2016

ALPINE SATELLITE DEVELOPMENT PLAN (ASDP)
WATER QUALITY MONITORING

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Anchorage, AK 99503

ConocoPhillips Alaska

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NOVEMBER 2016

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ACRONYMS & ABBREVIATIONS

°C	Degrees Celsius
ADEC	Alaska Department of Environmental Conservation
ASDP	Alpine Satellite Development Plan
CPAI	ConocoPhillips Alaska, Inc.
DO	Dissolved oxygen
DRO	Diesel range organics
FID	Flame ionization detector
GC	Gas chromatography
ICP	Inductively coupled plasma
µS/cm	Microsiemens per centimeter
mg/L	Milligrams per liter
Michael Baker	Michael Baker International
NTU	Nephelometric Turbidity Units
ppt	Parts per thousand
PSS	Practical Salinity Scale
RCRA	Resource Conservation and Recovery Act
RRO	Residual range organics
SGS	SGS North America, Inc.

1. INTRODUCTION

The 2016 Alpine Satellite Development Plan (ASDP) Water Quality Monitoring Report presents the results of the field sampling conducted in August 2016 for ConocoPhillips Alaska, Inc. (CPAI). Annual monitoring of lakes L9323, L9324, and M9313 is required by North Slope Borough Ordinance Serial No. 75-6-46, Stipulation IV.2.4.3(h) (NSB 2004). Lakes L9323, L9324, and M9313 have been monitored annually since 2007. An overview of the three study lakes relative to Alpine facilities is presented in Figure 1.1.

During the winter of 1998/1999, CPAI initiated construction of the Alpine Facility, CD1 and CD2, in the Colville River Delta. Alpine operations expanded with the implementation of the ASDP during the 2004/2005 winter season. Construction included placement of gravel facilities for two satellite drill sites, CD3 and CD4. The CD3 pad development included an airstrip and pad/airstrip access road, apron, and taxiway. The CD4 pad development included an access road running parallel to the existing Alpine Pipeline, connecting to the CD2 access road. Lake M9313 is near CD3, and lakes L9323 and L9324 are located north and south of CD4, respectively. In December 2011, CPAI was granted a permit allowing construction of a gravel road, bridge, and pipeline crossing over the Nigliq channel of the Colville River for the development of a satellite drillsite five miles west of Alpine.

The 2016 water quality monitoring program included in-situ field sampling of the three lakes for temperature, dissolved oxygen (DO), salinity, conductivity/specific conductance, pH, and turbidity. Additional water samples were collected at the lakes for laboratory analysis of dissolved hydrocarbons: diesel range organics (DRO), residual range organics (RRO), and Resource Conservation and Recovery Act (RCRA) metals.

ConocoPhillips Alaska

Miles
0 0.5 1 2

Date: 09/27/2016	Project: 154793
Drawn: BTG	File: Figure 1.1
Checked: SME	Scale: 1 in = 2 miles

Legend

Pipeline
Road
Sample Lake
Facility

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2016 ASDP
Water Quality
Overview Map

FIGURE: 1.1
(SHEET 1 of 1)

2. METHODS

Field investigations were conducted at lakes L9323, L9324, and M9313 on August 29, 2013. Pathfinder Aviation provided helicopter access to Lake M9313. An Alpine Environmental pickup truck was used to access lakes L9323 and L9324.

In-situ water quality data measurements and laboratory sample collections were performed by a two-person Michael Baker team. The Michael Baker team used inflatable kayaks with an attached support raft for transporting the sampling equipment (Photo 2.1 and Photo 2.2). In-situ water quality instruments were provided by TTT Environmental. Laboratory analyses and sample collection bottles were provided by SGS North America, Inc. (SGS). Prior to sampling, aerial reconnaissance was conducted to identify possible inflow and outflow sources, and to determine if lakes were hydraulically connected to other nearby surface water sources. It was also confirmed that each lake was well-mixed and lacked definable stratums prior to analytic sample collection.

Field sampling methods were based on U.S. Geological Survey (USGS 2006), Ward and Harr (1990), and U.S. Army Corps of Engineers methods (USACE 1987).

Safety precautions were followed, as outlined in the North Slope Water Resources 2016 Health, Safety, and Environmental Plan (Michael Baker 2016a) and the 2016 ASDP Water Quality Monitoring Job Safety Analysis (Michael Baker 2016b). Michael Baker employees worked in groups of two, and the helicopter remained on-site during the duration of the sampling process at Lake M9313. At lakes L9323 and L9324, Michael Baker employees checked in with Alpine security before and after sampling. Personnel were equipped with dry suits and U.S. Coast Guard-approved Type III personal floatation devices during sampling.

Photo 2.1: Equipment used to collect water quality data and samples; August 29, 2016

Photo 2.2: Preparing for sampling at Lake M9313; August 29, 2016

2.1 SAMPLE LAKE LOCATIONS

Previous in-situ monitoring of North Slope lakes indicate hydraulically isolated lakes are well-mixed during open water conditions. The likelihood of homogeneous conditions, which are verified at each lake with in-situ measurements, supports the use of single point sampling. For this project, it is assumed data collected at specific stations are representative of conditions throughout the well-mixed water body and thus, water samples collected at a single location are representative of the lake.

Selection of the appropriate location for samples was based on maximum lake depth and relative proximity to gravel facilities. The bathymetry of each lake was used to identify the deepest part of the water body, and a single representative sampling location was selected. The locations of the deepest part of lakes L9323, L9324, and M9313 were confirmed in 2010 using a hand-held sonar depth finder (Michael Baker 2010).

