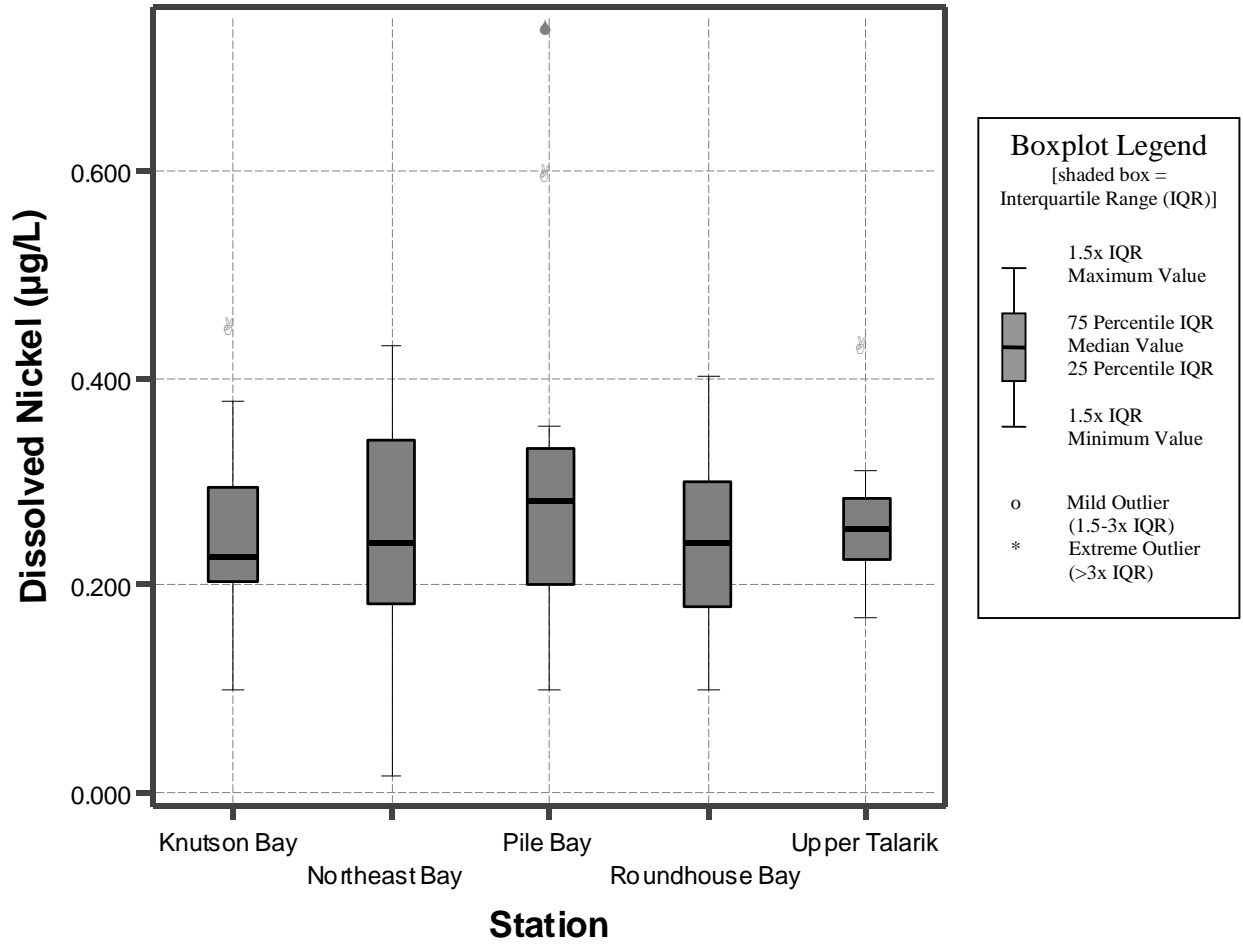
Dissolved Molybdenum ($\mu\text{g/L}$)



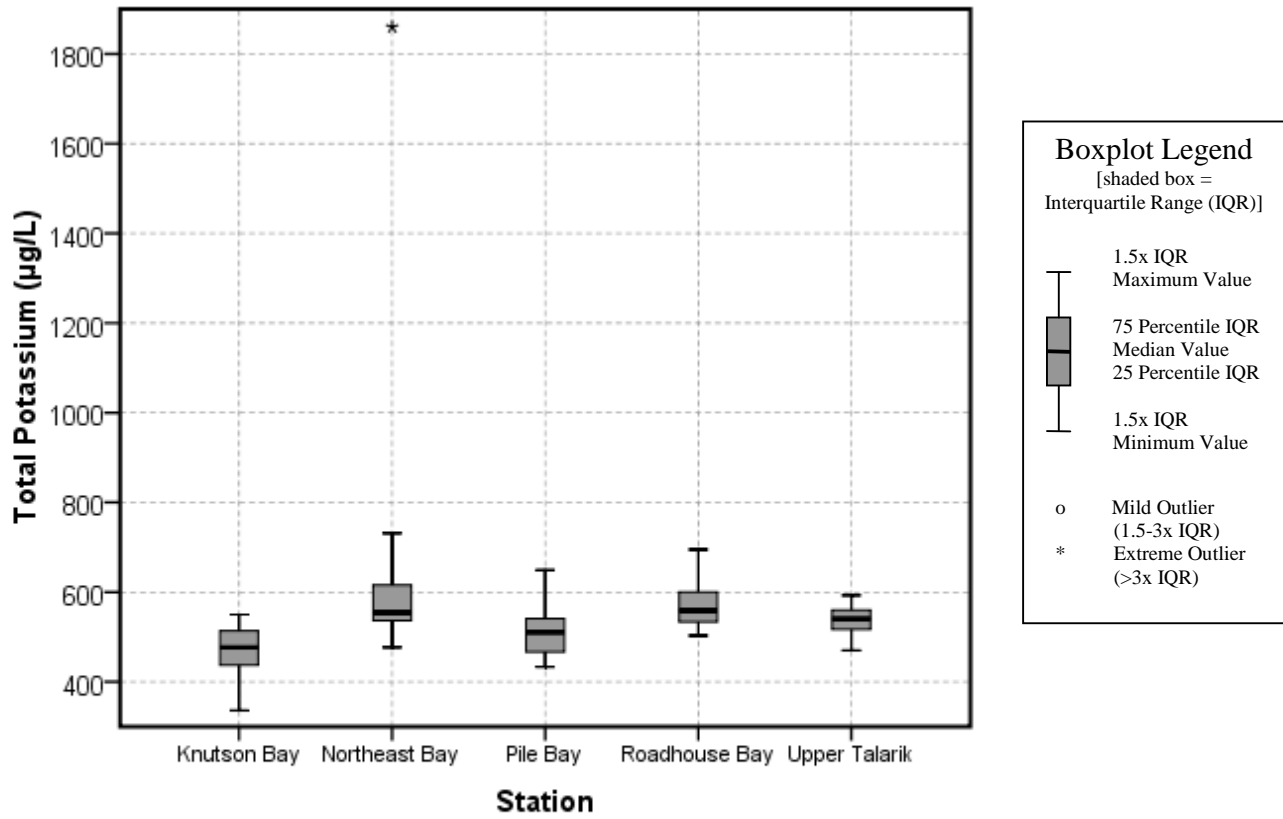