Sample locations were identified using a handheld global positioning system Garmin Rino 520HCx referenced to the North American [horizontal] Datum of 1983. The sample location for lakes L9323 and L9324 are shown in Figure 2.1. Figure 2.2 shows the sample location for Lake M9313.

ConocoPhillips Alaska

Feet
0 1,000 2,000

Date: 09/27/2016	Project: 154793
Drawn: BTG	File: Figure 2.1
Checked: SME	Scale: 1 in = 2000 feet

Legend

Water Quality Sampling Point
Pipeline
Road
Sample Lake
Facility

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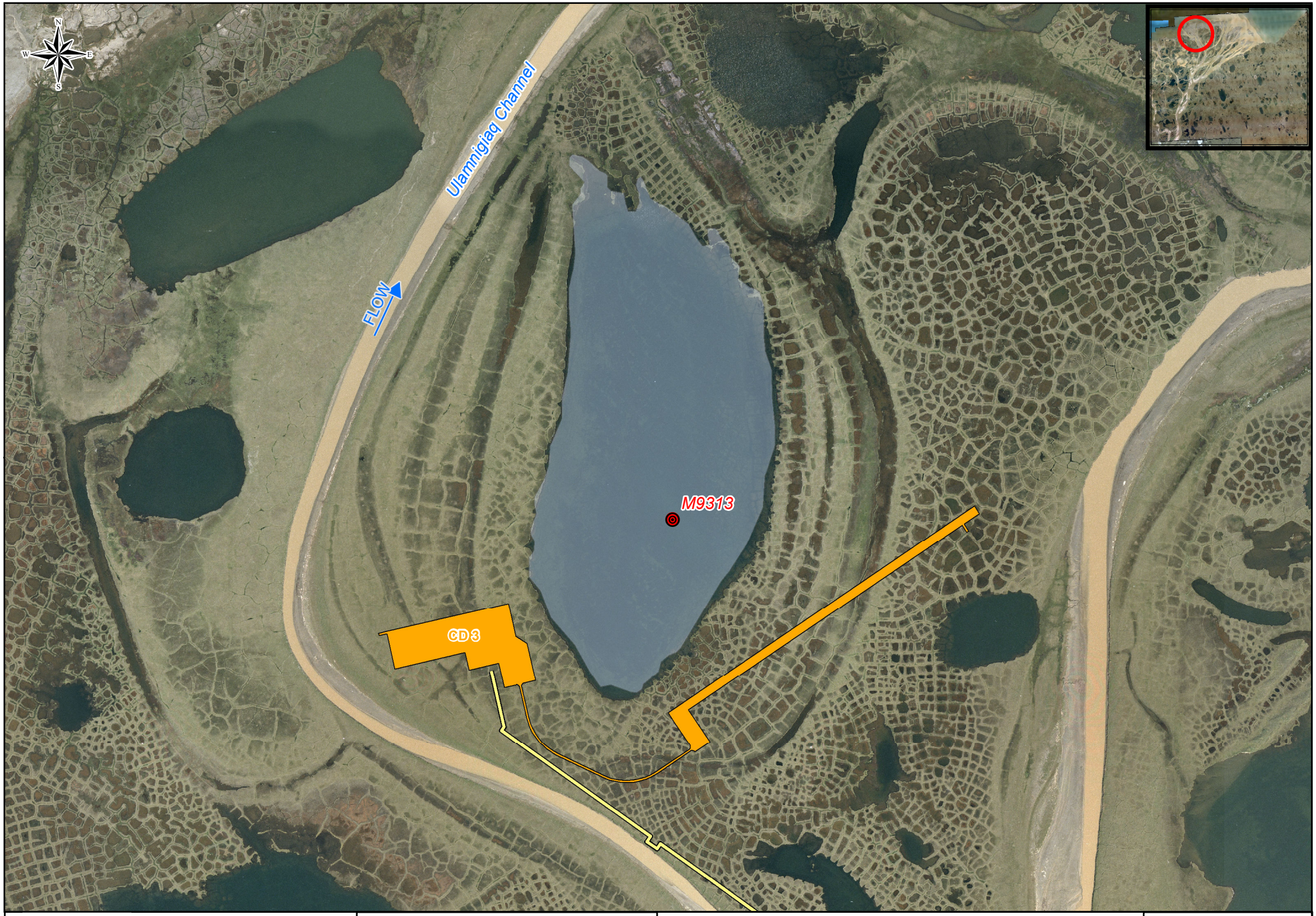
Lakes L9323 & L9324 ASDP Water Quality Sampling Locations

FIGURE: 2.1

(SHEET 1 of 1)



ConocoPhillips Alaska

Feet
0 500 1,000

Date: 09/27/2016	Project: 154793
Drawn: BTG	File: Figure 2.2
Checked: SME	Scale: 1 in = 1000 feet

Legend

- Water Quality Sampling Point
- Sample Lake
- Pipeline
- Facility

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Lake M9313
ASDP Water Quality
Sampling Location

FIGURE: 2.2

(SHEET 1 of 1)

2.2 IN-SITU WATER QUALITY PARAMETERS

In-situ water quality was measured at 2-foot intervals throughout the water column. A list of parameters collected is presented in Table 2.1.

Table 2.1: In-Situ Water Quality Parameters

Parameter	Units	Notes
Temperature	°C	degrees Celsius
Dissolved Oxygen	mg/L	milligrams per liter
Salinity	ppt	parts per thousand
Conductivity	µS/cm	microsiemens per centimeter
Specific Conductance	µS/cm	microsiemens per centimeter
Turbidity	NTU	Nephelometric Turbidity Units

Conductivity is a measurement of the water's ability to carry an electrical current. Dissolved salts (ions) are conductors of electrical current, and conductivity is proportional to the ion concentration (salinity) in an aqueous solution. The salinity is calculated using the in-situ conductivity and temperature, and the conversions defined by the Practical Salinity Scale (PSS) of 1978 (YSI 2007). The PSS is derived for standard seawater with a known ion composition; therefore, using the PSS for freshwater with unknown ion composition provides an estimate of the salinity.

Specific conductance is a metric commonly used to report the concentration of salts in freshwater. Conductivity measurements are temperature dependent. Specific conductance is calculated from in-situ conductivity and temperature using a site specific temperature correction coefficient. The correction coefficient is determined for a site by relating the conductivity of a sample at the in-situ temperature and the conductivity of the same sample at 25°C. Michael Baker completed this analysis for the Colville River in 2005 resulting in a correction coefficient of 0.0196 (Michael Baker 2006). The recharge of lakes from the Colville River flood waters during spring break-up justifies using the same correction coefficient for the lake measurements.

Turbidity refers to the cloudiness of a fluid caused by suspended solids that tend to be invisible to the naked eye. As particles in a fluid will scatter light focused on them, turbidity can be measured by the quantity of reflected light for a given amount of particulates. A Nephelometer is equipped with a detector next to the light beam and is used to measure turbidity. When using a calibrated Nephelometer, the units of turbidity are Nephelometric Turbidity Units (NTU).

INSTRUMENT CALIBRATION

A YSI 650 MDS handheld unit with YSI 6920 V2 Sonde sensor was calibrated by TTT Environmental according to the manufacturer's specifications. The YSI 690 V2 meter was calibrated for conductivity by Michael Baker personnel the morning of sampling. In addition, a calibration check of the DO sensor was performed using tap water as directed by the manufacturer. An optical DO sensor was used for the DO sampling. Prior to each field sampling event, the meter was thoroughly rinsed with lake water.

2.3 LABORATORY SAMPLE COLLECTION & ANALYSIS

SAMPLE COLLECTION

In-situ sampling was performed to confirm the water quality constituents were well-mixed within the water column at each sample location prior to laboratory sample collection. No oxyclines (notable change in oxygen concentration with depth) or thermoclines (notable change in temperature with depth) were apparent at any of lakes (Table 3.2). Therefore, a representative single point sample at mid-depth was collected at each location. In the event of significant lake stratification, multiple samples would have been collected throughout the water column and combined for laboratory analysis. Samples were collected from lakes using a 1.6" x 12" disposable polyethylene bailer (350 milliliter capacity). Nitrile gloves were worn during sample collection and changed between samples. A new bailer was used for each lake and discarded after use.

Sample bottles provided by SGS were stored in the provided cooler before, during, and after sample collection to maintain adequate storage temperatures and ensure chain of custody procedures were followed. Field samples were transported to SGS within 70 hours of initial sample collection.

LABORATORY ANALYSIS

The laboratory analyses performed for each water sample obtained from lakes L9323, L9324, and M9313 included DRO, RRO, and RCRA metals (Appendix A).

DIESEL RANGE ORGANICS (AK 102)

The AK 102 method for DRO, developed by the Alaska Department of Environmental Conservation (ADEC), is based on a solvent extraction, gas chromatography (GC) procedure for the detection of semi-volatile petroleum products such as diesels. Other non-petroleum compounds of similar characteristics may be detected with this method. Samples spiked with a surrogate (o-Terphenyl) are extracted with methylene chloride. The GC is temperature programmed to facilitate separation of organic compounds detected by a flame ionization detector (FID). Quantification is based on FID response compared to a diesel calibration standard.

RESIDUAL RANGE ORGANICS (AK 103)

The AK 103 method for RRO, developed by ADEC, was originally designed to measure lubricating or motor oils and other heavy petroleum products in soils. The *Underground Storage Tanks Procedures* (ADEC 2009) identifies the method as adequate for determining such compounds in solution. The method is an extension of ADEC AK 102, employing solvent extractions and GC to identify heavier RRO. Quantification is based on FID response compared to a residuals calibration standard.

RCRA METALS (SW6020)

The RCRA metals laboratory analysis method SW6020, developed by the U.S. Environmental Protection Agency Office of Solid Waste, employs inductively coupled plasma (ICP) - mass spectrometry to determine trace elements, including metals in solution (EPA 2006). Elements tested

include: arsenic, barium, cadmium, chromium, lead, selenium, and silver. This method measures ions produced by a radio frequency ICP. High temperatures are used to produce ions, which are then entrained in a plasma gas and extracted. The ions are separated on the basis of their mass-to-charge ratio with a mass spectrometer.

3. 2016 RESULTS

3.1 FIELD CONDITIONS - AUGUST 29, 2016

The average air temperature during sampling on August 29, 2016 was 40 degrees Fahrenheit. The weather throughout the day was overcast with light winds (10 mph).

LAKE L9323

Located near CD4 and the Nigliq Channel, Lake L9323 is moderately sized with grassy banks and some vegetation on the periphery (Photo 3.1 and Photo 3.2). Lake L9323 was hydraulically isolated at the time of sampling. No odor or film was observed while sampling the lake.

Photo 3.1: Lake L9323, looking southeast; August 29, 2016

Photo 3.2: Lake L9323, looking northwest; August 29, 2016

LAKE L9324

Located near CD4 and the Nigliq Channel, Lake L9324 is moderately sized with grassy banks and willows (Photo 3.3 through Photo 3.6). Some large bluffs surround the lake. Lake L9324 was hydraulically isolated at the time of sampling. No odor or film was observed while sampling the lake.