Total Nickel ($\mu\text{g/L}$)



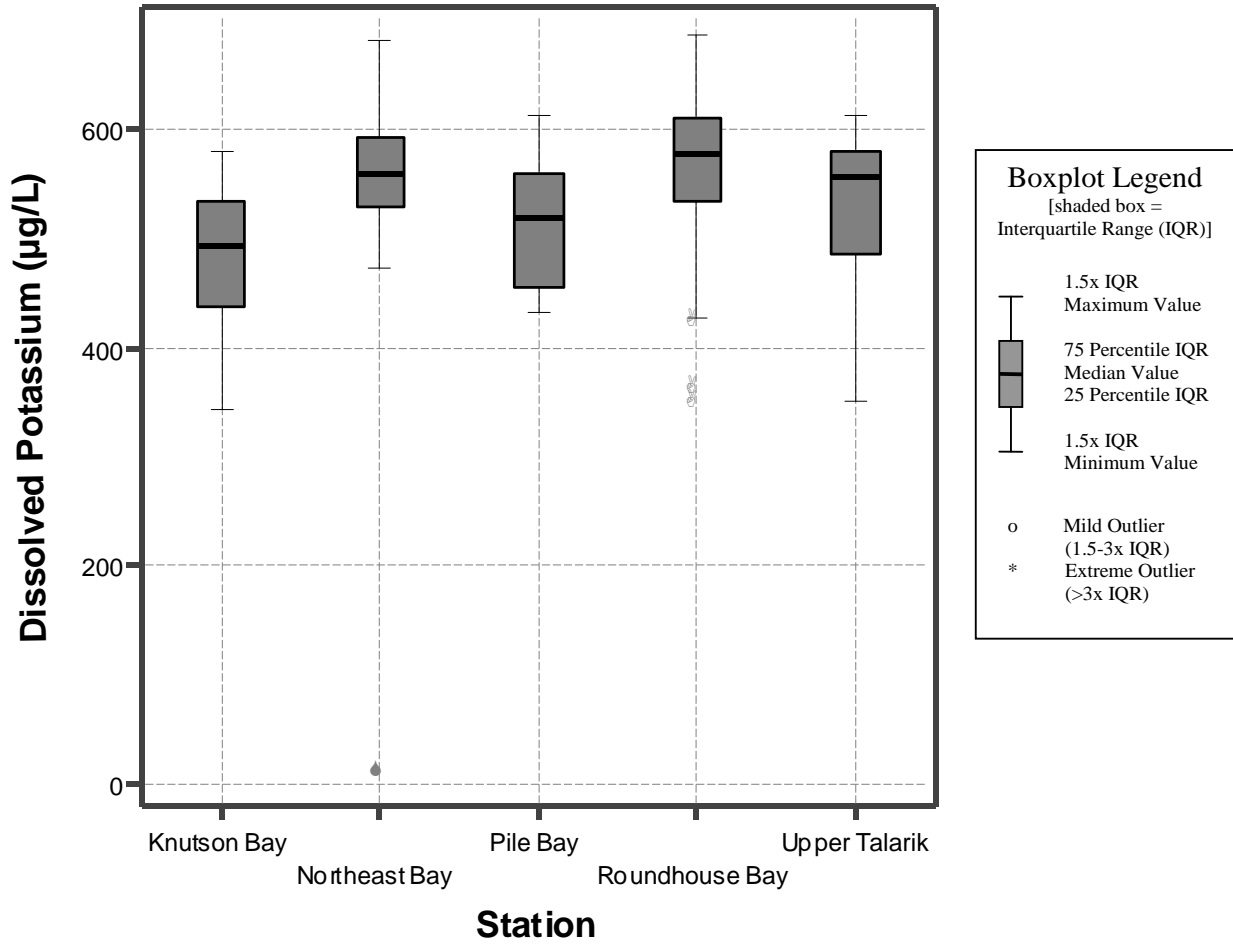
Dissolved Nickel ($\mu\text{g/L}$)



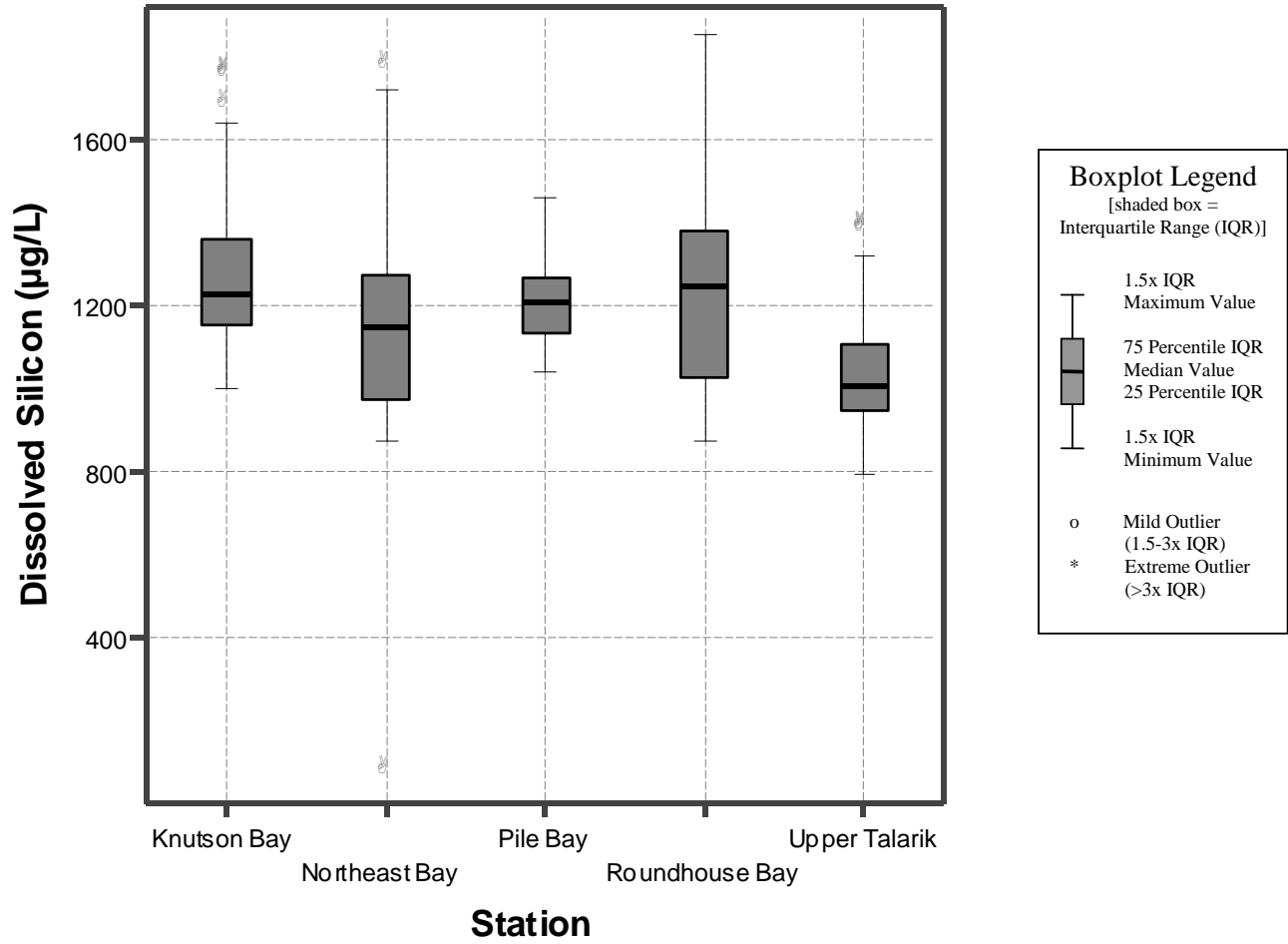
Total Potassium ($\mu\text{g/L}$)