Photo 3.3: Lake L9324, looking southeast; August 29, 2016

Photo 3.4: Lake L9324, looking west; August 29, 2016

Photo 3.5: Lake L9324, looking east; August 29, 2016

Photo 3.6: Lake L9324, looking east; August 29, 2016

LAKE M9313

Lake M9313, located near CD3 and the Ulamnigiaq Channel, is large with low grassy banks (Photo 3.7 through Photo 3.9). At the time of sampling, Lake M9313 was connected to some areas of water ponded in adjacent polygons, but flow was not observed between water bodies. No odor or film was observed while sampling the lake.

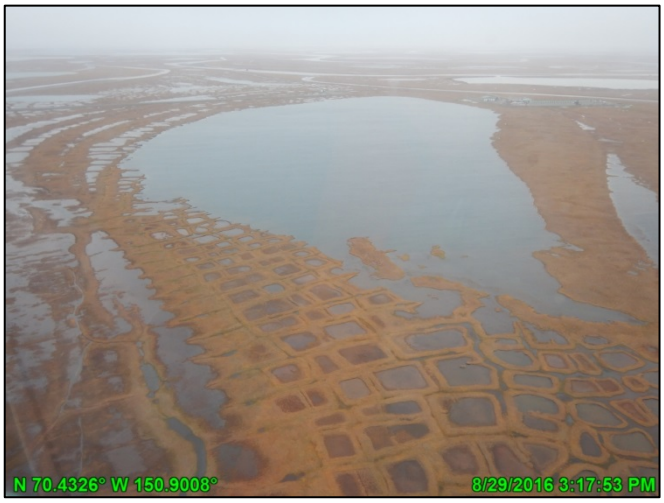

Photo 3.7: Lake M9313, looking south; August 29, 2016

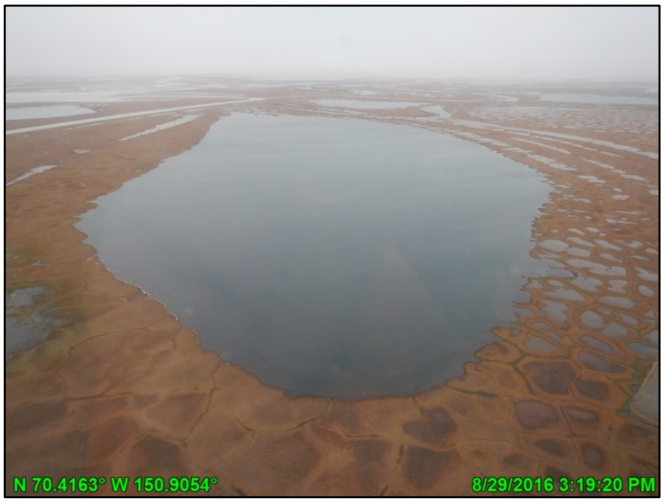

Photo 3.8: Lake M9313, looking north; August 29, 2016

Photo 3.9: Lake M9313, looking northwest; August 29, 2016

3.2 IN-SITU RESULTS

In-situ measurements were collected throughout the water column at the deepest part of each lake. Based on the relative homogeneity of results in all locations, the study lakes were determined to be well-mixed at the time of sampling. The in-situ water quality results from the August 29, 2016 sampling event are tabulated in Table 3.1.

Table 3.1: In-Situ Water Quality Results

Michael Baker INTERNATIONAL

CPAI 2016 ASDP Water Quality Monitoring
In-Situ Water Quality
Sample Date: August 29, 2016

Lake Location Time	Total Depth (ft)	Turbidity (NTU)	Depth (ft)	Temp (°C)	Conductivity (µS/cm)	Specific Conductance (µS/cm)	DO (mg/L)	DO (Percent Saturation)	Salinity (ppt)	pH
L9323 N70.2960° W150.9886° 20:45	15.3	-2.1	2	7.98	72.1	108	12.54	105.9	0.05	7.68
			4	7.99	72.2	108	12.54	105.9	0.05	7.69
			6	8.00	72.2	108	12.53	105.8	0.05	7.63
			8	8.00	72.2	108	12.52	105.8	0.05	7.57
			10	8.00	72.2	108	12.52	105.8	0.05	7.58
			12	8.00	72.2	108	12.52	105.8	0.05	7.55
			14	8.00	72.2	108	12.51	105.7	0.05	7.56
L9324 N70.2901° W150.9828° 22:00	6.3	0.0	2	7.60	85.8	130	13.00	108.8	0.06	8.99
			3	7.60	85.8	130	13.00	108.8	0.06	8.98
			4	7.60	85.8	130	13.00	108.8	0.06	8.98
			5	7.60	85.9	130	13.01	109.0	0.06	8.98
			6	7.60	85.8	130	13.01	109.0	0.06	8.99
M9313 N70.4217° W150.9001° 17:45	15.5	-2.3	2	7.70	456.6	691	12.39	104.1	0.33	7.92
			4	7.70	456.6	691	12.39	104.0	0.33	7.90
			6	7.70	456.7	691	12.39	104.0	0.33	7.90
			8	7.70	456.7	691	12.38	104.0	0.33	7.88
			10	7.70	456.8	691	12.38	104.5	0.33	7.82
			12	7.70	457.0	691	12.37	104.0	0.33	7.81
			14	7.70	456.8	691	12.37	104.0	0.33	7.51

Notes:
(1) Sample depth is measured from the water surface.
(2) Turbidity, temperature, conductivity, dissolved oxygen, and salinity were measured using a YSI 650-6920V2 meter.
(3) Turbidity is presented as an average of the sampled values in the water column.
(4) Negative turbidity is typically traced to minute contamination of the zero calibration standard. According to the meter manufacturer, a used instrument can contaminate a zero standard to almost 1.0 NTU.
(5) Specific conductance (referenced to 25°C) was obtained using a conversion coefficient of 0.0196 based on empirical data.

SPECIFIC CONDUCTANCE

Specific conductance was considered homogenous throughout the water column at all sample locations, but was notably different between lakes. Measured values exceeding 500 µS/cm are indicative of saline environments which are usually observed in lakes near the coast (ADF&G 2008). The average specific conductance was 108 µS/cm in Lake L9323 and 130 µS/cm in Lake L9324. Average specific conductance in Lake M9313, located nearest to the coast, was 691 µS/cm.

DISSOLVED OXYGEN AND WATER TEMPERATURE

The concentrations of DO were considered homogenous throughout the water column at all sample locations. In 2016, the average DO was measured at 12.53 mg/L in Lake L9323, 13.00 mg/L in Lake L9324, and 12.38 mg/L in Lake M9313.

A 100% saturation level is based on standard temperature and pressure conditions. The average percent-saturation at Lake L9323 was 105.8%, Lake L9324 was 108.9%, and Lake M9313 was 104.1%. The percent-saturation levels fall within the typical range for these lakes.

Temperatures in all lakes ranged from a maximum of 8.0°C in Lake L9323 to a minimum of 7.6°C in Lake L9324. The temperature in all three lakes remained consistent with depth.

SALINITY

Salinity remained consistent with depth in all three lakes. The greatest concentration was measured in Lake M9313 at 0.33 ppt, likely due to its coastal proximity. Lake L9323 and Lake L9324 had concentrations of 0.05 ppt and 0.06 ppt, respectively.

TURBIDITY

Average turbidity for lakes L9323, L9324, and M9313 was -2.1 NTU, 0.0 NTU, and -2.3 NTU, respectively. According to the meter manufacturer, a used instrument can contaminate a zero standard to almost 1.0 NTU. In addition, negative bias can result from interference because of absorbing particles, particle size, sample cell variations, particle density, and particle settling (Sadar 2004). As a result, the negative turbidity measurements can be interpreted as being close to 0.0 NTU.

3.3 LABORATORY RESULTS

With the exception of barium, analytical results show that targeted compounds and metals were not detected above the laboratory detection limit in lakes L9323, L9324, and M9313. Barium was detected in all lakes at concentrations below the ADEC cleanup level of 2.0 mg/L. The greatest measured concentration of barium was 0.211 mg/L in lake M9313. Barium is not uncommon in arctic waters at concentrations similar to those measured at the three lakes (Guay and Falkner 1998). Analytical results and the laboratory report are presented in Table 3.2 and Appendix A, respectively.

DRO and RRO were not detected above the laboratory detection limits in samples collected from lakes L9323, L9324, and M9313.

Table 3.2: Laboratory Analytical Results

Parameter	ADEC Cleanup Level[1] (mg/L)	Lake L9323 (mg/L)	Lake L9323[2] (mg/L)	Lake L9324 (mg/L)	Lake M9313 (mg/L)
Arsenic	0.01	ND[3]	ND	ND	ND
Barium	2.0	0.0485	0.0454	0.0667	0.211
Cadmium	0.005	ND	ND	ND	ND
Chromium	0.1	ND	ND	ND	ND
Lead	0.015	ND	ND	ND	ND
Mercury	0.002	ND	ND	ND	ND
Selenium	0.05	ND	ND	ND	ND
Silver	0.1	ND	ND	ND	ND
DRO	1.5	ND	ND	ND	ND
RRO	1.1	ND	ND	ND	ND

Notes:

1. ADEC Water Quality Standards 18 AAC 75.345 Table C Groundwater Cleanup Waters (ADEC 2009).
2. Duplicate sample
3. ND indicates analyte is not detected above the laboratory detection limit.

Source: SGS Laboratory Analysis Report 1165143

4. REFERENCES

Alaska Department of Environmental Conservation (ADEC). 2009. Water Quality Standards. 18 AAC 70. Underground Storage Tanks Procedures. Division of Spill Prevention and Response, Contaminated Sites Remediation Program.

Alaska Department of Fish and Game (ADF&G). 2008. Fish Habitat Permit FH04-111-0135 Amendment #1.

Guay, C.K. and K.K. Falkner (Guay and Falkner). 1998. A Survey of Dissolved Barium in the Estuaries of Major Arctic Rivers and Adjacent Seas. *Continental Shelf Research* 18:8 859-882.

Michael Baker International (Michael Baker) 2016a. North Slope Water Resources 2016 Health, Safety, and Environmental Plan. Prepared for ConocoPhillips Alaska, Inc.

-------- 2016b. 2016 Alpine Satellite Development Plan (ASDP) Water Quality Monitoring Job Safety Analysis. Prepared for ConocoPhillips Alaska, Inc.

------- 2010. Alpine Satellite Development Plan (ASDP) 2010 Water Quality Monitoring. November.

------- 2006. Colville River Ice Bridge Monitoring. April.

North Slope Borough (NSB). 2004 North Slope Borough Ordinance Serial No. 75-6-46

Sadar, M. 2004. Making Sense of Turbidity Measurements - Advantages In Establishing Traceability Between Measurements and Technology.

<http://acwi.gov/monitoring/conference/2004/conference_agenda_links/papers/poster_papers/215_SadarMike.pdf>

United States Army Corps of Engineers (USACE). 1987. Reservoir Water Quality Analysis. Engineering Manual EM-1110-2-1201.

United States Environmental Protection Agency (EPA). 2006. 2006 Edition of the Drinking Water Standards and Health Advisories. EPA 822-R-06-013.

United States Geological Survey (USGS). 2006. National Field Manual for the Collection of Water-Quality Data. Book 9 Handbooks for Water-Resources Investigations. Chapter A4 Collection of Water Samples.