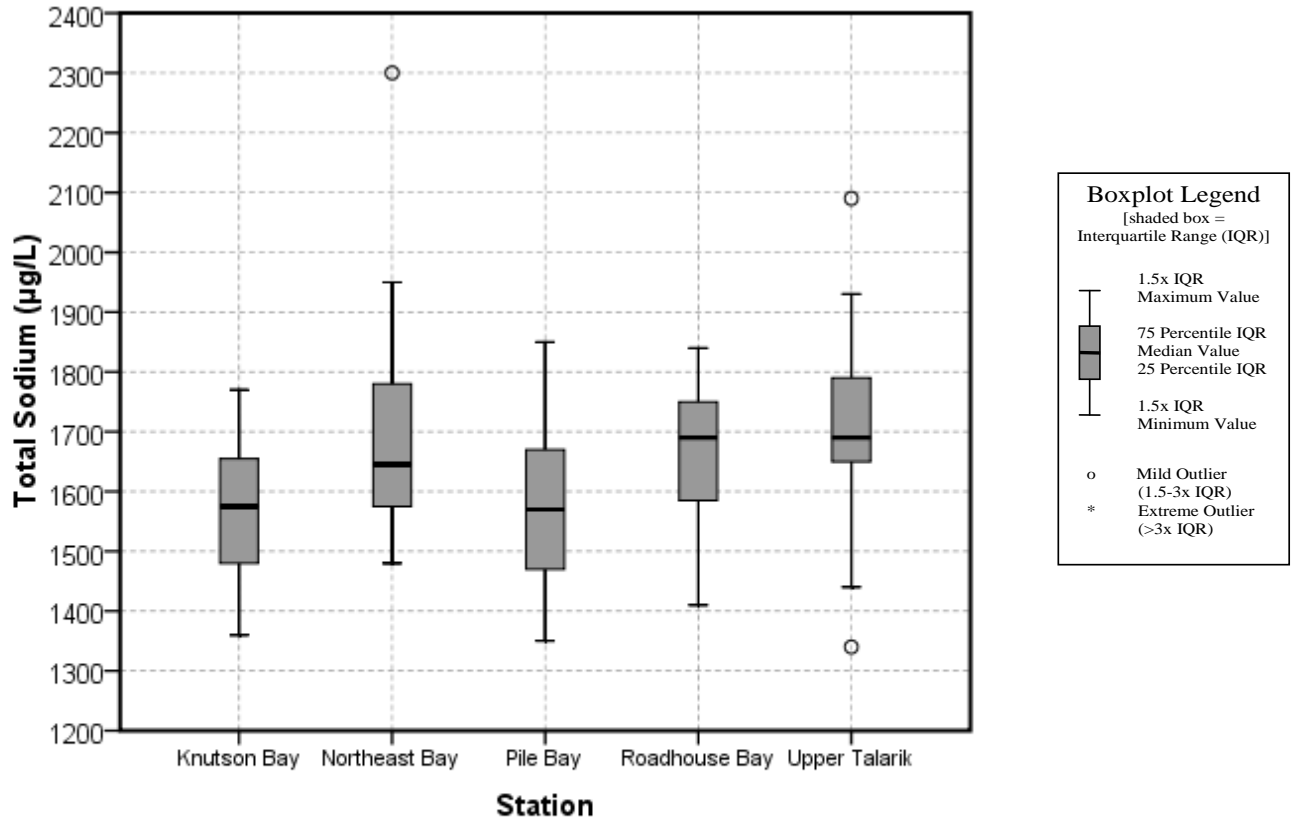
Dissolved Potassium ($\mu\text{g/L}$)



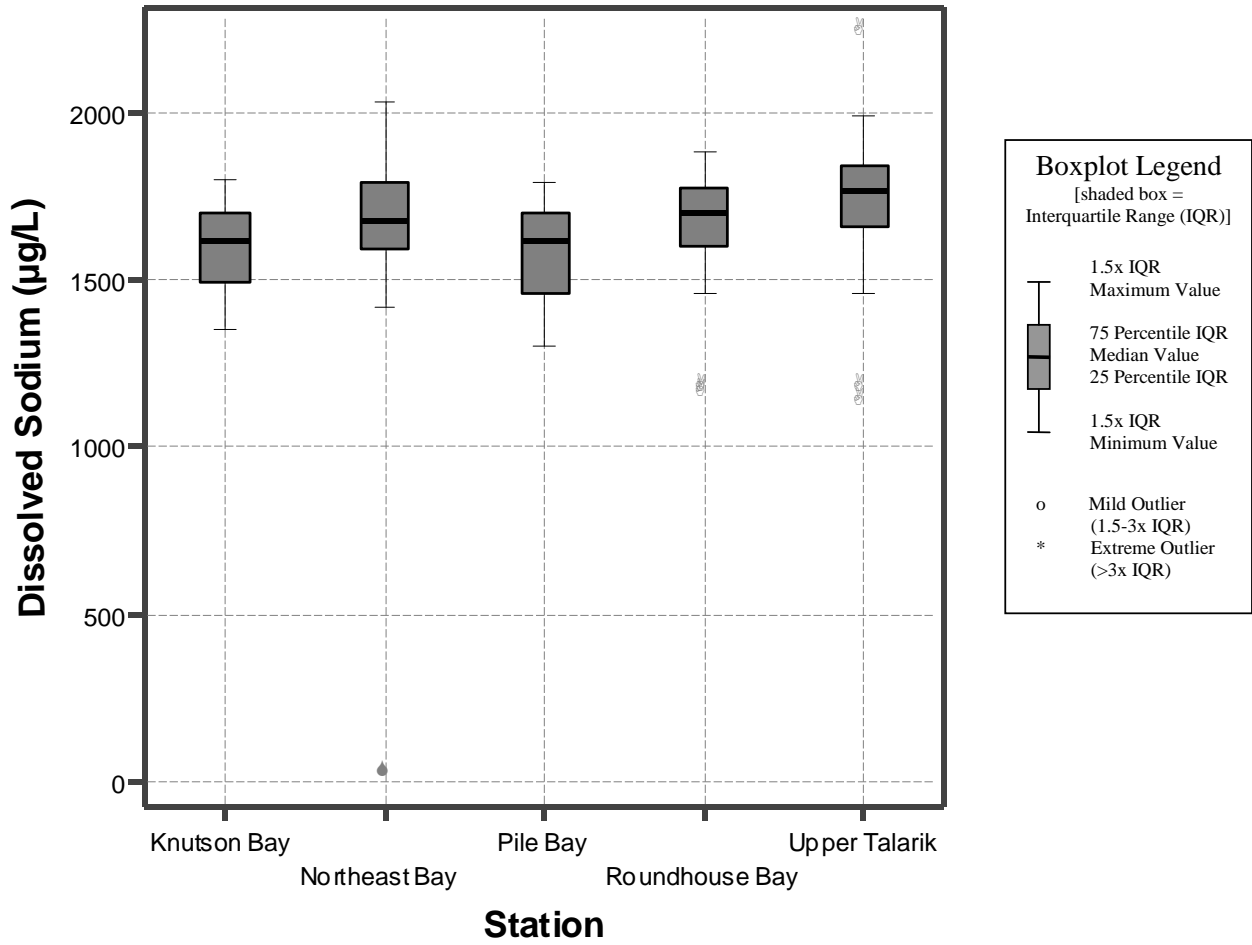