Ward, J.R. and C.A. Harr eds. 1990. Methods for Collection and Processing Surface-Water and Bed-Material Samples for Physical and Chemical Analyses. Open-File Report 90-147.

YSI Incorporated. 2007. YSI Model 30/30M Handheld Salinity, Conductivity and Temperature System Operations Manual.

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Appendix A LABORATORY ANALYTICAL RESULTS

Laboratory Report of Analysis

To: Michael Baker Jr., Inc.
3900 C Street, Suite 900
Anchorage, AK 99503
(907)334-0960

Report Number: **1165143**

Client Project: **2016 ASDP Water Quality**

Dear Garrett Yager,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Forest at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Forest Taylor Date
Project Manager
Forest.Taylor@sgs.com

Print Date: 09/14/2016 10:32:32AM

Case Narrative

SGS Client: **Michael Baker Jr., Inc.**
SGS Project: **1165143**
Project Name/Site: **2016 ASDP Water Quality**
Project Contact: **Garrett Yager**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

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t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
L9323	1165143001	08/29/2016	08/31/2016	Water (Surface, Eff., Ground)
M9313	1165143002	08/29/2016	08/31/2016	Water (Surface, Eff., Ground)
L9323-Dup	1165143003	08/29/2016	08/31/2016	Water (Surface, Eff., Ground)
L9324	1165143004	08/29/2016	08/31/2016	Water (Surface, Eff., Ground)

Method	Method Description
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
SW6020A	Metals by ICP-MS

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Detectable Results Summary

Client Sample ID: **L9323**
Lab Sample ID: 1165143001
Metals by ICP/MS

Parameter	Result	Units
Barium	48.5	ug/L

Client Sample ID: **M9313**
Lab Sample ID: 1165143002
Metals by ICP/MS

Parameter	Result	Units
Barium	211	ug/L

Client Sample ID: **L9323-Dup**
Lab Sample ID: 1165143003
Metals by ICP/MS

Parameter	Result	Units
Barium	45.4	ug/L

Client Sample ID: **L9324**
Lab Sample ID: 1165143004
Metals by ICP/MS

Parameter	Result	Units
Barium	66.7	ug/L

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Results of **L9323**

Client Sample ID: **L9323**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143001
Lab Project ID: 1165143

Collection Date: 08/29/16 20:45
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Arsenic	5.00	U	5.00	1.50	ug/L	5		09/09/16 09:55
Barium	48.5		3.00	0.940	ug/L	5		09/09/16 09:55
Cadmium	2.00	U	2.00	0.620	ug/L	5		09/09/16 09:55
Chromium	4.00	U	4.00	1.30	ug/L	5		09/09/16 09:55
Lead	1.00	U	1.00	0.310	ug/L	5		09/09/16 09:55
Mercury	0.200	U	0.200	0.0620	ug/L	5		09/09/16 09:55
Selenium	20.0	U	20.0	6.20	ug/L	5		09/09/16 09:55
Silver	2.00	U	2.00	0.620	ug/L	5		09/09/16 09:55

Batch Information

Analytical Batch: MMS9529
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 09/09/16 09:55
Container ID: 1165143001-F

Prep Batch: MXX30164
Prep Method: SW3010A
Prep Date/Time: 09/07/16 12:00
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 09/14/2016 10:32:38AM

Results of **L9323**

Client Sample ID: **L9323**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143001
Lab Project ID: 1165143

Collection Date: 08/29/16 20:45
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.600	U	0.600	0.180	mg/L	1		09/10/16 00:52
Surrogates								
5a Androstane (surr)	102		50-150		%	1		09/10/16 00:52

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK102
Analyst: NRO
Analytical Date/Time: 09/10/16 00:52
Container ID: 1165143001-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.500	U	0.500	0.150	mg/L	1		09/10/16 00:52
Surrogates								
n-Triacontane-d62 (surr)	99.8		50-150		%	1		09/10/16 00:52

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK103
Analyst: NRO
Analytical Date/Time: 09/10/16 00:52
Container ID: 1165143001-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 09/14/2016 10:32:38AM

Results of **M9313**

Client Sample ID: **M9313**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143002
Lab Project ID: 1165143

Collection Date: 08/29/16 17:45
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Arsenic	5.00	U	5.00	1.50	ug/L	5		09/09/16 09:59
Barium	211		3.00	0.940	ug/L	5		09/09/16 09:59
Cadmium	2.00	U	2.00	0.620	ug/L	5		09/09/16 09:59
Chromium	4.00	U	4.00	1.30	ug/L	5		09/09/16 09:59
Lead	1.00	U	1.00	0.310	ug/L	5		09/09/16 09:59
Mercury	0.200	U	0.200	0.0620	ug/L	5		09/09/16 09:59
Selenium	20.0	U	20.0	6.20	ug/L	5		09/09/16 09:59
Silver	2.00	U	2.00	0.620	ug/L	5		09/09/16 09:59

Batch Information

Analytical Batch: MMS9529
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 09/09/16 09:59
Container ID: 1165143002-F

Prep Batch: MXX30164
Prep Method: SW3010A
Prep Date/Time: 09/07/16 12:00
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 09/14/2016 10:32:38AM

Results of **M9313**

Client Sample ID: **M9313**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143002
Lab Project ID: 1165143

Collection Date: 08/29/16 17:45
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.577	U	0.577	0.173	mg/L	1		09/10/16 01:03
Surrogates								
5a Androstane (surr)	107		50-150		%	1		09/10/16 01:03

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK102
Analyst: NRO
Analytical Date/Time: 09/10/16 01:03
Container ID: 1165143002-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.481	U	0.481	0.144	mg/L	1		09/10/16 01:03
Surrogates								
n-Triacontane-d62 (surr)	104		50-150		%	1		09/10/16 01:03

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK103
Analyst: NRO
Analytical Date/Time: 09/10/16 01:03
Container ID: 1165143002-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 09/14/2016 10:32:38AM

Results of **L9323-Dup**

Client Sample ID: **L9323-Dup**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143003
Lab Project ID: 1165143

Collection Date: 08/29/16 20:50
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Arsenic	5.00	U	5.00	1.50	ug/L	5		09/09/16 10:04
Barium	45.4		3.00	0.940	ug/L	5		09/09/16 10:04
Cadmium	2.00	U	2.00	0.620	ug/L	5		09/09/16 10:04
Chromium	4.00	U	4.00	1.30	ug/L	5		09/09/16 10:04
Lead	1.00	U	1.00	0.310	ug/L	5		09/09/16 10:04
Mercury	0.200	U	0.200	0.0620	ug/L	5		09/09/16 10:04
Selenium	20.0	U	20.0	6.20	ug/L	5		09/09/16 10:04
Silver	2.00	U	2.00	0.620	ug/L	5		09/09/16 10:04

Batch Information

Analytical Batch: MMS9529
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 09/09/16 10:04
Container ID: 1165143003-E

Prep Batch: MXX30164
Prep Method: SW3010A
Prep Date/Time: 09/07/16 12:00
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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Results of **L9323-Dup**

Client Sample ID: **L9323-Dup**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143003
Lab Project ID: 1165143

Collection Date: 08/29/16 20:50
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.600	U	0.600	0.180	mg/L	1		09/10/16 01:13
Surrogates								
5a Androstane (surr)	87.6		50-150		%	1		09/10/16 01:13

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK102
Analyst: NRO
Analytical Date/Time: 09/10/16 01:13
Container ID: 1165143003-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.500	U	0.500	0.150	mg/L	1		09/10/16 01:13
Surrogates								
n-Triacontane-d62 (surr)	90.2		50-150		%	1		09/10/16 01:13

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK103
Analyst: NRO
Analytical Date/Time: 09/10/16 01:13
Container ID: 1165143003-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 09/14/2016 10:32:38AM

Results of **L9324**

Client Sample ID: **L9324**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143004
Lab Project ID: 1165143

Collection Date: 08/29/16 22:00
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Arsenic	5.00	U	5.00	1.50	ug/L	5		09/09/16 10:08
Barium	66.7		3.00	0.940	ug/L	5		09/09/16 10:08
Cadmium	2.00	U	2.00	0.620	ug/L	5		09/09/16 10:08
Chromium	4.00	U	4.00	1.30	ug/L	5		09/09/16 10:08
Lead	1.00	U	1.00	0.310	ug/L	5		09/09/16 10:08
Mercury	0.200	U	0.200	0.0620	ug/L	5		09/09/16 10:08
Selenium	20.0	U	20.0	6.20	ug/L	5		09/09/16 10:08
Silver	2.00	U	2.00	0.620	ug/L	5		09/09/16 10:08

Batch Information

Analytical Batch: MMS9529
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 09/09/16 10:08
Container ID: 1165143004-F

Prep Batch: MXX30164
Prep Method: SW3010A
Prep Date/Time: 09/07/16 12:00
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 09/14/2016 10:32:38AM

Results of **L9324**

Client Sample ID: **L9324**
Client Project ID: **2016 ASDP Water Quality**
Lab Sample ID: 1165143004
Lab Project ID: 1165143

Collection Date: 08/29/16 22:00
Received Date: 08/31/16 16:42
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.566	U	0.566	0.170	mg/L	1		09/10/16 01:24
Surrogates								
5a Androstane (surr)	105		50-150		%	1		09/10/16 01:24

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK102
Analyst: NRO
Analytical Date/Time: 09/10/16 01:24
Container ID: 1165143004-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.472	U	0.472	0.142	mg/L	1		09/10/16 01:24
Surrogates								
n-Triacontane-d62 (surr)	109		50-150		%	1		09/10/16 01:24

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK103
Analyst: NRO
Analytical Date/Time: 09/10/16 01:24
Container ID: 1165143004-A

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 09/09/16 08:43
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 09/14/2016 10:32:38AM

Method Blank

Blank ID: MB for HBN 1742743 [MXX/30164]
Blank Lab ID: 1350305

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1165143001, 1165143002, 1165143003, 1165143004

Results by **SW6020A**

Parameter	Results	LOQ/CL	DL	Units
Arsenic	2.50U	5.00	1.50	ug/L
Barium	1.50U	3.00	0.940	ug/L
Cadmium	1.00U	2.00	0.620	ug/L
Chromium	2.00U	4.00	1.30	ug/L
Lead	0.500U	1.00	0.310	ug/L
Mercury	0.100U	0.200	0.0620	ug/L
Selenium	10.0U	20.0	6.20	ug/L
Silver	1.00U	2.00	0.620	ug/L

Batch Information

Analytical Batch: MMS9529
Analytical Method: SW6020A
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 9/9/2016 8:52:22AM

Prep Batch: MXX30164
Prep Method: SW3010A
Prep Date/Time: 9/7/2016 12:00:59PM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1165143 [MXX30164]
Blank Spike Lab ID: 1350306
Date Analyzed: 09/09/2016 08:56

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165143001, 1165143002, 1165143003, 1165143004

Results by **SW6020A**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
Arsenic	1000	1020	102	(84-116)
Barium	1000	1000	100	(86-114)
Cadmium	100	101	101	(87-115)
Chromium	400	426	106	(85-116)
Lead	1000	1030	103	(88-115)
Mercury	10	10.7	107	(70-124)
Selenium	1000	1020	102	(80-120)
Silver	100	105	105	(85-116)