Dissolved Silicon ($\mu\text{g/L}$)



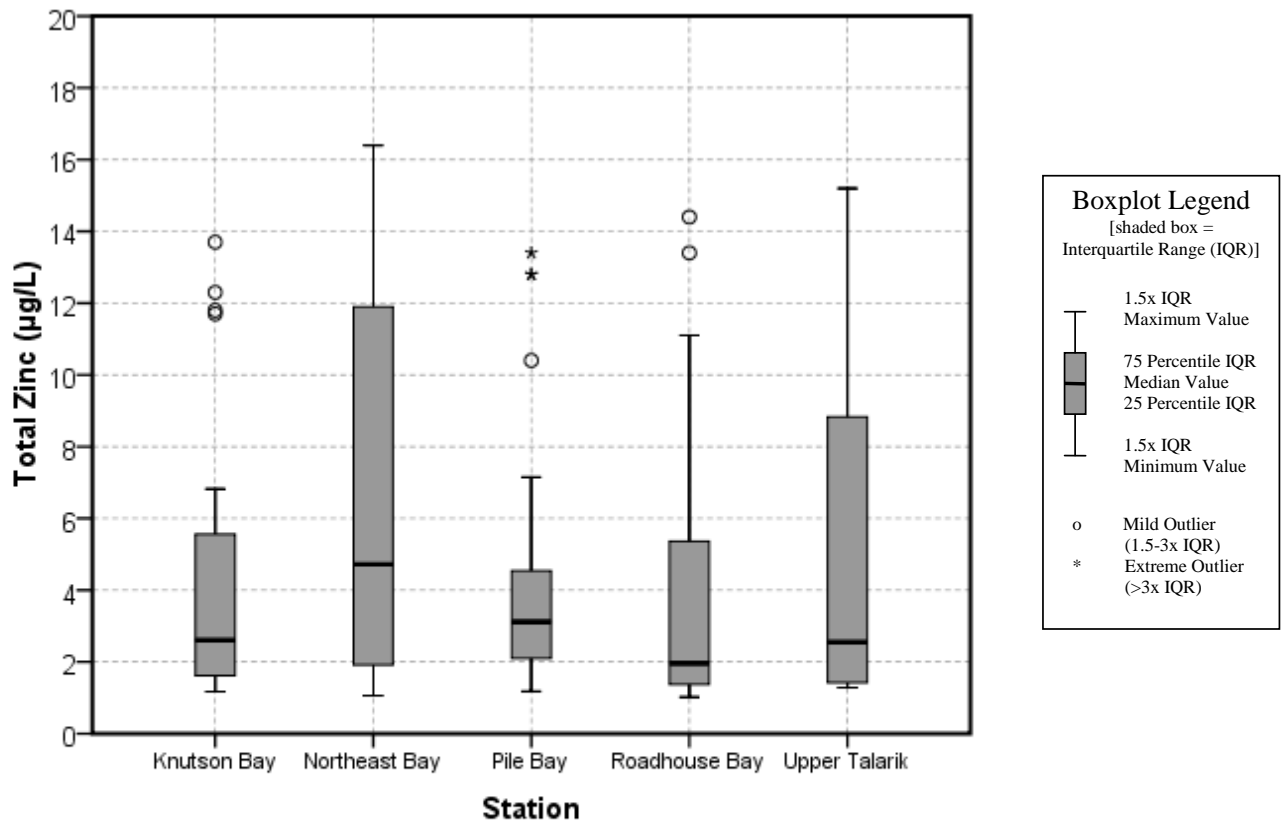
Total Sodium ($\mu\text{g/L}$)



Dissolved Sodium ($\mu\text{g/L}$)



Total Zinc ($\mu\text{g/L}$)



Dissolved Zinc ($\mu\text{g/L}$)