Batch Information

Analytical Batch: **MMS9529**
Analytical Method: **SW6020A**
Instrument: **Perkin Elmer Nexion P5**
Analyst: **VDL**

Prep Batch: **MXX30164**
Prep Method: **SW3010A**
Prep Date/Time: **09/07/2016 12:00**
Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1350307
MS Sample ID: 1350308 MS
MSD Sample ID: 1350309 MSD

Analysis Date: 09/09/2016 9:01
Analysis Date: 09/09/2016 9:05
Analysis Date: 09/09/2016 9:10
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165143001, 1165143002, 1165143003, 1165143004

Results by **SW6020A**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Arsenic	1.97J	1000	1030	103	1000	1010	101	84-116		
Barium	23.5	1000	1070	105	1000	1050	103	86-114		
Cadmium	1.00U	100	104	104	100	102	102	87-115		
Chromium	37.5	400	445	102	400	437	100	85-116		
Lead	3.38	1000	1040	103	1000	1020	102	88-115		
Mercury	0.125J	10.0	10.1	100	10.0	10.8	107	70-124		
Selenium	10.0U	1000	1000	100	1000	991	99	80-120		
Silver	1.00U	100	104	104	100	101	101	85-116		

Batch Information

Analytical Batch: MMS9529
Analytical Method: SW6020A
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 9/9/2016 9:05:48AM

Prep Batch: MXX30164
Prep Method: 3010 H20 Digest for Metals ICP-MS
Prep Date/Time: 9/7/2016 12:00:59PM
Prep Initial Wt./Vol.: 25.00mL
Prep Extract Vol: 25.00mL

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Method Blank

Blank ID: MB for HBN 1742857 [XXX/36251]
Blank Lab ID: 1350847

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1165143001, 1165143002, 1165143003, 1165143004

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	109	60-120		%

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: NRO
Analytical Date/Time: 9/9/2016 11:19:00PM

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 9/9/2016 8:43:06AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1742857 [XXX/36251]
Blank Lab ID: 1350847

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1165143001, 1165143002, 1165143003, 1165143004

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	107	60-120		%

Batch Information

Analytical Batch: XFC12815
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: NRO
Analytical Date/Time: 9/9/2016 11:19:00PM

Prep Batch: XXX36251
Prep Method: SW3520C
Prep Date/Time: 9/9/2016 8:43:06AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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CHAIN OF CUSTODY RECORD

1165143

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page ____ of ____

Section 1

CLIENT: Michael Baker Intl

CONTACT: Garrett Yager PHONE NO: 907-334-0960

PROJECT NAME: PROJECT/ PWSID/ PERMIT#:

REPORTS TO: E-MAIL:

INVOICE TO: QUOTE #: P.O. #:

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Type C = COMP G = GRAB MI = Multi Incremental Soils	Section 3 Preservative: 250mL HCl	250mL HNO3	REMARKS/ LOC ID
(1) A-F	L9323	8/29/16	8:45 pm		6	G	5	1	
(2) A-F	M9313	08/29/16	5:45 pm		6	G	5	1	
(3) A-E	L9323-Dup	8/29/16	8:50 pm		5	G	4	1	
(4) A-F	L9324	8/29/16	10:00 pm		6	G	5	1	

Section 5

	Date	Time	
Relinquished By: (1)	08/31/16	16:41	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	8/31/16	16:42	Received For Laboratory By:

Section 4

DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 5.4 0.1

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

Hand delivered

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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e-SAMPLE RECEIPT FORM

1165143

Review Criteria	Y/N (yes/no)	Exceptions Noted below
	Y	exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location		absent
COC accompanied samples?	Y	
		**exemption permitted if chilled & collected <8hrs ago or chlling not required (i.e., waste, oil)
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Y	Cooler ID: 1 @ 5.9 °C Therm ID: D11
		Cooler ID: @ °C Therm ID:
		Cooler ID: @ °C Therm ID:
		Cooler ID: @ °C Therm ID:
		Cooler ID: @ °C Therm ID:
If >6°C, were samples collected <8 hours ago?		
If <0°C, were sample containers ice free?		
If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
		Note: Refer to form F-083 "Sample Guide" for hold times.
Were samples received within hold time?	Y	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Y	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous?	Y	
		***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Y	
IF APPLICABLE		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		
Were all VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		
Were all soil VOAs field extracted with MeOH+BFB?		

Note to Client: Any "no" answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1165143001-A	HCL to pH < 2	OK			
1165143001-B	HCL to pH < 2	OK			
1165143001-C	HCL to pH < 2	OK			
1165143001-D	HCL to pH < 2	OK			
1165143001-E	HCL to pH < 2	OK			
1165143001-F	HNO3 to pH < 2	OK			
1165143002-A	HCL to pH < 2	OK			
1165143002-B	HCL to pH < 2	OK			
1165143002-C	HCL to pH < 2	OK			
1165143002-D	HCL to pH < 2	OK			
1165143002-E	HCL to pH < 2	OK			
1165143002-F	HNO3 to pH < 2	OK			
1165143003-A	HCL to pH < 2	OK			
1165143003-B	HCL to pH < 2	OK			
1165143003-C	HCL to pH < 2	OK			
1165143003-D	HCL to pH < 2	OK			
1165143003-E	HNO3 to pH < 2	OK			
1165143004-A	HCL to pH < 2	OK			
1165143004-B	HCL to pH < 2	OK			
1165143004-C	HCL to pH < 2	OK			
1165143004-D	HCL to pH < 2	OK			
1165143004-E	HCL to pH < 2	OK			
1165143004-F	HNO3 to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM- The container was received damaged.
FR- The container was received frozen and not usable for Bacteria or BOD analyses.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.